OFFICIAL GAZETTE
UNITED STATES PATENT OFFICE

VOL. 857

DEC. 1968

MICRO PHOTO DIVISION JN
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 3, 1968 Volume 857 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1968

Examiner affirmed	142
Examiner affirmed in part	18
Examiner reversed	50
Total	210

Foreign Patents Received in the Search Center as of October 31, 1968

Source	Date received	Highest number
Australia :		
(*Abstracts*)	Sept. 30, 1968	39,101/68
(*Patents*)	Oct. 26, 1968	282,326
Austria	Oct. 15, 1968	264,450
Belgium	May 6, 1968	676,000
Canada	Oct. 22, 1968	796,900
Czechoslovakia	Oct. 17, 1968	125,650
Denmark :		
(*Patents*)	Oct. 11, 1968	109,830
(*Fremlaeggelsesskrifter*)	Oct. 17, 1968	111,260
East Germany	Oct. 18, 1968	63,744
Egypt	June 28, 1967	6,873
Finland	Oct. 8, 1968	37,023
France :		
(*Patents*)	Oct. 15, 1968	1,527,250
(*Additions*)	Oct. 15, 1968	91,350
(*Medicaments*)	Sept. 23, 1968	5,300 M
(*Additions*)	May 2, 1968	162 CAM
Germany :		
(*Auslegeschriften*)	Oct. 7, 1968	1,272,850
(*Patents*)	Oct. 7, 1968	1,258,667
Great Britain	Oct. 21, 1968	1,129,450
India	Apr. 11, 1968	101,130
Ireland	Sept. 23, 1968	27,499
Italy	Apr. 25, 1968	670,000
Japan	Oct. 22, 1968	22,000
Netherlands :		
(*Octrooiaanvragen*)	July 29, 1968	6,390/68
(*Patents*)	Oct. 8, 1968	124,900

Foreign Patents Received in the Search Center as of October 31, 1968—Continued

Source	Date received	Highest number
Norway :		
(*Patents*)	Oct. 2, 1968	113,252
(*Utlegningsskrifter*)	Oct. 17, 1968	115,128
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Oct. 11, 1968	55,723
Rumania	Aug. 6, 1968	50,631
Sweden :		
(*Patents*)	Aug. 22, 1968	220,482
(*Utläggningsskrifter*)	Sept. 17, 1968	301,457
Switzerland	Oct. 22, 1968	460,672
U.S.S.R.	Oct. 7, 1968	216,226

Australia : First 2,000 incomplete
Belgium : First printed 493,079/1950
Canada : First printed 445,931/1948
Czechoslovakia : Not received between 81,300/1952 and 91,901/1959
Finland : First printed 19,428/1941
First 500 incomplete
Hungary : First received 5,792/1896
Latest 140,582/1951
Ireland : First received 10,000/1929
Italy : First 243,000 incomplete
Rumania : First received 40,380/1957
U.S.S.R. : Not received between 2,496/1928 and 116,000/1958
Yugoslavia : First received 10,001/1933
Latest 16,461/1941

Dependent Claims

The Notice on dependent claims of August 19, 1968 (854 O.G. 287) is hereby rescinded.

Accordingly, claims which define an ultimate species as well as those which name a specific compound may qualify as dependent claims if specific reference is made to a preceding claim.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 4, 1968.

New Application Received During September 1968

Patents	7274
Designs	443
Plant Patents	11
Reissues	23
Total	7751

Issue—December 3, 1968

Patents	1250	No. 3,413,656 to No. 3,414,905, incl.
Designs	29	No. 212,842 to No. 212,870, incl.
Plant Patents	3	No. 2,847 to No. 2,849, incl.
Reissues	7	No. 26,493 to No. 26,499, incl.
Total	1289	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 11, 1968

PATENT EXAMINING OPERATIONS AND GROUPS • Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-05-66	1-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-17-66	*6-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERGOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-02-66	2-24-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*3-01-66	7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-13-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-19-66	4-06-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-13-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*12-07-65	*11-01-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	1-26-66	9-26-63
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-16-66	4-21-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	2-14-68	4-18-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-07-67	10-08-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	1-03-67	2-18-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	12-12-66	11-02-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-01-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-09-67	4-16-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	*7-21-66	*5-31-63

Total number of pending applications (excluding Designs)..... 186,678
Total number of Design applications pending..... 2,727

Expiration of patents: The patents within the range of numbers indicated below expire during December 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents..... Numbers 2,576,909 to 2,580,378, inclusive
Plant Patents..... Numbers 1,049 to 1,058, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

STANDARD INTERNATIONAL CORPORATION, ASSIGNEE, BY MERGER OF THE BON AMI COMPANY
v.
AMERICAN SPONGE AND CHAMOIS COMPANY, INC.

No. 7949. Decided May 23, 1968

[55 CCPA—; — F.2d —; 157 USPQ 630]

1. TRADEMARK—WEAK MARKS.

"It is true, as pronounced in the *Fleetwood* and *Sure-Fit* cases, that owners of inherently weak trademarks do not ordinarily enjoy the wide latitude of protection afforded owners of strong marks. However, a mark which is initially a weak one may, by reason of subsequent use and promotion, acquire such distinctiveness that it can function as a significant indication of a particular producer as source of the goods with which it is used. *Clinton Detergent Co.* v. *The Procter & Gamble Co.*, 49 CCPA 1146, 302 F.2d 745, 133 USPQ 520 (1962), and *Jenkins Publishing Co.* v. *Metalworking Publishing Co.*, 50 CCPA 1218, 315 F.2d 955, 137 USPQ 358 (1963). In the present case, we think the original weakness of appellant's mark, which limited its registration to the Supplemental Register, is offset significantly by appellant's subsequent expenditures for promotion and the resulting sales."

2. SAME—CONFUSING SIMILARITY—"DUST 'N WAX" AND "DUST 'N GLOW" FOR POLISHING MATERIALS.

"Thus, sales of 'DUST 'N WAX' polish from the period 1961 through the first nine months of 1964 exceeded $4,000,000 and advertising expenses in connection with the mark during the same period amounted to in excess of $2,000,000. The predominant portion of those sales and expenditures took place before May 27, 1963, the date appellee filed its application for registration and to which it is limited for first use because of absence of any proof of earlier use. See *Kiekhaefer* v. *Willys-Overland Motors Inc.*, 43 CCPA 1013, 236 F.2d 423, 111 USPQ 105 (1956). Recognizing that each case must be considered on its own facts, we are of the view that 'DUST 'N WAX' has acquired such significance as an indication of the source of appellant's polish that the use of 'DUST 'N GLOW' for appellee's polishing cloth is likely to cause confusion or mistake or to deceive. Under the circumstances, appellee has acted at his peril in adopting so similar a mark for such closely related goods and any doubt there might be must be resolved against him. *Clinton Detergent Co.* v. *The Procter & Gamble Co.*, supra; *The United States Time Corp.* v. *Jacob Tennenbaum*, 46 CCPA 895, 267 F.2d 327, 122 USPQ 15 (1959)."

APPEAL from the Patent Office. Opposition No. 43,592.

REVERSED.

Mason, Fenwick & Lawrence, Edward G. Fenwick, Jr. for appellant.

Alex Friedman (*Blum Moscovitz Friedman Blum & Kaplan*, of counsel) for appellee.

Before RICH, *Acting Chief Judge*, and Judges SMITH, ALMOND, and KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

American Sponge and Chamois Company, Inc. seeks registration of "DUST 'N GLOW" for a cleaning and polishing cloth, impregnated with a polish. Relying on prior use and registration on the Supplemental Register of "DUST 'N WAX" for furniture polish, Standard International Corporation opposes, alleging that "DUST

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

'N GLOW" so resembles "DUST 'N WAX" as to be likely to cause confusion, or to cause mistake, or to deceive. The Trademark Trial and Appeal Board dismissed the opposition.[2]

The Board found, and appellee does not dispute, that "the goods of the parties would readily be assumed to originate with a single source if sold under the same or similar marks."

In concluding "there is no likelihood of confusion, or mistake or deception," the Board stated:

> The only similarity between the marks in issue resides in the parties' use of "DUST 'N." Opposer's mark possesses an obvious descriptive connotation as applied to its furniture polish which waxes as one dusts. In this regard we note that opposer's registration of "DUST 'N WAX" issued on the Supplemental Register. Applicant's mark, on the other hand, merely suggests that which opposer's mark says definitively. Moreover, the end portions of the marks are different. Opposer's mark is inherently weak and where a party uses a weak mark, his competitors may come closer to such mark without violating his rights.

In support of its view the Board cited *The Fleetwood Company* v. *Hazel Bishop, Inc.*, 352 F.2d 841, 147 USPQ 344 (CA. 7, 1965); *Sure-Fit Products Co.* v. *Saltzson Drapery Co.*, 45 CCPA 856, 254 F.2d 158, 117 USPQ 295 (1958).

We agree that the opposer's mark is inherently weak, but the "DUST 'N" part of it is not entirely without a certain distinctiveness and although the end portions of the marks are entirely different words, "GLOW" is at least suggestive of the effect of using a wax polish upon furniture.

We do not agree with the conclusion reached by the Board. **[1]** It is true, as pronounced in the *Fleetwood* and *Sure-Fit* cases, that owners of inherently weak trademarks do not ordinarily enjoy the wide latitude of protection afforded owners of strong marks. However, a mark which is initially a weak one may, by reason of subsequent use and promotion, acquire such distinctiveness that it can function as a significant indication of a particular producer as source of the goods with which it is used. *Clinton Detergent Co.* v. *The Procter & Gamble Co.*, 49 CCPA 1146, 302 F.2d 745, 133 USPQ 520 (1962), and *Jenkins Publishing Co.* v. *Metalworking Publishing Co.*, 50 CCPA 1218, 315 F.2d 955, 137 USPQ 358 (1963). In the present case, we think the original weakness of appellant's mark, which limited its registration to the Supplemental Register, is offset significantly by appellant's subsequent expenditures for promotion and the resulting sales.

[2] Thus, sales of "DUST 'N WAX" polish from the period 1961 through the first nine months of 1964 exceeded $4,000,000 and advertising expenses in connection with the mark during the same period amounted to in excess of $2,000,000. The predominant portion of those sales and expenditures took place before May 27, 1963, the date appellee filed its application for registration and to which it is limited for first use because of absence of any proof of earlier use.[3] See *Kiekhaefer* v. *Willys-Overland Motors Inc.*, 43 CCPA 1013, 236 F.2d 423, 111 USPQ 105 (1956). Recognizing that each case must be considered on its own facts, we are of the view that "DUST 'N WAX" has acquired such significance as an indication of the source of appellant's polish that the use of "DUST 'N GLOW" for appellee's

[2] Result reported at 149 USPQ 902.
[3] Appellant's evidence shows total sales of "DUST 'N WAX" polish for 1961, 1962 and first six months of 1963 to total over $2,790,000 and total promotional expenses for the same period to be over $1,490,000.

polishing cloth is likely to cause confusion or mistake or to deceive. Under the circumstances, appellee has acted at his peril in adopting so similar a mark for such closely related goods and any doubt there might be must be resolved against him. *Clinton Detergent Co.* v. *The Procter & Gamble Co.*, supra; *The United States Time Corp.* v. *Jacob Tennenbaum*, 46 CCPA 895, 267 F.2d 327, 122 USPQ 15 (1959).

The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

IN RE CORLISE M. SWEET

No. 7916. Decided May 2, 1968

[55 CCPA—; 393 F.2d 837; 157 USPQ 495]

1. CLAIM—CONSTRUCTION OF CLAIMS—MEANS FOR PERFORMING SPECIFIED FUNCTION—35 U.S.C. 112.

"We think the recitation in claim 1 of 'means to simultaneously change the position of said cutting elements for cutting a different size diameter' requires a structure which is itself inherently operable to carry out the adjustment of both elements 'simultaneously,' as distinguished from structure characterized merely in that a plurality of means can be adjusted simultaneously by an operator. Particularly since the Patent Office has not contended that the terminology is indefinite in any way, the reasonable construction of the present 'means' recitation in the light of 35 U.S.C. 112 is that the cutting elements are operatively interconnected so far as the mechanism for adjusting them is concerned. See *In re Danly*, 46 CCPA 792, 263 F.2d 844, 120 USPQ 528. We therefore do not find the mere fact that one or more lathe operators might adjust the positioning screws for individual cutting elements of Blancke simultaneously to demonstrate that claim 1 is unpatentable."

2. SAME—SAME—SAME.

" * * * a recitation of 'means' for performing a function is interpreted broadly to cover all means capable of performing the stated function and is not limited to the particular structure which the application may disclose."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"LATHE TURRET EQUIPPED WITH AUTOMATIC ADUSTING TANDEM TOOLS."

The refusal of certain claims in an application entitled "Lathe Turret Equipped With Automatic Adjusting Tandem Tools," as unpatentable over the prior art, is reversed as to one claim and affirmed as to the others.

APPEAL from the Patent Office. Serial No. 54,609.

MODIFIED.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals [2] affirming the rejection of claims 1, 16, 17, 22, and 37 [3] of application Serial No. 54,609, filed September 8, 1960, entitled "Lathe Turret Equipped With Automatic Adjusting Tandem Tools."

The invention relates to tandem cutting tools for lathes, which tools are simultaneously adjustable for turning a workpiece at different diameters. Sufficient details of the structure and operations will be

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Consisting of Dracopoulos and Brewrink, Examiners-in-Chief, and Angel, Acting Examiner-in-Chief, opinion by Brewrink.
[3] Twelve other claims remaining in the application were allowed by the Examiner.

apparent from consideration of FIGS. 1 and 3 of the application drawings:

FIG. 1

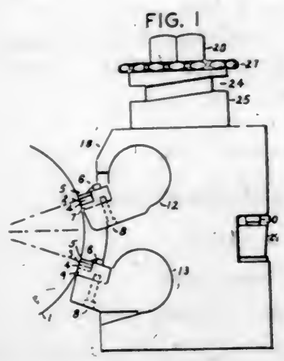


FIG. 3

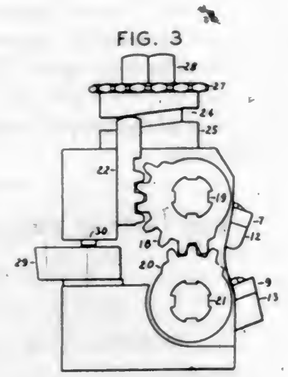


FIG. 1 is a side elevation of a square lathe turret 18 carrying a tandem turning tool having one cutting element above the center line of a workpiece 1 and another cutting element mounted an equal distance below the center line and offset slightly along the lathe axis.[4] A replaceable insert 7 carrying the upper cutting element 2 is mounted in an adjustable shank 12 while a corresponding insert 9 carrying the lower cutting element 3 is mounted in adjustable shank 13. Referring also to FIG. 3, which shows the reverse side of the turret, the shanks 12 and 13 are mounted on rotatable shafts, having splines 19, 21, extending through the turret, to the opposite ends of which shafts are keyed meshing gears 16 and 20, respectively. A rack 22, which engages gear 16, has a cam-follower at its upper end which rides in a slot 24 in cam 25, mounted for rotation on turret 18 and having a sprocket gear 27 fixed thereto by a nut 28. The cutting elements carried by shanks 12 and 13 are so arranged as to cut at the same distance from the center of the workpiece 1 with the cutting faces of the elements disposed along radii extending from the center of the workpiece.

When it is desired to change the diameter of the cut, the turret 18 is moved on the cross-slide of the tool carriage of the lathe to bring the cutting tool to the new diameter. Also, the cam 25 is rotated by means of sprocket 27 to cause the cam-follower on rack 22 to move the rack vertically and thereby rotate the gear 16 to such position that the upper cutting element 2 assumes the radial direction at the new position. Gear 16 in turn drives meshing gear 20 in the opposite direction so as also to bring the lower cutting element 3 carried by shank 13 to radial position. The adjusting movement of the cam can be geared to the movement of the cross-slide on the carriage so as to adjust the cutting elements to radial positions automatically for each turning diameter selected. Alternatively, the sprocket 27 may be replaced by a hand-operated wheel for rotating the shanks 12 and 13.

The turret 18 also includes single cutting elements 29 secured in place at the corners of the turret by screws 30. The turret may be rotated on its carriage to move the tandem tool away from the workpiece and place a selected one of the single cutting elements in operating position adjacent the workpiece.

[4] Although the complete lathe structure is not shown in FIGS. 1 and 3, the turret is mounted on a carriage that is driven along the lathe bed parallel to the axis during the turning operation, and a cross-slide is provided for adjusting the turret on the carriage in a direction perpendicular to the lathe axis to control the cutting diameter. The specification describes the offset relationship of the cutting elements as follows: In order to obtain maximum metal removal [,] cutting elements 3 should be set beyond cutting element 2 in the direction the carriage is feeding an amount equal to one half the feed of the carriage for one revolution of the workpiece.

Representative claims 1 and 16, with the recitations in issue italicized, read:

1. In a turning apparatus combination having a workpiece center of rotation and a cross slide; a tandem cutting tool, comprising a tool holder, at least two cutting elements carried by said holder in closely spaced relation one above the other to cut simultaneously at substantially the same distance from the lathe's center of rotation, each successive cutting element being offset from the one immediately thereabove in the direction of tool feed to provide a total cut per revolution of the workpiece corresponding to the sum of the cuts of the cutting elements and *means to simultaneously change the position of said cutting elements for cutting a different size diameter whereby said cutting elements will cut at substantially the same distance from the center of rotation on said different size diameter.*

16. The method of cutting more than one diameter on a large workpiece in a lathe with a tandem turning tool, comprising cutting a workpiece with at least two tandem cutting elements, said cutting elements are held one above the other on one side of the workpiece, said cutting elements cut on substantially the same workpiece diameter, at least one of said cutting elements is offset beyond a cutting element above it in a direction the cutting elements move when cutting, moving said cutting elements along the longitudinal length of the workpiece whereby at least two of the cutting elements will cut separate helical paths on the workpiece circumference, *and when it is desired to cut a larger diameter move the tool holder that holds the cutting elements to a greater distance from the lathe's center of rotation, and after the tool has moved simultaneously adjust the cutting elements whereby their top faces are approximately radial with the lathe's center of rotation,* and continue cutting the workpiece by moving the cutting elements along the longitudinal length of the workpiece thereby by using said tandem cutting elements that can be quickly adjusted for cutting different size diameters metal can be removed much faster from a workpiece than with a single cutting element.

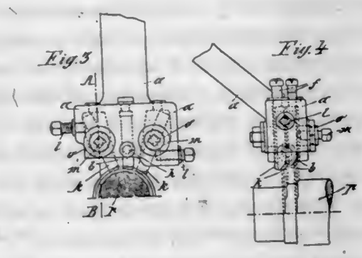
Claims 17, 22 and 37, like claim 16, are method claims.

The references relied on in the rejection are:

Blancke (British), 19,607, June 5, 1902.

Norton, 1,949,512, March 6, 1934.

Blancke discloses a tool holder, the most pertinent form of which is shown in FIGS. 3 and 4, reproduced below:



In the drawings, each of two adjacent sets of turning tools includes three cutting elements k, b, and k, disposed to cut at the same diameter[5] as shown in FIG. 3. FIG. 4 shows that the three cutters in each set are offset along the axis of the workpiece p. The two end cutting elements k, k of each set are shown as disposed at substantially equal distances on opposite sides of the middle cutter b. Screws are provided for adjusting the cutter elements k, k both laterally and

[5] Appellant contends that the showing of the three tools all cutting on the same diameter in Blancke's FIG. 3 is a mistake in the drawing but we do not find any persuasive evidence to support that contention.

radially to the workpiece and for adjusting the cutting element *b* radially.

Norton discloses a lathe arranged for simultaneous adjustment of tandem cutting tools disposed on diametrically opposite sides of a workpiece to be turned in axially offset relationships. Mechanism is provided whereby movement of a single operating member simultaneously moves the opposed cutting tools toward or away from the workpiece with the result that both tools are continuously disposed to cut at the same distance from the work center. Because the adjusting movements of the tools are along substantially the same diameter of the workpiece, although in opposite directions, no angular adjustment relative to the workpiece is required.

The Examiner rejected claim 1 as unpatentable over Blancke under 35 U.S.C. 103. He held that the recitation of "means to simultaneously change the position of the cutting elements for cutting a different size diameter" is so broadly stated in the claim as to read on a conventional lathe cross-feed screw, "which is obviously a part of the schematic showing of FIGS. 3 and 4" of Blancke. The "whereby" clause following that recitation was regarded as stating desired results without imparting any added limitations of structure.

The Examiner also stated:

> * * * the adjusting screws *l* and *f* of Blancke '607 are a broad means to simultaneously adjust the positions of the elements *k*, *b*, *k*, if a mechanic who is skillful with both hands desires to adjust any of these elements at the same time in order to expedite the finishing of a turning operation in a shorter time. It being noted that Norton '512 discloses the desirability of simultaneously adjusting cutting elements in a tandem cutting operation.

With respect to the method claims, the Examiner held that a "skillful" mechanic could obviously effect simultaneous adjustment of the cutting elements *k*, *k* with the on-center element *b* through the use of the adjusting screws *f* and *l* of Blancke. He regarded such adjustment as obvious in view of Norton's teaching of simultaneous adjustment of tandem cutting elements.

The Board stated that it shared the Examiner's view that the recitation of means to simultaneously change the position of cutting elements in claim 1 "does not specifically require a single point of application" of the adjustment action. It also took the position that "the appealed claims are so general in expression of the adjusting action" as to encompass adjustment of the reference tools in a machine which is out of service and the tool movement computed or controlled by movement toward the new positions by templets or other position determining devices. Norton was acknowledged as of interest by the Board, which, however, did not "find it necessary * * * to resort to combination of the mechanical structure thereof with that taught by Blancke."

Appellant urges that claim 1 should be considered in connection with the provision of 35 U.S.C. 112 [6] that an element may be expressed as a means for performing a specified function and that the "means" expression shall be construed to cover the corresponding structure.

[6] The pertinent last paragraph of 35 U.S.C. 112 reads:
> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

That provision of the statute is pertinent to the Patent Office position that the "means" recitation of claim 1 does not require a single point of application of the adjustment action, a position with which we disagree. **[1]** We think the recitation in claim 1 of "means to simultaneously change the position of said cutting elements for cutting a different size diameter" requires a structure which is itself inherently operable to carry out the adjustment of both elements "simultaneously," as distinguished from structure characterized merely in that a *plurality* of means can be adjusted simultaneously by an operator. Particularly since the Patent Office has not contended that the terminology is indefinite in any way, the reasonable construction of the present "means" recitation in the light of 35 U.S.C. 112 is that the cutting elements are operatively interconnected so far as the mechanism for adjusting them is concerned. See *In re Danly*, 46 CCPA 792, 263 F.2d 844, 120 USPQ 528. We therefore do not find the mere fact that one or more lathe operators might adjust the positioning screws for individual cutting elements of Blancke simultaneously to demonstrate that claim 1 is unpatentable.

[2] However, a recitation of "means" for performing a function is interpreted broadly to cover all means capable of performing the stated function and is not limited to the particular structure which the application may disclose. See *Phillips* v. *Lynch*, 54 CCPA 781, 367 F.2d 601, 151 USPQ 400. Here, claim 1 does not specify that the cutting elements are oriented to keep their cutting edges in alignment with radii of the workpiece when their position is changed for cutting a different size diameter.[7]

We agree with the Examiner that cross-feed mechanism for moving the tool toward and away from the workpiece undoubtedly is contemplated with the structure of Blancke's FIGS. 3 and 4. As the feed screw for that mechanism is adjusted, the outer cutting elements *k*, *k* of each set will obviously be maintained continuously at equal distance from the center of rotation of the lathe. It is true, as appellant urges, that the center element *b* will not be maintained at the same diameter as the outer elements but will be farther from the work center when the turning diameter is increased and closer to it when the diameter is decreased. However, we think it would be obvious to one skilled in the art that he could rely solely on the cross-feed of the tool to make small changes in turning diameter rapidly, particularly when the changes amount to only a slight *increase* in the diameter and even though the greater displacement would move the center tool out of contact with the work. We also agree with the argument, made by the Solicitor, that it would be obvious to eliminate the center element *b* if found to be in the way for such adjustment to a smaller diameter, especially since Blancke contemplates a modification using but two tools. It also is clear that such arrangement would meet the broad requirement of the whereby clause that the cutting elements "cut at substantially the same distance from the center of rotation on said different size diameter," despite the cutter edges being in less than perfect alignment with radii of the work. We therefore agree that claim 1 is so broadly drawn as to be obvious in view of Blancke under 35 U.S.C. 103.

[7] Appellant's argument against the rejection of claim 1 is at least partially based on a mistake as to what the claim recites since his brief describes it as stating "simultaneously adjust the cutting elements whereby their faces are approximately radial with the lathe's center of rotation." That expression does not appear in the claim.

Method claim 16 requires movement of the tool holder to place the cutting elements at a position to cut on a larger diameter followed by "simultaneously" adjusting the top faces of the cutting elements to positions radial to the lathe center of rotation. Claim 17, drawn as dependent on claim 16, specifies that "the tool holder and the cutting elements are all adjusted simultaneously * * *." It is apparent that the Board was correct in its position that the claim language is broad enough to include moving and adjusting the cutting elements while the machine is out of service and no cut is being made on the workpiece.[8] It is also clear that these method claims do not require specific apparatus for making the tool position adjustment but can be satisfied by manual adjustment of the tools independently.

Upon stopping a machining operation to adapt the tool of Blancke for cutting on a larger diameter, the expected procedure would be to first move the tool holder on the cross-slide to the new diameter and then adjust the cutting elements k, k to their new radial positions. We agree with the Examiner and Board to the extent that we think that a skilled mechanic would find it obvious, either by using both his hands or obtaining assistance from a second operator, to loosen, reposition radially, and then tighten both cutting elements k, k simultaneously. Thus, we are satisfied that claim 16 is obvious in view of Blancke.

However, claim 17 differs from claim 16 by requiring that the adjustment of the angle of the cutting elements be made simultaneously with, rather than *after*, the movement of the tool holder to the new diameter. That is the procedure provided through appellant's disclosed interconnection of the sprocket for rotating the cam for radially adjusting the cutting elements with the mechanism for moving the cross-slide to the new cutting diameter. We do not think that a person skilled in the art would derive any suggestion of so coordinating the two different phases of the adjusting procedure from a consideration of Blancke. Neither do we think that Norton, which requires no adjustment of the angle of the cutting elements, provides any suggestion of so operating the Blancke construction. Accordingly, the rejection of claim 17, whether on Blancke alone or Blancke in view of Norton, cannot be sustained.

The remaining claims, 22 and 37, call broadly for the step of "simultaneously" adjusting the cutting elements "for cutting a different size diameter" with no recitation that they are reoriented at the new diameter to keep their cutting edges in alignment with radii of the workpiece. The language thus corresponds in scope to that of claim 1 and claims 22 [9] and 37 are obvious over Blancke for the same reasons set forth in the specific consideration of that claim previously given herein.

[3] For the reasons stated, the rejection is *affirmed* as to claims 1, 16, 22 and 37 and *reversed* as to claim 17.

MODIFIED.

[8] Appellant contends that it would be impractical to stop the lathe to readjust the tools for each new diameter because the time required would result in the waste of "much more time than would be saved by the tandem tools." However, he does not point to any claim limitations which require that the adjustments be made while the cutting operation is in progress.

[9] Claim 22 additionally calls for use of a single cutting element in the turret with the tandem tool for alternative use therewith. However, the Examiner noted that the basic function of tool turrets is to accommodate a plurality of tools and appellant has neither controverted that statement nor argued that the feature renders the claim patentable.

U.S. Court of Customs and Patent Appeals

IN RE HANS SOENKSEN, WILHELM BAUMEISTER, AND ERICH UMLAUF

No. 7944. Decided May 9, 1968

[55 CCPA—; 393 F.2d 845; 157 USPQ 506]

1. APPEAL TO THE BOARD OF APPEALS—MATTER BEFORE BOARD—CONCESSION BY EXAMINER NOT BINDING ON BOARD.

"The appellants urge that the Examiner thus conceded unobviousness of the claims provided the alleged results were really obtained, and that the Board was in error in giving no weight to the concession. We do not understand what the Examiner had in mind when making this 'concession.' However, insofar as it is taken as conceding the unobviousness of the appealed claims, it is directly contradictory to the last sentence of the previously quoted portion of the Examiner's answer. We do not believe that the Board was in error in refusing to accept this sentence as an outright concession of unobviousness. Even if the concession had been unequivocal, it is within the power of the Board to reverse the Examiner. Insofar as any concession may have existed, therefore, we consider it to have been overruled by the Board's finding the invention to be obvious."

2. PATENTABILITY—COMBINING REFERENCES—PROCESS.

"We agree with the Examiner and the Board that the claims on appeal are obvious in view of the cited references. Considering Lee's teaching that secondary and tertiary esters can be prepared by similar reactions involving normal olefins and isoolefins, and Coleman's teaching that secondary esters can be separated from the reaction mixture by vacuum distillation, it would seem obvious to separate tertiary esters from their reaction mixture by means of vacuum distillation, particularly since Weissberger suggests vacuum distillation of thermally sensitive materials."

3. SAME — PARTICULAR SUBJECT MATTER — "PRODUCTION OF CARBOXYLIC ACID ESTERS OF TERTIARY ALCOHOLS."

The refusal of certain claims in an application entitled "Production of Carboxylic Acid Esters of Tertiary Alcohols" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 183,030.

AFFIRMED.

Marzall, Johnston, Cook & Root, Herbert B. Keil for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and Judges SMITH, ALMOND, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of all of the claims in appellants' application entitled "Production of Carboxylic Acid Esters of Tertiary Alcohols.[2]

The invention deals with the production of tertiary esters by the reaction of a carboxylic acid with an isoolefin in the presence of an acid catalyst and recovery of the product in high yields by a vacuum distillation process. The novelty upon which appellants base their argument for patentability is the use of a vacuum distillation separation process in combination with this particular chemical reaction.

The claims on appeal are claims 2–9, all of which depend from unappealed claim 1.[3] The claimed invention is, therefore, illustrated by claims 1 and 2 read together:

1. A process for the production of carboxylic acid esters of tertiary alcohols

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 183,030, filed March 28, 1962.

[3] Appellant attempted to cancel claim 1 and rewrite claim 2 to incorporate all limitations of claim 1. The amendment was refused under Rules 119 and 126. However, the Board considered claim 2 in its present dependent form, and we will do likewise.

which comprises reacting an aliphatic carboxylic acid selected from the group consisting of saturated carboxylic acids with one to five carbon atoms and hydrocarbon structure apart from the carboxylic group, carboxylic acids with one to five carbon atoms containing one olefinic double bond and having hydrocarbon structure apart from the carboxylic group, and the said saturated and unsaturated carboxylic acids substituted by chlorine, the said substituted and unsubstituted saturated and unsaturated carboxylic acids having boiling points under atmospheric pressure of between 100 and 200° C., at a temperature between +10° and +50° C. at a pressure of between 500 mm. Hg and 10 atmospheres in the presence of an acid catalyst having an equilibrium pressure of 1 atmosphere above 200° C. with an isoolefin having four to five carbon atoms, separating the reaction mixture containing said acid catalyst by distillation at a pressure between 0.1 and 100 mm. Hg into a more volatile fraction consisting mainly of the carboxylic acid ester and a less volatile fraction containing the catalyst, and recovering the carboxylic acid ester from said more volatile fraction.

2. A process as claimed in claim 1 wherein the process is carried out continuously and the less volatile fraction of the reaction mixture is returned to the reaction zone.

The remaining appealed claims depend from claim 2, and contain limitations not material to the issue before us.

The references relied on by the Examiner are:

Lee, 2,041,193, May 19, 1936.
Coleman, 2,224,809, Dec. 10, 1940.
Weissberger, Technique of Organic Chemistry, vol. IV, Distillation (1951).

The claims were rejected "as unpatentable over" Coleman in view of Lee and further in view of Weissberger.

Coleman teaches the preparation of isopropyl esters (secondary esters) of aliphatic acids by reacting propylene with acetic acid in the presence of an acid catalyst. With regard to the separation, Coleman teaches that his process can be carried out continuously, and states:

In each of the foregoing examples, the ester product was separated from the reacted mixture through fractional distillation of the latter. Any tendency of the reacted mixture toward charring may be avoided by carrying the last stage of the fractional distillation out under sub-atmospheric pressure. Instead of separating the ester product from the reaction mixture through direct distillation of the latter, the cooled reaction mixture may, of course, be neutralized with a basic material, washed with water, dried, and finally purified through distillation. However, such intermediate steps ordinarily are unnecessary in practicing the invention.

Lee was relied upon by the Examiner "to show that in the esterification of olefins, the use of normal olefins and isoolefins (to produce secondary and tertiary esters respectively) suggest one another."

Weissberger teaches that it is conventional to use vacuum distillation to avoid thermal decomposition during distillation.

The Examiner expressed the rejection in his answer as follows:

Claims 1–10 stand rejected as unpatentable over Coleman in view of Lee and further in view of Weissberger. It is considered that the use of isoolefins in place of normal olefins in the Coleman process to yield tertiary esters instead of secondary esters would be obvious in view of Lee's disclosure that this is the expected result. Weissberger further shows that it would be obvious to the skilled chemist to turn to vacuum distillation if distillation at atmospheric pressure involved extensive decomposition of the desired material. It is conceded that numerous independent prior art workers noted that distillation of the tertiary esters resulted in extensive decomposition and turned to other methods such as prior neutralization of the acid catalyst. However, it is considered that *to the extent that conventional vacuum distillation, and* THIS IS ALL THAT THE CLAIMS RECITE, *is utilizable, its use is obvious.* * * *

Having thus clearly expressed a rejection under 35 U.S.C. 103, the Examiner launched into a discussion which appears to be more related to sufficiency of disclosure than to obviousness. Since this was not raised as a reason for appeal, we would not need to consider it at all except for a "concession" made by the Examiner in this discussion. The Examiner said:

The Examiner's first reaction is of course this must have been tried. And indeed most likely the claimed procedure was tried by many and without success. For it turns out upon close examination that the key is not the simple claimed procedure but the use of specialized equipment or conditions. *Thus at the outset the Examiner will concede that the successful (no extensive decomposition) distillation under moderate vacuum of tertiary esters in the presence of acid catalysts is not obvious in view of the prior art.* [Emphasis added.]

[1] The appellants urge that the Examiner thus conceded unobviousness of the claims provided the alleged results were really obtained, and that the Board was in error in giving no weight to the concession. We do not understand what the Examiner had in mind when making this "concession." However, insofar as it is taken as conceding the unobviousness of the appealed claims, it is directly contradictory to the last sentence of the previously quoted portion of the Examiner's answer. We do not believe that the Board was in error in refusing to accept this sentence as an outright concession of unobviousness. Even if the concession had been unequivocal, it is within the power of the Board to reverse the Examiner. Insofar as any concession may have existed, therefore, we consider it to have been overruled by the Board's finding the invention to be obvious.

In its decision, the Board affirmed as follows:

We will sustain this rejection because we are convinced that the claimed process would have been obvious to a chemist of ordinary skill in the esterification art from the references relied on.

Appellants urge that the Board erred in arguing that the process claimed might not be operable using crude equipment, and that this argument had no place in the determination of obviousness. While we agree with appellants on the point of law involved, it does not appear to us that the Board did in fact consider operability in relation to obviousness. On the contrary, the Board noted that the Examiner had been concerned about whether the process would be operable using unsophisticated equipment, but the Board then held:

The appealed claims, however, require no determination whether the employment of a specialized distillation such as a falling film evaporator giving a 0.4 to 0.8 second time of exposure (see Weissberger Table III) would be attended by results not to be expected of a pot still giving a 1–5 hour exposure. The claims call for merely a distillation at a pressure within a wide range of pressures.

[2] We agree with the examiner and the Board that the claims on appeal are obvious in view of the cited references.[4] Considering Lee's teaching that secondary and tertiary esters can be prepared by similar reactions involving normal olefins and isoolefins, and Coleman's teaching that secondary esters can be separated from the reaction mixture by vacuum distillation, it would seem obvious to separate tertiary esters from their reaction mixture by means of vacuum distillation, particularly since Weissberger suggests vacuum distillation of thermally sensitive materials.

[4] The Umlauf affidavit, which was filed to answer some of the Examiner's problems concerning the sufficiency of the disclosure, is not considered herein because it is not pertinent to the obviousness rejection.

Despite a considerable amount of confusion by the Examiner as to the questions pertinent to a rejection under 35 U.S.C. 103, the fact remains that the rejection was clearly expressed in the answer and explicitly restated to the exclusion of any other ground of rejection in the Examiner's answer on remand. The Board expressly affirmed the obviousness rejection, correctly noting that it was unnecessary to consider the effect of various types of apparatus with regard to the particular claims before it. We are not persuaded of any error in the rejection.

The appellants also maintain that the Board erred in holding that the claims recite no particular method for carrying out the distillation. The statement referred to appears in the Board's decision on request for reconsideration. Reading this decision in conjunction with the original decision, it is clear that the Board meant that the claims are not limited to a particular vacuum distillation apparatus, which fact is confirmed by appellants' brief.

[3] The decision of the Board of Appeals is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE JOSEPH S. SMATKO

No. 7734. Decided May 16, 1968

[55 CCPA—; 393 F.2d 998; 157 USPQ 55]

1. PATENTABILITY—COMBINING REFERENCES.

"The allegation of impropriety in combining the references, we think, cannot stand in the face of appellant's statement before the Board that 'the concept of a fuel cell employing a hydrocarbon dehydrogenation catalyst in an electrode' is an old one. The Examiner went no further than the hydrocarbon dehydrogenation art."

2. SAME—CRITICALITY.

"We agree with the Solicitor that the mere recitation of an element in the claims is not necessarily determinative of its criticality. See *In re Eisenhut*, 44 CCPA 974, 245 F.2d 481, 114 USPQ 287 (1957). Accordingly, we find no merit in appellant's contention that each of the structural limitations of his claims is critical and must be 'met' by the references."

3. SAME—PARTICULAR SUBJECT MATTER—"HYDROCARBON FUEL CELL."

The refusal of certain claims in an application entitled "Hydrocarbon Fuel Cell" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 131,857.

AFFIRMED.

Lyon & Lyon, Robert M. Taylor, Jr. (*Homer R. Montague*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

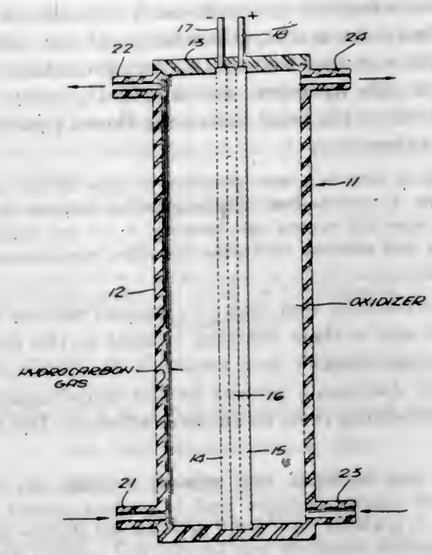
RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals [2] affirming the rejection of claims 1–8 and 10 of appellant's application Serial No. 131,857, filed August 16, 1961, entitled "Hydrocarbon Fuel Cell." No claim has been allowed.

---

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Consisting of Asp and Magil; Examiners-in-Chief, and Gaston, Acting Examiner-in-Chief; opinion by Gaston.

The invention is a hydrocarbon fuel cell of the sort shown in appellant's drawing:



The container 12 is divided into two sections by diaphragm 16 which is porous, wet, and electrolytically conductive. The diaphragm typically is made of asbestos and contains a dissolved electrolyte, e.g., potassium carbonate. Electrodes 14 and 15 are porous and catalytically active. Electrode 15 may be made of carbon. Electrode 14, typically porous sintered nickel activated with platinum black, contains a radioactive material, e.g., cerium^{144}. Hydrocarbon fuel, e.g., propane gas, flows into the chamber on the left through inlet port 21 and out through port 22. The oxidizer gas, usually oxygen, flows into the chamber on the right through port 23 and out through port 24. The specification points out that hydrocarbons are relatively unreactive at low temperatures and that, consequently, activating catalysts have been employed in the electrodes of fuel cells. The use of such catalysts, however, limits obtainable current density. Appellant's invention, it is alleged, permits activation of the hydrocarbons by the radiation from the electrode, adjacent to which easily consumed "active fragments" of the hydrocarbons are generated.

Claims 1 and 3 are illustrative:

1. A hydrocarbon fuel cell comprising a container separated into first and second compartments by electrode means, said first and second compartments each having inlet and outlet ports for the circulation of a hydrocarbon and an oxidizer, respectively, and said electrode means comprising first and second electrodes associated with said first and second compartments, respectively, said electrodes being separated by an ionic membrane, said first electrode being porous and catalytically active, and containing cerium^{144} isotope, said second electrode being porous and catalytically active, and said ionic membrane being porous, wet, and electrolytically conductive.

3. A hydrocarbon fuel cell, comprising a container separated into first and second compartments by electrode means, said first and second compartments each having inlet and outlet ports for the circulation of a hydrocarbon and an oxidizer, respectively, and said electrode means comprising first and second electrodes separated by an ionic membrane, said first electrode being associated with said first compartment and containing a radioactive isotope.

The following references were relied on: [3]

Gunn, 2,384,463, Sept. 11, 1945.
Foster Wheeler (British), 801,563, Sept. 17, 1958.

Gunn describes a fuel cell in which catalytic materials are incorporated into the electrodes so that, at low temperatures, sufficient ionization will take place at the electrodes to permit oxidation of the fuel. Suitable fuels include hydrogen, methane and propane. Appellant's discussion of Gunn in his brief before the Board provides a helpful summary of the reference:

> The Gunn patent is used as a basic reference to show as old the concept of a fuel cell employing a hydrocarbon dehydrogenation catalyst in an electrode thereof. Appellant does not contest this showing, * * * nor that it teaches the use of foraminous and sintered electrodes and other now-common features of fuel cells generally.

It is perhaps noteworthy that Gunn's catalysts are not described as dehydrogenative nor is their function limited to the facilitation of dehydrogenation reactions.

Foster Wheeler discloses a process for the dehydrogenation of hydrocarbons by subjecting them to nuclear radiation. The specification states:

> When radiation such as alpha, beta, gamma, neutrons and X-rays passes through matter, the heavier particles tend to produce nuclear changes and chemical reactions. It is known that lighter particles and photons such as gamma rays and X-rays produce ionisation and activate free radicals when limited to certain energy ranges.

It goes on to say that the heavy particles should therefore be ruled out in order to maximize activation and minimize formation of radioactive product. An example is given in which olefins are manufactured by the disclosed process.

The Board felt that these two references made appellant's invention obvious:

> It is established that dehydrogenation of hydrocarbons is a desirable result in the operation of a hydrocarbon fuel cell. Accordingly it would be obvious to one of ordinary skill in this art to include the radioactive material of * * * [Foster Wheeler] shown as dehydrogenating hydrocarbons in the electrode of the hydrocarbon fuel cell of Gunn et al. There is no evidence as to what appellant says is the necessity for the production of hydrocarbon fragments at the electrode or that * * * [Foster Wheeler] differs in this respect.

Appellant argues that the references cited should not have been combined and that, in any event, they do not meet the structural limitations of the claims.

[1] The allegation of impropriety in combining the references, we think, cannot stand in the face of appellant's statement before the Board that "the concept of a fuel cell employing a hydrocarbon dehydrogenation catalyst in an electrode" [4] is an old one. The Examiner went no further than the hydrocarbon dehydrogenation art.

Furthermore, we do not think appellant can argue that the fragmentation or ionization effected by his radioactive material is unexpected in view of the similar results effected by the dehydrogenation catalysts used in the fuel cells of the prior art and by the radioactive materials used in other dehydrogenation processes. In Gunn, *dehydrogenation* catalysts are specified for low temperature fuel cells because "catalytic action must take place at the electrode surfaces for promoting gaseous *ionization* thereat." [5] [Italics added.] In Foster Wheeler, nuclear radiation is described as productive of nuclear change, chemical reaction, free radical activation and ionization.

[2] We agree with the Solicitor that the mere recitation of an element in the claims is not necessarily determinative of its criticality. See *In re Eisenhut*, 44 CCPA 974, 245 F.2d 481, 114 USPQ 287 (1957). Accordingly, we find no merit in appellant's contention that each of the structural limitations of his claims is critical and must be "met" by the references.

[3] The decision of the Board is affirmed.

AFFIRMED.

[3] The Examiner also relied on several other references. The Board, however, deemed them cumulative and we will not consider them.

[4] He also stated: "Classically, the function of the catalysts in such cells has been that of dehydrogenation of the fuel gas, to provide hydrogen atoms for oxidation by the oxidizer, and to accelerate this oxidation."

[5] Appellant's brief states: "* * * neither Gunn et al. nor the appellant's structure depend primarily on dehydrogenation but rather on the formation of products that can be electrochemically consumed."

U.S. Court of Customs and Patent Appeals

IN RE FRANKLIN I. L. LAWRENCE AND MICHAEL J. POHORILLA

No. 7888. *Decided May 9, 1968*

[55 CCPA—; 394 F.2d 553; 157 USPQ 500]

1. PATENTABILITY—COMBINING REFERENCE—OBVIOUSNESS.
"Much of appellants' argument here comes in the end to the proposition that there are no explicit directions in any of the references to make the claimed compositions. Such directions are not required. *In re Siebentritt*, 54 CCPA 1083, 372 F.2d 566, 152 USPQ 618 (1967). It is enough that appellants' composition and method would be obvious to one of ordinary skill in the art with the references of record before him."

2. SAME—CRITICALITY—PROCESS—HEATING STEP.
"Appellants also make a more particular argument to the effect that the references do not suggest the necessity of heating the oil-insoluble material and the resin to form the preliminary suspension. The Board, as we have noted, did not see in appellants' specification any assertion of criticality for this heating step. The Board, in other words, felt that the record did not indicate any necessity for the heating step and, therefore, did not warrant any inference of unobvious effect from such step. We agree."

3. SAME—SAME—SAME—STEP USED IN EVERY EXAMPLE NOT NECESSARILY CRITICAL.
"We think that the mere inclusion of a certain condition in every example is no implicit assertion of its criticality."

4. SAME—OBVIOUSNESS.
"We do not think appellants' viscosity limitations distinguish over the sulfur-condensed hydrocarbons of the prior art. On this record, both sets of compounds would be expected to perform similarly in oleaginous compositions. It would be obvious to substitute the detergents of Jones et al. and of Logan in the lubricant dispersions of the prior art. It would be just as obvious to substitute detergents similar to those of Jones et al. and Logan. The mere restriction of the appellants' claims to a portion of the obvious subject matter, if indeed they are so restricted, cannot make them patentable."

5. SAME—PARTICULAR SUBJECT MATTER—"ORGANIC SUSPENDING MEDIUM AND COMPOSITION."
The refusal of certain claims in an application entitled "Organic Suspending Medium and Composition," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 815,810.

AFFIRMED.

Eugene F. Buell, *Buell, Blenko & Ziesenheim* for appellants.
Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals [2] affirming the rejection of claims 41–52 in application Serial No. 815,810, filed May 26, 1959, entitled "Organic Suspending Medium and Composition." No claim has been allowed.

The invention is a method of incorporating oil-insoluble, property-enhancing material such as detergents, antioxidants, antifouling agents, etc., into oleaginous compositions. The oil-insoluble material is first suspended in a certain kind of sulfur-condensed petroleum hydrocarbon resin and the suspension is then added to the oleaginous composition. Claims are directed to the method and the suspension initially prepared. Claim 51 is illustrative:

51. The method of stably dispersing a normally oil-insoluble material in an oleaginous composition comprising the steps of suspending said normally oil-insoluble material in a sulfur-condensed petroleum hydrocarbon resin by heating said oil insoluble material and resin, said resin containing more than 2 naphthenic rings per molecule and not more than 10% of wax type materials and produced by fractionation of heavy petroleum fraction with a liquified normally gaseous hydrocarbon, said resin having an ebullioscopic molecular weight in excess of about 1000 and SUS viscosity at 210° F. of at least 900 and a bromine number less than 10 condensed by heating said resin at a temperature of at least 400° F. with at least about 5% by weight of elemental sulfur for a period sufficient to increase the SUS viscosity at 210° F. by at least 200 greater than that of the original resin, said sulfur condensed hydrocarbon being effective in a concentration of about 10% by weight to increase the viscosity index of a 60 at 100 SUS standard base oil derived from a paraffinic crude source at least ten viscosity index units more than does a like amount of hydrocarbon starting material from which said condensation product is produced and adding the resulting suspension to the oleaginous composition.

Appellants' specification describes appropriate starting materials for the preparation of the sulfur-condensed petroleum hydrocarbon resin as "suitable crude oil fractions":

Appropriate fractions derived from crude oils of any source, including Pennsylvania crude oils, Mid-Continent crude oils, West Coast crude oils, Canadian crude oils, and the like, can be employed. All types of crude oils, including paraffin base crude oils, asphalt base crude oils, and napthenic crude oils provide suitable sources from which petroleum fractions useful in the production of the microgels of the invention can be derived.

* * * * * * *

It is also preferred that the hydrocarbon starting materials contain an average of not more than about 50% aromatic carbon atoms. Hydrocarbons which contain an appreciable quantity of highly condensed ring systems, such as those hydrocarbons which are found in the phenol or furfural extracts of lubricating oils, are operable and are most apppropriately employed as starting materials * * *.

* * * * * * *

Normal or vacuum distillation residual stocks and analogous fractions of paraffin base crude oils, such as Pennsylvania crude oils, are highly appropriate starting materials* * *. Hydrocarbons precipitated by conventional propane precipitation proecsses from such residual stocks are particularly suitable.

Further refinement of such propane-precipitated, high-molecular-weight hydrocarbons, which include both light and heavy resin fractions, by extraction with furfural or phenol in conventional manner, yields a raffinate from which

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Consisting of Magil and Behrens, Examiners-in-Chief, and Gaston, Acting Examiner-in-Chief, opinion by Magil.

microgels of maximum effectiveness are produced. Conventional solvent extraction processes are utilized to obtain such raffinates.

Appellants' specification refers to a vast number of industrial applications for the invention. It mentions particularly the desirability of stable dispersions of various additives in lubricating oils. Among these additives are alkaline earth metal carbonates and boric acid.

The following references were relied on:

Campbell et al., 2,485,861, Oct. 25, 1949
Cook, 2,614,985, Oct. 21, 1952.
Jones et al., 2,732,346, Jan. 24, 1956.
Logan, 2,822,332, Feb. 4, 1958.
Georgi, "Motor Oils and Engine Lubrication," 170 (1950).

Campbell et al. discloses the dispersion of alkaline earth metals and their salts in lubricating oil. Alkaline earth metal carbonates are mentioned specifically. A dispersing agent is added to the composition to maintain the additive "in proper and permanent distribution in the oil, apparently as a true colloidal dispersion * * *." The preferred dispersing agent is an alkali earth metal sulfonate soap. The specification points out:

It is understood that the amount of soap in the oil may be varied to give greater or lesser degree of detergency and varied also to permit colloidal dispersion of greater or lesser amounts of free alkali as demanded by the use of the oil.

Cook discloses a suspension of boric acid in a lubricant. Dispersing agents are also used to stabilize this suspension. Suitable agents include petroleum sulfonates, phosphatides and long chain carboxylic acid esters of polyhydric alcohols. Cook discloses that other additives, including detergents, may be present in the lubricating oil.

Jones et al. shows sulfur condensed hydrocarbons used as lubricant additives because of their detergent properties. These additives are prepared from a hydrocarbon feed stock containing a "substantial proportion of alkyl aromatics or naphthenic compounds," little, if any, olefinic compounds, and a minimum of waxy constituents. The feed stock's molecular weight is preferably over 300. Suitable sources are described:

Mineral oil base stocks provide a convenient source for feed stocks. Particularly desirable are lubricant base stocks having viscosities (Saybolt) above about 50 seconds, preferably in the range of about 75 to 500 seconds, at 210° F., and above about 300 to 750 seconds at 100° F., with A.P.I. gravities below about 30°. The base stock may be derived from mid-continent, coastal, and the like crudes, preferably those relatively rich in aromatic rings. The base stock, either distillates or residua, should be treated to remove waxy, asphaltic and olefinic constituents, if such materials are present in harmful amounts. Bright stocks, prepared by conventional deasphalting, dewaxing and acid-treating and/or clay-contacting of petroleum residuals, are quite effective feed stocks.

Solvent extracts or lubricant distillates and bright stocks, prepared by extraction of the materials with solvents such as phenol, furfural, SO_2, and other solvents by procedures well known to the art, are excellent feed stocks. These materials contain high concentrations of alkyl aromatic and naphthenic hydrocarbons. Solvent extracts produced from relatively low boiling lubricant distillates will frequently have the high viscosity and low gravity characteristics needed to produce suitable sulfurized materials. The raffinates produced in solvent extraction, particularly those obtained from the more paraffinic crudes, such as Pennsylvania crudes and the like, are generally unsuitable for use in the present invention because of the relatively low content of alkyl aromatics therein.

The additives are then prepared by contacting the feed stock with sulfur at 375–500° F.

Logan also discloses the use of sulfur-condensed hydrocarbons as detergents in lubricating oils. These can be prepared from suitable petroluem fractions:

> Petroleum fractions which contain substantially no asphalt either in a natural state or when deasphalted, and which have been solvent extracted to reduce the content of aromatic-type hydrocarbons therein and which have been dewaxed, are also suitable. These include lubricating oils produced from Pennsylvania, Mid-Continent, California, East Texas, Gulf Coast, Venezuela, Borneo, and Arabian crudes. The source of the crude from which the petroleum fraction is derived does not significantly influence the preparation or properties of the detergent material of my invention, provided the petroleum fraction has been prepared by subjecting the crude to certain necessary treatment to extrude certain undesirable materials therefrom.

The necessary treatment includes distillation, vacuum reduction, propane fractionation, solvent extraction with phenols, furfural, etc., and dewaxing. The treated fraction is then contacted with sulfur at 300–700° F.

Georgi teaches that detergent additives should properly be called dispersants since they maintain finely divided insoluble matter in a state of suspension.

The Examiner rejected appellants' claims because, in his view, the use of detergents to suspend oil-insoluble material in lubricants had been shown by Cook or Campbell et al. It therefore seemed obvious to him to use other detergents, viz, the detergents described in Jones et al. or Logan, in the very same way.

The Board agreed, and, in response to appellants' contentions, added that the heating of insoluble material and resin required by the claims could not impart patentability thereto inasmuch as no criticality for it had been shown and for the further reason that a similar use of heat was disclosed in Cook and Campbell et al.

[1] Much of appellants' argument here comes in the end to the proposition that there are no explicit directions in any of the references to make the claimed compositions. Such directions are not required. *In re Siebentritt*, 54 CCPA 1083, 372 F.2d 566, 152 USPQ 618 (1967). It is enough that appellants' composition and method would be obvious to one of ordinary skill in the art with the references of record before him.

[2] Appellants also make a more particular argument to the effect that the references do not suggest the necessity of heating the oil-insoluble material and the resin to form the preliminary suspension. The Board, as we have noted, did not see in appellants' specification any assertion of criticality for this heating step. The Board, in other words, felt that the record did not indicate any necessity for the heating step and, therefore, did not warrant any inference of unobvious effect from such step. We agree.

Appellants argue that the inclusion of the heating step in every example provides a basis for their assertion of criticality. **[3]** We think that the mere inclusion of a certain condition in every example is no implicit assertion of its criticality.

Appellants also controvert the Examiner's statement that the sulfur-condensed hydrocarbon detergents of the prior art could meet the viscosity limitations of appellants' claims. The Board addressed itself to this point:

> In our opinion, the art before us would suggest the use of the sulfurized products of Logan or Jones et al. as dispersants for oil-insoluble materials, thereby corresponding generally to the composition and method here claimed. Even if appellants' sulfurized hydrocarbon is not identical in every respect to the sulfurized hydrocarbon of Logan or Jones et al., * * * there is no showing that a change in the specific nature of the sulfurized hydrocarbon results in a significant unexpected change in the dispersion of the oil-insoluble material * * * or in the dispersing method * * *.

[4] We do not think appellants' viscosity limitations distinguish over the sulfur-condensed hydrocarbons of the prior art. On this record, both sets of compounds would be expected to perform similarly in oleaginous compositions. It would be obvious to substitute the detergents of Jones et al. and of Logan in the lubricant dispersions of the prior art. It would be just as obvious to substitute detergents similar to those of Jones et al. and Logan. The mere restriction of the appellants' claims to a portion of the obvious subject matter, if indeed they are so restricted, cannot make them patentable.

[5] The decision of the Board is affirmed.

AFFIRMED.

United States Court of Appeals
District of Columbia Circuit

EDWARD J. BRENNER, COMMISSIONER OF PATENTS, APPELLANT

v.

DEUTSCHE GOLD- UND SILBER-SCHEIDEANSTALT VORMALS ROESSLER, APPELLEE

No. 20,182. Decided May 8, 1968

[—U.S.App.D.C. —; — F.2d —; — USPQ —]

1. APPEAL TO U.S. COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA—"CLEARLY ERRONEOUS" RULE.

   See *Hays* v. *Brenner*, 123 U.S.App.D.C. 96, 98, 357 F.2d 287, 289 (1966); *California Research Corp.* v. *Ladd*, 123 U.S.App.D.C. 60, 64, 356 F.2d 813, 817 (1966); *Stieg* v. *Commissioner*, 122 U.S.App.D.C. 361, 353 F.2d 899 (1965); *Esso Standard Oil Co.* v. *Sun Oil Co.*, 97 U.S.App.D.C. 154, 156–57, 229 F.2d 37, 39–40, cert. denied, 351 U.S. 973 (1956). Cf. *Baenitz* v. *Ladd*, 124 U.S.App. D.C. 237, 239–40, 363 F.2d 969, 971–72 (1966) (process claim). It is true that these cases refer to the determination by the Patent Office or the District Court of non-obviousness of the subject matter as a whole. However, we believe that these standards are equally applicable to segments of the overall determination such as structural obviousness. It is now clear that the Court of Customs and Patent Appeals would not apply a "clearly erroneous" rule because they are of the view that the determination of "obviousness" is a legal, not a factual conclusion. *Application of Warner*, 379 F.2d 1011, 1016 n. 6 (1967). We remain of our view, most recently implied in *Higley* v. *Brenner*, — U.S.App.D.C. —, 387 F.2d 855 (1967), and *National Distillers & Chem. Corp.* v. *Brenner*, — U.S.App.D.C. —, 389 F.2d 927 (1967), that this is a factual conclusion based on a legal standard; thus the clearly erroneous rule applies.

2. PATENTABILITY—COMPOUND—OBVIOUSNESS—NOVEL OR SUPERIOR PROPERTIES.

   "Structural obviousness generally arises because the claimed compound is—in the chemists' jargon—a homolog, analog, or isomer of the prior art references. In fact, the enormous number of known organic compounds gives rise to a situation in which absolutely unique and unknown groupings of atoms in a completely new chemical compound is a rare occurrence. In light of this datum, this Court and the Court of Customs and Patent Appeals for some years now have been of the view that patentability is not determined on the basis of structural obviousness alone. Obvious molecular modification coupled with a showing of novel properties or superiority of known properties can establish patentability."

3. SAME—SAME—SAME—PROPERTIES CONSIDERED.

   "Perhaps the best expression of the view that obvious but novel compounds should be considered in conjunction with their properties is Judge Rich's excellent opinion in *Application of Papesch*, 315 F.2d 381 (CCPA 1963). * * * The sound reasoning of the *Papesch* case has been unanimously and repeatedly reaffirmed by the Court of Customs and Patent Appeals. Doubtless we must

agree with admonitions against deciding questions of chemical obviousness on the basis of structure alone."

4. SAME—SAME—SAME—STRUCTURAL SIMILARITY—*Graham* v. *John Deere Co.* CONSTRUED—35 U.S.C. 103.

"*Graham* [v. *John Deere Co.*] was the first authoritative opinion dealing with the question of obviousness under section 103. It is clear from that unanimous decision that hard and fast rules of general applicability are impossible to achieve under section 103. Rather, the section lends itself to several basic factual inquiries, enumerated by the Supreme Court. * * * It seems rather elementary to us that the 'background' referred to for determination of obviousness clearly is not limited to the issue of structural similiarity. Position isomerism, as involved here, focuses on close structural similarity which is to be taken into consideration with all other relevant facts in measuring the standard of obviousness under section 103. E.g., *Application of Weichert*, 370 F.2d 927, 933 (CCPA 1967); *Application of Mehta*, 347 F.2d 859 (CCPA 1965). This, we think is the teaching of *Graham*."

5. SAME—OBVIOUSNESS—EVIDENCE—RULE 132.

"The Patent Office Rules, particularly Rule 132, permit an applicant to meet an initial rejection with proof of unobviousness. A traditional method has always been to permit evidence of novel properties or utility. Indeed, prior to the *Graham* case, this was the Commissioner's consistent position. E.g., Brief for Commissioner, *Application of Higgins*, 369 F.2d 414 (CCPA 1966). We find nothing in *Graham* which calls for the radical shift in the law proposed."

6. SAME—COMPOUND—OBVIOUSNESS—35 U.S.C. 103.

"The plain language of section 103 makes it clear that obviousness of the subject matter as a whole is not limited to a consideration of structure; and this is consistent with the common sense of the situation."

7. SAME—SAME—SAME.

"In rejecting the broad proposition advanced by the Commissioner we should make it clear that structural obviousness is certainly a large factor to be considered in the determination of obviousness of the subject matter as a whole. Whether it is called an inference of obviousness, *Application of Mills*, 281 F.2d 223 (CCPA 1960), a prima facie showing of obviousness, *Application of Rosselet*, 347 F.2d 847, 850 (CCPA 1965), or a presumption of obviousness, *Application of Henze*, 181 F.2d 196, 201 (CCPA 1950), is, we believe, immaterial. The crucial factor is not the definition attached to the relationship nor the legal phraseology used to describe deductions reached from that definition, but rather the proximity of the relationship in terms of non-obviousness of *the subject matter as a whole*."

8. SAME—SAME—SAME—UNEXPECTED PROPERTIES—35 U.S.C. 103.

"We are not unmindful that we are dealing in the area commonly referred to by the patent bar as the *Hass-Henze* area, so named for the three *Hass* cases, 141 F.2d 122, 127, 130 (CCPA 1944) and *Application of Henze*, 181 F.2d 196 (CCPA 1950). These cases antedate section 103 and establish a rule that proof of the existence of unobvious or unexpected beneficial properties in a new compound which would otherwise appear obvious, is indicative of patentability."

9. CLAIM—CONSTRUCTION OF CLAIMS.

"In light of existing law it cannot be doubted that the claim itself must not be divorced in a vacuum from the specifications and descriptions accompanying it. See, e.g., *Schering Corp.* v. *Gilbert*, 153 F.2d 428, 432 (2d Cir. 1946)."

10. PATENTABILITY—COMPOUND—OBVIOUSNESS.

"The Commissioner correctly recognizes the difficulty of patenting new but obvious chemical compounds on the basis of novel properties and new uses. This problem of overclaiming arises from the fact that the patent is given for the *entire compound*, although based on only one new property it discloses. Thus, the patent holder of compound A, with properties X and Y, is foreclosed from using newly patented structurally obvious compound B, with obvious properties X and Y, merely because compound B also possesses new and obvious property Z. Whether or not the solution rests in strictly limiting patentability to the new use alone, or to the process by which it is made, however, is a matter for the Commissioner, the Congress, and courts with greater technical expertise to decide in the first instance. See Western, supra note 17, at 449–52."

11. SAME—CONSTITUTIONAL STANDARD—STATUTORY CONDITIONS—*Graham* v. *John Deere Co.* CONSTRUED.

"From the introductory sentence in *Graham* it is clear that the Supreme Court was well aware of the distinction between statutory conditions of patentability and constitutional standards. * * * Appellee and the District Court are correct in stating that advancement [of the art] is not one of the three conditions of patentability under the statutes. But this overlooks the clear, and at least implied, discussion in *Graham* of the constitutional standard. The conditions effectuating this standard are for congressional determination, but the standard itself is to be implemented by the Commissioner and the courts."

12. SAME—SAME—SAME—"ADVANCE IN THE ART."

"* * * while the major emphasis may be placed on the condition of nonobviousness, we do not find that such a determination, ipso facto, is also an ultimate determination on the question of advancement [of the art]. The other two statutory requisites, novelty and utility, have always been thought to be separate and independent conditions. If advance in the useful art is the necessary [constitutional] standard to sustain patentability, the more logical view is that the three independent statutory conditions are not separate from advancement but are the very indicia of it, in particular the condition of nonobviousness."

13. SAME—SAME—SAME—SAME.

"If, as is asserted by *amicus*, the Commissioner is really contending that before any claimed subject matter is patentable, it must 'advance the art' in the sense that it is demonstrated to be better than that which preceded it in terms of cost, performance, or otherwise, we must reject such a view. We do not equate the constitutional standard of advancement with a requirement that the claimed subject matter be 'better' than the prior art. The Constitution uses the word 'Progress,' and progress is an advancement step by step to new, useful and non-obvious subject matter * * *."

14. APPEAL TO U.S. COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA—"CLEARLY ERRONEOUS" RULE—COMPARATIVE TESTS—RULE 52 OF THE FEDERAL RULES OF CIVIL PROCEDURE.

"As we have previously noted * * * we are governed in our review of the factual findings of the District Court by the 'clearly erroneous' standard of Rule 52 of the Federal Rules of Civil Procedure. On the basis of the evidence produced on comparative tests, we cannot say that the District Court erred in holding that the claimed compound 'was equal or superior as a vermicide to the other three isomers * * *.'"

15. PATENTABILITY—COMPOUND—OBVIOUSNESS—ISOMERISM—*In re Henze* CONSTRUED.

"The Commissioner asserts that Henze is applicable to isomerism as well as homology and points to specific language in that opinion, 181 F.2d at 200–01. Such language is present, but on the basis of subsequent decisions of the Court of Customs and Patent Appeals, we think that it referred to the general problem of chemical obviousness, not to the specific 'presumption' or 'inference' of obviousness derived from the structural similarity present in the case of adjacent homologs."

16. SAME—SAME—SAME—CLOSELY RELATED COMPOUNDS—DECISIONS OF CCPA CONSTRUED.

"In one line of cases, that court has made it quite clear that Henze should be limited to its factual situation, even to the extent of excluding the question of *non-adjacent* homologs from its application. In another line of cases the court has indicated that the definitions attached to the relationship are unimportant, *Application of Druey*, 319 F.2d 237, 240 (CCPA 1963); rather it is the proximity of the relationship in terms of the non-obviousness of the subject matter as a whole. *Application of Lohr*, 317 F.2d 388, 389 n. 2 (CCPA 1963); *Application of Mehta*, 347 F.2d 859, 864 (CCPA 1965). We think these cases demonstrate that the genesis for the Henze rule was found in the homology of hydrocarbon chains alone, and that no mechanistic formulae can be indiscriminately applied to questions of chemical obviousness."

17. SAME—SAME—SAME—SAME—*In re Riden* CONSTRUED.

"In *Riden* the application was for certain compounds useful as pesticides.

The primary reference disclosed no use, either as an insecticide or for any other purpose * * *. Other references, however, did disclose utility as fungicides. * * * *Riden* would seem to indicate that even when the prior art was not alleged to possess the same properties, it is incumbent upon the applicant to make a comparison to see if it possessed the same properties. However, this does not appear to be the rule of the case since a patent was allowed as to the pesticidal use because such use was not suggested in the primary reference; nor did the court find it would have been obvious from other references which did disclose related uses."

18. SAME—SAME—EVIDENCE—COMPARATIVE TESTS.

"We should point out that this is not a case where the prior art disclosed the same utility thus requiring the applicant to demonstrate by clear and convincing evidence that his claimed compound has substantially greater effectiveness. *Application of McLamore*, 379 F.2d 985, 987 (CCPA 1967); *Application of Risse*, 378 F.2d 948, 958 (CCPA 1967); *Application of Wagner*, 371 F.2d 877, 883 (CCPA 1967); *Application of Weichert*, 370 F.2d 927, 931–32 (CCPA 1967); *Application of Rosselet*, 347 F.2d 847, 850 (CCPA 1965); *Application of Ruschig*, 343 F.2d 965 (CCPA 1965); *Application of Lohr*, 317 F.2d 388, 392 (CCPA 1963). Certainly where the prior art references expressly show a utility in the same narrow pharmacological area, comparative tests of greater effectiveness are the sine qua non of patentability."

19. SAME—SAME—SAME—SAME.

"We recognize, of course, that the best method of demonstrating patentability under *Papesch* and its progeny by the existence of a novel and unobvious property is through the use of comprehensive comparative testing. Nevertheless, on the whole record we are satisfied that the District Judge's conclusion of law concerning comparative testing was correct as applied to the facts of this case. We reach this conclusion on the basis of the limited comparative testing here, which, although it did not disprove the existence of the same properties in the prior art, strongly suggests, by reason of the vastly superior results obtained, that those new results derived from the existence of a novel property in the claimed compound; by limiting *Henze* to its facts, as the Court of Customs and Patent Appeals has done; and by what we read as to the meaning of the additional evidence adduced in this case. It should be recalled that appellee attempted to overcome the burden of structural obviousness through two evidentiary showings. In the first place, as we have indicated, evidence was offered to show new and unexpected properties and novel utilization of the claimed compounds. Had that been the only evidence offered we, and the District Judge as well, might have required further comparative testing. But appellee went on to offer further evidence of a secondary nature—the indirect utility of the claimed compound as an intermediate for the production of known drugs with greater effectiveness than when prepared under then-existing methodology. In light of this dual approach we find that the District Judge's conclusion of law not requiring comparative tests to be correct."

20. SAME—SAME—SAME—SAME—INDIRECT UTILITY AS AN INTERMEDIATE—*In re Finley* CONSTRUED.

"In *Finley* the claimed compound was an ester which, when converted to its calcium salt, produced an additant for lubricating oils with higher thermal stability than the prior art references. The Examiner, the Board of Appeals, and the court agreed that the compound itself was too far removed from its calcium salt to justify attributing the utility of the end product to the claimed compound. The Patent Office subsequently adopted this rule in several cases, and the Court of Customs and Patent Appeals has reaffirmed the rule in several recent cases."

21. SAME—SAME—SAME—SAME—SAME—SAME.

Held, with respect to the comparative tests of indirect utility as an intermediate in *In re Finley*, that "The court indicated that such evidence was admissible if the application was able to demonstrate why such tests were necessary or why no direct tests were possible"; and that "This modification has been subsequently followed."

22. SAME—EVIDENCE—BEST EVIDENCE RULE—SECONDARY EVIDENCE.

"We agree with the Solicitor that the best evidence rule has a sound basis for application in the patent field. But, the rule is not 'hard and fast,'

Application of Widmer * * *. Secondary evidence runs a greater risk of failing the relevancy test of admissibility in proportion to its remoteness from the claimed subject matter, but the question of remoteness is a question of law to be determined on the basis of the subject matter as a whole."

23. SAME—COMPOUND—OBVIOUSNESS—PRIMARY AND SECONDARY EVIDENCE—INDIRECT UTILITY AS AN INTERMEDIATE.

"We hold the District Court was correct in its application of the rule. Several reasons compel this conclusion. In all of the cases relied upon by the Solicitor, the secondary evidence [of indirect utility as an intermediate] was the only evidence presented, or the secondary use was the only use specified. Here, however, both direct evidence and secondary evidence was presented. In such a situation we think that the trier of facts is permitted to consider the secondary evidence as admissible evidence. Since this case was decided, the Court of Customs and Patent Appeals has expressly relied upon the opinion now under review for the proposition that the secondary evidence is admissible. *Application of Diamond* * * *. Certainly, if the District Judge's application of the best evidence rule had been in conflict with the views of the Court of Customs and Patent Appeals, they would hardly have cited his decision in this case. Having amply predicated admissibility on the basis of these two facts, we cannot say that the District Judge was clearly erroneous in finding that the secondary evidence also demonstrated the unique and novel properties claimed for the compound, and that a person of ordinary skill in the art would reasonably ascribe to the claimed compounds the contributing cause for the differences between the end product when made from the prior art and when made from the claimed compound. We hold the District Court was correct both in his findings of fact and conclusions of law; we should make clear that our opinion with respect to this issue is predicated on the availability of both primary and secondary evidence, and on the sufficiency of this evidence to show the existence of a novel and obvious property."

24. SAME—PARTICULAR SUBJECT MATTER—"THIOPHENYLPYRIDYL AMINE, CHLOROTHIOPHENYLPYRIDYL AMINE, THEIR SALTS AND PREPARATION."

The judgment of the District Court directing the issuance of a patent, in a suit under 35 U.S.C. 145, on two claims to compounds in an application entitled "Thiophenylpyridyl Amine, Chlorothiophenylpyridyl Amine, Their Salts and Preparation" is affirmed.

AFFIRMED.

Messrs. Joseph Schimmel, Solicitor, and *Raymond E. Martin*, Attorney, United States Patent Office, for appellant.

Mr. Jennings Bailey, Jr., with whom *Mr. Hugo Huettig, Jr.*, was on the brief, for appellee.

Messrs. Charles E. Feeny, Donald R. Dunner and *Herbert I. Sherman* filed a brief on behalf of The American Patent Law Association, as amicus curiae. *Mr. Ellsworth H. Mosher* also entered an appearance for amicus curiae.

Before BAZELON, *Chief Judge*, BURGER and ROBINSON, *Circuit Judges*

BURGER, *Circuit Judge:*

The Commissioner of Patents appeals from an order of the District Court directing him to issue a patent to appellee on two claims of a patent application.[1] Appellee, a West German corporation, is the assignee of the application, entitled "Thiophenylpyridyl Amine, Chlorothiophenylpyridyl Amine, Their Salts and Preparation." Claim 1 is generic, consisting of an ammonia-derivative compound selected from a group of compounds described by a general formula. Claim 2, a specific ammonia-derivative of Claim 1, is a specie identified in the chemical nomenclature as 1-azaphenothiazine.

[1] *Deutsche Gold- und Silber-Scheideanstalt vormals Roessler v. Commissioner of Patents*, 251 F. Supp. 624 (D. D.C. 1966). Suit was instituted in that court by appellee under 35 U.S. § 145 (1964) to compel appellant to issue a patent following denial of the application by an Examiner and the Patent Office Board of Appeals.

Admitting that the Patent Office is taking a new and "revolutionary approach," [2] the Commissioner raises four issues here: (1) whether under 35 U.S.C. § 103 (1964) structural obviousness alone is an absolute bar to the grant of a patent; (2) whether "advance in the art" is a *fourth* condition of patentability required by section 103 and *Graham* v. *John Deere Co.*, 383 U.S. 1 (1966); (3) whether evidence of comparative tests between the claimed compound and its isomers was insufficient to satisfy the burden of proof; and (4) whether the District Court erred in basing its decision on secondary evidence and not following the "best evidence" rule.

The factual background can be stated briefly. Appellee's application consisted of six claims including generic, specific, and process claims. The Examiner rejected five of the claims in light of four prior art references, and the last claim was cancelled. The Examiner also found that a "rule 132" affidavit,[3] submitted to traverse the prior art references, was insufficient. The Board of Appeals reversed as to the process claims, which still stand,[4] but affirmed the Examiner as to the generic and specific claims, the same claims in issue on this appeal, finding them unpatentable for failure to meet the non-obviousness requirement of section 103. The Board further agreed with the Examiner that the affidavit was ineffective to overcome the finding of obviousness, because no showing was made as to the pharmacological properties of the claimed compounds themselves in the affidavit.[5]

Apparently finding structural obviousness, the District Court determined that the existence of novel beneficial properties in the claimed compounds served to overcome the finding of obviousness due to structural similarities. In order to meet the prior art references, appellee introduced evidence showing novel vermicidal properties of the claimed compounds not disclosed or suggested in the prior art. Evidence was also introduced showing the enhanced effectiveness of the compounds as intermediates in the preparation of patented sedatives and antihistamines.

(1) *Structural Obviousness*

The third statutory criterion for the grant of a patent, "non-obviousness," [6] is found in section 103. "[A] codification of judicial precedents embracing the *Hotchkiss* [7] condition" of invention, *Graham* v. *John Deere Co.*, 383 U.S. 1, 17 (1966), section 103 precludes the grant of a patent

> if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

[2] The Patent Office Solicitor conceded that the Commissioner's approach was "revolutionary" at oral argument. The amicus takes a similar view:

> It is the considered opinion of *amicus* that the foregoing propositions advanced by the Commissioner are so far reaching in their implications and so sweeping in their scope that any decisions of this Court approving them would unquestionably be revolutionary in its import in the patent field.

Brief for Amicus Curiae, American Patent Law Association, p. 5.

[3] Patent Office Rule 132. See generally Seidman & Horowitz, Patent Office Rules and Practice § 132.1 (rev. ed. 1962).

[4] Appellee withdrew one of the three process claims in the District Court. Thus, only two process claims have been allowed.

[5] The showing was made as to the sedative and antihistamine derivatives, Andantol and Dominal. When these compounds were derived from the claimed compounds they purported to have superior pharmacological properties than when derived from other compounds. Since no demonstration was made of the properties of the compounds themselves when used as intermediates, the Board held that the pharmacological properties of the final product did not relate back to the compound used in its preparation, citing *Application of Druey*, 319 F.2d 237 (CCPA 1963). See discussion *infra*.

[6] The three statutory conditions of patentability are novelty and utility, as defined in 35 U.S.C. §§ 101–102 (1964), and non-obviousness, as set out in section 103. For an historical discussion of these three distinct tests, see Kitch, *Graham* v. *John Deere Co.*, New Standards for Patents, 1966 Sup. Ct. Rev. 293.

[7] *Hotchkiss* v. *Greenwood*, 52 U.S. (11 How.) 248 (1851), which gave birth to the "invention" standard eventually replaced by section 103's requirement of "non-obviousness."

In the *Graham* case the Supreme Court, for the first time, devoted itself to an extensive discussion of the concept of "non-obviousness" as codified in section 103. Some further clarification seems in order in what appears to be a blurred area of patent law.

The Commissioner asserts that under the standard of non-obviousness, *structural* obviousness of the claimed compound from the prior art reference is an absolute bar to a patent. While conceding that the language of section 103, "subject matter as a whole," refers not only to the chemical structure or formula, but can include properties of the structure or compound and the results it can accomplish, the Commissioner constructs the following argument:

> [I] t should be quite clear that the antecedent of "subject matter as a whole" in section 103 of 35 U.S.C. is "subject matter sought to be patented," which expression means obviously the ***claimed*** subject matter, as distinguished from subject matter which is merely disclosed in applicant's specifications but not included in the claims.

Commissioner's Reply Brief, p. 2 (emphasis in orginal). But cf. *General Tire & Rubber Co.* v. *Brenner*,—U.S.App.D.C.—, 381 F.2d 270 (1967).

Initially we have some doubt as to the question of structural obviousness. The Examiner found that the *concept* of the claimed compound was either clearly taught or obvious [8] from the prior art which disclosed the corresponding oxygen analog of the claimed compound; [9] that the concept of varying the ring nitrogen position and ring isomers to create the claimed compound were taught by name and structure; [10] and that the methods of preparation were clearly suggested by the prior art. The Board of Appeals agreed. Apparently this was also the finding of the District Court, although the opinion is not entirely clear on this score.[11] Since a Patent Office determination of non-obviousness is entitled to great weight, and District Court findings to the same effect will not be set aside unless clearly erroneous,[12] we are satisfied as to the structural obviousness of the claimed compound and the prior art references; indeed, the parties do not seem to challenge this. We note, however, that this is not a case where a new property was discovered in an old compound nor one involving a simplistic change in a chemical formula. Appellee's evidence discloses that substantial time and effort were devoted to experimentation in order to develop a new compound with novel and unobvious properties and utility.

[8] The Examiner's decision seems quite clear that he was considering the differences in the prior art in light of the level of ordinary skill in the art of pharmacology. Furthermore, the references relied upon demonstrate utility in pharmocological activities. We assume the correctness of that decision but we note that the determination of what is the "art" is not easy.

[9] A chemical analog is an organic compound having a closely related structure to another compound.

[10] Isomers are different compounds which have the same molecular *formula* but different molecular *structures*. Thus, while they contain the same number of the same kinds of atoms, the atoms are attached to one another in different ways.

[11] Twice in its opinion the court states that "none of the references broadly or specifically disclose" the claimed compound, 251 F. Supp. at 627, 630. In each instance the opinion immediately proceeds to a discussion of properties as if structural obviousness was present and conceded. A careful reading of these portions of the opinion, however, indicates that the court found obviousness as to structure only from a *combination* of the four references. When compared *individually* with the claimed compound, there was no obviousness.

[1] [12] See *Hays* v. *Brenner*, 123 U.S.App.D.C. 96, 98, 357 F.2d 287, 289 (1966); *California Research Corp.* v. *Ladd*, 123 U.S.App.D.C. 60, 64, 356 F.2d 813, 817 (1966); *Stieg* v. *Commissioner*, 122 U.S.App.D.C. 361, 353 F.2d (1965); *Esso Standard Oil Co.* v. *Sun Oil Co.*, 97 U.S.App.D.C. 154, 156–57, 229 F.2d 37, 39–40, cert. denied, 351 U.S. 973 (1956). Cf. *Bacnitz* v. *Ladd*, 124 U.S.App.D.C. 237, 239–40, 363 F.2d 969, 971–72 (1966) (process claim). It is true that these cases refer to the determination by the Patent Office or the District Court of non-obviousness of the subject matter as a whole. However, we believe that these standards are equally applicable to segments of the overall determination such as structural obviousness. It is now clear that the Court of Customs and Patent Appeals would not apply a "clearly erroneous" rule because they are of the view that the determination of "obviousness" is a legal, not a factual conclusion. *Application of Warner*, 379 F.2d 1011, 1016 n. 6 (1967). We remain of our view, most recently implied in *Higley* v. *Brenner*,—U.S.App.D.C.—, 387 F.2d 855 (1967), and *National Distillers & Chem. Corp.* v. *Brenner*, —U.S.App.D.C.—, 389 F.2d 927 (1967), that this is a factual conclusion based on a legal standard; thus the clearly erroneous rule applies.

The issue raised by the Commissioner is the extent to which this structural obviousness operates in the determination of the non-obviousness of the subject matter as a whole under section 103. **[2]** Structural obviousness generally arises because the claimed compound is—in the chemists' jargon—a homolog, analog, or isomer of the prior art references.[13] In fact, the enormous number of known organic compounds gives rise to a situation in which absolutely unique and unknown groupings of atoms in a completely new chemical compound is a rare occurrence. In light of this datum, this Court and the Court of Customs and Patent Appeals for some years now have been of the view that patentability is not determined on the basis of structural obviousness alone. Obvious molecular modification coupled with a showing of novel properties [14] or superiority of known properties [15] can establish patentability.

[3] Perhaps the best expression of the view that obvious but novel compounds should be considered in conjunction with their properties is Judge Rich's excellent opinion in *Application of Papesch*, 315 F.2d 381 (CCPA 1963). After discussing the various authorities and concluding that the statute required a determination of obviousness and patentability after consideration both of the chemical structure and the pharmaceutical and biological properties of the claimed compound, Judge Rich stated:

> From the standpoint of patent law, a compound and all its properties are inseparable; they are one and the same thing. The graphic formulae, the chemical nomenclature, the systems of classification and study such as the concepts of homology, isomerism, etc., are mere symbols by which compounds can be identified, classified, and compared. But a formula is not a compound and while it may serve in a claim to *identify* what is being patented, as the metes and bounds of a deed identify a plot of land, the *thing* that is patented is not the formula but the compound identified by it. And the patentability of the thing does not depend on the similarity of its formula to that of another compound but of the similarity of the former compound to the latter. There is no basis in law for ignoring any property in making such a comparison. An assumed similarity based on a comparison of formulae must give way to evidence that the assumption is erroneous.

Id. at 391. The sound reasoning of the *Papesch* case has been unanimously and repeatedly reaffirmed by the Court of Customs and Patent Appeals.[16] Doubtless we must agree with admonitions against deciding questions of chemical obviousness on the basis of structure alone. In response to the arguments of the Commissioner and those who assert that if a compound is structurally obvious, a showing of novel properties should not make it any less obvious,[17] several points should be noted.

First, it would appear that the Commissioner's position is hardly supported, but on the contrary is substantially undermined, by *Graham* v. *John Deere Co.*, 383 U.S. 1 (1966), although he seems to place great reliance on this case. **[4]** *Graham* was the first authoritative opinion dealing with the question of obviousness under section

[13] A homolog is a member of a series of compounds in which each member differs from the next member by a constant number of atoms. For example, the alkane family forms a homologous series, the constant difference between successive members being one carbon atom and two hydrogen atoms, e.g., CH_4 (methane), C_2H_6 (ethane), etc. See notes 9–10 *supra*, for definitions of analogs and isomers.

[14] See *E.I. du Pont de Nemours & Co.* v. *Ladd*, 117 U.S.App.D.C. 246, 328 F.2d 547 (1964); *Parker* v. *Marzall*, 92 F. Supp. 736 (D. D.C. 1950); *Application of Papesch*, 315 F.2d 381 (CCPA 1963).

[15] See, e.g., *Application of Lohr*, 317 F.2d 388 (CCPA 1963).

[16] For recent discussion see *Application of McLamore*, 379 F.2d 985, 989–90 (CCPA 1967); *Application of Wagner*, 371 F.2d 877 (CCPA 1967); *Application of Lunsford*, 357 F.2d 380 (CCPA 1966).

[17] See Western, Is 35 U.S.C. § 103 Applicable to Chemical Compounds? 8 Idea 443 (1964); Note, 32 Geo. Wash. L. Rev. 429 (1963).

103. It is clear from that unanimous decision that hard and fast rules of general applicability are impossible to achieve under section 103. Rather, the section "lends itself to several basic factual inquiries," enumerated by the Supreme Court:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id. at 17. It seems rather elementary to us that the "background" referred to for determination of obviousness clearly is not limited to the issue of structural similarity. Position isomerism, as involved here, focuses on close structural similarity which is to be taken into consideration with all other relevant facts in measuring the standard of obviousness under section 103. E.g., *Application of Weichert*, 370 F.2d 927, 933 (CCPA 1967); *Application of Mehta*, 347 F.2d 859 (CCPA 1965). This, we think, is the teaching of *Graham*.

While agreeing with this basic factual approach of *Graham*, the Commissioner asserts that where structural obviousness is assumed, "inquiry by the court into the issue as to whether the claimed subject matter has unexpected beneficial properties is prohibited under the *Graham* case." He then argues that this prohibition is derived from the fact that the issue of chemical properties is, at best, a "secondary consideration" under *Graham*. It is true that the Court in *Graham* mentions certain secondary considerations such as "commercial success, long felt but unsolved needs, failure of others, etc.," 383 U.S. at 17. But it is equally true that no court, including the Supreme Court, has ever considered chemical properties to be "secondary" in the determination of obviousness. See Note, 112 U. Pa. L. Rev. 1139 (1964).[18]

A second factor, to which we have already alluded, is the rare occurrence in finding a completely new compound whose molecular arrangements cannot be predicted, at least on paper. If we are to accept a determination of structural obviousness which cannot be rebutted by evidence of chemical, pharmaceutical, or biological properties, few pharmaceutical compounds will be patented, and the incentive aspect of the patent system, which is basic, will be lost from an important area.[19] The fact that "monopoly" power exists in the patent system does not mean, ipso facto, that it should be treated as an evil in the antitrust sense. While such exclusivity commands scrutiny, it must be recognized that this temporary "monopoly" is a deliberate creature of the Constitution and one long implemented by Congress to promote technology and encourage progress.

A third salient point comes from the Commissioner himself. **[5]** The Patent Office Rules, particularly Rule 132, permit an applicant to meet an initial rejection with proof of unobviousness. A traditional

[18] The commissioner's position here paraphrases the Board of Patent Appeals in *Papesch*:

> Such proof of advantages is not seen to occupy a different relationship than proof of commercial success or of the "filling of a long-felt want" often considered as sufficient to establish patentability in cases *where some doubt of obviousness exists*, but which have been consistently held as *insufficient alone* to override the holding of unpatentability *in a clear case* of obviousness.

Papesch, *supra*, at 386 (emphasis by court). It was rejected by the *Papesch* court. It may well be true that in the field of chemistry, the discovery of useful properties will be the factor primarily responsible for commercial success or a solution to a long felt need, but that alone does not make it a secondary factor.

[19] As was stated at a recent seminar on pharmaceutical invention, [t]ake away the concept of molecular modification and very few of our most outstanding drugs would be available today. Thus, the difference between morphine and codeine is a methyl group; between 11 desoxycorticosterone, which does nothing for humans, and cortisone, which does everything, is one oxygen atom. Seminar, Pharmaceutical Invention, 47 J. Pat. Off. Soc'y 648, 682 (1965).

method has always been to permit evidence of novel properties or utility. Indeed, prior to the *Graham* case, this was the Commissioner's consistent position. E.g., Brief for Commissioner, *Application of Higgins*, 369 F.2d 414 (CCPA 1966). We find nothing in *Graham* which calls for the radical shift in the law proposed.

Fourth, the patent statutes as a whole would seem to favor the *Papesch* standard. The section 101 criteria—utility—is largely dependent on the question of what the compound will do, and its properties are of prime consideration here. See *Brenner* v. *Manson*, 383 U.S. 519 (1966).

The Commissioner, in addition to reliance on *Graham*, refers to a recent decision of this court to support his position, *Hays* v. *Brenner*, 123 U.S.App.D.C. 96, 357 F.2d 287 (1966). He views *Hays* as holding that section 103 is an absolute bar to a patent where obviousness is assumed. It is true that some of the language in *Hays* affords a colorable basis for his contention, but it is also clear that the holding was not directed to the question of *structural* obviousness alone but to obviousness of *the subject matter as a whole*, a completely different situation. In *Hays* we made no effort to determine what the claimed subject matter was in the case of a chemical compound. **[6]** The plain language of section 103 makes it clear that obviousness of the subject matter as a whole is not limited to a consideration of structure; and this is consistent with the common sense of the situation.

[7] In rejecting the broad proposition advanced by the Commissioner we should make it clear that structural obviousness is certainly a large factor to be considered in the determination of obviousness of the subject matter as a whole. Whether it is called an inference of obviousness, *Application of Mills*, 281 F.2d 223 (CCPA 1960), a prima facie showing of obviousness, *Application of Rosselet*, 347 F.2d 847, 850 (CCPA 1965), or a presumption of obviousness, *Application of Henze*, 181 F.2d 196, 201 (CCPA 1950), is, we believe, immaterial.[20] The crucial factor is not the definition attached to the relationship nor the legal phraseology used to described deductions reached from that definition, but rather the proximity of the relationship in terms of non-obviousness of *the subject matter as a whole*.

The final assertion from the Commissioner's sweeping contentions is interesting but does not compel a contrary result. He views the claim as defining by name and diagram a mental concept of a chemical compound which, to the ordinary chemist, would convey both the structure and characteristics of a family of compounds. The Commissioner would have us adopt the following logic: Since section 103 refers to "subject matter as a whole," the antecedent of which is "subject matter sought to be patented," these obviously refer only to the *claimed* compound; hence, if that claim does not specifically refer to the particular property which demonstrates non-obviousness, it does not distinctly claim the invention as required in section 112, paragraph 2, but instead claims that compound for all uses and properties, thus overclaiming and foreclosing the public from using the

[8] [20] We are not unmindful that we are dealing in the area commonly referred to by the patent bar as the *Hass-Henze* area, so named for the three *Hass* cases, 141 F.2d 122, 127, 130 (CCPA 1944) and *Application of Henze*, 181 F.2d 196 (CCPA 1950). These cases antedate section 103 and establish a rule that proof of the existence of unobvious or unexpected beneficial properties in a new compound which would otherwise appear obvious, is indicative of patentability. Much has been written on the subject with little clarification. For a discussion of the doctrine, its limitations and the significance of homology see *Application of Mills*, 281 F.2d 218 (CCPA 1960). For a general discussion see Guttag, The Hass-Henze Doctrine, 43 J. Pat. Off. Soc'y 808 (1961); Collins, The Forgotten Chemistry of the Hass-Henze Doctrine, 44 J. Pat. Off. Soc'y 284 (1962); see also Western, *supra* note 17; Note 32 Geo. Wash. L. Rev. 423 (1963).

compound in an unrelated, but unobvious, field.[21] Cf. *Application of Kirk*, 376 F.2d 936, 942 (CCPA 1967). The Commissioner relies upon some out-of-context statements from *Graham*, and also on the companion case, *Calmar, Inc.* v. *Cook Chem. Co.*, 383 U.S. 1, 26 (1966). In the latter case, however, the parties agreed upon certain limitations in the claims. **[9]** In light of existing law it cannot be doubted that the claim itself must not be divorced in a vacuum from the specifications and descriptions accompanying it. See, e.g., *Schering Corp.* v. *Gilbert*, 153 F.2d 428, 432 (2d Cir. 1946).

(2) *Advance in the Art*

The Commissioner's second claim of error concerns some language in the District Court's opinion to the effect that "advance in the art" is not a condition for patentability.[22] The Commissioner refers us to several unrelated cases in which certain language suggests the contrary,[23] and to *Graham*. Appellee responds by pointing to the exclusion of "advancement" from the three legislatively-created statutory conditions of patentability, 35 U.S.C. §§ 101–103 (1964).

[11] From the introductory sentence in *Graham* it is clear that the Supreme Court was well aware of the distinction between *statutory conditions* of patentability and *constitutional standards*.[24] This is perhaps best illustrated by the following excerpt:

> Innovation, *advancement*, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must "promote the Progress of . . . useful Arts." This is the *standard* expressed in the Constitution and it may not be ignored.

383 U.S. at 6 (emphasis added in part). Appellee and the District Court are correct in stating that advancement is not one of the three *conditions* of patentability under the statutes. But this overlooks the clear, and at least implied, discussion in *Graham* of the constitutional *standard*. The conditions effectuating this standard are for congressional determination, but the standard itself is to be implemented by the Commissioner and the courts.[25] Thus, the semantic correctness of the District Court opinion should not be misconstrued. Cf. *Baenitz* v. *Ladd*, 124 U.S.App.D.C. 237, 240, 363 F.2d 969, 972 (1966).

The requirement of advancement is an illusory one, focusing on something incapable of precise definition. Other than an implication that advancement was the equivalent of "Progress" as used in the

[10] [21] The Commissioner correctly recognizes the difficulty of patenting new but obvious chemical compounds on the basis of novel properties and new uses. This problem of overclaiming arises from the fact that the patent is given for the *entire compound*, although based on only one new property it discloses. Thus, the patent holder of compound A, with properties X and Y, is foreclosed from using newly patented, structurally obvious compound B, with obvious properties X and Y, merely because compound B also possesses new and unobvious property Z. Whether or not the solution rests in strictly limiting patentability to the *new use* alone, or to the *process* by which it is made, however, is a matter for the Commissioner, the Congress, and courts with greater technical expertise to decide in the first instance. See Western, *supra* note 17, at 449–52.

[22] When the inherent existence of a certain beneficial utility in a claimed compound is itself unobvious, a requirement that an applicant must additionally show that his compound is unexpectedly more useful in comparison with prior art compounds would amount to *a requirement to prove "advance in the art", which is not a condition for patentability under American Patent Law*. 35 U.S.C. §§ 101–103. 251 F. Supp. at 628 (emphasis added).

[23] The following statements are indicative of those relied upon by the Commissioner:

> In administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substantially. *Eibel Process Co.* v. *Minnesota & Ontario Paper Co.*, 261 U.S. 45, 63 (1923).
>
> [P]atentable invention must be measured by the advance which it teaches over the prior art. *Helene Curtis Indus., Inc.* v. *Sales Affiliates, Inc.*, 233 F.2d 148, 154 (2d Cir. 1956).
>
> We are bound first to look into the prior art to ascertain what may be the real merit of the invention and to decide whether or not it has substantially advanced the art. *L-O-F Glass Fibers Co.* v. *Watson*, 97 U.S.App.D.C. 69, 76, 228 F.2d 40, 47 (1955).
>
> The statute permits the Patent Office to grant a patent only where invention, novelty, and utility coexist. . . . Advance over the art is a fourth element implicit in that recital. *Application of Henze*, 181 F.2d 196, 201 (CCPA 1950).

[24] After a lapse of 15 years, the Court again focuses its attention on the patentability of inventions under the *standard* of Art. I, § 8, cl. 8, of the Constitution and under the *conditions* prescribed by the laws of the United States. 383 U.S. at 3 (emphasis added).

[25] *Id.* at 6.

constitutional phrase,[26] the Court in *Graham* made no effort to define what constitutes an advancement. Similarly, the opinion does not tell how to determine whether an advancement has been made, although it does state more than once that advancement in the constitutional sense is tied in with the statutory condition of non-obviousness.[27] The Commissioner's position is best summed up in the response of the Solicitor at oral argument in this court when he was asked whether advance in the art is a requirement additional to the three specified in the statute, or is related to the statutory requirement of non-obviousness. He replied that in most situations the mere fact that the difference between the prior art and that which is described and claimed in any particular application or patent would *per se* be an advance in the art, but he also could envision situations in which that would not necessarily be true.

The Commissioner has conceded in this reply and elsewhere that a determination of unobviousness in most cases, but not necessarily all, is equivalent to an advance in the art. Appellee asserts that the congressional creation of the third statutory condition, non-obviousness, accomplished the constitutional purpose of the patent provision, and incorporates the concept of advance in the art. Indeed, *Graham* draws a close parallel between the determination of non-obviousness and advancement to the extent that the inquiry into non-obviousness "comports with the constitutional structures," 383 U.S. at 17. Similarly, it is quite clear that the pivotal condition discussed in *Graham*, non-obviousness, which was added to the patent statute in 1952, strongly equates itself with the judicial condition of "invention," previously so long used. Both formulations, invention and non-obviousness, "place emphasis on the pertinent art existing at the time the invention was made and *both are implicitly tied to advances in that art*," *id.*, at 14 (emphasis added).

[12] But, while the major emphasis may be placed on the condition of non-obviousness, we do not find that such a determination, ipso facto, is also an ultimate determination on the question of advancement. The other two statutory requisites, novelty and utility, have always been thought to be separate and independent conditions. If advance in the useful art is the necessary standard to sustain patentability, the more logical view is that the three independent statutory conditions are not separate from advancement but are the very indicia of it, in particular the condition of non-obviousness. See Note, 54 Geo. L. J. 1320, 1339 (1966).

Under this analysis we have some difficulty in perceiving how a claimed compound which is new, useful, and unobvious can still *not* constitute an advance in the art.[28] The Commissioner's position is that even if the three conditions are fulfilled, a step *backward* in the art is not patentable. But the relevant art does not go "backward" when the three conditions are fulfilled. The Commissioner's position appears to be a contradiction in terms.

[13] If, as is asserted by *amicus*, the Commissioner is really contending that before any claimed subject matter is patentable, it must

[26] *Id.* at 5.
[27] *E.g.*, *id.* at 14.
[28] We requested the Solicitor to file a supplemental memorandum on this point which he has done, but we do not find it compelling. For example, he relies upon *Murray Co. of Texas, Inc.* v. *Continental Gin Co.*, 264 F.2d 65 (5th Cir. 1959), and *Imperial Stone Cutters, Inc.* v. *Schwartz*, 370 F.2d 425 (8th Cir. 1966), for support. The first case is distinguishable as a combination patent. And in the second case the Eighth Circuit found both obviousness and lack of utility, which seem to demonstrate that no advance in the art was possible. The memorandum failed to disclose any case holding that a claimed subject matter was not patentable, because it did not advance the art, even though it was new, useful and non-obvious.

"advance the art" in the sense that it is demonstrated to be better than that which preceded it in terms of cost, performance, or otherwise, we must reject such a view.[29] We do not equate the constitutional standard of advancement with a requirement that the claimed subject matter be "better" than the prior art.[30] The Constitution uses the word "Progress," and progress is an advancement step by step to new, useful, and non-obvious subject matter:

> Progress is most effectively promoted by protecting those who enrich the art as well as those who improve it. Even though their inventions are not as good as what really exists, such inventors are not being rewarded for standing still or for retrogressing, but for having invented something. The system is not concerned with the individual inventor's progress but only with what is happening to technology.

Rich, Principles of Patentability, 28 Geo. Wash. L. Rev. 390, 402 (1960).

This is our understanding of the standard of advancement as interpreted in *Graham*. It is correct that *Graham* admonished the Commissioner to "tighten up" on applications, and mildly rebuked him for leniency in applying the conditions of section 103. 383 U.S. at 18. But this was not the creation of a new requirement of patentability [31] nor was it a mandate for the Patent Office to enforce the statutory conditions and constitutional standard with the zeal manifest in the Commissioner's position here.

Our analysis of the District Judge's opinion shows that the statement that advance in the art was not a condition of patentability meant no more than that the constitutional standard of advancement was demonstrated by the *utility* of the claimed compound over the prior art through its *unobvious* anthelmintic properties, regardless of the relative superiority in this respect. This seems to be the essence of the entire paragraph which the Commissioner attacks as erroneous. Surely we could impute no other interpretation to the opinion and we are satisfied that the District Judge did not mean that *advance* in knowledge was unnecessary to patentability.[32]

(3) *Sufficiency of Evidence*

In an effort to overcome the burden of structural similarity with the prior art, appellee specified in its complaint in the District Court, as it had done in its application before the Patent Office, that the claimed compound had unexpected utility in two areas. First, evidence was offered showing that the claimed compound was superior to three of its prior art isomers as a vermicide, a utility alleged to be unobvious in the prior references. Second, evidence was offered showing that patented antihistamines and sedatives had greater superiority when prepared from derivatives containing the claimed compound than when prepared under the then-known methodology.

[29] This is not to say, of course, that these may not be secondary factors for consideration as evidencing one of the three statutory conditions.
[30] The Court of Customs and Patent Appeals has consistently held that the claimed subject mater need not be better than the prior art. E.g., *Application of Ratti*, 270 F.2d 810 (CCPA 1959). And compare *Hotchkiss* v. *Greenwood*, 52 U.S. (11 How.) 248 (1851), the case establishing the invention condition wherein the Court rejected dissenting Justice Woodbury's opinion that the test should be "cheaper and better," *id.* at 267.
[31] Indeed, if we properly understand the Commissioner's position on the *Graham* case, he is using the advancement standard in such a manner that design patents would be invalid as well as many other accepted patentable subjects, e.g., toys. See Note, 54 Geo. L. J. 1320, 1337–39 (1966).
[32] The parties have each sought to place alternative arguments before us. Thus, the appellee asserts that an advance was made in this case, an argument better addressed to the evidentiary issue, while the Commissioner argues that the advance must be "substantial." We need not reach these arguments in view of our disposition of the issue. We should note, however, that the two cases relied upon by the Commissioner, *American Infra-Red Radiant Co.* v. *Lambert Indus., Inc.*, 360 F.2d 977 (8th Cir. 1966), and *Howe* v. *General Motors Corp.*, 252 F. Supp. 924 (N.D. Ill. 1967) do not establish advancement as a separate and unique standard but rather address themselves to the question of non-obviousness, thus equating the two. The language in those opinions about substantial advances is properly addressed to non-obviousness.

The Commissioner makes several claims regarding the sufficiency of this evidence.

(a) *Direct Utility as a Vermicide*

The first phase of appellee's evidence consisted of comparative tests between the claimed compound and three prior art isomers, demonstrating the superiority of the claimed compound when utilized as a vermicide. These tests, found by the District Court to be universally recognized, showed the following; (1) the claimed compound was equal in anthelmintic activity on ascaris worms [33] to two of the prior art isomers and one hundred times more effective than the third isomer; (2) the claimed compound was the least toxic [34] when compared with the three isomers; and (3) the claimed compound demonstrated a superior therapeutic value by the following comparative ratios, 1 : .45 : .70 : .01.

This comparative evidence was fully adopted by the District Court and led to that Court's conclusion that the claimed compound would be "equal or superior as a vermicide" when compared with the prior art isomers. 251 F. Supp. at 628. Furthermore, the District Court found that none of the prior art references relied upon suggested that the azaphenothiazines (the claimed compound and its prior art isomers) would be useful as a vermicide. Thus, the District Court concluded:

> When the prior art does not contain the slightest suggestion that the properties of a claimed compound would make it useful for a certain advantageous purpose, then the utility itself is unobvious, and it is unnecessary for an applicant to prove by comparative tests that his compound is more useful for the certain purpose than closely related prior art compounds. *Ibid.*

The Commissioner makes two arguments directed at this evidence. First, he argues that the comparative tests did not afford a sufficient basis for the District Court's unequivocal holding that the claimed compound was equal or superior to the prior art isomers when utilized as a vermicide.

[14] As we have previously noted, see note 12 *supra*, we are governed in our review of the factual findings of the District Court by the "clearly erroneous" standard of Rule 52 of the Federal Rules of Civil Procedure. On the basis of the evidence produced on comparative tests, we cannot say that the District Court erred in holding that the claimed compound "was equal or superior as a vermicide to the other three isomers . . ." 251 F. Supp. at 628. Thus we reject the Commissioner's first argument.

The Commissioner's second argument is directed at the statement of the District Judge just quoted, to the effect that an applicant need not prove that his claimed compound is more useful by comparative testing where the prior art does not suggest that the properties of the claimed compound would be useful for a certain purpose.[35]

[33] Anthelmintic activity is an activity which is directed against worms which are parasitic in animals and, in some cases, humans, e.g., intestinal parasites such as ascaris worms.

[34] The toxicity tests were based on the largest dosage of the claimed compound and its prior art isomers which was required before fifty percent of the host animals tested were destroyed. The importance of the toxicity ratio is clear. Thus, the utility of any drug is circumscribed if it causes severe illness or death.

[35] The prior art relied upon did not disclose any specific utility or property. The Rath patent for azaphenothiazine compounds provides the sole indication of therapeutic utility disclosed in the prior references. Rath's compounds are said "to be distinguished by relatively low toxicity and valuable physiological effects based on their capacity for stabilizing the vegetative and central nervous system . . ." 251 F. Supp. at 627 (quoting the Rath application, No. 2,789,978, April 23, 1957). No other utility or property is disclosed in the other prior art references.

In support of its legal conclusion, the District Court relied upon *E. I. Du Pont de Nemours & Co. v. Ladd*, 117 U.S.App.D.C. 246, 328 F.2d 547 (1964) and *Application of De Lajarte*, 337 F.2d 870 (CCPA 1964). The Commissioner challenges the applicability of these cases. As was expressly noted by this court in *Du Pont*, the issue there involved a question of anticipation under 35 U.S.C. § 102, not a question of obviousness under section 103. Moreover, since section 102 was involved, no issue was raised regarding the necessity of making comparative tests involving closely related prior art compounds.[36] We think that the *De Lajarte* case, however, supports the conclusions of the District Judge. Although there was some doubt as to whether anticipation or obviousness was involved, 337 F.2d at 873, the court considered both sections and concluded:

> In the total absence of evidence in the record to indicate that the amber glass disclosed by Lyle [the prior art reference] would be expected to have desirable electrical insulating properties, we can find no justification for placing the burden on applicant to conduct experiments to determine the insulating properties of the colored glass disclosed by Lyle. *Id.* at 874.

In addition to distinguishing these cases, the Commissioner's principal argument is that where an applicant is attempting to demonstrate that his claimed compound possesses novel or unobvious beneficial properties he must show that such properties are *not in fact possessed by the prior art reference*. Under the ruling of the District Judge no such showing was required of appellee. The Commissioner relies upon *Application of Henze*, 181 F.2d 196 (CCPA 1950).

In *Henze*, the application was for claimed compounds one of which was the next higher homolog of a compound disclosed in a prior publication.

> The Examiner had held . . . that the claims in issue were unpatentable, lacking invention over the disclosure of the publication, because the appellant had failed to show that the compounds claimed had an unexpected beneficial property not possessed by the lower adjacent homologue disclosed in the publication. The examiner held that the affidavit did not aid in conferring patentability upon the rejected claims because there was no showing that the lower homologue would not yield results similar to the claimed compounds under certain dosages.
>
> * * * * * * *
>
> The burden is on the applicant to rebut that presumption [of unpatentability] by a showing that the claimed compound *possesses* unobvious or unexpected beneficial properties not actually *possessed* by the prior art homologue. It is immaterial that the prior art homologue may not be recognized or *known* to be useful for the same purpose or to possess the same properties as the claimed compound.

Id. at 200–01 (emphasis in the original). The rationale articulated for the rule was that the characteristics normally possessed by members of a homologous series are generally the same, varying gradually from one member to the next. Thus, a chemist knowing the properties of one member of the series would have little difficulty predicting the properties of the adjacent members of the homologous series. *Ibid.*

The *Henze* case and its progeny have brought little clarification to the field of patent law. See note 20 *supra*. The case itself applied its doctrine to the question of adjacent homologs. *Isomerism, as involved in the present case, is somewhat different; it is basically a*

[36] The District Judge found that the government's attempt to distinguish *Du Pont* was erroneous in light of *Application of Brown*, 329 F.2d 1006 (CCPA 1964). We do not believe that the *Brown* opinion equates the two sections for all purposes, nor do we find *Brown* to be pertinent to the problem here.

structural classification not dependent upon similarities of properties as is homology. See Morrison & Boyd, Organic Chemistry 32 (2d ed. 1966); Collins, *supra* note 20, at 286. **[15]** The Commissioner asserts that *Henze* is applicable to isomerism as well as homology and points to specific language in that opinion, 181 F.2d at 200–01. Such language is present, but on the basis of subsequent decisions of the Court of Customs and Patent Appeals, we think that it referred to the general problem of chemical obviousness, not to the specific "presumption" or "inference" of obviousness derived from the structural similarity present in the case of adjacent homologs.

[16] In one line of cases, that court has made it quite clear that *Henze* should be limited to its factual situation, even to the extent of excluding the question of *non-adjacent* homologs from its application.[37] In another line of cases the court has indicated that the definitions attached to the relationship are unimportant, *Application of Druey*, 319 F.2d 237, 240 (CCPA 1963); rather it is the proximity of the relationship in terms of the non-obviousness of the subject matter as a whole. *Application of Lohr*, 317 F.2d 388, 389 n. 2 (CCPA 1963); *Application of Mehta*, 347 F.2d 859, 864 (CCPA 1965). We think these cases demonstrate that the genesis for the *Henze* rule was found in the homology of hydrocarbon chains alone, and that no mechanistic formulae can be indiscriminately applied to questions of chemical obviousness.[38]

Although not cited by the parties, we think *Application of Riden*, 318 F.2d 761 (CCPA 1963), has some bearing on the issue. **[17]** In *Riden* the application was for certain compounds useful as pesticides. The primary reference disclosed no use, either as an insecticide or for any other purpose, *id.* at 762. Other references, however, did disclose utility as fungicides. The court found

> There is no showing in this case that the compounds of claims 3 and 8 differ by more than a matter of degree from the compounds of Boehme et al. [the prior reference] in *any* properties. It is true that Boehme et al. does not teach that the compounds have insecticidal properties, but there is no showing that they do not. Had there been evidence of a *new* property of the closely related compounds not possessed by the analog, a different case might arise. . . . Such evidence was not forthcoming during the prosecution of the case. Indeed, the specification of appellants' application indicates that the Boehme et al. compounds have the same properties but differ only in degree . . .

Id. at 764 (emphasis in the original). Thus, *Riden* would seem to indicate that even when the prior art was not alleged to possess the same properties, it is incumbent upon the applicant to make a comparison to see if it possessed the same properties. However, this does not appear to be the rule of the case since a patent was allowed as to the pesticidal use because such *use* was not suggested in the primary reference; nor did the court find it would have been obvious from other references which did disclose related uses. *Id.* at 768. Because

[37] *Application of Mills*, 281 F.2d 218, 221–23 (CCPA 1960); *Application of Elpern*, 326 F.2d 762 (CCPA 1964); *Application of Wagner*, 371 F.2d 877, 883–84 (CCPA 1967).

[18] [38] We should point out that this is not a case where the prior art disclosed the *same* utility thus requiring the applicant to demonstrate by clear and convincing evidence that his claimed compound has substantially greater effectiveness. *Application of McLamore*, 379 F.2d 985, 987 (CCPA 1967); *Application of Risse*, 378 F.2d 948, 958 (CCPA 1967); *Application of Wagner*, 371 F.2d 877, 883 (CCPA 1967); *Application of Weichert*, 370 F.2d 927, 931–32 (CCPA 1967); *Application of Rosselet*, 347 F.2d 847, 850 (CCPA 1965); *Application of Ruschig*, 343 F.2d 965 (CCPA 1965); *Application of Lohr*, 317 F.2d 388, 392 (CCPA 1963). Certainly where the prior art references expressly show a utility in the same narrow pharmacological area, comparative tests of greater effectiveness are the *sine qua non* of patentability. Nor is this a case where the property of the claimed compound was exactly opposite that of the prior art reference. *Application of Petering*, 301 F.2d 676 (CCPA 1962); *Application of Lambooy*, 300 F.2d 950 (CCPA 1962). Cf. *Application of Wagner, supra*, at 883–84. In fact, there is absolutely no suggestion that it was obvious to a chemist that the prior art isomers of appellee's claimed compound would have the anthelmintic properties claimed in the specification.

of this difference we do not believe that *Riden* compels comparative testing to the extent here sought.

[19] We recognize, of course, that the best method of demonstrating patentability under *Papesch* and its progeny by the existence of a novel and unobvious property is through the use of comprehensive comparative testing. Nevertheless, on the whole record we are satisfied that the District Judge's conclusion of law concerning comparative testing was correct *as applied to the facts of this case*. We reach this conclusion on the basis of the limited comparative testing here, which, although it did not disprove the existence of the same properties in the prior art, strongly suggests, by reason of the vastly superior results obtained, that those new results derived from the existence of a novel property in the claimed compound; by limiting *Henze* to its facts, as the Court of Customs and Patent Appeals has done; and by what we read as to the meaning of the additional evidence adduced in this case. It should be recalled that appellee attempted to overcome the burden of structural obviousness through two evidentiary showings. In the first place, as we have indicated, evidence was offered to show new and unexpected properties and novel utilization of the claimed compounds. Had that been the only evidence offered we, and the District Judge as well, might have required further comparative testing. But appellee went on to offer further evidence of a secondary nature—the indirect utility of the claimed compound as an intermediate for the production of known drugs with greater effectiveness than when prepared under then-existing methodology. In light of this dual approach we find that the District Judge's conclusion of law not requiring comparative tests to be correct.

(b) *Indirect Utility as an Intermediate*

The second phase of appellee's evidence consisted of comparative tests between the claimed compound and its three prior art isomers with respect to their value as an intermediate in the preparation of two end products, a patented sedative and a patented antihistamine. This evidence disclosed that when the patented compounds were prepared from the claimed compounds they had a greater sedative and antihistaminic effect and greater therapeutic ratio than when the patented compounds were prepared from the three prior art isomers. Appellee claims that these tests demonstrate some novel and unique property in the claimed compound and that one skilled in the art would ascribe to the claimed compounds the contributing cause for the differences in end-product results.

The Commissioner's argument is tied in with his earlier evidentiary contentions just discussed. There he claimed that the direct evidence comparing the prior art with the claimed compound did not sufficiently disclose a novel property in the prior art. Since that evidence was insufficient, the Commissioner continues, the only basis for granting the patent was the District Judge's reliance on the evidence in question in this aspect of the appeal. The error here, the Commissioner claims, is a violation of the "best evidence" rule. Relying on a series of cases, the Commissioner argues that the District Court opinion violated the well-known rule that evidence of new properties or unexpected results possessed by final products made directly from intermediates or derivatives (i.e., the claimed compounds) is inadmissible to prove patentability because of the remoteness of the relation back to the intermediate.

The Solicitor in his brief relies upon the rule which had its genesis in *Application of Finley*, 174 F.2d 130 (CCPA 1949). **[20]** In *Finley* the claimed compound was an ester which, when converted to its calcium salt, produced an additant for lubricating oils with higher thermal stability than the prior art references. The Examiner, the Board of Appeals, and the court agreed that the compound itself was too far removed from its calcium salt to justify attributing the utility of the end product to the claimed compound.[39] The Patent Office subsequently adopted this rule in several cases,[40] and the Court of Customs and Patent Appeals has reaffirmed the rule in several recent cases.[41]

[22] We agree with the Solicitor that the best evidence rule has a sound basis for application in the patent field. But, the rule is not "hard and fast," *Application of Widmer*, *supra* note 41, at 759. Secondary evidence runs a greater risk of failing the relevancy test of admissibility in proportion to its remoteness from the claimed subject matter, but the question of remoteness is a question of law to be determined on the basis of the subject matter as a whole.

[23] We hold the District Court was correct in its application of the rule: Several reasons compel this conclusion. In all of the cases relied upon by the Solicitor, the secondary evidence was the only evidence presented, or the secondary use was the only use specified. Here, however, both direct evidence and secondary evidence was presented. In such a situation we think that the trier of facts is permitted to consider the secondary evidence as admissible evidence. Since this case was decided, the Court of Customs and Patent Appeals has expressly relied upon the opinion now under review for the proposition that the secondary evidence is admissible. *Application of Diamond*, *supra* note 41, at 219–220. Certainly, if the District Judge's application of the best evidence rule had been in conflict with the views of the Court of Customs and Patent Appeals, they would hardly have cited his decision in this case. Having amply predicated admissibility on the basis of these two facts, we cannot say that the District Judge was clearly erroneous in finding that the secondary evidence *also* demonstrated the unique and novel properties claimed for the compound, and that a person of ordinary skill in the art would reasonably ascribe to the claimed compounds the contributing cause for the differences between the end product when made from the prior art and when made from the claimed compound. We hold the District Court was correct both in his findings of fact and conclusions of law; we should make clear that our opinion with respect to this issue is predicated on the availability of both primary and secondary evidence, and on the sufficiency of this evidence to show the existence of a novel and unobvious property.

[24] AFFIRMED.

BAZELON, *Chief Judge*, dissenting.

[21] [39] The court indicated that such evidence was admissible if the application was able to demonstrate why such tests were necessary or why no direct tests were possible. 174 F.2d at 135. This modification has been subsequently followed. See cases cited *infra* note 40.

[40] Ex parte *Ullyot*, 103 USPQ 185 (P.O. Bd. App. 1952); Ex parte *Parker and Adams*, 102 USPQ 367 (P.O. Bd. App. 1950).

[41] *Application of Diamond*, 360 F.2d 214 (CCPA 1966); *Application of Widmer*, 353 F.2d 752 (CCPA 1965); *Application of Druey*, 319 F.2d 237 (CCPA 1963); *Application of Surrey*, 319 F.2d 233 (CCPA), cert. denied, 375 U.S. 930 (1963). The District Judge relied upon two best evidence cases from the District Court here, *Union Carbide Corp. v. Brenner*, 239 F. Supp. 923 (D. D.C. 1964); *Parker v. Marzall*, 92 F. Supp. 736 (D. D.C. 1950). We agree but hasten to point out that these cases fit within the framework of the best evidence rule and do not indicate this circuit's disagreement with the rule.

[1] In *Graham* v. *John Deere Co.*, the Supreme Court stated that the "inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the [non-obviousness] requirements of § 103. . . ." 383 U.S. 1, 19 (1966). I respectfully submit that the majority has ignored the Supreme Court's admonition.

There is no question that the claimed compound is structurally obvious. The majority concludes that such a compound can meet the requirements of § 103 if it has novel properties. I need not decide whether this conclusion is correct because I believe there was no adequate showing that the claimed compound in fact possessed novel properties.

The only method of proving that a compound has properties not possessed by the prior art is comparative testing. Here the majority concedes that the comparative testing was not comprehensive. Furthermore, the trial judge's ability to evaluate the limited comparative evidence was undoubtedly undermined by his belief that:

> When the prior art does not contain the slightest suggestion that the properties of a claimed compound would make it useful for a certain advantageous purpose, then the utility itself is unobvious, and it is unnecessary for an applicant to prove by comparative tests that his compound is more useful for the certain purpose than closely related prior art compounds.

Finally, the district judge only concluded that the claimed compound was "equal or superior as a vermicide" to the prior art compounds. This is not a clear cut finding of novel properties.

The majority refuses to require further comparative testing in this case because the appellee "went on to offer further evidence of a secondary nature—the indirect utility of the claimed compound as an intermediate for the production of known drugs with greater effectiveness than when prepared under then-existing methodology." There is some question as to whether such secondary evidence is admissible.[42] But even if it is, I do not believe it makes up for the lack of comprehensive testing on the primary issue—the claimed compound's novel properties when utilized as a vermicide. Thus I think the court's opinion today fails to heed the admonition of the Supreme Court in *Graham* v. *John Deere Co.*

[42] See e.g., *Application of Druey*, 319 F.2d 237 (CCPA 1963); *Application of Finley*, 174 F.2d 130 (CCPA 1949).

PATENT SUITS

Notices under 35 U.S.C. 290: Patent Act of 1952

2,702,049, M. M. Seeloff, FLUID VALVE, **filed** June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1059, *Versa Products Co., Inc.* v. *Flick Reedy Corp.*

2,742,327, T. Marks, FULLY AUTOMATIC MACHINE FOR MAKING BRUSHES, **filed** May 9, 1967, D.C., E.D. Va. (Norfolk), Doc. 6174, *American Technical Machinery Corp.* v. *Star Band Company, Inc. and Leo Cardon.* Final judgment, June 21, 1968.

2,787,738, J. M. Hisle, STARTING MECHANISM, **filed** May 19, 1964, D.C., E.D. Ky. (Lexington), Doc. 1581, *Mid-States Enterprises, Incorporated and Cedric Vogel, trustee for and on behalf of Nat C. Jamison, Ira M. Malott, Wanda Malott and James N. Floyd* v. *Electronic Controls, Inc.* The plaintiff, Mid-States Enterprises, Inc. is owner of patent; claim 1 is valid. Defendant, Electronic Controls, Inc. has infringed claim 1, June 14, 1968.

2,794,665, R. Sasse, NIGHT LATCH, **filed** June 5, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–941–AAH, *Merrill E. Bell, doing busines as S & D Industries and Ekstrom Enterprises* v. *Belcrith International, Ltd., Inc., doing business as Peabody Distributing Co. and Specialty Hardware Co.*

2,869,216, Overlund, Hill and Seger, CASKET SEALING CONSTRUCTION, **filed** Apr. 26, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–301, *F. H. Hill Co., Inc.* v. *National Casket Co., Inc.*

2,904,449, S. W. Bradstreet, METHOD AND COMPOSITIONS FOR FLAME SPRAYING, **filed** July 17, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1320, *Continental Coatings Corp.* v. *Metco, Inc. et al.*

2,919,042, J. V. Kieruliff, TRAVELLING SHIP-LOADING CRANE, **filed** Nov. 17, 1967, D.C., Oreg. (Portland), Doc. C–67–595, *Jorgen V. Kieruliff* v. *Scrap Loaders, Inc. et al.* Consent judgment, no injunction or award of damages, All other claims not disposed of by this judgment are dismissed with prejudice, June 26, 1968.

2,933,333, Bredtschneider, Drewes, Laird and Onak, PIPE COUPLING, **filed** June 13, 1967, D.C., N.D. Ill. (Chicago),

Doc. 67c988, *Crane Co.* v. *Aeroquip Corporation*. Consent judgment, patent valid, June 12, 1968.

2,962,979, W. C. McCormick, METHOD OF CORRECTING EXISTING TRACK AND ALIGNMENTS AND MEANS FOR PRACTICING IT, **filed** July 18, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1335, *Nordberg Manufacturing Company and William C. McCormick* v. *Plasser American Corporation*.

2,970,861, J. L. Short, LIVESTOCK CARRIER, **filed** June 26, 1968, D.C., N.D. Ohio (Toledo), Doc. C–68–193, *Ronald W. Dean* v. *Fruehauf Corporation*.

2,974,432, Warnock and Hubenerm, PRESS-FREE CREASE RETAINED GARMENTS AND METHOD OF MANUFACTURE THEREOF, **filed** June 10, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49392, *Jack Winter, Inc.* v. *Koratron Company, Inc.*; **3,268,915**, same, PROCESS OF MANUFACTURING PRESS-FREE GARMENT WITH RETAINED CREASES, **filed** June 13, 1968, D.C., E.D. Ky. (Lexington), Doc. 1856, *Cowden Manufacturing Company* v. *Koratron Company, Inc.*

2,974,852, Huss and Kuchenbecker, DISPENSING CARTON, **filed** June 12, 1968, D.C.N.J. (Trenton), Doc. C–592–68, *American Can Company* v. *DSC of Newark (Inc.)*.

2,987,440, Junkmann, Kathol and Richter, INJECTABLE HORMONE PREPARATIONS, **filed** June 4, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1020, *E. R. Squibb & Sons, Inc.* v. *Maizel Laboratories, Inc.*

3,024,518, R. B. Newton, METHOD OF MAKING PILE FABRICS, **filed** Mar. 3, 1967, D.C., W.D. Va. (Lynchburg), Doc. 67–C–6–L, *Deering Milliken Research Corporation* v. *Burlington Industries, Inc.* Dismissed by agreement of parties, May 22, 1968.

3,049,256, G. E. Urban, REFUSE BODY LOADING AND PACKING MECHANISMS, **filed** Dec. 28, 1965, D.C., E.D. Mich. (Detroit), Doc. 27853, *Gar Wood Industries, Inc.* v. *The Heil Co.* Consent judgment, July 10, 1968.

3,064,460, S. J. Dziadulonis, MACHINE FOR REDUCING AND ROUGHENING THE MARGIN OF A SOLE, **filed** Mar. 26, 1968, D.C., Ct. of App., Mass. (Boston), Appeal No. 7102, *Accurate Shoe Machines, Inc.* v. *International Shoe Machinery Corp.* Dismissed upon motion of appellant, June 10, 1968.

3,079,935, T. Padek, AUTOMATIC CLEANING SYSTEM, **filed** July 19, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–619, *Detergent Engineering Corporation* v. *Bill McDavid Oldsmobile, Inc.*

3,086,206, H. Greenberg, END FIRE PLANAR DIPOLE ARRAY WITH LINE TRANSPOSITION BETWEEN DIPOLES AND IMPEDANCE INCREASE TOWARDS FEED, **filed** Oct. 10, 1966, D.C., S.D.N.Y., Doc. 64–C–S39, *Channel Master Corporation* v. *Winegard Co. and RCA*. Consent judgment, defendant, R.C.A. and counterclaims by said defendant are dismissed without prejudice; title amended. Defendant, Winegard, is perpetually enjoined except to the extent licensed by plaintiff, June 20, 1968.

3,086,297, L. A. Kantrowitz, TALKING BOOK, **filed** June 4, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1014, *Marvin Glass & Associates* v. *Mattel, Inc. et al.* **Same, filed** June 20, 1968, D.C., S.D. Tex. (Houston), Doc. CA68–H–516, *Marvin Glass & Associates* v. *Mattel, Inc., and Sears, Roebuck & Co.* **Same, filed** July 3, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1240, *Mattel, Inc. et al.* v. *Marvin Glass & Associates*.

3,100,897, S. Langer, COVERALL, **filed** June 14, 1968, D.C., S.D.N.Y., Doc. 68–C–2426, *Andray Products, Inc.* v. *Gimbel Brothers, Inc. et al.*

3,102,875, H. L. Heiss, POLYURETHANE REACTION PRODUCT AND METHOD FOR MAKING SAME, **filed** Jan. 25, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c150, *Jefferson Chemical Co.* v. *General Tire & Rubber Co.* Agreed order dismissing complaint for lack of venue, June 12, 1968.

3,231,943, Miller and Hohenfeld, WASHER GAIN FOR TIMBER STRUCTURES, **filed** May 16, 1967, D.C., N.D. Ala. (Birmingham), Doc. CA67–279–S, *Malleable Iron Fittings Company* v. *Barron Bethea Company Incorporated*. Judgment, claims are invalid and unenforcable against defendant, permanently enjoining plaintiff from maintaining any other suit against defendant, June 24, 1968.

3,232,761, Allen and Burness, HARDENING OF PHOTOGRAPHIC GELATION LAYERS, **filed** July 16, 1968, D.C.N.J. (Trenton), Doc. 729–68, *Philip A. Hunt Chemical Corporation* v. *Eastman Kodak Company*.

3,235,180, Graham, Wright and Brauckslek, COMBINATION PRESSURE AND TEMPERATURE CONTROL, **filed** July 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1131–F, *Robertshaw Controls Company* v. *Honeywell, Inc.*

3,259,304, L. F. Tichnor, POSTCARDS, **filed** Nov. 13, 1967, D.C., Ct. of App., Mass. (Boston), Doc. App. No. 7025, *Colour Picture Publisher, Inc.* v. *Mike Roberts Color Productions, Inc.* Judgment of the District Court is vacated, case is remanded for further proceedings not inconsistent with the opinion filed today, June 11, 1968.

3,261,377, S. Balut, THREAD FEED CONTROL FOR SHUTTLES, **filed** June 11, 1968, D.C., M.D. Pa. (Scranton), Doc. C–68–246, *Stephen Balut et al.* v. *Bloomsburg Mills, Inc.*

3,268,915. (See 2,974,432.)

3,269,877, Schlossberg and Carrier, PHOSPHATE COATING COMPOSITION, **filed** Mar. 21, 1968, D.C., E.D. Mich. (Detroit), Doc. 31046, *Detrex Chemical Industries, Inc.* v. *Quality Production Co., Inc.* Consent decree, defendant acknowledges validity of patent and acknowledges infringement and agrees to cease and desist from further infringement, June 21, 1968.

3,273,188, W. R. Levack, VACUUM HEAD FOR SWEEPING SWIMMING POOLS, **filed** July 16, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1151WPG, *American Concrete Products Company* v. *Rainbow Plastics*.

3,299,681, C. F. Hautau, PROGRAM CONTROLLED TUBE BENDER, **filed** June 25, 1968, D.C., W.D. Ky. (Louisville), Doc. 5970, *Charles F. Hautau and Allen M. Krass* v. *Conrac Corp. and Ford Motor Co.*

3,305,668, D. C. Smith, CABLE HEATER, **filed** Apr. 12, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c576, *Wrap-On Company, Inc.* v. *David C. Smith*. Consent judgment, complaint and counterclaim dismissed with prejudice, Jan. 16, 1968.

3,313,545, J. R. Bartsch, UNITARY MOLDED GOLF BALL, **filed** July 15, 1968, D.C., E.D. Mich. (Detroit), Doc. 31486, *PCR Patent Development Corporation* v. *Polygolf Incorporated*.

3,325,988, Klein and Bolinger, BALANCED ELASTICIZED MULTIFILAMENT YARN; **3,325,989**, E. D. Bolinger, same, **filed** June 20, 1967, D.C., W.D. Va. (Lynchburg), Doc. 67–C–19–L, *Deering Milliken Research Corporation* v. *Burlington Industries, Inc. and E. I. du Pont de Nemours and Company*. Dismissed by agreement of parties, May 22, 1968.

3,325,989. (See 3,325,988.)

3,335,430, Schwarz and Dokes, SWIMMING POOL ASSEMBLY AND MEANS FOR SUPPORTING SIDEWALLS OF THE POOL, **filed** July 11, 1968, D.C.N.J. (Newark), Doc. 709–68, *Epic Pools Corp.* v. *Hendon Construction Company et al.*

3,338,848, W. D. Hamilton, ADHERENT ACOUSTICAL AND DECORATIVE COATING COMPOSITION, **filed** July 15, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1136–AAH, *Willis D. Hamilton* v. *Blue Ribbon Products, Inc.*

3,387,396, D. G. Smith, DISPLAY DEVICES, **filed** June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1075, *Lava-Simplex Internationale, Inc.* v. *Herbert S. Russcol and Monk, Incorporated*. **Same, filed** June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1074, *Lava-Simplex Internationale, Inc.* v. *Lampcraft Industries*. **Same, filed** June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1073, *Lava-Simplex Internationale, Inc.* v. *Heat Tapes, Inc.*

D. 206,199, B. Zuckerman, GARMENT HANGER, **filed** July 10, 1968, D.C., S.D.N.Y., Doc. 68–C–2806, *Mr. Hanger, Inc.* v. *Warbern Plastics, Inc.*

D. 211,210, Golden, Walker and Tsuji, HOUSING FOR A RADIO TUNER OR SIMILAR ARTICLE, **filed** June 13, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–984–F, *GW Electronics, Inc.* v. *General Mobile Electronics Co. et al.*

DEFENSIVE PUBLICATIONS

PUBLISHED DECEMBER 3, 1968

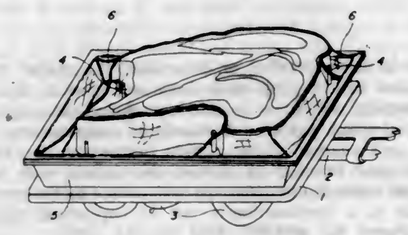
Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

534,488
VACUUM SYSTEM FOR SKIN PACKAGING USING A CURTAIN COATING METHOD AND PACKAGED ARTICLES PRODUCED

Rex Eells and John L. Cameron, both of P.O. Box 431, Kingsport, Tenn. 37662

Filed Mar. 15, 1966. Published Dec. 3, 1968
Class 53—22
2 Sheets Drawings. 14 Pages Specification



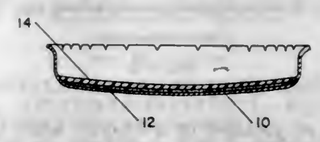
A method for packaging an article including the steps of placing the article on a substrate, curtain coating the article and the substrate with a viscous, molten, thermoplastic composition, and evacuating the atmosphere between the substrate and the coating through apparatus adapted to transmit air through the substrate to a vacuum producing means. Evacuation occurs at least within a border area defined by a perimetric strip having a narrow width extending just beyond the perimeter of the article where it is in contact with the substrate. The package thus formed has a coating of thermoplastic material in intimate contact with the article and the substrate at least within a border area defined by a perimetric strip having a narrow width extending just beyond the perimeter of the article where it is in contact with the substrate. Apparatus for producing such a package includes a support for the substrate and the articles to be packaged, vacuum producing apparatus, an aperture extending through the substrate into the space between the substrate and the coating and connected to the vacuum producing apparatus.

539,561
CONTAINER CLOSURE LINED WITH A THERMOPLASTIC RESIN

Donald C. Davis and Ben T. Pardue, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Apr. 1, 1966. Published Dec. 3, 1968
Class 117—21
1 Sheet Drawing. 8 Pages Specification

A container closure lined with an inner thermoplastic resin, preferably polyethylene, applied in powder form prior to melting and then cooled to solidify. Adhesion of the liner to the closure to form a good seal may be enhanced by an intervening layer of a powdered, wax-type adhesive, preferably a low molecular weight maleated polyethylene. The thermoplastic resin may contain a foaming agent such as sodium bicarbonate. The liner is applied by metering the resin in powder form into the

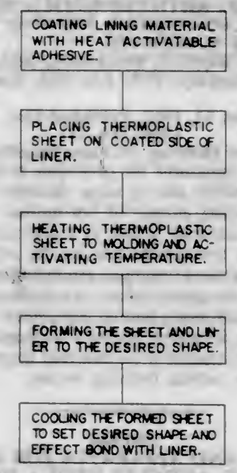


container cap as it moves beneath an appropriate source of supply. The closures are then passed beneath a heating device which fuses the powder to a molten film which is cooled to cause solidification of the liner.

599,087
METHOD FOR SECURING A LINING TO A SHAPED THERMOPLASTIC ARTICLE

Charles G. Chandler, % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Dec. 5, 1966. Published Dec. 3, 1968
Class 156—224
1 Sheet Drawing. 10 Pages Specification

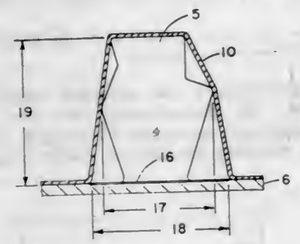


A textile or other type lining is secured during the molding step to a shaped article formed from a thermoplastic material. This is accomplished by the steps of coating a lining material with a heat activatable adhesive, bringing a sheet of thermoplastic material from which the article is to be formed in contact with the coating, activating the coating by applying heat either from the sheet if it is pre-heated or from an external source, molding the sheet by vacuum forming to the desired configuration, and cooling to set the shape and effect a bond between the shaped sheet and the lining.

611,202
CURTAIN COATING AN ARTICLE ON A POROUS SUBSTRATE

John J. Murphy and Ernest L. Myers, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Dec. 23, 1966. Published Dec. 3, 1968
Class 117—105.3
1 Sheet Drawing. 18 Pages Specification



Articles are packaged on a substrate which is air-permeable except for an air impermeable area approximating the vertically downward projection of the article. The air pressure beneath the substrate is reduced and a curtain of viscous molten thermoplastic material is deposited over the article and substrate. The air impermeable area is somewhat larger than the vertical projection and is formed from an interposed sheet beneath the substrate or by impregnating the upper or lower surface of the substrate with a printing ink, paper varnish or lacquer, aqueous emulsion of a synthetic resin, resinous adhesive, or the like.

608,607
METHOD AND APPARATUS FOR CURTAIN COATING ARTICLES WITH A HOT MELT ON A CONTINUOUS MOVING AIR-PERMEABLE SUBSTRATE

Rex Eells and David E. Stooksbury, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Jan. 11, 1967. Published Dec. 3, 1968
Class 264—37
1 Sheet Drawing. 16 Pages Specification

Method and apparatus for packaging articles supported on an air-permeable web in large numbers at high speed employing a falling curtain of hot molten rather viscous thermoplastic material which is continuously deposited as a preferably transparent film on the articles and web while in motion above vacuum producing means so as to draw the film into close contact. An endless moving band can be positioned along one or both sides of the moving web so as to intercept excess thermoplastic material which can advantageously be removed from the band and returned to the curtain forming means.

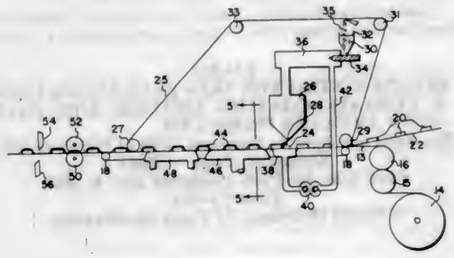
650,046
METHOD AND APPARATUS FOR CURTAIN COATING ARTICLES WITH A HOT MELT ON A CONTINUOUS MOVING AIR-PERMEABLE SUBSTRATE

Rex Eells and David Emory Stooksbury, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Continuation-in-part of application Ser. No. 608,607, Jan. 11, 1967. This application June 29, 1967. Published Dec. 3, 1968
Class 264—90
2 Sheets Drawings. 16 Pages Specification

Method and apparatus, as illustrated in FIGURE 3, for preparing periodical inserts by packaging articles supported on an air-permeable web in large numbers at high speed employing a falling curtain of hot molten rather viscous thermoplastic material, which is continuously deposited as a preferably transparent film on the articles and web while in motion above vacuum producing means so as to draw the film into close contact. The web may have repeating printing or decorations thereon with the articles placed at certain precise locations on the web in order to fit the printing or decoration. An endless moving band can be positioned along one or both sides of the moving web so as to intercept excess thermoplastic material which can advantageously be removed from the band and returned to the curtain forming means. These bands may be used to provide the curtain with neat, straight edges and to define the area coated by the curtain.

This is a continuation-in-part of copending application, Serial No. 608,607, filed Jan. 11, 1967.



620,292
MODIFYING POLYMERS WITH CYANOGEN AZIDE

David S. Breslow, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Mar. 3, 1967. Published Dec. 3, 1968
Class 260—75
No Drawing. 8 Pages Specification

Hydrocarbon polymers such as polyolefins, polystyrene, natural rubber, etc. and polyesters of dicarboxylic acids with glycols such as poly(ethylene terephthalate), etc. can be cross-linked or otherwise modified with small amounts of cyanogen azide. When modified by treating with small amounts of cyanogen azide, the products have increased susceptibility toward the application of dyes, coatings, adhesives, as well as improved printability, emulsifiability and antistatic properties while retaining their solubility. The cross-linked products obtained by using slightly larger amounts of cyanogen azide are in addition tough, resilient, and insoluble in solvents for the untreated polymer.

Cyanogen azide is an unstable liquid having the formula N_3CN and is best used dissolved in a solvent.

In preparing the modified polymers the cyanogen azide is incorporated in the polymer as for example by dissolving in a mutual solvent and then evaporating the solvent. The polymer plus the cross-linker is then subjected to either heat or irradiation. In general from about 0.1% to about 10% of cyanogen azide will be used. If modification is to be accomplished by heating, a temperature of 20° C. to 150° C. will be used. If irradiation is used, the wave lengths will be in the range of from about 2000A to 3000A.

629,901
ANHYDROUS PREPARATION OF MONOVINYLACETYLENE UTILIZING CATALYST SYSTEM CONTAINING CATALYST REACTION CONTROL DILUENT

Ransom Edward Ashmore, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 11, 1967. Published Dec. 3, 1968
Class 260—678
No Drawing. 8 Pages Specification

An essentially anhydrous cuprous chloride catalyst system for polymerizing acetylene to monovinylacetylene which comprises substantially (1) about 10–95 volume percent of a solution of cuprous chloride and an amine hydrochloride selected from the group consisting of primary and secondary amine hydrochlorides containing not more than six carbon atoms, in an anhydrous liquid carboxylic acid amide containing not more than six carbon atoms, said amide amounting to less than 53% by weight of said solution and (2) about 90–5 volume percent of hydrocarbon ether as reaction control diluent. A preferred ether is diphenyl ether. The reaction control diluent is a hydrocarbon ether having the formula R—O—R′ wherein R and/or R′ are alkyl, cycloalkyl, aralkyl or aryl radicals optionally substituted with halogen or alkyl groups. Said diluent should boil above 100° C. and preferably between 150° C. to about 200° C. The melting point of the pure reaction control diluent must be at or below the catalyst system reaction temperatures; included are: dihexyl ether, diphenyl ether, benzyl-n-butyl ether, p-chlorophenyl methyl ether, p-tert. butylphenyl methyl ether, p-tert. butylphenyl ethyl ether, p-tert. butylphenyl isopropyl ether, p-tert. butylphenyl benzyl ether and dibenzyl ether.

Said reaction control diluent forms an immiscible phase and is incorporated into said catalyst system in said polymerization followed by recovering monovinylacetylene from the resulting exit gas.

The use of reaction control diluent achieves a practical degree of tar solvency, high yield of monovinylacetylene, a high conversion of acetylene and permits more catalyst flexibility. Improved catalyst performance and life is achieved.

661,222
AZO DYES FROM ISOINDOLO(1,2-b)BENZOTHIAZOLES

Gether Irick, Jr., % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Aug. 17, 1967. Published Dec. 3, 1968
Class 260—158
No Drawing. 32 Pages Specification

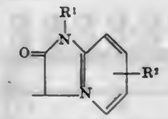
Water-insoluble azo compounds prepared by coupling certain diazotized amines with an isoindolo(1,2-b) benzothiazole coupling component are useful as dyes for hydrophobic fibers.

663,484
PHENYLAZO CATIONIC DYES HAVING AN AZAINDOLE-2-ONE COUPLING COMPONENT

James M. Straley and John G. Fisher, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Aug. 28, 1967. Published Dec. 3, 1968
Class 260—152
No Drawing. 11 Pages Specification

Monoazo cations useful in the dyeing of acrylic, modacrylic and acid modified polyester textile materials contain an aniline diazo component and a coupling component having the formula



wherein R^1 and R^2 each are hydrogen or lower alkyl.

677,040
HETEROCYCLIC MONOAZO DYES CONTAINING AN N - VINYLSULFONYLETHYL - 1,2,3,4 - TETRAHYDROQUINOLINE GROUP

John I. Dale III, and Max A. Weaver, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Oct. 23, 1967. Published Dec. 3, 1968
Class 260—155
No Drawing. 18 Pages Specification

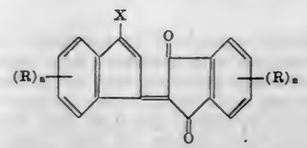
Water-insoluble monoazo compounds containing a heterocyclic diazo component and an N-vinylsulfonylethyl-1,2,3,4 - tetrahydroquinoline coupling component which are useful as dyes for hydrophobic protein or synthetic textile materials.

680,302
NOVEL DERIVATIVES OF BIINDONE

Gether Irick, Jr., % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Nov. 3, 1967. Published Dec. 3, 1968
Class 260—590
No Drawing. 12 Pages Specification

Water-insoluble biindone compounds having the formula



wherein X is halogen, unsubstituted or substituted alkoxy, phenoxy or naphthoxy; R is hydrogen or a substituent; and *n* is 1 or 2. The disclosed compounds are useful as dyes for hydrophobic textile materials such as cellulose acetate, polyamide and polyester fibers.

REISSUES

DECEMBER 3, 1968

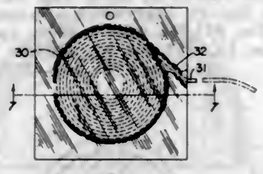
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,493
SKIN-PACKAGE

Carl B. Stoker, Jr., Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Original No. 3,253,705, dated May 31, 1966, Ser. No. 221,559, Sept. 5, 1962. Application for reissue Apr. 20, 1967, Ser. No. 641,058

6 Claims. (Cl. 206—56)



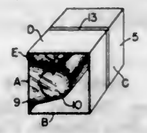
A skin package is provided by placing a dispensable bulk of a long length of flexible material to be packaged between a backing through which a vacuum can be drawn and a thermostretchable and heat-sealable film, with an end of the material extending from the film and backing, and then by heating the film and drawing a vacuum through the backing, the film is stretched over the bulk of the material and heat sealed thereto, with an end of the material extending from the package.

26,494
PACKAGE

Carl B. Stoker, Jr., Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Original No. 3,246,745, dated Apr. 19, 1966, Ser. No. 360,250, Apr. 16, 1964. Application for reissue Apr. 20, 1967, Ser. No. 641,059

8 Claims. (Cl. 206—65)



A skin package is provided by placing material to be packaged between a backing through which a vacuum can be drawn and a thermostretchable and heat-sealable film, and then by heating the film and drawing a vacuum through the backing, the film is stretched over the backing and heat sealed thereto. The backing is then shaped to enclose the article.

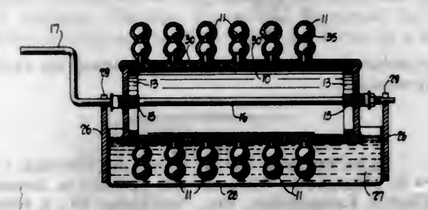
26,495
CERAMIC SHELL MOLDS AND METHODS OF PRODUCTION

Claude H. Watts, Lyndhurst, and Robert A. Horton, Chesterland, Ohio, assignors to Precision Metalsmiths, Inc.

Original No. 3,249,972, dated May 10, 1966, Ser. No. 341,498, Jan. 31, 1964. Application for reissue June 15, 1966, Ser. No. 562,974

23 Claims. (Cl. 164—26)

In the art of investment casting, a refractory mold and process of making the same characterized by the formation of a mold body around a set-up which is then removed to provide a passage defined by an inner surface of the mold body and pattern cavities gated into the passage, the passage being adapted to receive a core



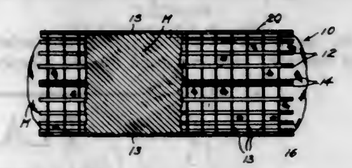
having portions spaced from the inner surface of the mold body to define a sprue passageway communicating with the pattern cavities.

26,496
MEAT CASING

John Krauss, Jamaica Estates, and Richard J. Barbu, Lindenhurst, N.Y., assignors to Markbar Corporation, Garden City, N.Y., a corporation of New York

Original No. 3,248,905, dated May 3, 1966, Ser. No. 389,837, Aug. 17, 1964. Application for reissue Nov. 21, 1966, Ser. No. 615,871

1 Claim. (Cl. 66—193)



A fabric consisting of two panels having adjoining selvage edges, each consisting of a warp-wise strand of knitted chain loops. Each panel has a plurality of parallel lines of warp-wise, knitted chain loops providing courses for an elastic cord, the warp portions of which form bites which combine with the selvage edge chain loops, as knitted components thereof, to join the panels together. The bites of elastic cord from each panel alternate along the strand of chain loops constituting the joined selvage edges of the fabric. The elastic cord is covered by two layers of thread. Each layer is composed of right and left hand filaments, adjacent coils of the outer layer threads being in continuous contact when the cord is in relaxed state.

26,497
X-RAY FILM EXPOSURE MEASURING SYSTEM HAVING MEANS FOR TERMINATING THE EXPOSURE

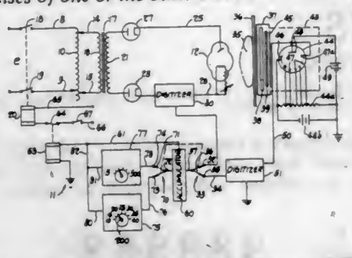
Walter E. Splain, Solon, Ohio, assignor, by mesne assignments, to Picker Corporation, White Plains, N.Y., a corporation of New York

Original No. 3,356,847, dated Dec. 5, 1967, Ser. No. 475,604, July 28, 1965. Application for reissue Dec. 22, 1967, Ser. No. 698,062

16 Claims. (Cl. 250—95)

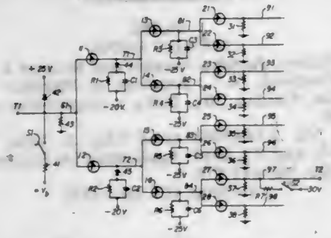
In MAS control, X-ray tube current is integrated and digitized to form a train of pulses, each pulse representing a predetermined MAS. In phototiming control, phototube

current is integrated and digitized to form a train of pulses. The pulses of one or the other train are counted and, when



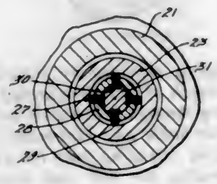
a preselected number of pulses are counted, the exposure is terminated.

26,498
ELECTRONIC SWITCHING NETWORK
Max S. Macrander, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Original No. 3,184,552, dated May 18, 1965, Ser. No. 96,957, Mar. 20, 1961. Application for reissue Apr. 18, 1966, Ser. No. 546,127
20 Claims. (Cl. 179—18)



19. An automatic switching system comprising a plurality of cascaded matrices, each of said matrices including first and second multiples arranged to provide intersecting crosspoints, means responsive to a simultaneous marking of the ends of a desired path at a multiple in one of said matrices and a multiple in another of said matrices for initiating a systematic search sequentially and individually over a plurality of self-seeking paths extended via randomly selected crosspoints in said cascaded matrices, and means responsive to the completion of a first of said paths between said marked multiples for terminating said systematic search over said paths.

26,499
ELECTROLYTIC HONING DEVICE
John H. Greening, Birmingham, Mich., assignor, by mesne assignments, to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan
Original No. 3,267,018, dated Aug. 16, 1966, Ser. No. 233,772, Oct. 29, 1962, which is a continuation-in-part of Ser. No. 811,914, May 8, 1959. Application for reissue Mar. 14, 1967, Ser. No. 626,649
14 Claims. (Cl. 204—217)



An electro-chemical honing apparatus having a rotatable and reciprocable cathode body with a plurality of honing stones carried by said body in an electrically non-conductive relation to said cathode body and movable against the work surface of a bore to remove the metal oxides left on the surface by electrolytic action.

PLANT PATENTS

GRANTED DECEMBER 3, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing

2,847
ROSE PLANT
George D. Sitton, Sr., Rte. 3, Box 29, Lindale, Tex. 75771
Filed Dec. 16, 1966, Ser. No. 602,429
1 Claim. (Cl. Plt.—20)

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique color.

2,848
CARNATION PLANT
Pasquale Mercuri, 189 Post Road, and George Mercury, 260 Landham Road, both of Sudbury, Mass. 01776
Filed Mar. 11, 1966, Ser. No. 533,732
1 Claim. (Cl. Plt.—70)

1. A new and distinct variety of carnation plant as herein disclosed, characterized as to novelty by a quilled petal structure.

2,849
ROSE PLANT
David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California
Filed June 14, 1967, Ser. No. 646,132
1 Claim. (Cl. Plt.—24)

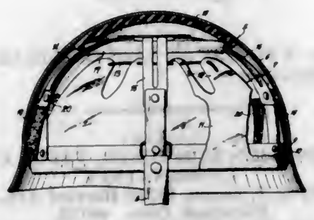
1. A new and distinct variety of rose plant of the floribunda (hybrid polyantha) class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous plant having an attractive, semi-upright, bushy and well-foliaged plant habit, a very floriferous habit, with the flowers usually borne in small clusters on short to medium length stems typical of a good floribunda habit, excellent urn-shaped buds and an attractive high-centered open flower form, medium sized flowers of quite double petalage, and a distinctive light to medium yellow flower color which remains attractive at all times.

PATENTS

GRANTED DECEMBER 3, 1968

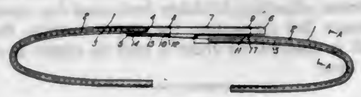
GENERAL AND MECHANICAL

3,413,656
PROTECTIVE HELMETS
German Vogliano and Dieter Beckmann, both of 12 Forststrasse, 1 Berlin-Zehlendorf 37, Germany
Filed June 30, 1965, Ser. No. 468,313
1 Claims. (Cl. 2—3)



A protective helmet including internal and external shells interconnected by "Velcro" strips so that upon the application of a blow thereto the strips will be disconnected whereby the external shell will rotate relative to the internal shell.

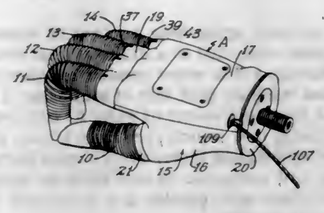
3,413,657
GARMENT WAISTBANDS
Cecil Stanley Sheriff, Bishopbriggs, Scotland, assignor to D. & H. Cohen Limited, Glasgow, Scotland, Great Britain
Filed Sept. 16, 1966, Ser. No. 580,011
7 Claims. (Cl. 2—221)



A garment waistband has a main tunnel-formation with a secondary or auxiliary tunnel-formation therein, one longitudinal side of the auxiliary tunnel being attached to the corresponding side of the main tunnel whilst the other longitudinal side of the auxiliary tunnel is free. A resiliently extensible belt is located within the auxiliary tunnel and one end of the belt is anchored towards one end thereof. Fastening means are provided to connect the other end of the belt to the anchored end of the belt.

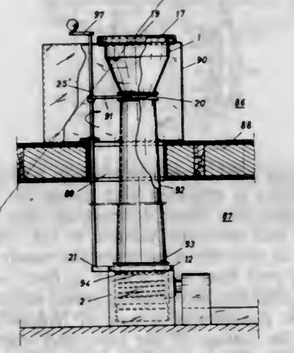
3,413,658
ARTIFICIAL HAND HAVING A BODY CONSTRUCTED FROM SEPARATE MOLDED PLASTIC PARTS FOR EASIER REPLACEMENT OF DAMAGED PARTS
Daniel B. Becker, 152 W. Stevens, St. Paul, Minn. 55107
Filed Oct. 20, 1965, Ser. No. 498,439
12 Claims. (Cl. 3—12.7)

An artificial hand, the body portion of which is made of molded plastic. The body is made up of a first portion shaped to simulate the palm portion of the hand, a second portion shaped to simulate the back of the hand, and a knuckle forming section interfitting to the palm and hand back portions. Flexible fingers are supported by the knuckle forming section. The fingers are flexed by a level



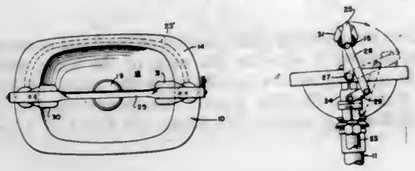
means within the hand body connected to the fingers by links.

3,413,659
DEVICE IN ELECTRICAL CLOSETS
Hans Josef Nordstedt and Lars Folke Delin, Amal, Sweden, assignors to Aktiebolaget Hakanssons Industrier, Amal, Sweden, a corporation of Sweden
Filed July 11, 1966, Ser. No. 564,089
Claims priority, application Sweden, July 15, 1965, 9,339/65
21 Claims. (Cl. 4—131)



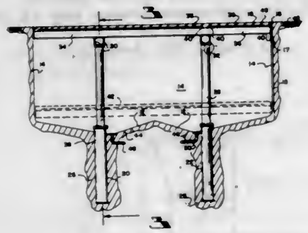
1. In an electric closet, two compartments, one of said compartments arranged on the top of the other compartment, the upper one of these compartments comprising a closet chair tapering conically downwards and the other compartment comprising an electric combustion chamber, the lower end of said closet chair provided with a lid adapted to be swung to the side and the upper end of said combustion chamber provided with a cover adapted to be swung away to the side in the same direction as said lid, said cover being greater in diameter than said lid and adapted to perform a coordinated swinging movement until one of its borders is situated approximately under the corresponding border of said lid before said lid is brought to participate in said swinging movement.

3,413,660
EYE WASH FOUNTAIN
Carmen John Lagarelli and John G. Pecis, Wilmington, Del., assignors to Speakman Company, Wilmington, Del.
Filed July 29, 1966, Ser. No. 568,828
2 Claims. (Cl. 4—166)



1. In an eye wash, comprising a source of water under pressure, a basin connected to a drain, at least two aerating nozzles having a first water conduit connected thereto, said nozzles being on each side of said basin, a second water conduit from said source of water to said first water conduit, a valve in said second conduit to initiate the flow of water, the combination therewith of a push bar pivoted on said basin and connected to said valve to initiate the flow of water from said nozzles and retractable shields over said aerator nozzles.

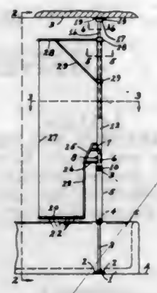
3,413,661
SWIMMING POOL AND COVER CONSTRUCTION
Norman Jack Ross, 4415 N. Arcadia, Phoenix, Ariz. 85018
Filed Oct. 21, 1965, Ser. No. 499,561
2 Claims. (Cl. 4—172)



A swimming pool cover construction wherein a swimming pool bowl is provided with means for raising and lowering a deck-like cover downwardly into the bottom of the pool and upwardly relative to the upper portion of the pool so that the cover may alternately be used as a swimming pool floor and a deck in flush relation with pool coping and the surrounding areas; said cover being supported on plungers of a pair of hydraulic cylinders recessed in the bottom of the pool, and wherein a fluid pressure supply means is adapted to deliver water into the cylinders, such that the cylinders are operable by water under pressure, and which is compatible with water in the pool should leakage occur from the cylinders into the pool.

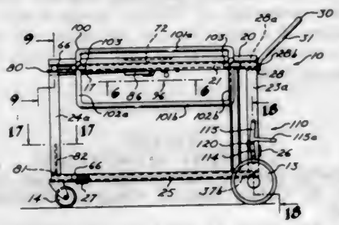
3,413,662
BATH SEATS
Robert W. Stayton, 420 N. Main St., Eldorado, Ohio 45321
Filed Dec. 21, 1966, Ser. No. 603,657
2 Claims. (Cl. 4—185)

The invention pertains to bath seats providing means by which invalids or semi-invalids may safely enter and leave a bath tub and which is capable of being operated solely by the user. The device is easily installed entirely independently of the bath tub and may be swung clear of the bath tub when not in use, thereby eliminating any



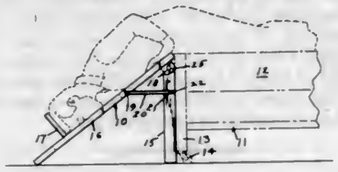
obstruction of the bath tub when the bath tub is to be used by noninvalids.

3,413,663
COMBINATION STRETCHER, TABLE, CHAIR COMBINATION
David T. Swann, 16309 Harvard Ave., Cleveland, Ohio 44128
Filed Feb. 23, 1967, Ser. No. 617,943
12 Claims. (Cl. 5—81)



There is disclosed herein a cart for use in hospitals and similar institutions for transporting supplies, the cart including means affording foldable back and leg rests and further means for elongating the upper surface thereof whereby it is convertible from a cart to either a wheelchair or a litter.

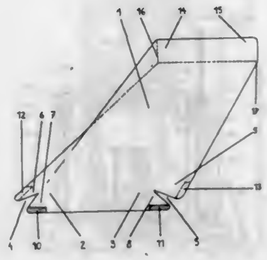
3,413,664
DECLINING BOARD
Ernest Harold Dahlberg, 917 Lincoln Ave., Erie, Pa. 16505
Filed Nov. 9, 1966, Ser. No. 593,007
2 Claims. (Cl. 5—327)



The body support disclosed herein is for the purpose of supporting the torso and head of human being in an inclined position, so that liquid will clear from his throat and lungs. The device is made up of a vertical angle suitable to be supported on a floor beside a bed and a torso support attached to the vertical legs and extending downward and having a head rest on which the head of the

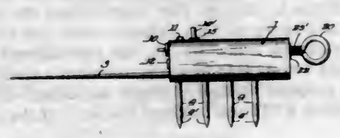
individual can be rested. The legs are pivotally supported to the torso support so that the device can be folded up for storage.

3,413,665
UNDERSHEET FOR BEDS AND THE LIKE
André Robert Amet, Gerardmer, France, assignor to Ste Linvosges, Gerardmer, France, a company of France
Filed Aug. 9, 1967, Ser. No. 659,478
Claims priority, application France, Aug. 26, 1966, 74,351
3 Claims. (Cl. 5—334)



Undersheet for covering a mattress characterised by a suitable slot on at least one of its corners, each of the folds thus formed having, one on its outer face, the other on its inner face, bands adhesive to one another. The corners of the undersheet not provided with slots are sewn to form angled sections.

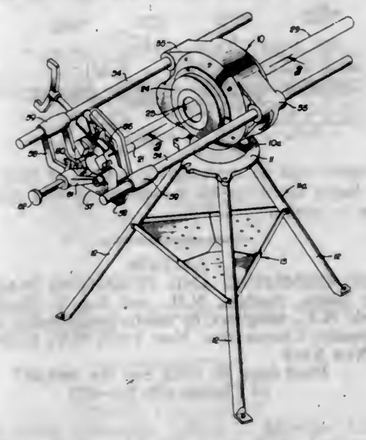
3,413,666
COMBAT WEAPON
Arthur G. Johnson, Jr., 231 W. Terra Cotta, Crystal Lake, Ill. 60014
Filed Nov. 14, 1966, Ser. No. 593,801
1 Claim. (Cl. 7—14.1)



A combat weapon comprising a chambered handle carrying a blade extended longitudinally from one end thereof, the handle end having a liquid discharge nozzle therein communicating with the chamber. A hand-operated pump is arranged in the handle communicating with its chamber for expelling a sight disabling liquid therefrom through the nozzle. A plurality of relatively spaced spikes carried by the handle longitudinally thereof. A second chamber in the handle opening onto its opposite end for receiving a garroting line therein.

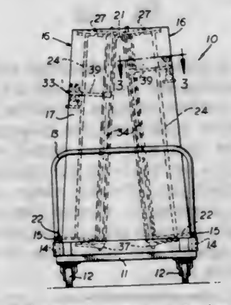
3,413,667
UNIVERSAL SUPPORTING AND DRIVING APPARATUS FOR PIPE SUBJECTED TO THREADING
Howard N. Behnke, Monterey Park, Calif., assignor to Collins Machinery Corporation, Monterey Park, Calif., a corporation of California
Filed Aug. 1, 1966, Ser. No. 569,143
12 Claims. (Cl. 10—89)

The disclosure concerns portable apparatus for centering and rotating workpieces, such as pipe to be threaded, and in which work gripping jaws have work release positions in which each jaw is elongated in a direction normal to an axial radial plane, the jaw being rotatable by a



lever extending radially in that jaw position, the lever being spaced from the jaw.

3,413,668
PAPER PADDING AND TRANSPORT DEVICE
Alex M. Bak and Richard P. Wojcik, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,781
6 Claims. (Cl. 11—1)

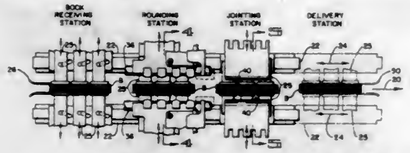


A paper padding and transport device having a plurality of padding racks and pressing units and which is adjustable to accommodate various sizes of paper as well as varying heights of paper stacks in the padding racks.

3,413,669
MECHANISM FOR CONVEYING UNBOUND BOOKS INTERMITTENTLY THROUGH A ROUNDING AND BACKING MACHINE
James H. Thorp, West Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed Feb. 1, 1967, Ser. No. 613,211
6 Claims. (Cl. 11—5)

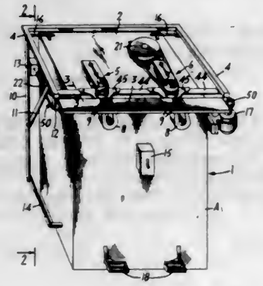
A light weight book conveying mechanism having parallel carrier rails which reciprocate longitudinally in timed relation with the operation of book forming means at various machine stations, which rails carry light weight book engageable jaws movable toward and away from one another to grip the books during movement of said rails in one direction, and which jaws release said books for shaping by said forming means during retrograde movement; said mechanism residing in a rounding and backing machine having cams which operate said book conveying mechanism, and said book forming means cy-

clically to advance said books from one station to the next and to form said books at one of said stations during



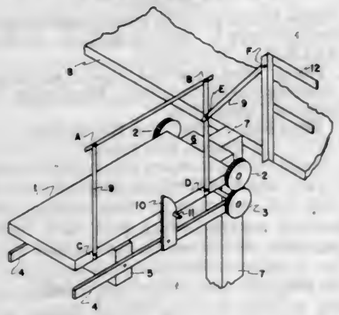
each cycle with no more than one third of each machine cycle being taken up by movement of said books from station to station.

3,413,670
SHOE TRIMMING AND FINISHING MACHINE
Lester Gidge, Nashua, N.H., and Ben V. Dardig, New York, N.Y., assignors, by mesne assignments, to United Dynamics Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,467
22 Claims. (Cl. 12—87)



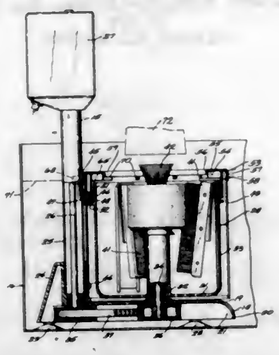
Apparatus is provided for trimming and finishing a shoe based by guiding the base against a rotating cutter and/or scouring surface using a template to which the shoe at the heel base is fastened, the fastening preferably employing snap-on male studs and female receptacles. A first guide surface is provided for the template. An additional guide surface is provided above the template against which is transversely pressed the joint between the shoe upper and the side edge of the outsole. Maneuvering the shoe against the two guide surfaces is improved by a floating table.

3,413,671
GANGWAY
Robert W. Conner, Alvin, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,219
5 Claims. (Cl. 14—71)



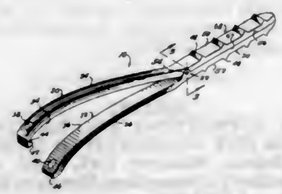
A retractable gangway to provide access from a loading dock to a railroad tank car wherein the platform portion and counterweight converge. The gangway retracts to a vertical position when not in use.

3,413,672
BASKET CAP FOR GLASS WASHING MACHINE
John F. Gallo, 3530 19th Ave., Kenosha, Wis. 53140
Filed May 29, 1967, Ser. No. 642,073
10 Claims. (Cl. 15—76)



Disclosed herein is a cap or bumper ring for a glass washing machine of the type having a motor driven basket and brush assembly which is rested in a sink basin or tank partially filled with water. The cap is constructed of an impact resistant plastic and is in the form of an annular ring with inner, outer and intermediate concentric depending flanges. The intermediate flange is relatively deep as compared with the other flanges and is located outside the lip or rim of the basket and extends below the rim to prevent lemon rinds, debris, etc., from getting into the area of the motor switch actuating arm and to prevent water from overflowing the basket rim. Radial vanes or jetties located on the undersurface of the cap return the centrifugally swirling water into the center of the basket as it climbs to the top. The vanes deflect the water in the form of a series of high velocity water jets having an inwardly curved trajectory. In one embodiment, the cap is provided with upstanding tabs to mount a stationary brush which projects inwardly toward the center of the basket and which is utilized to clean the stem of the glass.

3,413,673
HANDLE MEANS FOR A DETACHABLE CLEANING PAD
Carl S. Gewirz, 502 Garfield St. NW., Washington, D.C. 20008
Filed Mar. 29, 1966, Ser. No. 538,385
10 Claims. (Cl. 15—105)



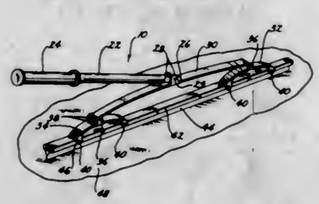
Handle for use with a cleaning pad. The handle is insertable into a socket of the pad and has pivoted members which move away from each other to grip the interior of the pocket of the pad.

3,413,674
REVERSIBLE BUFFING PAD
Thomas H. Reid, 9341 Piedmont, Detroit, Mich. 48228
Filed Jan. 16, 1967, Ser. No. 609,578
2 Claims. (Cl. 15—230.12)



A reversible buffing wheel having piled opposite surfaces one of which acts as a buffing surface and the other of which acts as a cushioning surface for the buffing surface. The buffing wheel has a continuous piled surface from one face to the other with the pile extending around the edge. This continuous piled surface is formed by adhering two piled members in back-to-back relationship, steaming the thus joined article and tumbling and drying to cause intermixing of the tufts at the periphery of the article.

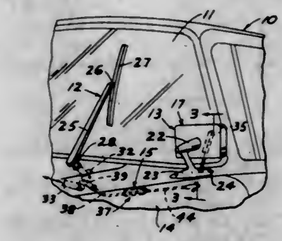
3,413,675
HAND WIPER FOR AUTO BODIES
Dick O. Westrum, Stratford, Iowa 50249
Filed Jan. 3, 1967, Ser. No. 607,028
1 Claim. (Cl. 15—245)



A hand operated wiper including elongated handle pivotally attached to elongated flexible frame member carrying a wiper or cleaning element adapted to flex sufficiently for matingly conforming to the exterior surface of an automobile body or the like.

3,413,676
REAR VIEW MIRROR WIPER ASSEMBLY
Otto A. Engel, 8086 Westwood St., Detroit, Mich. 48228
Filed May 19, 1967, Ser. No. 639,729
7 Claims. (Cl. 15—250.27)

A wiper apparatus for a vehicle rear view mirror mounted on a vehicle fender, and including a rear view mirror wiper which is mounted on an arm for movement over the surface of the rear view mirror. The rear view mirror wiper arm is nomally biased toward the rear view mirror. The rear view mirror wiper arm is oscillated backwardly and forwardly to move the wiper over the rear view mirror by means of a driving arm that is hingedly connected at one end thereof to the rear view mirror wiper arm and at the other end thereof to a plate attached to



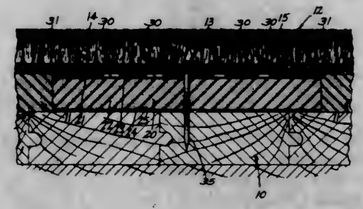
the oscillating shaft on which the regular vehicle windshield wiper is mounted.

3,413,677
APRON CLEARERS
David M. Ford, Charlotte, Alfred C. Morrow, Lowell, and Harry S. Barr, Jr., Charlotte, N.C., assignors to Pneumafil Corporation, Charlotte, N.C., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,900
16 Claims. (Cl. 15—256.51)



An apparatus for clearing a moving surface of foreign matter by supporting a wiping apron for movement on a support adjacent the surface to be cleared, with the apron contacting and moving with respect to the support and the surface to be cleared. The coefficient of friction between the support and the apron is greater than the coefficient of friction between the surface to be cleared and the apron so that the movement of the surface to be cleared coupled with the force with which the apron is forced against the surface imparts movement to the apron which is restricted by the friction between the support and the apron, thereby producing a wiping action on the surface to be cleared.

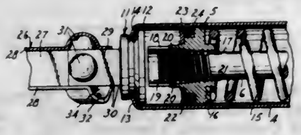
3,413,678
CARPET SEAM SECURING DEVICE
Joris M. Krantz, 3132 Edgewood Ave. N., Minneapolis, Minn. 55427
Filed Sept. 28, 1966, Ser. No. 582,698
4 Claims. (Cl. 16—16)



A substantially flat elongated strip of material having upwardly projecting barbs adapted to receive thereon along an imaginary seamline extending parallel with the longitudinal axis of said strip both edges of the carpet

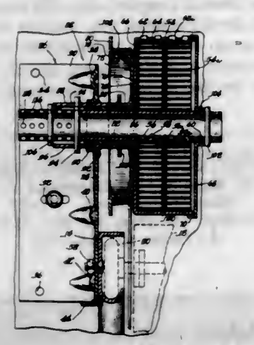
making up a seam in overlying relationship to said strip, adhesive on the upper surface of said strip to prevent vertical movement of the carpet relative to the strip, padding material affixed to the under surface of the strip so that the strip and the padding material have a thickness approximately equal to standard carpet padding, and means for affixing the strip to a floor along the desired seam line.

3,413,679
DOOR CLOSER AND MOUNTING MEANS THEREFOR
Russell W. Waldo, 863 Ottawa Ave., St. Paul, Minn. 55107
Filed July 10, 1967, Ser. No. 652,118
7 Claims. (Cl. 16—52)



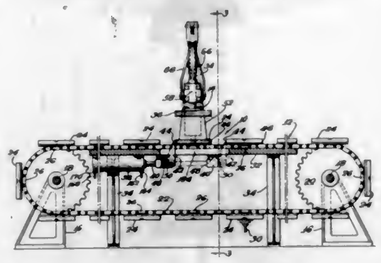
A hydraulic door closer including a cylinder and a piston equipped reciprocatory piston rod having means for pivotally mounting the rod to a door frame, the piston having a valve adjustable responsive to relative rotary movement between the cylinder and the piston rod. A mounting bracket adapted to be secured to a door has a releasable connection with the cylinder for holding the cylinder against rotation on its axis and permits easy removal of the cylinder from the bracket.

3,413,680
SPIRAL COUNTERBALANCE UNIT
Dale H. Rowe and Roy Ralph Jackwig, Galesburg, Ill., assignors to Rowe Manufacturing Company, Galesburg, Ill., a corporation of Illinois
Filed July 30, 1965, Ser. No. 476,009
6 Claims. (Cl. 16—198)



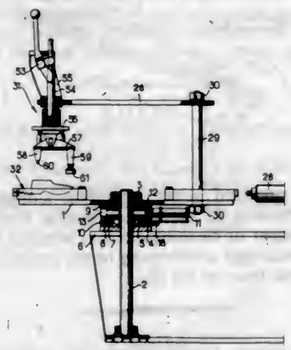
There is disclosed a counterbalancing spring unit for overhead garage doors comprising a bracket, a shaft fixed with respect to the bracket, a rotatable drum on the shaft and a spiral spring having an inner end fixed with respect to the shaft and an outer end connected to and rotatably biasing the drum. A cable is wound on the drum and has its outer end detachably connected to the bracket for maintaining the spiral spring in a pretensioned condition prior to installation of the unit.

3,413,681
APPARATUS FOR FLATTENING POULTRY MEAT
Joseph Manaster, 1238 W. George St., Chicago, Ill. 60657
Filed June 9, 1966, Ser. No. 556,312
4 Claims. (Cl. 17—25)



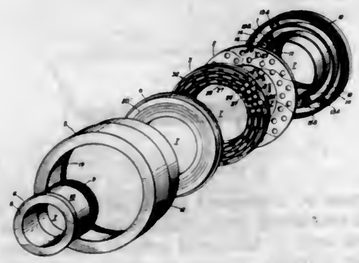
A conveyorized meat-tenderizing machine for flattening poultry meat having a bone extending therefrom is provided by a plurality of plates that are advanced in step-wise fashion into register with a press plate for tenderizing the meat. Each plate has a depression therein for accommodating the bone; the press plate is formed with teeth; and air-cylinder means are utilized for forcing the press plate against the meat so as to tenderize without crushing the bone. Lost motion means accommodate the interaction between the air-cylinder and press plate. Separate air-cylinder means are provided for advancing the plates in step-wise manner.

3,413,682
INJECTION MOULDING APPARATUSES WITH ROTATING PLATFORM
Roland Wucher, 24 Rue Jean-Allemane, Villetaneuse, Seine-St-Denis, France
Filed Aug. 13, 1965, Ser. No. 479,535
Claims priority, application France, Aug. 31, 1964, 986,684; Apr. 20, 1965, 13,821
8 Claims. (Cl. 18—4)



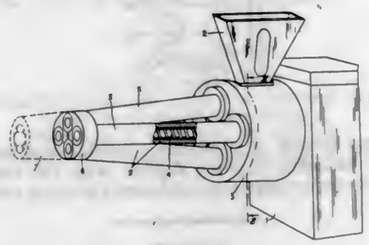
In an injection moulding machine having several moulds fixed at the periphery of a rotatable platform, a mechanism for intermittently rotating the platform so that it reaches the end of its movement at approximately zero speed, a means for mounting pushrods for said moulds, by suspending them at the periphery of one plate spaced from the platform, and an arrangement whereby the moulds are fitted within respective open front presses made of cut metal plates.

3,413,683
ANNULAR BI-COMPONENT SPINERETTE ASSEMBLY
Roy Lee Yelverton, Jr., Gulf Breeze, Fla., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Sept. 24, 1965, Ser. No. 490,051
2 Claims. (Cl. 18—8)



For spinning economically large numbers of bi-component fibers from each spinning position, an annular bi-component spinnerette is provided having a novel spin dope distribution assembly associated therewith.

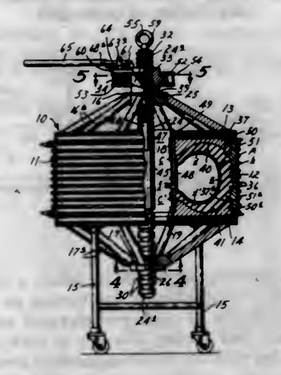
3,413,684
EXTRUSION MACHINE WITH VARIABLE DISCHARGE
Franco Prandi and Gianpiero Prandi, both of Via Tevere 3, Oleggio, Novara, Italy
Filed Sept. 8, 1966, Ser. No. 577,858
Claims priority, application Italy, Sept. 30, 1965, 9,594/65; Dec. 6, 1965, 11,972/65; Jan. 29, 1966, 13,949/66
3 Claims. (Cl. 18—12)



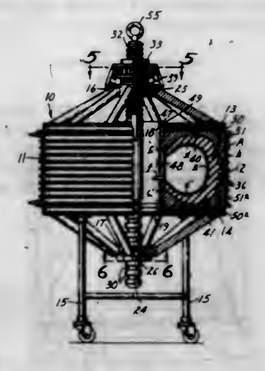
An extruder includes a cylindrical feed head having an internal feed cavity which is connected at the top of the head to a hopper for the plastic material to be extruded. A plurality of cylinders separately connected into an end face of said cylindrical feed head and have inlets inside the cavity for receiving the material to be plasticized. An extruder screw is arranged at each cylinder and connected to drive means for selective rotation of each screw. All of the cylinders are connected at their outer end to a combining head for combining the material discharged from each of the cylinders into a single outlet.

3,413,685
CLAMPING MECHANISM FOR A TIRE PRESS
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 30, 1966, Ser. No. 597,919
4 Claims. (Cl. 18—18)

Tire retreading equipment of the type used to retread heavy-duty tires, capable of applying a retread of the "full cap" type in which the retread may extend completely around the tire from bead to bead, is disclosed. An annular matrix and a pair of oppositely disposed pressure plates cooperate to form a deep cavity retread mold. A cylindrical curing rim extends through axial openings in the pressure plates, matrix section, and tire. An axially positioned clamping device is provided to clamp the two pressure plates tightly against opposite sides of the matrix section.

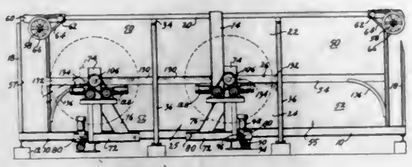


3,413,686
TIRE RETREADING EQUIPMENT
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 23, 1966, Ser. No. 596,695
3 Claims. (Cl. 18—18)



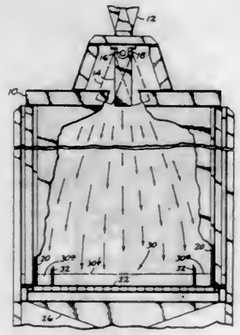
This application discloses tire retreading equipment of the type used to retread heavy-duty tires. Tires of this type, which are used on earth movers or airplanes for example, often require a retread of the "full cap" type in which the retread may extend completely around the tire from bead to bead. The equipment disclosed herein is capable of retreading a tire from bead to bead. The equipment includes an annular matrix and a pair of oppositely disposed pressure plates that cooperate to form a deep cavity retread mold. An axially positioned clamping device is provided to clamp the two pressure plates tightly against opposite sides of the matrix section, and a cylindrical curing rim is provided that extends through axial openings in the pressure plates, matrix section, and tire.

3,413,687
ROTATIONAL MOLDING APPARATUS FOR THERMOPLASTIC ARTICLES
Elliott Bavers, New York, N.Y., assignor, by mesne assignments, to Rotodyne Manufacturing Corporation, Brooklyn, N.Y., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,892
21 Claims. (Cl. 18—26)



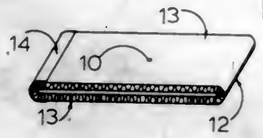
Rotational molding apparatus in which a single curing chamber open at opposed ends and having an open-ended cooling compartment at each end elevated above a supporting surface, and having closures at each of its open ends, is provided with two mold-supporting structures each movable from one cooling compartment into the curing chamber. The mold-supporting structures each includes a rotatable mold-supporting shaft reciprocable in continuous horizontal slots provided in the side walls of the chamber and compartments; the shaft ends rotatably supported in uprights of a trolley consisting of interconnected trolley frames disposed on the exterior of the side walls of the apparatus and movably supported thereon.

3,413,688
MAT FORMING APPARATUS AND METHOD
Donald A. Sangesand and Dale L. Schubert, Tacoma, Wash., assignors to International Design Corporation, Tacoma, Wash., a corporation of Washington
Filed Jan. 30, 1967, Ser. No. 612,456
2 Claims. (Cl. 19—155)



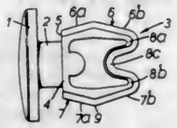
Felted mats useful in the production of wood composition board are produced by felting lignocellulose particles on a forming screen in a felter provided with longitudinally extending deckles positioned a spaced distance inwardly from the side edges of the screen. The particles are deposited on both sides of the deckles, forming a felted mat having separate central and marginal sections. The marginal sections are removed selectively, leaving a center section having sharply defined side edges of uniform thickness. The center section then may be hot pressed into a composite board having uniform properties across its width.

3,413,689
BANDING SHEET LAMINATES AND MATERIALS HAVING SIMILAR CHARACTERISTICS
Mark E. Powell, 1613 Chemawa Road NE. 97303, and Arthur G. Matherly, 3030 Argyle Drive S. 97302, both of Salem, Oreg.
Filed July 10, 1967, Ser. No. 652,664
1 Claim. (Cl. 24—17)



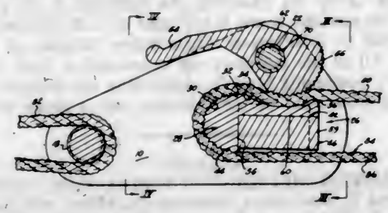
A band of corrugated paperboard adapted for wrap-around restraining engagement with rolled sheet building material such as laminated counter tops or the like for compact shipping, storage or display purposes, and for protecting the edge of the material so rolled and confined.

3,413,690
FASTENER STUD FOR ASSEMBLY IN AN APERTURED SUPPORT
Arthur Stanley Pearson, Sherwood, and David Julian Ford and Robert Michael Clarke, Stapleford, England, assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,363
Claims priority, application Great Britain, Mar. 1, 1966, 8,923/66
3 Claims. (Cl. 24—73)



A stud formed as a one-piece moulding of synthetic plastics including opposed flexible arms the free ends of which are connected by an integral bridging element.

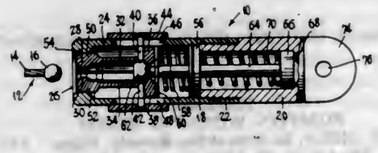
3,413,691
BUCKLE
Edwin C. Elsner, Tujunga, Calif., assignor to Aeroquip Corporation, Jackson, Mich.
Filed Oct. 21, 1965, Ser. No. 499,288
2 Claims. (Cl. 24—170)



A buckle for use with flexible straps in a cargo control system and particularly adapted for heavy duty applications. The buckle employs two friction surfaces to provide the heavy duty feature. One surface is opposite

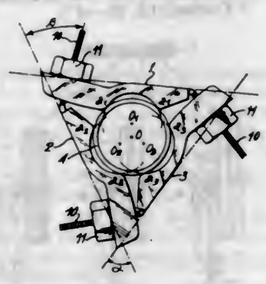
the movable cam on the release lever and the other is a knurled convex surface on the striker plate which engages the flexible strap when the latter is in tension.

3,413,692
FASTENER HAVING PREDETERMINED LOAD RELEASE
Clarence G. Pressley, Trumbull, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Apr. 3, 1967, Ser. No. 627,776
13 Claims. (Cl. 24—230)



A fastener for a cable end or the like, wherein an intentional predetermined overpull or tension results in the cable being released. The fastener has an elongate body with an end opening into which the cable is pushed. Chuck-type jaws in the body can grip an enlargement on the cable end, when the jaws are at a given intermediate axial locking position. The jaws are axially movable against the restraint of a spring to an advanced releasing position wherein they can spread. Sufficient pull on the cable overcomes the restraining spring and axially advances the jaws, thereby to release the cable. The jaws are also axially movable against the action of another spring, to a retracted position, also wherein they can spread to receive the enlargement of the inserted cable end. A grippable sleeve on the body is shiftable to axially retract the jaws for receiving the enlargement.

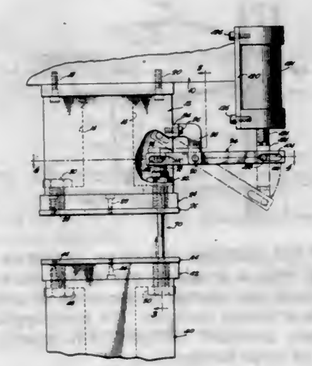
3,413,693
CLAMPING COLLAR
Charles Felix Tonnelline, 122 Ave. Francois Arago, Nanterre, Hauts-de-Seine, France
Filed Apr. 7, 1967, Ser. No. 629,159
Claims priority, application France, Apr. 8, 1966, 57,179
7 Claims. (Cl. 24—284)



A clamping collar for cylindrical or regular polygonal bodies such as tubes, pipes, spindles and shafts, the said collar being characterized in that it comprises at least three elements having arcuate bearing surfaces coupled to each other through the intermediary of clamping means, whereby the collar forms a regular polygon circumscribed on the cross-section of the body to be gripped.

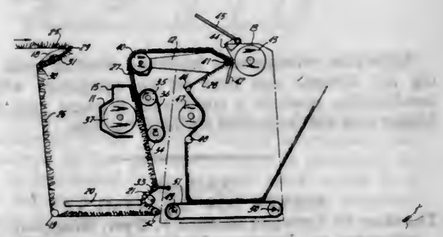
The present invention has for its object a collar, ring, or clip, serving for supporting, fixing or locking of parts, and in particular of regular cylindrical or polygonal bodies such as tubes, pipes, spindles and shafts.

3,413,694
APPARATUS FOR MAKING PERFORATED BRICKS
Walter J. Thomas, Sr., Plymouth Meeting, Pa., assignor, by mesne assignments, to International Minerals & Chemical Corporation, Skokie, Ill., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 516,888
4 Claims. (Cl. 25—90)



An attachment for perforating bricks is employed with a conventional brick press and includes a power means, rocker arm and piercing means. A bracket is releasably secured to the upper portion of the press and the rocker arm is pivoted intermediately thereto. Power means is secured to one end of the rocker arm and the other end operates the piercing means. The piercing means operates through a bore in a bolt which secures the plunger to the plunger plate.

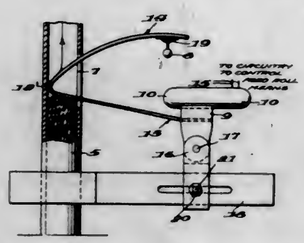
3,413,695
METHOD FOR ELECTRIFYING AND SHEARING OF PILE FABRICS
Heinz Hergert, Frankfurt am Main, Germany, assignor to Polrotor Inc., Garden City, N.Y.
Filed Oct. 31, 1966, Ser. No. 590,807
3 Claims. (Cl. 26—2)



Method for electrifying pile fabric via a heated, grooved, moving surface wherein the fabric is conveyed in a vertical direction through the electrifier and the pile fibers set in erect position immediately after departure therefrom by drawing cool air into contact with the pile while separating and venting the heated air adjacent the point of departure of the fabric from the surface. The vertical feed acts as partial compensation for initial forward lay of the pile and immediate cooling prevents

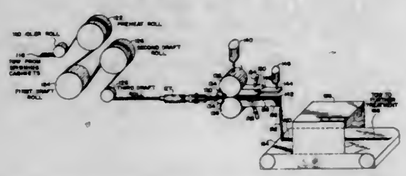
return of crimp to the fibers of the pile. The fabric is subsequently sheared.

3,413,696
APPARATUS FOR CRIMPING YARN SUITABLE FOR PRODUCING CREPE FABRICS
James Ashton Flowers, New Castle, and Donald Charles Knodel and John Edward Pretka, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 571,787
4 Claims. (Cl. 28—1)



A stuffer-box crimping apparatus, having an improvement comprising a weighted pin affixed to a mercury switch to signal any change in the mass of crimped filaments in the crimping chamber. The force applied in particular ranges produces crimped yarn suitable for the production of crepe fabric.

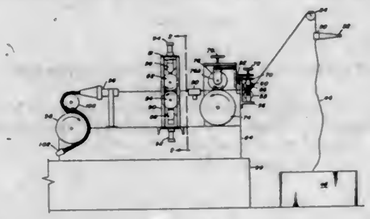
3,413,697
APPARATUS FOR PRODUCTION OF HIGH-SHRINK YARN
Albert H. Agett and William L. Aspy, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Application Mar. 26, 1962, Ser. No. 182,500, now Patent No. 3,258,825, dated July 5, 1966, which is a continuation-in-part of application Ser. No. 150,320, Nov. 6, 1961. Divided and this application Feb. 28, 1966, Ser. No. 559,012
2 Claims. (Cl. 28—1)



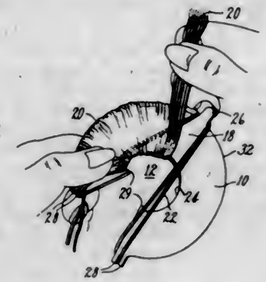
Apparatus arrangement including drafting rolls, bulking jet, crimper and heat setting equipment which in combination produce a continuous filament yarn having higher bulk and improved shrink properties.

3,413,698
FILTER TOW TREATMENT
Theodore C. Fritz and Richard F. Dyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 419,748, Dec. 21, 1964. This application Dec. 29, 1965, Ser. No. 517,241
2 Claims. (Cl. 28—1)

An improved method and apparatus makes possible the production of tobacco smoke filters from continuous fine denier multifilament tow. The method includes banding, pretensioning and longitudinally displacing individual filaments of the tow with respect to each other prior to applying a plasticizer with a dual roll applicator arrangement, and thereafter subjecting the tow to a gas jet treatment thereby uniformly distributing the plasticizer on the tow.

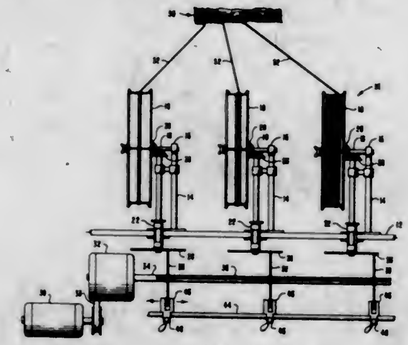


3,413,699
POMPON WINDING FORM
Norma S. Millay, 26 Laurel St., Beverly, Mass. 01915
Filed Sept. 19, 1966, Ser. No. 580,380
2 Claims. (Cl. 28—2)



A pompon winding form of C-shape having its ends displaced from each other along a central axis to provide space for passage of filling strands being wound about the circumferential length of the form.

3,413,700
FABRIC UNRAVELING MACHINE
Alexander Abowitz, 3386 E. Olympic, Los Angeles, Calif. 90023
Filed Dec. 19, 1966, Ser. No. 602,908
5 Claims. (Cl. 28—17)

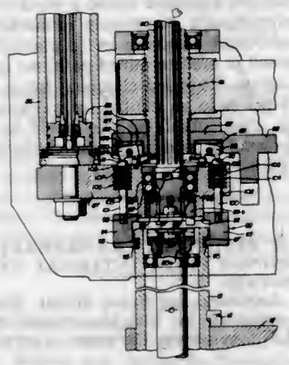


This invention relates to a fabric unraveling machine wherein yarn-winding reels are mounted on a support. Means are provided for separately adjusting the speed of each yarn-winding reel. In addition, means are provided for adjusting the speed of all the winding reels without disturbing the relative speeds of the winding reels, so that the fabric unraveling machine may be started slowly to determine whether or not the yarn-winding reels have the correct speed in relation to each other for the particular fabric to be unraveled.

3,413,701
PRODUCTION OF ENTANGLED NOVELTY YARN
Francis B. Breazeale, Hendersonville, N.C., assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
No Drawing. Filed June 28, 1966, Ser. No. 561,055
1 Claim. (Cl. 28—72)

This process involves the treatment of a synthetic high polymer filamentary yarn. An undrawn, untwisted yarn is passed through a drawing zone where it is drawn to several times its original length in a non-uniform manner to produce variable denier yarn, and then immediately passing the same through an air jet to effect a uniformly entangled yarn.

3,413,702
TURRET MACHINE HAVING TOOL STORE
Fred G. Burg, Los Angeles, Calif., assignor, by mesne assignments, to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Continuation-in-part of application Ser. No. 435,972, Mar. 1, 1965. This application Oct. 4, 1965, Ser. No. 496,242
24 Claims. (Cl. 29—26)

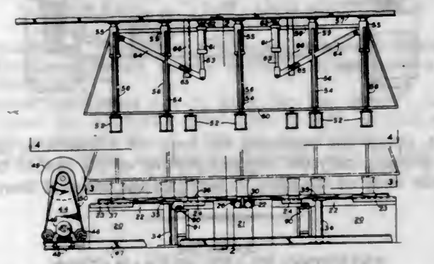


A turret is rotatable about a vertical axis beneath the carriage that is vertically movable and supported on a frame, the turret having a series of quills that can be directly clamped one at a time to a vertically movable feed member. Such clamping also couples tool-supporting spindles through a clutch to a rotatably driven shaft. Other clamps lock the carriage to the frame, while a further clamp can lock a quill in its extended position. A still further clamp can lock the turret. Fluid actuators are used to release quill-restraining-means and to reciprocate the non-rotatable feed member.

3,413,703
METHOD FOR FABRICATING TRUSSES IN HORIZONTAL POSITION
Arthur Carol Sanford, Palm Beach, Fla., assignor, by mesne assignments, to Arthur Carol Sanford, Pompano Beach, Fla.
Filed July 26, 1966, Ser. No. 567,990
2 Claims. (Cl. 29—155)

1. The method of fabricating trusses having wood components connected together in one plane by toothed connector plates on opposite sides of each truss joint, comprising the steps of:

assembling the components of a first truss in horizontal side-by-side relation to a second truss having connector plates applied to the joints on its underside,

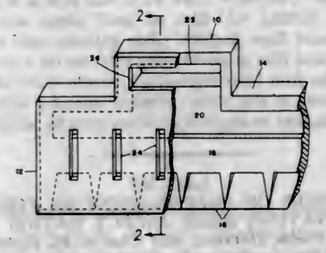


depositing connector plates on the top sides of all joints of both trusses simultaneously,

embedding the teeth of all top side plates by passing a roller press thereover,

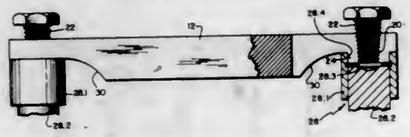
removing said second truss having plates on both sides, and inverting said first truss and placing it in the position previously occupied by said second truss.

3,413,704
METHOD OF MAKING COMPOSITE ULTRA-THIN METAL PLATELET HAVING PRECISELY CONTROLLED PATTERN OF FLOW PASSAGES THEREIN
John F. Addoms, Jr., Rancho Cordova, and Charles B. McGough, Fair Oaks, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Nov. 26, 1965, Ser. No. 510,013
1 Claim. (Cl. 29—157)



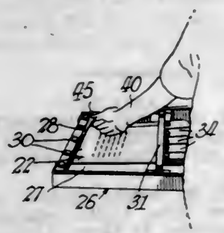
This disclosure concerns a method of making a composite ultra-thin metal platelet having a precisely controlled pattern of flow passages therein. In practicing the method, a first metal layer of sheet stock which is of accurate thickness is provided with openings extending completely therethrough, the openings being formed by etching, stamping, or any other suitable procedure. A second metal layer is then provided with a controlled pattern of elevated and depressed areas on one surface by subjecting the second metal layer to a chemical etchant bath. The first and second metal layers are then bonded together in overlying relation to each other to comprise the metal platelet which has a pattern of flow passages formed therein including flow metering passages having a depth of extreme accuracy as determined solely by the thickness of the first metal layer and other flow passages whose depth is less critical.

3,413,705
HYDRAULIC VALVE LIFTER PULLER
Frank R. Maxwell, 73 Granite St., Malden, Mass. 02148
Filed July 3, 1967, Ser. No. 650,849
4 Claims. (Cl. 29—213)



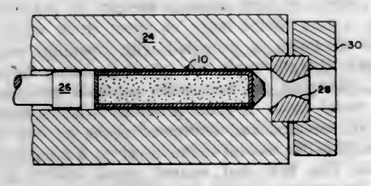
A device for removing the body of a hydraulic lifter by gripping only the exposed portion of the central bore of the body of the lifter to facilitate the removal thereof.

3,413,706
PRINTING PLATE PREPARATION
Robert Allen Shade, Ernst Daniel Nystrand, and Gerald Lee Marchant, Green Bay, Wis., assignors to Paper Converting Machine Co., Inc., Green Bay, Wis., a corporation of Wisconsin
Filed May 11, 1964, Ser. No. 366,372
3 Claims. (Cl. 29—407)



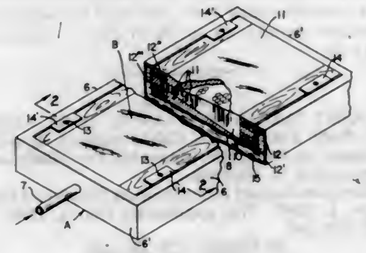
1. A method of printing plate preparation, comprising elastically longitudinally stretching a plastic film substantially uniformly across its width adapted to be wrapped about a plate cylinder, scribing said film along a pair of spaced-apart transverse lines while said film is in stretched condition, folding said film on itself along said lines to develop insert flaps for said plate cylinder and thereafter mounting said film in enveloping relation on a plate cylinder with the fold lines engaging opposite sides of a longitudinal recess in the plate cylinder whereby substantially identical register in successive plates may be achieved.

3,413,707
METHOD OF PREPARATION OF FIBERS HAVING HIGH ASPECT RATIOS
Joseph L. Klein, Harvard, and Charles H. Zenuk, South Acton, Mass., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed May 10, 1967, Ser. No. 637,468
8 Claims. (Cl. 29—419)



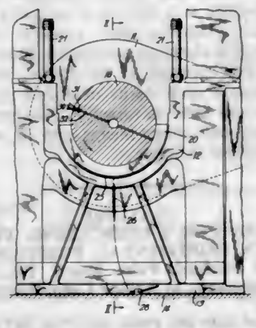
A method of preparing elongated fibers from a relatively stiff material such as beryllium is described. The fibers are characterized by extremely high aspect ratios and are formed by mechanically mixing particles of the material to be fibered with particles of a second material which will serve as a ductile matrix for the fibers and extruding the resultant mixture at an elevated temperature to form an extended metallic bar. The bar is then segmented and the segmented portions are repacked and reextruded at least one additional time. The fibers embedded in the resultant metallic bar are recovered by etching away the ductile matrix with an appropriate acid.

3,413,708
PROCESS FOR MACHINING EXPANDED HONEYCOMB
Holmes S. Norville, Corte Madera, and Tibor Eckstein, Oakland, Calif., assignors to Hexcel Products, Inc., Berkeley, Calif.
Filed Sept. 12, 1966, Ser. No. 578,692
6 Claims. (Cl. 29—423)



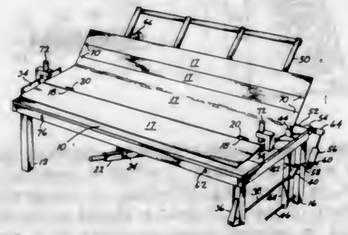
1. In a process useful for simultaneously machining at least two surfaces of an expanded honeycomb structure while embedded and stabilized within a block of solidified liquid, the improvement comprising immersing in said liquid said honeycomb structure and a plurality of pressure pads disposed in predetermined positions corresponding to the location of applied clamping forces by which the solidified block is to be secured for movement during said machining, then solidifying said liquid to cause the same to firmly bond to said honeycomb structure and to said pressure pads.

3,413,709
METHOD OF REMOVING CRANKSHAFT BEARING BUSHINGS FROM INTERNAL COMBUSTION ENGINES
Hugo Scobel, Augsburg, and Franz Steidle, Haunstetten, Germany, assignors to Maschinenfabrik Augsburg-Nurnberg A.G., Augsburg, Germany, a corporation of Germany
Filed Aug. 23, 1965, Ser. No. 481,774
Claims priority, application Germany, Aug. 26, 1964, M 62,218
2 Claims. (Cl. 29—427)



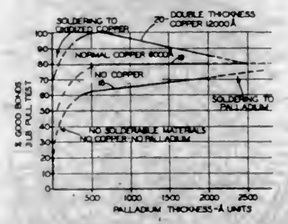
1. A method for the ready removal of lower semi-cylindrical crankshaft bearing bushing disposed between the bearing pins of an engine crankshaft and a supporting bearing block therefore without removal or displacement of said crankshaft, which comprises the steps of injecting hydraulic fluid under pressure between the radially outer circumferential surface of said bearing bushing and said bearing block for urging the radially inner circumferential surface on said bearing bushing into high friction engagement with said crankshaft bearing pin and for relieving frictional engagement between said radially outer circumferential surface and said bearing block, rotating said crankshaft bearing pin for inducing rotation of said bushing out of engagement between said crankshaft bearing pin and said bearing block, and removing said bushing after said rotation thereof without displacing or removing said crankshaft and while said crankshaft remains supported by other bearing bushings and bearing blocks engaging other bearing pins thereof.

3,413,710
METHOD FOR EDGE JOINING WOOD VENEERS
Chester W. Carbaugh, Rte. 4, Box 619, Salem, Oreg. 97302
Filed Sept. 3, 1965, Ser. No. 484,937
4 Claims. (Cl. 29—429)



Wood veneers are edge joined to form plywood core veneer by arranging a pair of veneers of random width side by side on a support, one on each side of a thin abutment. The ends of the veneers are aligned. One of the veneers is pressed against one side of the abutment. The other veneer is pressed resiliently against the other side of the abutment. The veneers then are stapled or otherwise fastened together edge to edge, after which the abutment is retracted.

3,413,711
METHOD OF MAKING PALLADIUM COPPER CONTACT FOR SOLDERING
Robert F. Brewer and Benjamin Piechocki, Bethlehem, Pa., assignors to Western Electric Company, New York, N.Y., a corporation of New York
Filed Sept. 7, 1966, Ser. No. 577,743
4 Claims. (Cl. 29—473.1)



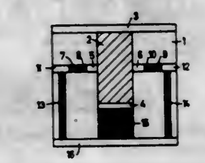
1. The method of soldering a metallic lead to a base of a metal other than copper, but which has an affinity for copper, which comprises:

depositing on the base a layer of copper having a thickness of at least 12,000 angstrom units;

depositing on the copper layer a layer of palladium having a thickness between 500 and 750 angstrom units; and

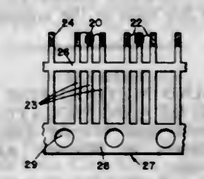
applying solder to the metallic lead and the palladium layer to dissolve the palladium and form a bond with the underlying copper layer.

3,413,712
HALL-VOLTAGE GENERATOR UNIT WITH AMPLIFYING ACTION, AND METHOD OF PRODUCING SUCH UNIT
Walter Engel, Nuremberg, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Original application Apr. 5, 1962, Ser. No. 185,377, now Patent No. 3,319,173, dated May 9, 1967. Divided and this application Dec. 1, 1966, Ser. No. 619,084
Claims priority, application Germany, Apr. 8, 1961, S 73,382
4 Claims. (Cl. 29—571)



1. The method of producing a Hall-generator unit which comprises depositing semiconductor material upon an insulating base plate, etching away a portion of the deposited material to form a Hall plate and two tunnel diode portions, doping the tunnel diode portions to form tunnel diodes, depositing a conducting metal to form the internal circuit connections to said Hall plate and tunnel diodes.

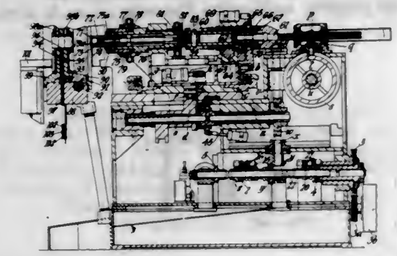
3,413,713
PLASTIC ENCAPSULATED TRANSISTOR AND METHOD OF MAKING SAME
Robert W. Helda, Andover, Mass., and Milan L. Lincoln, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed June 18, 1965, Ser. No. 465,123
7 Claims. (Cl. 29—588)



A plastic encapsulated semiconductor device is mass produced by a series of steps involving the use of a multiple-unit lead frame in the form of an elongated, rectangular metallic strip having a particular geometric configuration. The lead frame strip includes a continuous lead mounting portion which extends the length of the strip, and a plurality of leads integral with the mounting portion extending at right angles therefrom. The leads are arranged in spaced parallel groups joined by a continuous tie portion extending parallel to the lead mounting portion, intermediate the lead mounting portion and the lead ends. At least one lead of each group includes an end portion adapted for the bonding of a semiconductor element thereto, while the ends of the other leads of each group are adapted for wire bonding to form electrical connections with the semiconductor element. The method includes the steps of die-bonding and wire bonding to complete the electrical structure, followed by the step of encapsulating the semiconductor elements and the adjacent lead portions in plastic, and then severing the mounting portion and tie portion from the metallic strip,

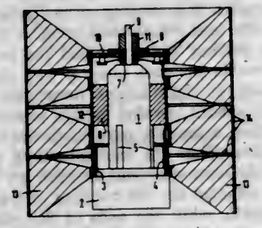
whereupon the completed assembly is ready for testing and separation of the individual units.

3,413,714
METHOD FOR WINDING ARMATURES OF DYNAMO ELECTRIC MACHINES
Robert Cyril Sheldon, Streetly, Warwickshire, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 8, 1963, Ser. No. 293,315
Claims priority, application Great Britain, June 19, 1963, 24,434/63
1 Claim. (Cl. 29—596)



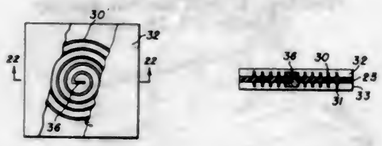
1. A method of winding dynamo electric machine armatures comprising in sequence, (a) gripping the wire ends coming from wire guides relative to the commutator of an armature to be wound, (b) winding a predetermined number of turns less than the full number of turns on the armature while holding said wire ends, (c) inserting and staking the portions of the wires adjacent the gripped ends in slots in the segments of a commutator so as to be retained thereby and simultaneously severing the gripped ends of the wire, (d) continuing the winding operation until the full number of turns have been wound upon the armature, (e) regripping the wires adjacent the wire guides to hold said wires relative to the commutator of the armature to be wound, and (f) severing the wires adjacent the gripped portions while simultaneously inserting and staking the free ends of the severed wire into the slots in the commutator segments.

3,413,715
APPARATUS AND METHOD FOR PRODUCING THE STATOR OF A DC MINIATURE MOTOR
Hans-Peter Latussek and Werner Dittrich, Nurnberg, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany
Filed July 5, 1966, Ser. No. 562,755
Claims priority, application Germany, July 13, 1965, S 98,153
3 Claims. (Cl. 29—596)



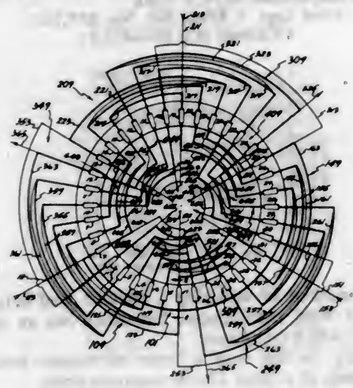
1. A method for producing the stator of a miniature motor, comprising the steps of
coaxially positioning a centering ring around one end of an assembly mandrel;
coaxially positioning a substantially annular stator magnet around the assembly mandrel;
supporting the stator magnet on the assembly mandrel in spaced relation from said centering ring;
coaxially positioning a bearing plate at the opposite end of said assembly mandrel;
coaxially positioning a substantially tubular-housing around the centering ring, the stator magnet and the bearing plate;
crimping the housing between and around each of the centering ring, the stator magnet and the bearing plate to hold said centering ring, said stator magnet and said bearing plate in position; and
withdrawing the assembly mandrel from said bearing plate, said stator magnet, said centering ring and said housing in an axial direction.

3,413,716
THIN-FILM INDUCTOR ELEMENTS
Frederick A. Schwertz, Pittsford, and Frederick H. Smith, Jr., Poughkeepsie, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 30, 1965, Ser. No. 452,288
5 Claims. (Cl. 29—602)



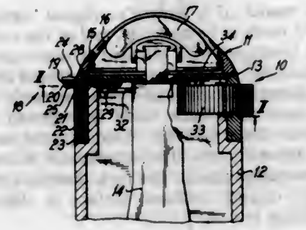
A method of producing a thin-film electrical inductor element in which a uniform conductive material is deposited on an insulating substrate, a xerographically formed pattern of chemical resist is placed on the conductive material in selected areas according to a predetermined spiral configuration, exposed areas of the conductive material are removed by subjection to a chemical etch to form a spiral conductor, the chemical resist material is removed to expose the conductive material in the predetermined spiral configuration, and an insulative magnetic core-forming material is deposited on the insulating substrate within the spiral of the conductor.

3,413,717
ELECTRIC MOTOR
Robert W. Peters, Menomonee Falls, Wis., assignor to Henry J. Gorski, Milwaukee, Wis.
Filed Mar. 25, 1965, Ser. No. 442,686
5 Claims. (Cl. 29—605)



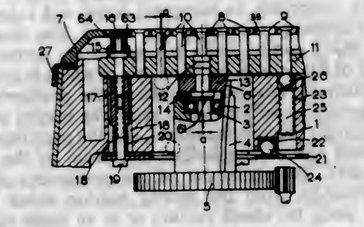
This invention relates to a method of winding a stator wherein a pyramidal lap wound stator is provided with three separate, substantially identical phase windings, each phase winding being lapped with respect to one of the other phase windings. Each phase winding is formed by lapping a plurality of coil groups, which groups have been formed by pyramidally winding a plurality of coils.

3,413,718
DRY ELECTRIC RAZOR WITH SHORT AND LONG HAIR CUTTERS
Kurt Baumann, Solingen-Merscheid, Germany, assignor to Robert Krups, Solingen-Wald, Germany, a firm
Filed Feb. 28, 1967, Ser. No. 619,473
Claims priority, application Germany, Mar. 3, 1966, K 58,626
7 Claims. (Cl. 30—34.1)



A dry electric razor having reciprocating type short and long hair cutters, the long hair cutter being positioned laterally and obliquely with respect to the short hair cutter and being extendable for use and retractable when not required and also being disconnected from the oscillating drive of the shaver when in the retracted position.

3,413,719
ELECTRIC RAZOR WITH ADJUSTABLE CUTTER
Kuno Moser, Unterkirnach, Germany, and Kurt Bäuerle, Schramberg-Sulgen, Germany
Filed May 26, 1966, Ser. No. 553,084
Claims priority, application Germany, May 31, 1965, M 65,405
9 Claims. (Cl. 30—43.2)



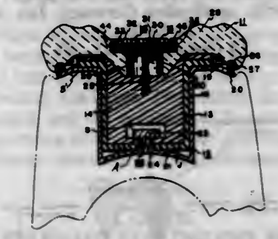
An electric razor having a cutting plate provided with a plurality of cylindrical bores. A circular cutting blade is positioned within each bore and is of a diameter smaller than said bore. Drive means interconnected to the cutting blades move same eccentrically within the bores so that the cutting blade slides around the bore for performing a cutting function. The cutting plate is adjustable relative to the cutting blades to permit adjustment of the closeness of shave obtainable by razor. Guide means are provided for controlling the eccentric motion of the cutter blades.

3,413,720
DISPOSABLE PLASTIC SAFETY RAZOR
Roy E. Mullen, Rochester, N.Y., assignor to Rochester Razor, Inc., Rochester, N.Y., a corporation of New York
Continuation of application Ser. No. 229,927, Oct. 11, 1962. This application May 16, 1966, Ser. No. 550,575
2 Claims. (Cl. 30—62)



A plastic safety razor has a body formed of a head and a handle molded in one piece of resilient plastic material. The head is molded with a thin slot open at the front of the head and at opposite ends of the head, and the face walls of the slot are spaced apart by the thickness of a blade adapted to be held within the slot. The slot is closed by a back wall which forms a rear abutment for a single edge blade held in the head. The blade has blunt edges at the extremities of its sharpened edge and is pushed endwise into the slot and by engagement with the blunt edges is seated rearwardly against the back abutment wall of the slot. Curved fingers extend forward from the slot and under the sharpened edge of the blade, and a gliding plane slopes downward from the head toward the cutting edge of the blade at approximately 25° angle to the blade. The integral handle extends forwardly from the head at an angle of 75° to a position forward of the cutting edge of the blade, and the handle is channel shaped with the open side of the channel facing forward. Such a combination of features allows economical and accurate molding of the razor body, accurate and efficient seating of the blade within the razor head, provides a comfortable shave with an easily manipulated tool, and allows the razor to be made cheaply enough to be discarded after use.

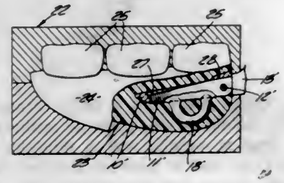
3,413,721
DENTURE IMPROVEMENT
Stephen C. Pickering, 1627 Foothill Drive, Salt Lake City, Utah 84108
Filed Aug. 16, 1965, Ser. No. 479,776
2 Claims. (Cl. 32—2)



The present invention provides dentures wherein artificial tooth elements are resiliently mounted, in elastomeric jackets, within suitable receptacles mounted to and recessed in denture bases or plates The tooth elements are articulatively anchored to the receptacles for retention purposes and also for predetermining maximum extension

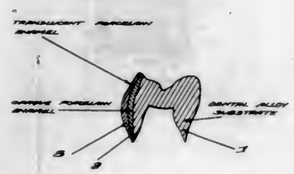
of the tooth elements from their respective receptacles, and this without deterring both vertical and lateral, full circle adjustment of individual tooth elements during occlusion. The individual tooth elements can comprise a tooth veneer and a base "filler means" which are themselves releasably secured together for purposes hereinafter delineated.

3,413,722
ANCHORAGE FOR PARTIAL DENTURE AND METHOD OF MAKING SAME
Clawson N. Skinner, 2108 El Rey Drive, Whittier, Calif. 90606
Filed Aug. 1, 1966, Ser. No. 569,372
4 Claims. (Cl. 32—5)



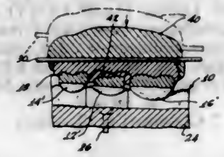
3. A partial denture and anchorage assembly comprising, an anchorage casting adapted to be fixedly secured to a patient's dental structure and having an elongated integral male hinge member projecting therefrom and closely overlying an edentulous gum area, a partial denture saddle formed for straddling support on said gum area and having embedded in one end thereof a female hinge member with an elongated opening through the top side thereof coextensive in length and width with said male hinge member and so dimensioned along the top thereof relative to said male member as to provide a wedge shaped cavity to permit slight vertical pivotal movement of said partial denture toward said gum area and relative to said fixed anchorage as masticating pressure is applied to said denture by the user.

3,413,723
NOBLE METAL ALLOY ADAPTED TO RECEIVE PORCELAIN CLADDING, ARTIFICIAL DENTAL CONSTRUCTIONS AND METHOD OF PREPARING THE SAME
Ewald Wagner, Pforzheim, and Walter Ernst Ludwig Pralow, Sackingen, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, and Vita Zahnfabrik H. Rauter K.G., Sackingen, Hochshein, Germany
Filed Jan. 30, 1963, Ser. No. 254,977
Claims priority, application Germany, Jan. 30, 1962, D 38,024
13 Claims. (Cl. 32—8)



1. Dental alloy adapted to have porcelain coverings fired thereon consisting essentially of 80 to 90% of gold, 5 to 15% of platinum, 0.1 to 2% of indium, 0.1 to 2% of tin and 0.05 to 1% of rhenium.

3,413,724
METHOD FOR MAKING DENTAL CROWNS AND BRIDGES
Errol H. Segal, 1772 S. Corning St., Los Angeles, Calif. 90035
Original application Mar. 21, 1967, Ser. No. 624,851, now Patent No. 3,354,548, dated Nov. 28, 1967. Divided and this application Aug. 23, 1967, Ser. No. 662,808
6 Claims. (Cl. 32—17)



From a model of a patient's original teeth, a matrix is made of a tooth to be crowned, and of the teeth adjacent thereto. A U-shaped wire element is removably attached to an articulator, and the matrix is secured thereto. The matrix is placed over the corresponding teeth of a model which is made after such tooth is prepared and which is mounted on the articulator. Wax is placed on the model of such prepared tooth. The attachment is then pressed to force the matrix against the wax, thereby automatically forming the original occlusal surface in the wax, from which a filling is cast.

3,413,725
DOWEL ASSEMBLY WITH REMOVABLE POSITIONING MEANS
Alfred J. Stern, 5307 Valkeith St. 77035, and Harold L. Stern, 6906 Van Etten St. 77021, both of Houston, Tex.
Continuation-in-part of applications Ser. No. 579,748, Sept. 15, 1966, and Ser. No. 595,557, Oct. 27, 1966. This application July 28, 1967, Ser. No. 656,921
11 Claims. (Cl. 32—40)

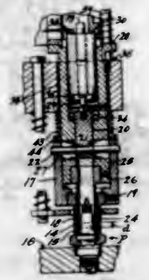


A dowel assembly for use in making a positive model of a tooth comprising an elongated dowel and a positioning pin removably secured to the dowel. The dowel includes a shank portion and a tapered seating portion having a pair of flat parallel surfaces, one of which is provided with a transverse groove. A portion of the positioning pin extends generally perimetrically about the seating portion and clampingly engages the dowel, and the positioning pin is restrained against longitudinal movement by the transverse groove. The remainder of the positioning pin extends outwardly from the seating portion either longitudinally along the shank portion or at an angle with respect to the longitudinal axis of the dowel.

3,413,726
GAUGING DEVICE
Stanley Sankovich, Toledo, Ohio, assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 579,900
3 Claims. (Cl. 33—169)

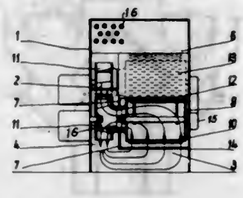
An apparatus for measuring and indicating the depth of a packing within a spark plug. The apparatus includes an inner hollow cylindrical gauging finger adapted to be received by the shell to abut the upper packing surface, an

outer hollow cylindrical gauging finger circumjacent the inner finger and adapted to abut the upper shell edge. Both inner and outer fingers are resiliently biased against the upper packing and shell surfaces when the apparatus is in position. A differential transformer having movable core and casing is associated to move along with the gauging



fingers whereby the relative position of the transformer core and casing and, thus, its electrical output, are proportional to the packing depth. A means for indicating the transformer output is provided to indicate packing depth. Means for adjusting the relative position of the transformer core and casing relative to the gauging fingers is also provided.

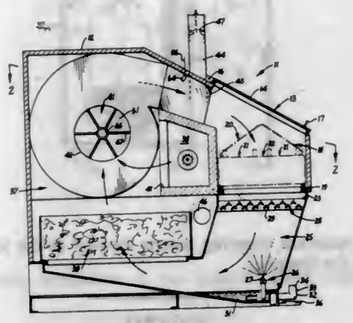
3,413,727
PROCESS AND APPARATUS FOR THE HEAT-TREATMENT OF AIR-PERMEABLE MATERIALS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA A.G., Basel, Switzerland
Filed Dec. 9, 1966, Ser. No. 600,550
Claims priority, application Germany, Dec. 10, 1965, A 51,034
13 Claims. (Cl. 34—16)



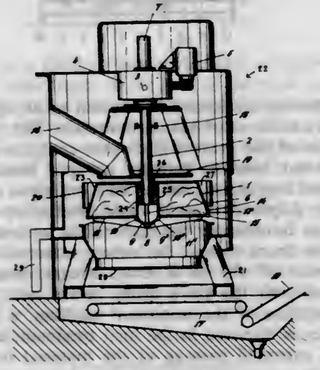
The present disclosure relates to a process and apparatus for the heat-treatment of air permeable textile materials wherein the wet material to be heat-treated is conveyed on the surface of cylindrical sieve drums in a serpentine fashion through a treatment zone which is subdivided into at least two zones, while passing a heated gaseous treatment medium around and through said material. The quantity of the treatment medium circulated in the first zone per conveying element is smaller than in subsequent zones and the material in the first zone is subjected to a more powerful suction draft than in the subsequent zones.

3,413,728
METHOD AND APPARATUS FOR DRYING CHARGED BATTERY PLATES
Ernest G. Tiegel, Redwood City, and Ralph G. Tiegel, San Carlos, Calif., assignors to Tiegel Manufacturing Co., Belmont, Calif., a corporation of California
Continuation-in-part of application Ser. No. 494,658, Oct. 11, 1965. This application Aug. 7, 1967, Ser. No. 663,915
14 Claims. (Cl. 34—22)

An improved method and apparatus for drying assemblies of charged battery plates suitable for use in dry charged batteries in which fresh combustion gases are mixed with a fraction of prior used drying gas that has been cooled and had water removed therefrom to provide a heated mixture of low oxygen content gas to be passed through the battery plates for controlled drying thereof; the invention also provides for improved features, such as the cooling of the used gas by direct impingement with a cold water spray, the use of a mist eliminator to take discrete water particles from the gas so cooled, and the use of a positive pressure within the drying apparatus to positively prevent contamination by leakage from external atmosphere.



3,413,729
CENTRIFUGAL LAUNDRY DRIER
Alfred Wagner, Munich, Germany, assignor to Maschinenfabrik Bernhard J. Goedecker, Munich, Germany
Filed Jan. 24, 1967, Ser. No. 611,428
10 Claims. (Cl. 34—58)

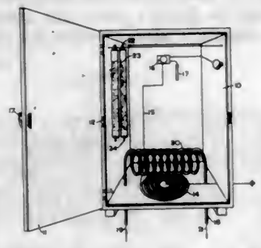


A centrifugal laundry drier whose top-suspended basket has an imperforate, downwardly flaring, conical outer wall and two hingedly attached bottom wall sections to permit bottom discharge. The bottom rim of the outer wall is notched, and the notches are bounded by the bottom wall portions when the basket is closed to provide radial discharge apertures for the extracted water.

3,413,730
APPARATUS FOR DRYING FILM
Wilfred H. Olson, 50 Alexandre Tache Blvd., Hull, Quebec, Canada
Filed May 12, 1967, Ser. No. 638,005
Claims priority, application Canada, May 16, 1966, 960,481
7 Claims. (Cl. 34—73)

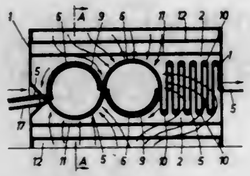
An apparatus is provided for drying wet film-like material such as photographic film, the apparatus being in

the form of an enclosed essentially air-tight, dust free chamber containing a temperature controlled heating coil



and a moisture trapping means located at the lower portion of the chamber.

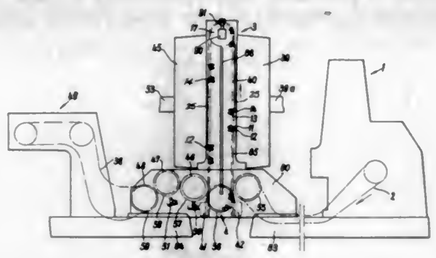
3,413,731
APPARATUS FOR THE HEAT-TREATMENT OF MATERIALS OF ALL KINDS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA A.G., Basel, Switzerland
Filed Nov. 10, 1966, Ser. No. 593,343
Claims priority, application Germany, Nov. 10, 1965, A 50,819
16 Claims. (Cl. 34—115)



The present disclosure is directed to an apparatus for the heat-treatment of textile materials. The heat-treating apparatus of the present disclosure comprises a substantially closed housing defining a rapid heating-up zone and a final treatment zone, at least one sieve drum means rotatably disposed in said rapid heating-up zone, inlet means for introducing the material to be heat-treated to said sieve drum means, fan means communicating with the interior of the sieve drum means, heating means associated with the sieve drum means and provided in the circulation of the treatment medium, a plurality of roller means disposed in the final treatment zone to provide for extended passage of the material being treated and outlet means for removing the heat-treated material from the final treatment zone.

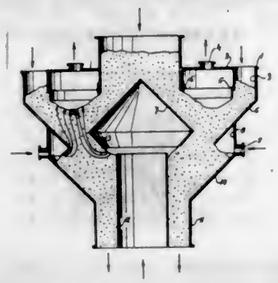
3,413,732
DRYING DEVICE FOR FRESHLY PRINTED SHEETS
Werner Koch, Gotzenhain, and Friedrich Preuss, Neu-Isenburg, Germany, assignors to Roland Offsetmaschinenfabrik Faber & Schleicher A.G., Offenbach am Main, Germany, a firm of Germany
Filed May 10, 1967, Ser. No. 637,443
Claims priority, application Germany, May 21, 1966, R 43,315
7 Claims. (Cl. 34—162)

A device for drying printer's ink on freshly printed sheets printed in a printing press and before being transported, one by one, to a treatment station. The device includes substantially vertically disposed up and down drying paths along which the sheets to be dried are guided by endless conveyors. The device also includes means for restoring moisture lost by the sheets while being dried, for instance, by hot air. Such vertical disposition of the



drying paths reduces the space required for the device so that the same can be conveniently installed between the printing assembly of the press and the treatment station.

3,413,733
SHAFT EXCHANGER
Jaroslav Pospíšil and Josef Plšek, Prerov, Václav Hubáček, Olomouc, and Oldřich Kučeřík, Kostelec u Holesova, Czechoslovakia, assignors to CKD Praha, Oborovy Podnik, a corporation of Czechoslovakia
Filed Oct. 18, 1966, Ser. No. 587,523
Claims priority, application Czechoslovakia, Oct. 21, 1965, 6,341/65
8 Claims. (Cl. 34—171)

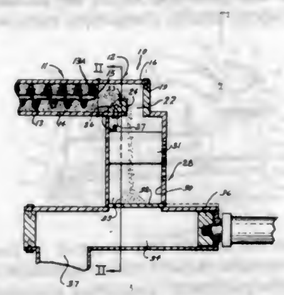


A vertical shaft heat exchanger for heating granular materials passing therethrough by hot gases. A hollow annular distributing member is co-axially mounted in the vertical shaft heat exchanger. The granular material is introduced from above into the shaft exchanger where it is divided into two streams which pass through a pair of channels which are defined by the external walls of the shaft exchanger, and a guiding member co-axially mounted therein. Hot gases are introduced into the heat exchanger and axially from below and pass through the granular material in counter-current flow.

3,413,734
SCREW FEED STABILIZER
Jack E. Kimball, Fremont, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 24, 1967, Ser. No. 611,446
9 Claims. (Cl. 34—182)

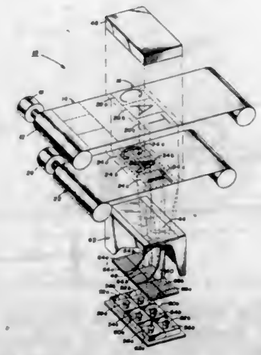
This invention is comprised of a screw conveyor which has a collection chamber disposed at the discharge end

thereof, whereby said chamber permits accumulation of plastic granules during operation such that same becomes



filled and thereafter the plastic granules spill over the vertical forward wall or dam.

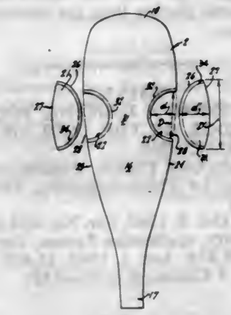
3,413,735
OPTICAL PATTERN RECOGNITION SYSTEM
Virgil Erbert, Albuquerque, N. Mex., assignor to Teaching Complements, Incorporated, Albuquerque, N. Mex., a corporation of New Mexico
Filed Nov. 8, 1965, Ser. No. 506,675
19 Claims. (Cl. 35—48)



A graphic pattern recognition system which includes a character modulation means disposed at an image plane upon which the pattern to be recognized is optically projected. The character modulation means includes at least two areas each of which is spatially related to the optical pattern to be recognized. Each of the areas of the modulation means is a filter material adapted to modulate the character of the energy forming the image in a mutually distinguishable manner, such as a Polaroid material or frequency filter material. The total light of each character passed through the character modulation means is then separately summed and the summation compared to produce a recognition decision.

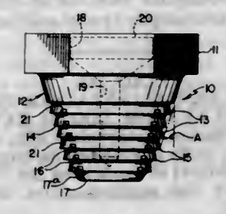
3,413,736
BOOT CONSTRUCTION
Joseph Spiteri, 173 7th St., San Francisco, Calif. 94103
Filed July 5, 1967, Ser. No. 651,206
9 Claims. (Cl. 36—54)

A boot construction including a special tongue structure developed to minimize or preclude bunching or bulging of the tongue in the area overlying the ankle of the wearer to provide a more comfortable fit. The tongue is provided with flexible bulbous projections, formed by filling panels secured in portions cut out from opposite longitudinal edge margins of the tongue, which increase the



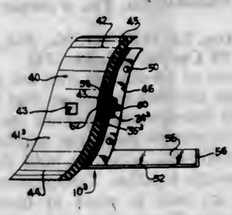
longitudinal dimension of the tongue along such margins.

3,413,737
FOOTBALL CLEAT
Carl W. Kneebusch, Strongsville, Ohio, assignor to Hy-Production, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 11, 1967, Ser. No. 666,691
5 Claims. (Cl. 36—67)



A cleat for a football shoe or the like comprises a base portion for attachment to the sole of the shoe and a generally frusto-conical portion unitary with the base portion and converging downwardly therefrom. The surface of the generally frusto-conical portion is roughened to provide additional traction when embedded in the soil by providing a plurality of serrations encircling the periphery of the generally frusto-conical portion and generally at right angles to a plane through the axis of the frusto-conical portion. A preferred form of these serrations consists of reversed frusto-conical sub-portions converging upwardly and joined to adjacent sub-portions by short annular shoulder portions in planes generally at right angles to the axis of the cleat.

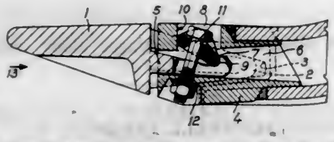
3,413,738
RUBBER BLADE FOR PLOW
Lewis B. Goldberg, c/o L. B. Sales Co., 520 5th Ave., New York, N.Y. 10020
Filed Apr. 11, 1966, Ser. No. 541,751
7 Claims. (Cl. 37—42)



The invention consists of a plow having a removable and reversible resilient scraper blade attached to a mold-

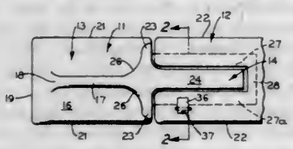
board wherein both the moldboard and the blade are V-shaped in cross section with a concave lower portion and a convex upper portion. The upper and lower ends of the blade extend further than the corresponding edges of the moldboard.

3,413,739
MEANS FOR FIXING A DIGGING TOOTH TO THE LEADING EDGE OF THE TOOL OF AN EARTH WORKING MACHINE
Gabriel L. Guinot, Oise, France, assignor to Societe Anonyme Poclain, Le Plessis-Belleville, Oise, France, a French society
Filed Oct. 5, 1965, Ser. No. 493,058
Claims priority, application France, Oct. 9, 1964, 990,878; Apr. 1, 1965, 11,628
4 Claims. (Cl. 37—142)



A digging tooth attached to a support member on an earth working machine by a pivotable lock bar extending between the support member and engaging a recess in one side of the tooth with a securing bolt attached to the lock bar for pivoting the lock bar to bias same into a forceful locking relationship against said tooth.

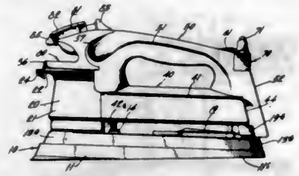
3,413,740
FRICTIONAL RETAINER FOR EXCAVATOR TOOTH KEY
Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.
Continuation-in-part of application Ser. No. 485,154, Sept. 7, 1965. This application Dec. 20, 1965, Ser. No. 515,255
3 Claims. (Cl. 37—142)



A key passes through aligned holes in a tooth-holder and fits into a notch in the tooth, thereby restraining withdrawal of the tooth from the holder. To prevent the key from being jarred loose, a rubber loop extends around the key and frictionally engages walls of the holder and of the tooth.

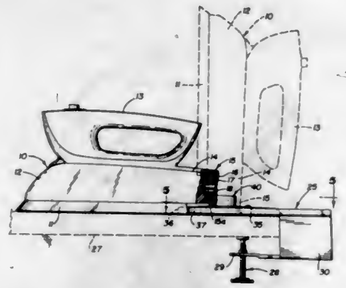
3,413,741
ELECTRIC IRON
Walter M. Schwartz, Jr., Charles R. Turner, and John C. Fagan, Philadelphia, Pa., assignors to Proctor-Silex Incorporated, Philadelphia, Pa., a corporation of New York
Filed Aug. 23, 1966, Ser. No. 574,358
59 Claims. (Cl. 38—78)

Component parts of an electric iron are provided with manually operable latching means so that the parts can be assembled and disassembled without the use of tools. At least three component parts are employed with the latching means preferably acting to hold the handle and sole plate components together. Components not directly latched together are held in place by interlocking with other components so that the latching together of other components holds them in place. A water reservoir component for example, is made to interfit mechanically with the handle component and is clamped in place by the sole plate when the sole plate and handle are latched together. A pump and spray nozzle component may be similarly



interfitted with the handle and clamped in place by the sole plate component. A cord plug component interfitting with the handle preferably completes electrical connections to the heating element in the sole plate.

3,413,742
COMBINATION CLOTHES-PRESSING IRON AND REST MOUNT THEREFOR WITH AUTOMATIC HOMING MEANS
Robert C. Le Sueur, River Forest, Ill., and Vincent A. Martens, Racine, Wis., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 28, 1967, Ser. No. 671,375
9 Claims. (Cl. 38—96)

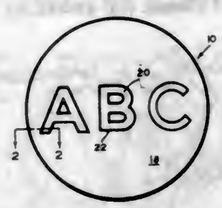


A combination clothes-pressing iron and rest mount with automatic homing means for guiding the iron to proper placement on the mount; the iron having a heel portion with a rearwardly facing opening therein projecting rearwardly from the iron at a level above the sole plate of the iron, and the mount having an arcuate curb and an upright hub located at the center of the arc of the curb. The sole plate has rearwardly facing abutment surfaces which engage the arcuate curb when the iron is backed against the curb from various directions. The heel of the iron overhangs the curb when the iron has been backed against the curb so that the iron can then be pivoted on the mount to upstanding rest position on the mount with the hub fitting snugly into the opening in the heel. Current conducting means may be located in the hub and heel opening for automatically supplying current to a heating element in the iron when the iron is in rest position on the mount.

3,413,743
LOW PROFILE EMBOSSED-DEBOSSED PRINTING ON A CLOSURE
George L. Goodhue, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1967, Ser. No. 614,601
2 Claims. (Cl. 40—311)

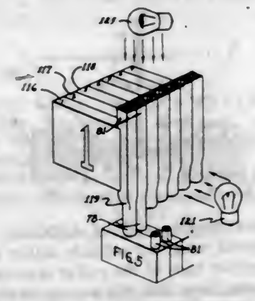
A closure having low profile printing formed by embossing the letters and debossing the area surrounding

the letters. The letters forming the printing on the closure are embossed or raised only a slight distance above the plane of the background. To give the letters the appearance of a greater height a debossing channel is placed



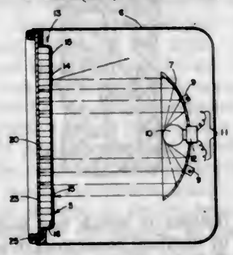
around the periphery of the letters. The letters now give an apperance of having a substantial height whereas the letters are only raised a slight distance above the plane of the background.

3,413,744
VISUAL READOUT DEVICE
Ronald E. Bowles, 12712 Meadowood Drive, Silver Spring, Md. 20904
Original application Jan. 21, 1963, Ser. No. 252,788. Divided and this application May 20, 1965, Ser. No. 470,949
25 Claims. (Cl. 40—28)



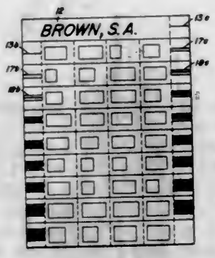
Fluid amplifiers are employed in conjunction with a flow path containing a fluid which is visual or has the property of rendering other devices viewable. The fluid amplifiers upon proper signal conditioning move the fluid into a particular region to produce a visual display. Upon further signal conditioning, the fluid amplifiers transport the fluid to a region where the fluid can no longer effect a visual display.

3,413,745
BLANKOUT SIGN
Ray W. Cabe, Manhattan Beach, Calif., assignor to Tamar Electronics Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Apr. 5, 1967, Ser. No. 628,607
6 Claims. (Cl. 40—132)



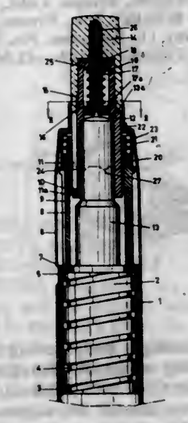
An illuminated sign is in the form of a sandwich structure, a message to be displayed being delineated in clear areas on a rear illuminated opaque panel, a central panel of honeycomb structure being sandwiched between the opaque panel and a front panel of translucent material.

3,413,746
ORDERED RECORD FILE
Giles A. Wilkinson, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application June 11, 1963, Ser. No. 287,053, now Patent No. 3,259,037, dated July 5, 1966. Divided and this application Feb. 7, 1966, Ser. No. 525,434
11 Claims. (Cl. 40—158)



A record file comprised of a series of film strips each having information areas located between identifying end portions. At least one end portion of each strip has a pattern which is uniquely complementary to the pattern on only one other strip in the file so that integrity of the file can be verified by the continuity of patterns. The pairs of complementary patterns are also sequentially related so that when the strips are arranged in side by side order, an index to the file is provided by the patterns.

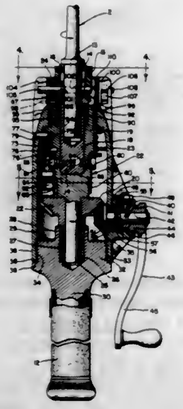
3,413,747
WRITING INSTRUMENT HAVING A RETRACTABLE WRITING MEMBER
Marcel Tanner, Pontenet, Switzerland, assignor to Fabrique Tana, a company of Switzerland
Filed Aug. 29, 1966, Ser. No. 575,653
Claims priority, application Switzerland, May 27, 1966, 7,718/66
4 Claims. (Cl. 40—335)



This disclosure concerns a writing instrument having a retractable writing member and a calendar comprising

two indicator devices one for the dates of the month, the other for the days of the week, the two indicator devices being displaced together for the indication of the date and being displaceable one with respect to the other for putting them into agreement, there being only one control member for actuating the writing member and the calendar.

3,413,748
AUTOMATIC CASTING ROD
Viggo Kragh, General Delivery, Hollister, Mo. 65272
Filed June 21, 1967, Ser. No. 647,793
10 Claims. (Cl. 43—19)



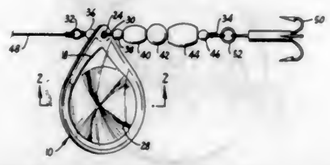
A casting rod having a journal section and a rod portion rotatable in the section about an axis extending longitudinally of the rod, the rod having an outer end offset radially from the axis and supporting a line with a lure, a spring wound about the inner end of the rod for rapidly accelerating the rod to swing the lure in an arc and a stop for abruptly decelerating rotation of the rod to accentuate casting of the lure.

3,413,749
COMPARTMENTED FISH LURE
William D. Jeffers, Fresno, Calif., assignor to Jeffers & Bailey, Inc., Fresno, Calif.
Filed May 11, 1966, Ser. No. 549,347
6 Claims. (Cl. 43—42.06)



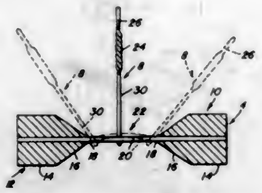
A fish lure including a body having a cavity, and an indentation extending outwardly therefrom, for receiving a perforable capsule filled with a fish-attracting fluid. The capsule includes an extension for alignment wholly within the indentation for releasing a stream of fish-attracting fluid when the lure is moved through a body of water. A fish hook is integrally attached to a portion of the lure body.

3,413,750
LIGHT DIFFRACTION FISHING LURE
Dana R. Henry, 320 Lee St., Apt. 1204, Oakland, Calif. 94610
Filed Apr. 11, 1966, Ser. No. 541,622
5 Claims. (Cl. 43—42.33)



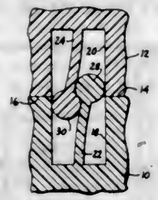
A fishing lure having a clear, transparent, watertight, flexible envelope containing therein a flexible diffraction grating sheet, the envelope and grating sheet being concavo-convex in form and being pivotally mounted on a beaded leader.

3,413,751
FREE ROLLING SINKER AND LEADER CONNECTING LINK
Delbert Westover Biddle, 3384 Dartmouth Drive, Santa Rosa, Calif. 95405
Filed Oct. 10, 1966, Ser. No. 585,474
6 Claims. (Cl. 43—44.97)



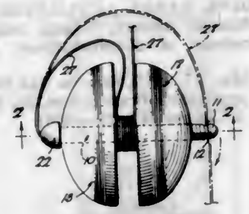
An elongated flexible rod of restricted cross-section has axially aligned weighted rollable sinker heads mounted on the respective ends of the rod at spaced apart points. A novel line attaching link has an eye at its leading end with which a leader can be connected. The trailing end of the link has an elongated loop which is slidingly and pivotally shiftable on the rod between the heads in a plurality of planes including the axis of the rod. This unique "trip free" principle allows the angler to free an entangled line without losing any of his tackle.

3,413,752
BODY HAVING A SNAP-TYPE FASTENER
Charles O. Perry, 1225 Jones, San Francisco, Calif. 94133
Continuation of application Ser. No. 360,924, Apr. 20, 1964. This application Nov. 14, 1967, Ser. No. 683,030
7 Claims. (Cl. 46—25)



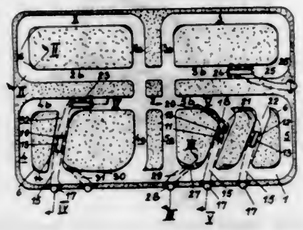
A snap-type fastener in which two bodies can be attached together by identical connectors in each body. The connector in each body comprises a recess in the face of the body with a stem in the recess supporting a latch portion which projects beyond the face of the body.

3,413,753
STRING SUSPENDED AERIAL TOY
Henry G. Colmer, Jr., 4203 Belvedere St., Mobile, Ala. 36609
Filed Nov. 27, 1964, Ser. No. 414,351
6 Claims. (Cl. 46—61)



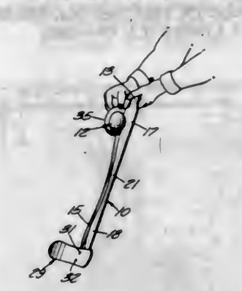
A spinning device including a first circular body section having an axially disposed threaded member, a second circular body section having an axially disposed threaded opening threadedly mounted on the threaded member, a spacer member mounted on the threaded member between the circular body sections, a strand of string for spinning the body sections about their common axis and said strand of string having one end thereof secured axially on an exterior portion of the device and having a length sufficient to permit the strand to extend to the space between the body sections and be wound on the spacer member.

3,413,754
TOY VEHICLE RACE TRACK
Alfred Einfalt, Nuremberg, Germany, assignor to Gebruder Einfalt, Blechspielwarenfabrik, Nuremberg, Germany, a German firm
Filed Oct. 27, 1966, Ser. No. 590,012
Claims priority, application Germany, Feb. 11, 1966, E 22,914
5 Claims. (Cl. 46—206)



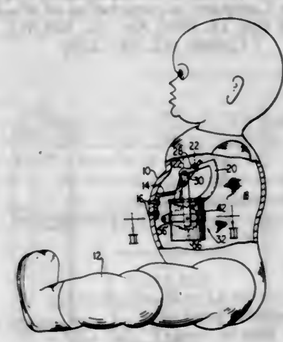
There is shown a toy track game including a base plate having thereon a closed track and at least one track connecting one point of the closed track with another point thereof. A diverter disposed adjacent to one end of the branch track is controllable so that one of several self-propelled vehicles placed on the track can be directed either to continue along the closed track or to enter the branch track. Each of the vehicles is equipped with stop and release means for the drive mechanism thereof. Manually operable control means are provided for controlling the diverter and also the stop and release means on a vehicle when the same reaches a predetermined position on the branch track. The control means when operated release a vehicle stopped in the predetermined position and simultaneously set the diverter so that a second vehicle is directed into the branch track to be arrested by the control means when reaching said predetermined position on the branch track.

3,413,755
BALL AND STICK GAME
Jerry D. Mishler, Minburn, Iowa. 50167
Filed May 11, 1966, Ser. No. 549,221
3 Claims. (Cl. 46—220)



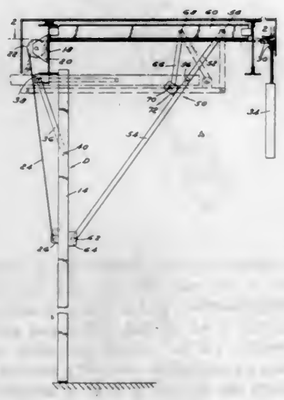
1. A toy comprising in combination a stick, a transverse member at the end of said stick for pushing and guiding a rolling member, and a rolling member of spherical shape adapted to be pushed, rolled and guided by the transverse member on the end of said stick, said rolling member having a circular rib extending around a diameter thereof, whereby the rolling member is adapted to roll on said circular rib, and to roll on its spherical surface if it deviates off said circular rib, said stick having a lengthwise groove in its surface of a size to receive therein the circular rib on the rolling member whereby the rolling member may be rolled down the stick with the circular rib traveling in said groove.

3,413,756
SOUND-PRODUCING DEVICE FOR A TOY FIGURE
Robert Gardel, 11 Riverside Drive, New York, N.Y. 10023, and Egon Gorsky, 365 E. 46th St., Brooklyn, N.Y. 11220
Filed Dec. 13, 1965, Ser. No. 513,219
6 Claims. (Cl. 46—117)



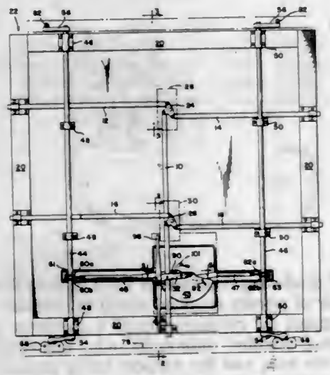
A sound-producing mechanism for a doll or the like in which a pair of gravity actuated sound devices are mounted on a support for rotation around a common axis, the devices being oriented differently, e.g., oppositely, with respect to the axis, and the support being pivotally hung from an axis fixed in the doll's torso, the support being operatively connected to the torso through a connection such that movement of the support through a given arc rotates the sound devices through a multiple of said arc; thus the support and sound devices carried thereby may swing through 90° with respect to the doll torso while the sound devices are rotated through 180°, characteristic sounds being emitted with each such rotation in either direction.

3,413,757
CANOPY DOOR
Charles S. Davidson, La Salle, Mich., assignor to Byrne Doors, Inc., Ferndale, Mich., a corporation of Michigan
Filed Sept. 19, 1966, Ser. No. 580,409
8 Claims. (Cl. 49—200)



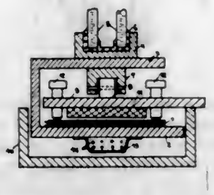
An operating mechanism for a door which preferably includes a cable for raising and lowering the door between open and closed positions and an arm for controlling the angular movement of the door. Means are provided for bracing the door against the force of wind load when closed, preferably including pivoted brace arms connected to the door and to a fixed support and another arm for holding the brace arms in straight condition when the door is closed.

3,413,758
LOCKING ASSEMBLY FOR SLIDING PLUG-TYPE DOOR
Kristjan H. Palsson, Seattle, Wash., assignor to Pacific Car and Foundry Company, a corporation of Washington
Filed July 15, 1966, Ser. No. 565,572
7 Claims. (Cl. 49—220)



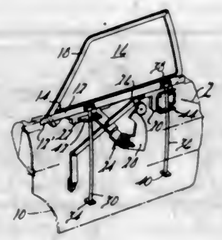
An opening and closing assembly for plug-type railway car doors comprises a gear rotatably mounted on the door, a door lock bar assembly, a rotatable gear actuating lever mounting a pinion in driving mesh with the gear, a linkage assembly interconnected with the gear to shift the door laterally into and out of the railway car door opening, and a decelerating mechanism adapted to be engaged by the gear as the door is moved out of the car door opening to restrain the gear against uncontrolled rotation caused by expanding door seals.

3,413,759
SLIDING PANEL ACTUATORS
Jacques Henry-Baudot, Antony, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, France
Filed Mar. 27, 1967, Ser. No. 626,282
Claims priority, application France, Apr. 20, 1966, 58,322
4 Claims. (Cl. 49—360)



An apparatus for releasing the weight of heavy sliding door or window panels which may be laterally moved for instance by rolling along horizontal tracks. An elongated linear winding armature of partial length with respect to the length of the track is affixed to the panel and moves with it within a magnetic field airgap arranged along the track. Said winding is energized from pairs of brushes arranged along said track.

3,413,760
VEHICLE WINDOW CONTROL SYSTEM
John P. Gorys, Detroit, and Rudolph M. Horvat, Allen Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 31, 1967, Ser. No. 627,513
8 Claims. (Cl. 49—375)

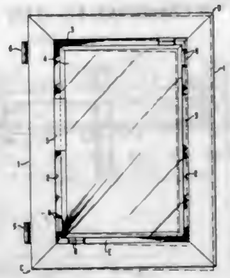


A vehicle window movement control system for stabilizing window panels that are movable in vertical and horizontal directions. The guide system, which cooperates with four bar linkage window operating mechanism, includes a rod functioning as a guide track and a guide member slidable along the rod to provide required stabilization. The guide member is capable of use with rods of varying cross sectional dimensions.

3,413,761
ANTI-SAGGING BLOCK MEANS FOR METAL CLOSURES
Alberto Proni, Via Molinelli 18, Bologna, Italy
Filed June 19, 1967, Ser. No. 646,968
Claims priority, application Italy, July 1, 1966, 15,053/66
4 Claims. (Cl. 49—396)

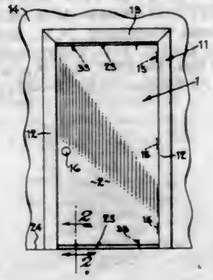
A vertically hinged, swinging closure comprising a rectangular metal frame and a glass insert in the frame

opening tends to sag. To restore the frame to its rectangular shape, block means are inserted in the clearance space formed between the edges of the glass and the opening in the frame, whereby the block means force the



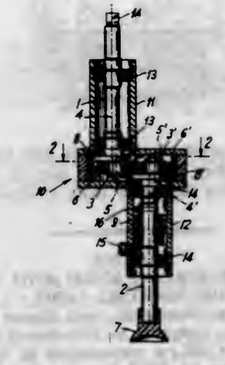
sagging frame to assume its original rectangular shape. The block means comprise blocks of various thicknesses, and several blocks may be assembled to form a stack of a thickness matching the size of the clearance space.

3,413,762
EDGE ADJUSTMENT DEVICE FOR DOORS
Lucien Louis Baudé, St. Germain-en-Laye, France, assignor to The Steelcraft Manufacturing Company, Rossmoyne, Ohio, a corporation of Ohio
Filed Jan. 11, 1967, Ser. No. 608,658
3 Claims. (Cl. 49—501)



The disclosure relates to prefabricated doors formed of sheet metal for installation in a casing or doorframe, also formed of sheet metal. In order to compensate for variations in the size of the prefabricated door and its casing or frame, the door includes at least one edge adjustment device arranged to be regulated after the door is installed in the casing. In the disclosure, the adjustment device is installed in the lower edge portion of the door which includes a fixed, downwardly facing reinforcement channel. The edge adjustment device is in the form of an upwardly facing, channel-shaped adjustment rail slidably fitted within the recess delineated by the reinforcement channel and biased downwardly by a series of spaced springs maintained under compression between the reinforcement channel and the adjustment rail. Adjustment screws pass through the adjustment rail and into threaded engagement with the fixed reinforcement channel, whereby adjustment of the screws in one direction forces the adjustment rail inwardly, counter to the biasing springs, while adjustment in the opposite direction permits the compression springs to force the adjustment rail outwardly.

3,413,763
DEVICE FOR GRINDING ENGINE VALVES
José Vivas Clurana and Vicente Vivas Clurana, both of Calle Orfebres Santacatalina, 14–16, Castellon, Spain
Filed Nov. 6, 1964, Ser. No. 409,458
Claims priority, application Spain, Feb. 6, 1964, 104,040, 104,041
8 Claims. (Cl. 51—29)

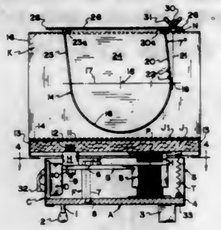


The disclosure is directed to a valve grinder having a housing with a driving shaft and a driven shaft rotatably mounted therein for angular displacement about respective axes which are substantially parallel. One end of the driving shaft is formed for coupling to driving means, such as an electric motor or the like, and the outer end of the driven shaft is formed for coupling to a valve to be ground. The inner end of each shaft carries a respective bearing, and each bearing is eccentric to the axis of its respective shaft. One of these bearings is tangentially engageable with the other, and the respective eccentricities of the bearings differ from each other. In another embodiment of the invention the bearing on the driving shaft is an anti-friction bearing and has an outer race which is engageable with an eccentric axially extending bearing member on the inner end of the driven shaft. With the arrangement of the invention, when the driving shaft is rotated about its axis, the driven shaft is oscillated about its axis and, due to the relative difference in the respective eccentricities of the bearings, the tangential engagement therebetween is interrupted at a predetermined point during each oscillation of the driven shaft in one respective angular direction. Means, in the form of a torsion spring, are coupled to the driven shaft and are operable, during interruption of the tangential engagement, to oscillate the driven shaft in the opposite angular direction.

3,413,764
DEBURRING MACHINE
Robert Dean Kunkle, 3324 Walton Way, San Jose, Calif. 95117
Filed Dec. 5, 1966, Ser. No. 599,011
8 Claims. (Cl. 51—163)

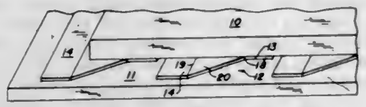
1. A deburring machine comprising:
(a) a tank for holding the material to be deburred;
(b) said tank having a substantially half cylindrical bottom and a rear wall extending upwardly from the back portion of said bottom, said rear wall being inclined forwardly at an angle to a vertical plane that lies tangent to the arcuate bottom;
(c) means for supporting said tank only at its rear; and
(d) means for applying a vibratory force only at the rear of said tank, the amplitude of vibration being gradually damped from the rear to the front of said tank;

(e) whereby the material in said tank will be vibrated and the mass of material that contacts with the rear tank wall and with the portion of the rounded bottom



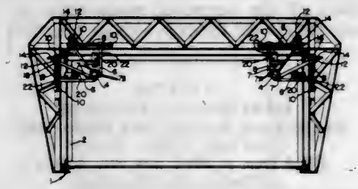
disposed adjacent to said wall will be moved upwardly and then forwardly at the top of the material for causing the entire mass to slowly revolve in said tank.

3,413,765
EXPANDABLE WALL PANEL AND METHOD FOR MAKING SAME
David H. Williams, Sunnyvale, and Ernest C. Pellaton, Larkspur, Calif., assignors to Fibreboard Corporation, San Francisco, Calif., a corporation of Delaware
Filed June 14, 1967, Ser. No. 646,059
12 Claims. (Cl. 52—99)



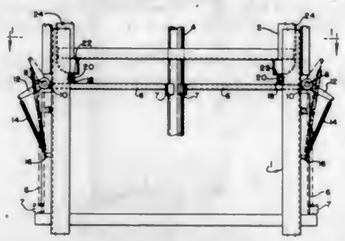
An expandable wall panel is formed by securing a sheet of material between two superimposed panels. The sheet is suitably constructed and arranged so that when the two panels are moved apart at least one spacing web or rib is positioned substantially perpendicularly therebetween.

3,413,766
STABILIZERS FOR FLUID CYLINDER PLUNGERS
John Hart Wilson and Vernon Taylor Cash, both % Wilson Mfg. Co., P.O. Box 1031, Wichita Falls, Tex. 76307
Filed Apr. 24, 1967, Ser. No. 632,985
5 Claims. (Cl. 52—115)



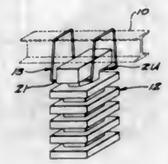
Stabilizers for the plunger of a fluid cylinder, which prevents lateral movement of the plunger, when the plunger is in extended position, of greater length than that at which the unsupported plunger would remain rigid. The plunger is stabilized by pairs of arms pivotally mounted at right angles to each other, which arms move into position around the plunger as the plunger is extended from the cylinder. The stabilizer arms are retained in inwardly extended position, in engagement with the plunger, under the influence of a spring. The stabilizers are moved out of engagement with the plunger by a cam and roller arrangement, as the plunger is retracted.

3,413,767
STABILIZERS FOR FLUID CYLINDER PLUNGERS
John Hart Wilson, %Wilson Mfg. Co., P.O. Box 1031, Wichita Falls, Tex. 76307
Continuation-in-part of application Ser. No. 410,700, Nov. 12, 1964. This application Feb. 13, 1967, Ser. No. 619,884
6 Claims. (Cl. 52—115)



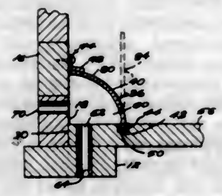
A stabilizer for stabilizing plungers of fluid cylinders of high slenderness ratio, to support the plunger against lateral deflection within the length thereof, when the plunger is used in towers, such as extensible masts, or in elevator shafts. The stabilizing device utilizes arms to sequentially move into engagement, at spaced intervals, with the plunger as the extensible mast or the elevator car moves upward, and to move out of engagement with the plunger and out of the path of the extensive mast or elevator car as the extensible mast or elevator car moves downward. The stabilizer arms are maintained in disengaged position while the extensible mast or the elevator car is moved therebelow.

3,413,768
ELEMENTS FOR THE SUPPORT OF REFRACTORY ANCHORS
Roger C. Stephens, Hamburg, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 18, 1967, Ser. No. 610,092
3 Claims. (Cl. 52—484)



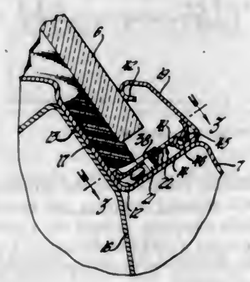
The disclosure concerns the use of a hanger element made of a single length of wire rod bent to form a support for refractory anchors.

3,413,769
BASEMENT DRAIN
Robert M. Hoyt, 4922 N. 54th, Omaha, Nebr. 68104
Filed Dec. 27, 1965, Ser. No. 526,927
2 Claims. (Cl. 52—198)



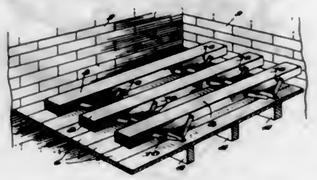
In a basement with a concrete floor, a recess spaced from and extending continuously along a substantial part of the periphery of the floor, an elongated passage-forming means having a lower edge buried in the recess, the passage-forming means extending upwardly to form a water drainage passage between the member and the basement wall, and means in the recess for firmly anchoring said passage-forming means to said floor and for thereby substantially sealing the space between said means and the floor so that water cannot pass therethrough.

3,413,770
REVEAL MOLDING INSTALLATION AND CLIP
Edwin M. Adams, Mount Clemens, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,808
8 Claims. (Cl. 52—208)



A motor vehicle windsield installation with a reveal molding clip inserted generally parallel to the pinchweld flange and wedged between the flange and a retaining stud, thus being located by the flange. Two tabs selectively engageable with the reveal molding accommodate variations in dimensions of the vehicle body.

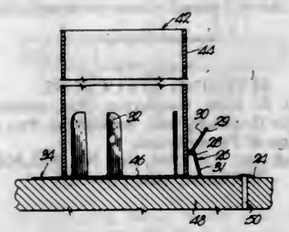
3,413,771
FLOOR LEVELING DEVICE
Hubert T. Dudley, Arlington, Va., assignor to Timber Engineering Company, a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,951
7 Claims. (Cl. 52—480)



A floor leveling device for spacing sleepers at varying distances above an existing floor. The height at which the device supports the the sleepers is adjustable by bending the pair of legs which project upwardly in sloping relation from the base plate. The legs are secured to one of the sleepers and the base plate is secured to the existing floor.

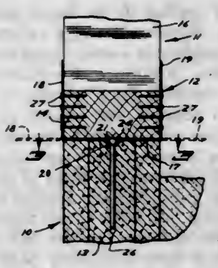
3,413,772
SPRING LOADED SLEEVE LUG
William P. McCarthy, Kansas City, Mo., assignor to Ridgewood Instrument Company, Kansas City, Mo., a corporation of Missouri
Filed Feb. 10, 1966, Ser. No. 526,467
4 Claims. (Cl. 52—677)

A lug for supporting form sleeves which are vertically positioned on a surface to be covered with concrete, the lug having a base to be secured to said surface, a pair of upright legs at one end of the base and a clamp element secured to the base and spaced from the legs, the legs being laterally offset with respect to the clamp, the clamp element defining a cam surface and points whereby the



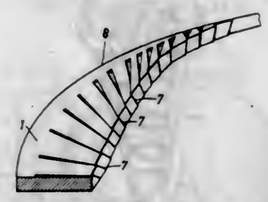
sidewall of the sleeve may be inserted between the legs and the clamp and retained therebetween during pouring of the concrete.

3,413,773
SADDLE ANCHOR
Gerald A. Fitzgerald, 4937 Drew Ave. S., Minneapolis, Minn. 55410
Filed Oct. 7, 1966, Ser. No. 586,334
4 Claims. (Cl. 52—713)



A sheet metal saddle anchor mounting a frame to the top of a concrete wall. An anchor bolt having a head entirely within the recess of the mid-portion of the anchor and a body with a terminating lateral leg embedded in the concrete attaches the saddle anchor to the concrete wall.

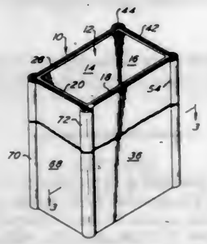
3,413,774
CONSTRUCTION ELEMENT
Rudolf Oberreich, 33 Delsterner Str., 58 Hagen-Delstern, Germany
Filed June 27, 1966, Ser. No. 560,636
Claims priority, application Germany, Sept. 4, 1965, O 8,378
9 Claims. (Cl. 52—720)



A structural element composed of an initially flat, solid bar of rectangular cross section provided with a plurality of regularly spaced lateral notches extending from one narrow longitudinal edge of the element across a substantial portion of its width, each notch being defined by two parallel, substantially planar sides which extend oblique-

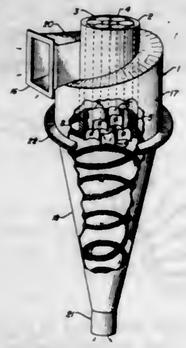
ly to the large flat faces of the element for permitting the two sides of each notch, adjacent the open end of the notch, to supportingly bear against one another when the element is bent in a plane perpendicular to the narrow lateral edge and is twisted about its longitudinal axis.

3,413,775
BUILDING STRUCTURE
Emanuel B. Katz, Souderton, Pa., assignor to Tubular Products, Inc., Souderton, Pa., a corporation of Pennsylvania
Filed Apr. 13, 1966, Ser. No. 542,398
6 Claims. (Cl. 52—727)



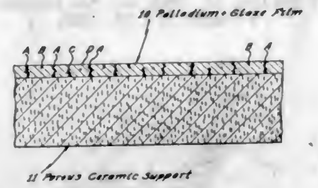
Substrates are applied to the outer peripheral surface of at least three discrete sides of a column by means of taped members adhesively joined to the substrates and the face of the column. A cornice is provided at each of the corners of the column. Each cornice is provided with tongues disposed between the column and two adjacent substrates and arms overlying two adjacent substrates. The arms and tongues of each cornice are connected by a web disposed between adjacent side edges of two adjacent substrates. When the substrates are applied to a rectangular column, the method utilized is to pre-assemble two of the substrates with the cornices thereon and attach the same to substrates which have previously been secured to the adhesive strips on the column.

3,413,776
CYCLONE SEPARATOR
Frank F. Vytlacil, Cary, Ill., assignor to F. F. Vee Equipment Co., Inc., Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 405,355, Oct. 21, 1964. This application Jan. 18, 1967, Ser. No. 622,840
6 Claims. (Cl. 55—1)



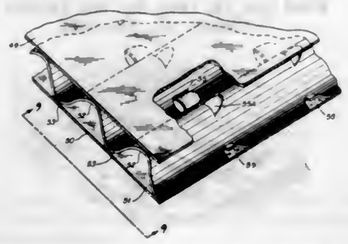
Cyclone apparatus havin abundle of circular or near circular tubes within the main gas outlet tube and method for improving cyclone performance wherein the inner spiral of outlet gas from the cyclone is divided into a plural number of gas spirals and each gas spiral is separately passed through the main gas outlet tube.

3,413,777
HYDROGEN DIFFUSION AND METHOD FOR PRODUCING SAME
Robert C. Langley, Millington, and Herbert Myers, Newark, N.J., assignors to Engelhard Minerals & Chemicals Corporation, a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,999
10 Claims. (Cl. 55—158)



Diffusion elements suitable for the diffusion separation of hydrogen from gaseous mixtures and methods for their preparation which elements consist of a porous ceramic body structure having a surface coating of a ceramic glaze containing finely-divided hydrogen-permeable metal embedded in a glass matrix.

3,413,778
MEANS FOR SEPARATING LIQUID AND GAS OR GASEOUS FLUID
Charles A. Lavery, Charles T. Patterson, and William R. Willis, Tulsa, Okla., assignors to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 515,034, Dec. 20, 1965. This application Oct. 17, 1967, Ser. No. 677,838
3 Claims. (Cl. 55—186)

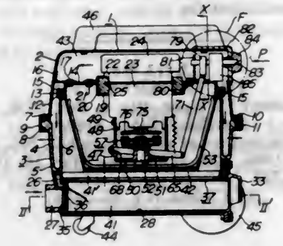


Vessels through which liquids and gases are passed for separation are disclosed. The baffles within the vessels are arranged to provide passages in which the flow of fluids has its Reynolds number controlled without substantial effect upon the velocity of the fluids.

3,413,779
ELECTRIC CLEANER
Kimio Takahashi, Ikuo Koike, and Kouichi Sagawa, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 13, 1966, Ser. No. 601,406
Claims priority, application Japan, Apr. 4, 1966, 41/30,133
11 Claims. (Cl. 55—272)

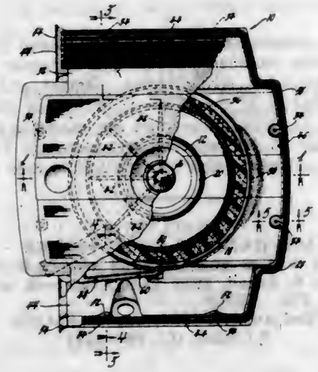
An electric vacuum cleaner including a fan in the upper portion of the main body of the cleaner for producing a flow of air between a suction inlet and an exhaust

outlet through a dust collecting chamber formed in the lower portion of the main body of the cleaner, a first filter mounted in the dust collecting chamber in a dust case which is slideably received therein and which communi-



cates with the suction inlet, said first filter extending horizontally across said dust case and spaced vertically above the bottom thereof, and a second filter located above said first filter in contact with power driven dust removing means.

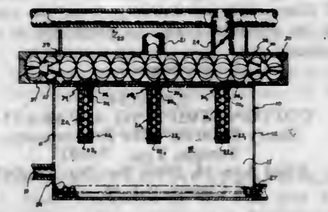
3,413,780
AIR CLEANER AND SILENCER ASSEMBLY
Norman J. Amlott, Flint, and James D. Karn, Grand Blanc, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,545
1 Claim. (Cl. 55—276)



An automotive air cleaner and silencer is provided with a pair of parallel snorkels integral with and extending along opposite sides of a substantially rectangular housing. The housing comprises upper and lower plastic members supported on the carburetor by a metal base plate and provided with a peripheral tongue and groove joint.

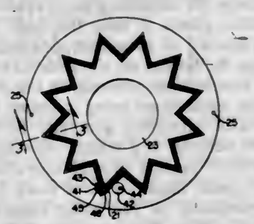
3,413,781
SONIC AEROSOL FILTERING DEVICES
Harry I. Abbond, 5845 Clematis Drive, Baton Rouge, La. 70808
Filed Aug. 15, 1966, Ser. No. 572,369
12 Claims. (Cl. 55—292)

Apparatus for separating aerosols from gases having an enclosed housing divided into a dust chamber and a clean gas discharge chamber with a plurality of filter bags positioned between the dust chamber and the clean gas discharge chamber, and a sound manifold enclosing a sound generating means which communicates with the



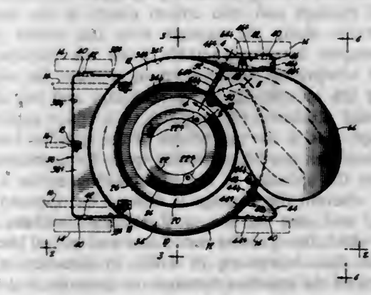
filter bags for directing sonic waves into the bags for dislodging accumulated aerosols therefrom.

3,413,782
AUTOMOTIVE AIR FILTER
Woodrow W. Bartlett, Salt Lake City, Utah, assignor to Gem Corporation, a corporation of Utah
Filed June 7, 1966, Ser. No. 555,750
10 Claims. (Cl. 55—485)



An automotive air filter of the type used on the carburetor or other air intake of internal combustion engines to prevent the ingestion of dust and dirt constructed so that successive outer layers of filter membrane which become clogged can be removed to expose a still unclogged membrane therebeneath with pressure exerting means for closing off any potential alternate passages past the end of the severed filter membrane and along a path between the layers of filter medium. The invention further provides molded structural supports in air excluding contact with opposed side edges of each layer of said filter membrane and at least one filter unit configuration in which the structural supports are the main support elements of a filter adapted for use on engine carburetors.

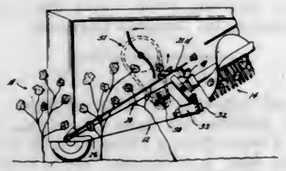
3,413,783
ROTARY POWER MOWER
Donald H. Gordon, Waynesboro, Va., assignor to Virginia Metalcrafters, Incorporated, Waynesboro, Va., a corporation of Virginia
Filed Sept. 22, 1965, Ser. No. 489,216
10 Claims. (Cl. 56—25.4)



A rotary power mower is provided having an upwardly spiraling channel for discharging vegetation cuttings for-

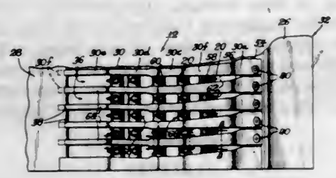
wardly of the motor in which the inlet of the channel lies ahead of and in angular offset relation to the outlet so that cuttings flowing through the outlet are freely discharged above and substantially over the inlet without plugging the outlet and without discharge of the cuttings into the inlet.

3,413,784
COTTON STRIPPING APPARATUS
Henry J. Jezek, 1204 E. Downsave, Temple, Tex. 76501
Filed Apr. 28, 1966, Ser. No. 546,061
7 Claims. (Cl. 56—34)



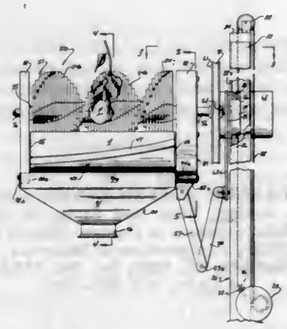
1. Apparatus for mounting on a vehicle for movement through cotton plants to strip the bolls therefrom, comprising, a plurality of elongated stripping fingers, means for mounting the fingers on a vehicle to extend in side-by-side spaced relationship generally in the direction of travel of the vehicle, each finger being mounted to pivot laterally around an axis extending generally in the direction of travel of the vehicle, and means yieldingly holding each finger separately against pivotal movement around said axis to allow each finger to pivot away from an adjacent finger independently of the other fingers as required to accommodate cotton plants passing between the fingers.

3,413,785
COTTON PICKER
Robert M. Fachini, 5588 Melvin Road, Memphis, Tenn. 38117
Filed Mar. 24, 1966, Ser. No. 537,064
2 Claims. (Cl. 56—43)



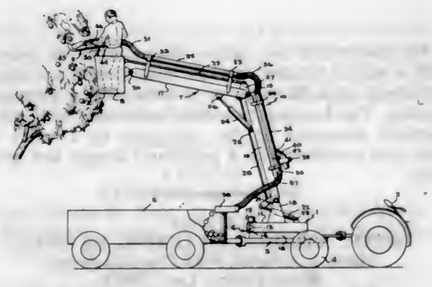
1. In a cotton picker having a picking unit with a fore-and-aft passage therein for the movement of cotton plants therethrough pursuant to movement of the picker along the plants, and having spindles projectable through slots into said passage and into cotton plants in the passage and movable along the passage with the cotton plants and thereupon being retractable from the passage, the invention comprising means forming a space for accommodating the spindle for movement into and out of the passage and confining the spindles to a space equivalent to bare spindles in the movement of the spindles into the passage and then providing greater space for accommodating cotton the spindles in the withdrawing action of the spindles, wherein the passage is defined by opposed wall elements, and one of the wall elements defines slots through which the spindles move into and out of the passage, said slots increasing in width in direction of the movement of the spindles through the passage, and being formed by a plurality of individually mounted slat bars, the slat bars having respectively opposed edges defining the slots, and the slots having a leading portion generally increasing in width progressing to the rear, and the slat bars at their leading portions each having one straight edge extending generally in the direction of the movement of the picker and another edge having elements inclined to that direction for forming said increasing dimensions of the said portions of the slots.

3,413,786
FRUIT HARVESTER
Robert D. Wehr, Rte. 6, Box 1736, Lakeland, Fla. 33801
Continuation-in-part of application Ser. No. 523,069, Jan. 26, 1966. This application Mar. 29, 1967, Ser. No. 626,767
18 Claims. (Cl. 56—328)



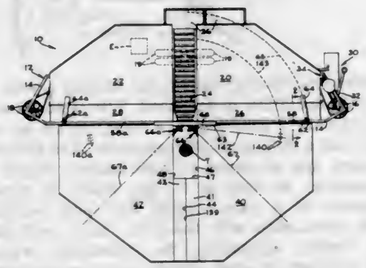
A truck mounted boom has a cantilevered harvesting head movably mounted thereon. The harvester head includes a rotatable screw-shaped member and smaller tubular members at either side to feed fruit thereto for harvesting. The tubular members are rotated in the opposite direction of the screw-shaped member. The entire harvester head is movable along a cantilevered shaft.

3,413,787
MECHANICAL FRUIT PICKER
Frederick W. Van Antwerp, 3508 Atlantic Blvd., and Robert S. Edsall, 1828 28th Ave., both of Vero Beach, Fla. 32960
Filed Aug. 25, 1966, Ser. No. 574,976
9 Claims. (Cl. 56—328)



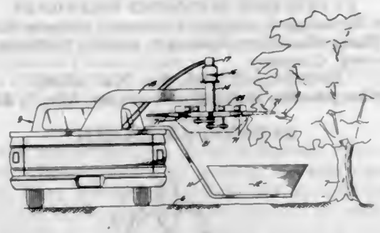
1. A mechanical fruit picker comprising, a hollow body and a head connected thereto, the head including an open-mounted hood communicating with the interior of the hollow body and having an end wall terminating at the open mouth, a picker member rotatably mounted in the hood adjacent the open mouth and having a substantially cylindrical fruit-engaging surface confronting and spaced from the end wall of the hood, and means to rotate the picker member, whereby fruit entering the open mouth of the hood will pass between the picker member and end wall and be caused to rotate upon the end wall through contact with the fruit-engaging surface of the picker member.

3,413,788
FRUIT HARVESTING MACHINE
Andrew W. Merk, Roseville, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,767
11 Claims. (Cl. 56—329)



This invention is drawn to a fruit collector which utilizes cooperating collection panels which direct fruit into a conveyor.

3,413,789
VIBRATORY FRUIT HARVESTER
Henry E. Studer, Davis, Calif., assignor to OECO Corporation, Portland, Oreg., a corporation of Oregon
Filed Sept. 18, 1964, Ser. No. 397,536
5 Claims. (Cl. 56—330)



1. A fruit harvester adapted for dislodging fruit from plants by vibration thereof, comprising a carriage adapted for movement along a planting, a plant-engaging rotor having a plurality of fingerlike projections thereon distributed about the circumference of said rotor to penetrate the plant growth with the rotor positioned against the planting, a rotor support on said carriage defining an axis of rotation for said rotor transverse to the direction of carriage movement permitting substantially continuous rolling contact of said rotor with the planting at a speed corresponding approximately to the speed of such carriage movement, a plurality of rotative weight masses, means mounting said masses on the rotor for rotation thereon about respective axes substantially parallel to and offset from said rotor axis, drive means drivingly connected to said masses to rotate the same synchronously at relatively high speed about their respective axes, the angular positional relationship of said masses while in rotation and the locational relationships of their respective axes being such that their rotational torque reaction forces combine additively to vibrate the rotor in a rotative sense while combining subtractively in a lineal sense so as to offset each other and thereby reduce vibrational loading forces on the rotor support.

3,413,790
ADJUSTABLE CULTIVATING RAKE
Harold O. Eads, Parkersburg, W. Va., and James W. Robison, Belpre, Ohio, assignors to McDonough Company, Parkersburg, W. Va., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,631
1 Claim. (Cl. 56—400.06)



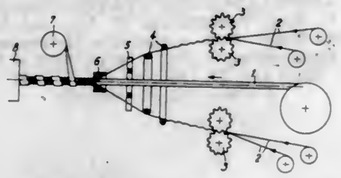
The nature and gist of the invention asserted, the nature and general substance of the subject matter being claimed, and the inventive concept involved reside in an adjustable cultivating rake of multi-purpose design and of durable, economical construction, and having a rigid head assembly of spaced raking tines and transverse supporting tubes suited both to lawn conditioning and to soil preparing uses, and an adjustable handle mounting adapting the rake for fixing the tines in different raking and cultivating attitudes, and for positioning the handle for convenient holding by different operators and in different applications.

3,413,791
DEVICES FOR USE IN SEPARATING THREADS
Nellie Ancona Feld, 100 Avenue P, Brooklyn, N.Y. 11204
Filed Dec. 9, 1966, Ser. No. 600,432
10 Claims. (Cl. 57—2.3)



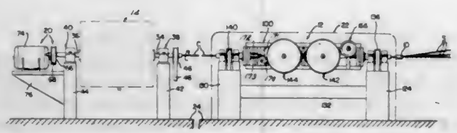
1. A weighted device comprising a base, a hook member of spring material, means to anchor the lower end of said member to said base, said member having an upper hook portion projecting upwardly above said base, and forming a wedging groove, and a cover on said base enclosing the upwardly projecting portion of said member.

3,413,792
PROCESS AND APPARATUS FOR THE MANUFACTURE OF CONCENTRIC CONDUCTORS FOR ELECTRIC CABLES
Wilhelm Werdenberg, Saint-Prex, Switzerland, assignor to Societe Anonyme des Cableries et Trefileries de Cossonnay, Vaud, Switzerland, a Swiss company
Filed Apr. 21, 1967, Ser. No. 632,640
Claims priority, application Switzerland, May 4, 1966, 6,566/66
6 Claims. (Cl. 57—9)



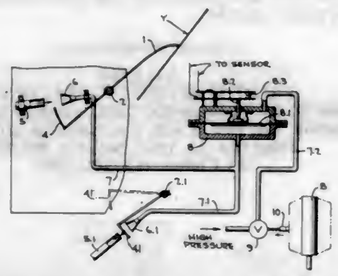
A process in which straight wires are pulled by the moving cable between cogged rollers thereby becoming corrugated. The corrugated wires are guided between two cylindrical rings surrounding the core, in such a manner that each plane of the corrugation comes to lie in one of the tangential planes of the cable. The corrugated wires are distributed and thus disposed regularly by means of channels on the circumference of the core in an even-phase as possible on the surface of the cable by means of a nipple hole surrounding the core together with the concentric conductor. The wires are held firmly in position on the cable by wrapping material around the wires. An apparatus which includes cogged rollers, means for drawing wires, two cylindrical rings, channels disposed on at least one of said rings, and a nipple having a hole. The cogged rollers, cylindrical rings, channels and nipple are disposed one after another in the direction of forward movement of the cable.

3,413,793
SHEAVE CAPSTAN ASSEMBLY FOR CABLE TAKEUP APPARATUS
Ralph M. Stine, Kenmore, and Herbert E. Weller, Williamsville, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 29, 1966, Ser. No. 546,303
21 Claims. (Cl. 57—68)



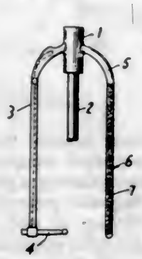
The disclosure concerns a sheave capstan assembly for twisting cable fed from a forming die to takeup means wherein the latter rotates with the capstan assembly about the die axis. The capstan assembly carries a pair of sheaves which provide a figure 8 cable path while the cable travels along the capstan. The cable is twisted between the die and the first sheave. The sheaves are driven by transmission means to rotate in opposite directions about parallel axes transverse to the die axis as the capstan rotates to provide the major portion of pulling force required for twisting and feeding the cable from the die. The sheave drive transmission means is an integral part of the capstan assembly.

3,413,794
PNEUMATIC SENSING SYSTEM
Charles C. Bell, Warwick, and Kurt W. Niederer, Saunderstown, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Mar. 28, 1967, Ser. No. 626,502
10 Claims. (Cl. 57—80)



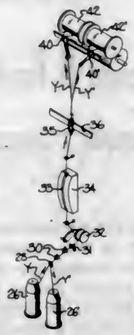
A pneumatic sensing system for sensing a yarn strand in a textile operation is described. The system comprises in combination a yarn feeler, a vane, an air jet and air receiver, and a fluid pressure transducer. The elements are constructed and arranged to continuously supply air to the transducer as long as a yarn strand is present. In the absence of a yarn strand, the vane, which is in operable association with the yarn feeler, will interrupt the air supply, exhausting the transducer, which will activate a signal to stop a work cycle, or initiate a rethreading procedure. A preferred embodiment utilizes the improved pneumatic sensing system in an automatic spinning unit having a patroling tender. This embodiment employs a registration vane in operable association with a second air jet and air receiver. The registration vane interrupts the second air supply at each spinning station, but the transducer is not exhausted unless both air jets are interrupted. When the pneumatic yarn sensing system is employed on a patrolling spinning tender, it can be coordinated with a full bobbin sensor.

3,413,795
FLYER FOR SPINNING MACHINES
Ernest Breuning, Gerlingen, Germany, assignor to Eugen C. Maier Metallverarbeitung G.m.b.H., Fellbach, Wurttemberg, Germany
Filed May 5, 1966, Ser. No. 547,857
Claims priority, application Germany, May 7, 1965, B 81,816
11 Claims. (Cl. 57—115)



A flyer for spinning machines is disclosed as having a pair of legs extending parallel to the spindle axis, with at least one of these legs having a series of bristles extending therealong to entrain fiber fly and retain the fiber fly in the bristles. The bristles may be removably mounted as a unit on the leg, and the leg may be formed with air flow apertures or slots therethrough. In one embodiment of the invention, the exit end of the air flow slot or aperture is closed by a screen or the like for further entraining and retaining fiber fly.

3,413,796
THERMOPLASTIC STRETCH YARN AND METHOD OF FORMING SAME
Marvin H. Comer, Burlington, and James Robert McCracken, Graham, N.C., assignors to Alamance Industries, Inc., Burlington, N.C., a corporation of North Carolina
Filed July 14, 1966, Ser. No. 565,213
9 Claims. (Cl. 57—140)



A thermoplastic stretchable yarn suitable for the knitting of ladies' sheer hosiery and a method of forming the yarn which includes joining together pairs of the fine denier yarns (10 to 20 denier and having 2 to 10 filaments), false-twisting them with a high range of turns (75 to 120 turns per inch), and then separating the yarns and taking them up on separate take-up packages. The resulting stretchable yarn contains certain of the characteristics of a non-torque stretch yarn as well as certain of the characteristics of a torque stretch yarn.

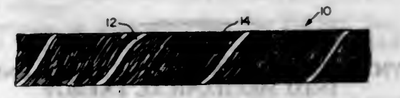
3,413,797
TREATMENT OF ORIENTED CRYSTALLINE POLYESTER FILAMENTS
Roy Chapman, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 18, 1966, Ser. No. 573,181
Claims priority, application Great Britain, Aug. 23, 1965, 36,025/65
3 Claims. (Cl. 57—140)

Drawn polyethylene terephthalate filament yarns of high intrinsic viscosity and high tenacity are heat treated by passing them through a fluidized bed of solid particles maintained in the range 240° C.–264° C. in order to reduce shrinkage without undesirably reducing properties such as tenacity, elongation and modulus.

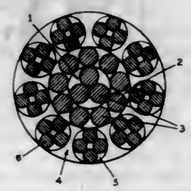
The filaments have the following properties: intrinsic viscosity of 0.85–1.00 dl. per gram, tenacity of at least 8 g.p.d. in the form of a yarn of up to 10,000 denier and not more than one turn per inch twist, extension of at least 10%, shrinkage of less than 8%, a 2% modulus of at least 80 g.p.d. and a shrinkage force of less than 0.35 g.p.d.

3,413,798
YARNS AND FABRICS THEREOF
Eitan Zur, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 621,049
12 Claims. (Cl. 57—140)

A composite yarn composed of an inelastic continuous filament yarn combined with staple fibers having specific work-to-break and tenacity values, the continuous filament yarn being visible among the staple fibers in the composite yarn. A knit fabric of these yarns having unique aesthetics, namely, a silk-life appearance and a tactility combining worsted-like and silk-like hand.

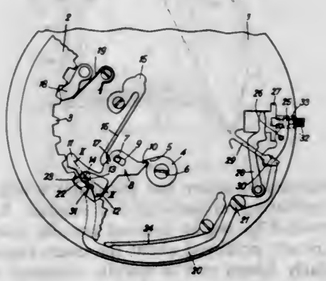


3,413,799
METALLIC CABLE
Daniel Lejeune, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed Sept. 1, 1967, Ser. No. 664,995
Claims priority, application France, Sept. 7, 1966, 75,621
8 Claims. (Cl. 57—145)



Metallic cords or cables for reinforcing tires, conveyor belts, sheathed tubing and the like in which the core wires of the cords are of larger diameter than the sheath wires in a ratio between about 1.05/1 and 2/1 in order to improve and render more uniform the resistance of the wires in the cord to breakage by repeated bending and to enhance the resistance of the cord to compressive stresses.

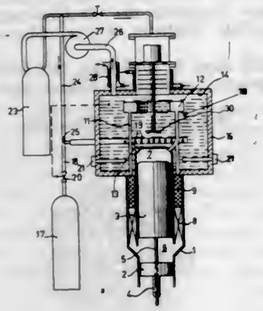
3,413,800
CALENDAR CORRECTION MECHANISM FOR A WATCH MOVEMENT
Georges Dubois and Fernand Cherbuin, Grenchen, Switzerland, assignors to A. Schild S.A., Grenchen, Solothurn, Switzerland, a company limited by shares of Switzerland
Filed June 6, 1966, Ser. No. 555,478
Claims priority, application Switzerland, June 17, 1965, 8,473/65
7 Claims. (Cl. 58—58)



A date correcting mechanism in a calendar timepiece wherein the date indicator can be advanced simply by means of a person axially displacing the winding stem of the movement, the winding stem being operatively

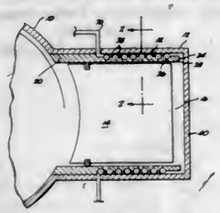
associated with the date indicator driving means which is driven by the watch movement to automatically advance the date indicator every twenty-four hours.

3,413,801
DEVICE FOR CONVERTING CALORIFIC ENERGY INTO MECHANICAL ENERGY
Roelf Jan Meijer and Roland Anton Johan Otto Van Witteveen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 5, 1967, Ser. No. 637,136
Claims priority, application Netherlands, May 11, 1966, 6606406
8 Claims. (Cl. 60—24)



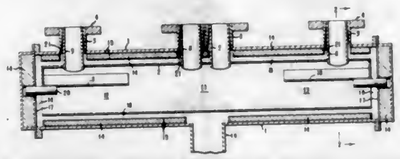
A heat supply system for operating a heat engine and specifically a hot-gas engine, comprising a container of a molten metal fuel, a supply of an oxidizer connected by conduit to the fuel container, and a supply of a non-reactive gas connected to the fuel container through at least part of the supply conduit of the oxidizer thereby preventing backflow of the metal fuel to the supply conduit in the event of a dimnishing of the supply of oxidizer.

3,413,802
REGENERATOR STRUCTURE
Kenneth W. Cowans, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 13, 1967, Ser. No. 667,423
6 Claims. (Cl. 60—24)



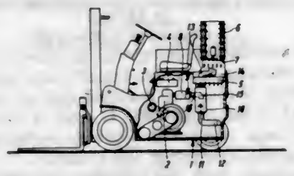
The disclosed structure has particular utility in closed cycle reciprocating refrigerators and engines. A hot cylinder is provided having an internal annular mandrel with grooves spirally arranged about the outer circumference. An annularly finned rod is spirally disposed within the mandrel grooves to surround the mandrel and project thereabove. The cylinder also comprises a cap press-fitted over the finned rod. A regenerator space is thus provided between the cap and the telescopically received mandrel. Fluid circulates from the hot cylinder through the space and over the finned rod. The rod acts as a regenerator absorbing and returning heat to the circulating fluid as a thermodynamic cycle proceeds.

3,413,803
EXHAUST MANIFOLD REACTION SYSTEM AND APPARATUS
Iver Theodore Rosenlund, Chester County, Pa., and Walter Harold Douthit, New Castle County, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,392
13 Claims. (Cl. 60—29)



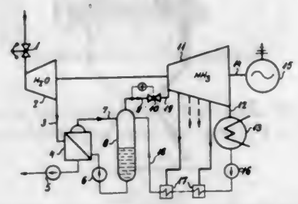
Method of reducing the concentration of hydrocarbons and carbon monoxide in the exhaust gas from internal combustion engines by passing the exhaust gas through an exhaust manifold reactor having an outer shell positioned concentrically around an inner chamber in which streams of exhaust gas from a plurality of exhaust ports of the engine are directed into a mixing zone in the inner chamber at high velocity so as to impact at angles of at least 80° and the exhaust gas is caused to make sharp turns before exiting the inner chamber and passed through the annular space between the inner chamber and the outer shell before exiting the reactor.

3,413,804
DEVICE FOR TREATING EXHAUST GASES
Bernhard Max Schongs, Stapelfelderstrasse 34a, Hans Waldemar Lau, Lauenburgerstrasse 9, both of Hamburg, Germany, and Jürgen Behrens, Schulstrasse 23, Breitenfelde, Germany
Filed Sept. 1, 1966, Ser. No. 576,572
Claims priority, application Germany, Sept. 7, 1965, St 24,366
3 Claims. (Cl. 60—30)



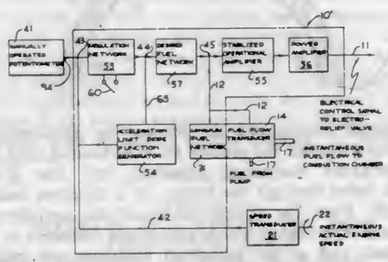
A device for treating exhaust gases from internal combustion engines, particularly for use on vehicles carrying explosives or exposed to an explosive atmosphere, includes a mixing chamber connected to the exhaust gas conduit and which is arranged to receive fresh air from atmosphere for mixing with the exhaust gases in order to reduce the temperature of the gases below a temperature at which there is a danger of further ignition or explosion of the gases. In one embodiment the air is drawn directly through a filter which is constructed to entrain any explosive substances in suspension and into the mixing chamber for direct mixing with the exhaust gases. In another embodiment, the air is first directed through the engine water cooler or heat exchanger so that it is partially heated before it is brought in contact with the exhaust gases but is still cool enough to reduce the exhaust gases below a critical temperature to one in which ignition or sparking is not possible.

3,413,805
METHOD OF AND APPARATUS FOR CONTROLLING PLURAL FLUID MEDIUM THERMAL POWER PLANTS
László Heller and László Forgo, Budapest, Hungary, assignors to Komplex Nagyberendezesek Export-Import Vallalata, Budapest, Hungary, a firm
Filed Mar. 22, 1966, Ser. No. 538,896
Claims priority, application Hungary, Mar. 29, 1965, HE-456
4 Claims. (Cl. 60—38)



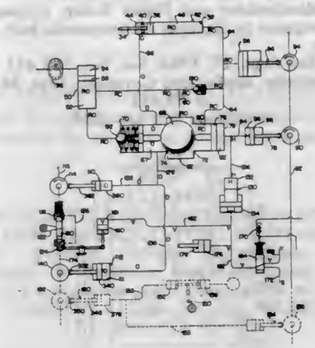
Method and apparatus for controlling a plural medium power plant in which the heat content of a working medium working between higher temperature limits (steam) is transmitted through a heat exchanger to a working medium working between lower temperature limits by continuously maintaining the minimum pressure of the steam higher than atmospheric pressure.

3,413,806
FUEL SYSTEM AND ELECTRICAL CONTROL THEREFOR
William H. Belke, Peoria, John W. Crayton, Washington, and Duane E. Evans and William E. Streight, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 7, 1966, Ser. No. 532,436
3 Claims. (Cl. 60—39.28)



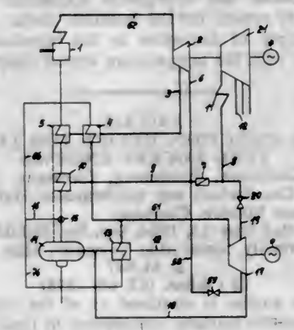
In the fuel line to the combution chamber of a gas turbine engine is arranged a fuel bypass circuit containing an electrically controlled pressure relief valve to divert, if and as required, a variable portion of the fuel destined for the combustion chamber back to the reservoir; hence, to control the amount of fuel to the combustion chamber by regulating the fuel system pressure. The relief valve is responsive to a load signal from an electrical control which in turn is responsive to electrical input signals representative of desired engine speed, actual fuel flow to the combustion chamber and actual engine speed and provided by a manually operated potentiometer, a fuel flow transducer and a speed transducer, respectively.

3,413,807
MACHINE TOOL
Earl A. Thompson, Bloomfield Hills, Mich., assignor to Earl A. Thompson Manufacturing Co., a corporation of Michigan
Continuation of application Ser. No. 334,503, Dec. 30, 1963. This application Jan. 30, 1967, Ser. No. 621,092
17 Claims. (Cl. 60—54.5)



A tool, e.g. a grinding wheel, is reciprocated by either of two hydraulic link actuators, the pulsators of which may be constantly operated by cams against a return pressure. One actuator may provide a long stroke, e.g. to remove the grinding wheel from the work and insert it in a new work piece. The other actuator may oscillate the wheel rapidly on a short stroke in the work piece while it is grinding. The actuators are selectively made operative or inoperative (while their pulsators are continuously cycled) by confining liquid to the appropriate hydraulic circuit or permitting the liquid to surge into and out of the circuit. This latter is accomplished by a single ball valve moved to one of two positions by a third hydraulic actuator against a return spring.

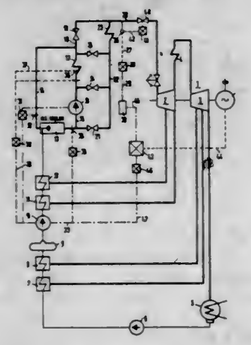
3,413,808
METHOD OF AND ARRANGEMENT FOR CONTROLLING THE STEAM TEMPERATURE IN STEAM POWER OPERATIONS WITH ONE OR MORE INTERMEDIATE SUPERHEATING STAGES
Klaus Knizia, Nochen uber Engelskirchen, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummerskirchen, Germany
Filed Feb. 27, 1967, Ser. No. 618,825
15 Claims. (Cl. 60—67)



Power plant in which steam from a boiler is supplied to an auxiliary turbine and exhaust steam from the auxiliary turbine is passed through a superheater to a main

turbine while steam bled off from between the inlet of the auxiliary turbine and the inlet of the superheater is expanded to a cooler temperature or is used to generate secondary steam and which expanded steam or secondary steam is also supplied to the superheater inlet.

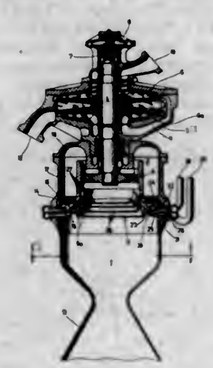
3,413,809
STEAM POWER PLANTS
Walter Bredtschneider and Elmar Kefer, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Sept. 27, 1966, Ser. No. 582,411
Claims priority, application Germany, Sept. 30, 1965, S 99,851
9 Claims. (Cl. 60—104)



Steam power plant has a boiler circulating system including a live steam conduit, a return conduit, at least one injection cooler, and a heater for producing superheated live steam in the system which is fed in part to a prime mover through the live steam conduit and is returnable in part through the return conduit to the injection cooler before it is fed to the prime mover. Regulation of the system is afforded by a pressure sensor for measuring live steam pressure in the live steam conduit, the pressure sensor being operatively connected to the heater for regulating the same in accordance with the pressure of the live steam in the live steam conduit. Regulation of the system is also provided by two temperature sensors, one of which is disposed in the return conduit at a location thereof upstream from the injection cooler and operatively connected to the return conduit for regulating the flow of superheated steam through the return conduit in accordance with the temperature sensed thereby. The other temperature sensor is located downstream of the injection cooler and operatively connected to a feedwater supply system for the injection cooler for regulating the supply of feedwater to the injection cooler in accordance with the temperature sensed thereby.

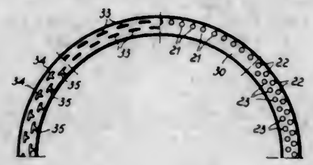
3,413,810
FUEL INJECTION DEVICE FOR LIQUID FUEL ROCKET ENGINES
Michael Kaufmann, Neubiberg, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany
Filed May 13, 1966, Ser. No. 550,034
Claims priority, application Germany, May 15, 1965, B 81,947
14 Claims. (Cl. 60—258)

A rocket engine is disclosed as of the type supplied with combustible mixture components in liquid form and having a combustion chamber into which at least one component or an incompletely burned mixture of plural components is delivered as a gaseous stream. The combustion chamber includes an injection device injecting at least one other component, preferably still in liquid form, into the gaseous stream. The injection device comprises plural fixed component-supply lines arranged in the form of a small mesh lattice extending across the combustion chamber and the flow path of the gaseous stream. These supply lines have small cross sections whereby not to



interfere with the flow of the gaseous stream from a precombustion chamber into the main combustion chamber, the supply lines having component injection orifices and presenting substantially no resistance to the flow of the gaseous stream therethrough toward a nozzle, while preventing any turbulence or backflow of the products of combustion.

3,413,811
METHOD AND APPARATUS FOR TUNNELING
Pasquale Giovanni Giacobino, Piazzale Leonardo da Vinci 12, Milan, Italy
Filed Feb. 4, 1966, Ser. No. 525,011
Claims priority, application Italy, Feb. 17, 1965, 3,094/65; June 23, 1965, 13,897/65
2 Claims. (Cl. 61—42)

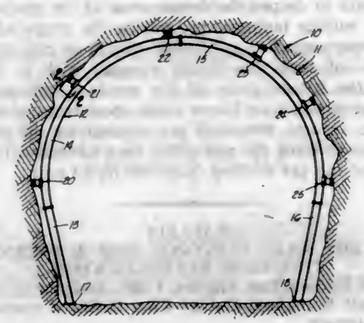


Elongated excavations are formed by positioning an open frame against the ground to be excavated, and driving elongated sharpened members into the ground through holes through the frame, in a direction inclined outwardly from the frame, all about the periphery of the frame. The region within the driven members is then excavated; and as the elongated members are inclined outwardly, the spaced thus provided will be large enough for a second frame, which is inserted through the first frame and then the procedure is repeated. At all times, excavation will thus be conducted within a sheath of driven elongated members that prevent collapse of the walls of the excavation.

3,413,812
BLOCK DEVICE
Kirk H. Fox, Loomis, Calif., assignor to Gates & Fox Co., Inc., Bakersfield, Calif., a corporation of California
Filed Aug. 31, 1967, Ser. No. 664,666
4 Claims. (Cl. 61—45)

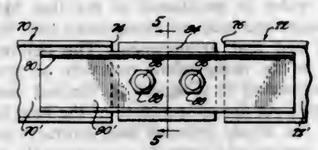
A block device for blocking steel ribs in place adjacent a tunnel wall. The block device includes a base plate

which is secured to the rib, a stem which mates with the base plate and a cap for the stem. The cap has an



outer face adjacent to the tunnel wall. Different size stems are employed depending upon the contours of the tunnel wall.

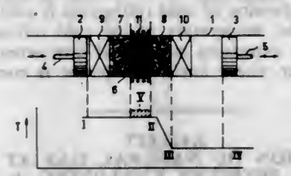
3,413,813
TUNNEL SUPPORT INCLUDING A YIELDABLE CONNECTION
James H. Rock, Sewickley, Pa., Lloyd E. Anderson, Sr., Des Moines, Iowa, and Milton Thomas Buckwalter, Allison Park, Pa., assignors to Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 9, 1966, Ser. No. 532,943
9 Claims. (Cl. 61—45)



A pair of rigid tunnel supporting ribs each have a web and the adjacent ends of the ribs are spaced apart. Means for connecting the ends of the ribs comprises a pair of rigid channel members each having webs engaging webs on the ribs for clamping the end portions of the ribs between the channel members. Rigid filler means is disposed between the channel members and in contact therewith, the filler means being spaced from at least one of the end portions of the ribs to permit relative movement between the parts and absorbing excess loading by controlled friction.

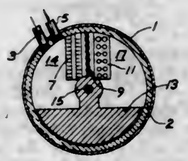
3,413,814
METHOD AND APPARATUS FOR PRODUCING COLD
Johannes Rudolphus van Geuns, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 620,005
Claims priority, application Netherlands, Mar. 3, 1966, 6602744
29 Claims. (Cl. 62—3)

A method and apparatus for producing cold in which the entropy of a paramagnetic substance is alternately varied by varying an external parameter such as a magnetic field, and a fluid medium such as helium gas is flowed in alternate directions in heat-exchange relationship with the substance. During the directional flows heat and cold respectively are dissipated from the substance to the fluid, and corresponding to these flows there is heat-exchange relationship first by a portion of the fluid with an area absorbing heat from the fluid, and subsequently by a remote portion of the fluid with an area to



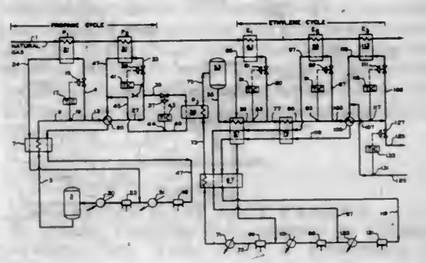
be cooled. Fluid in the first area is at a generally higher temperature than fluid in the area to be cooled, and portions of fluid in the two areas are not intermixed.

3,413,815
HEAT-ACTUATED REGENERATIVE COMPRESSOR FOR REFRIGERATING SYSTEMS
Eric G. U. Granryd, Chicago, Ill., assignor, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a not-for-profit corporation of New York
Filed May 2, 1966, Ser. No. 547,040
7 Claims. (Cl. 62—6)



A compressor used in a cooling system of the type which includes a gas compressor, an evaporator, a condenser, and a fluid throttling member between the evaporator and the condenser. The compressor is a heat actuated regenerative compressor and includes a chamber for confining gas, a valve in the chamber for regulating the flow of gas into and out of the chamber, a member for displacing the gas within the chamber, means in the chamber for heating the gas, means in the chamber for cooling the gas and a heat regenerator in the chamber, the regenerator being adjacent to and between the heating and cooling means.

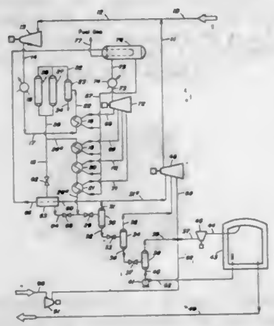
3,413,816
LIQUEFACTION OF NATURAL GAS
Salvador S. De Marco, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 578,114
6 Claims. (Cl. 62—21)



Natural gas is liquified by heat exchange with a series of separate progressively decreasing temperature level refrigerants. Each of the cold liquid refrigerants is expanded to a vapor-liquid condition, then passed in heat exchange with the natural gas and then with the cold

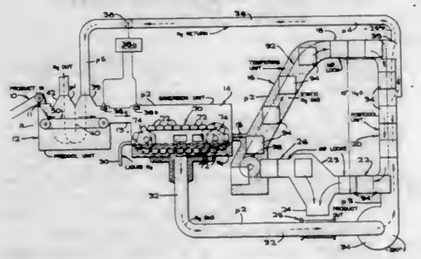
unexpanded liquid refrigerant causing the liquid portion of the refrigerant to vaporize. The vaporized refrigerant is recompressed and condensed to complete the refrigeration cycle. Expansion of cold refrigerant is controlled responsive to the temperature of the cold refrigerant upstream of the expansion means and downstream of the heat exchanger where liquid refrigerant is cooled prior to expansion.

3,413,817
LIQUEFACTION OF NATURAL GAS AT SUPERCRITICAL PRESSURE EMPLOYING A SINGLE REFRIGERATION CYCLE
Ludwig Kniel, Scarsdale, N.Y., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 437,621, Feb. 18, 1965, which is a continuation-in-part of application Ser. No. 358,789, Apr. 10, 1964. This application July 6, 1967, Ser. No. 651,587
9 Claims. (Cl. 62—23)



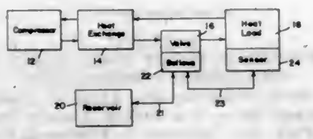
A process for liquefying natural gas by compressing the gas to a pressure above the critical pressure thereof, cooling the gas by indirect heat transfer with a single refrigerant to a temperature slightly above the normal boiling point of the refrigerant and expanding the cooled gas to effect liquefaction thereof.

3,413,818
IMMERSION FREEZING
John P. Pelmulder, Saratoga, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,298
9 Claims. (Cl. 62—63)



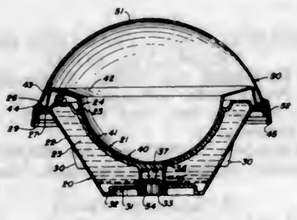
1. The method of freezing cellular organic products comprising the steps of providing a bath of liquefied nitrogen gas, precooling the product in a bath of cold gas evolved from said bath to bring the product to an average temperature that is slightly above freezing, subjecting the precooled product to the bath of liquefied nitrogen gas to form a relatively thin frozen crust on the product, tempering the partially frozen product in a static bath of cold nitrogen gas that has evolved from the liquid bath to deepen the frozen crust of the product and raise its surface temperature, passing the tempered product countercurrent to a dynamic stream of cold nitrogen gas evolved from the liquid nitrogen bath to further deepen the frozen crust of the product sufficiently to cause the product to freeze solid upon removal thereof from the dynamic stream of gas, maintaining the pressure of the gas entering the precooling bath substantially equal to that of the gas evolved from the liquid bath.

3,413,819
FLOW RATE CONTROL FOR A JOULE-THOMSON REFRIGERATOR
Siegfried Hansen, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,689
3 Claims. (Cl. 62—222)



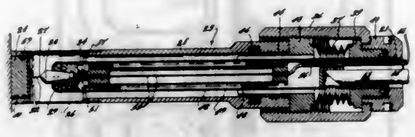
A conventional Joule-Thomson circuit is disclosed comprising a compressor, heat exchanger and heat load. A controlled valve is positioned in the line between the heat exchanger and load and comprises a bellows operated valve ball and seat arrangement. The bellows is line-connected to an independent reservoir of pressure gas and line-connected to a sensor in thermal contact with the heat load. As the temperature of the heat load varies the gas in the sensor expands and contracts causing the bellows to expand and contract and moves the ball in and out of registry with the valve seat thereby controlling gas flow in response to load temperature variation.

3,413,820
SUPREME SERVICE ASSEMBLY
Roger L. Paquin, Killingworth, Conn., assignor to Glacier Ware, Inc., a corporation of Connecticut
Filed Sept. 26, 1966, Ser. No. 582,130
4 Claims. (Cl. 62—371)



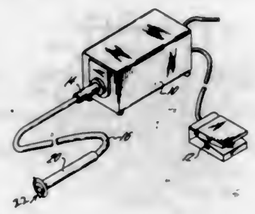
A double-walled cold capsule including a bottom wall portion, a frusto conical side wall portion integral therewith and an inner parti-spherical wall portion, the inner and side wall portions each having an upper edge and a radial lip extending therefrom with the lips secured to provide a sealed cavity, and a refrigerant solution sealed within the cavity, the side wall portion having a series of projections for nesting the capsule with others in spaced stacked relation.

3,413,821
CRYOGENIC REFRIGERATION FOR CRYSTAL X-RAY DIFFRACTION STUDIES
Henry F. Villaume and Donald S. Collins, Emmaus, Pa., assignors to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 617,905
5 Claims. (Cl. 62—514)



An apparatus for the cryogenic refrigeration of a specimen to be studied by X-ray diffraction. The specimen is mounted within a vacuum jacket and cooled with a miniature, open-cycle, Joule-Thomson refrigerator.

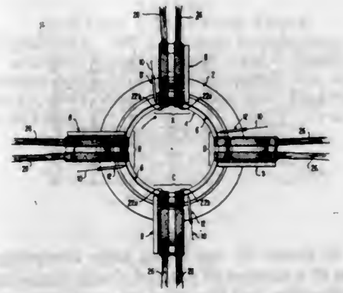
3,413,822
APPARATUS FOR MENDING KNITTED FABRICS
Stanford Marley, New York, N.Y. (37—28 80th St., Jackson Heights, N.Y. 11372)
Filed Mar. 28, 1967, Ser. No. 626,534
5 Claims. (Cl. 66—1)



In apparatus for mending pulled threads in knitted fabrics and including a rotary shaft, a work engaging member consisting of a circular blade mounted on the end of the shaft, said blade having spaced loop thread engaging elements on its periphery separated by arcuate edge portions of the blade adapted to engage against the work between loop thread engagements by the elements. The elements may be triangularly shaped projections on the periphery or indentations in the marginal edge portion of the blade whose corners form loop thread engaging elements.

3,413,823
APPARATUS FOR PRODUCTION OF PATTERNED PILE FABRIC
Abraham John Beucus, Delavan, Wis., and Patrick Joseph Forde, Kitchener, Ontario, Canada, assignors to Amphenol Corporation, Broadview, Ill., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,554
5 Claims. (Cl. 66—9)

A deep pile knitting machine is equipped for quantity production of fabric having walewise pattern effects. A number of body yarn and pile fiber feed stations are located about a needle cylinder. At each station, different types of pile fibers are delivered to axially spaced portions of a doffer, and the knitting needles are selectively raised into contact with the doffer portions to pick up one or the other or both types of pile fibers. Selectivity is accomplished by providing the individual needles of the set with butts of different lengths for cooperation with stationary cams adjacent the needle cylinder.



3,413,824
METHOD FOR THE SPOT SHAPING OF KNIT FABRICS AND RESULTANT FABRICS PRODUCED THEREBY
Samuel B. Kuney, Dover, N.J., assignor to Swiss Knitting Company, Dover, N.J., a corporation of New Jersey
Filed Feb. 19, 1965, Ser. No. 433,853
11 Claims. (Cl. 66—177)

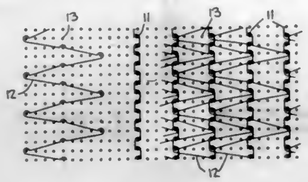


A method, machine and product are disclosed for the manufacture of articles of knit, stretch fabric construction on a modified, circular spring needle knitting machine. A four course pattern of fabric construction is constituted by alternating courses of textile yarn and courses of combined textile yarn and stretch yarn. Readily variable, automatically operated control means are provided on the knitting machine to control the length of the textile yarn stitch at locations in the article, whereby a lengthening of the textile stitch from the normal length thereof at predetermined times forms an integral pocket or convexity of a predetermined configuration and size at a predetermined location in the article, and a shortening of the textile stitch from the normal length thereof at predetermined times forms an integral seam piece or concavity of a predetermined configuration and size at a predetermined location in the article.

3,413,825
METERING WARP KNIT FABRICS
Allen R. Winch, Westfield, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 399,042, Sept. 24, 1964, which is a continuation-in-part of application Ser. No. 339,055, Dec. 30, 1963. This application June 30, 1967, Ser. No. 650,551
5 Claims. (Cl. 66—192)

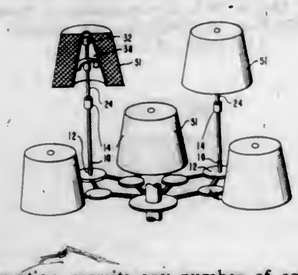
A warped knit continuous filament fabric carrying a depositant and having a low stretch in the warpwise direc-

tion and a high stretch in the walewise direction, said fabric including two sets of yarn having a denier of from about 15 to about 150, containing from about 5 to about 75 filaments per yarn and having a denier per fil of from



about 0.5 to about 20, one set of yarns comprising yarns in the form of a number of parallel chains extending in the warpwise direction and the other set comprising yarns extending in the walewise direction.

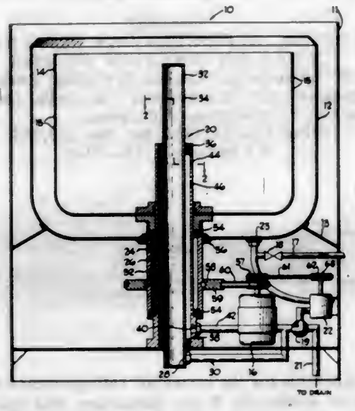
3,413,826
YARN STACKING DEVICE FOR KNITTING MACHINES
Alexander Abowitz, 3386 E. Olympic, Los Angeles, Calif. 90023
Filed Apr. 4, 1966, Ser. No. 540,173
7 Claims. (Cl. 66—8)



This invention permits any number of cones of yarn to be stacked one on top of the other on the rotating stand of a compiex knitting or sewing machine so that by tying or pig tailing the ends of one cone to the beginning of the cone below, the yarn capacity of the knitting or sewing machine can be increased. This invention comprises assemblies including extension rods and steadying surface members adjustably mounted on the extension rods. These surface members engage and grip the inner surfaces of the stacked cones of yarn. In this way any number of cones of yarn can be stacked one on top of the other while the adjustably mounted steadying surface members in each assembly engage the inner surface of each cone of yarn and holds the cones steady during the rotation of the stand on which the stacked cones of yarn are mounted.

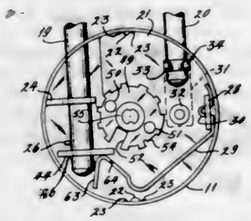
3,413,827
JET ACTION FOR LIQUID TREATMENT OF MATERIALS
George E. Kochanek, Glen Ellyn, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1967, Ser. No. 628,749
11 Claims. (Cl. 68—23)

A washing machine in which washing fluid under pressure is supplied to a hollow tube positioned in the center of a tub. Associated with the tube is a plurality of jets from which the pressurized washing fluid is emitted. The jets are positioned so that the resulting streams are substantially tangential to the inner periphery of the hollow tube and so arranged that the clothes being washed as-



sume a tumbling motion but without suffering the adverse effects resulting from a mechanical agitator.

3,413,828
COMBINATION LOCK
Bob G. Harrell, St. Louis County, Mo., assignor to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed June 6, 1966, Ser. No. 555,319
5 Claims. (Cl. 70—25)

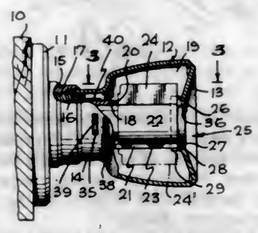


A combination lock with an arrangement of tumblers which are constructed to speed up the operation of the lock combination for unlocking the shackle, and resilient means which is energized upon the movement of the shackle into locked position for moving the tumblers to initiate the energization of the resilient means which will then release its energy to scramble the usual gate alignment of the tumblers.

3,413,829
DOUBLE CUTOUT SPINDLE CAP
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280
Filed Feb. 20, 1967, Ser. No. 617,350
3 Claims. (Cl. 70—224)

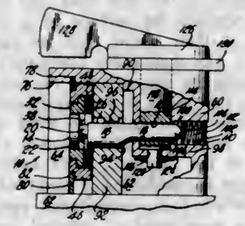
The invention relates to door locks wherein a key-actuated mechanism is located in the handhold, such as a knob or lever handle. In the structure to which the invention is applicable, the handhold is nonrotatably attached to an interior tubular spindle by a releasable detent, so that the handhold can be removed from the spindle. The spindle, when rotated, actuates a conventional lock mechanism. A key-actuated mechanism or core, which consists of a separate, removable unit, is located within the handhold and also within the outer end of the spindle. A protrusion of the key-actuated core, known to the trade

as a pin tumbler chamber, extends outwardly and is received within one of two oppositely located slots in the spindle. Practice requires that the key-actuated mechanism or core be capable of being reversed 90 degrees to appropriately invert the keyway on left hand and right hand doors, respectively. It is for this purpose that the spindle has two slots, one on each side. Between the spindle and the face of the handhold is a ring which interconnects the spindle with the face of the handhold. The ring is adapted to have a snug fit in an appropriate hole in the handhold face so that it can be



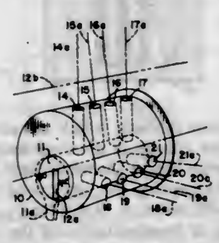
placed in position where it will tend to remain. On a rearwardly extending flange of the ring are two cutout portions which correspond to the slots in the spindle. The ring is positioned in the handhold so that the cutout portions will align with the slots in the spindle. Accordingly, the key-actuated mechanism, when positioned in one of the slots and the corresponding cutout portion, can be reversed in position upon removal of the handhold and the handhold reapplied without it being necessary to disturb the position of the ring in the face of the handhold and even though the handhold is not relocated rotationally.

3,413,830
LATCH ASSEMBLIES, PARTICULARLY FOR WINDOWS
Michael Rifkin, 458 Lake Ave., Lyndhurst, N.J. 07071
Filed Dec. 7, 1966, Ser. No. 599,898
7 Claims. (Cl. 70—312)



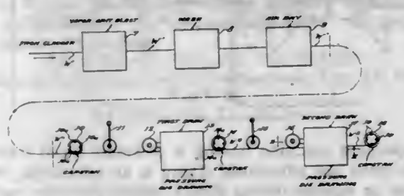
1. In a latch assembly, a locking member having a locking position and a pair of rotary means surrounding and freely turnable with respect to said locking member and shaped for retaining the latter in said locking position thereof except when both of said rotary means are simultaneously in given angular positions, respectively, and mounting means for mounting said locking member for movement to and from said locking position thereof and for mounting said pair of rotary means for rotary movement with respect to said locking member, so that unless both of said rotary means are simultaneously in said given positions thereof, respectively, said locking member cannot be removed from said locking position thereof said mounting means and said pair of rotary means respectively having forwardly directed front surfaces all situated substantially in a common plane, and visual indicating means carried by said pair of rotary members and said mounting means for visually indicating at said front surfaces when said pair of rotary members are in said given positions.

3,413,831
ROTARY CYLINDER LOCK
Alois Crepinsek, % 777 Lock and Engineering, Division and Dell Sts., Campbell, Calif. 95008
Continuation-in-part of application Ser. No. 459,644, May 28, 1965. This application Dec. 18, 1967, Ser. No. 691,419
9 Claims. (Cl. 70—358)



A key operated rotatable plug and cylinder lock in which the plug and cylinder are provided with pin-receiving holes that are disposed at one or more different angles with respect to the sides of the key inserted into the plug. Various angles may be provided to the pin-receiving holes so that the number of combinations possible with the lock mechanism is greatly increased, and also making it much more difficult for unauthorized duplication of the key.

3,413,832
WIRE DRAWING METHOD
Ernest U. Lang and William F. Hope, Niles, Mich., assignors to National-Standard Company, a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,208
14 Claims. (Cl. 72—42)

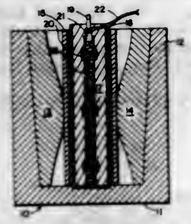


A method of drawing wire, and especially wire having a steel core clad with soft metal such as aluminum, by first mechanically scoring the wire to provide it with a surface having sharp irregularities, coating the wire with a fine particle size lubricant capable of clinging in the scored surface, compacting the lubricant in a pressure die, and then drawing the wire through a reducing die.

3,413,833
METHOD AND APPARATUS FOR EXPLOSIVELY FORMING ARTICLE OF RELATIVELY BRITTLE METAL
Irving Lieberman, Covina, and Louis H. Knop and Louis Zernow, Glendora, Calif. assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Continuation-in-part of application Ser. No. 304,922, Aug. 27, 1963. This application Mar. 9, 1966, Ser. No. 536,559
8 Claims. (Cl. 72—56)

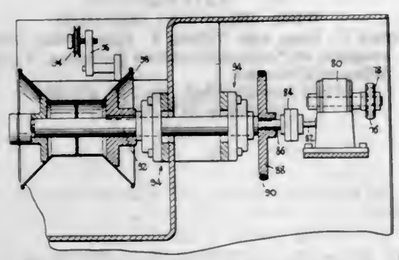
This disclosure concerns a method and apparatus for forming workpieces having either a tubular or a flat configuration and being of a relatively brittle metal into

shaped articles by utilizing the energy generated from the detonation of an explosive charge. The method relies upon the use of a body of molten metal as a medium for heating the relatively brittle metal workpiece which decreases the brittle characteristics of the metal prior to the detonation of the explosive charge and as a shock



transmitting medium through which the energy from the detonated explosive charge is directed to the workpiece. The explosive energy forces the workpiece against a contoured die, thereby causing the workpiece to conform to the shape of the die surfaces to produce a shaped article without shattering or fragmentation of the relatively brittle metal from which it is made.

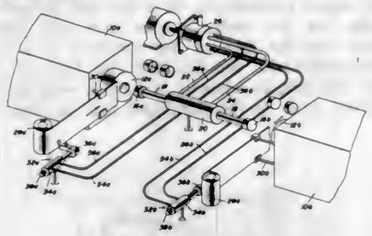
3,413,834
STRAND WORKING AND SPOOLING APPARATUS AND METHOD
Joseph J. Kovaleski, Trumbull, Conn., assignor to The Advanced Wyrepak Company, Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Apr. 2, 1965, Ser. No. 445,079
19 Claims. (Cl. 72—289)



A spooling machine having a powered spool traverse whose limits are adjustable. There is an adjustable, independent or master timing device which provides successive, adjustable time intervals, and a control mechanism activated by the timing device, which periodically automatically increases the separation or spacing of the limits of the traverse and simultaneously reduces the spool speed by predetermined increments. The time period between the increments can be varied by adjusting the timing device, and is a multiple of the traverse period whereby either many or else few traverses can occur between separation increments of the traverse limits and decrements of the spool speed.

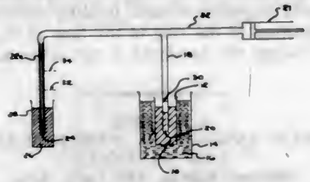
3,413,835
RAPID CAN FORMER
Wesley R. Master, Wauwatosa, Wis., assignor to Applied Power Industries, Inc., a corporation of Wisconsin
Filed Aug. 5, 1966, Ser. No. 570,534
5 Claims. (Cl. 72—361)

1. A can-forming machine comprising:
a reciprocatory device for driving at least one movable die;
a stationary die disposed and configured to cooperate with said movable die during reciprocation thereof to form material disposed therebetween;
a feed device disposed to feed material between said aforementioned dies;
a multi-pumping unit hydraulic pump having the output from its pumping units split into a plurality of conduits; and



at least a pair of said conduits connected to said reciprocatory device to provide reciprocation therefor and at least another of said conduits being connected to said feed device to provide sequential phased operation thereof with respect to the operation of said reciprocatory device.

3,413,836
GEL POINT INDICATOR
Herbert G. Nadeau, North Haven, and Paul H. Waszeciak, Hamden, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,591
7 Claims. (Cl. 73—17)

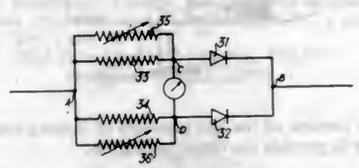


An apparatus for determining gel point and like changes from liquid to solid (e.g., freezing point) is provided. Two tubes, one having its lower end beneath the surface of a sample of the test fluid, the second having its lower end beneath the surface of a reference fluid, are connected at their upper ends to each other and to a bellows or like means for alternately compressing and decompressing the gas sealed in the tubes. The liquid level within the two tubes is thereby caused to oscillate. When the change from liquid to solid occurs in the test sample the magnitude of oscillation of fluid in the tube disposed in the reference fluid suddenly doubles. The latter change in oscillation is observed manually or by a sensing device (e.g., capacitance operative relay). The test fluid is maintained at constant temperature for determination of gel time or is subjected to controlled heating or cooling where the change of state in the test fluid is caused by temperature change.

3,413,837
KATHAROMETER BRIDGE
Bui-Ai, Toulouse, Raymond P. Fleux, Paris, Georges A. Giralt, Balma, and Robert N. Lacoste, Toulouse, France, assignors to Centre National de la Recherche Scientifique, Paris, France, a corporation of France
Filed June 23, 1966, Ser. No. 559,976
Claims priority, application France, June 24, 1965, 22,150
6 Claims. (Cl. 73—27)

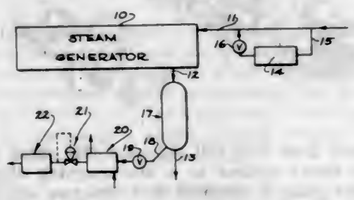
1. A katharometer apparatus for the determination of the relative thermal conductivity of a gas comprising an enclosure, means for thermostatically controlling the said

enclosure, two housings within the enclosure, means for filling the said housings respectively with a gas to be analyzed and a reference gas, and within each housing a diode thermally isolated from the walls of the said housing and through which flow equal currents in the



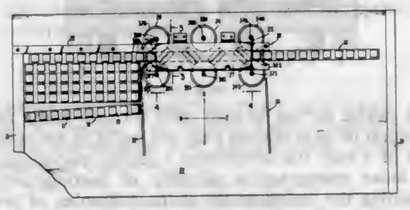
forward direction, the said diodes serving as heat sources which are cooled respectively in the gas to be analyzed and in the reference gas, and means for measuring the ratio of the resistances of the diodes in the forward direction, the said ratio being equal to the ratio of the thermal conductivities of the gas to be analyzed and the reference gas.

3,413,838
STEAM QUALITY DETERMINATION
Paul F. Duddy, East Pedro, Calif., assignor, by mesne assignments, to Struthers Thermo-Flood Corporation, Tulsa, Okla., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,572
2 Claims. (Cl. 73—29)



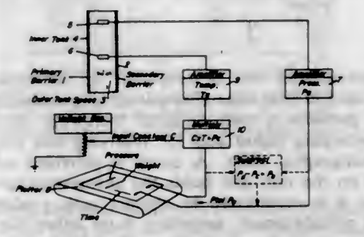
A process for measuring the percent conversion of a liquid to a vapor in a vaporizer designed to vaporize a portion only of a multi-component liquid stream at elevated temperatures and pressures which process comprises monitoring the content of a non-vaporizable component of said liquid prior to vaporization, vaporizing a portion of said liquid to form a combined liquid-vapor stream wherein the liquid phase of said stream is rich in said non-vaporizable components, collecting a sample of liquid from said combined liquid-vapor stream without condensing any vapor in said combined stream and measuring the content of the non-vaporizable component in said sample.

3,413,839
METHOD OF AND APPARATUS FOR MECHANICALLY TESTING THE QUALITY OF BONDED JOINTS
Kendall Clark and Walter J. Schuelke, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 15, 1965, Ser. No. 507,848
8 Claims. (Cl. 73—37)



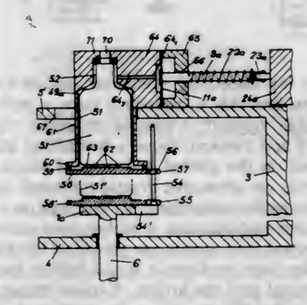
High pressure, high velocity jets of fluid medium are used to develop tensile, shear and compressional forces in the evaluation of the bonded joints between a microminiature chip device and the conductive land pattern on a dielectric substrate of a microminiature module.

3,413,840
LEAK DETECTION SYSTEM
Norman K. Basile, Bronx, and Donald R. Yearwood, Brooklyn, N.Y., and Donald W. Brideweser, Montvale, N.J., assignors to John J. McMullen, Montclair, N.J.
Filed Apr. 19, 1966, Ser. No. 543,725
5 Claims. (Cl. 73—40)



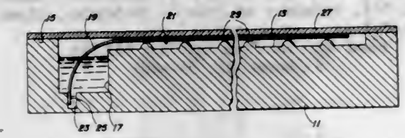
A leak detector for liquefied gas storage tanks including temperature and pressure sensors located within a constant volume space about the tank. Leak conditions in the inner tank change the weight of gas in the space which affects the signals developed by the pressure sensor but which does not affect significantly those generated by the temperature sensor. The general seriousness of the leak is indicated by comparing the temperature and pressure sensor signals with each other.

3,413,841
LEAK TESTING METHOD AND APPARATUS FOR CONTAINERS
Max Weber, Buchs, Switzerland, assignor to Elcalor A.G., Fabrik fur elektrothermische Apparate, Aarau, Switzerland
Filed Oct. 10, 1966, Ser. No. 585,501
Claims priority, application Switzerland, Apr. 15, 1966, 5,487/66
9 Claims. (Cl. 73—45.1)



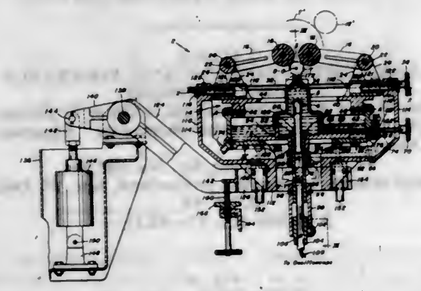
Plastic cups or bottles are tested for tightness by trapping a body of air in a small space downwardly bounded by the tested object while the latter is supported on a movable platform. The trapped air is then expanded and/or compressed, and the resulting air leakage into or out of the space causes defective objects to cling to the testing apparatus or to drop from it depending on the specific sequence of air pressure changes when the supporting platform is withdrawn, whereas acceptable objects show the opposite behavior.

3,413,842
THIN-LAYER CHROMATOGRAPHIC DEVELOPING APPARATUS
John C. Hecker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New York
Filed May 6, 1966, Ser. No. 548,165
8 Claims. (Cl. 73—61.1)



Apparatus for the development of chromatographic sheets used in thin-layer chromatography including a tray which provides a well, integral therewith, for holding the developing liquid and for receiving one end of the chromatographic sheet. A cover is provided which fits tightly on the tray and holds the chromatographic sheet so that it is maintained in contact with a plurality of spaced protuberances, extending from either the tray or the cover, to prevent capillary flow of the developing liquid adjacent the chromatographic sheet.

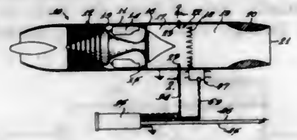
3,413,843
TRANSDUCER FOR ULTRASONIC TESTING OF PIPE
Peter Kortenhoven, Chicago, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,413
9 Claims. (Cl. 73—71.5)



Apparatus for inspecting elongated articles for defects. The apparatus includes a stationary base, a pivotally supported carriage support, a gimbal mounted on the carriage support and pivoted about a horizontal axis, a carriage mounted on the gimbal and pivoted about a second horizontal axis, an ultrasonic crystal mounted on the carriage, and means for supporting the carriage on the article. In the preferred embodiment, a rubber boot surrounds the ultrasonic crystal, and means are provided for introducing liquid into the boot to form a liquid bridge between the ultrasonic crystal and the article. Various means are provided for adjusting the crystal on the carriage to its proper position relative to the surface of the article to be inspected.

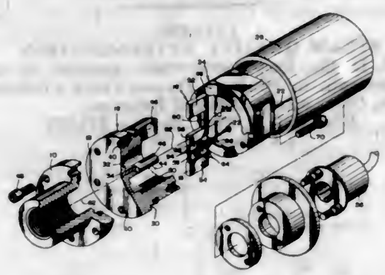
3,413,844
JET ENGINE THRUST INDICATOR
Curtiss R. Schafer, Newtown, Conn., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 23, 1965, Ser. No. 450,342
15 Claims. (Cl. 73—117.4)

A meter for measuring the thrust produced by jet engines which meter is responsive to the ion content of the engine exhaust gases. The ion content measurement is compared with a standard measurement obtained from



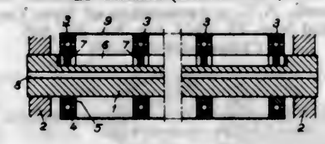
the ion content of the gas products of burned engine fuel in order to provide the thrust indication.

3,413,845
LOW DEFLECTION FORCE TRANSDUCER
Jean-Pierre A. Pugnaire, Arlington, Mass., assignor, by mesne assignments, to Bytrex, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Feb. 18, 1966, Ser. No. 528,449
19 Claims. (Cl. 73—141)



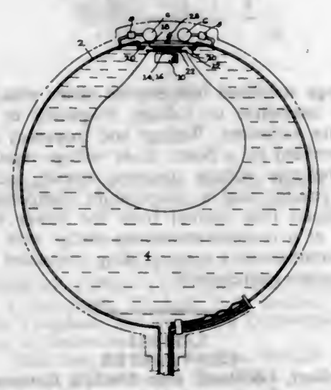
A strain gage load cell utilizes a thin shear plate to measure forces applied to a load-receiving diaphragm. The shear plate is mounted in a structure which spans across a diameter of a tubular wall forming the load cell housing and is connected between the housing and a thrust member extending in an axial direction perpendicular to the diaphragm. Due to this construction, the shear plate receives opposing forces from the housing and the thrust member to generate forces within the plate which are predominantly shearing forces so that a high sensitivity is obtained for a relatively low deflection.

3,413,846
DEVICE IN STRIP MILLS FOR DETERMINING THE DISTRIBUTION OF STRIP TENSION OVER THE WIDTH OF THE STRIP
Rune Flinth, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed July 12, 1966, Ser. No. 564,637
Claims priority, application Sweden, July 13, 1965, 9,215/65
13 Claims. (Cl. 73—144)



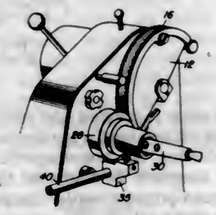
A device for use in strip mills for controlling the distribution of strip tension over the width of the strip consists of a billy roll comprising a central, stationary shaft, an outer casing and a plurality of bearings rotatably mounting the casing on the shaft. A number of pressure sensing transducers are operatively associated with the bearings between the shaft and the outer casing. Electrical connections for the transducers are led through a bore in the shaft.

3,413,847
VOLUME MEASURING SYSTEM
Robert J. Kraushaar, Tenafly, N.J., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed July 22, 1965, Ser. No. 474,077
4 Claims. (Cl. 73—149)



A liquid gauging system for a container of liquid operating under zero gravitational conditions wherein the container includes a vapor space in which a trace gas is injected for subsequent density measurement and hence gas volume and liquid mass. The vapor space envelops a gas detector by means of a vortex creating impeller means rotatably mounted on the gas detector.

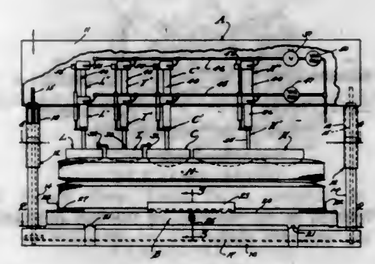
3,413,848
PICK TESTING DOCTOR BLADE ASSEMBLY
William C. Walker, New York, N.Y., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,407
1 Claim. (Cl. 73—150)



An apparatus for measuring the tendency of paper to be pulled apart by the ink on the rollers of a printing machine. Such devices are called pick testers and simulate conditions present in a printing machine. The disclosed pick tester utilizes a grooved rod for metering the ink onto the inking disc.

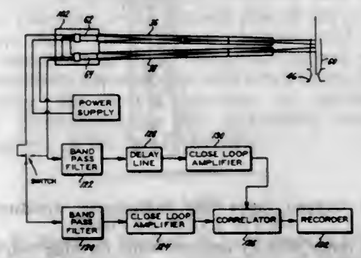
3,413,849
LABORATORY BEDDING TEST MACHINE
Melvin N. Janapol, Los Angeles, Calif., assignor to Wortso Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 30, 1965, Ser. No. 517,732
3 Claims. (Cl. 73—161)

This invention is concerned with improvements in bedding testing machines employed for the depressing of the simulated human form into mattresses or the like, whereby the functions of the mattress can be observed and recorded. Variably selected weights are applied in order to simulate a person's body of prescribed weight, by direct means applying specified proportionate weights, and adapted to retract the same. Specifically, cylinder and piston means of proportionate cross sectional effective area



are employed and associated with respective proportionate weights of the body portions that they represent, and fluid pressure is selectively applied thereto through a common pressure source, whereby the selective adjustment of a single control establishes the overall weight of the simulated body form. Further, a shiftable mattress support table is provided and upon which said mattress is centered for testing of pre-selected areas thereof.

3,413,850
MEANS FOR DETERMINING THE VELOCITY OF A LUMINESCENT GAS STREAM
Samuel E. Merrifield, Florissant, Mo., assignor, by mesne assignments, to McDonnell Douglas Corporation, St. Louis, Mo., a corporation of Maryland
Filed May 6, 1966, Ser. No. 548,151
12 Claims. (Cl. 73—194)

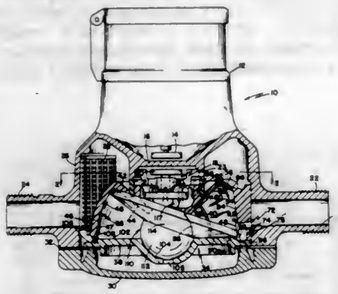


An apparatus to determine the velocity of a luminescent gas stream with a pair of spaced optical devices having means sensitive to the illumination of the stream to produce an output signal responsive thereto and further including means for correlating the output signal.

3,413,851
NUTATING DISK METERS
Alan Clarkson Curtiss, Wellesley Hills, and Leo Graham Owens, Dedham, Mass., assignors to Hersey-Sparling Meter Company, Dedham, Mass., a corporation of Massachusetts
Filed Sept. 29, 1966, Ser. No. 583,011
1 Claim. (Cl. 73—258)

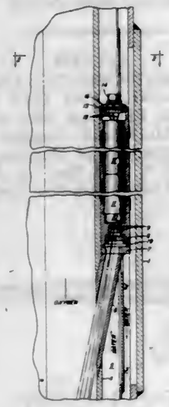
Fluid metering device of the nutating disk type in which the diaphragm in the disk chamber is removable

and is biased against the ball shaped disk bearing and against the bottom surface of the chamber by a resilient



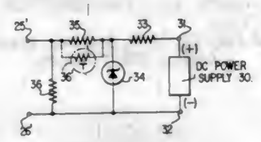
member located at the juncture of the top and side surfaces of the chamber shell.

3,413,852
RADIOMETER AND OXYGEN LANCE COMBINATION
Frederik Engel, Greenwich, and Alwyn F. Wiebe, Ridgefield, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,095
4 Claims. (Cl. 73—355)



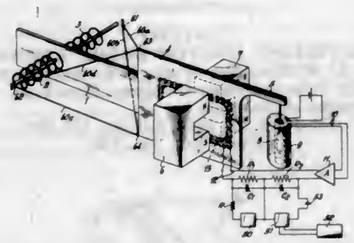
1. An oxygen lance and radiometer structure comprising:
(a) a lance with cylindrical walls forming two coolant passages,
(b) a bottom wall with at least one opening angled out at a small angle,
(c) at least one inclined tube in the inner wall of the lance extending upwardly at least onto the inner coolant passage and having its axis aligned with the axis of one of the openings in the bottom of the lance,
(d) a radiometer mounted on the upper end of said inclined tube having means for selecting a predetermined wavelength band of radiation and being located so that the entrance pupil of the radiometer receives radiation through the inclined tube, and
(e) the radiometer being provided with a radiation detector responsive to the predetermined radiation range and electronics receiving signal from said detector and producing an output which is a function of temperature of the materials whose radiations are received by the radiometer.

3,413,853
ZENER DIODE TEMPERATURE METER
Ralph M. Rowell, Lynn, Mass., assignor to General Electric Company, a corporation of New York
Filed Apr. 11, 1966, Ser. No. 541,740
5 Claims. (Cl. 73—362)



A voltage stabilized temperature meter which is substantially insensitive to voltage, frequency or ambient temperature variations. Voltage and frequency stabilization is provided by a Zener diode voltage regulator circuit. A resistive voltage dropping circuit, including a coupling resistor and a temperature compensating resistor, couples load current from the power supply to the input of a resistive measuring bridge with the temperature compensating resistor being connected to shunt a portion of the load current.

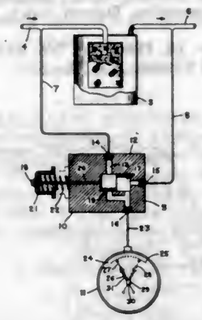
3,413,854
GRAVIMETER
Anton Graf, Lochham, near Munich, Germany, assignor to Continental Elektroindustrie A.G. Askania-Werke, Berlin-Mariendorf, Germany, a corporation of Germany
Continuation of application Ser. No. 423,422, Jan. 5, 1965. This application Aug. 29, 1967, Ser. No. 664,212
Claims priority, application Germany, Jan. 8, 1964, G 39,562
3 Claims. (Cl. 73—382)



A gravimeter mass is pivoted and restrained for movement in a vertical plane about a horizontal axis and has an electrically conducting but non-magnetic portion located in a permanent magnetic field so that the movements of the mass are speed-proportionally damped by eddy currents induced in that portion. The same mass portion carries a winding energized by reversible direct current from an amplifier which is controlled in response to positional departure of the mass from a given null reference position. The amplifier output also furnishes a measure of the change in gravity acting upon the mass.

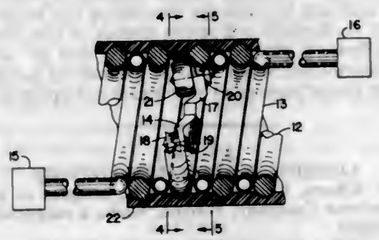
3,413,855
APPARATUS FOR MEASURING AND INDICATING FLUID PRESSURE ACROSS A FLUID RESTRICTION
Carl Bloom, Springfield, Mass., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,223
1 Claim. (Cl. 73—389)

A device for selectively measuring on a single gauge the pressure upstream and downstream of a filtering means disposed in a fluid carrying line to enable rapid comparisons of the pressures on opposite sides of the



filtering means and to provide accurate means of determining the pressure drop across the filtering means.

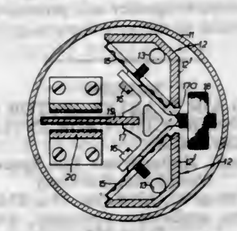
3,413,856
PRESSURE OPERATED DRIVING MEANS
Anthony J. Lombardi, Wyckoff, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,228
6 Claims. (Cl. 73—398)



A pressure responsive device consists of a collapsible tube collapsed by a movable roller against a fixed bearing surface. Fluid pressure inside the tube forces the roller along the tube. In one embodiment a spring opposes movement of the roller while an index finger moving with the roller rides over a pressure-indicating scale. In another embodiment, for driving a shorting device for a helical antenna or inductor, the collapsible tube is wound between the conductive turns of the helix, and the roller moves helically under fluid pressure applied to either end of the tube. The fluid also serves as a heat conveyor.

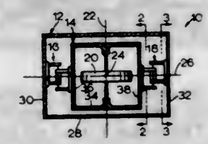
3,413,857
PRESSURE SENSOR
Stafford Malcolm Ellis, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Oct. 11, 1966, Ser. No. 585,828
Claims priority, application Great Britain, Oct. 12, 1965, 43,338/65
5 Claims. (Cl. 73—407)

A transducer including two flexible diaphragms each supported at its periphery and disposed in mutually inclined planes, and also including a bridging member which is connected to a central part of each of the diaphragms. The bridging member is supported solely by its connection to the diaphragms for pivotal movement about an axis coincident with the line of intersection of the inclined planes. The bridging member is balanced about the axis by a balancing weight so that it will move pivotally to a position in which the forces applied to it by the diaphragms and any external force are in balance.



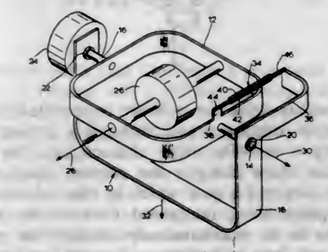
There is a capacitive pick-off for sensing any pivotal displacement of the bridging member from a neutral position.

3,413,858
FLEXURE PIVOT
Frank Samet, New York, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,455
9 Claims. (Cl. 74—5)



1. A flexible pivot comprising:
a pair of mounting members; and
means interconnecting said mounting members, including a pair of criss-crossed flexure elements and a compensating spring means for relative angular displacement of said mounting members about a common pivot axis;
said mounting members having respective base portions disposed on radially opposite sides of the pivot axis;
said flexure elements having radially opposite end portions fixedly connected to said base portions;
said mounting members having respective arm portions fixedly connecting to their respective base portions and extending to the opposite side of the pivot axis from their respective base portions; and
said compensating spring means having end portions respectively connecting to said arm portions for preloading the flexure elements in tension and for counterbalancing the null-seeking restraining moments of the flexure elements.

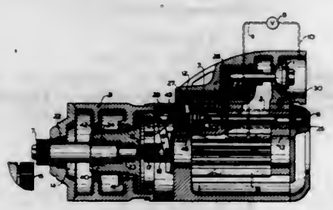
3,413,859
DIGITAL RATE GYRO
Hugh E. Riordan, Wyckoff, N.J., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,148
10 Claims. (Cl. 74—5.4)



1. In combination, a gyro having a rotor supported for precession, vibrating beam transducer means operable in

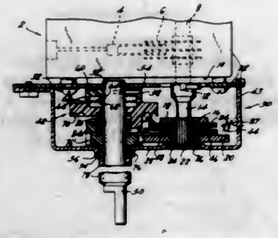
both tension and compression for restraining precession of said rotor, and means for vibrating said transducer means at its natural frequency and producing a frequency output proportional to the gyro input angular rate.

3,413,860
COMPRESSED AIR STARTER MOTOR OF ROTARY PISTON CONSTRUCTION FOR INTERNAL COMBUSTION ENGINES
Heinz Heckt, Holterstrasse 12a, Sprockhovel, Westphalia, Germany
Filed Aug. 25, 1966, Ser. No. 575,120
Claims priority, application Germany, Aug. 31, 1965, D 48,097
4 Claims. (Cl. 74—6)



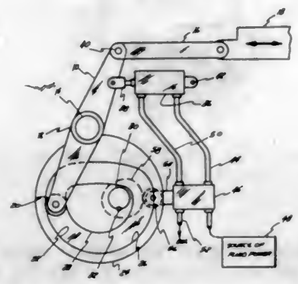
A compressed air starter motor of rotary piston construction having air driven rotors operatively connected to a drive pinion. The motor has an air operated meshing piston and a pinion shaft which mounts the drive pinion. A gear unit output member surrounds the pinion shaft and is operatively connected to the pinion shaft. A lever is connected between the meshing piston and the pinion shaft. Displacement of the meshing piston acting through the lever moves the pinion shaft axially. A wedge body overrunning clutch is positioned between the gear unit output member and the pinion shaft. A lost motion mechanism is connected to the lever and the meshing pinion and is effective to absorb the difference in displacement between the meshing piston displacement and the axial displacement of the pinion shaft.

3,413,861
FINE-COARSE TUNING DRIVE
Charles W. Moritz, Wilbraham, Mass., and Alfred Sfreddo, Stafford Springs, Conn., assignors to General Instruments Corporation, a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,318
8 Claims. (Cl. 74—10.5)



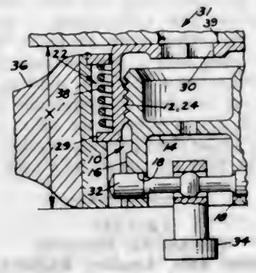
A fine-coarse drive for a tuner is provided, the input shaft directly rotating a cam through a driving connection having a non-slip drive characteristic for normal drive forces, there being a lost motion connection between that cam and a gear which in turn provides coarse drive, a spring being interposed between the gear and the cam so as to simultaneously position the gear and urge the cam into said driving connection with the input shaft.

3,413,862
CAM CONTROLLED ACTUATOR INCLUDING INTERMITTENT TORQUE MEANS
William A. Waara, Detroit, Mich., assignor to Visi-Trol Engineering Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 18, 1967, Ser. No. 635,300
10 Claims. (Cl. 74—53)



An actuating arm supported for rocking movement about its midpoint has one end attached to an article to be reciprocated in forward and return strokes. The opposite end of the arm has a roller engaged in a closed groove of a rotating cam. The configuration of the groove defines variations in acceleration and deceleration in the movement of the article in its forward and return paths. A motor or other rotating means provides a continuous torque sufficient to rotate the cam during low torque portions of the forward and return strokes. A cam actuated fluid cylinder is connected to the arm and provides an added intermittent torque to assist the rotating means during high torque portions of the forward and return strokes.

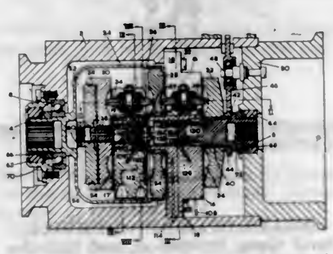
3,413,863
LOCKING ADJUSTMENT DEVICE
Carl F. Schorn, Birmingham, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Aug. 25, 1966, Ser. No. 575,156
9 Claims. (Cl. 74—89.15)



An axial adjustment and locking device includes first and second engaging members with one of said members having formed thereon a plurality of circumferentially spaced axially extending and radially directed protuberances and the other of said members having formed thereon a plurality of axially extending and radially directed grooves with said grooves being of a configuration adapted to at times receive therein the protuberances of said one of said members; both of the first and second engaging members being threaded in a manner so as to have the grooves at least partially interrupt the otherwise continuous thread form and so that the protuberances also contain the thread form; the first and second members

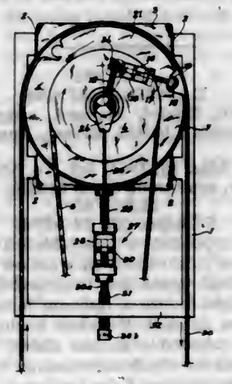
being thusly effective to have the threaded portion of the protuberances threadably engage the threaded portion between the grooves, for relative axial movement therebetween, and also effective to at times have the protuberances moved out of threaded engagement and into juxtaposition with the grooves.

3,413,864
VARIABLE-RATIO FRICTIONAL DRIVES
George Maurice Martin Magill, Clifford Raymond Schofield, and Richard Nelson Rhodes, Bradford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Mar. 9, 1967, Ser. No. 621,835
Claims priority, application Great Britain, Mar. 9, 1966, 9,962/65
13 Claims. (Cl. 74—200)



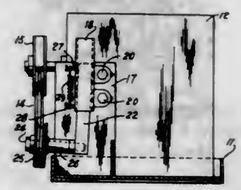
This invention concerns a variable-ratio frictional drive gear having drive rollers engaging torus discs of which the drive ratio is controlled indirectly by virtue of the rollers being mounted in tangentially movable carriages, each carriage having a hydraulically controlled piston at one end in a pressure cylinder, and a guide piece at the other end movable in a guide cylinder, the guide cylinders and pressure cylinders being on opposite sides of an intermediate plane normal to the gear axis, the roller tilt axes being inclined to that plane.

3,413,865
BELT DRIVE
Klaus Nimtz and Gustav Franzen, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed Nov. 28, 1966, Ser. No. 597,415
Claims priority, application Germany, Dec. 2, 1965, P 38,259
9 Claims. (Cl. 74—242.9)



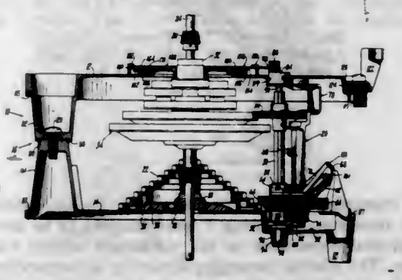
A belt drive with means for tightening the belt to be driven by belt engaging means, according to which a driven pulley or the like is by a first fluid operable cylinder-piston means connected to said belt engaging means while a second fluid operable cylinder-piston means controlled by said first fluid operable cylinder-piston means acts upon said belt engaging means so as to vary the tautness of said belt.

3,413,866
BELT TENSIONING DEVICE
Byron C. Ford, Rte. 2, Lockney, Tex. 79241
Filed Oct. 14, 1966, Ser. No. 586,791
1 Claim. (Cl. 74—242.11)



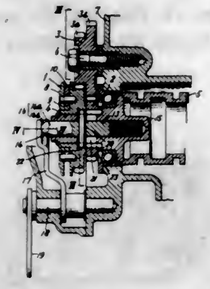
A spring biased tensioning device for belts, as between a prime mover and a driven mechanism, whereby the belt can be maintained at proper operative tension semi-automatically, as by the application of tension to the belt at the moment when the initial or starting "pull" is exerted, and maintaining such tension until the prime mover is stopped.

3,413,867
VARIATOR
Richard B. Hamlin, Altoona, Pa., assignor to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut
Filed Feb. 28, 1967, Ser. No. 619,408
28 Claims. (Cl. 74—348)



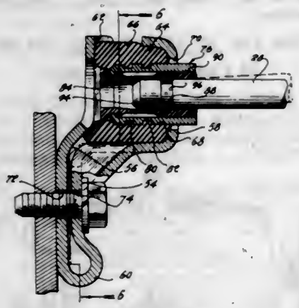
In a variator for a fuel dispenser, a gear cone rotatably supported on a frame with a plurality of range arm assemblies mounted thereon, the range arm assemblies each including a unitary gear positioning carriage having a helical detenting rack engageable with the frame for obtaining varying outputs from the gear cone in accordance with a selected setting, and a plurality of rotary amplifying levers respectively driven by the range arm assemblies for operating price posting wheels, the rotary amplifying levers having circular hub portions supported in stacked relation for rotation on the frame.

3,413,868
APPARATUS AND METHODS FOR CONTROLLING A MULTIPLE STAGE GEAR TRANSMISSION MECHANISM
Yoshitoku Iizuka, Saitama-ken, Japan, assignor to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan
Filed May 9, 1966, Ser. No. 548,650
Claims priority, application Japan, May 10, 1965, 40/36,041
1 Claim. (Cl. 74—371)



Apparatus having a rotatable shift drum for shifting a transmission mechanism between one or plural speed changes in accordance with the magnitude of its angular movement by the action of a control lever which selects one of two gear trains for a single or a plural speed change.

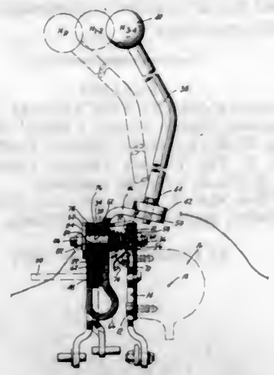
3,413,869
GEARSHIFT LINKAGE
Ronald C. Pellman, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,727
6 Claims. (Cl. 74—473)



A transmission gearshift linkage for an automotive vehicle driveline comprising a lever adapted to be mounted for pivotal movement on the stationary vehicle body or frame. The pivotal mounting structure accommodates dimensional tolerances between the linkage and the frame or body without affecting the linkage geometry.

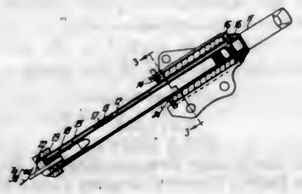
3,413,870
REMOTE CONTROL LINKAGE MECHANISM FOR MULTIPLE RATIO VEHICLE TRANSMISSIONS
Arthur L. Spease, Jr., Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 593,453
4 Claims. (Cl. 74—475)

A transmission ratio-controlling linkage comprising multiple shift levers mounted for oscillation about a common axis and a driver actuated selector lever mounted for oscillation on said common axis to permit adjustment



thereof in transverse planes as the shift levers are selected during a transmission ratio shifting sequence.

3,413,871
BRAKE OPERATING DEVICE
Ronald David Gore, Brentwood, and Malcolm Anthony Sharpe, Ilford, England, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 5, 1967, Ser. No. 628,576
Claims priority, application Great Britain, Aug. 17, 1966, 36,734/66
8 Claims. (Cl. 74—536)

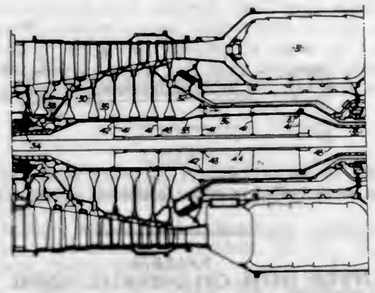


A motor vehicle parking brake system having a pull device for applying the brake, a ratchet mechanism for holding the brake in an applied position and a lost motion connection between the ratchet and the pull device. The structure permits the pull device to be pushed to an out-of-the-way position without releasing the brake.

3,413,872
DAMPING MEANS
Lionel Haworth, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Mar. 18, 1966, Ser. No. 535,457
Claims priority, application Great Britain, Mar. 19, 1965, 11,863/65
5 Claims. (Cl. 74—574)

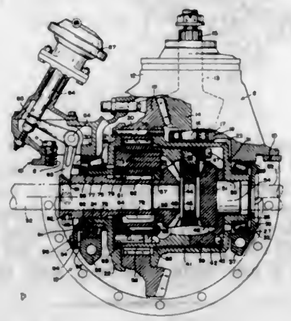
A machine, especially a rotary-bladed fluid-flow one, having as one of its components a hollow shaft which in use rotates at high speed and is subjected to a periodic force which might induce a resonant lobing in the shaft and hence cause damage, the shaft having one or more rigid members, preferably annular dished discs, mounted inside it at positions which substantially raise the lowest natural lobing frequency of the shaft to a value substantially greater than the frequency of the said periodic force, the lowest natural lobing frequency being calculated while taking account of the effect of the rotation

of the shaft, the positions of the discs being preferably at or near antinodes of the natural lobing modes which



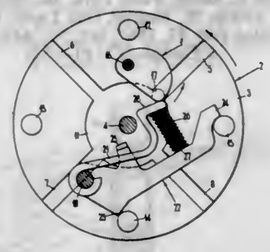
can occur through the operating range of speeds of rotation of the shaft, and being caused by the said periodic force.

3,413,873
MULTI-SPEED PLANETARY DRIVE AXLE ASSEMBLY
Leo A. Bixby, Niles, Mich., assignor, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware
Filed May 8, 1967, Ser. No. 636,807
10 Claims. (Cl. 74—695)



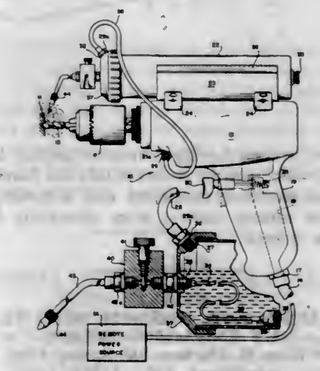
A two speed planetary gear drive axle assembly comprises a carrier fixed over and extending within a drive axle housing and having spaced arms within the housing rotatably mounting a differential housing connected by the usual bevel pinion and ring gear to the engine driven propellor shaft. The housing contains differential mechanism connected between the usual drive axle shafts. The differential cage constitutes a carrier for planet gears constantly meshed with an internal ring gear fixed on the differential housing and an axially slidable sun gear sleeve that projects through one end of the differential housing. The sun gear is shiftable between one operative position where it is clutched to a stationary stop ring rigid with the axle carrier and a second operative position where it is clutched to the differential cage. The stop ring is secured on the carrier arm adjacent the sun gear sleeve and independently of the adjustment nut for the bearings mounting the differential housing, so that drive torque reactions do not affect the bearing adjustment. In one embodiment the stop ring is fixed to the carrier arm and the associated bearing cap that completes the bearing mount, and in other embodiments the stop ring is secured only upon the bearing cap. The hitherto conventional internal wear plate between adjacent axial surfaces of the differential cage and differential housing is eliminated because special lubricant passages through the cage supply lubricant from the differential space to those surfaces.

3,413,874
SHAFT-COUPLING MECHANISMS
George Henry Arnold, Havant, England, assignor to The General Electric Company, Limited, London, England, a British Company
Filed Sept. 7, 1966, Ser. No. 577,791
2 Claims. (Cl. 74—822)



A shaft coupling mechanism including a drive member which drives an intermittently driven member in which means is included to substantially overcome backlash in the motion of the driven member. The mechanism includes a driven member mounted for rotation about an axis with a face of said driven member transverse to the axis, said face having a plurality of radial channels. The mechanism further includes a driving member mounted for rotation about a further axis parallel to and displaced from the axis of the driven member. The driving member includes a peg which upon rotation of said driving member enters the inner end of one of said channels in a first rotational position of the channel and leaves the inner end of that channel in a second rotational position of the channel. The driven member thereby is driven intermittently by engagement between said peg and a wall of each channel in turn, as the driving member rotates continuously. The mechanism also includes locking means that is operative when engaged to prevent rotation of the driven member. Lastly the mechanism includes a spring controlled by the driving member to urge the locking means into a locking position during periods of lost motion of the driving member.

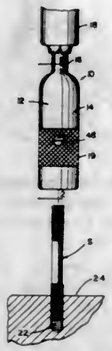
3,413,875
COOLANT APPLICATOR FOR DRILL MOTORS
Wilfred Larson, Van Nuys, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed July 28, 1966, Ser. No. 568,662
9 Claims. (Cl. 77—7)



A power driven tool for drilling and the like includes a coolant container, suitably pressurized, with flexibly retained means in the container for coolant pickup. A con-

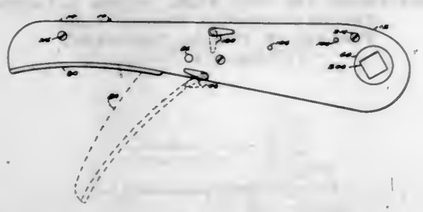
duit leading from the pickup terminates in a spray nozzle for directing coolant onto a cutting member.

3,413,876
POWER WRENCH FOR TIGHTENING STUDS IN ENGINE BLOCKS AND THE LIKE
Ernest R. Shinn, Palos Park, Ill., assignor to Arthur W. Bencur, Oak Lawn, Ill.
Filed July 12, 1967, Ser. No. 652,933
8 Claims. (Cl. 81—53)



A power wrench for driving and tightening studs in engine blocks and the like. The wrench body has a shank suitable for mounting in a drill press chuck and a socket for telescopic reception over the stud to be tightened. As the stud bottoms in the socket of the continuously rotating wrench body, a cam controlled multiple jaw clutch closes inwardly upon the stud to engage and rotate it. Withdrawal of the wrench from the stud disengages the clutch.

3,413,877
RATCHET WRENCH
Franklin J. Teichmeier, Ravenna, Nebr. 68869
Filed Mar. 20, 1967, Ser. No. 624,443
4 Claims. (Cl. 81—54)



A ratchet wrench having a remote control lever, the majority of which can be stored within the handle of the wrench, and providing ratcheting with a minimal movement of the remote control lever outwardly from the body of the wrench.

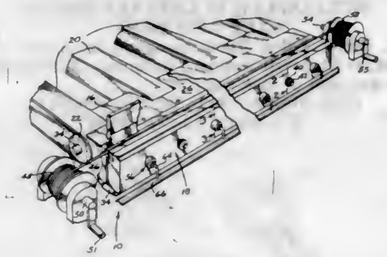
3,413,878
DOUBLE OPEN END WRENCH WITH FLEXIBLE NUT ENGAGING MEANS
William H. Mariner, 909 Spring Ave., Salisbury, Md. 21801
Filed Nov. 7, 1967, Ser. No. 688,644
3 Claims. (Cl. 81—64)

An improved box end wrench of double end type, each end having double socket sizes, and a groove in the shank of the wrench connecting each socket with a flexible band extending through said groove into each



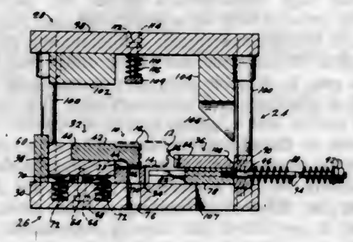
socket to be coiled in either socket to act upon a nut or bolt.

3,413,879
CLIPPER WITH CYLINDRICAL ANVIL AND METHOD OF REPLACING THE ANVIL SURFACE
James A. Nell, 2549 31st St., Springfield, Oreg. 97477
Filed May 23, 1966, Ser. No. 552,302
8 Claims. (Cl. 83—13)



A clipper with an elongated anvil of substantially cylindrical shape which is clamped in operative position between opposed anvil clamps with a portion of the anvil exposed between the clamps. In changing the anvil surface, the anvil may be moved endwise with respect to the anvil clamps or rotated between the anvil clamps to expose a new surface between such clamps.

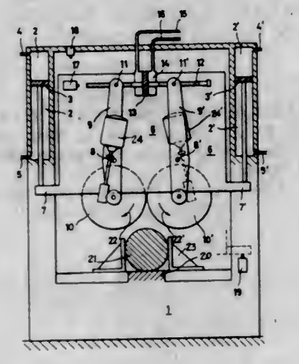
3,413,880
METHOD AND APPARATUS FOR PRODUCING HOLES IN SIDEWALLS OF MEMBERS HAVING CHANNEL-LIKE CROSS SECTIONS
Joesph E. Foist, Toledo, Ohio, assignor to Toledo Stamping & Manufacturing Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,031
6 Claims. (Cl. 83—54)



4. A method for producing a substantially circular opening in a sidewall of a rocker arm with a substantial edge portion of said opening being substantially coextensive with an arcuate bottom wall thereof extending transversely of the sidewall, said method comprising supporting a punch within said rocker arm and substantially

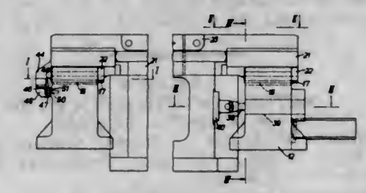
tangentially to the bottom wall of the rocker arm, backing up said sidewall around a portion through which said opening is to be produced, moving said punch toward and through said sidewall, and firmly supporting a substantial portion of said bottom wall of said rocker arm adjacent which the opening is made to prevent movement of said bottom wall away from said punch as said punch approaches said sidewall adjacent said bottom wall.

3,413,881
MACHINE FOR SAWING WORKPIECES OF LARGE DIMENSION HAVING TWO CIRCULAR SAW BLADES
Paul Stolzer, Achern, Baden, Germany, assignor to Keuro Maschinenbau G.m.b.H. & Co. K.G., Achern, Baden, Germany
Filed Oct. 14, 1966, Ser. No. 586,720
Claims priority, application Germany, Oct. 14, 1965, K 57,390
7 Claims. (Cl. 83—486)



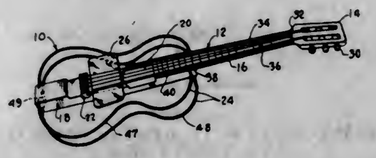
For cutting workpieces of large dimension, two circular saw blades with the driving means mounted a short distance from each other on a slideable carriage which is vertically moveable by hydraulic jacks towards and from the workpiece. The saw blades are further mounted for movement in a horizontal direction.

3,413,882
MEANS FOR ADJUSTING POSITION OF SHEAR BOLSTER
William James Richmond and Kenneth Hollingworth, Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England
Filed July 22, 1966, Ser. No. 567,123
Claims priority, application Great Britain, July 23, 1965, 31,612/65
6 Claims. (Cl. 83—641)



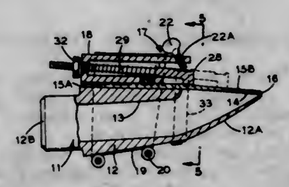
The disclosure of this invention relates to a crosscut shear having a pair of spaced-apart housings which receive an upper blade and a shear bolster which carries a lower shear blade. The bolster is provided with tapered faces for engaging similar tapered faces provided on the housings of the shear. A motor is provided to move the bolster relative to the housing and along the faces to vary the blade gap.

3,413,883
STRINGED MUSICAL INSTRUMENT
Margaret Helbourne, 18443 Muirland, Detroit, Mich. 48221
Filed Oct. 19, 1964, Ser. No. 404,854
6 Claims. (Cl. 84—267)



A practice guitar comprises a one-piece solid staff formed of wood and having a conventionally shaped head, head nut and finger board at one end. The finger board, fitted with conventional frets, is an integral part of the staff. In place of a conventional hollow sound box, the other end of the staff is extended to form the body of the staff with the body forming the sole acoustical base of the instrument when the instrument is completely assembled. An open wire frame in four parts and having the contour of a conventional sound box is removably secured to the staff. An adjustable lower bridge is mounted on the body to vary the position of the strings vertically, laterally or both, with the bridge being held firmly in the desired adjusted position when the strings are tensioned.

3,413,884
REED TYPE MUSICAL INSTRUMENT AND IMPROVED MOUTHPIECE THEREFOR
Giuseppe Sciacca, 148 W. 15th St., New York, N.Y. 10011
Filed May 9, 1966, Ser. No. 548,504
10 Claims. (Cl. 84—383)

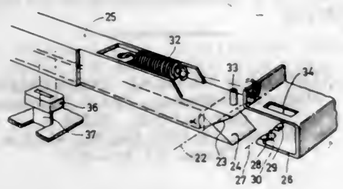


This disclosure is directed to a mouthpiece for a reed type musical instrument in which a fixture is clamped to the body of the mouthpiece and which includes a pressure plate adapted to bear against the reed at varying points so as to vary the frequency of reed vibration to obtain a desired optimum sound. A means may be also inserted in either the key hole or the adjacent thumb hole in the form of a screen insert to further vary the tone of the instrument.

3,413,885
PIVOTAL CONNECTION FOR KEYS OF A MUSICAL INSTRUMENT
Piet van der Lely, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,593
Claims priority, application Netherlands, Feb. 17, 1966, 6602034
6 Claims. (Cl. 84—435)

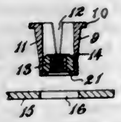
This disclosure relates to a means for connecting keys

to form a keyboard of a musical instrument. A spring mounted hinged connection interconnects the key to the



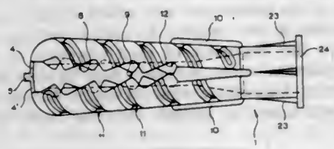
instrument, and a guide intersecting the key limits lateral movement of the key.

3,413,886
BLIND NUTS WITH RESILIENT SPLIT TAPERED CAGE
Ronald Proctor, 2 Robins Court, Upton Pyne, Exeter, Devon, England
Filed Jan 3, 1967, Ser. No. 606,946
1 Claim. (Cl. 85—73)



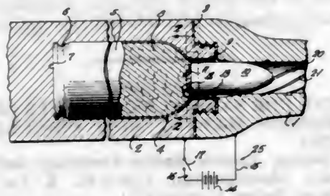
A blind nut having a resilient cage in which is positioned a screw threaded nut, the bore of the cage within which the nut is held by friction has parallel sides and has a plurality of slots in the wall thereof. The outer periphery of the cage wall is tapered, whereby on the cage being inserted into a hole in a parent member, the slots are closed and the upper part of the cage bore takes a tapered formation. On axially moving the nut along the cage, the cage is distorted to secure it in the parent member.

3,413,887
EXPANDING DOWEL OF THERMOPLASTIC MATERIAL
Wolf von Wolff and Dieter Bertelsmann, Emmendingen, Baden, Germany, assignors to Max Langensiepen Kommanditgesellschaft, Emmendingen, Baden, Germany, a corporation of Germany
Filed Jan. 26, 1966, Ser. No. 523,170
Claims priority, application Germany, Jan. 30, 1965, L 49,858
10 Claims. (Cl. 85—83)



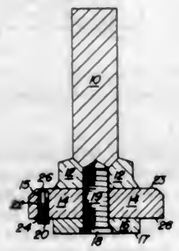
An expanding dowel of thermoplastic material has a neck and two legs tending to spread apart from each other; a resilient member normally holds the legs in substantially parallel position, so that the dowel can be inserted through a thin wall into a hole in a thicker wall spaced from the thin wall without the possibility that the legs will spread apart and be unable to enter the hole in the thicker wall after passing through the thin wall.

3,413,888
ELECTRICALLY-ACTUATED CARTRIDGE
Victor B. Kaley, 2023 Oliver St., West Hyattsville, Md. 20782
Filed Sept. 14, 1966, Ser. No. 579,431
9 Claims. (Cl. 89—28)



A cartridge having metallic casing and a bullet at one end insulated from the casing. A priming composition is secured on the end of the bullet inserted in the casing. A conductor of electricity is secured at one end between the insulation of the bullet and the metal casing and extends to adjacent the priming composition, which is secured to the bullet, to ignite the same.

3,413,889
ARBOR FOR CIRCULAR CUTTERS
Milton A. Frank, Sr., Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 18, 1966, Ser. No. 588,248
4 Claims. (Cl. 90—11)

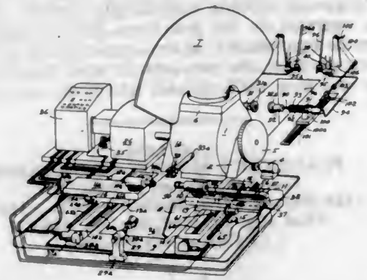


1. An arbor cutter assembly comprising a straight shank, said shank having a base co-axial therewith, said base including a flanged portion and a reduced section extending from the face of said flanged portion, a partially threaded bore extending axially through at least a portion of said base, a cutting tool having a central opening and being mounted on said reduced section, spring loaded retractable plunger means protruding from said flanged section, said cutting tool having means engaging said plunger means to prevent the cutting tool from rotating on said reduced section, fastening means received in said threaded bore for securing the cutting tool to said base and for retracting said plunger means so that it does not protrude beyond the thickness of the cutting tool.

3,413,890
METHOD OF AND DEVICE FOR MACHINING BLANKS
Sten Gunnar Wingquist, Trollhattan, Sweden, assignor to Nydqvist & Holm Aktiebolag, Trollhattan, Sweden, a corporation of Sweden
Continuation-in-part of application Ser. No. 342,568, Feb. 4, 1964. This application Feb. 9, 1966, Ser. No. 526,118
5 Claims. (Cl. 90—13)

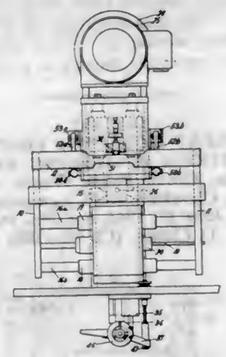
There is a disclosed a copying machine for machining blanks in continuous operation in conformity with and

under the control of master patterns. The machine comprises a first rotary shaft on which a pair of blanks can be mounted in circumferentially spaced relationship. A first machining means serves to machine the blanks when in a first predetermined angular position, and a second machining means serves to machine the blanks when in a second predetermined angular position. A second rotary shaft mounts a pair of master patterns in a circumferentially spaced relationship corresponding to the angular spacing of the blanks as mounted on the first shaft.



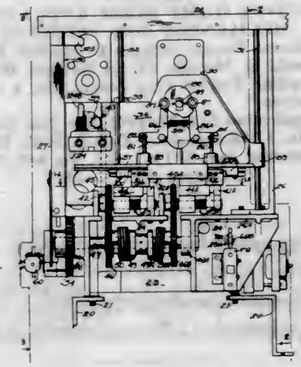
One master pattern controls the machining by the first machining means and the other master pattern by the second machining means. Control means control the master patterns and the machining means so that a blank is machined by the first machining means when it is in the first angular position and by the second machining means when it is the second angular position. Cycling is effected by the control means so that successive blanks are machined by either machining means, depending upon whether they are rotated by the first shaft into the first or into the second angular position.

3,413,891
PROFILING MACHINES
Thomas M. Roberts, Cambridge, England, assignor to British Welding Research Association, London, England, a British body corporate
Filed May 4, 1966, Ser. No. 547,463
Claims priority, application Great Britain, May 6, 1965, 19,195/65
5 Claims. (Cl. 90—13)



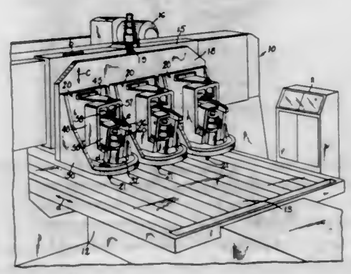
A profiling machine for the two-dimensional shaping of a component to the same profile as a template. The machine has a horizontally movable assembly for moving the template with respect to a follower and the component to be shaped with respect to a cutter. The follower and cutter are mounted on an assembly which rests on an adjustable stop which is freely movable in an upward direction. The stop is adjusted to lower the follower and cutter assembly and to reverse the direction of horizontal movement whenever the follower strikes the template, the progressive lowering of the stop permitting the cutter to cut more deeply into the component to be shaped in successive transversals.

3,413,892
AUTOMATIC KEY DUPLICATING MACHINE
William E. Casey, Chicago, and Herman L. Selden, Skokie, Ill., assignors to Vend-A-Key Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,802
15 Claims. (Cl. 90—13.05)



An automatic key duplicating machine is disclosed of the type having a key-cutting cycle in which an automatic vise closes to clamp a key element during the duplicating operation and opens thereafter to release the key element at the conclusion of the cycle, wherein there is incorporated a vise structure, control circuits and instrumentalities, and an automatic gauging mechanism having a hold-down device moveable to selectively pre-set starting positions close to the key element to engage, urge and hold the latter in a proper position in the vise while it is still open but without excessive force, the presetting movements being controlled by gauge signals from a source such as the disclosed mechanism for dispensing key elements from groups having different characteristic dimensions of the type alluded to.

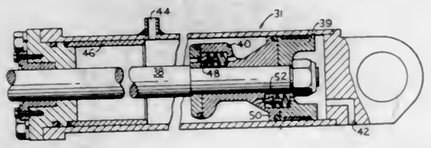
3,413,893
MACHINE TOOL
Henry M. Wilson, Downey, Calif., assignor to Pratt and Whitney Inc., Hartford, Conn., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,953
21 Claims. (Cl. 90—17)



This invention is directed to milling machines and more particularly to a tool supporting structure which can be

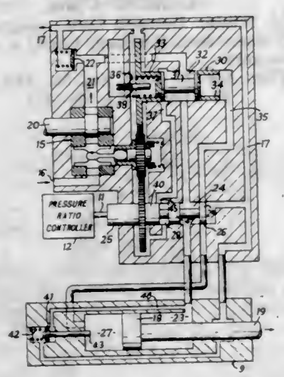
used to perform intricate angularly related machining operations on workpieces. This particular tool holder of the tool supporting structure of this invention includes one member mounted in a second member and supported on a bearing surface thereon, the first-mentioned member having gear teeth about the outer circumference thereof and motor drive means for rotating the first-mentioned member. In addition, a rack is provided which, in combination with a second motor, is utilized to pivot the motor within the first-mentioned member. As a further improvement, there is provided a second rack in other embodiments, which is used in conjunction with a third motor for raising and lowering the tool.

3,413,894
BOTTOM DUMP DOOR ACTUATING MECHANISM FOR VEHICLES
Ralph H. Kress, Peoria, Jackson C. Medley, East Peoria, and Donald E. Merritt, Peoria Heights, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Original application Oct. 23, 1965, Ser. No. 503,037, now Patent No. 3,356,416, dated Dec. 5, 1967. Divided and this application Apr. 3, 1967, Ser. No. 649,379
2 Claims. (Cl. 91—28)



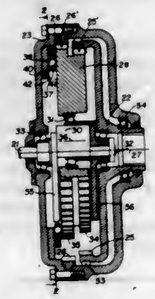
A hydraulic jack including a cylinder having large and small diameter sections and a piston having corresponding large and small diameter sections located in the cylinder. The cylinder has a discharge opening in its large diameter section adjacent the small diameter section, and the piston has a check valve in both its large and small diameter sections to effect either partial or full extension of the jack.

3,413,895
AUTOMATIC CONTROL OF PISTON-TYPE HYDRAULIC ACTUATORS
Robert B. Matthews, Ilford, England, assignor to The Plessey Company Limited, Ilford, England a British company
Filed Dec. 1, 1966, Ser. No. 598,313
Claims priority, application Great Britain, Dec. 3, 1965, 51,405/65
6 Claims. (Cl. 91—400)



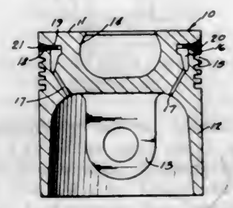
To control a differential-piston hydraulic actuator ram by a sensor and maintain the response sensitivity independent of pump-delivery pressure while varying the latter according to the force to be overcome, pump-delivery pressure acts permanently on the small-areas side of the differential piston while a ram-control valve operated by the sensor controls the selective connection of the large-area side to drain and to pump inlet to restore normal sensor response. The pressure at the large-area side acts in turn against a spring to open a pump-load control spill valve which, by varying spill from pump delivery up to a maximum-spill position determined by an end stop, so varies the pump-delivery pressure as to maintain the large-area pressure substantially constant. A nudger valve operated by the ram keeps delivery pressure low when the ram piston is at the large-area end of its cylinder except when the ram-control valve is set for maximum spill from the large-area side of the ram piston.

3,413,896
PLANETARY MOTION MECHANISM
Ernest Wildhaber, Brihton, N.Y.
(124 Summit Drive, Rochester, N.Y. 14620)
Filed May 22, 1967, Ser. No. 640,031
13 Claims. (Cl. 92—57)



A bearing is devised for direct rolling contact between parts that have a planetary relative motion, a relative motion obtainable by uniform rotation of two parts on different axes that lie in the same plane. The creation of such a planetary bearing leads to improved designs of certain types of planetary transmissions, and also of engines, compressors and pumps with reciprocating pistons that are connected to a planetary or wobble member. The planetary bearings contain balls generally kept in position by a cage. The cage is guided to describe an intermediate planetary motion to achieve rolling contact on all its balls, the cage center moving in a circular path.

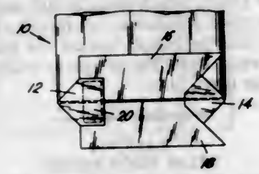
3,413,897
OIL GALLERY EQUIPPED PISTONS AND METHODS OF MAKING SAME
Rupert L. Atkin, Grosse Pointe Woods, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 17, 1965, Ser. No. 464,781
12 Claims. (Cl. 92—186)



An oil gallery piston having an annular internal oil gallery surrounded by a peripheral groove extending to

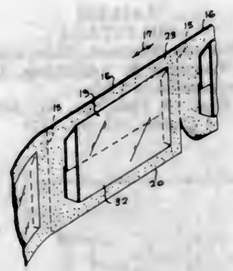
the circumferential exterior surface of the piston, the groove being closed with a weld and the gallery being closed from the weld material by a backup ring. The backup ring is inserted into the gallery groove prior to the formation of the gallery as a high-temperature melting part of a low-temperature melting gallery-forming core which is later evacuated to form the gallery.

3,413,898
SEAL BARRIERS FOR THERMOPLASTIC BAGS
William L. Calvert, Westfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
Original application Apr. 25, 1966, Ser. No. 545,099, now Patent No. 3,343,748, dated Sept. 26, 1967. Divided and this application June 27, 1967, Ser. No. 649,246
7 Claims. (Cl. 93—35)



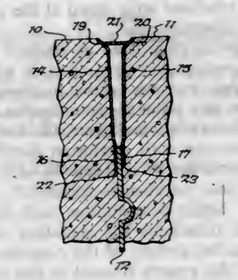
A method of providing a square-ended thermoplastic bag with a barrier material which bag has been pre-cut to form a square bag end having two sides flaps and two end flaps. The method comprises the steps of outfolding the side flaps, folding in the end flaps and inserting the barrier material under one of the end flaps. The barrier material is then sealed to the underside of the end flap. In a subsequent operation, a forming platen is inserted over one of the infolded end flaps and the side flap are folded over it and sealed to each other. Thereupon, the forming platen is removed and the side flaps are sealed to the end flap backed up by the barrier material.

3,413,899
METHOD OF FORMING PACKING UNIT
Leon M. Timms, 636 Amherst Drive, Burbank, Calif. 91504
Original application Aug. 16, 1965, Ser. No. 479,735, now Patent No. 3,330,470, dated July 11, 1967. Divided and this application May 15, 1967, Ser. No. 638,378
9 Claims. (Cl. 93—61)



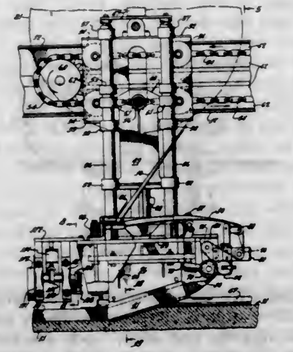
A method of forming a preassembled shipping unit including an adhesive carrier sheet to be adhered to an item being shipped and carrying a thin pocket for receiving a packing slip or the like. The method includes securing in relatively fixed positions two adjacent edges of the sheet material of the pocket by contact of both edges with the adhesive of the carrier sheet.

3,413,900
GROOVE FILLER
Alfred F. Crone, Williamsville, N.Y., assignor to Acme Highway Products Corporation, Buffalo, N.Y.
Filed Sept. 30, 1966, Ser. No. 583,180
3 Claims. (Cl. 94—17)



This disclosure relates to improvements in groove formers or fillers of unitary construction for concrete pavements, which form grooves in the pavement and are removably positioned in the grooves thus formed at pavement joints to close these grooves and maintain them in correct shape while the pavement is hardening.

3,413,901
APPARATUS AND METHOD FOR INSERTING A CONTINUOUS AND SOLID JOINT STRIP INTO PLASTIC CONCRETE
Arthur I. Lusk, Santa Ana, Calif., assignor to Industrial Engineering Developments, Inc., Little Rock, Ark., a corporation of Arkansas
Continuation-in-part of application Ser. No. 468,381, June 30, 1965. This application Mar. 16, 1967, Ser. No. 623,638
57 Claims. (Cl. 94—39)



The present apparatus and method are particularly adapted to insert joint strips or tapes transversely of plastic concrete shortly after it has been extruded from a paving machine during formation of a concrete highway or similar elongated mass or slab of concrete. Some of the major elements or groupings (which, for convenience, will be referred to below as "features") disclosed in detail in the specification are as follows, many of such features

being closely interrelated and coacting unobviously with each other as will hereinafter be set forth in detail:

(a) Apparatus is provided which may be employed to cause the strip-insertion head to travel transversely of the highway at the same time that the entire apparatus is moved longitudinally thereof.

(b) Power-driven means are provided on the apparatus to positively feed (push) the strip in a direction opposite to the direction of traverse of the strip-insertion head, and in precisely timed relationship relative to the speed of traverse, the rate of feeding being such as to create substantially zero resultant strip speed at the point where the strip leaves the insertion head.

(c) The strip-insertion head or blade is so constructed that a flat (uncorrugated) strip or tape, which is capable of being push-fed, may be caused to change direction in a vertical plane just prior to entering the concrete. Such strip-insertion head also facilitates traverse of the blade through the concrete with minimum disturbance thereof and with maximum insertion speed. In addition, undesired ingress of grout into the blade is prevented.

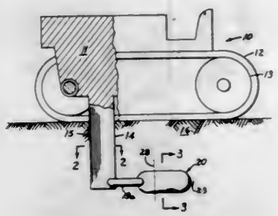
(d) Sensing, height-determining, and finishing means are provided to determine the elevation of the head or blade relative to the surface of the concrete, and to fill in and finish over the groove formed in the concrete as the blade moves therethrough.

(e) Means are provided to vibrate the head or blade in a substantially vertical direction. Means are also provided to vibrate the head or blade, and selected portions of the finishing means, at different frequencies and amplitudes and for different purposes.

(f) Means are provided to cut off the strip or tape after each strip-insertion traverse, and to insure that the remaining strip end is properly located at the end of the cutting operation and during the return traverse.

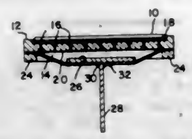
(g) Slip-form means are provided at opposite edges of the highway to insure that the strip-insertion head does not break off edge portions of the plastic concrete.

3,413,902
SOIL COMPACTION PROCESS AND DEVICE THEREFOR
George L. Malan, 560 E. Rowland St., Apt. G3, Covina, Calif. 91722
Filed June 17, 1965, Ser. No. 464,715
5 Claims. (Cl. 94—48)



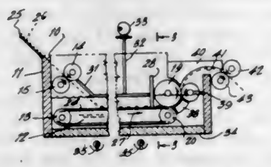
1. Apparatus for compacting earth comprising: a substantial reactive mass adapted to rest freely and otherwise unsupported directly and solely upon the surface of the earth to be compacted, and to cover a substantial area thereof; a mast attached to the mass and projecting downwardly therefrom into the earth; a vibrator attached to the mast beneath the surface of the earth and beneath the reactive mass; and propulsion means for moving the reactive mass along the surface of the earth, thereby moving the mast through the earth, and pulling the vibrator through the earth at a level and a location which are beneath the moving reactive mass, vibrational energy produced by the vibrator reacting on the earth between the vibrator and the reactive mass.

3,413,903
HIGH SPEED PLATEN
Lawrence Vincent Maldarelli, Duarte, Calif., assignor to Hycon Manufacturing Co., Monrovia, Calif.
Filed Jan. 24, 1966, Ser. No. 522,473
2 Claims. (Cl. 95—11)



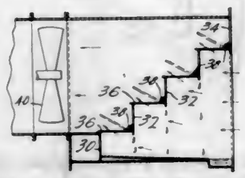
A camera platen is provided with a plurality of openings communicating to a pressure chamber. A piston operating in the pressure chamber creates a vacuum at the surface of the platen, which subjects film next adjacent the platen to a pressure differential, conforming the film to the platen. Returning the piston toward the platen, the film is propelled away from the platen to enable high-speed transport of the film.

3,413,904
FILM PROCESSOR
Murray Friedel, North Miami Beach, Fla., assignor to Visual Graphics Corp., New York, N.Y., a corporation of New York
Filed Sept. 7, 1965, Ser. No. 485,502
4 Claims. (Cl. 95—94)



A device for processing exposed photographic sheet material in which the material is led into a developing tank having a fluid tight transparent actinic light filtering material bottom. Transport belts within the tank lead the sheet material across the tank and a swingable dam holds the sheet material within the developing solution for the required interval of time. Release of the sheet material by the dam permits the transport belts to carry the developed sheet material out of the tank and into subsequent developing and drying chambers.

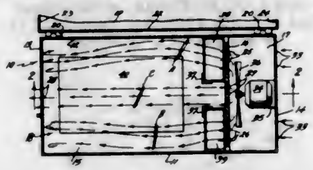
3,413,905
AIR INTAKE
Edward H. Johnson, Maumee, Ohio, assignor to The American Warming & Ventilating, Inc., Toledo, Ohio, a corporation of Ohio
Filed Sept. 19, 1966, Ser. No. 580,474
4 Claims. (Cl. 98—37)



An air intake louver has an exceptionally large free area for the passage of air and yet is resistant to weather. The large free area is achieved by employing baffles which

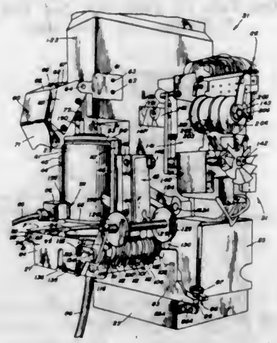
are arranged in a stepped configuration with each baffle being forward, toward the direction of air from which the air flows, of an adjacent, lower baffle, and with a lower edge of each forward baffle being approximately at the same level as the upper edge of the lower baffle. Further, the baffles can have rain troughs at their lower edges to collect water which is deposited upon the baffles as the air moves between them and changes direction abruptly.

3,413,906
MOLD RETARDANT BREAD BOX
Alexander R. Usdavin, 2148 O St. NW., Apt. 401, Washington, D.C. 20037
Filed Apr. 12, 1965, Ser. No. 447,324
6 Claims. (Cl. 99—249)



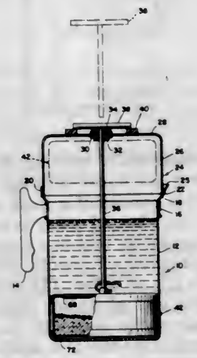
1. A foodstuff preserving box comprising a container, a partition dividing the container into a foodstuff storage compartment and a blower receiving compartment, said partition having openings therethrough communicating said compartments, a blower in said blower compartment adjacent said partition, and at least one receptacle for receiving a mold retardant therein positioned in the path of air flow from the blower so that the air from the blower will pass through said openings in the partition, over the said mold retardant, vaporize some of the retardant, entrain the vaporized mold retardant and pass over the foodstuff in the foodstuff compartment and deposit at least some of the entrained vaporized mold retardant on the foodstuff.

3,413,907
INFUSOR APPARATUS
Owen J. Schwertfeger, Chicago, and Frank D. Brill, Norridge, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,786
12 Claims. (Cl. 99—287)



An improved one cup coffee brewing mechanism comprises a brewing chamber having a coffee outlet opening and filter means in cooperation therewith. Means are provided for placing a charge of ground coffee in the chamber, and the device further includes means for sealing the ground coffee within the chamber and liquid supply means adapted to inject a jet stream of water into the ground coffee so as to cause vigorous agitation thereof. Pressurizing means simultaneously increases pressure within the chamber such that the ground coffee is rapidly and thoroughly infused with the heated water and the resulting brewed coffee is discharged from the outlet opening of the chamber through the filter means.

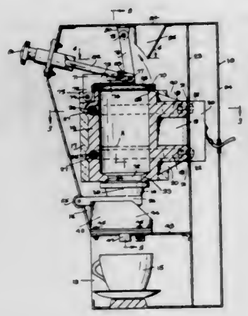
3,413,908
APPARATUS FOR PRODUCING A COFFEE INFUSION
Philip Nadelson, 28—16 34th St., Long Island City, N.Y. 11103
Continuation-in-part of application Ser. No. 119,402, June 26, 1961. This application Mar. 1, 1965, Ser. No. 436,233
12 Claims. (Cl. 99—297)



Apparatus for producing a beverage infusion comprising an urned portion, having, in turn, a liquid reservoir, a flared portion extending upwardly and outwardly from said liquid reservoir, a peripheral flange extending upwardly from said flared portion and a seat at the juncture between said flared portion and said peripheral flange; a pouring spout being located along said peripheral flange and above the seat defined by the juncture between the flange and the flared portion; the angle of inclination and length of said flared portion being chosen to provide a rapid by-pass between the container and the flared portion upon the upward stroke of said container; the area of the by-pass about the container at the location of said flared portion being sufficient to enable the liquid caused to flow upwardly by the container on its upward stroke to enter the by-pass and return to the liquid reservoir without entering the cover portion, enabling the cover portion to remain clean and free of liquid, in the reservoir; said liquid reservoir further comprising a cover portion disposed in an hermetically sealed relationship with respect to said urned portion, said cover portion being particularly adapted to be disposed in an hermetically sealed relationship with respect to said peripheral flange, and upon said seat; and a container particularly adapted to be reciprocated through at least one cycle relative to a liquid base disposed in said liquid reservoir; the dimensions of said container and said liquid reservoir being chosen to define a minimum by-pass therebetween; and wherein said container comprises a top portion; a bottom portion; and a center portion extending between said top and bottom portions; and wherein said top and bottom portions each comprise at least one mesh

insert, the insert in said top portion being recessed, and the insert in said bottom portion protruding therefrom.

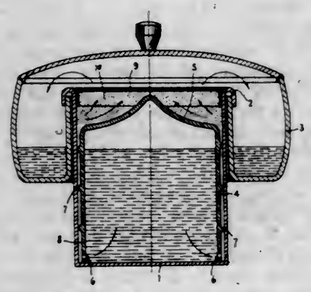
3,413,909
COFFEEMAKING APPARATUS
William Heier, 312 Henry Ave., Warminster, Pa. 18974
Filed June 15, 1967, Ser. No. 646,263
21 Claims. (Cl. 99—298)



Apparatus for sequentially brewing individual cup by cup servings of fresh hot liquid beverage, such as coffee. Each cup of coffee is brewed of a fresh charge of coffee grounds through which heated water is passed under the pressure of air expanded by heat in a closed heated vessel with which is sequentially introduced just enough water to make up a single cup of coffee. The coffee is brewed at a temperature below that of boiling water.

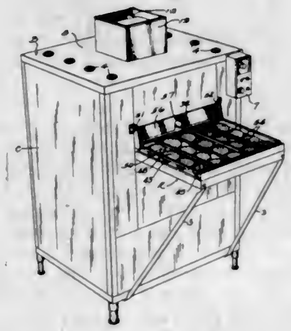
Provision is made in the apparatus for facilitating removal and replacement therein of a holder for the coffee grounds from which the coffee essence is extracted for each cupful of coffee, as well as for easy replacement in the holder of a filter assembly which underlies and supports the bed of coffee grounds during the coffee brewing operation. The filter assembly includes a filter disc and grid assembly which is disposable after such use thereof as may be desired.

3,413,910
COFFEEMAKING DEVICE
Salvatore Sanvitale, Via Buccella 6, Trento, Italy
Filed Aug. 28, 1967, Ser. No. 663,612
Claims priority, application Italy, Aug. 31, 1966, 775,776/66
4 Claims. (Cl. 99—303)



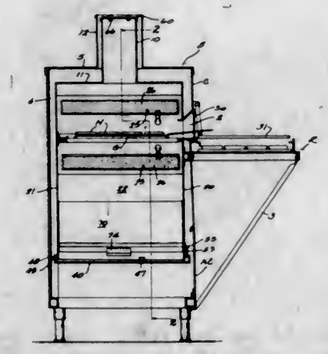
A device for making "espresso"-type coffee which consists of an inverted glass-shaped element inserted into an outer vessel of larger diameter, and an annular urn connected to the top of the outer vessel. The glass-shaped element is filled with water and inserted into the larger vessel; afterwards the two are turned upside down, powdered coffee is poured into the ensemble, a filter is threaded on top and the urn is positioned. Upon heating, the water escapes through openings laterally provided in the inverted glass-shaped element, passes through the annulus provided by the differential diameters of the two vessels, filters through the coffee powder and the filter and collects in the annular urn.

3,413,911
FOOD BROILER
Louis A. M. Phelan, Roscoe, Ill. 61073, and John W. Vos, Roscoe, Ill., and Cyril G. Wedige and William A. Spates, Beloit, Wis.; said Vos and said Spates assignors to said L. A. M. Phelan, an individual
Filed Feb. 12, 1968, Ser. No. 704,734
9 Claims. (Cl. 99—355)



A food broiler of the type utilizing a horizontal, side entrance, and having a loading and unloading rack for the food being broiled which provides for instant transfer of the broiled food, such as hamburgers for example, from the removable grill to pre-positioned buns.

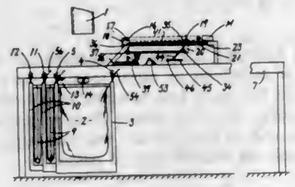
3,413,912
FOOD BROILER
Louis A. M. Phelan, Roscoe, Ill. 61073; John W. Vos, Roscoe, Ill., and Cyril G. Wedige and William A. Spates, Beloit, Wis.; said Wedige, said Vos, and said Spates assignors to said Phelan
Filed Feb. 12, 1968, Ser. No. 704,828
7 Claims. (Cl. 99—400)



A food broiler of the type utilizing infra-red heat generating units in its broiler chamber, which chamber is

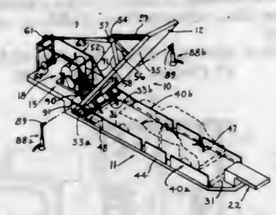
substantially sealed against the entry of excess air. The chamber has a quick detachable pan at the bottom for catching hot fat. The pan can be locked in position, yet readily removed from one end of the broiler.

3,413,913
COMPACTING DEVICE FOR REFUSE CONTAINERS
Egon Gunnar Smedlund, Litoringvagen 68, Halmstad, Sweden
Filed Apr. 20, 1967, Ser. No. 632,400
8 Claims. (Cl. 100—53)



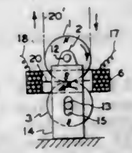
An apparatus for compacting refuse in successive containers or sacks, the sacks being successively presented below a refuse chute for filling. Adjacent to the refuse chute is a reciprocating carriage transporting a compactor or tamping device. The carriage, upon movement toward the sack in which the contents are to be taped or compacted, brings a compactor head to a position over the mouth of the filled sack and causes the descent of the head into the sack to contact and compress or compact the refuse therein. The amount of compression is regulatable and when a predetermined amount of resistance to compression is reached, the compression by the compactor head is ceased; the head is elevated out of the sack and the carriage is retracted to its initial position. Means is also provided by which the filled sack, with its compacted contents, is moved away from filling position and another sack moved to position to be filled and its contents compressed or compacted.

3,413,914
JUNKED METAL COMPRESSING SMASHER
Wesley D. Ballard, Phoenix, Ariz., assignor of fifty percent to Henry V. Gonzales, Phoenix, Ariz.
Filed June 3, 1966, Ser. No. 555,187
6 Claims. (Cl. 100—100)



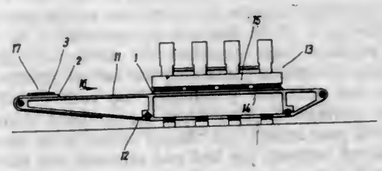
The invention includes a base with bed therearound, successive bodies, as automobile bodies, placed on the base being smashed by a hammer with forward end mounted on a transverse pivot across the base. A support, cantilevered forwardly, has forward sheave means, cable dead end, and clutch-connected, engine driven reel mounted thereon, with reel cable extending to a rear sheave means on a frame upstanding from hammer and thence back and forth between rear and forward sheave means. Engine drive is de-clutched for reel free-wheeling to run off cable as hammer descends, and is enclutched to elevate the hammer.

3,413,915
MAGNETICALLY BIASED PRESSURE APPLICATION TO RUNNING LENGTH MATERIALS
Leslie Ethel Goodwin and Jean Max Rowe, Wilmington, Del., and Nathaniel Convers Wyeth, Rosedale, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 10, 1965, Ser. No. 462,961
10 Claims. (Cl. 100—169)



A pair of cooperating magnetically biased pressure applicators mounted for free movement with respect to one another, one of which is a roll supported by a coaxial shaft journaled at the ends to permit roll rotation, defining between them a material-receiving nip, and a method for loading the applicators.

3,413,916
FEEDING DEVICE FOR PRESSES OR THE LIKE
Helmut Adolf Friz, Stuttgart, and Alfred Dettelbach, Stuttgart-Bad Cannstatt, Germany, assignors to Adolf Friz Gesellschaft mit beschrankter Haftung, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany
Filed June 13, 1967, Ser. No. 645,780
Claims priority, application Germany, June 14, 1966, F 49,454; June 12, 1967, F 52,661
10 Claims. (Cl. 100—221)

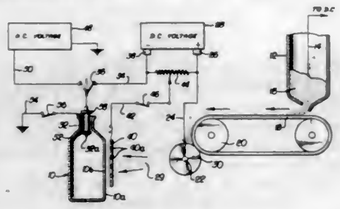


A feeding device for presses or the like which comprises a press including a press table, at least two carriers for goods to be conveyed to the press, means for moving both said carriers behind each other along the same movement path into the press, and means for driving the carriers separately from each other and including means for moving the carriers selectively into the same working position.

3,413,917
ELECTROSTATIC PRINTING WITH MEANS TO CHANGE POLARITY OF COUNTER ELECTRODE
William T. Fisher, Los Alamitos, Charles B. Patterson, Lakewood, and Stanley M. Dahl, Whittier, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Nov. 16, 1966, Ser. No. 594,820
12 Claims. (Cl. 101—114)

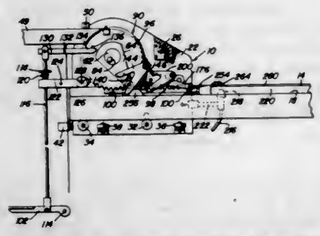
Electrically charged particles, deposited on an object in a predetermined pattern through an electrical field, have a tendency to migrate from their points of impingement, due to electrical potential conditions created during

printing. This invention alleviates charge imbalances and other conditions which cause migration, generally by



application of reversing charges to the areas of the object affecting print stability.

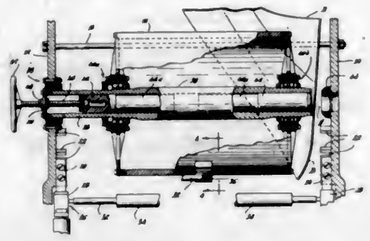
3,413,918
GRAVURE PROOF PRESS
Omer O. Gingras, 749 New Ludlow Road, South Hadley, Mass. 01075
Filed Sept. 27, 1965, Ser. No. 490,310
11 Claims. (Cl. 101—158)



A press including an elongated bed with means for supporting an image panel and a carriage mounted on the bed for guided movement therealong with a drum journaled from the carriage for rotation about an axis extending transversely of the bed and adapted to closely overroll the image panel upon movement of the carriage along the bed. A gear wheel is supported from the drum for concentric rotation therewith and a rack gear extends longitudinally of the bed and is supported at its opposite end portions from the bed for limited reciprocation laterally of a plane containing the axis of rotation of the drum and generally paralleling the path of movement of the carriage, the gear wheel means being meshed with the rack gear means and biasing means being operatively connected between the bed and opposite end portions of the rack gear means yieldingly urging the opposite end portions of the rack gear means toward the plane through which the axis of rotation of the drum moves during movement of the carriage along the bed.

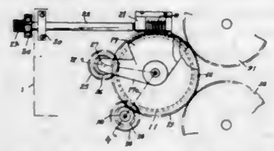
3,413,919
METHOD AND MEANS FOR SUPPORTING THE BACKING CYLINDER OF PRINTING APPARATUS TO FACILITATE REPLACING AN ENDLESS MEMBER EXTENDING PARTLY AROUND IT
Urey Hocutt, Baltimore, Md., assignor to The Johnson Fast Print Machine Corporation, Brooklandville, Md., a corporation of Maryland
Filed Oct. 23, 1965, Ser. No. 503,486
9 Claims. (Cl. 101—216)

A heavy backing cylinder is suspended between two support members on a combination of an axial sleeve and a shaft which is reciprocal within the sleeve to project one end of the shaft beyond one end of the sleeve or withdraw the shaft end into the sleeve. One end of the sleeve is disposed within a bearing in one of the support members and one end of the shaft is normally projected into a bearing in the other of the support members. For passing an endless printer's blanket over and around the suspended cylinder, or removing it, the cylinder is temporarily supported by projecting a pair of print rolls, or the mandrels on which they are mounted, or other means, against the



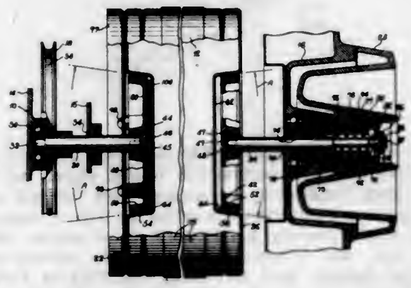
cylinder, or against a narrow yoke interposed between the print rolls or mandrels or other means and the cylinder, and the projected shaft end is withdrawn from said other support member into the sleeve thereby providing space between one end of the cylinder and one support member through which the blanket can be passed.

3,413,920
PRINTING POSITION CONTROL DEVICE FOR AN OFFSET PRINTING MACHINE
Tamaki Kaneko and Kazunobu Yamamoto, Tokyo, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Filed Jan. 16, 1967, Ser. No. 609,587
Claims priority, application Japan, Jan. 19, 1966, 41/2,933
7 Claims. (Cl. 101—248)



Device for an offset printing machine, which enables an operator to rotate the impression cylinder to adjust the position of the clamping fingers on said cylinder in relation to the sheet feeding mechanism and blanket cylinder and thus adjust the longitudinal position of the printing on the sheet.

3,413,921
DUPLICATING MACHINE PRINTING DRUM MOUNTING CONSTRUCTION
William D. Boatman, Fridley, Minn., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California
Filed Mar. 23, 1967, Ser. No. 625,360
22 Claims. (Cl. 101—248)



A duplicating machine construction in which the printing drum is mounted for rotation by frusto-conical arbor

members received within recesses in the ends of the drum and frictionally gripping the perimeter of each recess for driving engagement. One arbor member is connected to a drive for rotating the drum and an arbor member is selectively movable axially to disengage the drum from the drive for allowing selective rotation of the drum relative to the drive and for permitting selective removal of the drum from the machine.

3,413,922
PRINTING PLATE SUPPORTING MEANS IN BED AND CYLINDER PRINTING MACHINES
Albert F. Wike, South Euclid, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 13, 1966, Ser. No. 542,716
4 Claims. (Cl. 101—269)



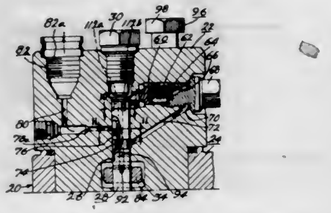
A printing machine having a long bed is provided with retaining pins to hold printing members at any of a series of positions across the bed. A form which has a plurality of print-receiving areas on its face, is shiftable along the bed into one of a plurality of print receiving positions established by gauges. The bed length, the width of the printing members, and the distance between print receiving members, are all related in even multiples for interplay of printing members and form to provide for gathering time related information on a single form.

3,413,923
RIFLE GRENADE
Boris Batou, Geneva, Switzerland, assignor to Anstalt fur die Entwicklung von Erfindungen und gewerblichen Anwendungen ENERGA, Vaduz, Liechtenstein
Filed July 12, 1967, Ser. No. 652,826
Claims priority, application Switzerland, Aug. 29, 1966, 12,566/66
3 Claims. (Cl. 102—65.2)



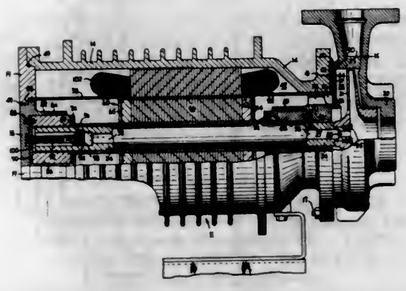
A rifle grenade having a body of substantially spherical shape, a tubular tail-rod connected at one pole of the sphere, a tubular nipple disposed at the opposite pole of the sphere, a circular plate of the diameter of the body and fixed to the nipple, a ballistic cap enclosing a firing device and disposed above the plate, a cylindrical casing supported against the plate, the cylindrical body and the tail-rod, and a closed peripheral space below the plate and between the casing and the spherical body.

3,413,924
FUEL INJECTION PUMP CONVERSION ARRANGEMENT AND METHOD
Theodore S. Chmura and Max H. Voigt, Chicopee Falls, Mass., assignors to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Apr. 11, 1967, Ser. No. 630,121
13 Claims. (Cl. 103—2)



In a single plunger distributor type fuel injection pump, a conversion arrangement and method for halving the number of operational pump outlet ports by plugging or otherwise eliminating certain of the outlet ports and by providing slot means in the plunger to direct the fuel which would normally be pumped toward the blocked ports either to the fuel supply sump or to the operational ports.

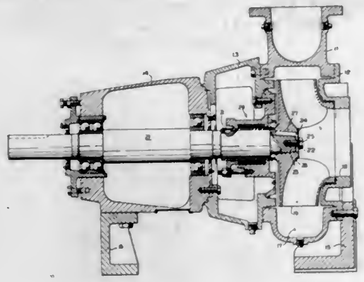
3,413,925
CENTRIFUGAL PUMP HAVING THRUST BALANCING MEANS
Joseph F. Campolong, Danielson, Conn., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,647
16 Claims. (Cl. 103—87)



A cenrifugal pump is provided having means for balancing the forward hydraulic thrust on the impeller shaft which comprises a slide valve at the rear of a hollow channel through the impeller shaft which regulates the flow of fluid from the rear of the rotor chamber through the pump shaft to the inlet to the centrifugal pump thereby regulating the amount or reverse thrust applied to the

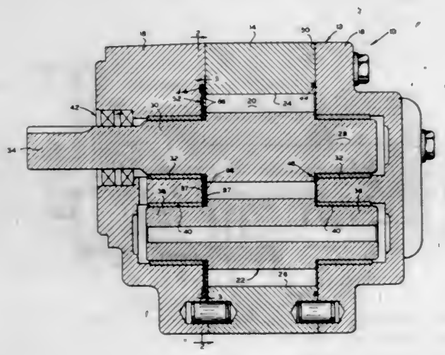
shaft. The valve is placed so as not to affect the flow of fluid through the rear bearing supporting the shaft.

3,413,926
CENTRIFUGAL PUMP
Richard Ayson, Aurora, Ill., assignor to General Signal Corporation, a corporation of New York
Filed Aug. 25, 1967, Ser. No. 663,317
1 Claim. (Cl. 103—111)



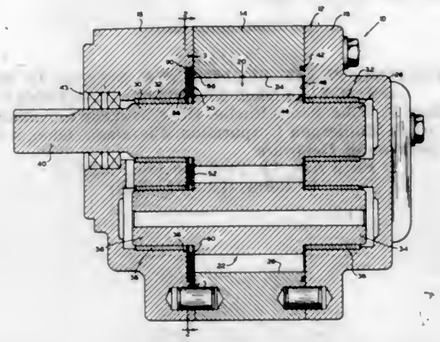
A centrifugal pump employing a taper fit between the impeller and drive shaft, and a seal sleeve for protecting the shaft from the wearing effects of the shaft seal. The sleeve is slidable on the shaft and is biased into abutment with the impeller by a dished ring spring made of coiled flat wire and seated in an annual peripheral groove formed in the shaft.

3,413,927
GEAR PUMP WITH BALANCED PRESSURE LOADED THRUST PLATE
Ronald L. Sisson, Jackson, and Carmen H. Shreve, Niles, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 21, 1966, Ser. No. 603,467
10 Claims. (Cl. 103—126)



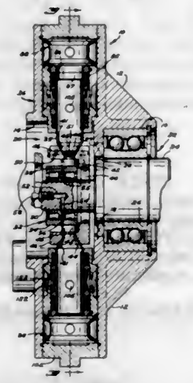
Gear pump with thrust plate utilizing the pressure of the pumped liquid, in which the thrust plate is of bellows form defining a pressure cavity receiving the pumped liquid by which balanced pressure is applied against the gears.

3,413,928
GEAR PUMP THRUST PLATE
Ronald L. Sisson, Jackson, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 21, 1966, Ser. No. 603,469
10 Claims. (Cl. 103—126)



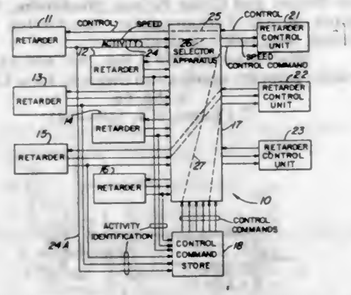
Thrust plate for gear pump for sealing the gears therein, of bellows construction utilizing pressure of the pumped liquid, for minimizing fatigue of the bellows.

3,413,929
RADIAL PISTON PUMP
Ernest E. Cook, Anoka, and Ramon Pareja, Edina, Minn., assignors to Hypro, Inc., Minneapolis, Minn., a corporation of Ohio
Filed Apr. 21, 1966, Ser. No. 544,129
4 Claims. (Cl. 103—174)



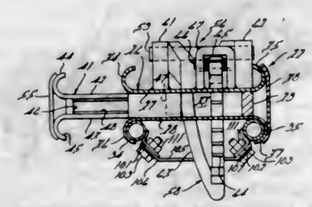
A radial piston pump having a plurality of cylinders functioning in combination with an inlet chamber and an outlet chamber, the inlet and outlet chambers being disposed generally co-axially, one with another, the outlet chamber being circumscribed about the periphery of the inlet chamber. Appropriate valving, including valving extending radially through the pumping pistons is employed for the inlet to the cylinders, and check valve means, arranged along the inner axis portion of the pistons is employed to control flow during the outlet or pressure stroke. Check valve means are also provided to isolate the pumping cylinders from the pressure chamber. The pistons are driven by an eccentric means, and have a tapered base portion in order to reduce the axial drive width requirement.

3,413,930
RAILROAD RETARDER CONTROL SYSTEMS
Robert B. McCune, Allendale, and Rosser L. Wilson, Mahwah, N.J., assignors to Abex Corporation, a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,712
9 Claims. (Cl. 104—26)



A selective control system for the car retarders in a railroad freight classification yard, in which a single control unit may serve a substantial number of different retarders. The control system comprises several independent retarder pressure control units, the number of control units being substantially smaller than the number of car retarders in the yard, but each control unit being capable of controlling the operation of any one of the retarders. A selector apparatus is interposed between the control units and the car retarders and is used to complete operating connections, individually and selectively, between any one of the control units and any one of the car retarders. The system further includes sequence control means that determines which control unit is to be connected to an individual retarder when control of that retarder is required.

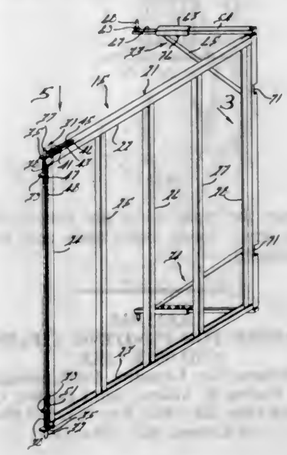
3,413,931
FREIGHT BRACING DEVICE
Paul C. Augustine, Jr., Plymouth, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,360
1 Claim. (Cl. 105—369)



A railway car for carrying coiled sheet steel and including a lightweight crossbar assembly for bracing the coils during transit. The crossbar assembly is automatically adjusted for width and has a lightweight construction due to its employment of formed metal plates.

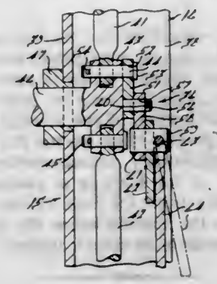
3,413,932
BULKHEAD
James R. Bennett, New Boston, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,528
6 Claims. (Cl. 105—376)

A cargo bracing system including a freight bracing bulkhead assembly carrying locking pins at one of its sides for coaction with pin plates at one side of a cargo area for locking the one side of the bulkhead in a bracing position. Arms are pivotally connected to the other side of the bulkhead at one of their ends and carry locking



pins at their opposite ends for effecting a detachable connection to pin plates carried at the opposite side of the cargo area.

3,413,933
LOCKING MECHANISM
Jackson A. Shook, Northville, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,878
11 Claims. (Cl. 105—376)

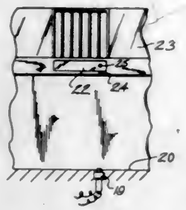


A cargo bracing system including a bulkhead assembly having operating handles for its locking mechanism at each side of the bulkhead frame. Each of the operating handle assemblies provides for operation of the locking pins upon movement of one of the operating handles without attendant movement of the other operating handle.

3,413,934
SECURITY SYSTEM FOR BANKS
August J. Di Giacobbe, Jr., Jeannette, Pa.
(111 Ivy Road, Pittsburgh, Pa. 15229)
Filed July 7, 1967, Ser. No. 651,734
3 Claims. (Cl. 109—6)

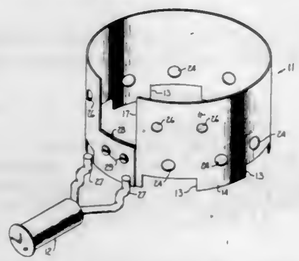
A vestibule structure for banks having an electrical system which will be operated by any one of the tellers which will entrap a bank robber so that he cannot escape. This system is provided with a foot switch which will activate a solenoid to close the outer doors of the establishment and a time delay relay incorporated in the circuit will then close the inner doors of the vestibule so that the bandit cannot re-enter the bank. The inner doors of the

vestibule cannot be forced open while they are being closed by a motor which is set in motion by the time delay



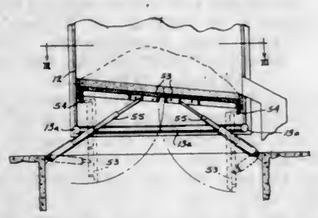
relay, and once the inner doors are closed, the solenoid latch on the inner doors locks them and prevents the escape of the bandit.

3,413,935
CONTAINER FOR IGNITING CHARCOAL AND THE LIKE
William E. Behrns, San Leandro, Calif., assignor of one-half to Burton E. Adams, San Leandro, Calif.
Filed Mar. 28, 1966, Ser. No. 537,904
3 Claims. (Cl. 110—1)



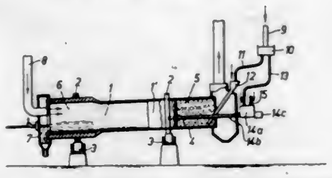
A container is described for facilitating the ignition of charcoal or the like in a barbeque brazier. The container is a tubular housing which is open at both ends and has a notch extending into its upper end edge to at least the central portion of the housing for the reception of the shank portion of an electric fire igniter. A plurality of circumferentially spaced perforations extend through the wall of the housing at positions which are spaced downwardly from the base of the notch so that air can enter into the housing below the location therein of the heating element of an electric igniter.

3,413,936
CONSTRUCTION AND OPERATION OF SAFETY DUMPING SYSTEM IN RECOVERY BOILERS
Herbert L. Matthews, 3384 Cardiff Place, Victoria, British Columbia, Canada
Continuation of application Ser. No. 474,100, July 22, 1965. This application Oct. 5, 1967, Ser. No. 673,110
Claims priority, application Canada, Oct. 14, 1964, 913,910
3 Claims. (Cl. 110—7)



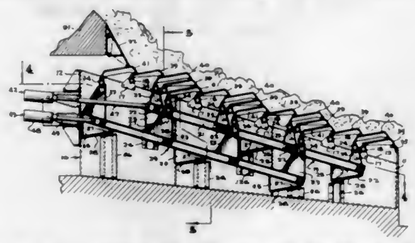
A recovery boiler of the type employed in the kraft sulphate pulp process. The boiler is provided with a movable floor which enables quick dumping of a hot char bed during an emergency shut down.

3,413,937
METHOD AND AN ARRANGEMENT FOR TREATING SEWAGE WASTES AND THE LIKE
Gustav Bojner and Gösta Bojner, Stockholm, Sweden, assignors to AB Torkapparater, Stockholm, Sweden, a Swedish joint-stock company
Filed May 23, 1967, Ser. No. 640,582
Claims priority, application Sweden, June 15, 1966, 8,184/66
7 Claims. (Cl. 110—14)



The waste material from a purification plant, which is a suspension of a sludge in a liquid, is divided in at least one liquid phase and one semifluid phase, and the liquid phase is utilized as a washing liquid for hot gases obtained from a combustion of the waste material, said liquid phase in the washing stage being heated and concentrated by the heat from the hot combustion gases and then being conducted into the heating stage, while the semifluid phase is conducted directly into the heating stage, where the two phases again are combined and together heated for drying and combustion.

3,413,938
STOKER CONSTRUCTION
Miro Dvirka, Long Island City, N.Y., assignor to Hagan Industries, Incorporated, Corona, N.Y., a corporation of New York
Filed Apr. 12, 1967, Ser. No. 630,412
6 Claims. (Cl. 110—38)

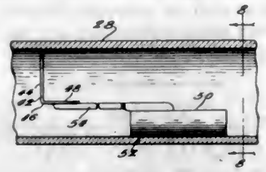


A stoker construction for burning refuse in an incinerator including a plurality of stationary grates and a plurality of movable grates arranged along an inclined plane, which grates coact upon reciprocating the movable grates to cause a tumbling action of the refuse as it is conveyed from the charging end of the stoker to the ash removal end thereof, thus exposing and subjecting a maximum area of such refuse for reduction by combustion.

3,413,939
BAFFLE MEANS FOR HEAT EXCHANGER
James L. Phillips, 2635 S. Avers Ave., Chicago, Ill. 60623
Filed Mar. 2, 1966, Ser. No. 531,246
1 Claim. (Cl. 110—97)

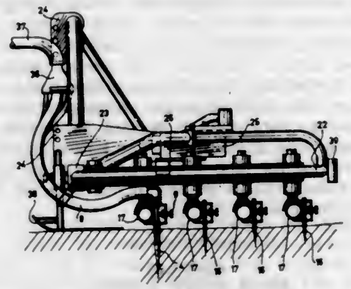
A baffle means for a heat exchanger, such as a fire tube boiler, the baffle being shaped to substantially match-

ingly span a portion of the tube which the heat exchange medium normally gravitates and being connected



to a spaced ballast member to hold the baffle in the desired heat medium deflecting orientation.

3,413,940
INSTRUMENT FOR INJECTING A GAS OR LIQUID INTO THE SOIL
Herbert Vissers, Spoorstraat 4, Nieuw-Vennep, Netherlands
Continuation of application Ser. No. 657,629, Aug. 1, 1967, which is a continuation-in-part of application Ser. No. 523,689, Jan. 28, 1966. This application Mar. 13, 1968, Ser. No. 712,866
Claims priority, application Netherlands, Feb. 3, 1965, 6501345
7 Claims. (Cl. 111—7)

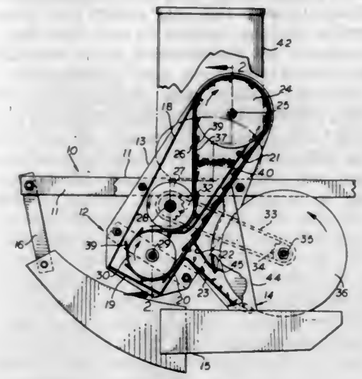


Implement for injecting ammonia into the ground by means of a harrow having time carrying beams reciprocating transverse to the direction of travel of the implement, the foremost tines being hollow and the ammonia passing through these reciprocating tines

---

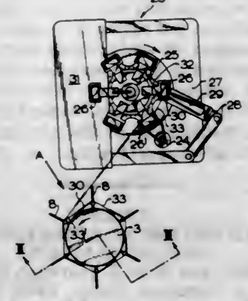
3,413,941
PLANTER METERING DEVICE
Raymond F. Roberson, Los Angeles, Calif., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,187
6 Claims. (Cl. 111—77)

1. In a planter having a frame and a furrow opener carried thereby, a seed hopper mounted on the frame having an opening for the passage of seed therefrom and seed selecting and metering mechanism disposed between the hopper and the furrow opener for receiving seed from the hopper and discharging it to the furrow opener comprising, a housing mounted on the frame in communication with said outlet to receive seed from the hopper, spaced pulleys mounted in said housing, and an endless conveyor belt trained on said pulleys, said belt having cutouts forming spring fingers normally disposed and biased in the plane of the belt when the latter follows a straight path between said pulleys and deflectable radially outwardly as the inner face of said belt engages and follows a curved path over one of said pulleys to form a pocket between each of said fingers and the periphery of said one of said pulleys, and retainer means mounted in said housing in substantial engagement with said inner



face of said belt upon departure of the latter from said one of said pulleys to hold seed therebetween and said fingers.

3,413,942
DEVICE FOR WINDING ON OF SEWN WORKPIECES
Hans Scholl, Bielefeld, Germany, assignor to Kochs Adlernahmaschinen-Werke AG, Bielefeld, Germany
Filed Aug. 9, 1966, Ser. No. 571,283
Claims priority, application Germany, Aug. 12, 1965, K 56,863
4 Claims. (Cl. 112—2)

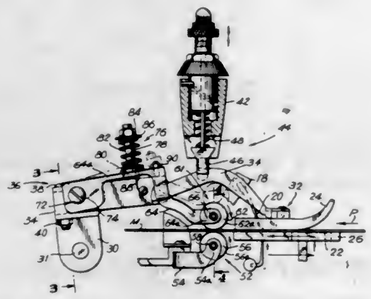


A device for winding on of workpieces arriving from a sewing installation and attached to one another by thread chains, which makes it possible to receive a great number of workpieces withdrawn from a sewing installation in an orderly manner and without the danger of entanglement, so that the workpieces may be separated from one another with a small expenditure of time when the sewing machine is inoperative.

3,413,943
AUXILIARY FEED MECHANISM FOR A SEWING MACHINE
Ronald J. Boser, 21 Bolan Drive, Huntington Station, N.Y. 11746
Filed Nov. 9, 1966, Ser. No. 593,152
6 Claims. (Cl. 112—214)

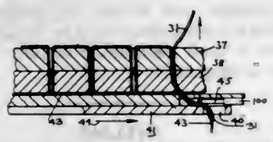
1. An auxiliary feed mechanism for a sewing machine of the type including a sewing mechanism, a sewing needle operatively connected to and adapted to be reciprocated through stitch-forming movement by said sewing

mechanism, a feed dog drive operative to feed material along a feed path past said sewing needle, a support located rearwardly of said sewing needle, a presser foot, and a first pivotal connection mounting said presser foot to said support such that said presser foot extends into an operative position relative to said feed dog drive to engage material fed therebetween and is swingable about said first pivotal connection from said operative position into a clearance position, said auxiliary feed mechanism comprising a first rotary drive means including a material-contacting surface located rearwardly of said sewing needle along said material feed path adapted to advance material along said feed path, a second rotary drive means including a material-contacting surface mounted for



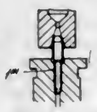
swinging movement in unison with said presser foot having a cooperating operative position with said first rotary drive means such that said material-contacting surfaces thereon engage opposite sides of material fed therebetween, and an elongated support bracket for said second rotary drive means, said support bracket having means at one end for journalling said second rotary drive means for rotation thereat and having at its opposite end a second pivotal connection to said presser foot oriented transversely to said first pivotal connection such that said support bracket and said presser foot are movable independently of each other in a vertical plane to thereby minimize the transmission of vibration movement of said presser foot to said support bracket.

3,413,944
THREAD SEVERING ATTACHMENT FOR SEWING MACHINE
Malcom Spinrad and Bryce E. Hoverter, Jr., Reading, Pa., assignors to American Safety Table Company, Inc., Reading, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1965, Ser. No. 492,200
14 Claims. (Cl. 112—252)



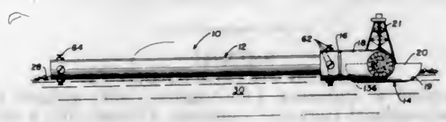
Special throat plate apparatus for a sewing machine to provide simultaneous severance of both needle thread and bobbin thread close to the undersurface of the work by first snubbing both threads with a slider against an unheated heatable wire carried by the throat plate at a time when the needle thread take-up lever has risen to a particular position lower than its topmost position, then severing both threads by heating the heatable wire after the needle thread take-up lever has completed its rise to draw thread for the next stitch, and then retracting the snubbing slider. The apparatus can be operated manually or in conjunction with an automatic needle positioning mechanism, which latter is described with the illustration of an operating circuit.

3,413,945
PROCESS FOR MANUFACTURING POINTS FOR BALL-POINT PENS
Guido Bertoglio, Lugano-Viganello, Ticino, Switzerland, assignor to Real Patentauswertung Anstalt, Vaduz, Liechtenstein
Filed Apr. 25, 1966, Ser. No. 545,134
Claims priority, application Switzerland, May 11, 1965, 6,662/65
3 Claims. (Cl. 113—32)



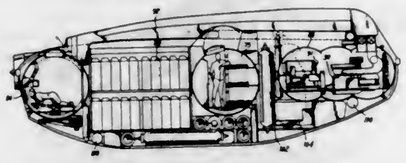
A process for manufacturing points for ball-point pens comprises cutting off from cylindrical stock a short cylindrical blank whose height-to-width ratio is about 1:1, and then performing a single cold extrusion step on the blank in a female die whose internal diameter is greater than the external diameter of the blank, so as to form a cup whose bottom and side walls are of about equal thickness. Thereafter, the cup is lengthened and reduced in diameter while maintaining the thickness of the bottom and side walls substantially unchanged, until an elongated blind bottom tube is produced. The bottom is cut from the tube so that the tube is open at both ends, and then the open-ended tube is shaped to the form of a point for a ball-point pen.

3,413,946
SPAR BUOY VESSEL
Hans Udo von Schultz, Fort Worth, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Aug. 31, 1966, Ser. No. 576,338
31 Claims. (Cl. 114—.5)



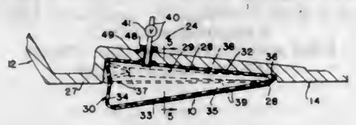
This specification discloses a versatile floating vessel suitable for the exploitation of subaqueous fluid mineral deposits. The vessel includes a shipshaped platform and a spar buoy hull connected so that the vessel can be transported across a body of water with the portions thereof aligned to form a composite shipshaped vessel. The vessel is arranged at a marine site with the spar buoy hull depending vertically into the water and supporting the platform above the surface. The platform maintains the same orientation in both arrangements. With a drilling rig mounted on a deck of the platform, a drill string can be guided into a borehole extending into the formations underlying the marine bottom through a passage extending through the spar buoy hull of the vessel. The spar buoy hull can be utilized as a portion of a marine conductor pipe. The vessel can be dynamically positioned, the positioning motors being controlled in conjunction with transponders fixed on the marine bottom around the borehole, or means for detecting the deviation of the drill string from the axis of the passage through the spar buoy hull in which it is suspended.

3,413,947
SUBMARINE CRAFT
Jacques Picard, St.-Jean-Cap-Ferrat, France, assignor to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, France
Filed Apr. 26, 1967, Ser. No. 633,732
Claims priority, application France, Apr. 29, 1966, 59,620
20 Claims. (Cl. 114—16)



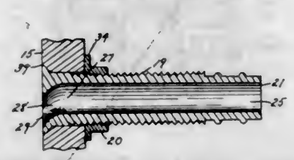
A submarine craft comprising a hull having at least one independent water-tight element adapted to withstand the external ambient pressure, at least one of said elements having the general shape of a torus which may be formed by a plurality of sections of any shape such as, for example, rings of circular section, at least some of said rings being similar to each other, the surface of each ring having, in its section perpendicular to the generator circle of the torus located in the central plane of the ring, a curvature having its concavity directed towards the center of said circle and the radius of which is less than that of the equatorial circle of the torus, the surfaces of the rings being those of a torus, a cylinder or a sphere.

3,413,948
FLUID PRESSURE CONTROLLED PLANING AND TRIM MEANS FOR WATER CRAFT
Harry H. Coll, Pompano Beach, Fla., assignor to Chris-Craft Industries, Inc., Pompano Beach, Fla., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,877
2 Claims. (Cl. 114—66.5)



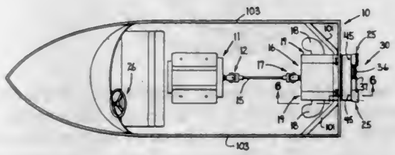
Fluid pressure control planing and trim means of a novel type are disclosed for use on water craft. The hull of the craft is recessed on opposite sides of its keel center line to receive a pair of identical, flexible, hollow and inflatable plane units. These are variably pressurized from the interior of the craft to inflate them, thus displacing a bottom planing surface of each unit downwardly from a retracted position in the hull recess to an extended planing position beneath the hull. Each planing unit is of a flexible material and in a generally triangular cross section, the apex of which is at the forward portion of the recess. Further, each planing unit, in the form of a fluid-tight envelope shaped thusly, has bellows wall formations on each of its opposite sides, so that the envelope is assisted in its fluid pressure expansion and distension to the inflated position, as well as assisted in collapsing automatically, and otherwise unaided, to the deflated position. The planing envelope is equipped on its bottom with a relatively inflexible plate-like sheath.

3,413,949
FLUID EXIT PORT FOR BOATS
Abraham Allen Lipton, Mamaroneck, N.Y. (22 Lafayette Ave., New Rochelle, N.Y. 10801)
Filed Mar. 22, 1967, Ser. No. 625,217
2 Claims. (Cl. 114—184)



The present invention relates to the provision of a hollow bolt and threadly associated nut structure which provides means for communication between the inner and outer surfaces of the hollow of a boat at portions disposed below normal water line, the bolt including a bore having a partially curvilinear axis to provide for the exiting of a fluid at an angle other than a right angle with respect to the line of movement of the boat, so as to reduce turbulence and drag.

3,413,950
JET BOAT STEERING APPARATUS
Thomas E. Gravenstreter, 4419 Washington Blvd., Indianapolis, Ind. 46205
Filed Jan. 3, 1967, Ser. No. 606,684
7 Claims. (Cl. 115—12)

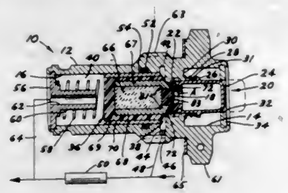


A jet boat steering device which includes in a boat rudder a pair of diverging planes fixed to one another and between which the jet stream moves. The forward edge of one plane pivots into the jet stream before the rearward edge of the other plane to provide precise steering in slight turns. The boat has two such rudders and two pumps feeding the rudders. Reverse movement is accomplished by closing off the outlets of the pumps with gates whereby the streams flow through conduits out the sides of the boat. These reverse conduits also serve the additional function of aerating the streams to reduce spray during steering.

3,413,951
DIFFERENTIAL PRESSURE INDICATOR
Leonard W. Keil, Birmingham, and Carl F. Schorn, Troy, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed June 15, 1964, Ser. No. 375,219
11 Claims. (Cl. 116—70)

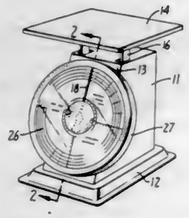
This application discloses a magnetic pressure indicating device which will provide a visual signal when a predetermined pressure differential is attained, the signal being maintained until the device is reset, the device in its preferred form including a body having three chambers formed therein, a magnetic piston assembly to which a pressure is communicated forming a movable wall between the first chamber and the second sealed chambers, a dome-shaped fixed wall between the second and third chambers, an armature assembly slidably mounted in the third chamber and urged away from the dome-shaped wall by a spring, the armature assembly being retained against the fixed wall by the magnetic piston assembly

until the piston assembly is moved away from the wall by a predetermined pressure, and a signal button secured



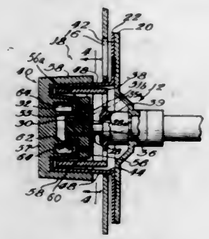
to the armature assembly for indicating when the assembly has moved away from the fixed wall.

3,413,952
SCALE WITH ADJUSTABLE COVER-DIAL COMBINATION
Douglas M. Homs, Hillsborough, Calif. (% Douglas Home Co. Inc., 1640 Rollins Road, Burlingame, Calif. 94010)
Filed Oct. 12, 1966, Ser. No. 586,080
3 Claims. (Cl. 116—114)



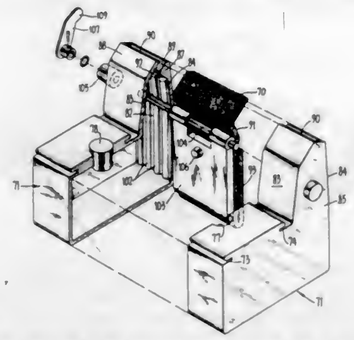
A removable, transparent, circular cover for a dial scale is provided with markings to be read in conjunction with a conventional scale pointer. The cover may be interchanged with another with different markings. The cover is frictionally attached to the scale body so that it can be twisted to set the "zero" marking or to compensate for tare, or in batch weighing.

3,413,953
SELF-LOCKING KNOB STRUCTURE
Bernhard R. Kuhl, Mount Prospect, and Donald H. Larson, Arlington Heights, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,302
7 Claims. (Cl. 116—124.1)



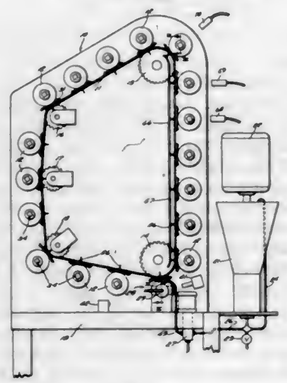
A knob assembly for multiple tuning mode receivers including a tuning knob having rearwardly extending prongs and rearwardly extending channel-like surfaces and a dial having forwardly extending fingers matingly engageable with the rearwardly extending channels of the knob and further being provided with a midportion terminating in a rearwardly extending shoulder for receiving the rearwardly facing prongs of the knob, the dial being positioned to the interior of a receiver with the guideways and midportion extending forwardly through an opening in the receiver cabinet and the knob being assembled to the dial by being telescoped thereto from the exterior of the cabinet.

3,413,954
MOISTENING DEVICE
Vito Viola, Oakland, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,226
6 Claims. (Cl. 118—46)



In the form of the invention shown, a wick is immersed in a tank of liquid with one end surface of the wick exposed, providing a moistening surface to which surface liquid normally flows by capillary attraction. The tank, or reservoir, is removably supported within a base on which a postage metering machine is detachably secured. With each cycle of operation of the postage meter, a length of gummed tape is printed with a postage indicia and thereafter severed, forming a strip of a given length. As the printed strip is withdrawn from the machine it is selectively passed over the moisture-laden exposed end of the wick, sufficient liquid being caused to flow to the moistening surface by compression of the wick upon each cyclic operation of the postage meter, thereby supplementing the capillary flow.

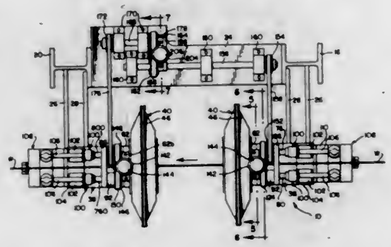
3,413,955
APPARATUS FOR COATING THE INTERIOR OF A CONTAINER WITH A RESINOUS FILM
Vincent J. Patti, Norridge, Ill., assignor to TRW Inc., a corporation of Ohio
Filed Apr. 23, 1965, Ser. No. 450,480
3 Claims. (Cl. 118—55)



Apparatus for coating the interior of a container with a resinous film including a conveyor means, individually

driven work holder means which deliver the container to an injecting station where the resinous material is injected into the container, then to a high speed rotation station where the work holder is driven at a high speed to distribute the resinous material as a film along the interior of the container, and finally to a heating station where the container is driven at a lower velocity while the resinous material is being set under the influence of a heating means.

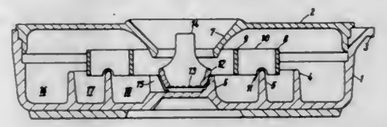
3,413,956
DRIVE SYSTEM FOR APPARATUS FOR APPLYING CODE MARKINGS OF DIFFERENT COLORS ONTO ELONGATED ARTICLES
Horst L. Woellner, Colden, N.Y., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 24, 1967, Ser. No. 618,362
16 Claims. (Cl. 118—314)



Apparatus for applying code markings of different colors onto an insulated conductor includes two pairs of hollow perforated ink dispensing wheels spaced longitudinally along the wire travel path, with the wheels of each pair being longitudinally offset and spaced on opposite sides of the wire, and a drive system for rotating the wheels in timed relation to each other and to the speed of wire travel, so that the wheels of one pair sequentially apply registered markings on opposite sides of the wire at regular intervals to form bands of one color, while the wheels of the other pair sequentially apply registered markings of another color on opposite sides of the wire at regular intervals to form bands of another color intermediate the bands of the one color. The drive system includes individual mechanisms for adjusting the relative angular positions of the wheels in each pair to bring the markings of each band into register, a mechanism for varying the relative angular positions of the pairs of wheels for adjusting the spacing between the differently colored bands, and a transmission interconnecting such mechanisms and including a series of cog belts, pulleys and shafts arranged so that one wheel pair is driven from a motor while the other pair is driven from such one pair, with the angular movement of a wheel in one pair being synchronized with that of the corresponding wheel in the other pair. The arrangement permits not only adjustment of the register of each band without affecting the register of the other band or the spacing between bands, but also variation of the spacing between bands without affecting the register of either band.

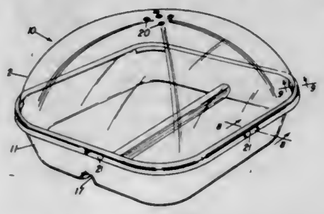
3,413,957
APPARATUS FOR CONDITIONING AND GATHERING LIVE FISH FOOD
Gerolf Steiner, 3 Guterbergstrasse, Heidelberg, Germany
Filed Oct. 12, 1966, Ser. No. 586,141
Claims priority, application Germany, Jan. 26, 1966, H 58,343
7 Claims. (Cl. 119—3)

1. An apparatus for concentrating live fish food, comprising a container adapted to be partly filled with water and provided with a detachable cover having an opening therein, said container and said cover each being made of a light impermeable material and the container being internally divided into sections by partitions and immersion walls such that, when said cover is in position on



said container, the opening in said cover is positioned above a section of the container which is required to receive light through said opening and which is separated from the remaining sections by said partitions and immersion walls.

3,413,958
PET ANIMAL SHELTER
James L. Artig, Delwood, Minn., assignor to Artig Products, Inc., a corporation of Minnesota
Continuation-in-part of application Ser. No. 463,291, June 11, 1965. This application Oct. 7, 1966, Ser. No. 585,196
15 Claims. (Cl. 119—15)

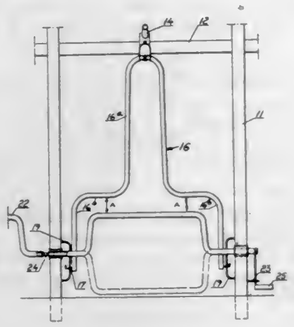


1. An animal shelter comprising in combination, a bottom member and a removable top member, said bottom member having a generally flat base and an upwardly extending side wall, said side wall terminating in its upper edge in a transversely and outwardly extending flange portion having ventilation apertures therein, said top being dome shaped and having a transversely and outwardly extending peripheral bottom flange portion seating on a portion of said transverse flange portion of the bottom member and a depending skirt on said flange of the top member that extends down over the transverse flange portion on the bottom member in spaced relation to said apertures in the bottom member and constituting means providing an overhanging sheltering portion relative to said ventilation apertures for no draft ventilation for said shelter, said depending skirt and said transverse flange on the bottom member having cooperating releasable securing means for holding the top member on the bottom member.

3,413,959
CATTLE STANCHION
Torsten Modig, Eric Modig, and Erik Alfons Lofgren, all of Box 139, Umea, Sweden
Filed Oct. 4, 1966, Ser. No. 584,184
3 Claims. (Cl. 119—148)

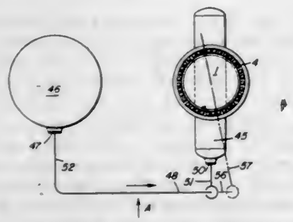
1. A device for fastening cattle, comprising in combination with a feeding grate having vertical posts and a transverse bar carried by said posts, a neck yoke having upper vertical branches adapted to receive the neck of an animal and lower vertical branches which are more widely spaced than said upper branches, means swingably connecting said upper branches to said bar, means pivotally connecting said lower branches to said posts, and a U-shaped axle having horizontal ends pivoted to said

posts and located below said upper branches, said neck yoke and said axle securing said animal while allowing



it a limited freedom of movement in a lying position and an upright position.

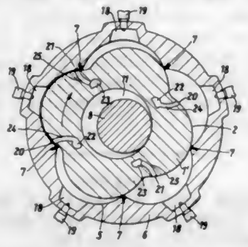
3,413,960
EQUIPMENT COMPRISING A PROCESSING VESSEL OR A STEAM GENERATOR HAVING A SUPPORTING STRUCTURE WHICH ALLOWS FOR THE THERMAL VARIATION IN LENGTH OF CONNECTING PIPE LINES
Wilhelmus A. Feliks, The Hague, and Henri H. Weevers, Gouda, Netherlands, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Aug. 8, 1966, Ser. No. 571,115
Claims priority, application Netherlands, Aug. 17, 1965 6510744
8 Claims. (Cl. 122—510)



A processing installation including a processing vessel for receiving and delivering currents of fluid media having a high temperature differential relative to the ambient air. The vessel is mounted on a supporting structure allowing thermal expansion of connecting pipe lines. The support preferably includes ball bearings and the like.

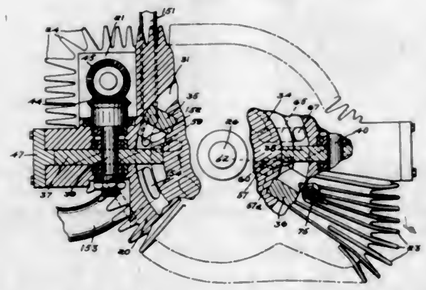
3,413,961
ROTARY PISTON ENGINE, ESPECIALLY CIRCULAR PISTON INTERNAL COMBUSTION ENGINE
Johann Keylwert, Cologne-Kalk, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany
Filed Sept. 22, 1966, Ser. No. 581,382
Claims priority, application Germany, Sept. 24, 1965, K 57,216
5 Claims. (Cl. 123—8)

Rotary piston internal combustion engine having a trochoidal piston with an even number of lobes and a housing with a trochoidal cavity with one more lobe than said piston. The piston has inlet and outlet passages leading to opposite sides of alternate ones of the lobes thereof and annular channels in the housing communicate with said passages. Seal strips in the housing along the region



of the cavity therein nearest the axis of the cavity sealingly slide on the periphery of the piston.

3,413,962
ROTARY ENGINE
Lewis E. Upchurch, 10 Jefferson St., Marblehead, Mass. 01945
Filed Nov. 17, 1966, Ser. No. 595,280
10 Claims. (Cl. 123—13)

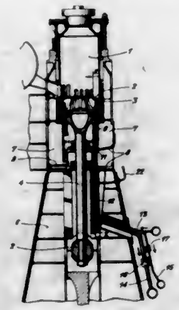


A rotary engine having a casing enclosing a rotor chamber in which a drive rotor is mounted. The rotor has a concave peripheral surface and carries one or more projecting vanes. A pair of disk-shaped gates are mounted on opposite sides of the chamber and rotate about axes perpendicular to that of the rotor. The gates have slots which permit the vanes to pass through. The gates divide the chamber into two regions, in one of which intake and compression occur and in the other of which combustion and exhaust take place. Fuel compressed by a vane as it travels through the first region is led to an accumulator chamber, then transmitted at the appropriate time to the combustion region and ignited there to drive a vane.

3,413,963
APPARATUS FOR LIQUID COOLING OF PISTONS IN PISTON-TYPE INTERNAL COMBUSTION ENGINES
Gosen Joop Hellingman, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Mar. 16, 1967, Ser. No. 623,745
Claims priority, application Switzerland, Mar. 18, 1966, 3,996/66
8 Claims. (Cl. 123—41.36)

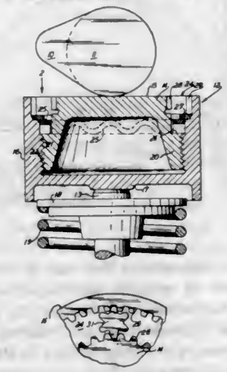
There is disclosed an internal combustion engine having a liquid-cooled piston or pistons. For each piston there are provided two pairs of tubes. One tube of each pair is fixed at one end to the piston and moves with it. The other tube of each pair is fixed at one end to a stationary part of the engine, and the free ends of the two tubes of each pair are in telescoping relation to each other, with the movable tube extending outside the stationary tube. A packing or sleeve is provided between the two tubes of each pair. Water or other coolant flows

under pressure into one of these stationary tubes, into the movable tube in telescoping relation therewith, through a cavity in the piston, and back out through the other pair of tubes. The movable tubes extend moreover through packings into a chamber which is closed off from the engine crankcase, and the stationary tubes have their fixed ends within this chamber. Separate conduits connect the stationary tubes with coolant supply and return facilities outside the engine. An additional conduit permits withdrawal of coolant accumulating in this chamber,



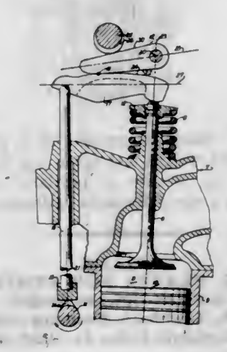
which is moreover connected, at the upper part thereof with the atmosphere outside the engine. The free end of one or both of the stationary tubes is shaped to act as an ejector with the aid of the coolant flowing through it. The suction space of the ejector thus provided is connected by a conduit or conduits with the annular sleeve-like space between the telescoped portions of the tubes in which this ejector is located. The ejector action occurring upon the flow of coolant thus acts to aspirate air and/or coolant which may find its way into this annular space. A storage space may be provided in communication with these conduits, within which coolant may accumulate between the intervals of intensive ejector action, which varies due to piston motion.

3,413,964
LASH ADJUSTING MECHANISM FOR THE OPERATING TRAIN OF A RECIPROCATING MEMBER
William John Pask, Hornchurch, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 9, 1967, Ser. No. 637,130
Claims priority, application Great Britain, Oct. 21, 1966, 47,241/66
5 Claims. (Cl. 123—90)



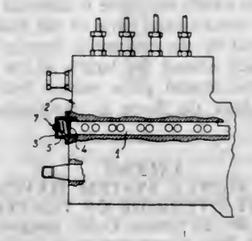
This mechanism comprises a tappet having external and internal members threadably engaging each other. The ring gear of an epicyclic gear train is formed on an inner surface of the exterior member and the sun gear of the train is formed on the interior member. Meshing a pinion gear with the ring and sun gears and rotating the pinion gear adjusts the effective length of the tappet and thereby adjusts the lash in the operating train.

3,413,965
MECHANISM FOR VARYING THE OPERATION OF A RECIPROCATING MEMBER
John M. Gavasso, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,129
9 Claims. (Cl. 123—90)



This mechanism comprises an elongated lever pivoted at one end and extending parallel to a rocker arm located in the actuating train of a reciprocating valve, with the inner surface of the lever contacting the outer surface of the rocker arm. The contacting surfaces are contoured so the lever serves as a fulcrum for the rocking motion of the rocker arm. During the rocking motion, the contact point between the lever and the rocker arm moves along the surfaces. An eccentric portion of a rotatable shaft contacts the outer surface of the lever and rotation of the shaft pivots the lever, thereby changing the crankshaft angle at which the valve begins its operational event.

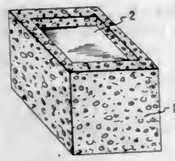
3,413,966
DEVICE FOR REDUCING THE EXHAUST SMOKE OF A COMBUSTION ENGINE
André Massard, Lyon, France, assignor to Automobiles M. Berliet (Rhone, France), a corporation of France
Filed Sept. 28, 1966, Ser. No. 582,707
Claims priority, application France, Oct. 1, 1965, 33,451
1 Claim. (Cl. 123—139)



A device for reducing exhaust smoke from an internal combustion engine during start up or rapid pick up comprising a damping means associated with the fuel regulating device of the engine in such a manner that braking

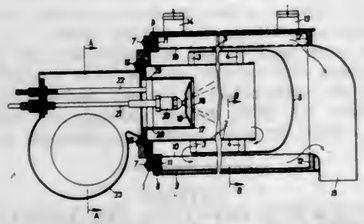
will be exerted on the fuel regulating device between the positions of full load and overload.

3,413,967
FUEL BLOCK HEATER
William S. Hoock, Flossmoor, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 528,417, Feb. 18, 1966. This application Nov. 20, 1967, Ser. No. 684,161
6 Claims. (Cl. 126—59.5)



A fuel block heater composed of a container made from porous light weight aggregate, e.g. expanded shale, and a binder, e.g. silicate or portland cement, having disposed therein a normally solid hydrocarbon wax.

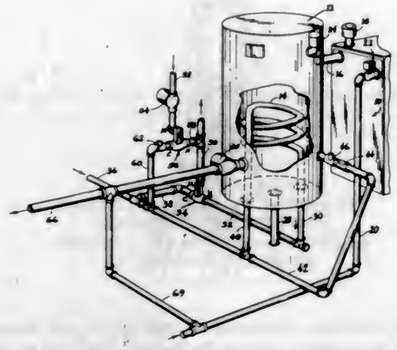
3,413,968
LIQUID FUEL HEATER FOR MOTOR VEHICLE
Eugen Stump, Stuttgart-Unterturckheim, and Gerhard-Jürgen Fränkle, Grunbach, Germany, assignors to Sudeutsche Kuhlerfabrik Julius Fr. Behr, Stuttgart-Feuerbach, Germany
Filed Nov. 14, 1966, Ser. No. 593,815
Claims priority, application Germany, Nov. 20, 1965, S 100,586
5 Claims. (Cl. 126—116)



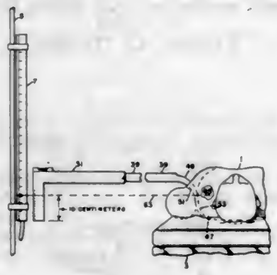
Liquid fuel heater for heating motor vehicles or preheating engines which comprises a burner having a pressure spraying nozzle and an air nozzle around the burner, where the burner tube is surrounded by an inner chimney, an outer chimney and a heat exchanger as well as an inlet and an outlet for the medium to be heated, which is normally air, and in which the flame is directed in a manner that it will not contact cold parts of the heat exchanger, which is achieved by the concentric arrangement of the components which extend the length of the path of the flame so that the heated gases release heat to the exchanger only where the flame is completely burnt out.

3,413,969
HOT WATER SUPPLY SYSTEM HAVING MEANS TO PREVENT OVERRIDE OF TEMPERATURE
Alfred Whittell, Jr., El Monte, Calif., assignor to Raypak Company, Inc., a corporation of California
Filed Dec. 28, 1966, Ser. No. 605,348
7 Claims. (Cl. 126—362)

The disclosure relates to hot water heating systems which include the supplying of domestic hot water at a temperature of 140°, for example. The domestic hot water supply is controlled by a temperature responsive three-way mixing or tempering valve at the inlet. A recirculating pump is provided in the domestic hot water circuit. In known systems of this type. during standby periods when there is no draw of water from the system, no cold water enters from the city water supply, and as a result, the temperature overrides, approaching that at the heat source, i.e., the boiler or heat exchanger, approaching 180° for example, at which temperature persons using the water may be scalded. To meet the problem, an additional temperature responsive three-way mixing or tempering valve is used in the return line from the domestic hot water supply. The mixing or tempering valve in the return line is connected so that the return water enters the "M" port in which the thermostat is located, so that part of it is bypassed to the inlet line to the domestic hot water circuit, and part of it is returned to the heat source.



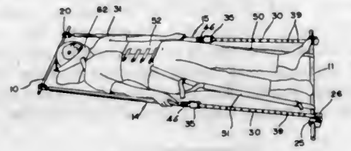
3,413,970
ACCESSORY INSTRUMENT FOR THE MEASUREMENT OF CENTRAL VENOUS PRESSURE
Paul E. Rockwell, 38 Belle Ave., Troy, N.Y. 12180
Filed Apr. 27, 1967, Ser. No. 634,310
9 Claims. (Cl. 128—2.05)



An accessory instrument for use in conjunction with the measurement of central venous pressure of a patient comprising an L-shaped rigid bar having a horizontal leg mounting an air bubble level and slidingly receiving an extensible member releasingly locked in its extended position through a cooperating ball and spring detent assembly, and a vertical leg with centimeter indicia formed therein. The extensible member has a depending, integral end portion of sinusoidal configuration which wedgingly

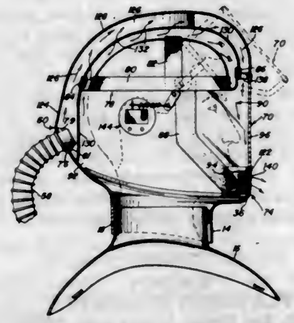
functions as a first class lever when disposed over and upon the patient's arm and beneath the patient's back.

3,413,971
BODY TRACTION DEVICE
Robert N. Evans, 43 S. Kensington Ave., La Grange, Ill. 60525
Filed Sept. 6, 1966, Ser. No. 577,363
11 Claims. (Cl. 128—75)



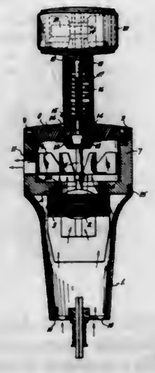
1. A traction device comprising, a frame having top and bottom cross bars, a pair of spaced side bars extended between the cross bars and connected thereto, each of the side bars having means for varying the effective length thereof in spaced increments to vary the distance between the cross bars and set the over-all length of the traction device, and means associated with each of the side bars for varying the effective length thereof in small amounts to apply the desired amount of traction.

3,413,972
AIRFLOW HELMET
Carl L. Depping, Walla Walla, Wash. (R.F.D. 3, Armstrong, British Columbia, Canada)
Filed Sept. 27, 1965, Ser. No. 490,319
6 Claims. (Cl. 128—142.7)



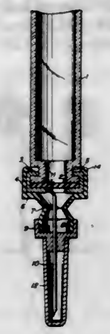
A helmet completely enclosing the head of a wearer with spaced concentric shells defining an air passage therebetween, an air blower discharges air into the air passage adjacent the rear thereof and an outlet is provided adjacent the bottom front of the helmet to circulate air therethrough. The inner shell terminates above eye level and is supported from the head in spaced relation to provide air circulation between the inner shell and the head of the wearer. The inner shell is provided with openings communicating with the air passage so that air passing through the air passage will entrain air from interiorly of the inner shell to circulate air about the head of the wearer. The air passing through the air passageway is prevented from passing rearwardly beyond the face area of the wearer by a seal structure and the air also passes over the interior of a transparent panel forming a portion of the outer shell.

3,413,973
MASSAGING VIBRATOR WITH MEANS FOR DIRECTING HEATED AIR ONTO A PERSON
Akihiko Teranishi, 8-3-chome, Yamawaki machi, Showaku, Nagoya, Japan
Filed Feb. 4, 1966, Ser. No. 525,089
Claims priority, application Japan, Feb. 24, 1965, 40/13,913
4 Claims. (Cl. 128—24.2)



A massaging device comprising a handle containing a motor, a vibrator connected to said handle by spring means and driven by the motor through additional spring means, and a fan in the handle for drawing air in to be heated by said motor and then directed against the body.

3,413,974
HYPODERMIC SYRINGES
Milton J. Cohen, 7111 Connecticut Ave., Chevy Chase, Md. 20015
Filed June 26, 1963, Ser. No. 290,745
7 Claims. (Cl. 128—218)

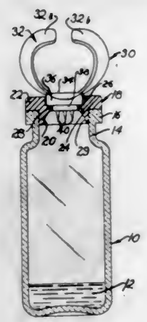


1. A disposeable hypodermic syringe comprising a glass barrel, having a flange about the neck at one end, a puncturable rubber disk resting against said flange, an aluminum member sealing and securing said disk to said flange, a hubbed body secured against the disk end of said cartridge, said body being concave in shape, said concave body capable of collapsing upon pressure directed toward the cartridge, the body terminating outwardly in a hub, a hypodermic needle affixed to the hub with an end portion extending into the hubbed body to a position adjacent the disk for penetration of said disk upon collapsing said concave body.

3,413,975
COMBINATION SCARIFIER AND LOADING DISPENSER FOR BIOLOGICALS

Gary L. Hein, Decatur, Ill., assignor to Lincoln Laboratories, Inc., Decatur, Ill., a corporation of Indiana

Filed Aug. 23, 1965, Ser. No. 481,642
3 Claims. (Cl. 128—253)



A combination container and dispenser for loading a biological onto a multiple point scarifier is provided by a rigid container with a resilient dispensing head for substantially closing the container but having a central aperture through which liquid may be dispensed onto the head of the scarifier. The dispensing head provides a recess in the resilient material surrounding the central aperture which serves to sealing seat the support base of the scarifier and to center the multiple points in the aperture, so that loading of liquid onto the points of the scarifier is accomplished by one hand manipulation by inverting the container. Finger engaging means on the container and scarifier aids in one hand manipulation of both parts when held in material loading association with each other.

3,413,976
ARRANGEMENT FOR REMOVAL OF CONCRETIONS FROM URINARY TRACT

Leo Voolfovich Roze, Riga, U.S.S.R., assignor to Gosudarstvenny Elektrotekhnichesky Zavod VEF

Filed July 29, 1963, Ser. No. 298,059
3 Claims. (Cl. 128—328)

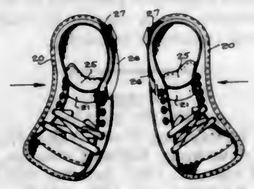


1. An instrument for the removal of concretions from the urinary tract including means for introduction into the bladder and the ureter, a flexible sonde operably associated with said means, said sonde having a discharge head adapted to be positioned adjacent a concretion, said discharge head being defined by concentric inner and outer electrode, said outer electrode having an annular end portion surrounding the inner electrode with said annular end portion and the end of the inner electrode being located at the same level, a flexible current conducting envelope encasing said inner electrode operably connected with the outer electrode, a layer of insulating material between the conducting envelope and the inner electrode, fluid delivery means extending axially of said sonde and having an outlet opening adjacent said discharge head through which fluid is delivered into the zone of the concretion, means operably connected with said inner electrode and envelope for producing electric discharges having a voltage of 5–30 kw. and 700–1100 μa. current therebetween which in conjunction with the fluid delivered through said outlet opening develop an electro-hydraulic impact for crushing the concretion, and means for delivering fluid into the zone of the concretion.

3,413,977
CORRECTIVE SHOE

Abraham Soble, Cedarbrook Hill Apts., Wyncote, Pa. 19095, and Harold Cantor, 940 E. Slocum St., Philadelphia, Pa. 19150

Filed Oct. 22, 1965, Ser. No. 501,570
7 Claims. (Cl. 128—583)



A corrective shoe for the treatment and correction of club foot deformity (talipes equino-varus) having a strap adapted to be drawn tautly across the instep of the wearer's foot in a direction to pull the hind-foot portion of the foot into a position of valgus, the pull being from a fixed point on the lateral or distal side of the heel pocket of the shoe which overlies the tarsal bones to a point of quick-releasable securement on the opposite medial side of the heel pocket, the strap being operative to hold and maintain the hind-foot in that firm condition of valgus which was initially obtained by casting. The outer exposed surface of the strap on the medial side of the shoe is smooth and free of protuberances which might injure the flesh or skin upon scraping contact therewith of the tautly secured strap.

3,413,978
FLAVORED CIGARETTE

Arvel A. Brill, 264 Oriole, Union Lake, Mich. 48085

Filed Feb. 15, 1966, Ser. No. 527,448
3 Claims. (Cl. 131—4)

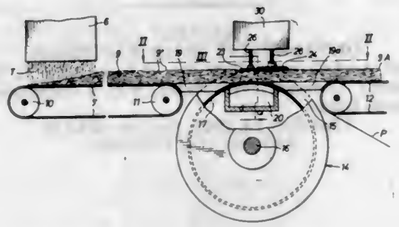


A cigarette having a band of a water soluble confectionary material between its mouthpiece and the limit of the area which is burnt.

3,413,979
CONTINUOUS CIGARETTE ROD-MAKING MACHINE

Kurt Körber, Hamburg-Bergedorf, Germany, assignor to Hauni Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany

Continuation-in-part of application Ser. No. 5,836, Feb. 1, 1960. This application Oct. 6, 1965, Ser. No. 493,321
Claims priority, application Germany, Feb. 2, 1959, H 35,519
The portion of the term of the patent subsequent to July 19, 1983, has been disclaimed
8 Claims. (Cl. 131—84)

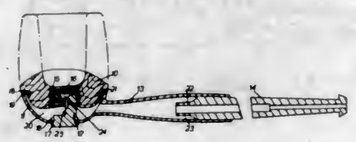


1. A machine for continuously forming a tobacco rod, comprising a tobacco distributor, an endless conveyor belt mounted therebeneath to convey a stream of tobacco along a conveyor pathway, a second endless conveyor belt spaced from said first named conveyor belt to form an intervening gap in said conveyor pathway, a transfer conveyor located in said gap between said conveyor belts, said transfer conveyor comprising continuously moving independent side and bottom walls defining between themselves a tobacco receiving groove for confining the tobacco stream as it traverses said gap, said bottom wall being perforated, driving means for independently and continuously moving said independent side and bottom walls so as to advance the tobacco in said tobacco receiving groove, a suction chamber mounted beneath said perforated bottom wall to exert a suction force on the tobacco confined in said groove during a portion of its travel along said pathway, and a trimming device located above said gap to trim the tobacco during its travel through said gap and above said suction chamber while the tobacco is in a compressed state and is being conveyed along said pathway by said continuously moving side and bottom walls of said transfer device.

3,413,980
TOBACCO PIPES

Ivor Isaac Pollock, "Rossdene," 20 Carrwood Ave., Bramhall, Cheshire, England

Continuation-in-part of application Ser. No. 420,215, Dec. 21, 1964. This application Oct. 31, 1966, Ser. No. 590,992
Claims priority, application Great Britain, Dec. 28, 1963, 51,097/63
7 Claims. (Cl. 131—214)

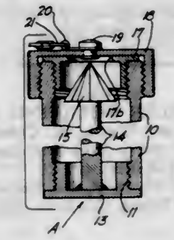


A tobacco pipe has a detachable bowl and a metal bowl-holding cup. A smoke-carrying stem extends from and communicates with the interior of the metal bowl-holding cup, and a male screw-threaded member within the cup and fixed to and projecting from the bottom of the cup has screw-threaded engagement with the bowl to connect the bowl to the cup. The interior surface of the cup and the underside of the bowl define a smoke chamber between the bowl and the cup, and a slot traverses the screw threads on the male screw-threaded member for passing smoke from the bowl to that chamber.

3,413,981
POCKET ASH TRAY

Frank J. Polizzi, 1370 Singletary Ave., and Andre J. Polizzi, 1250 Yosemite Ave., both of San Jose, Calif. 95126

Filed Feb. 9, 1967, Ser. No. 614,871
2 Claims. (Cl. 131—256)

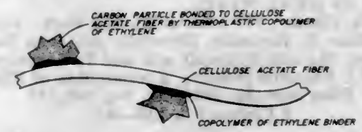


A tubular body is provided with a closure member on one end thereof with a standard mounted on the inner side of the closure member and extending coaxially within the body, the standard has an enlarged snuffing head thereon in the form of a fluted cone or rosehead countersink. An annular guide member is provided in the other end of the body to guide the lighted end of a cigar or cigarette inserted therein to impaled condition on the snuffing head. A sealing cap is removably mounted on the body over the annular guide member and is attached to the body by a lanyard.

3,413,982
TOBACCO SMOKE FILTER EMPLOYING ETHYLENE COPOLYMER BONDING MATERIAL

Bobby J. Sublett and George P. Touey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 4, 1965, Ser. No. 477,144
5 Claims. (Cl. 131—266)



A filter element of filamentary material containing granular material such as activated carbon bonded to the filaments by a heat-sensitive adhesive copolymer of ethylene. The adhesive copolymer masks only that portion of the carbon particle in direct contact with the filaments.

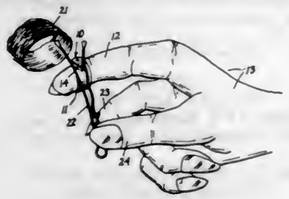
3,413,983
BOBBY PIN SPREADER

William M. Halstead, P.O. Box 195, Linthicum Heights, Md. 21090

Filed Oct. 21, 1965, Ser. No. 499,467
1 Claim. (Cl. 132—1)

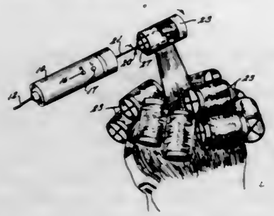
This application discloses a bobby pin spreader, comprising a ring-like mounting member adapted to be positioned on a finger, and a substantially triangular pin spreading wadge provided on said mounting member with its longitudinal axis oriented in a direction tangential to the mounting member, said wedge including a relatively

wide rear edge, a pair of broad, flat side edges divergent rearwardly from a point on said longitudinal axis to said



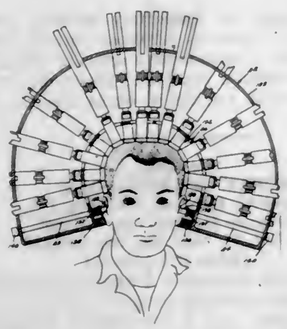
rear edge, and a top surface co-extensive with the area defined by said rear and side edges.

3,413,984
HAIR CURLER ROTATING DEVICE
Charles W. Tracy and Wayne H. Coloney, Tallahassee, Fla., assignors of thirty-three and one-third percent to Julian V. Smith, Tallahassee, Fla.
Filed June 18, 1965, Ser. No. 465,066
3 Claims. (Cl. 132—34)



Apparatus for curling hair including a housing having a drive shaft projecting therefrom and head means mounted on the shaft. The head means includes spaced tines engageable directly with the hair for curling the hair in a tight curl or receivable within a hair roller for turning the roller and curling the hair in a loose curl.

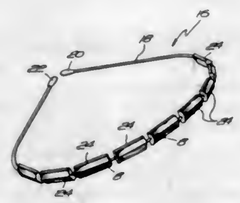
3,413,985
HAIR CUTTING APPARATUS HAVING MEANS FOR CUTTING HAIR IN ACCORDANCE WITH PREDETERMINED HAIR STYLES AS A FUNCTION OF HEAD SHAPE
John A. Dlouhy, 707 Clinton St., Oak Park 60304, William E. Reynolds, Riverside, and John Balla, Argo, Ill.; said Reynolds and said Balla assignors to IIT Research Institute, a corporation of Illinois
Filed Nov. 28, 1962, Ser. No. 240,537
9 Claims. (Cl. 132—45)



9. A mechanism for automatically cutting a head of hair comprising,

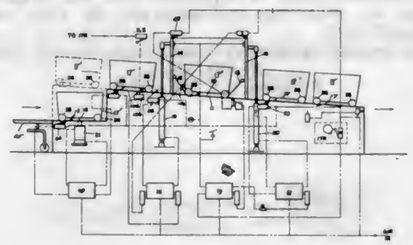
support means,
a plurality of adjustable cutting means carried on said support means,
means for producing and selecting a plurality of signal-patterns corresponding to different hair styles for the particular head of hair being cut, and
drive means connected to said cutting means and to said last-named means for individually positioning each of said cutting means relative to that portion of the head being cut adjacent each of said respective cutting means to produce a hair cut corresponding to the selected hair style.

3,413,986
ORNAMENTAL HAIR FASTENER
Daniel A. Triangolo, Cranston, R.I., assignor to Danal Jewelry Company, Providence, R.I., a corporation of Rhode Island
Filed Oct. 13, 1965, Ser. No. 495,658
3 Claims. (Cl. 132—46)



A hair ornament that is adapted to be placed on the head of a wearer and that is formed of a spring wire material, a plurality of ornamental articles being cast around the spring wire such that arcuate-shaped bores are formed therein, the spring wire having an arcuate conformation and being received in snug fitting relation within the arcuate ornaments such that rotation of the ornaments on the wire is prevented.

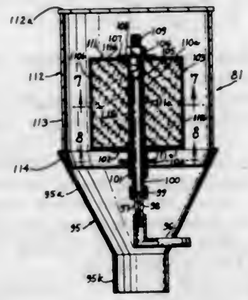
3,413,987
WASHER STERILIZER AND CONTROL
Gilbert Gould Brown, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 499,321, Oct. 21, 1965. This application Dec. 18, 1967, Ser. No. 691,652
13 Claims. (Cl. 134—46)



A combination washer sterilizer and a specific water dispensing means wherein a movable nozzle is moved into engagement with load supporting means in the sterilizer by means of water pressure behind a movable nozzle. The movable nozzle has a flange that is slidably received in the

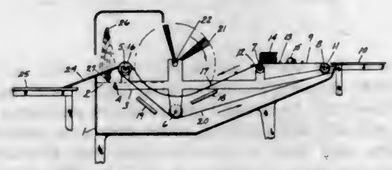
hollow member. The flange is provided with a sufficient clearance to allow some water to flow past the flange and a bleed hole is provided in the hollow member so that the water that goes past the flange can bleed out of the hollow member. A suitable seat is provided above the nozzle so that the nozzle will be forced into engagement with the seat by water pressure. Thus, the flow of water through the nozzle holds it in engagement with the load support so that water can be sprayed onto the dishes supported on the load support.

3,413,988
OIL FILTER CLEANER
Stedman M. Butler, Box 459, Rock Island, Ill. 61201
Continuation-in-part of application Ser. No. 462,577, June 9, 1965. This application Apr. 10, 1967, Ser. No. 629,455
5 Claims. (Cl. 134—102)



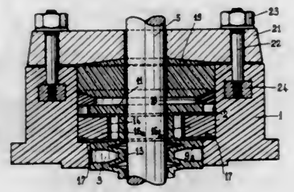
The apparatus is adapted to clean filters, as annular type automobile oil filters, and achieves simplification by passing pressurized cleaning liquid through a simple venturi orifice and upwardly through a perforated diffuser and outwardly through the filter to be cleaned. The filter is mounted on the flange of a sleeve selectively setscrew positionable upon the diffuser, while a nut is threaded downwardly upon the diffuser upper end to restrain the filter between nut and flange. Only a simple cover is needed to be disposed manually over filter to seat on a lower member through which the soiled fluid is discharged.

3,413,989
SONIC DISHWASHER
Fred A. Kochendorffer, 1328 W. 25th St., Erie, Pa. 16502
Filed Feb. 15, 1967, Ser. No. 616,247
5 Claims. (Cl. 134—128)



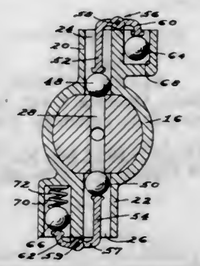
Dishes are carried through a washing zone of liquid subject to sonic vibration by a belt type conveyor dipping into the washing zone while the dishes are held on the conveyor by a brush yieldably conforming to the dishes and conveyor.

3,413,990
VALVE HAVING A PLUG FITTED WITH A PLASTIC BELLOWS ELEMENT AND METHOD OF ASSEMBLY THEREOF
Jean Gachot, 179 Ave. de la Division Leclerc, Enghien, Val d'Oise, France
Filed Mar. 3, 1967, Ser. No. 620,328
Claims priority, application France, Mar. 25, 1966, 54,996
6 Claims. (Cl. 137—15)



1. A method whereby the extremity of a leakproof bellows element which is joined to a valve plug and which surrounds the operating stem of said valve plug is assembled in leak-tight manner within a valve head, said method comprising engaging the extremity of said bellows element which is remote from said plug into a valve-head opening of comparable width which terminates in a cavity of larger size, fitting in the terminal portion of said bellows element a flexible ring which has a greater width than that of the aforesaid opening but the internal diameter of which is smaller than the external diameter of an annular flange formed at that extremity of said bellows element which is remote from said valve plug, and fitting inside said ring a thick washer formed of several abuttingly assembled components, whereupon the assembly consisting of the terminal portion of said bellows element, said ring and washer is clamped against the bottom of said cavity.

3,413,991
TWO-STAGE FLUID PRESSURE GOVERNOR
Reginald T. Lewicki, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,174
10 Claims. (Cl. 137—54)



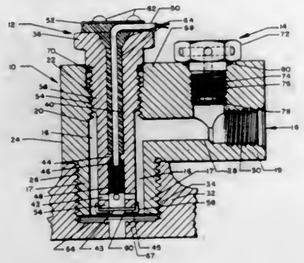
A rotatable shaft contains lateral hollow, open end extensions fluid connected to a shaft bore source of fluid under pressure varying with speed. The extensions each contain a ball valve regulating fluid pressure change, each ball valve being abutted by a bellcrank lever having the opposite end engaged by a radially outwardly moving, centrifugally responsive ball weight.

A spring preloads one ball valve to a closed position to effect a two stage governor action.

3,413,992
EXPLOSIVELY ACTUATED VALVE ASSEMBLY

Daniel I. Yahle, Orlando, Fla., assignor to Martin-Marietta Corporation, Middle River, Baltimore, Md., a corporation of Maryland

Filed Oct. 1, 1963, Ser. No. 312,945
12 Claims. (Cl. 137—68)



1. An explosively actuated valve assembly for predeterminedly releasing gas from the exhaust port of a high pressure source, comprising, in combination:

(a) a housing having an inlet port connected to said exhaust port of said high pressure source, an outlet port, and a central bore;

(b) capsule means adjustably positionable within said bore and extending towards said inlet port;

(c) said capsule means having a central cavity at one end, which cavity is normally closed by a diaphragm mounted for movement with said capsule means toward and away from said inlet port, and at least one opening extending through said capsule means into said cavity, said opening providing communication between said cavity and said outlet port;

(d) said capsule means being movable into firm engagement with the exhaust port of said source so that said diaphragm overlaps said exhaust port and thereby prevents unintentional release of said gas;

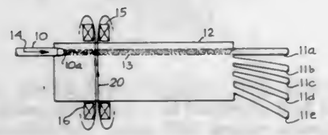
(e) explosive means positioned within said cavity and being of sufficient force, when ignited, to rupture said diaphragm; and

(f) means for selectively causing the ignition of said explosive means so as to blow out at least a portion of said diaphragm and thereby open the exhaust port and rapidly release said gas through said opening to said outlet port.

3,413,993
FLUID DEVICE

Richard W. Ziemer, Altadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

Filed June 7, 1965, Ser. No. 461,955
9 Claims. (Cl. 137—81.5)

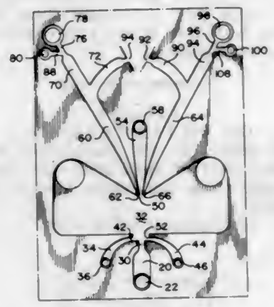


A fluid amplifier having a matrix of output channels arranged in rows and columns, and magnetic means for directing the flow of an electrically neutral, electrically-conducting fluid to a selected output channel.

3,413,994
VARIABLE GAIN PROPORTIONAL AMPLIFIER

Edwin U. Sowers III, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Aug. 18, 1965, Ser. No. 480,674
8 Claims. (Cl. 137—81.5)



1. A pure fluid proportional amplifier comprising an interaction chamber;

source means in fluid flow communication with said interaction chamber for providing a power jet thereto;

a passageway opening into said interaction chamber for receiving fluid of the power jet therefrom;

first control means operative within said interaction chamber for deflecting the power jet with respect to said passageway for varying the flow of fluid of the power jet into said pasageway;

utilization means in fluid flow communication with said passageway having a given impedance;

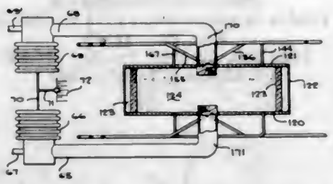
variable impedance means in fluid flow communication with said passageway;

means for controlling said variable impedance in response to a signal.

3,413,995
FLUID AMPLIFIER

Romald E. Bowles, 12712 Meadswood Drive, Silver Spring, Md. 20904, and Billy M. Horton, 9712 Kensington Parkway, Kensington, Md. 20795

Application Feb. 23, 1965, Ser. No. 439,500, now Patent No. 3,276,259, dated Oct. 4, 1966, which is a continuation of application Ser. No. 49,061, Aug. 11, 1960. Divided and this application June 9, 1966, Ser. No. 556,300
28 Claims. (Cl. 137—81.5)

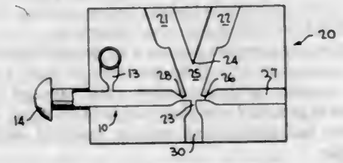


1. In a fluid vortex device having a vortex chamber, said vortex chamber having an axis, fluid in said chamber being responsive to external motivation to produce a rotational velocity of said fluid about said axis, means for supplying said fluid to said chamber with substantially no rotational velocity relative to said chamber about said axis and at a relatively large radius of said chamber, fluid outlet means located axially of said chamber and including egress orifice means having a radius smaller than said relatively large radius by a large factor, and sensing means located downstream of said egress orifice means responsive substantially only to a rotational velocity of said fluid in said chamber about said axis, said sensing means being responsive substantially only to said rotational velocity of said fluid in said chamber about said axis in terms of a function of fluid and flow parameters, said sensing means including means extending only slightly within said vortex chamber in the region of said egress orifice for solely and alone providing a pressure signal representative only of said rotational velocity of said fluid in said chamber about said axis, and means for providing a signal representative substantially only of said rotational velocity of said fluid in said chamber about said axis in response to said pressure signal.

3,413,996
ACOUSTICALLY OR ELECTRICALLY CONTROLLED FLUID AMPLIFIERS

Jonathan E. Fine, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 15, 1966, Ser. No. 580,156
8 Claims. (Cl. 137—81.5)

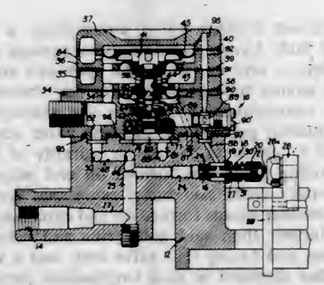


1. A proportional fluid amplifier comprising: an interaction chamber, power nozzle means to direct fluid into said interaction chamber, plural outlets communicating with said interaction chamber, one control nozzle adjacent one side of said power nozzle, a second control nozzle adjacent the other side of said power nozzle, means to simultaneously create a suction pulse on said one control nozzle and a pressure pulse on said second control nozzle, said means to simultaneously create a suction pulse on said one control nozzle and a pressure pulse on said second control nozzle including a transmission pipe having two ends and interconnecting said control nozzles, and a pressure transducer located at one end of said transmission pipe and a discharge nozzle at said other end being communicated to said second control nozzle, an inlet nozzle for said transmission pipe, said inlet nozzle being inverted with respect to the interior of said transmission pipe and communicating with said one control nozzle.

3,413,997
PNEUMATIC RELAY

John L. Taylor, Marshalltown, Iowa, assignor to Fisher Governor Company, a corporation of Iowa

Filed Dec. 20, 1965, Ser. No. 515,109
3 Claims. (Cl. 137—85)

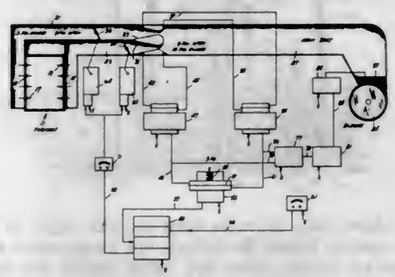


A pneumatic relay convertible between snap-active service and throttling service by means of an adjustable switching block on the relay housing.

3,413,998
AIR FLOW PROPORTIONING APPARATUS

Arthur S. Vaughan, Millburn, N.J., assignor to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York

Filed May 5, 1965, Ser. No. 453,461
5 Claims. (Cl. 137—118)

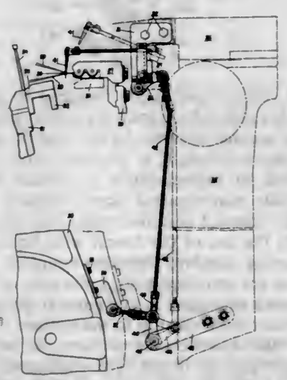


An air flow proportioning apparatus utilizing two venturis with throats of substantially equal cross-sectional area and means actuated by the pressure drops across said venturis for opening and closing dampers in accordance with a predetermined rate of flow.

3,413,999
SELVAGE LOOPING DEVICE FOR LOOM

Harold White, Cumberland, R.I., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar as trustees under an agreement and indenture of trust

Filed Feb. 23, 1967, Ser. No. 618,100
7 Claims. (Cl. 139—195)



A selvage needle having controlled pivotal movement provided through positive linkage with the reciprocating loom sword.

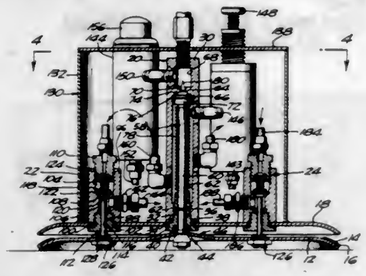
3,414,000
FLOW CONTROL UNIT

William E. Newton, Loma Linda, Calif., assignor to Loma Linda University, Loma Linda, Calif., a corporation of California

Continuation of application Ser. No. 358,838, Apr. 10, 1964. This application Aug. 24, 1966, Ser. No. 574,815
7 Claims. (Cl. 137—209)

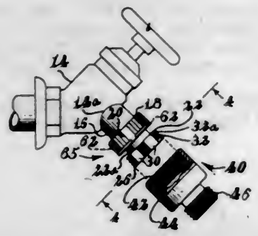
A unit for selectively regulating the flow of turbine-operating air, syringe air and syringe water to a dental handpiece and having a valve-operating foot plate member rockably supported on a base member. Coacting between these members are a turbine air control valve,

situated on a first axis, and syringe air and syringe water control valves, situated on a second axis perpendicular to, and crossing, the first one. The valve-operating mem-



ber is depressible about its front and side edges to selectively operate one of the valves, or a combination of the turbine air control valve and either one of the syringe valves.

3,414,001
ANTI-SIPHON OUTLETS
Joseph C. Woodford, 203 N. Buchanan St., Spring Lake, Mich. 49456
Filed Mar. 25, 1965, Ser. No. 442,601
11 Claims. (Cl. 137—216)



A faucet outlet construction designed to accommodate a vacuum breaker which may be either permanently or temporarily secured thereto. In the case of a new faucet, the discharge end thereof is provided with non-standard screw threads to accommodate a vacuum breaker having cooperable non-standard screw threads. This makes it possible to connect and disconnect the vacuum breaker but prevents the use of the faucet with liquid conductors or hoses having standard threaded couplers. The threads of the faucet are provided with a plurality of peripherally spaced grooves extending in the general direction of flow from the faucet from the top to the bottom of the threads to prevent the insertion of a tube or hose over the threaded end and in liquid-tight engagement therewith. The grooves will provide passages between the faucet outlet end and the tube which will prevent back-flow of liquid in the faucet. A faucet adapter or extension can be used on previously installed faucets. This adapter or extension is permanently bonded to the distal end of the previously installed faucet and provides advantages similar to those of new faucet construction.

3,414,002
AUTOMATIC TWO-WAY LUBRICANT-SEALED PLUG VALVE
Alexander S. Volpin, 10200 W. Broadview Drive, Miami Beach, Fla. 33154
Filed June 17, 1966, Ser. No. 558,410
13 Claims. (Cl. 137—246.12)

1. An automatic two-way sealant-sealed plug valve, including

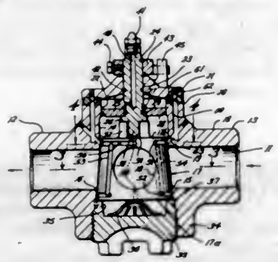
(a) a housing having opposed flow ports therein,

(b) a plug member rotatable in said housing between positions opening and closing said flow ports,

(c) sealing groove systems to distribute sealant material about each flow port,

(d) a sealant reservoir in the housing,

(e) separate passage means connecting each of said sealing groove systems to said reservoir,

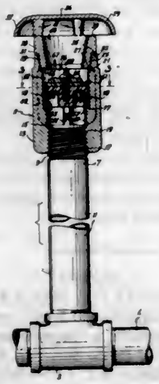


(f) a dual-area sealant-displacing barrier member having a plug member-actuating stem secured thereto both slidably disposed in said reservoir.

(g) said barrier member having a larger pressure-active area exposed to line fluid pressure in said housing and a smaller pressure-active area exposed to atmospheric pressure exteriorly of said housing, and

(h) means for introducing sealant material into said reservoir.

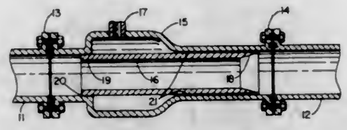
3,414,003
VACUUM BREAKER VALVE
Fred K. Wyckoff, Costa Mesa, Calif., assignor to Donald G. Griswold
Filed May 19, 1964, Ser. No. 368,628
8 Claims. (Cl. 137—217)



1. A vacuum breaker valve, comprising: a generally cylindrical body having a longitudinal passage extending therethrough; a vent cap mounted upon one end of said body and having passage means formed therein for establishing communication between the atmosphere and said longitudinal passage; an annular valve seat located within said longitudinal passage; a plurality of longitudinally extending guide ribs formed on and projecting radially inwardly from said body along said longitudinal passage; shoulder means formed on and extending radially inwardly farther than said guide ribs and being axially spaced from and facing said valve seat; and a valve closure member disposed in said longitudinal passage radially inwardly of said guide ribs and above said shoulder means, said valve closure member presenting an elongated centering and guiding surface to said guide ribs and

being freely movable from a position engaging said shoulder means to a position engaging said valve seat.

3,414,004
FILM INJECTOR
Dale M. Bankston, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,523
5 Claims. (Cl. 137—237)



1. Apparatus for forming a film of a first liquid on the internal surface of a conduit through which a second liquid flows, said apparatus comprising:

an outer housing connected into and aligned with a straight section of said conduit,

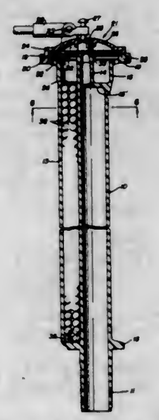
a sleeve within said housing, said sleeve being of substantially uniform diameter, being open to the flow of said second liquid through said sleeve, and being spaced from and substantially parallel to the inner surface of said housing, at least near the downstream end of said sleeve, to form an annular channel between said housing and said sleeve,

a seal between said sleeve and said housing at the upstream end of said sleeve,

and means for introducing said first liquid into said annular channel and causing flow of said first liquid through said flow channel,

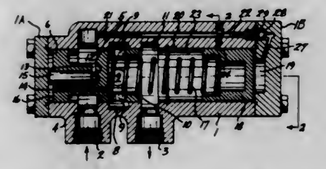
the downstream end of said sleeve being parallel to said housing for a distance equal to at least the internal diameter of said sleeve to cause substantially parallel flow of said first and second liquids at the downstream end of said sleeve where the liquids meet.

3,414,005
UNIFIED PLASTIC BALLCOCK AND SILENCER
Howard A. Fulton, Perrysville, Vaughn D. Flinner, Big Prairie, and Milo G. Sheaffer, Lakeville, Ohio, assignors to Mansfield Sanitary, Inc., Perrysville, Ohio, a corporation of Ohio
Filed July 27, 1966, Ser. No. 568,228
11 Claims. (Cl. 137—436)



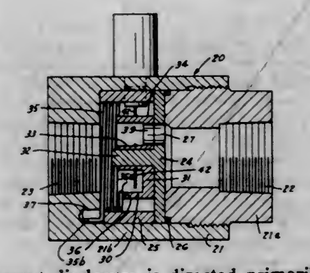
1. Unified plastic ballcock construction comprising an inlet tube and an integral hush tube in parallel side-by-side relation therewith and having an outlet at one end and an inlet at the other end, an annular well connected to and communicating with said hush tube inlet, and a valve inlet duct surrounded by said well and communicating at one end with the end of said inlet tube in offset relation thereto, said valve inlet duct having a valve seat on its other end the port area of which is substantially less than that of the hush tube inlet.

3,414,006
AUTOMATIC CUSHION RELIEF VALVE
Arne Feroy, Kent, Wash., assignor to Amadyne, Inc., Seattle, Wash., a corporation of Washington
Filed July 27, 1966, Ser. No. 568,184
6 Claims. (Cl. 137—494)



1. An automatic cushion relief valve for controlling the rate of fluid pressure increase in hydraulic systems, comprising a valve body having a longitudinal bore, ports communicating with said bore at locations spaced axially thereof, a primary piston element slidable in such bore to control communication between said ports, an auxiliary piston element slidable in such bore, a compression spring engaged between said piston elements, a primary fluid passage communicating between one of said ports and the end portion of said valve body bore remote from said primary piston element, check valve means in said primary fluid passage openable for flow of fluid out of such bore end but blocking reverse flow, a secondary fluid passage communicating between said primary fluid passage and a portion of such bore remote from said primary piston element through a portion in lateral registry with said auxiliary piston element, and variable fluid restrictor means in said secondary passage variable in response to movement of said auxiliary piston element along such bore to control flow of fluid through such portion of said secondary fluid passage in registry with said auxiliary piston element.

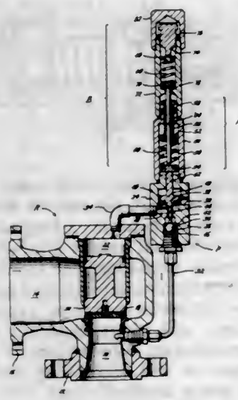
3,414,007
LOAD LOWERING VALVE FOR HYDRAULIC HOISTS
Robert F. De Marco, Mentor, Ohio, assignor to Fluid Controls, Inc., Mentor, Ohio, a corporation of Ohio
Filed Apr. 19, 1965, Ser. No. 448,919
12 Claims. (Cl. 137—493)



The present disclosure is directed primarily to a load lowering valve for a hydraulic hoist. A valve plug with

a plurality of ports is seated on a seat area provided with a plurality of ports. The plug is yieldably rotated in the direction toward maximum registry of the ports by a torsion spring which also urges the plug toward the seating area. The structure permits a relatively free flow through the body from the inlet to the outlet, but restricts the flow from the outlet to the inlet in relation to the pressure of the fluid at the outlet side of the wall.

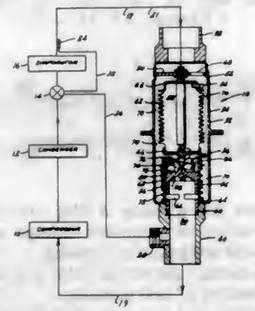
3,414,008
PRESSURE OPERATED VALVE
Marvin H. Greenwood, Houston, Tex., assignor to Anderson, Greenwood & Co., Bellaire, Tex., a corporation of Texas
Filed Sept. 15, 1966, Ser. No. 579,747
10 Claims. (Cl. 137—492)



1. A pilot valve assembly comprising,
a body,
said body defining an inlet port, a control port, an outleat port, a first valve seat between said inlet port and said control port and a second valve seat between said control port and said outlet port,
a pilot valve movably positioned within said body and adapted to seat on said second valve seat,
a second valve movably positioned within said body and adapted to seat on said first valve seat,
means connecting said pilot valve and said second valve to hold said second valve unseated when said pilot valve is seated,
means exerting a force on said pilot valve to bias said pilot valve toward seated position, and
blowdown control means exerting a force on said pilot valve only when the pilot valve is at least partially unseated to bias said pilot valve toward seated position.

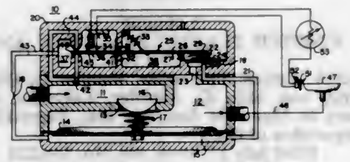
3,414,009
INLET PRESSURE REGULATOR
Leo F. Merchant, Southfield, Mich., assignor to American Standard Inc., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,335
10 Claims. (Cl. 137—494)

1. A gas pressure regulator comprising a housing structure having internal wall means equipped with a flow port therein, said wall means subdividing the housing structure into an inlet chamber for gas whose pressure is to be regulated and an outlet chamber for exhaust gas; a sealed bellows disposed within the inlet chamber; said bellows having calibrated internal force means whereby inlet chamber pressures above the regulated pressure effect contraction of the bellows, and inlet chamber pressures below the regulater pressure permit expansion of the bellows by the calibrated force means; a valve element arranged to traverse the defined flow port; a motion-multiplying means connecting the valve element with the bellows whereby expansion of the bellows effects a magnified closing movement of the valve element; and spring means acting on the valve element to move same in the



port-opening direction, said spring means developing sufficient force on the valve element to effect movement thereof but insufficient force to effect any appreciable contraction of the bellows, whereby the position of the valve element is determined substantially solely by pressure differential between the inlet chamber and bellows interior.

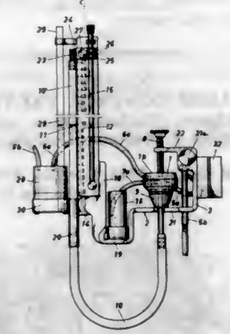
3,414,010
CONTROL APPARATUS
Hubert T. Sparrow, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 505,882
13 Claims. (Cl. 137—495)

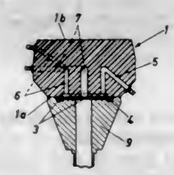


A modulating valve utilizing a multilayered magnetostrictive member which flexes upon application of an electric current. In one embodiment, flexure of the member exerts variable pressure on a diaphragm to variably restrict a pilot valve causing modulation of a main valve output. In a second embodiment, the magnetostrictive member directly operates a step opening modulating valve. Also disclosed is a pulse operated, modulating valve which maintains a variably open valve condition between pulses.

3,414,011
DEVICE TO CREATE AND AUTOMATICALLY MAINTAIN A PREDETERMINED GAS EXCESS PRESSURE IN CAVITIES
Goran Olof Uddenberg, Goteborg, Sweden, assignor to Aktiebolaget Vacuum-Extractor, a corporation of Sweden
Filed May 4, 1966, Ser. No. 547,647
Claims priority, application Sweden, May 6, 1965, 5,922
4 Claims. (Cl. 137—510)

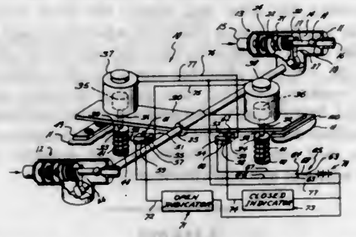
The present device automatically maintains a predetermined excess gas pressure in cavities such as for example, normally closed cavities such as the abdomen of





the human body so that the cavity can be visually inspected while inflated and containing interior illumination.

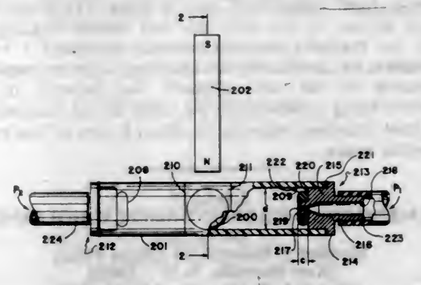
3,414,012
DUAL LATCHING SOLENOID VALVE
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of William C. McNutt and Hugh G. Odell
Filed June 28, 1967, Ser. No. 650,166
9 Claims. (Cl. 137—554)



A valve assembly for simultaneously controlling the flow of more than one fluid, said assembly having separate valve means which are movable between open and closed positions by a rocker arm which in turn is actuated by electrical solenoids. Releasable, latching means which are independent of the solenoid means are provided in the assembly which securely latch each of the valve means in one of its said positions whenever the rocker arm moves the valve means to that position.

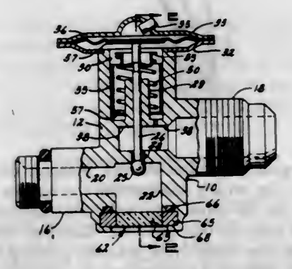
3,414,013
DIFFERENTIAL PRESSURE INDICATOR
Howard R. Jaquith, Rochester, N.Y., assignor to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Filed Sept. 16, 1966, Ser. No. 580,019
8 Claims. (Cl. 137—557)

A differential pressure indicator has a ball held in the middle of a tube by a magnet. A small differential in pressures at the ends of the tube moves the ball to the lower pressure end of the tube where it seats on an O-ring. The O-ring has an interference fit on a nipple which ex-



tends a little more than half way into the O-ring, and conducts fluid pressure into the tube.

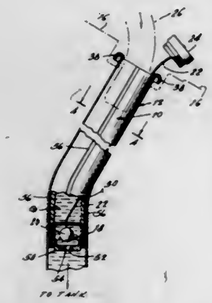
3,414,014
EXPANSION VALVE
Leo Francis Merchant, Southfield, and Darwin Robert Grahl, Lincoln Park, Mich., assignors to American & Standard Inc., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,039
1 Claim. (Cl. 137—559)



1. A refrigerant expansion valve comprising a one piece valve housing having a central elongated body portion defining an axis; a first boss extending right angularly from the central portion adjacent one of its ends, and a second boss extending right angularly from the central portion adjacent its midpoint; a first parallel walled liquid inlet passage extending within the first boss on an axis at right angles to the body portion axis; a parallel walled liquid inlet chamber extending into said one end of the central body portion on the body portion axis to intersect the inlet passage; a parallel walled vaporous outlet passage extending within the second boss and the midportion of the central body portion on an axis at right angles to the body portion axis; a parallel walled cavity extending axially into the end of the body portion remote from the inlet chamber; the central body portion having an annular boss of appreciable length projecting axially within the cavity to form an elongated stem guide; said central body portion having a flow passage extending between the inlet chamber and outlet passage in axial alignment with the stem guide; a valve element of appreciably less diameter than the lateral dimension of the liquid inlet chamber, said valve element being located in said liquid inlet chamber for movement toward and away from the flow passage to control flow through the valve; a thermostatic operator including a diaphragm extending across the cavity. in the central body portion for movement toward the inlet chamber on temperature increase; an operator stem extending from the diaphragm through the stem guide and flow passage to operate the valve element; a compression coil spring operatively disposed in the valve

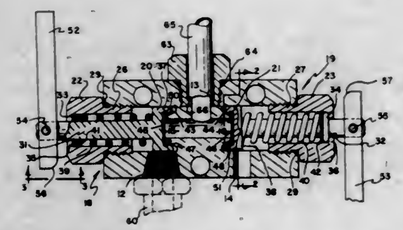
housing for urging the stem in a direction tending to close the valve element; and a transparent planar inspection window located in the end of the central body portion remote from diaphragm; said window extending in a plane normal to the stem axis and constituting an end wall for the inlet chamber whereby to afford a visual indication of insufficient refrigerant charge or improper operation of the valve element; the diameter of the window being substantially the same as the diameter of the inlet chamber, whereby to afford a view of the entire chamber space.

3,414,015
EMERGENCY GASOLINE-SUPPLY HOLDING DEVICE
Howard S. Howard, 17 Clover Place, New Rochelle, N.Y. 10805
Filed Feb. 2, 1966, Ser. No. 524,438
2 Claims. (Cl. 137—572)



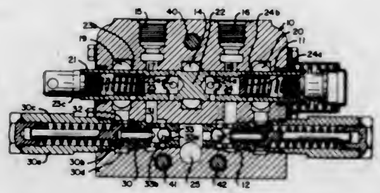
An emergency gasoline-supply holding device for an auto or the like which is essentially a hollow tube and is mounted in the fill spout or inlet of the main gasoline tank of the auto and, in this position, does not interfere with the filling of the tank—the gasoline passing through the tube—while effectively trapping, as an emergency gas supply for subsequent use, the quantity of gasoline which rises to a level above the lower end of the tube.

3,414,016
FLUID CONTROL APPARATUS
Carrol C. Sachs, 9938 Cybourn Ave., Sunland, Calif. 91040
Filed Aug. 18, 1966, Ser. No. 573,388
6 Claims. (Cl. 137—596.2)



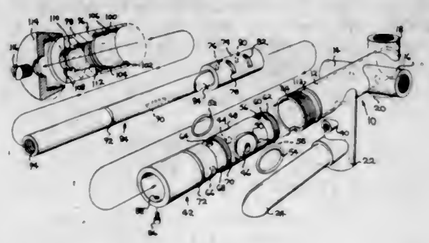
A high temperature valve is disclosed herein having a body formed with passage means through said body in communication with three ports. The passage means includes valves seat means therein and a pair of poppet means for selectively controlling the flow of air through the passage means between one of said ports and either of the other of said ports. The poppet means includes silicone rubber sealing members for engaging said valve seat means, spring means for urging said sealing members against said valve seat means, and lever means for moving said poppet means in opposition to said spring means to a location wherein said sealing members are remote from said valve seat means.

3,414,017
FLUID CONTROL VALVES
Robert F. Hodgson, Canfield, Ohio, assignor to Commercial Shearing & Stamping Company, a corporation of Ohio
Filed Sept. 6, 1966, Ser. No. 577,279
9 Claims. (Cl. 137—596.2)



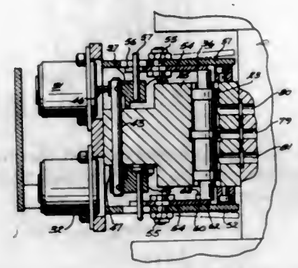
1. A fluid pressure valve comprising a housing, a main bore extending lengthwise through said housing, at least one spaced parallel bore in said housing parallel to the main bore, a high pressure inlet in said housing adapted to be connected to a source of high pressure fluid, said inlet communicating with said main bore intermediate its ends, a low pressure exhaust chamber spaced from said inlet communicating with both bores, a high pressure cylinder chamber intermediate the inlet and the exhaust chamber and communicating with both bores, a spool axially movable in said main bore, said spool being hollow along its axis at each end, spaced ports in said spool at each end communicating with the hollow axis, said ports being spaced so that in a neutral position at least one of the spaced ports at each end of the spool communicates with an exhaust chamber and the other port lies adjacent the inlet and within the bore intercepting any fluid leakage along the bore whereby bleed-by fluid from the inlet is relieved into the center of the spool and to the exhaust chamber through said spaced ports, in one working position one group of ports and their associated hollow axis connects the inlet and one cylinder chamber and a normally closed pressure responsive valve in said other bore between said cylinder chamber and the adjacent exhaust chamber.

3,414,018
MIXING AND DIVERTER VALVE ASSEMBLY
Carl A. Eversman, 2943 Manchester Drive, Toledo, Ohio 43606
Filed Dec. 8, 1966, Ser. No. 600,071
6 Claims. (Cl. 137—597)



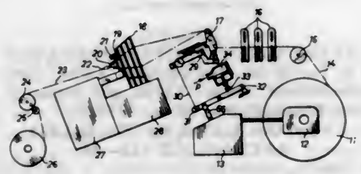
A valve assembly for mixing and diverting fluids having a cylindrical valve piston moveable axially and rotationally within a valve cylinder and not requiring gasketing or other fluid sealing means between the relatively moving surfaces.

3,414,019
ELECTRO-FLUID CONTROL SYSTEM
Nagle V. Gusching, Sidney, Ohio, assignor to The Monarch Machine Tool Company, a corporation of Ohio
Filed Oct. 13, 1966, Ser. No. 586,460
12 Claims. (Cl. 137—625.65)



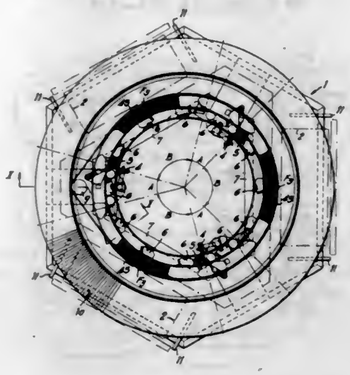
The disclosure shows an electro-hydraulic control system which may be used to shift gears in a geared transmission. A rotary tap switch selectively energizes one or more of plural solenoids, which in turn pivot rocker plates into one of three positions each. The rocker plates swing plural abutment levers in first paths into one of three positions each. The abutment levers are pivoted on clapper plates which are pulled together along a second path transverse to the first path, by a fluid cylinder motor to move plural fluid valves into one of three positions. The selected positions of the plural fluid valves then effects the shifting of gears in the geared transmission.

3,414,020
WARP-TENSION EQUALIZATION MECHANISM FOR TRAVELLING-WAVE SHEDDING LOOMS
Heinrich Fend, Uster, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding AG, Zurich, Switzerland
Filed July 25, 1966, Ser. No. 567,607
Claims priority, application Switzerland, June 27, 1965, 10,509/65
19 Claims. (Cl. 139—12)



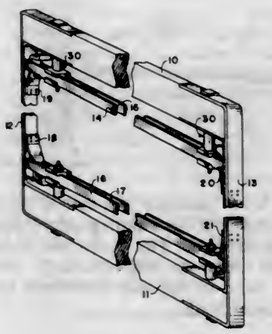
A travelling-wave shedding loom having a number of heddle frames side by side and groups of warp threads of a width corresponding to the width of the heddle frames. A warp thread tension device individually controls the warp tension of each group of warp threads. Tension equalization means are arranged between the tension devices and provide that the same force is extended by each of the tension devices to produce the equal warp thread tension. This tension equalization can be attained by cable hydraulic or pneumatic means.

3,414,021
HEDDLE FRAME MOTION FOR CIRCULAR LOOMS
Armand Malchair, Herstal, Belgium, assignor to Peltzer & Fils S.A., Societe Anonyme, Verviers, Belgium, a company
Filed Sept. 14, 1966, Ser. No. 579,364
Claims priority, application Belgium, Sept. 17, 1965, 669,744
9 Claims. (Cl. 139—13)



A heddle frame motion for circular looms including independent groups of articulated heddle frames with the frames of each group being disposed side by side around the loom. In and between each heddle frame group the frames are selectively actuatable by rotatable cam tracks provided with switching devices.

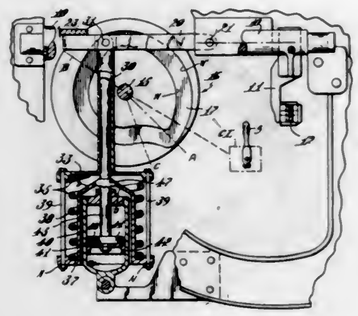
3,414,022
LOCKING ASSEMBLIES FOR CONFINING HEDDLE SUPPORTING RODS IN FRAMES
Robert N. Suhr, Marietta, Ga., assignor to Pioneer Heddle & Reed Company, Inc., Atlanta, Ga., a corporation of Georgia
Filed Apr. 22, 1966, Ser. No. 544,535
2 Claims. (Cl. 139—92)



A heddle rod locking assembly for use in conjunction with a conventional heddle frame including a pair of opposed jaws which are movable toward and away from each other for selectively clamping and thereby arresting appreciable movement of heddle rods or for releasing the heddle rods. The opposed jaws are carried by a supporting structure, which is in turn carried by the heddle frame and includes means for spacing the opposed jaws from the heddle frame and means for simultaneously moving

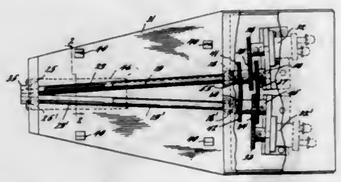
the opposed jaws toward each other to selectively clamp heddle rods between the jaws and arrest appreciable movement of the heddle rods.

3,414,023
PICKER DRIVE MECHANISM
Stephen C. Dangel, 329 Park St., Boston, Mass. 02132, and George B. Kirby Meacham, 414 S. Crest Road, Chattanooga, Tenn. 37404
Filed May 20, 1966, Ser. No. 551,770
20 Claims. (Cl. 139—145)



Picker drive mechanism for a power-driven weaving loom in which, when the loom is in normal operation, energy is accumulated during the nonpicking portion of each cycle of the picker cam and delivered to the picker at the inception of the picking stroke of the picker thereby to accelerate the picker, but which does not so accumulate energy when the loom is being operated by hand.

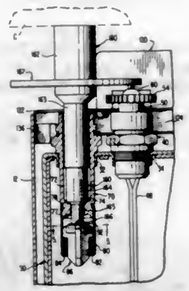
3,414,024
APPARATUS FOR CUTTING AND BENDING WIRE LEADS
Albin R. Anderson, Lowell, and Benjamin J. Sadewicz, Haverhill, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 1, 1967, Ser. No. 619,764
9 Claims. (Cl. 140—1)



Component leads inserted through a printed circuit board are cut and bent by a slotted sleeve concentrically mounted on a slotted rod. The sleeve and rod are rotated relative to each other to simultaneously cut and then simultaneously bend in opposite directions one or more pairs of component leads.

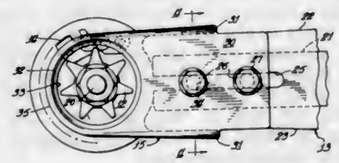
3,414,025
FILL NOZZLE
John S. Smith, Atlanta, Ga., assignor to Scripto, Inc., a corporation of Georgia
Filed Apr. 18, 1966, Ser. No. 543,168
1 Claim. (Cl. 141—98)

The present invention relates to a charging apparatus for introducing gaseous fuel into the reservoir of a lighter having a burner valve assembly and a fill valve assembly positioned in adjacent relationship at one end of the reservoir including a nozzle portion for insertion into the fill valve assembly so as to move it to an open position for



filling and an extending arm portion for engaging said burner valve assembly to maintain said burner valve in sealed engagement during filling.

3,414,026
CHAIN SAW SHROUD STRUCTURE
Max Merz, Los Angeles, Calif., assignor, by mesne assignments, to Nicholson File Company, East Providence, R.I., a corporation of Rhode Island
Filed Oct. 4, 1965, Ser. No. 492,396
14 Claims. (Cl. 143—32)

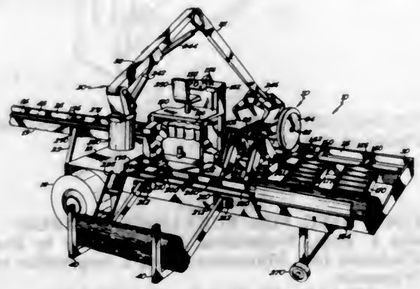


A chain saw structure including a shroud or guide at that end of the chain saw bar adjacent the sprocket and comprising plates adjustably secured to the bar at opposite sides thereof, said bar being adjustably secured to the chain saw power unit, the arrangement being such that as the bar is adjusted relative to the sprocket, to compensate for variations in chain length, the relation between the shroud and the sprocket may remain constant, thus preserving the proper geometric relationship between the chain and sprocket as the former passes to, around and from the latter.

3,414,027
PULPWOOD CUT-OFF APPARATUS
Wilbert J. Larva, Sr., and Jerry R. Larva, both of Box 422, Floodwood, Minn. 55736, and Wayne F. Nurmi, Box 146, Meadowlands, Minn. 55765
Filed Oct. 5, 1966, Ser. No. 584,424
14 Claims. (Cl. 143—46)

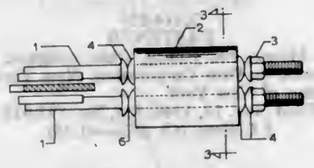
1. A logging machine comprising, a main frame, at least a pair of wheel means mounting the main frame for rolling movement, coupling means included on the frame and adapted to be connected to a draft means for moving the frame, an input conveyor bed having conveyor means therein positioned along the extent of the frame and on one side thereof, stop means positioned at one end of the input conveyor bed and the frame, cut-off saw means positioned on the main frame adjacent the input conveyor bed and spaced from the stop means for pivotal movement toward and away from the conveyor bed, clam means positioned on the frame adjacent the extent of the input conveyor bed and midway along the same between

said other end of the frame and the saw means, means positioned between the stop means and the saw means for raising cut-off logs from the input conveyor bed and positioning the logs relative thereto, an output conveyor bed having a conveyor means therein positioned on the frame parallel to the input conveyor bed and on the opposite side thereof on the frame, means positioned between the input conveyor bed and output conveyor bed on the main frame and adapted to receive logs from the input conveyor bed and transport them to the output con-



veyor bed, means positioned remote from said one end of said frame and in part on said output conveyor bed to remove logs therefrom, motor means for operating the conveyor means in the input and output conveyor beds together with the saw means and the positioning means and the clam, and individual control means connected to and controlling the operation of said last named motor means and including a console means mounting the same positioned on the main frame between the input and output conveyor beds.

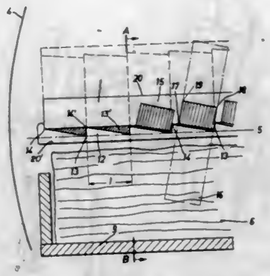
3,414,028
BANDSAW GUIDE
Charles E. McManama, Potlatch, Idaho 83855
Filed Oct. 18, 1965, Ser. No. 496,983
2 Claims. (Cl. 143—165)



The present invention is a bandsaw guide comprising refinements of the guide surface holders whereby the holders are integrated into elongate members which are attached to a base or supporting standard where they may be adjusted therefrom angularly against the saw blade or laterally against the saw blade, and fixed thereupon in a desired adjusted position; to either compensate for guide wear or deflect the saw in a particular manner.

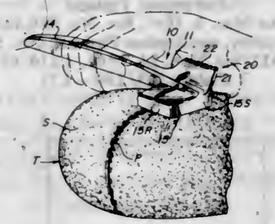
3,414,029
KNIFE FOR CUTTING LUMBER
Paul Arthur Kirsten, Ernst-Moritz-Arndt-Str. 6, Beuel, near Bonn, Germany
Filed Aug. 26, 1965, Ser. No. 482,850
8 Claims. (Cl. 144—230)

A knife for use with wood cutting machines to cut strips and shavings of predetermined width comprising a body member having a bottom chip surface and a forward edge surface defined by a pair of planar surface portions disposed in parallel relation to the longitudinal axis of the knife. A plurality of parallel spaced recesses are formed in the chip surface transverse to the longitudinal axis of the body member and intersect the forward edge surface to define cutting edges therewith. The spaced recesses define splitting tips therebetween which determine the widths



of the strips cut. The planar surface portion of the forward edge surface adjacent the chip surface includes the cutting edges and is disposed in co-planar relation with the cutting plane of the knife, while the other planar surface portion is angularly disposed relative to the cutting plane to form a relief angle therebetween.

3,414,030
SKIN CUTTER AND PEELER
Samuel J. Popell, 2920 N. Commonwealth, Chicago, Ill. 60657
Filed Oct. 4, 1965, Ser. No. 492,458
4 Claims. (Cl. 146—43)

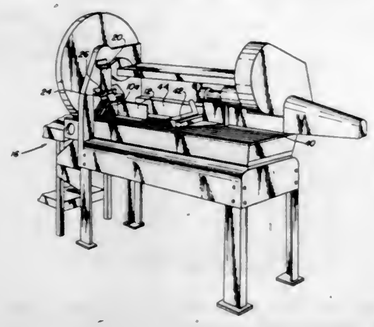


A cutter for thin skinned produce is disclosed as comprising a one-piece holder having an elongated handle end and a hollow mounting head, a molded plastic support shoe pivotally carried in partly recessed position in the head to present a skin contacting surface and a cutter blade structure embedded in the head forwardly of its pivot axis and projecting through the skin contacting surface to present an array of cutting edges of T-shaped outline. The cutter includes a plow blade and skin lifting wing blades flanking the line of action and slightly to the rear of the plow blade. The wing blades are spaced from the shoe surface to provide clearance for the skin being cut and are beveled in opposed relation to the shoe surface to cause the pivoted shoe to follow the skin contour and insure a uniform depth of cut.

3,414,031
METHOD AND APPARATUS FOR REDUCING THE AMOUNT OF BACKSTRAP TRIMMED FROM HOG BELLIES
Brice L. Thomas, Omaha, Nebr., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,272
5 Claims. (Cl. 146—241)

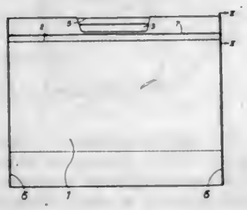
This invention relates to an improvement in assemblies for slicing compressible materials such as hog bellies and the like. The improvement is a slicing guide for reducing

the amount of backstrap trimmed from hog bellies preparatory to producing bellies of uniform widths which when sliced will yield sliced bacon of corresponding uniform lengths. The guide is generally comprised of a bracket and a guide plate vertically fixed thereto. The



guide plate is angularly disposed to the path of the bellies and is disposed immediately forward of the trimming knife so that the material will run into the plate and be compressed thereby as the material advances along the plate and is fed into the trimming knife which thereby trims less backstrap.

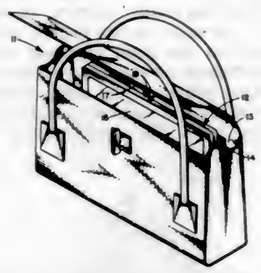
3,414,032
SHOPPING BAGS
Annikki Jortikka, Murtokatu 3 B62, Jarvenpaa, Finland
Filed Mar. 3, 1967, Ser. No. 620,420
Claims priority, application Finland, Oct. 5, 1966, 2,612/66; Nov. 24, 1966, 3,110/66
3 Claims. (Cl. 150—1.7)



This invention relates to an improvement in a shopping bag made of plastic film, and comprising plastic straps which are fastened to the film by welding. According to the invention a canal is formed around the mouth of the bag for accommodating said straps, the plastic film constituting the canal having holes cut therein to expose said straps for the purpose of grasping the bag in use.

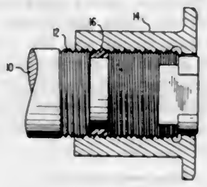
3,414,033
INTERCHANGEABLE PURSE INSERT
Billy J. Tucker, 2715 Hemple St., Chesapeake, Va. 23324
Filed June 15, 1967, Ser. No. 646,231
8 Claims. (Cl. 150—34)

A pouch or envelope type purse insert having closure means and readily detachable from the interior of a lady's purse and readily reattachable to the interior of another such purse. The purse insert is constructed of a pliable, transparent plastic to display the contents thereof, and is interiorly provided with document carrying pockets and cartridge-belt type loops in which lipstick tubes and the like are disposed. One portion of a separable nylon tape fastener is secured to the purse insert,



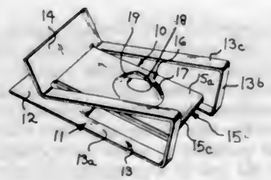
and the cooperating portion of the fastener is secured to the interior of at least one purse.

3,414,034
LOCK RING FOR THREADED MEMBERS
Philip J. Imse, Wauwatosa, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 23, 1966, Ser. No. 552,049
1 Claim. (Cl. 151—7)



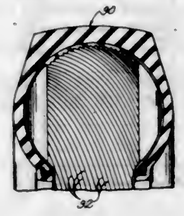
A plastic split lock ring having a rectangular cross-section seated within a recess in a threaded shaft and being capable of axial and circumferential expansion upon engagement by a cooperating threaded nut.

3,414,035
FASTENER
Robert A. Munse, Perrysburg, Ohio, assignor, by mesne assignments, to Vare Corporation, New York, N.Y., a corporation of New York
Filed Nov. 14, 1966, Ser. No. 593,919
5 Claims. (Cl. 151—41.75)



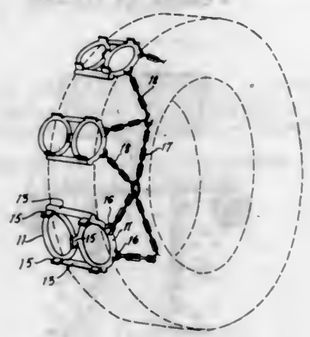
A one-piece spring metal fastener clip is formed of a plate folded back upon itself to provide upper and lower arms integrally joined by a bight portion. The free ends of the upper and lower arms terminate in upper and lower panels, respectively, the upper panel being inclined upwardly away from the lower panel and the two panels are connected by generally U-shape spring strips along opposite sides of the clip. Integral with the upper panel and lying generally between the spring strips and generally parallel with the lower arm is a portion which is folded upwardly and backwardly upon itself to provide upper and lower plies. In the upper ply there is formed a nut impression which lies above a bolt hole through the lower ply, and a detent lip depends beneath one side of the bolt hole for snapping into a hole on a panel.

3,414,036
TIRE COOLING
Frank O. Skidmore, 2513 3rd St., Cuyahoga Falls, Ohio 44221
Continuation-in-part of application Ser. No. 418,515, Dec. 15, 1964. This application Aug. 24, 1966, Ser. No. 574,705
5 Claims. (Cl. 152—153)



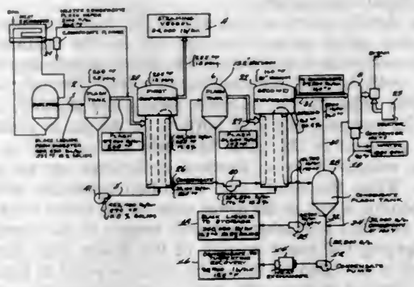
A tire construction incorporating raised ribs on the internal surface of the tire spiralled around the toric axis of the tire so as to achieve a swirling, spiral circulation of the air inside the tubeless type pneumatic tire during rotational operation of the tire in association with an automobile at high speed so as to carry heat away from the tread and shoulder area portion of the tire to the sidewalls and mounting rim. The raised rib construction on the internal surface of the tire, particularly across the tread portion, achieves the objects of the invention.

3,414,037
PLATFORM TYPE TRACTION STRUCTURE ASSEMBLY
Roger L. Gower, P.O. Box 65, Canaan, Maine 04924
Filed Nov. 13, 1967, Ser. No. 682,186
3 Claims. (Cl. 152—229)



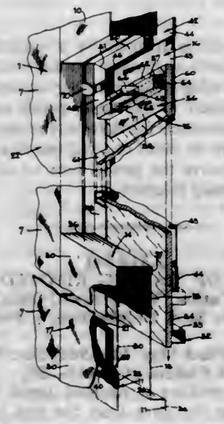
This invention relates to an improved platform type traction structure assembly. Said platforms consisting of a plurality of annular members disposed between parallel elongated members and having loops associated with said annular members adaptable for attaching said platform members to side chains.

3,414,038
HEAT RECOVERY METHOD AND APPARATUS
Oliver Armas Laakso, Glens Falls, N.Y., assignor to Aktiebolaget Kamyr, Karlstad, Sweden
Filed June 21, 1965, Ser. No. 465,635
6 Claims. (Cl. 159—17)



A process and apparatus are disclosed for concentrating the black liquor diluent from a cellulose digester. The diluent from the digester is flashed and the residue liquor and flash vapor are passed into indirect heat exchange in an evaporator. The released vapor from the evaporator is passed to a steaming vessel to steam wood chips fed to the digester. The partially concentrated liquor from the evaporator is passed to another flasher and the flash vapor and further concentrated liquor from the second flasher are again passed in indirect heat exchange in a second evaporator.

3,414,039
CONVERTIBLE STORM AND SCREEN DOOR
Donald L. King, Loveland, Ohio, assignor to The Steelcraft Manufacturing Company, Rossmoyne, Ohio, a corporation of Ohio
Filed May 2, 1966, Ser. No. 547,046
4 Claims. (Cl. 160—90)

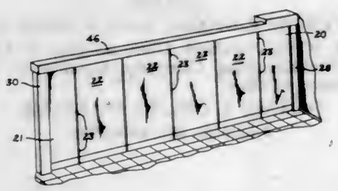


The disclosure relates to a convertible screen and storm door for installation in an outside wall of a building, in-

cluding a slidable storm window panel and a fixed screen sash having a frame. The door proper is formed of sheet metal, comprising hollow vertical stiles and horizontal cross members, the upper portion of the door having an opening delineated by the vertical stiles and the upper horizontal cross member. The lower portion of the door constitutes a closure panel extending downwardly between the stiles from the lower portion of the opening to the lower cross member, the panel also being of hollow sheet metal construction.

The closure panel, at one side or the door, includes an inset area which forms a storage well for the storm window panel when it is lowered. The stiles include opposed inner walls having channel-shaped guide channels with the open sides of the channels facing one another, and with the marginal side edge portions of the storm window panel confined in the guide channels and adapted to be shifted selectively to an elevated or lowered storage position. When the storm sash is shifted upwardly within the opening, a rail at the lower edge of the storm window panel provides a weather seal with respect to the opening by engaging the lower portion of the screen sash frame. A latch is provided on the storm window panel to hold it in its elevated position. The latch is manipulated from inside the building and is released in order to lower the storm window panel into its storage well.

3,414,040
FOLDING PARTITIONS AND OPERATORS THEREFOR
Donald S. Harris, New Castle, Ind., assignor to New Castle Products, Inc., New Castle, Ind., a corporation of Indiana
Filed Aug. 5, 1966, Ser. No. 570,483
13 Claims. (Cl. 160—188)

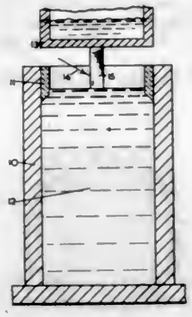


A folding partition formed by a plurality of successively hinged panels supported by an overhead track, is operable by a flexible drive member extending along the track and connected to the lead panel and a drive. A mechanism also connects the drive to the opposite end panel and is operative to pivot the end panel after the panels are extended to move the panels into an aligned and longitudinal compressed relation.

3,414,041
METHOD OF MAKING RIMMED STEEL
John Gilbert Cutton, Youngstown, Ohio, assignor to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed May 10, 1966, Ser. No. 548,865
4 Claims. (Cl. 164—56)

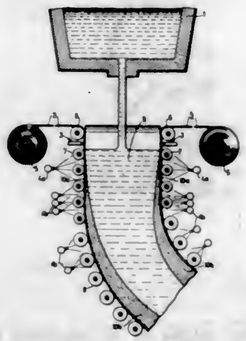
A method of making a rimmed ingot having higher carbon content in the core than the rim by teeming an ingot of low-carbon steel, adding rimming agents during teeming, permitting rimming to proceed for a short time after filling the mold, then adding carburizing material to the mold to give the core a carbon content about twice that of the rim.

3,414,042
METHODS OF PRODUCING KILLED STEEL
Knut Franz Behrens, 86 Schlossstrasse, 422 Dinslaken, Germany, and Walter Stein, 2 Heidestrasse, 4222 Friedrichsfeld, Germany
Filed May 12, 1966, Ser. No. 549,615
4 Claims. (Cl. 164—57)



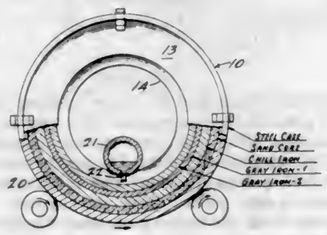
1. A process for making killed steel by adding at least one deoxidizing agent during pouring, including the steps of pouring the steel in a rimming state into a mold fitted with a feeder head until the level of the steel penetrates into the lower part of the feeder head; thereupon interrupting the pouring for at least the period necessary to allow the steel to boil up intensely and achieve the circulation common in the solidification of rimming steel; and thereafter filling up the feeder head of the mold with steel while at the same time the deoxidizing agent is added to the contents of the mold.

3,414,043
METHOD FOR THE CONTINUOUS TRANSFERRING OF LIQUID METALS OR ALLOYS INTO SOLID STATE WITH DESIRED CROSS SECTION WITHOUT USING A MOULD
Anton Robert Wagner, Villa Elvik, Nybybruk, Sweden
Filed Mar. 21, 1966, Ser. No. 536,027
Claims priority, application Sweden, Mar. 27, 1965, 3,989/65
4 Claims. (Cl. 164—86)



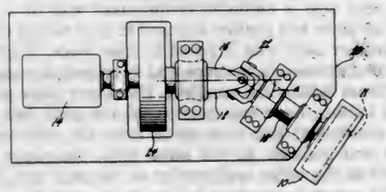
Continuous casting technique, wherein a sheet of metal is continuously moved downwardly whilst opposite edges are welded together; the envelope is supported between opposed rollers; molten metal continuously poured into resulting descending tubular envelope; a first set of sprays of coolant is directed onto upper zone of wall of filled envelope under conditions to produce moderate cooling of contents, after which second set of sprays of coolant is directed onto lower zone of wall of filled envelope under conditions to effect fast cooling. Filled envelope is moved downwardly and away at the rate tubular envelope is formed and filled.

3,414,044
METHOD OF MAKING BIMETALLIC TUBULAR ARTICLE
Edgar J. Justus, Beloit, Wis., Carl B. Dahl, Rockton, Ill., and Walter H. Bade and C. Franklin Hamilton, Huron, Ohio, assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin, and Sandusky Foundry & Machine Company, Sandusky, Ohio, a corporation of Ohio
Filed May 12, 1966, Ser. No. 549,604
9 Claims. (Cl. 164—95)



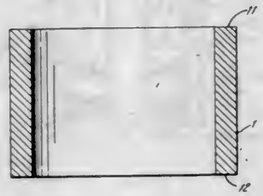
A method of forming a bimetallic tubular article by a centrifugal casting process. An initial pour of a chill iron alloy is introduced into a rotating mold. The chill iron alloy forms an exterior casting surface which is difficult to machine. A flux is added over the surface of the chill iron alloy before the chill iron layer has cooled to its solidus temperature. Subsequently, the chill iron layer is cooled to a temperature below its solidus temperature and a softer iron alloy is introduced into the mold. The softer iron alloy is introduced in one or more pours and ultimately forms a readily machineable interior surface of the tubular article.

3,414,045
METHOD FOR CENTRIFUGAL CASTING
Douglas J. Harvey, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,894
3 Claims. (Cl. 164—116)



The method of centrifugal casting wherein a mold is filled with molten material and then rotated at a continuously varying speed so as to generate shearing forces for grain refining purposes.

3,414,046
MOLD STRUCTURES FOR CONTINUOUSLY CASTING AN ELONGATED METAL BODY OF DESIRED CROSS-SECTION
Egon Pipitz and Gerolf Strohmeier, Reutte, and Bruno Tarmann, Kapfenberg, Austria, assignors to Schwarzkopf Development Company, New York, N.Y., a corporation of New York, and Gebr. Bokler & Company, Kapfenberg, Austria, a corporation of Austria
Filed Nov. 23, 1965, Ser. No. 509,422
Claims priority, application Austria, Dec. 10, 1964, A 10,478/64
6 Claims. (Cl. 164—273)



1. A hollow mold structure of a continuous casting apparatus for continuously casting an elongated metal body,

which mold structure has a mold section of predetermined cross-section shaped to continuously receive molten corrosive metal through an inlet opening and at least partially solidifying the received molten metal into successive solidified body portions of said elongated metal body having said cross-section, said mold section having an outlet end shaped to feed said successive solidified metal body portions to succeeding sections of said casting apparatus,

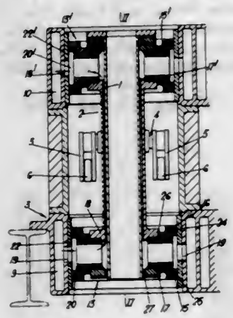
said mold structure consisting of a hard homogenous composition consisting of a ceramic phase and a metal phase,

said ceramic phase constituting 80 to 15 vol. percent of said mold structure and consisting of a ceramic selected from the group consisting of zirconium oxide containing 4 to 10 wt. percent of calcium oxide, zirconium oxide containing 4 to 10 wt. percent of magnesium oxide, such zirconium oxides containing up to 50 wt. percent thorium oxide, such zirconium oxides containing up to 50 wt. percent titanium oxide, such zirconium oxides containing up to 50 wt. percent hafnium and combinations of two and more of said ceramics,

said metalic phase constituting 20 to 85 vol. percent of and being the balance of said mold structure and consisting of metal selected from the group consisting of molybdenum, tungsten, molybdenum containing up to 50 wt. percent chromium, tungsten containing up to 50 wt. percent chromium, a tungsten-molybdenum alloy containing up to 50 wt. percent chromium and alloys of two and more of said metals,

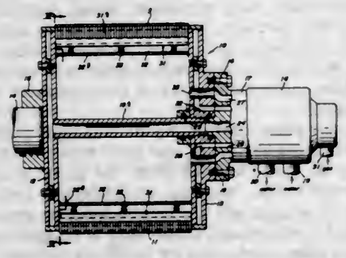
said mold structure consisting of a homogenous mixture of fine powder particles of said specified ceramic and metal phase ingredients, which particles have been compacted and have been sintered at temperatures of at least 1800° C into a homogenous body having a high density near the theoretical density of its composition and resisting corrosion by molten metal at high temperatures of at least about 1400° C. in contact therewith.

3,414,047
APPARATUS FOR COOLING RECIPROCATING, CURVED CONTINUOUS CASTING MOLDS
Charles W. Saunders, Aspatria, England, assignor to The United Steel Companies Limited, The Mount Broomhill, Sheffield, Yorkshire, England, a British company
Filed Aug. 15, 1966, Ser. No. 572,448
Claims priority, application Great Britain, Aug. 19, 1965, 35,664/65
3 Claims. (Cl. 164—283)



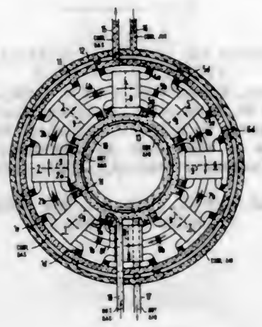
A machine for continuously casting metal includes a mold which is curved and surrounded by a water jacket, the assembly of mold and water jacket being mounted to reciprocate within a stationary housing. To allow the cooling water to flow, hollow cylinders working in sockets are interposed between the housing and the water jacket, the flow and return manifolds for the water are made in the housing and communicate with the water jacket through hollow pivots on which the cylinders are mounted.

3,414,048
CONTACT DRUM AND METHOD FOR HEAT EXCHANGE WITH TRAVELING STRIP
Waldo Rall, Fox Chapel Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 513,328, Dec. 13, 1965. This application Dec. 26, 1967, Ser. No. 701,513
3 Claims. (Cl. 165—1)



A contact cooling drum for strip being processed in a vacuum has a connection supplying gas at low pressure to the interior thereof and normally closed valves in its surface opened by engagement of the strip, therewith. A limited amount of gas thus flows into the space between the drum surface and the strip bent around it, which greatly increases the rate of heat transfer from the strip to the drum surface.

3,414,049
REGENERATOR SYSTEM FOR MHD GENERATORS
Hellmuth Mentschel and Jürgen-Dietrich Welly, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 3, 1967, Ser. No. 620,347
Claims priority, application Germany, Mar. 5, 1966, S 102,376
6 Claims. (Cl. 165—4)



A high-temperature heat exchanger system, particularly for MHD generators, is composed of a ring arrangement of regenerators filled with heat storage masses of substantially spherical constitution. The regenerators are two interconnected groups of which one is traversed by hot combustion waste gases while the second group is traversed by fresh air to be preheated. Cyclical control means switch periodically a regenerator from the hot (inlet) end of the gas group to the hot (outlet) end of the air group and simultaneously a regenerator from the cold (inlet) end of the air group to the cold (outlet) end of the gas group.

3,414,050
HEAT PIPE CONTROL APPARATUS
Davinder K. Anand, Beltsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 11, 1967, Ser. No. 630,788
9 Claims. (Cl. 165—32)

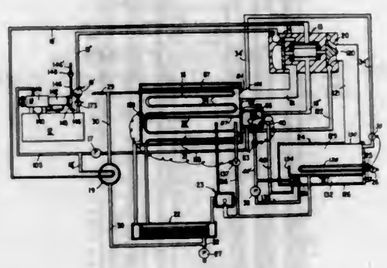


The invention is a heat exchange device of the type known as a heat pipe, and is particularly useful for controlling the temperature within a space satellite.

A heat pipe is mounted in the outer wall of a satellite with an inner end portion exposed to heat within the satellite and an outer end exposed to free space. Vaporizable fluid is contained in the pipe and is caused to vaporize by heat from within the satellite. The vapor thus produced flows to the outer end portion of the pipe and heat is thus discharged into free space from the relatively cool outer end portion. At the same time, the vapor is condensed in the outer end portion of the pipe and the condensed vapor is returned to the inner end by a wick in the pipe.

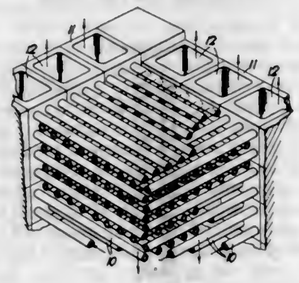
For controlling the heat output a valve is used for regulating vapor flow in one embodiment of the invention. In another embodiment means is employed for interrupting the flow of condensed vapor back to the input end of the pipe.

3,414,051
HEATING AND COOLING SYSTEM
Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Application May 23, 1966, Ser. No. 552,257, which is a division of Ser. No. 377,314, filed June 23, 1964, now Patent No. 3,289,745, dated Dec. 6, 1966. Divided and this application May 15, 1967, Ser. No. 638,379
1 Claim. (Cl. 165—62)



A heat exchanger for circulating heating medium for heating a load. The heating medium is heated by steam. A trough surrounds a tube bundle and contains water about the tube bundle for regulating the heating capacity of the tube bundle. The amount of water is varied to regulate the heating capacity of the heat exchanger.

3,414,052
TUBULAR HEAT EXCHANGERS
Boguslaw Chojnowski, Romsey, and Bruce Anthony Beckerleg, Dibden, England, assignors to Central Electricity Generating Board, London, England, a British body corporate
Filed Oct. 18, 1966, Ser. No. 587,457
Claims priority, application Great Britain, Nov. 9, 1965, 47,536/65
5 Claims. (Cl. 165—164)



A recuperative heat exchanger comprises a matrix of tubes, typically ceramic tubes, in horizontal layers, the tubes in each layer being spaced apart and parallel to one another but transverse to tubes in adjacent layers. The tubes are supported in walls having vertical ducts forming headers so that one of the heat exchanger fluids can be passed through the tubes and the other vertically through the matrix around the outside of the tubes. Saddles formed of refractory packing is provided at each point where the tubes cross so that the whole structure may be made rigid.

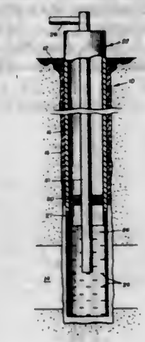
3,414,053
REMOVAL OF INTERFERING IONS IN WATERFLOOD
Lawrence E. Treiber, H. R. Froning, and Frank O. Jones, Jr., Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 18, 1966, Ser. No. 595,409
6 Claims. (Cl. 166—9)

A waterflooding process for recovering crude oil uses an organic agent to improve oil recovery. When the effectiveness of the agent is decreased by the presence of multivalent metal ions, such as calcium and magnesium, a water soluble carbonate, such as sodium carbonate, and an alkali metal hydroxide, such as sodium hydroxide, are used to inactivate the multivalent metal ions.

3,414,054
SECONDARY RECOVERY OF PETROLEUM BY SURFACTANT-WATER FLOODING
George G. Bernard, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed June 19, 1967, Ser. No. 647,177
14 Claims. (Cl. 166—9)

A process for recovering petroleum from a subterranean reservoir by flooding with an aqueous surfactant solution wherein the adsorption of surfactant by the reservoir rock is inhibited by treating the reservoir with pyridine prior to injecting the surfactant. Preferably, treatment is accomplished by injecting an aqueous solution of pyridine into the reservoir in an amount at least sufficient to substantially satisfy the adsorption capacity of the reservoir rock. The pyridine and the surfactant can be displaced through the formation by a subsequently injected aqueous drive fluid.

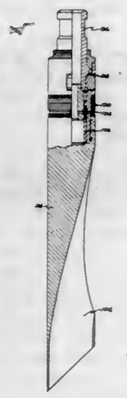
3,414,055
FORMATION CONSOLIDATION USING A COMBUSTIBLE LINER
Thomas C. Vogt, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Oct. 24, 1966, Ser. No. 589,107
18 Claims. (Cl. 166—12)



A method of consolidating an incompetent formation wherein a liner of combustible material is positioned in a well at a point contiguous to the formation and then ignited to heat the formation to a temperature sufficient to consolidate the formation. A gas containing oxygen is supplied to the liner during combustion of the liner and is preferably supplied at a pressure sufficient to establish a positive pressure gradient in the well so that gas will continuously pass into the formation during the consoli-

dation process to maintain permeability in the formation. In another embodiment of the invention, a pack of unconsolidated, particulate material is disposed about the liner in the well and is consolidated by the heat from the combustion of the liner.

3,414,056
WELLHEAD APPARATUS
Cicero C. Brown and James D. Mott, Houston, Tex.; said Mott assignor to Brown Oil Tools, Inc., Houston, Tex., a corporation of Texas
Filed Mar. 6, 1967, Ser. No. 620,968
13 Claims. (Cl. 166—89)



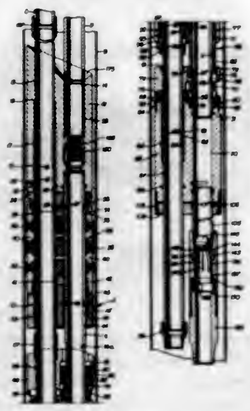
A combination tree and hanger structure for a dual production well which provides diverging production flow passages and workover passages aligned with the production strings, removable plugs for sealing the workover passages and simplified guiding for orientation of the components of the wellhead apparatus.

3,414,057
WELL PUMPING AND FORMATION TREATING APPARATUS
Dixon T. Harbison, P.O. Box 2477, Fort Worth, Tex. 76101
Filed Dec. 2, 1966, Ser. No. 598,721
3 Claims. (Cl. 166—105)



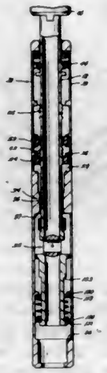
A well pumping and formation treating apparatus which permits the injection of treating fluids without the removal of the apparatus from the well whereby the pumping operation may be resumed as soon as the productivity of the formation is increased to a sufficient extent.

3,414,058
WELL BORE PACKER
John F. de Rochemont, La Habra, Calif., assignor to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed May 18, 1965, Ser. No. 456,657
25 Claims. (Cl. 166—120)



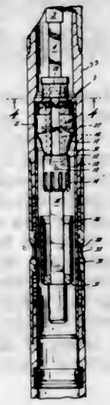
A hydraulically set well packer, in which differential area piston means are employed to set the packer in a well without regard to the hydrostatic column of fluid naturally standing in the well.

3,414,059
ACTUATING MEANS FOR WELL TOOLS
Benjamin P. Nutter, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 6, 1967, Ser. No. 620,943
54 Claims. (Cl. 166—150)



This disclosure describes actuating means for well tools having relatively rotatable inner and outer telescopically arranged members. A threaded member, such as a nut, is disposed in the annular space between the telescoped members between two spaced stops on one of the members such as, for example, the outer member. Threads on the other member, for example the inner member, are normally engaged with the threaded member. So long as the threaded member remains in its normal position relative to the threads, the other member cannot be moved over a longitudinal span any greater than allowed by the spaced stops. Means are provided for retarding longitudinal movement of the other member in a direction toward one of the stops. Thus, upon relative rotation of the telescoped members, the threaded member will be moved in the opposite direction along the threads until it engages the second stop. This will permit the telescoped members to then be moved in a different longitudinal span.

3,414,060
SELECTIVE SHIFTING TOOL
Joseph T. Zak, P.O. Box 119, Telferner, Tex. 77988
Filed Nov. 20, 1967, Ser. No. 684,172
5 Claims. (Cl. 166—214)



A selective shifting tool for use in a well tubing in conjunction with shifting a sleeve and establishing communication in drilling and production operations between the tubing and the tubing-casing annulus, comprising a mandrel having an upper and lower laterally reduced area, a wire line attachment at the upper end of said mandrel for connection with a wire line and lowering the tool into a shiftable sleeve to engage and shift said sleeve to move the ports thereof in alignment with the ports in the tubing, thus establishing communication with the tubing-casing annulus, or in the event of multiple completion, establishing connection with another zone where pressure of the other zone is greater than the tubing pressure, and a pair of expansible keys on said mandrel having means for constantly urging said keys outwardly, to lock the keys in the sleeve to be shifted, retainer rings on said keys and means for maintaining said retainer rings in position, means on said mandrel for releasably anchoring said keys thereon and retrieving means on the lower end of said mandrel for receiving and compressing said keys for retrieving said tool.

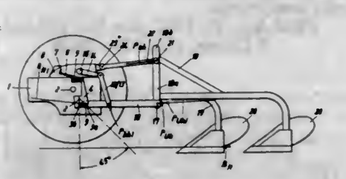
3,414,061
FULL-OPENING WELL TOOL
Benjamin P. Nutter, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Mar. 6, 1967, Ser. No. 620,841
24 Claims. (Cl. 166—226)

This disclosure pertains to full-bore well tools and particularly describes a tool having a so-called "ball valve" controlling communication therethrough. To actuate the ball valve, an actuating member connected thereto is associated with suitable biasing means normally engaged in compression between first and second opposed shoulders on the actuating member and tool housing to hold the valve in one position. When the tool mandrel is moved to operate the ball valve, the actuating member is moved in such a manner that the biasing means are disengaged from between the first and second shoulders and then



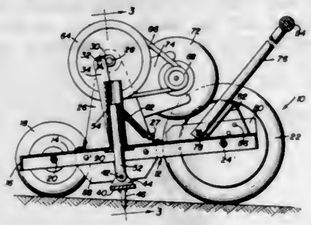
brought into engagement with third and fourth shoulders so arranged that further movement of the mandrel will develop an increased biasing force sufficient to move the valve to its other position. Means are also disclosed for releasably securing the valve in its other position while the mandrel is moved to the further positions. Means are also described whereby testing devices can be releasably secured in the tool and selectively released upon opening of the ball valve.

3,414,062
DEVICE FOR CONTROLLING THE WORKING DEPTH OF SOIL WORKING IMPLEMENTS
Walter Koenig, Bergisch-Gladbach, Germany, assignor to Klöckner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany
Filed Oct. 12, 1964, Ser. No. 403,010
3 Claims. (Cl. 172—7)



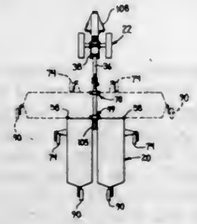
A tractor having control means responsive to changes in draft force to automatically adjust the depth of penetration of a towed earth working implement by raising or lowering the tractor draft arms and the linkage of the control means being connected to the draft arms and having a positional relationship, to the draft arms and means for lifting the same, such that vertical components of force will not cause any operation of the linkage of the control means.

3,414,063
SOIL PERFORATING MACHINE OR AERATOR
Martin Kuhlman, 772 Nightingale, Fairfield, Calif. 94533
Filed Mar. 17, 1966, Ser. No. 535,102
8 Claims. (Cl. 172—21)



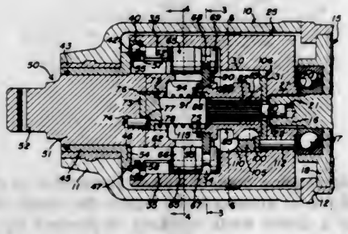
The invention comprises a wheeled lawn perforator adapted to pierce the soil with minimum disturbance of non-pierced portions of the lawn.

3,414,064
ADJUSTABLE ROTARY HOE
William E. Foster, R.R. 6, Box 1038, Kokomo, Ind. 46901
Filed Aug. 19, 1965, Ser. No. 480,907
3 Claims. (Cl. 172—311)



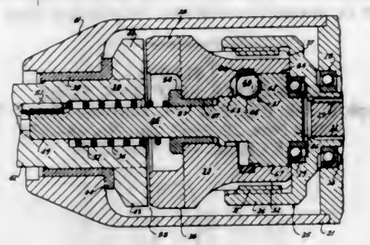
A farm implement of the rotary hoe type wherein multiple hoe sections or gangs are so constructed and arranged as to be readily extended to a substantial width for farm or field use, and can be easily retracted to a much lesser width for travel or for storage.

3,414,065
ROTARY IMPACT TOOL
Ronald C. Falter, Dayton, Ohio, assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 26, 1967, Ser. No. 633,761
6 Claims. (Cl. 173—93.5)



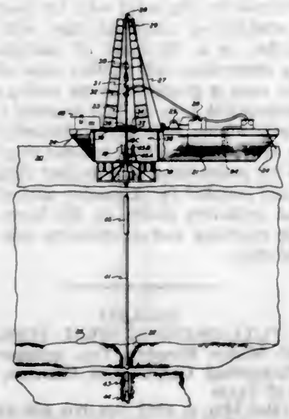
A rotary motor drives a cup-shaped hammer with inwardly projecting lugs. An anvil extends into the hammer and supports a pair of dogs connected by a yoke mounted on a sleeve which can slide on a splined spindle rotating with the anvil. A spring urges the sleeve to move the dogs out of the path of the lugs. A cam mounted on the hammer engages a ball carried by the sleeve and pushes against the spring causing the hammer to impact the anvil through the dogs in response to rotation of the hammer relative to the anvil.

3,414,066
IMPACT WRENCH
William K. Wallace, Barneveld, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 31, 1966, Ser. No. 576,368
16 Claims. (Cl. 173—93.6)



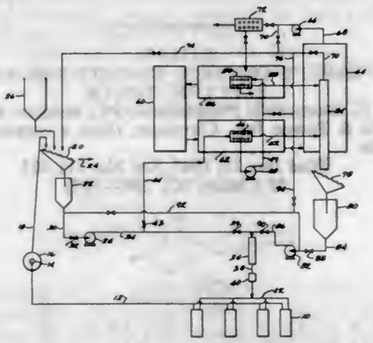
A impact wrench is disclosed having a rotating dog that is periodically movable axially against a return spring into impacting relation with an anvil when a cam carried by the dog has cooperation with a ball rollable about a track defined between the dog and an extension of the anvil. The cam is cooperable with the ball only when the ball is located in a particular area of the track. The ball is caused to be rolled about the track to the particular area by means of a friction ring carried by the dog, and is then released of the ring as it enters the particular area. During a cam action the ball is forced over an abutment in its path into a relatively deep area of the track where, following an impacting action of the dog with the anvil, the ball is again frictionally gripped by the ring and again rolled about the track.

3,414,067
DRILLING
Robert F. Bauer, Whittier, Hal Stratton, Pasadena, and Aaron D. Rhodes, Arcadia, Calif., assignors, by direct and mesne assignments, to Shell Oil Company, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 28, 1957, Ser. No. 649,137
21 Claims. (Cl. 175—7)



2. Apparatus for carrying out operations such as drilling and working in a well in a formation underlying a body of water comprising a floating vessel, a generally upright elongated hollow conductor disposed beneath the vessel so the upper end of the conductor terminates in the vicinity of the vessel, an anchor including an opening therethrough communicating at one end with the upper end of the well, releasable coupling means for connecting the lower end of the conductor to the anchor to form through the opening in the anchor a continuous conduit between the well and the vessel, means for moving equipment to and from the well through the conductor, remote control means for releasing the coupling means from the water surface to permit the conductor and anchor to be separated from each other, and means for guiding the conductor from the floating vessel to the anchor so the coupling means connects to the anchor to form the said continuous conduit.

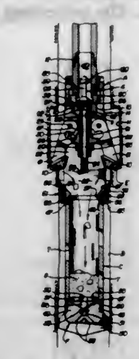
3,414,068
METHOD OF TREATING ABRASIVE-LADEN DRILLING LIQUID
Joseph L. Pekarek, Penn Hills Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,350
5 Claims. (Cl. 175—67)



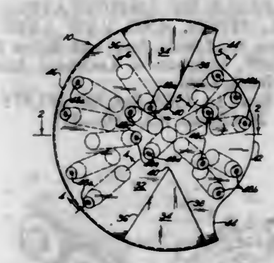
In a hydraulic jet drilling method in which high-velocity streams of a liquid laden with ferrous abrasive particles are used to penetrate the formation being drilled, excessive increases in the density of the drilling liquid must be prevented to avoid high pumping costs. Two to fifteen percent of the drilling liquid circulated is treated to remove all solid particles larger than 200 mesh to thereby form a clean liquid which is then circulated in the well. The treatment of drilling liquid and substitution of clean drilling liquid can be accomplished either continuously or periodically.

3,414,069
APPARATUS FOR RECOVERING FORMATION WALL SAMPLES FROM A BORE HOLE
Archer W. Kammerer, Jr., Fullerton, Calif., assignor of one-fifth to Jean K. Lamphere and three-fifths to Archer W. Kammerer, Fullerton, Calif.
Filed Aug. 8, 1966, Ser. No. 570,829
26 Claims. (Cl. 175—268)

1. In apparatus for cutting and retrieving formation samples from the wall of a bore hole: a rotary drill bit adapted to be lowered in the bore hole and having initially retracted cutter means expandable laterally outwardly to produce cuttings from the wall of the bore hole and to enlarge the diameter of the bore hole incident to rotation of the drill bit and its cutter means; and formation collecting means secured to and depending from the lower portion of said drill bit and having an upper opening through which the cuttings can drop into the formation collecting means; said rotary drill bit having means for connecting said bit to tubular drill string means extending to the top of the well bore and also having a longitudinal passage communicating with the tubular drill string means for conducting fluent material between said drill bit and the top of the well bore.



3,414,070
JET DRILLING BIT
Joseph L. Pekarek, Penn Hills Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of abandoned application Ser. No. 311,088, Sept. 24, 1963. This application Oct. 19, 1966, Ser. No. 587,910
12 Claims. (Cl. 175—393)



A drill bit for use in hydraulic jet drilling in which a portion of the periphery of the drill bit is at a first radial distance from the center of rotation of the bit and a second portion of the periphery of the bit is at a lesser radial distance from the center of rotation of the bit. Nozzles extend downwardly through the bottom of the bit adjacent each of the portions of the periphery to allow flow of the abrasive-laden drilling fluid and cuttings from nozzles adjacent both portions directly into space surrounding the drill bit without crossing the flow from other nozzles.

3,414,071
ORIENTED PERFORATE TEST AND CEMENT SQUEEZE APPARATUS
Jack B. Alberts, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,827
11 Claims. (Cl. 175—4.51)

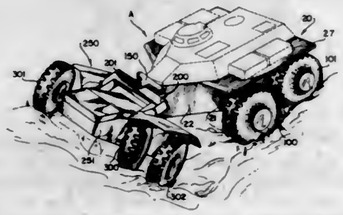
Method and apparatus for testing formations in a well bore. The apparatus includes a packer secured to the lower end of a tubing string. An opening in the wall of

the packer is provided between upper and lower packer elements which engage the wall of the well casing. The interior of the packer has an internal shoulder that forms a seat for perforating and cementing tools. A lug in the packer orients the tool rotationally with respect to the opening in the packer. The cementing tool has a cement-



ing head connected with upper and lower portions of the tool by toggle links which project the head through the opening in the packer upon movement of the upper and lower portions of tool toward each other. The cementing tool includes an explosive device for displacing cement slurry from a chamber in the tool through the cementing ports in the cementing head.

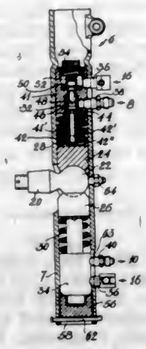
3,414,072
VEHICLE CAPABLE OF ARTICULATING ABOUT ROLL, PITCH, AND YAW AXES
Wetmore Hodges, Jr., Menlo Park, and Ralph R. Roesky, Los Altos, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 16, 1965, Ser. No. 487,675
20 Claims. (Cl. 180—51)



A highly maneuverable wheeled vehicle consisting of a rear "truck" member having two pairs of wheels mounted on a walking beam, and a front "truck" attached to the rear truck in a highly articulate manner providing for relative movement on pitch, yaw, and roll axes simultaneously.

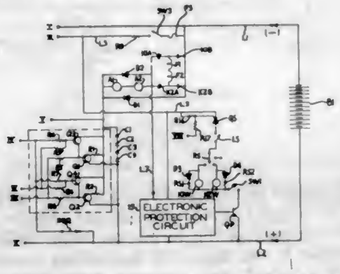
3,414,073
CONTROL DEVICE FOR VEHICLE POWER STEERING MECHANISM
Alexander Hurwitz, 33 Yawniell St., Givatayim, Israel
Filed Feb. 23, 1967, Ser. No. 617,874
5 Claims. (Cl. 180—79.2)

A control device for a vehicle power steering mechanism comprises a tubular housing forming a portion of the vehicle steering rod, a ball displaceable within the housing in accordance with the direction of steering, and valves on opposite sides of the ball controlling the power fluid in accordance with the direction of displacement of the ball. The device includes a spring on each side of the ball and a plug movable within an end of the housing for compressing the springs and thereby varying the manual



force required to actuate the power steering mechanism. The plug is formed with a diametrical slot receiving a pin, and the housing end is formed with a plurality of pairs of diametrically opposed openings receiving the pin ends.

3,414,074
SAFETY CONTROL CIRCUIT FOR AN ELECTRIC TRUCK
Alan C. Dannettell, Philadelphia, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 23, 1967, Ser. No. 611,103
10 Claims. (Cl. 180—101)

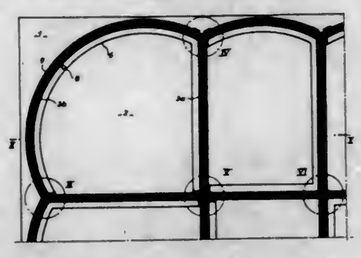


In an electric truck, seat-operated contacts are provided for deenergizing the truck's traction motor when the operator of the truck leaves his seat and for simultaneously protecting semiconductor speed control circuitry which varies the energization of the motor. Further means are provided for preventing energization of the motor until bias voltages are provided to the semiconductor circuitry.

3,414,075
FLEXIBLE SKIRTING SYSTEM FOR SURFACE EFFECT MACHINES
Jean Henri Bertin, Neuilly-sur-Seine, France, assignor to Bertin & Cie, Paris, Seine, France, a company of France
Continuation-in-part of application Ser. No. 165,634, Jan. 11, 1962. This application Apr. 19, 1965, Ser. No. 449,009
Claims priority, application France, June 30, 1961, 866,604, add. application 80,047; Apr. 20, 1964, 971,607, Patent 1,421,301
8 Claims. (Cl. 180—121)

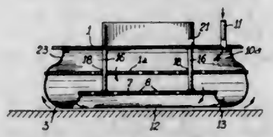
A surface effect machine of the multi-cushion kind operable with distinct pressure fluid cushions positioned next to each other and surrounded by a yieldable skirting

system which comprises a peripheral wall lobated in plan and formed by a succession of outwardly-convex arcuate flexible skirt portions connected to form said wall at cuspidal edges thereof, and inner lobe separating means



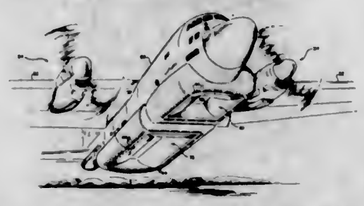
formed by one or more substantially planar flexible partitions extending substantially rectilinearly from said cuspidal edges inwardly of said peripheral wall and forming therewith junctions which are generally Y-shaped in plan with each partition being the leg of the Y.

3,414,076
GAS-CUSHION DEVICES INTENDED TO SUPPORT OR GUIDE A MOVABLE LOAD
Jean Henri Bertin, Neuilly-sur-Seine, and Michel Jules Jacquot, Suresnes, France, assignors to Bertin & Cie, Paris, France, a company of France
Filed Apr. 27, 1966, Ser. No. 545,616
Claims priority, application France, Apr. 30, 1965 15,435
7 Claims. (Cl. 180—124)



A pressure fluid-cushion device for a surface effect machine or the like movable along a bearing surface, comprising an annular bead made of flexible fluidtight material, a radially outer portion of said bead being attached to a rigid structure of said machine and a radially inner portion of said bead being secured to a fluid permeable central member mechanically linked to said structure, said bead being arranged to be inflated by said fluid thus to present a convex surface towards said bearing surface and to laterally confine the fluid cushion built up by pressure fluid crossing said central member.

3,414,077
AIR CUSHION VEHICLE
Thomas Desmond Earl, 421 Johnson St., Niagara-on-the-Lake, Ontario, Canada
Filed Aug. 29, 1966, Ser. No. 575,663
1 Claim. (Cl. 180—128)



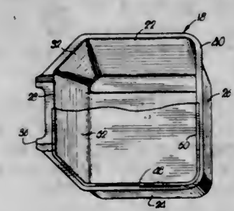
A ground effect vehicle is provided with an inflated flexible trunk provided with air bleed-off openings and valve mechanism associated with the openings to regulate air flow therethrough.

3,414,078
TUNED RESONANCE MUFFLER
Louis Andersson, Gotgatan 73, Stockholm, Sweden
Filed Apr. 11, 1966, Ser. No. 541,607
Claims priority, application Switzerland, Mar. 15, 1966, 3,712/66
8 Claims. (Cl. 181—48)



A sound muffler for combustion engines is disclosed. The sound muffler comprises an elongated hollow casing having an inner tube concentrically mounted therein, a portion of the inner tube extending into the hollow casing and a portion of the inner tube extending outside the hollow casing past the rear end thereof. The portion of the inner tube extending into the hollow casing terminates within the hollow casing at a location approximately equal to one half the total length of the hollow casing at approximately the location of a node of a standing wave generated therein. A ring member is provided for sealing the rear end of the hollow casing about the inner tube whereby an annular intermediate compartment is formed between the inner tube and the hollow casing. The relative positioning and dimensions of the hollow casing and the inner tube are such that sound is dampened as efficiently as possible and, at the same time, as small resistance as possible exists opposing the departing exhaust gases.

3,414,079
TOE-ROOM AERIAL BUCKET WITH REMOVABLE LINER
Raymond J. Wacht, Overland Park, and George H. Eckels, Prairie Village, Kans., assignors, by mesne assignments, to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed June 27, 1967, Ser. No. 649,267
6 Claims. (Cl. 182—46)

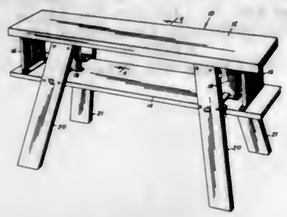


An aerial basket is provided having four major sides, each pair of opposed sides being inclined in the same direction to provide two working stations with normal toe room. The opposed sides diverge as the open top of the basket is approached to facilitate the insertion and removal of a polyethylene liner through the top. The liner, when in place, provides a composite bucket assembly of determinable insulation value having the same amount of toe room as is available when the liner is removed.

3,414,080
COLLAPSIBLE SAWHORSE
Edmund J. Doucette, 50 Monmouth Blvd., Oceanport, N.J. 07757
Filed May 16, 1967, Ser. No. 638,785
6 Claims. (Cl. 182—155)

A collapsible sawhorse having spring-biasing means

connected between the sawhorse body and each sawhorse leg for automatically biasing each leg upon manual guidance thereof into its terminal mounted or travel position.

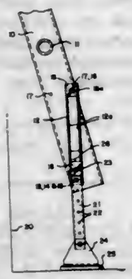


3,414,081
CONTRACTIBLE LADDER
Albert F. Wedvik, 1615 2nd Ave. W., Seattle, Wash. 98119
Filed May 18, 1967, Ser. No. 639,446
1 Claim. (Cl. 182—160)



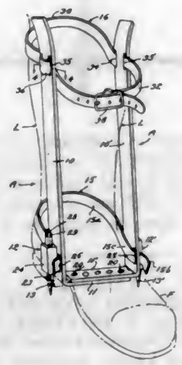
A contractible ladder having spaced-apart legs joined by end-pivoted rungs provided with stops bearing on leg surfaces to maintain themselves horizontal and to limit downward movement of the outer leg even though otherwise unsupported.

3,414,082
LADDER LEG EQUALIZERS
Willard L. Gilland, 2487 Driftwood Drive, Bethel Park, Pa. 15102
Filed Apr. 27, 1967, Ser. No. 634,175
2 Claims. (Cl. 182—204)



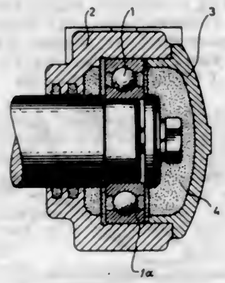
A ladder leg equalizer for metal ladders rotatable about the end of a ladder leg and extensible generally parallel to the vertical surface against which the opposite end of the leg of the ladder is placed.

3,414,083
CLIMBER OR HIKER ASSIST DEVICES
Arland Rininger, R.F.D. 1, Wadsworth, Ohio 44256
Filed Apr. 3, 1967, Ser. No. 628,099
1 Claim. (Cl. 182—221)



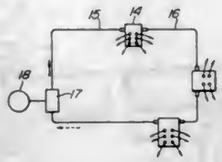
Title-indicated devices, each pair having two L-shaped side members adjustably joined at their overlapped base portions, each member carrying a vertically adjustable spike, each device having two securing straps or the like embracing leg and foot portions of the user, and being looped through paired holes in respective side members.

3,414,084
PROCESS OF LUBRICATING AND SEALING ROLLER BEARINGS AND ARTICLE MADE FROM THE PROCESS
Curt Bues, Gollenshausen Post Gstadt, Hans-Albert Granzin, Sprendlingen, Gerhard Pfleiderer, Kelkheim, Taunus, and Heinrich Anger, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed May 4, 1965, Ser. No. 453,193
Claims priority, application Germany, May 11, 1964, K 52,920
5 Claims. (Cl. 184—1)



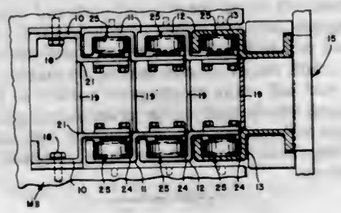
Lubrication and sealing of roller bearings by introducing into the interior thereof a polytetrafluoroethylene powder which will coat the bearing elements and sealing cushions and fill in the voids upon expansion with use, and roller bearings so lubricated and sealed.

3,414,085
CENTRALIZED LUBRICATING SYSTEM
Hiroshi Fujita, Notogawacho, Japan, assignor to Daikin Kogyo Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Feb. 1, 1966, Ser. No. 524,268
Claims priority, application Japan, Feb. 3, 1965 (utility models), 40/7,820, 40/7,821; Feb. 5, 1965, 40/6,471
4 Claims. (Cl. 184—7)



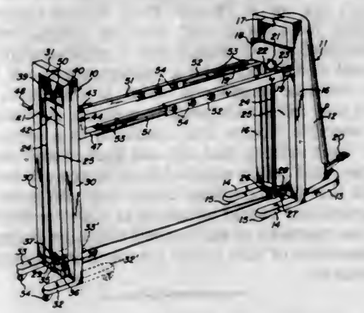
A distributing valve assembly of the type adapted to be connected in series with another like distributing valve assembly in a loop of pipe in a centralized lubricating system comprising a pilot plunger having a check valve at either end for controlling the passage of lubricant, a plurality of metering plungers, and a metering-change over plunger. Passageways are provided at the ends of the plungers to allow the lubricant to be distributed by the successive operation of the metering plungers, and a central lubricant return passageway communicates with the center of the metering-change over plunger and the pilot plunger to allow the lubricant to exit through one of the check valves after movement of the metering-change over plunger.

3,414,086
PLURAL UPRIGHT MECHANISM
Bronislaus I. Ulinski, Jenkintown, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 19, 1966, Ser. No. 573,531
17 Claims. (Cl. 187—9)



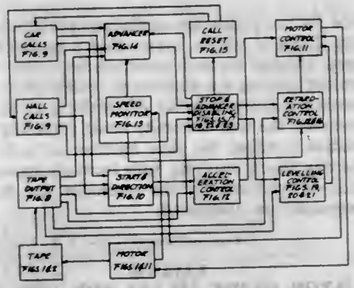
An upright construction for lift trucks in which the cross section of the upright sections has opposed channels with a common web of improved strength and rigidity. The upright cross section is substantially S shaped with upper and lower rollers bearing against the common web of adjacent uprights. The upright construction is adaptable for one or several uprights that may be needed for a required amount of lift, and the first upright is mounted on the truck in any one of several predetermined locations relative to the predetermined load lifting plane depending on the number of uprights required.

3,414,087
AUXILIARY LIFT APPARATUS
Gregory E. Schmiesing, R.R. 1, New Bremen, Ohio 45869
Filed Apr. 3, 1967, Ser. No. 627,950
13 Claims. (Cl. 187—11)



Auxiliary Lift Apparatus for use in supplementing the available lift capacity of a powered unit such as a fork lift truck characterized by a uniquely mounted lift device which incorporates novel means for deriving its own power from a conventionally powered lift unit.

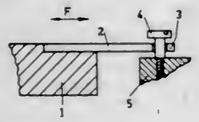
3,414,088
PHOTOCELL POSITION DETECTOR FOR ELEVATOR CARS INCLUDING A PERFORATED TAPE UNIQUELY ENCODED FOR EACH POSITION WITH RESPONSIVE CONTROL MEANS
William Henry Bruns, Lincolndale, Lew H. Diamond, Massapequa, and Herbert Jacoby, New York, N.Y., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 22, 1961, Ser. No. 154,132
36 Claims. (Cl. 187—29)



1. In combination with an elevator car arranged for vertical movement in a hoistway and serving a plurality of landings, a plurality of electric signal producing means, each having two output terminals, means responsive to car movement for selectively energizing said signal producing means in predetermined binary coded combinations corresponding to the location of said car at preselected positions in said hoistway, diode matrix means having a plurality of input terminals electrically connected to said output terminals of said signal producing means and also having a plurality of output terminals, one for each of said preselected positions, said diode matrix means being arranged to decode said predetermined coded combinations by selectively producing in response thereto electrical signals at said matrix output terminals in accordance with the corresponding location of said car, and enabling means with two output terminals responsive to the location of said car outside a predetermined region located at each said preselected position to

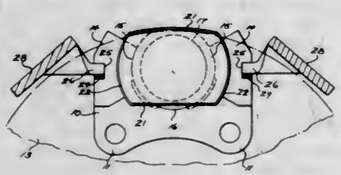
prevent said diode matrix means from decoding notwithstanding the production of one of said predetermined coded combinations, said enabling means being operable when the car enters any one of said predetermined regions to enable said diode matrix means to decode the predetermined coded combination produced for the position at which the car is located, each of said electric signal producing means and said enabling means including a unidirectional power source and a photosensitive switch, each said switch including a photosensitive cell having a certain resistive impedance which in responsive to light striking said cell is substantially reduced, each said switch being operable from a first condition to a second condition by light striking said cell and back to said first condition when said cell in shielded from light, each said switch when in said first condition connecting said power source to its associated output terminals in a first certain manner and when operated to said second condition interchanging the connection of said power source to its associated output terminals.

3,414,089
DEVICE FOR PROTECTING A MECHANICAL RESONATOR AGAINST SHOCK
Henri Charles Schneider, Mon Abri, Switzerland, assignor to Centre Electronique Horloger S.A., Neuchatel Switzerland, a company of Switzerland
Filed Oct. 28, 1966, Ser. No. 590,309
Claims priority, application Switzerland, Nov. 30, 1965, 16,452
10 Claims. (Cl. 188—1)



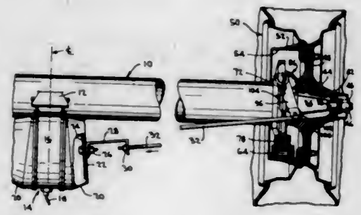
Device for protecting an oscillating mechanical resonator from shock in which is provided a resilient member positioned parallel to and co-acting with the resonator, the member having an elastically deformable extremity and another, rigidly secured extremity together with a plate member, the free extremity being vertically displaceable relative to either the plate member or to the resonator, whereby shock resulting both from an increase in the amplitude of oscillation of the resonator and from vertical movements are dampened.

3,414,090
ACTUATOR GUIDE MEANS FOR DISC BRAKE
Stewart K. Hambling, Tamworth, England, assignor to Girling Limited, Tyseley, England, a British company
Filed Apr. 13, 1966, Ser. No. 542,246
Claims priority, application Great Britain, Apr. 13, 1965, 15,591/65
1 Claim. (Cl. 188—73)



In a disc brake of the sliding yoke reaction type one friction pad is applied directly to the disc by a piston working in a cylinder which in turn is slidably guided on radially extending ribs in a stationary member and engaging a minor portion of the outer area of the cylinder to move the yoke axially and bring a second friction pad carried by the yoke into engagement with the opposite face of the disc when the cylinder is pressurized.

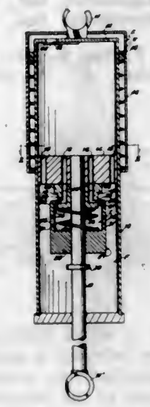
3,414,091
SINGLE-SHOE BRAKING SYSTEM
Leonard Troy, 611 N. Webster Ave., Scranton, Pa. 18510
Filed Apr. 2, 1965, Ser. No. 445,207
5 Claims. (Cl. 188—78)



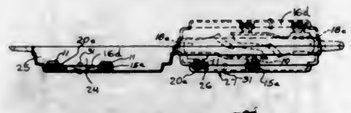
1. In a vehicle brake system, an axle, a brake drum journaled on the end of said axle and including an annular brake surface, said brake drum opening away from the end of said axle, and at least one brake shoe assembly mounted on said axle within said brake drum, said brake shoe assembly comprising a bracket mounted on said axle and including a support portion and a fulcrum portion extending radially from said axle, an arcuate brake shoe pivotally engaged at one end to said support portion on a pivot axis spaced from said axle, spring means connected between the other end of said brake shoe and said bracket for normally urging said brake shoe away from said annular braking surface of said drum, said fulcrum portion including bearing lip means disposed in opposed relation to an intermediate portion of said brake shoe remote from the pivot axis thereof, bell crank means engaged with said bearing lip means and including a lever portion extending toward the other end of said brake shoe and including a portion for connection to a force transmitting rod, said bell crank means including a socket portion opening toward said brake shoe, said brake shoe including a socket portion opening toward the socket portion of said bell crank means, and push rod means abuttingly engaged between socket portions of said bell crank means and said brake shoe whereby pivotal movement of said bell crank means on said bearing lip means by movement of said bell crank means lever portion in the direction toward which said brake drum opens causes said brake shoe to be urged into engagement with said annular braking surface against the force imposed by said spring means.

3,414,092
SHOCK ABSORBING DEVICE
Frank H. Speckhart, 84 Cornelia Drive, Rochester, N.Y. 14606
Filed Jan. 3, 1967, Ser. No. 607,025
4 Claims. (Cl. 188—100)

This is a method of and apparatus for controlling the damping of movement of the unsprung mass of a vehicle with respect to the sprung mass of the vehicle in response to the time rate of change in velocity of the unsprung mass to reduce the amount of "jerk" or time rate of change of acceleration transmitted from the unsprung mass to the sprung mass of the vehicle. The shock absorbing device has a conventional fixed opening through the piston thereof for the passage of fluid therethrough and a valve which opens in response to acceleration of the unsprung mass of a vehicle to reduce the damping ability of the shock absorbing device.

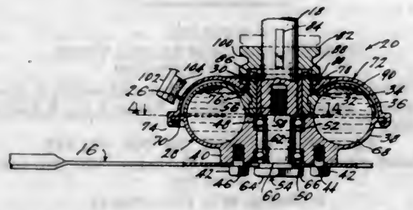


3,414,093
SHOE RACK AND CARRYING CASE
Chester R. Chostner, 222 Vale Ave., Rockford, Ill. 61107
Filed Aug. 30, 1966, Ser. No. 576,119
11 Claims. (Cl. 190—16)



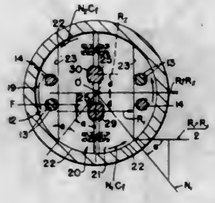
The shoe rack has adhesion pads of Velcro provided thereon in spaced relation and there are mating pads of Velcro provided on the bottoms of the shoes enabling the shoes to be held detachably on the rack by adhesion of the pads. A carrying case having hinged halves with generally rectangular recesses provided in the bottoms thereof, receive generally rectangular shoe racks on which the shoes are mounted, at least one of these racks being removable and there being suspension means on one longitudinal edge portion of the removable rack enabling the same to be hung up for better display of the shoes carried thereon, the suspension means being further movable to a propping position to prop the rack in an inclined position on a generally horizontal support.

3,414,094
FLUID DRIVE FOR ROTARY MOWERS
Hans Hauser, Fredericktown, Ohio, assignor to The J. B. Foote Foundry Co., Fredericktown, Ohio, a corporation of Ohio
Filed Oct. 31, 1966, Ser. No. 590,937
8 Claims. (Cl. 192—3.21)



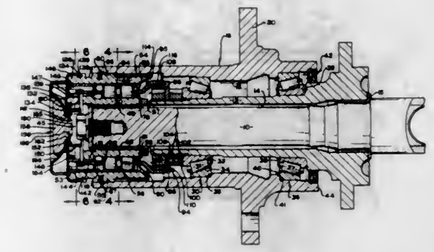
A fluid drive designed specifically for a lawn mower is provided. The drive has a unique clutch for engaging and disengaging a fluid clutch with a drive shaft and for braking the clutch housing when disengaged.

3,414,095
BALANCED BI-DIRECTIONAL NO-BACK DRIVE MECHANISM
Ilmars Kalns, Taylor, Mich., assignor to Formsprag Company, Warren, Mich., a corporation of Michigan
Filed Dec. 29, 1966, Ser. No. 605,872
14 Claims. (Cl. 192—8)



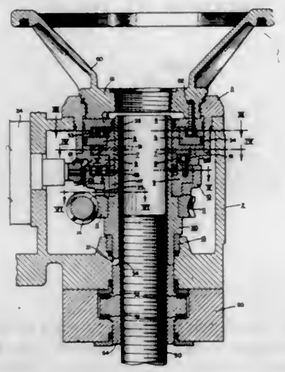
A no-back type clutch or anti-feed-back or torque transmitting mechanism is disclosed which has two brake shoes normally urged in a direction to engage a cylindrical brake drum surface, but separated from the latter by the action of driving pins on a power input member. The output member has driven and reaction transmitting pins extending between the brake shoes; and in response to an excessive torque load the output pins spread the shoes into braking engagement with the drum surface, thus limiting the feed back of torque to the input. The output pins react against the shoes on a greater length moment arm than do the input pins, with a resultant couple-balancing effect.

3,414,096
AUTOMATIC AND MANUAL MEANS FOR HUB CLUTCH
George R. Reed, Lambertville, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed June 17, 1966, Ser. No. 558,331
14 Claims. (Cl. 192—38)



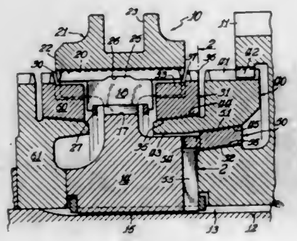
An automatically and manually actuated hub lock is provided by the use of a roller engaging means disposed between an inner race secured to the axle and an outer race secured to the hub. The roller engaging means is mounted between the inner and outer races and has axially extending portions which contact manually or automatically actuated restraining means to urge the clutch into engaged positions. The restraining means and roller engaging means are both floatingly mounted to provide free play of the parts so that, upon actuation, there is positive alignment and mating engagement of the parts to insure positive and efficient clutch operation.

3,414,097
TORQUE AND/OR THRUST OPERATOR
Walter J. Denkowski, King of Prussia, Pa., assignor to King of Prussia Research and Development Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Filed May 31, 1967, Ser. No. 642,502
10 Claims. (Cl. 192—48.91)



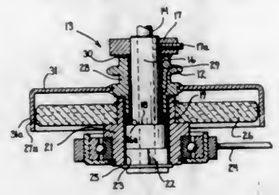
A clutch comprising a rotatable load shaft which is driven either rotationally or linearly by being alternately clutched to either a handwheel or electric motor through a rigid element carrying radially movable clutching rollers.

3,414,098
POSITIVE CLUTCH WITH MULTIPLE FRICTION SYNCHRONIZING DISKS
Donald W. Kelbel, Muncie, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 5, 1966, Ser. No. 584,534
9 Claims. (Cl. 192—53)



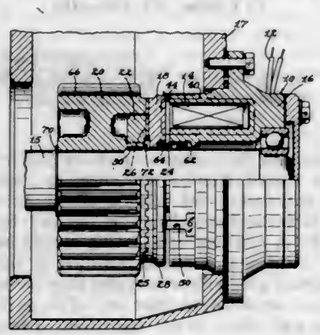
A synchronizer having a hub with a synchronizer ring drivingly connected thereto shiftable to establish a frictional connection between the hub and a gear to be synchronized therewith including a clutch sleeve drivingly connected to the hub and shiftable to establish a positive driving connection between the hub and the gear, a clutch drum drivingly connected to and axially movable with respect to the gear having a pair of clutch surfaces thereon, an annular ring drivingly connected to the hub and having clutch surfaces thereon engageable with one of the surfaces on said drum and a clutch surface on the gear, and the other clutch surface on the drum adapted to be engaged by said ring.

3,414,099
TILT MOTION CLUTCH STRUCTURE
Marion H. Davis, Hagerstown, Ind., assignor to V-Plex Clutch Corp., Hagerstown, Ind., a corporation of Delaware
Filed May 2, 1966, Ser. No. 552,369
6 Claims. (Cl. 192—65)



A clutch assembly in which frictional engagement of the driving and driven members is achieved by tilting or shifting the driven member with relation to the driving member, the movement of the displaced member being generally transverse to the axis of rotation of the driving member.

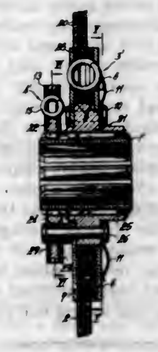
3,414,100
ELECTROMAGNETIC CLUTCH
Glenn S. Spencer, Big Flats, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,097
6 Claims. (Cl. 192—90)



A spring-engaged, electromagnetically-released clutch having a stationary electromagnetic coil and magnet body. The slidable armature which is spring-biased away from the coil and magnet body is the coupling member between coaxial torque-transmitting members having co-planar faces. One of the members is connected to a shaft for rotation therewith, while the other member may rotate free of the shaft. Suitable means, such as dentil teeth on the corresponding faces, may be engaged by the coupling member when the coil current is off to provide a fixed connection therebetween.

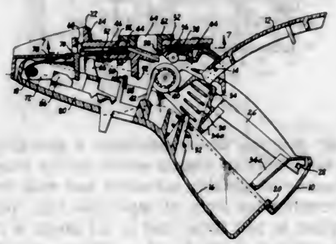
3,414,101
DRIVEN CLUTCH PLATE WITH FLEXIBLE CENTER
Richard Binder and Peter Geibel, Schweinfurt, Germany, assignors to Fichtel & Sachs A.G., Schweinfurt, Germany
Filed Nov. 16, 1966, Ser. No. 594,855
Claims priority, application Germany, Nov. 20, 1965, F 47,732
2 Claims. (Cl. 192—106.2)

The driven member of an automotive friction clutch has a hub attached to the clutch disc by vibration absorbing springs which resiliently resist angular displacement of the disc relative to the hub, and by lost motion connections which directly transmit torque between the hub and



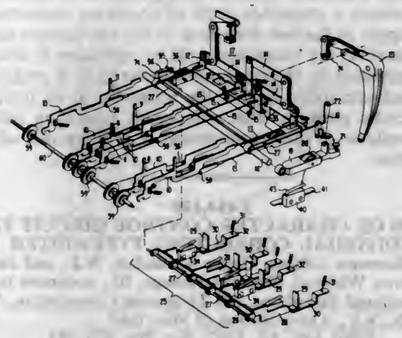
disc at a desired maximum deformation of the springs to relieve the latter of the transmitted force.

3,414,102
TAPE HANDLING MEANS FOR TAPE EMBOSSING TOOL
Ralph E. Norvelle, 112 La Questa Drive, Danville, Calif. 94526
Filed Feb. 7, 1966, Ser. No. 525,518
10 Claims. (Cl. 197—6.7)



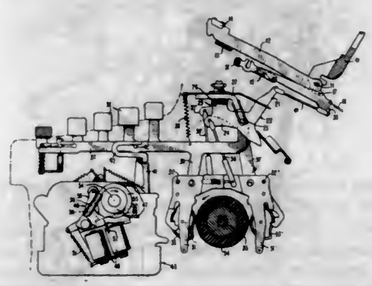
1. In a hand held embossing tool having a first body, a second body pivotally mounted on said first body for pivotal movement through an operating stroke toward and away from said first body, tape transport means on said first body operatively connected to said second body for advancing a tape an incremental distance along a tape path responsive to movement of said second body away from said first body, and embossing means on said first body for embossing indicia in a tape in said path responsive to movement of said second body through said operating stroke toward said first body, the improved means for scoring and cutting a tape in said path which comprises: knife means mounted on one side of said path for scoring and cutting a tape in said path, anvil means mounted on the opposite side of said path from said knife means, selectively operable connecting means for moving said knife means and anvil means into engagement with each other over a predetermined portion of the width of said tape path responsive to movement of said second body toward said first body, and selectively operable shifting means for moving said knife means and said anvil means toward each other for engaging a tape in said tape path while preventing said knife means from engaging said anvil means over said predetermined portion of the width of said tape path, with said connecting means and said shifting means operable alternatively for cutting and scoring a tape in said path.

3,414,103
SIGNAL RESPONSIVE AND SIGNAL GENERATING MEANS FOR SINGLE ELEMENT PRINT HEAD TYPEWRITER
Ronald N. Knudsen, Alexandria, Va., and Bela Kerper, Hillside, Md., assignors, by mesne assignments, to Epsco, Incorporated, Westwood, Mass., a corporation of Massachusetts
Filed Mar. 31, 1966, Ser. No. 539,075
18 Claims. (Cl. 197—20)



This invention relates to devices and circuitry for both sensing character and function operations and controlling such operations in a standard IBM Selectric Typewriter. Electrical signals, generated in response to the sensed operation of characters and typewriter functions, are used to perforate tape, control other typewriters or as input to data processing systems. Code signals from tape readers, other typewriters or data processing systems may control character and function operation of the typewriter.

3,414,104
REPEAT-CHARACTER-DELAY CODE TRANSLATOR SYSTEM
David F. Frick, Castro Valley, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,061
16 Claims. (Cl. 197—20)



The code translator is of the mechanical power driven type having a cycle-control clutch which is controlled to initiate each new translator cycle and during which a plurality of code permutation slides are set to permutational positions according to individual ones of the code elements in each of successive multiple code-element permutation electrical codes supplied to the translator. A plurality of translator seekers test each such permutational slide setting and are individually selected thereby for power drive actuation of a corresponding typewriter key lever to print successive alphanumeric and symbol characters during each of succesive translator cycles and at a

cyclic rate higher than the repeat-character printing rate of the typewriter. An electrical storage register, which may be of the bistable multivibrator or core storage type, stores during an interval following completion of each translator cycle the binary-zero and binary-one code bits of the permutation code supplied to the translator during such each translator cycle. This stored code is compared with the next code supplied to the translator to ascertain whether such next code is identical to or is different from the stored code. If the comparison shows a code difference, the translator cycle-control clutch is so controlled as to initiate a translator cycle of operation concurrently with supply of the new code to it. If the comparison shows code identity, the translator cycle of operation is delayed in its initiation by the cycle-control clutch or is prolonged by clutch-controlled halt of the translator at an intermediate cyclic position. This reduces the operating rate of the translator to the repeat-character printing rate of the typewriter.

3,414,105
CLASS OF CHARACTER CONTROL CIRCUIT FOR EDITORIAL CORRECTING TYPEWRITER

Paul Riemann Adams, Upper Montclair, N.J., and James Warren Whitesel, Western Springs, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

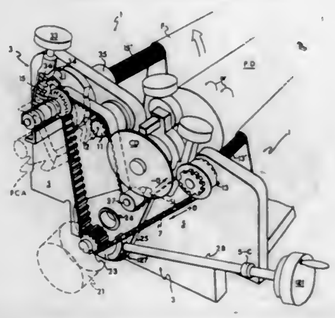
Filed Apr. 17, 1967, Ser. No. 631,293
19 Claims. (Cl. 197—20)

All characters and stunts are classified into one or more of a plurality of classes of characters. An automatic typewriter is adapted to print out a clean copy of text material. Responsive to a detection of any selected one or more of the classes of characters, the typewriter stops itself and the typist makes suitable corrections.

3,414,106
HIGH SPEED PRINTER WITH IMPROVED PAPER ENGINE ARRANGEMENT

Robert J. Moran, Littleton, Harold M. Shneider, Weston, Earl E. Masterson, Newtonville, and Gale J. Bunner, Randolph, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,909
1 Claim. (Cl. 197—133)

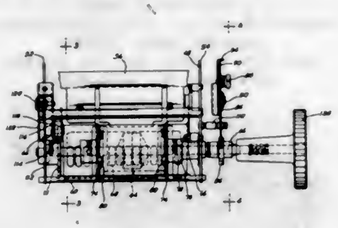


1. In a paper feeding arrangement for a high-speed printer including a stationary printer frame, upper and lower paper feed means mounted on said stationary printer frame for advancing a web of paper forms past a print station, and upper and lower tractor pulleys respectively connected to said upper and lower paper feed means, an improved paper tensioning arrangement in combination therewith comprising: a support means; journal means pivotally mounting said support means on said stationary printer frame between said upper and lower tractor pulleys; drive motor means mounted on said support means below said journal means and having a drive pulley connected thereto; a tension pulley rotatably mounted on said support means above said journal means, said tension pulley being adjustable radially relative to said journal means; an endless flexible timing belt means coupling said upper and lower tractor pulleys, drive pulley and tension pulley; and manually operable means mounted on said stationary printer frame and operable to pivot said support means about said journal means; the arrangement being such that pivoting of said support means together with said drive motor means, drive pulley and tension pulley disposed thereon about said journal means effectively rotates one of said upper and lower tractor pulleys relative to the other of said upper and lower tractor pulleys through said timing belt means, thereby to tension said web in said high-speed printer by varying the relative phase between said upper and lower paper feed means without significantly affecting the tension along said timing belt means.

3,414,107
FORM PRINTING DEVICE

William E. Sievers, Morton Grove, Ill., assignor to Victor Comptometer Corporation, a corporation of Illinois

Filed Sept. 11, 1967, Ser. No. 666,804
5 Claims. (Cl. 197—133)



The form printing device includes a plurality of individually settable print wheels which are set from a keyboard by means of slidable actuators and rack bars. The form is a continuous strip of separable tags, tickets, or labels supplied in roll form and is fed about a rotatable platen. The platen is made of a rubber or rubberlike tube into which are pressed a pair of aluminum extrusion cores. A pair of end plates having hubs are secured by set screws to the platen shaft which extends through the cores. The end plates are formed with equally spaced inwardly projecting offsets which engage in notches formed in the platen tube and in notches formed in the edges of the form strip to drive the platen and to feed the form. The platen shaft is rotated on every cycle of the device by a pawl and ratchet wheel drive a distance sufficient to feed the form a distance equal to the spacing between notches. A star wheel on the platen shaft and a spring biased detent hold the shaft and platen against inadvertent rotation. A thumb wheel on the shaft is used for manual feeding of the form.

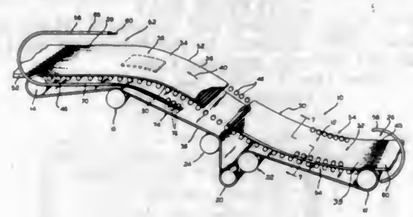
3,414,108
INCLINED MOVING WALKWAY ARRANGEMENT

Randolph H. Jackson, Aurora, Byron J. Eddy, Naperville, Kenneth D. Mitchell, Oswego, Ernest D. Johnson and Charles G. Hall, Aurora, and James E. Hicks, McHenry, Ill., assignors to Stephens-Adamson Mfg. Co., a corporation of Illinois

Filed Mar. 27, 1967, Ser. No. 626,003
15 Claims. (Cl. 198—16)

This invention relates to an inclined moving walkway arrangement of the moving sidewalk type in which the walkway is defined by an endless conveyor belt member

that is built for lateral stiffness but adequate longitudinal flexibility for belt training purposes, with the belt being trained between end pulleys on wheel-like rollers that support the side edges of the belt, with no solid support through the center of the belt, such as a slider plate, being employed for most of the length of the conveyor. The



moving walkway arrangement for the first time provides both a level entry and a level exit that is defined by the belt training arrangement, and a moving hand rail is provided which is driven by having its lower run releasably clamped to the lower run of the belt instead of having the hand rail driven through take off mechanisms from the conveyor driving end pulley.

3,414,109
TRANSPORTATION DEVICES HAVING MOVABLE HANDRAILS

Myron A. Clark, West Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 2, 1965, Ser. No. 511,165
6 Claims. (Cl. 198—18)

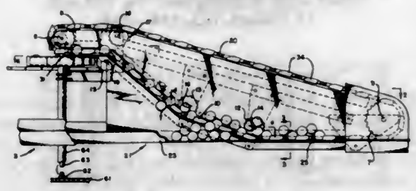


The return run of a moving handrail engages a plurality of successive traction rollers, each provided with a pressure roller. A cantilever mounting of rollers provides accessibility.

3,414,110
FEEDING APPLES IN SINGLE FILE FROM A BULK SUPPLY

Robert G. Ellis, Richmond, and Robert J. Singleton, Concord, Calif., assignors to Atlas-Pacific Engineering Company, a corporation of California

Filed Feb. 9, 1967, Ser. No. 615,000
7 Claims. (Cl. 198—30)

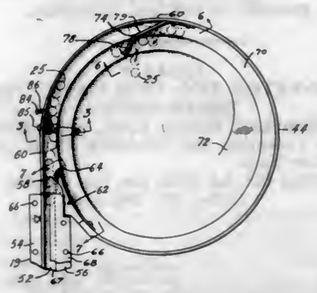


A chain type feeder takes apples from a bulk supply at a first lower elevation and arranges the apple in single file order for discharge horizontally one at a time at an elevated discharge station.

3,414,111
FEED HOPPER HAVING ADJUSTABLE ARTICLE ORIENTING MEANS

Richard B. Ernest, Richboro, Pa., assignor to Penn Engineering and Manufacturing Corporation, Doylestown, Pa., a corporation of Delaware

Filed Mar. 8, 1967, Ser. No. 621,534
8 Claims. (Cl. 198—33)

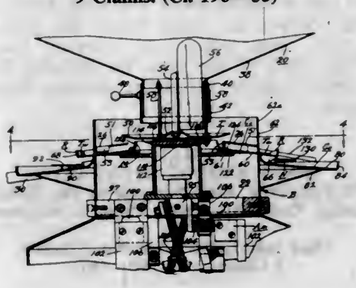


A vibratory hopper having a ramp or step along which a fastener or the like is movable. A plate carried by the hopper and positioned relative to the edge of the ramp so as to reject from the ramp a fastener whose center of gravity falls beyond the edge of the ramp. An adjusting means carried by the hopper and secured to the plate to move the plate toward or away from the edge of the ramp.

3,414,112
CAP FEEDING APPARATUS

Jacob Ravn, Phoenixville, Pa., assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania

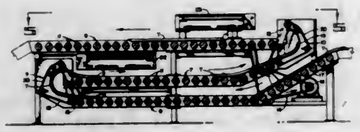
Filed June 8, 1967, Ser. No. 644,723
9 Claims. (Cl. 198—33)



A cap feeding apparatus for orienting caps of generally cup-like form used on containers, comprising an accumulation chamber wherein the caps are initially deposited in a random fashion, a generally circular tray disposed below the discharge end of the accumulation chamber and a bowl assembly wherein caps discharged from the tray are oriented so that they are all facing the same direction when they enter a discharge chute communicating with the bowl assembly, the discharge chute usually communicating with apparatus for applying the caps to containers. The bowl assembly consists of a first annular collecting chamber surrounding and overlying the outer peripheral edge of the tray, a second annular collecting chamber below the first chamber and a plurality of ramps providing a flow path for caps from the first to the second chamber. The ramps have selector cutouts whereby caps which are properly oriented slide over the selector cutouts and those caps which are not properly oriented drop through the

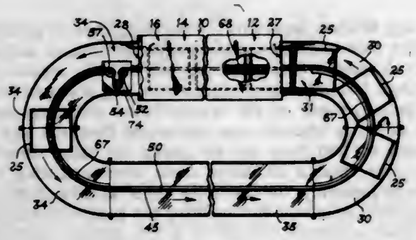
cutouts and are flipped over so that they enter the second collecting chamber in a properly oriented position. Means is provided for vibrating the bowl assembly to cause movement of caps therethrough. Further, the tray is normally connected to the vibratory actuating means for the bowl assembly to discharge caps from the tray to the first collecting chamber and automatically disconnected to stop discharge of caps from the tray when a predetermined load exists in either of the collecting chambers. This arrangement provides an overload protection.

3,414,113
CONVEYOR FOR PNEUMATIC TIRE TREAD PIECES
Walter J. Sutherland, Weston, Conn., assignor to Spadone Machine Company, Inc., Norwalk, Conn., a corporation of New York
Filed Oct. 14, 1965, Ser. No. 496,053
1 Claim. (Cl. 198—84)



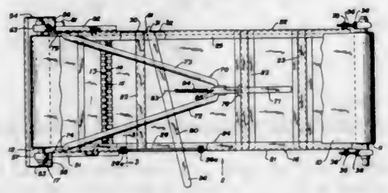
A conveyor machine for handling a wide range of sizes and weights of pneumatic tire tread pieces without adjustment wherein the tread pieces are subjected to a uniform gentle undulating and turn-around action stabilizing the tread by working the rubber while the tread pieces are in a relaxed state, thus relieving stresses in the extruded tread. The conveyor is characterized by open accessible vertically stacked conveyor sections and open accessible turn-around sections. The vertically stacked conveyor sections include a series of rollers whose rotation is synchronized, while the turn-around conveyors include a pair of spaced chains with strips forming flights extending between the chains which are guided along curved paths, these turn-around conveyors being open toward the inside of the turns for allowing the tread piece to move onto the succeeding conveyor section in a relaxed state.

3,414,114
DISHWASHING APPARATUS
Gerald B. Fox, Troy, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed July 7, 1967, Ser. No. 651,924
3 Claims. (Cl. 198—181)



The diswashing conveyor includes chain means moveable in a channel located in a supporting surface for dish racks. A portion of the chain protrudes above the level of the supporting surface to convey the racks. The drive means for the chain conveyor is located at one edge of the washer, see 54 in FIGURE 2, so as to draw the chain against the channel and permit the chain to return to an immediately adjoining channel.

3,414,115
AUTOMATIC SPRING TENSIONING OF CONVEYOR BELT
Lauren W. Gates, Stockton, and Nickolas A. Holtz, Sacramento, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Filed Mar. 27, 1967, Ser. No. 626,206
8 Claims. (Cl. 198—208)

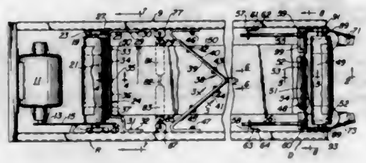


A belt conveyor is provided that has a main frame with two side panels rigidly joined by cross members and, a first pulley at one end. An auxiliary frame at the other end of said main frame has a second pulley and has side panels and a Y-frame structure with the two extremities of its branches secured to the two side panels of the auxiliary frame and meeting at a central stem extending lengthwise of the conveyor centrally between the side panels of the main frame. The auxiliary frame is guided for movement in line with and relative to the main frame, and the conveyor belt is supported by the pulleys. A bar extends generally laterally across the main frame between the stem and the second pulley, and a spring joins the stem to the bar midway between the side panels of the main frame.

Preferably, one side panel of the main frame has an elongated lengthwise-extending slot with ratchet teeth along one edge, and the other side panel of the main frame has a series of spaced openings opposite the slot. The bar has one end engageable in an opening of this series and the other end engaging in said ratchet and extending beyond to provide a handle.

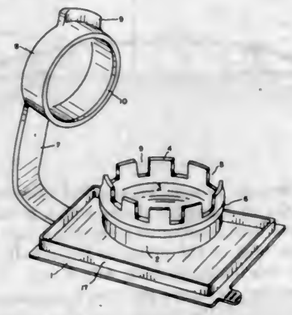
Each pulley is preferably supported by a bearing, which is supported by a holding means enabling adjustment for belt training. The bearing holding means comprises a bracket on the frame, a plate having a pair of threaded studs extending through openings in the bracket, nuts on each stud on each side of the bracket, and a flanged U-shaped member secured to the plate.

3,414,116
CONVEYOR SCRAPER MEANS
Robert F. Oury, Wayne, Ill., assignor, by mesne assignments, to Harsco Corporation, Wormleysburg, Pa., a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,450
11 Claims. (Cl. 198—230)



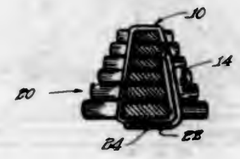
In a horizontal conveyor having a belt with an outer surface and an inner surface arranged between a receiving pulley and a discharge pulley to form a closed loop having a top side and a bottom side, the belt can be efficiently cleaned by providing, in the manner described hereinafter in detail, a discharge end scraper positioned in contact with the outer surface of the belt and located on the bottom side of the loop; a receiving end scraper positioned in contact with the inner surface of the belt and the surface of the receiving pulley; and skimming means positioned in contact with the inner surface of the belt and located on the bottom side of the loop between the receiving end scraper and discharge pulley.

3,414,117
CONTACT LENS CASE
Harry R. Leeds, 250 Ashley Drive, Rochester, N.Y. 14620
Filed Feb. 21, 1968, Ser. No. 707,184
7 Claims. (Cl. 206—5)



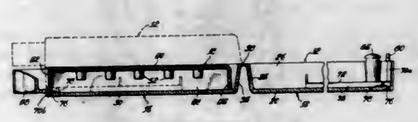
A case or holder for a fluid immersed contact lens. The case is provided with one or more orifices below the rim of the lens holding well to prevent the fluid level from rising to too high a level and allowing the lens to float over the rim edge, to prevent damaging the lens when the case lid is closed. A preferred form comprises a case well with a castellated rim.

3,414,118
BANDING TOGETHER OF ARTICLES
Aaron S. Jacobson, 534 Stratford Place, Chicago, Ill. 60657
Filed Nov. 29, 1966, Ser. No. 597,695
8 Claims. (Cl. 206—16)



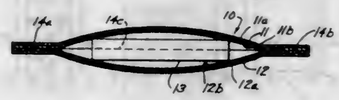
A strap for snugly holding a plurality of articles together comprising a flat, one-piece band of a heat-expandable plastic material, and fastening means therefor, said fastening means including interlocking male and female members positioned in spaced apart relation on said band, the spacing between said members being such that said members are difficulty engageable when said band, in a non-heat expanded condition encompasses a plurality of articles to be held thereby, and which is such that said members are readily engageable when said band, in a like situation, is in a temporary heat-expanded condition.

3,414,119
PILL CARRYING AND DISPENCING DEVICE
Eugene B. Finch, Jr., Elmwood Park, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,677
9 Claims. (Cl. 206—42)



A case for carrying and dispensing medicine pills or the like comprising a pair of generally similar outer sections hingedly interconnected at their rear edges and open at their front sides and a pair of trays open on one side positioned within respective sections with bottoms in back-to-back relation.

3,414,120
PACKAGING MATERIAL
John C. Sellers, Barrington, Ill., assignor to General Binding Corporation, Northbrook, Ill., a corporation of Illinois
Filed June 10, 1966, Ser. No. 556,621
3 Claims. (Cl. 206—46)

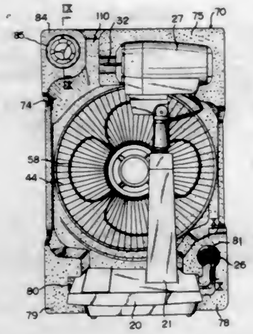


The instant invention relates to packaging material and the resultant package obtained by the use thereof, and more particularly, to a packaging material and package that is uniquely adapted to afford an effective packaging material which will permit sterilization of the contents thereof, after completion of the packaging, and without the necessity of either repeating sterilization later or opening, closing or otherwise tampering with the package itself subsequent to such sterilization, up to the ultimate time of desired use of the contents.

3,414,121
PACKING DEVICES FOR ELECTRIC FANS
Hiroshi Suzuki, Nagoya-shi, Japan, assignor to Tokyo Shibaura Denki Kabushiki Kaisha, Kanagawa-kau, Japan, a joint-stock company of Japan
Filed Dec. 26, 1967, Ser. No. 693,299
Claims priority, application Japan (all utility models): Dec. 29, 1966, 41/442, 41/443; Jan. 9. 1967, 42/2,107, 42/2,108, 42/2,109; Jan 13, 1967, 42/3,580, 42/3,581, 42/3,582; Feb. 28, 1967, 42/16,570, 42/16,571
8 Claims. (Cl. 206—46)

A packing box for packing component parts of an electric fan is comprised by a pair of complementary box halves each including a central recess and a second and third recesses on the opposite sides of the central recess whereby the sub-assembly including the motor, pedestal and base is accommodated in the central recesses and the second and third recesses, and fan guards

are accommodated in the central recesses on opposite sides of the pedestal in back-to-back relation. The sub-

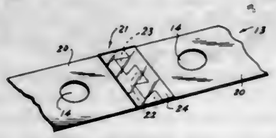


assembly is positioned in the packing box on one side of the center of the central recesses to stabilize the package.

3,414,122
MAILING CARTON FOR PHOTOGRAPHIC PRINTS AND/OR THEIR NEGATIVES
Adrian C. Runions, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 29, 1967, Ser. No. 694,575
9 Claims. (Cl. 206—47)

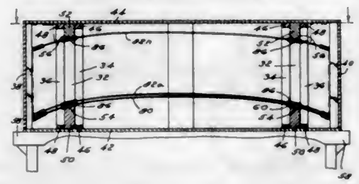
A carton which can be used by a film processor to mail a set of photographic prints and their corresponding negatives to a customer, and which can then be used by the customer to return the negatives to the processor for ordering extra ones of any of the prints. The carton is made from, and is stored practically until use as, a scored, cut and printed flat sheet of relatively heavy paperboard. For the most part, it is formed up as it is loaded with a customer's order of photographic prints and their corresponding negatives.

3,414,123
BELT FROM WHICH ARTICLES ARE TO BE DISPENSED
Donald D. Litt, Scarsdale, and David B. Jaroff, New York, N.Y., assignors to Miner Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 17, 1967, Ser. No. 609,845
2 Claims. (Cl. 206—56)



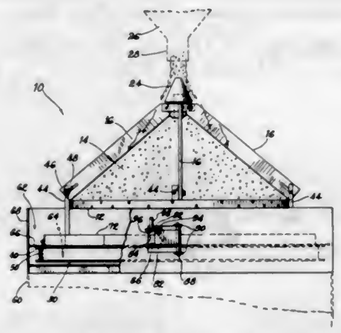
A flexible belt from which articles, particularly balloons, held in openings spaced along the belt are to be dispensed is formed in sections which are separably joined in end-to-end relation so that belt sections carrying balloons or other articles can be joined to belt sections already in a dispensing machine for replenishing the supply of articles to be dispensed. The joining together of the belt sections is achieved by forming the ends of the latter with mating projections which are held in interfitting relation by tape adhesively secured thereacross.

3,414,124
CONTAINER FOR SHEETLIKE MATERIAL
Edward J. Lidgard, Lathrup Village, Mich., assignor to Flotepak Corporation, Southfield, Mich., a corporation of Michigan
Filed May 5, 1967, Ser. No. 636,293
9 Claims. (Cl. 206—62)



An improvement in a packaging and shipping container for multiplicity of frangible plates which includes a four-wall enclosure with transverse supporting logs and unique means on the edge of the plates to frictionally engage the same and to mechanically lock with a log on one of the walls in a manner to secure the plates against endwise displacement, interlock the plates, and also space the plates.

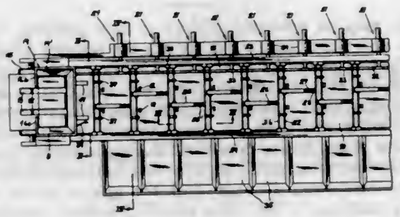
3,414,125
APPARATUS FOR SEPARATING FOUNDRY SAND
Henry J. Cakora, Pekin, Ill., assignor to Tazewell Machine Works, Inc., Pekin, Ill., a corporation of Illinois
Filed Apr. 4, 1967, Ser. No. 628,466
14 Claims. (Cl. 209—1)



A machine for removing tramp metal, core butts, and other foreign material from foundry sand or the like, comprising a circular platform for holding a pile of the sand, a rotatable support beneath said platform, one or more plows mounted on said rotary support and extending upwardly at an inclined angle from the periphery of said platform toward the axis thereof for striking off the sand

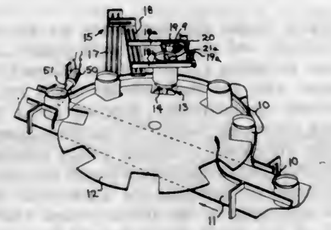
into a conical pile, means for directing contaminated sand upon the top of the pile, the sand itself being adapted to stick to the pile while the foreign bodies roll and slide down the pile and fly off the lower edge of the pile, an annular trough disposed outwardly and downwardly from the platform for catching the foreign bodies, the trough comprising a bottom wall rotatable with said support, a stationary cylindrical outer wall, and inner wall members adjustably mounted on said rotary support, the sand being adapted to fall downwardly from the edge of the pile through an opening between said platform and said trough, and a device for removing the foreign bodies from said trough.

3,414,126
BOOK-SORTING MACHINE
Vincent N. Vulcano, 136 E. 55th St., New York, N.Y. 10022
Filed May 23, 1966, Ser. No. 552,278
8 Claims. (Cl. 209—73)



Books stacked in a hopper are successively deposited on a conveyor and are photoelectrically scanned by a plurality of sorting stations along the conveyor path, recognition of a particular type of book by a corresponding sorting station resulting in the actuation of an associated ejector which discharges the book into an assigned receptacle.

3,414,127
METHOD AND APPARATUS FOR INSPECTING GLASS CONTAINERS
Thomas B. Sorbie, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 23, 1967, Ser. No. 618,222
10 Claims. (Cl. 209—88)

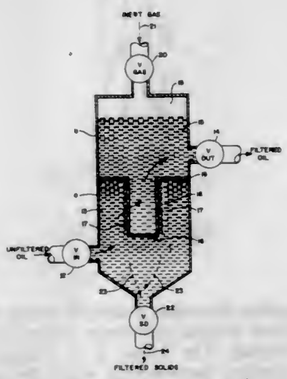


An apparatus and method for detecting rim surface defects in glass containers wherein the edge of a thin strip of flexible, resilient, mechanically durable tape is contacted with the sealing rim surface of the glass container while the rim surface is being rotated. The tape is supported in such a manner that it will buckle or flex when contacting a defect and this buckling will provide as amplified mechanical displacement which is converted to an electrical signal to operate a reject mechanism.

3,414,128
NITROGENOUS MATERIAL FRACTIONS OBTAINED FROM GILSONITE IN FROTH FLOTATION
Robert E. Baarson, La Grange, and Charles L. Ray, Wheaton, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware
No Drawing. Filed Sept. 24, 1965, Ser. No. 490,114
6 Claims. (Cl. 209—167)

A recovery of molybdenum or molybdenum and copper from metallic sulfide ores is brought about in a flotation operation in which finely-divided metallic sulfide ores containing molybdenum and iron or molybdenum, copper and iron are conditioned with a mixture of heterocyclic nitrogen compounds extracted from the mineral gilsonite and having an average boiling point within the range of about 200° F. to 750° F., the molybdenum or molybdenum and copper being separated as froth product.

3,414,129
HIGH TEMPERATURE, OXYGEN-FREE EDIBLE OIL FILTRATION
Louis H. Going, Deerfield Township, Warren County, Robert E. Mersfelder, Springfield Township, Hamilton County, and Robert O. Schmitt, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 27, 1967, Ser. No. 693,865
8 Claims. (Cl. 210—82)

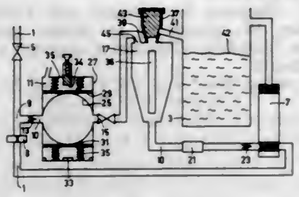


A process for high temperature (150–500° F.) edible oil filtration, which permits high speed filtration in the absence of oxygen and convenient removal of filtered solids from the filter apparatus, without exposure of the oil or filtered solids to air or water.

3,414,130
APPARATUS FOR REGENERATING A WATER SOFTENER IN COMBINATION WITH A WASHING MACHINE
Oswald Berzups, Hamburg-Garstedt, Germany, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,175
Claims priority, application Germany, July 29, 1964, P 34,785
2 Claims. (Cl. 210—97)

Apparatus for automatically regenerating the ion exchanger of a water softener for washing and rinsing machines wherein for forming a measured amount of the regenerator liquid, there is provided an adjustable ac-

cumulator having an elastic bladder member for receiving fresh water which measured amount of water is subsequently added to the exchange ion salt and supplied to the water softener.



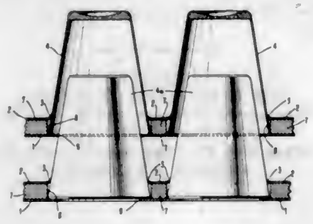
3,414,131
DIALYSIS FRAME FOR SPECIMEN CUVETTE
Turman E. Allen, Jr., Kensington, Md. (1616 15th St., Meridian, Miss. 39301)
Filed Oct. 4, 1966, Ser. No. 584,283
2 Claims. (Cl. 210—321)



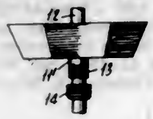
This invention comprises a dialysis frame used to form with a standard dialysis membrane tubing a chamber for specimen analysis. The frame is an elongated member having an opening therethrough which forms the chamber when the frame is inserted in the tubing. The frame includes an integral, generally U-shaped, filling and emptying pipe adapted to the configuration of the opening and extending upwardly for external filling and emptying of the chamber. The pipe originates in a syringe coupling, has a chamber filling and emptying hole disposed at the lower end of the chamber, and terminates in an aspirator coupling.

3,414,132
MOUNTS FOR OBJECTS SUCH AS GLASSWARE, PARTICULARLY FOR TRANSPORTATION AND DISPLAY
Roger Cornu, La Chapelle Saint-Mesmin, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Nov. 25, 1966, Ser. No. 596,967
Claims priority, application France, Dec. 2, 1965, 40,606
6 Claims. (Cl. 211—41)

A mount for the transport and display, especially of fragile articles such as glassware. The articles are arranged orderly on a backing plate or sheet, with their rims or bases of larger cross-sectional contour in contact therewith. A second plate has apertures correspondingly orderly arranged and each of which has a shape corresponding to the contour of the article in contact with the first or backing plate, but of slightly smaller size. After the articles are arranged upon the first plate, the second plate is moved downwardly into adjacent relation with the first, with each aperture therein passing over and fitting snugly about its respective article at a location near the contour thereof in contact with the first plate. The two plates are then secured together as by adhesive or by interposed spacers. The internal rims of the apertures may be upturned slightly in final position, by contact with the articles. The articles are thereby firmly held to the first plate and protected in packaging and transport. They are also attractively displayed. The first or backing plate may have apertures therein each concentric with but of smaller size than the corresponding apertures in the second plate. In the case of drinking glasses for example, the apertures in the first plate may be sized to fit down, a predetermined distance over the glasses of an underlying package or set, thus enabling orderly nesting and protection against breakage of the articles.



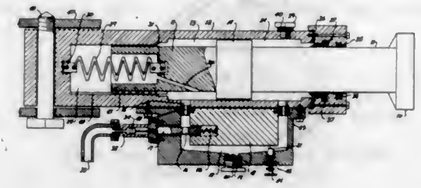
3,414,133
SMALL HANGING BASKET FOR BEACH UMBRELLAS
Rosa Innocenti Guerri, Via Arrigo Boito 23, Florence, Italy, and Lucio Abbiati, Via A. Alciati 5, Milan, Italy
Filed Aug. 30, 1966, Ser. No. 576,107
Claims priority, application Italy, Sept. 23, 1965, 9,326
3 Claims. (Cl. 211—133)



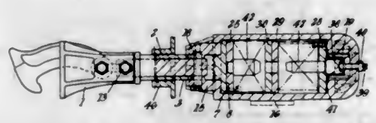
A hanging basket for positioning on the shaft of a beach umbrella and supporting small articles, comprising a container including a central sleeve adapted for slidable engagement with the shaft of the beach umbrella and wall portions symmetrically disposed about the central sleeve and connected thereto by partition members. The basket also comprises a tubular means adapted to slide along the shaft of the umbrella wherein the tubular means includes means for reducing the diameter of the tubular means to selectively fix the tubular means with respect to the shaft of the beach umbrella and position the container.

3,414,134
APPARATUS FOR SLACK CONTROL
Raymond N. Nealis, 11 Harvest Road, Levittown, Pa. 19056
Continuation of application Ser. No. 480,943, Aug. 19, 1965. This application Jan. 3, 1967, Ser. No. 629,837
11 Claims. (Cl. 213—43)

Apparatus for controlling slack between railroad cars including piston and cylinder means operatively connected between adjacent cars so that the relative motion between the piston and cylinder provides for slack, a fluid line between the cylinder chambers for conducting fluid between the same and mechanism in the line to stop the fluid flow and prevent the relative motion and thereby prevent slack.



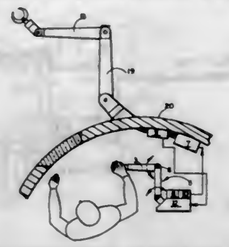
3,414,135
COUPLERS
Max Hubert Prophet Alexander Levie, Wolverhampton, England, assignor to F. H. Lloyd & Co. Limited, James Bridge Steel Works, near Wednesbury, Staffordshire, England, a British company
Filed June 23, 1966, Ser. No. 559,840
Claims priority, application Great Britain, July 23, 1965, 31,618/65
6 Claims. (Cl. 213—45)



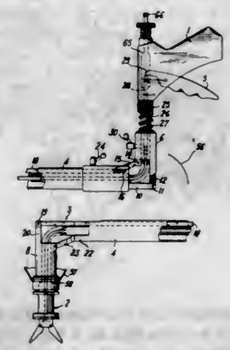
Railway buffing and drawgear in which a spring container includes first and second groups of parallel arms with the arms of the second group interdigitated with those of the first. Transverse inner abutment means is adjacent the inner abutment means of the other group and outer abutment means is remote from the outer abutment means of the other group. The inner abutment means of each group lies between the inner and outer abutment means of the other group to be capable of sliding in the space defined by the arms and inner and outer abutment means of the other group.

3,414,136
UNDERWATER MANIPULATOR SYSTEM
John R. Moore, Los Angeles, and James S. Sweeney, Laguna Beach, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Jan. 18, 1966, Ser. No. 521,323
8 Claims. (Cl. 214—1)

System for positioning an underwater manipulator arm to correspond with the position of an analog arm. The flow rate and pressure of the fluid transmitted to the hydraulic actuators used to move the manipulator arm are measured by transducers. The output of the transducers is integrated or otherwise processed by conversion circuits to produce a signal, indicative of the position of the manipulator, which signal is compared with another signal indicative of the analog arm position. An error signal thereby is produced which appropriately actuates valves controlling the fluid flow to the hydraulic actuators, thereby causing the manipulator arm to move to the desired position. Rate damping is provided to the analog arm to simulate the viscous damping experienced by the manipulator during motion in the viscous underwater medium.



3,414,137
REMOTE HANDLING DEVICE
Marcel Fortin, Le Chesnay, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed June 6, 1966, Ser. No. 555,563
Claims priority, application France, June 11, 1965, 20,455; Oct. 15, 1965, 35,206
6 Claims. (Cl. 214—1)

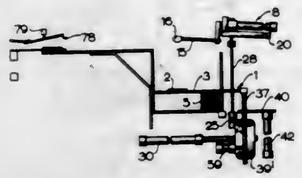


A remote controlled grab for use in a nuclear reactor has a control connected to the grab through a tubular member. The control has a sliding member mounted in a rotatable transmission member. The grab has a similar sliding member and rotatable transmission member. The sliding members are connected by flexible rods acting through the tubular member. A rotatable sleeve is mounted in the tubular member and is connected to the transmission members by serially connected universal joints. The tubular member is articulated to the control and to the grab.

3,414,138
DEVICE FOR THE AUTOMATIC REMOVING AND STACKING OF WORKPIECES, IN PARTICULAR OF SEWN WORKPIECES
Hubert Jünemann and Hans Scholl, Bielefeld, Germany, assignors to Firma Kochs Adlernahmaschinenwerke A.G., Bielefeld, Germany
Filed Oct. 20, 1965, Ser. No. 498,871
Claims priority, application Germany, June 8, 1965, K 56,327
9 Claims. (Cl. 214—6)

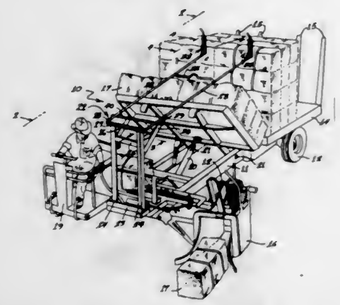
A device for the automatic removing and stacking of workpieces, in particular of sewn workpieces of flexible textile fabrics, from a coupled machine, particularly from a coupled sewing machine or sewing installation. This

device is controlled by compressed air means and it comprises a workpiece carrier for removing the workpieces, after the completion of a sewing operation, out of an opened workpiece holding clamp to a horizontal grill-like



pick-up for the workpieces, displaceable in a quadrangular path and in interaction with a magazine for stacking the workpieces. A brake device acts on the workpiece pick-up to interrupt its downward stroke before it reaches the workpiece stack.

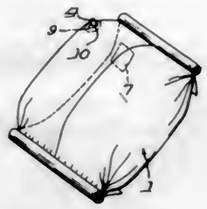
3,414,139
BALE HOLDER
Andros D. Strommen, Vandalia, Mont. 59273
Filed Dec. 13, 1965, Ser. No. 513,471
5 Claims. (Cl. 214—6)



A bale-stack holder and stabilizer with actuating mechanism adapted to be attached to a bale wagon or the like to prevent buckling of a stack of bales during transport operations, which is combined in operation with a transverse bed tiltable about a transverse axis adjacent its rear end and with a load-carrying bed arranged rearwardly of the bale wagon frame to receive tiers of bales from the transverse bed. Those improvements which essentially embody a substantially rigid, elongate member pivotally mounted at one of its ends to the bale wagon frame in a position generally forwardly of the transverse bed and with means through contact of the elongate member with intermediate bales of a stack or the load-carrying bed to cause the member to pivot, swing and permit clearance when bales are transferred to the load-carrying bed from the transverse bed, and with simple means for automatically positioning the free end of the elongate member in contact with intermediate tiers of bales of a stack on the load-carrying bed.

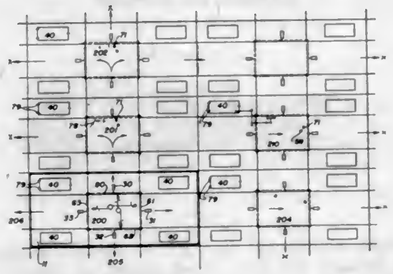
3,414,140
DUNNAGE
John G. Feldkamp, Homewood, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York
Filed Aug. 1, 1966, Ser. No. 569,358
11 Claims. (Cl. 214—10.5)

A pneumatic dunnage device for cushioning a load in a transportation vehicle. The device has a flexible inflatable bladder covered with a reinforcing shroud and the bladder is provided with valve means to permit inflation of the device. A reinforcement patch is provided on the bladder wall opposite the position of the valve means for



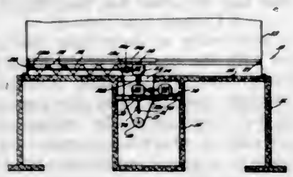
stiffening the bladder in the region of the patch to minimize weakening of the bladder in that region due to forces on the bladder caused by inrushing air when the device is inflated through the valve means.

3,414,141
PARKING DEVICE WITH CONTROL MEANS IN EACH STALL TO CONTROL THE MOVEMENT OF A VEHICLE CARRIER
Raoul Albert Rougemont, 6 Allee de la Residence de la Peuplerale, Fresnes, France
Filed May 10, 1965, Ser. No. 454,263
6 Claims. (Cl. 214—16.1)



This invention relates to a parking garage and, more particularly, to apparatus for the storage of automobiles including a building having several floors joined by an elevator, each floor having a rectilinear network of tracks for guiding a platform on which an automobile is carried.

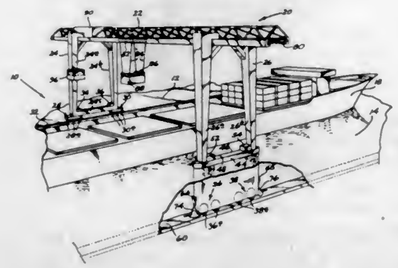
3,414,142
SWEEP ARM BIN UNLOADER
Melvin W. Kolze, 1011 Thomas, Forest Park, Ill. 60130
Continuation-in-part of application Ser. No. 435,223, Feb. 25, 1965. This application May 9, 1967, Ser. No. 637,196
7 Claims. (Cl. 214—17)



A bottom unloading free sweeping conveyor screw mechanism for a storage bin with an impeller-wheel member at the outer end of the conveyor screw in working

relationship with a retaining track attached to the side walls of the container to maintain the screw in generally parallel relationship with the bottom of the container. A flow-control plate freely rotating above the bottom opening of the container to prevent the particulate material from flowing by gravity out of the container and a separate control means regulating the actual rate of unloading.

3,414,143
MARINE TERMINAL FACILITY
Gordon L. Scott, 1410 NE. Marine Drive, Portland, Oreg. 97211
Filed Nov. 10, 1966, Ser. No. 593,548
9 Claims. (Cl. 214—14)



The terminal facility comprises a crane with spaced pedestals supporting an elongated trolley-supporting frame spanning the pedestals, one pedestal being movable along a path defined along a wharf or pier and the other pedestal being movable along a path adjacent the wharf defined along a bottom underlying the water which floats vessels moored at the facility.

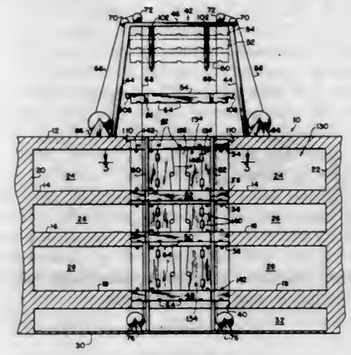
3,414,144
APPARATUS FOR HANDLING BULK CARGO
Jan Hendrik Antonie Lassing, Lot 5, Concession 2, Northumberland County, Murray Township, R.R. 3, Trenton, Ontario, Canada
Filed Jan. 11, 1966, Ser. No. 520,003
6 Claims. (Cl. 214—15)



This specification deals with apparatus for moving bulk cargo such as, for instance, coal and the like, within the hold of a ship to a central conveyor system whereby the bulk cargo can be lifted through the cargo hatch to dockside. Specifically the disclosure deals with a system of plows which by regular reciprocal movement within the hold moves the bulk cargo into position. An essential feature is the use of a plow to move the bulk cargo from a flat surface over to the conveyor thereby eliminating the usual gravity feed systems presently employed.

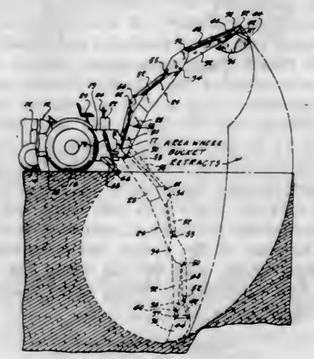
3,414,145
SHIP HOLD STRUCTURE FOR LOADING OF PALLETIZED CARGO
Frank Calabrese, 4828 194th St., Flushing, N.Y. 11365
Filed June 21, 1967, Ser. No. 647,770
10 Claims. (Cl. 214—15)

Apparatus for loading cargo mounted on pallets within hold compartments of a multi-deck ship in which the decks have vertically-aligned hatch openings. A plurality of pontoons are provided to fill the deck hatch openings and a trestle is mounted on the main deck for storing the pontoons and for mounting cables selectively attachable to individual pontoons for raising and lowering the pontoons



loaded with cargo between the main deck and the various sub-deck levels. Retractable latch means are provided at each deck level for supporting the pontoons during loading operations.

3,414,146
AUTOMATIC BACKHOE UNIT FOR USE WITH INDUSTRIAL TRUCKS AND TRACTORS
James A. Caywood, Birmingham, and William J. Howard, Warren, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 571,813
28 Claims. (Cl. 214—138)

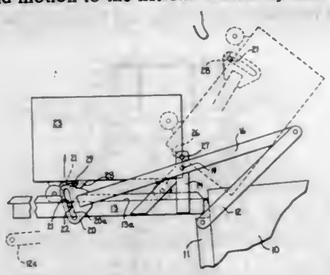


This specification describes a hydraulic motor circuit for operating the articulated members of a backhoe digger. The circuit includes a pressure source for the motors and a pressure signal source for automatic pilot operators for a pressure distributor valve situated in the circuit. The operators respond to both pressure changes in the fluid motors and to the displacement of the motor driven elements to establish both an automatic digging sequence and an automatic retract sequence.

3,414,147
HOIST ARM STRUCTURE FOR REFUSE LOADERS
John B. Schroering, Louisville, Ky., assignor to Tri-City Industrial Services, Inc., Louisville, Ky., a corporation of Kentucky
Filed Feb. 17, 1967, Ser. No. 616,926
1 Claim. (Cl. 214—314)

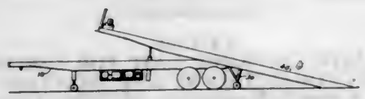
A hoist arm structure in which the container to be unloaded is pivoted on an axis displaced vertically above

the pivotal axis of the hoist arms thereby providing a compound motion to the lift bar carried by the hoist arms



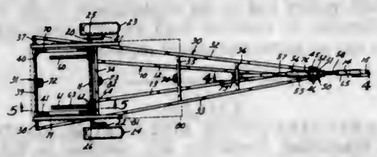
so that the container may be rotated and held through an angle of more than ninety degrees.

3,414,148
POWER LOADING SEMI-TRAILER
Edwin V. Bishop, P.O. Box 265, Sparks, Md. 21152
Filed July 11, 1966, Ser. No. 569,000
7 Claims. (Cl. 214—505)



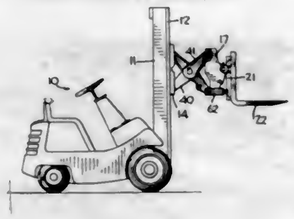
This invention relates to semi-trailers of the type in highway service for transporting cargo. The semi-trailer of this invention differs from any other art known to me in that it comprises in combination a wheeled semi-trailer chassis, an elongated tilt frame pivotally mounted to said chassis and a load receiving bed slidably mounted to said tilt frame, there being power means cooperating between said wheeled semi-trailer chassis and said tilt frame to produce tilting motion and power means cooperating between said tilt frame and said load receiving sliding bed to produce sliding motion. The tilt frame is provided at the rear with a wheeled landing gear to provide support against longitudinal tipping when the sliding bed is extended rearwardly and at the same time permitting convenient forward or rearward motion of the vehicle. The rear of the sliding bed is equipped with a tapered shoe which may be slid along the ground or pavement and conveniently thrust under a load or withdrawn from under a load.

3,414,149
TRAILER AND HOIST
Howard Boyd Nelson, 1017 Broadway, and Herbert D. Schildt, Rte. 4, Box 88, both of Alexandria, Minn. 56308
Filed June 24, 1966, Ser. No. 560,223
8 Claims. (Cl. 214—506)



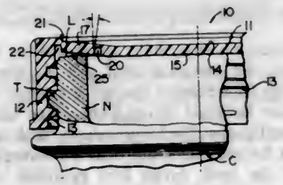
A trailer having a first frame with wheels pivotally mounted thereon and a second frame attached thereto in overlying relationship with the front ends slidably engaged for relative horizontal movement and the rear ends attached by pivotal links for relative vertical movements with relative horizontal movements of the front ends thereof. The wheels are further attached so that they pivot downwardly and raise the trailer vertically upwardly as the upper frame pivots upwardly.

3,414,150
SCISSORS EXTENDER
Bronislaus I. Ulinski, Jenkintown, Pa., assignor to Eaton Yale & Towne, Inc., a corporation of Ohio
Filed Aug. 17, 1965, Ser. No. 480,355
8 Claims. (Cl. 214—730)



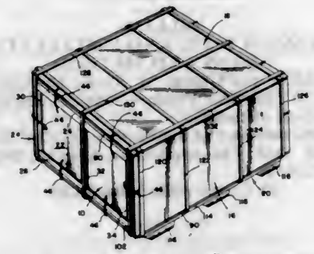
A lift truck is equipped with two pairs of scissors links that support a load carrier for extending and retracting movement, each particular pair of links being formed from relatively thin metal plate, with one of its links formed in two parts. The two parts are arranged at opposed sides of the second scissors link of the particular pair, and are assembled to one another through a bearing member that is mounted to rotate in an opening of the second link. The scissors links will contribute a relatively large throw while each link is rather short, and will permit the truck operator better visibility. The load carrier supported by the scissors links has a hydraulic ram that will side shift load engaging forks, while also supporting the forks for both side shifting and vertical tilting movements.

3,414,151
LINERLESS PLASTIC CLOSURES
John D. Morrison, Glen Ellyn, Ill., assignor to J. S. Plastics Inc., Naperville, Ill., a corporation of Illinois
Filed Jan. 6, 1967, Ser. No. 607,696
4 Claims. (Cl. 215—40)



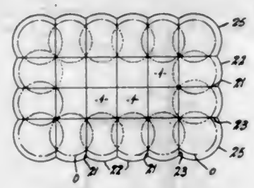
This disclosure relates to a linerless closure which includes an end panel defined by a central wall portion which merges gradually with a radially outermost annular wall portion, the annular wall portion having an inner annular sealing surface inclined radially inwardly and downwardly relative to the axis of the closure, and a pair of hinge means in the form of continuous annular generally U-shaped grooves opening outwardly through the inner annular sealing surface for permitting the deflection of the outermost annular wall portion to bring the inner sealing surface thereof into conforming relationship with a lip of an associated container closed by the linerless closure.

3,414,152
KNOCKDOWN CONTAINER
Dolphin D. Overton III, Mullins, S.C., assignor to Overton Container Corporation, Mullins, S.C., a corporation of North Carolina
Filed Aug. 11, 1967, Ser. No. 659,982
13 Claims. (Cl. 217—12)



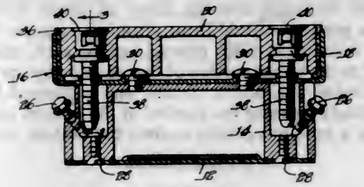
A rectangular container is provided having no projections on its outer surface, that is capable of being rapidly assembled and disassembled. This container includes two end sections each having a panel with a frame on one side and with the edge of the panel extending beyond the frame to form lips on the top, bottom, and side edges of the end section. Two side sections are also provided, each having a wall with a lip on its top and bottom edges and a groove on each of its ends for receiving one of the lips on the side edges of the end sections. The container further includes top and bottom sections each having a wall with a lip on its side edges for engaging the top and bottom lips, respectively, of the two side sections, and a groove on each of its ends for receiving the top and bottom lips, respectively, of the end sections. Fasteners are provided to hold the sides, top, and bottom sections in engagement with the end sections.

3,414,153
MULTICELLULAR CONTAINERS OR ENCLOSURES
René P. Leroux, 23 Boulevard Jules Verne, Nantes, France
Filed Aug. 1, 1966, Ser. No. 569,287
Claims priority, application France, May 4, 1966 60,146
17 Claims. (Cl. 220—1)



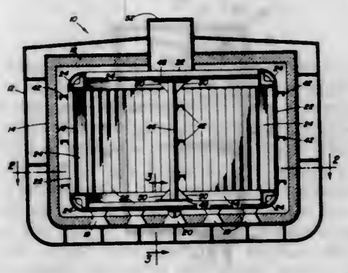
Multicellular structures are provided for use as liquid and/or gas storage containers, internal and external pressure withstanding vessels, and the like which are aplexic; that is, non-deformable in the sense that any small flexing or movement of the walls thereof from pressure forces is equally distributed throughout each small individual portion of the entire wall structure and supporting internal structures so that the entire vessel or container retains substantially the same outline as it was designed with no localized deformations resulting from the said pressure forces. This is achieved by constructing the container or vessel structures with at least the outer walls thereof of spherical and/or cylindrical surfaces or substantially spherical and/or cylindrical surfaces and with the internal supporting structure following the same lines of curvature as the wall structures and/or the lines of intersection thereof so that the entire internal space of the vessel is occupied or covered without overlap by the placement of said internal structures by the exact method of following the outline of layers of polyhedrons inscribed in imaginary spheres drawn between two normal sections of said structure or vessel in which a perfect carrelage of polygons can be drawn which are perfectly inscribable in a circle with said polygons in said sections forming faces of said polyhedrons on opposite sides thereof at said sections and with the free faces thereof being curved surfaces of substantially constant mean curvature. In addition, said internal structures may be either generally solid partitions forming said polyhedrons or strut-like structures outlining said polyhedrons with the design of the sections of the struts being determined by the partitions they replace so as to maintain an equilibrium throughout the entire structure with respect to the ability of each small portion thereof to withstand equally the same degree of said pressure forces.

3,414,154
COVER RING AND LEVELING SCREW ASSEMBLY FOR UNDERFLOOR WIRING DUCT JUNCTION BOX
Manning I. Rose, Dayton, Ohio, and Robert C. Zimmerman, San Jose, Calif., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed May 16, 1967, Ser. No. 638,923
9 Claims. (Cl. 220—3.7)



A cover ring and leveling screw assembly for an underfloor wiring duct junction box, the leveling screws being permanently assembled with the cover ring by snap-in retainers.

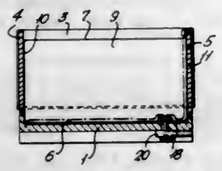
3,414,155
WALLS FOR LIQUEFIED GAS STORAGE TANKS
Ralph A. Corvino, Spring Valley, N.Y., assignor to John J. McMullen, Montclair, N.J.
Filed Aug. 25, 1966, Ser. No. 575,110
14 Claims. (Cl. 220—5)



A storage tank for storing liquefied gas at about ambient pressure comprising a top, a bottom, four upstanding walls, each of tubular construction being formed of

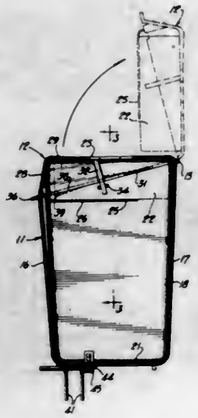
a plurality of parallel pipes with their axes aligned with the plane of the wall and joining means connecting adjacent pipes together to form a liquid-tight barrier comprising at least in part a weld for each pipe which extends parallel to the axis of each pipe and runs longitudinally along a part of the outside surface of the pipe, and a plurality of stiffening members mounted to the walls of the tank extending horizontally and being spaced vertically.

3,414,156
COLLAPSIBLE CONTAINER FOR FLUID OR POWDER
Karl-Fredrik Felldin, Malmo, Sweden, assignor to Interlund S.A., Nyon, Switzerland, a Swiss joint-stock company
Filed Apr. 30, 1965, Ser. No. 452,176
4 Claims. (Cl. 220—6)



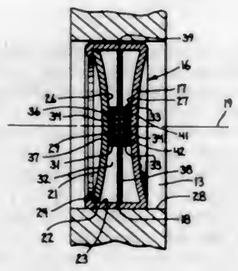
Collapsible container for fluid or powder comprising an outer container consisting of a bottom plate having pivotable side flaps, an inner container having a top wall, bottom wall and side walls made of flexible material, and having an elongted opening along an upper horizontal edge, the portions of said inner container adjacent to said opening forming two lips pressed against each other and attached to the upper portion of one of said flaps by means of detachable attachment means, and a flanged bottom pipe sealingly pressing the portion of the bottom wall surrounding a bottom opening against the bottom plate.

3,414,157
COMBINED LITTER CONTAINER AND TISSUE DISPENSER
Thomas E. Wright, Chicago Ridge, Ill. (16W571 Honeysuckle Rose, Hinsdale, Ill. 60521)
Filed June 23, 1965, Ser. No. 466,405
5 Claims. (Cl. 220—23)



An open top container having a lid hinged thereto and a tissue dispensing opening in its top wall, a tissue package having a tissue dispensing opening in its top wall, and means releasably holding the tissue package in an operative position at the inner side of the lid with the tissue dispensing openings in registration and permitting removal of a used tissue package from said operative position and mounting a refill tissue package in such position when the lid is swung on its hinge to an open position.

3,414,158
EXPANSION PLUG AND INSTALLATION MEANS AND METHOD
Paul J. Hunckler and George M. Keefe, Huntington, Ind., assignors to Hunckler Products, Inc., Huntington, Ind., a corporation of Indiana
Continuation-in-part of application Ser. No. 558,759, June 20, 1966. This application Aug. 11, 1966, Ser. No. 571,941
22 Claims. (Cl. 220—24.5)



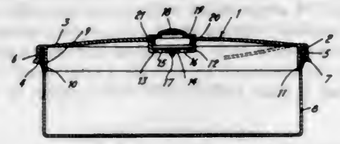
An aperture sealing plug, typically for engine blocks, and including a radially expandable axially extending flange, with a mechanically-operated dish shaped disc, or thermally operated expansive or explosive chemical component to effect the expansion in the aperture after placement therein by a finger-operated installation tool.

3,414,159
HANDLED CONTAINER WITH SLIDING COVER
Theodore C. Murr, 2001 Wentworth Ave., South St. Paul, Minn. 55075
Filed Apr. 28, 1967, Ser. No. 634,678
6 Claims. (Cl. 220—41)



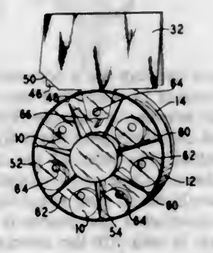
A handled container with a sliding cover which has particular utility as a child's lunchbox, but which lends itself to many other uses, as for example, a merchandising container for toys, food, ice cream or the like. The particular construction of the container is such that the body and cover each provide cooperating coincident portions of a single handle, and when the container is being carried, with the hand of the carrier grasping the handle, it is impossible for the container to fall open. The structure lends itself particularly well to economical molding in synthetic plastics, and a wedging construction of the body flange as received in the slotted cover insures that the cover and body are in tight, sealed relationship when the two handle portions are coincident. The structure, with its flat, uninterrupted surfaces, also lends itself particularly well to ease in repeated cleaning and to the reception of printed material, such as designs, slogans, safety colors and safety patterns.

3,414,160
REDUCED-PRESSURE BOX
Michel Weber, 5 Rue Alphonse Bordereau 77, Chelles, France
Filed Apr. 24, 1967, Ser. No. 633,079
Claims priority, application France, Apr. 26, 1966, 59,080
3 Claims. (Cl. 220—44)



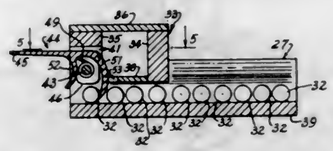
A reduced pressure box of the type having a cover adapted to create a partial vacuum when being positioned on said box, said cover having at least a hole and being provided with a flexible diaphragm seated over said hole whereby forming a check-valve and providing the exhaust of the air from the interior of the box when a reciprocating motion is imparted to said cover.

3,414,161
HEARING AID BATTERY DISPENSER
William H. Doring, Old Greenwich, Conn., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 4, 1967, Ser. No. 628,357
8 Claims. (Cl. 221—2)



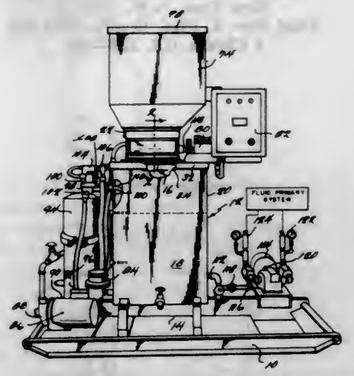
A hearing aid battery dispenser of transparent thermoplastic resinous material comprising a pair of circular members which are relatively rotatable to individually dispense said batteries, with a sheet insert having an electrically conductive surface cooperating with orifices in one of the members to enable testing of the batteries in the dispenser.

3,414,162
DISPENSER WITH TRAP CHAMBER AND PIVOTED RELEASER
Michele Leonforte, 19 Juniper Road, Kings Park, N.Y. 11754
Filed Nov. 9, 1967, Ser. No. 681,669
3 Claims. (Cl. 221—266)



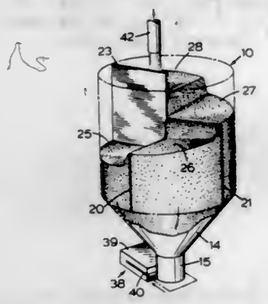
A dispenser of circular discs having a storage chamber wherein the discs may be distributed at random and induced to roll down curved surfaces into a groove. The discs assume an aligned, standing position in the groove and are fed sequentially therefrom into a manually operated ejecting mechanism.

3,414,163
APPARATUS AND METHOD FOR MIXING AND DISPENSING A DRY, PARTICULATE SOLID WITH A LIQUID
Preston G. Gaddis, 20th and Country Club Road, Bartlesville, Okla. 74003
Filed June 16, 1965, Ser. No. 464,450
10 Claims. (Cl. 222—57)



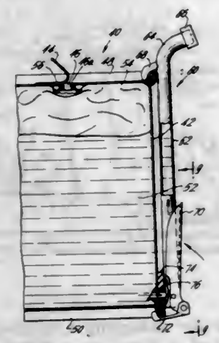
4. A process for delivering a mixture of a dry, particulate solid and a liquid to a liquid primary system from a mixing zone comprising the steps of sensing a low liquid level in said mixing zone, delivering a liquid to said mixing zone in response to said low liquid level sensed, sensing the flow of said liquid to said mixing zone, dispensing a predetermined amount of dry, particulate solid to said mixing zone in response to said liquid flow sensed, continuing the flow of said liquid to a predetermined high liquid level while simultaneously, substantially homogeneously mixing said solid and liquid, sensing said high liquid level in said mixing zone, discontinuing the delivery of said liquid to said mixing zone and discharging said mixture to said liquid primary system in response to said high liquid level sensed.

3,414,164
BLENDING APPARATUS FOR SOLIDS
Stephen A. McKay, St. Bruno, Quebec, Canada, assignor to Electric Reduction Company of Canada, Ltd., Toronto (Islington), Ontario, Canada
Filed Mar. 6, 1967, Ser. No. 620,991
9 Claims. (Cl. 222—64)



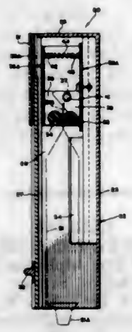
A blending apparatus for particulate material, consisting of a vertical container divided internally by vertical partitions of different heights into several sector-like compartments of different heights. The compartments empty at the bottom into a common mixing chamber with a single outlet. Particulate material is delivered continuously to the highest compartment, which fills up and overflows into an adjacent compartment, which fills and overflows into the next, and so on.

3,414,165
PROTECTIVE CONTAINER
Earle Goodenow, 108 E. 30th St., New York, N.Y. 10016
Filed Nov. 4, 1966, Ser. No. 592,205
3 Claims. (Cl. 222—82)



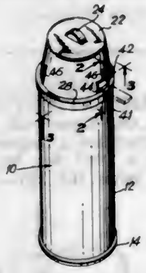
A liquid storage container provided with an expandable bag to protect a stored liquid as the same is decanted. The container is formed with a spout which communicates with the stored liquid by means of a downwardly extending passageway formed by an inner boundary wall, said passageway having a bottom entry into the main liquid storage chamber. The invention also applies to disposable containers with built in expandable bags, with an external spout and pouring arrangement being attached to the container by piercing means which create the bottom entry passageway.

3,414,166
DEVICE FOR DISPENSING MATERIAL FROM COLLAPSIBLE CONTAINER MEANS
Paul G. Martin, 1212 W. Loveland Ave., Loveland, Ohio 45140
Filed Aug. 29, 1966, Ser. No. 575,882
1 Claim. (Cl. 222—102)



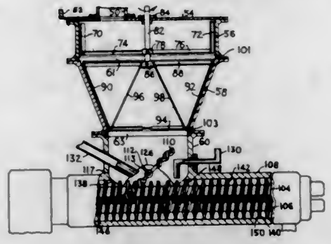
A wall mountable device for efficiently squeezing material from a collapsible tube comprising supporting structure, a pair of cooperating rollers mounted adjacent each other in parallel relation and having spring means urging such rollers toward each other upon inserting a collapsible container therebetween to provide a controlled squeezing action, and a door positionable with respect to the tube outlet.

3,414,167
TAMPERPROOF OVERCAP FOR A VALVED PRESSURE-LOADED CONTAINER
Leonard Osrow, Great Neck, N.Y., assignor to Osrow Products Company, Inc., Glen Cove, N.Y.
Filed Mar. 9, 1967, Ser. No. 621,817
11 Claims. (Cl. 222—182)



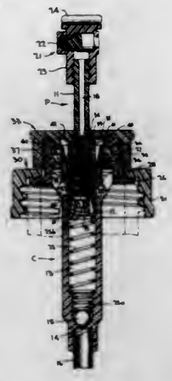
A tamperproof overcap for a conventional valved pressure-loaded container in which the top chime of the container is caught between a shoulder near the bottom of the overcap and an interrupted inwardly extending flange below the shoulder. The skirt of the overcap is formed with a circumferentially narrow elongated slot immediately above the chime so that when the tip of a screwdriver or like flat-bladed instrument is inserted into the slot and twisted, it will lift the overcap off the chime. The overcap skirt is weakened below the slot so that it will rupture when the screwdriver lifts the overcap thus leaving an indication that the cap has been detached. Despite the rupture of a lower peripheral portion of the skirt the overcap can be replaced on the container, but with a telltale that it has been previously removed.

3,414,168
APPARATUS FOR FEEDING PARTICULATE MATERIALS
Hans A. Eckhardt, 55 Crescent Bend, Allendale, N.J. 07401
Filed Aug. 29, 1966, Ser. No. 575,667
19 Claims. (Cl. 222—227)



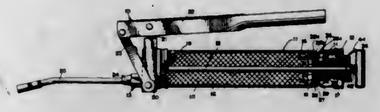
An apparatus for feeding particulate materials with a throat in the lower portion of a compartment and a rotatable screw extending through the lower portion of the throat, has in the throat a bail-like rotor, without supporting axle, crimped in two planes, which wipes alternatingly the inner surface of the throat and the periphery of the screw. The bail-like rotor approaches the inner throat surface at a ridge running from above the rotor's mounting point downward. The ridge of less than 90° is formed between the groove behind the ridge and the inner surface of the throat below the ridge.

3,414,169
LIQUID DISPENSER
Douglas F. Corsette, Los Angeles, Calif., assignor, by mesne assignments, to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,847
5 Claims. (Cl. 222—321)



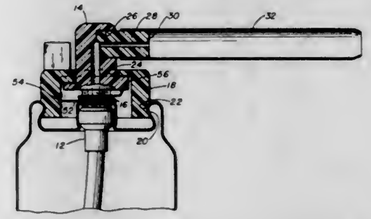
A liquid dispensing pump including a plunger disposed for reciprocation in a cylinder through an annular collar which defines part of a breather passage at the upper end of the cylinder. The plunger rod and the collar jointly define a downwardly diverging annular valve seat around the plunger rod for wedging reception of an annular skirt of resiliently deformable material at the upper end of the piston, to close the breather passage. Also, the plunger rod and the piston have cooperating valve portions for alternately opening and closing a discharge passage through the plunger incident to plunger reciprocation.

3,414,170
LATCH ASSEMBLY FOR GREASE GUN PLUNGER RODS
Edwin P. Sundholm, Albert City, Iowa 50510
Filed Oct. 19, 1967, Ser. No. 676,432
3 Claims. (Cl. 222—340)



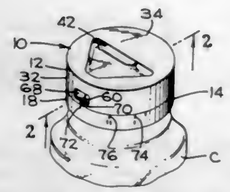
A latch assembly for restraining movement of a spring-biased plunger rod toward the dispensing head of a grease gun. The latch is provided with an opening through which the plunger rod passes and is disposed between the spring and the end closure cap of the grease gun, being normally maintained transversely to the plunger rod by the spring. An outer portion of the latch extends through opening in the end closure gap by which the operator may pivot the inner portion of the latch about the closure cap opening toward the grease dispensing end to engage the sides of the latch opening with the plunger rod.

3,414,171
AEROSOL DISPENSER FOR DISPENSING MEASURED AMOUNTS
Charles R. Grisham and Howard A. Cramer, both of 1742 E. 6th St., P.O. Box 1747, Tulsa, Okla. 74104
Filed Oct. 5, 1966, Ser. No. 584,562
9 Claims. (Cl. 222—402.14)



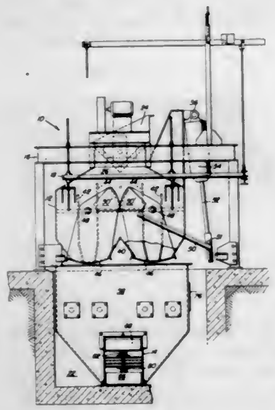
Briefly, the invention comprises a non-rotatable spray nozzle positioned on a pressurized container and biased to a closed position with a rotatable holding nut positioned on the pressurized container in a manner that rotation of the holding nut causes cam follower members on the holding nut to coact with a cam member on the spray nozzle to depress the spray nozzle and activate the valve mechanism of the pressurized container to an opened position permitting communication between the interior of the pressurized container with the open valve mechanism and open spray nozzle, thus permitting the pressurized fluid to leave the container. Rotation of the holding nut in the opposite direction then permits the cam follower members and cam member to assume their original position and deactivate the valve mechanism. The metering device may be rotated manually in both directions, or as by a modification shown herein, a return spring may be included to bias the metering device to a closed position. Also, another modification shows a dashpot arrangement for lengthening the return time of the metering device to the closed position. Another modification describes a clutch and slip ring assembly which is usable to lengthen the rotative stroke of the metering device to increase the volume of fluid dispensed.

3,414,172
DISPENSING DEVICE
Augustine A. Souza, San Jose, Calif., assignor of one-half interest to Anthony A. Souza
Filed Mar. 21, 1966, Ser. No. 535,759
6 Claims. (Cl. 222—443)



A dispensing device for fluent granular materials or the like in the form of a bottle cap including two relatively-rotatable sections with communicating conduits arranged to dispense a predetermined amount of the material upon appropriate manipulation.

3,414,173
MATERIALS CONDITIONING, WEIGH BLENDER SYSTEM
Walter J. Sackett, Sr., 3700 Echodale Ave., Baltimore, Md. 21206
Filed Feb. 24, 1966, Ser. No. 529,680
1 Claim. (Cl. 222—506)



This invention relates to a compact batching plant for compounding, mixing, and delivering granular materials. A hopper is supported in a lever arrangement for an overhead beam scale. The hopper has vertical divider plates and a truncated V lower portion. The bottom is open except for an elongated inverted V divider to comprise a pair of spaced parallel ports.

These ports open and close simultaneously in clam shell fashion by means of arcuate gates having mutual gear sectors and a hydraulic actuator.

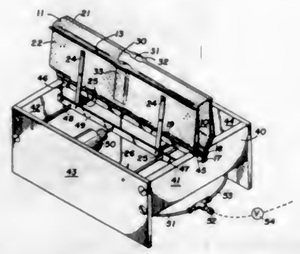
3,414,174
GARMENT PROCESSING HANGER
Joseph W. A. Off, Dallas, Tex., assignor to Haggar Company, Dallas, Tex., a corporation of Texas
Filed Mar. 2, 1966, Ser. No. 531,155
8 Claims. (Cl. 223—52)

1. A hanger for support of garments in a baking oven, which comprises:

(a) an elongated thin-walled metallic tube having two parallel opposed side panels and having integral structure forming a hinge support zone extending along one edge of said tube,

(b) a pair of hinge means secured to said tube along said support zone,

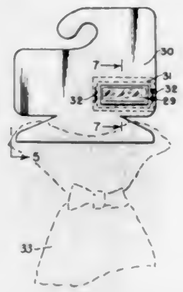
(c) two inwardly facing plates respectively supported by said hinge means on opposite sides of said tube and extending the length and width of said side



panels, the confronting surfaces of said plates and panels being disposed at an angle to said side panels for engagement at the edges thereof opposite said hinges and having sand-blast roughened surfaces for contact with garments inserted therebetween, and

(d) resilient means normally to bias said plates toward said side panels.

3,414,175
COMBINED GARMENT HANGER AND RECEPTACLE
Doris A. Brosk, 150 E. 69th St., New York, N.Y. 10021
Filed July 7, 1964, Ser. No. 380,829
4 Claims. (Cl. 223—85)

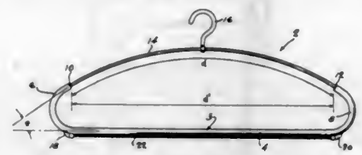


A combined garment hanger and receptacle which has an upper hook portion, a lower portion for supporting a garment and an intermediate portion. A transparent box-like cover having marginal flanges connected to the intermediate body portion, the intermediate body portion and the box-like cover constituting a receptacle for containing an article.

3,414,176
GARMENT HANGER
Anthony M. Arnold, 5951 Balsan St., Apt. 306, Vancouver, British Columbia, Canada
Filed July 13, 1965, Ser. No. 471,599
5 Claims. (Cl. 223—88)

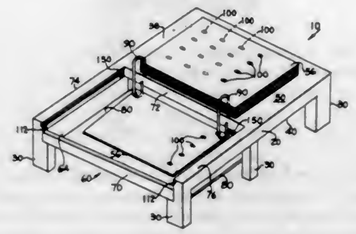
A garment hanger having a rigid bottom member with integral rigid high, rounded, short end portions curving upwardly and inwardly toward each other and having

spaced free ends. A flexible soft rubber cord curves smoothly between said spaced free ends and is connected thereto, and a hook is connected to the rubber cord. For



storage, the hook may be bent down and inserted between the bottom member and another rubber cord stretched below the bottom member.

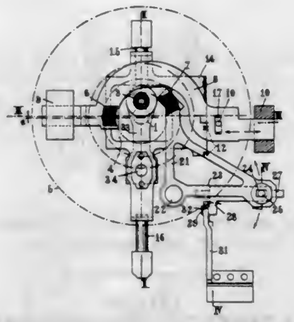
3,414,177
INFORMATION HANDLING AND STORING APPARATUS
Robert E. Spinner, 26 Deer Trail Road, North Caldwell, N.J. 07006, and David F. Wolfe, 173 Riverside Drive, New York, N.Y. 10024
Continuation-in-part of applications Ser. No. 475,064, July 27, 1965, and Ser. No. 613,690, Oct. 24, 1966.
This application Sept. 8, 1967, Ser. No. 674,371
26 Claims. (Cl. 225—94)



The disclosure is of apparatus which includes an information-entering assembly comprising a blank punch card and a support plate mounted on a suitable support portion of a housing and adapted to have master information cards seated on the blank punch card one at a time for entering information. Each master information card has a group of apertures, each aperture being associated with a unit of information and each group of apertures also being associated with a corresponding group of information-receiving areas in the punch card. A group of these master information cards is mounted adjacent to the information-entering assembly. Information can be entered by punching holes in the punch card or by making other markings which can be read optically or electrically. The information can also be entered electrically through electrical circuit elements associated with each information unit for transmittal to remote electronic circuitry.

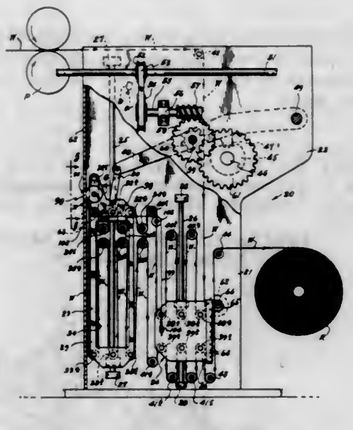
3,414,178
HIGH-SPEED FILM FEED MECHANISM FOR MOTION PICTURE CAMERAS
Andre Coutant, Neuilly-sur-Seine, and Jacques Mathot, Paris, France, assignors to Eclair International, Societe Anonyme, Paris, France
Filed Mar. 27, 1967, Ser. No. 626,275
Claims priority, application France, Mar. 25, 1966, 55,010
4 Claims. (Cl. 226—62)

High-speed film feed mechanism for motion-picture camera comprising a continuously rotating shaft carrying a rotary plate having a crankpin and a cam groove, said crankpin producing through a link the vertical reciprocating movements of the film-feed claw carrier member, said groove controlling on the one hand by means of a first sector the horizontal movements of the feed



claw carrier member and on the other hand by means of another sector and a square-shaped lever the movements of the pilot claw.

3,414,179
APPARATUS FOR VIEWING MOVING WEBS
William F. Huck, 81 Greenway Terrace, Forest Hills, N.Y. 11375
Filed Mar. 2, 1967, Ser. No. 626,909
17 Claims. (Cl. 226—113)

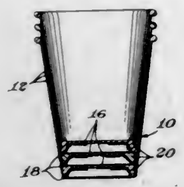


An apparatus permitting viewing of patterns on a continuously propelled web by displacement of a length of the web oppositely to the direction of web movement at a fixed viewing zone is provided with an auxiliary displacement system operable to change equally and oppositely the lengths of the paths of the respective web leads entering and leaving the viewing zone so that any desired part of the patterns on the web can be selected for viewing.

3,414,180
PLASTIC CONTAINERS
Ruben A. Tigner, Pinconning, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Mar. 14, 1963, Ser. No. 265,219, now Patent No. 3,338,997, dated Aug. 29, 1967. Divided and this application Jan. 9, 1967, Ser. No. 641,065
2 Claims. (Cl. 229—1.5)

A plastic foam container having a raised bottom and a lower peripheral leg. A reinforcing gusset is formed

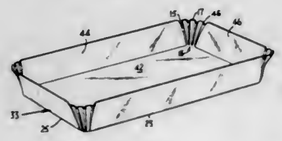
integrally with and between the lower peripheral leg and the raised bottom, the gusset being expanded to a substantially greater extent than the adjoining portions of the cup to provide such reinforcement.



3,414,181
PARTIAL DEORIENTATION OF SEGMENTS OF BIORIENTED THERMOPLASTIC SHEET

Francis J. Sloan, Cranford, N.J., assignor to Union Carbide Corporation, a corporation of New York

Filed June 29, 1965, Ser. No. 468,074
34 Claims. (Cl. 229—2.5)

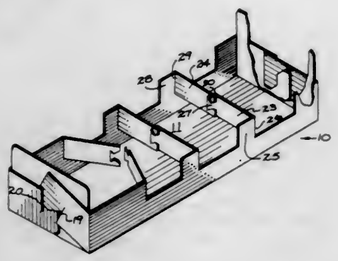


A process for forming a three dimensional article from a bioriented thermoplastic sheet by selectively heat-shrinking segments of the sheet causing the sheet to bend in a desired shape.

3,414,182
TRAY HAVING INTEGRAL DIVIDER STRAPS

Frank E. Fobiano, Cincinnati, Ohio, assignor to Premier Carton Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 29, 1967, Ser. No. 649,945
3 Claims. (Cl. 229—28)



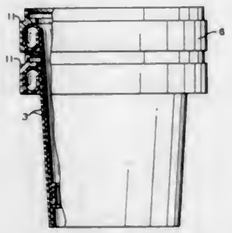
A tray-type paperboard carton having a bottom wall, end walls and side walls and divider straps struck from said side walls and extending across the carton to divide it into at least two compartments.

3,414,183
RING-A-RIM CLOSURES

Isaac L. Wilcox, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,678
11 Claims. (Cl. 229—43)

A rim structure for use in a closure assembly which enables a plurality of rims to be stacked together, and a plurality of nestable containers to be nest-fitted together when the rims are in place on the containers. A top

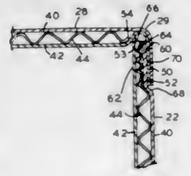


member for enclosing the container can be placed on the rim after the container has been filled.

3,414,184
FLUSH CORRUGATED FIBERBOARD BOX JOINT

Richard W. Loheed, West Lafayette, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed June 1, 1967, Ser. No. 642,741
7 Claims. (Cl. 229—48)

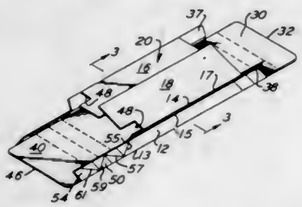


Manufacturer's joint for a box formed from a blank of corrugated fiberboard having two liners and corrugating medium therebetween, the joint being formed between the two adjacent edges of a blank having an inner and an outer liner and intervening corrugating medium, one edge of the blank having the liners extended to form lap portions beyond the edge of the intervening corrugating medium, with the inner lap portion of the inner liner being offset outwardly and adhesively bonded to the outer liner to form a lap of the thickness of both liners and of substantial width, and the other edge of the blank having its outer liner pressed inwardly along the edge for a width at least as great as the width of the lap, to provide an offset area, and an offset at least as great as the thickness of the lap, and the lap being adhesively secured to the offset area in overlapping relation thereto.

3,414,185
EXPANSIBLE CENTER SEAM ENVELOPE

Frank L. Young, 401 Caranel Circle, Penn Valley, Pa.

Filed Jan. 16, 1968, Ser. No. 698,202
7 Claims. (Cl. 229—75)



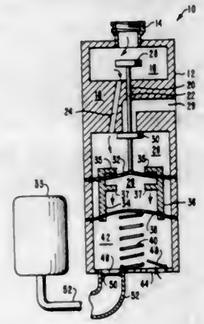
An expansible center seam envelope and method for making the same from a single paperboard blank in a

continuous operation whereby all side and bottom gussets are interiorily folded and flattened at the completion of the regular procedure. In its completed form, the envelope is easily expanded into box-like configuration.

3,414,186
TRANSDUCER

Poul Jorgensen, 3649 Meadville Drive, Sherman Oaks, Calif. 91403; Harry L. Jackson, 9 Stallion Road, Rolling Hills, Calif. 90274; and Thomas B. Odom, 960 Latchford Ave., Hacienda Heights, Calif. 91745

Filed July 22, 1966, Ser. No. 567,147
22 Claims. (Cl. 230—52)

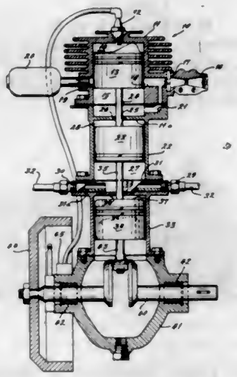


This invention relates to a water pressure powered air pump for rapidly generating air pressure from water pressure. In this invention, water under pressure, as from a water faucet, enters a housing and causes a diaphragm or piston to move back and forth in the housing. The diaphragm or piston separates the water in the housing from an air chamber in the housing and this movement of the diaphragm or piston, when combined with suitable air inlet and outlet valves in the air chamber, first draws air into the chamber and then pushes it out of the air chamber to a pressure tank to provide air pressure.

3,414,187
COMPRESSOR

Edward V. McMullin, St. Louis, and James M. Edwards, Florissant, Mo., assignors to Laclede Gas Company, a corporation of Missouri

Filed Sept. 14, 1966, Ser. No. 579,262
5 Claims. (Cl. 230—56)

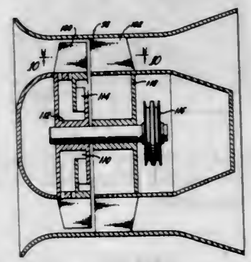


A refrigerant compressor utilizing a two cycle gas fired engine having a firing piston connected to a compressor piston with a guide piston connected to the compressor piston and to a flywheel to provide a source of standby stored energy to the firing piston in the event the operation of the compression piston is upset by sudden load changes.

3,414,188
FAN HAVING HOLLOW BLADES

Daniel Gordon Gallie, Allen Park, Mich., assignor to American Radiator & Standard Sanitary Corp., New York, N.Y., a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 597,042
6 Claims. (Cl. 230—120)

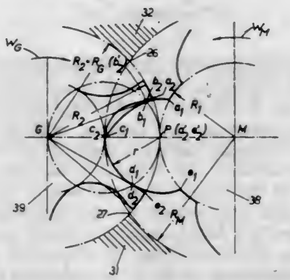


A fan blade construction especially designed to inhibit boundary layer separation of fluid on the trailing face of the fan blade. The fan blade is hollow and perforated on its trailing face, and a slot along the trailing edge of the blade communicates with the hollow interior of the blade. The blade interior in turn communicates with a secondary impeller which creates a negative pressure in the interior of the hollow blade to establish air flow characteristics minimizing boundary layer separation.

3,414,189
SCREW ROTOR MACHINES AND PROFILES

Jan Edvard Persson, Ektorp, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed June 22, 1966, Ser. No. 564,469
12 Claims. (Cl. 230—143)



A screw rotor machine comprising intermeshing helically grooved rotors in a casing therefor with clearance spaces being provided between the intermeshing rotors and between them and the casing so as to avoid direct contact between the rotors and reduce the leakage of working fluid from the working chambers.

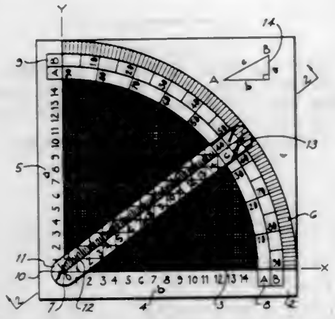
3,414,190
TRIGONOMETRIC COMPUTING INSTRUMENT

Richard John Lemiesz, Shelby Township, Macomb County, Mich. (14980 24-Mile Road, Mount Clemens, Mich. 48043)

Filed Feb. 17, 1967, Ser. No. 616,957
1 Claim. (Cl. 235—61)

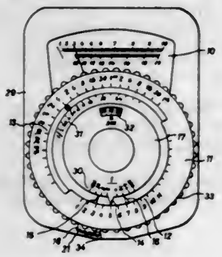
The invention discloses a computing gage type instrument which applies a combined graphical and algebraic method of solution to trigonometric problems. This is

accomplished by providing an instrument having five variable scales of measure which are mathematically and



symbolically related to the five variable parts (the three sides and two acute angles) of any right triangle which is to be solved in trigonometry.

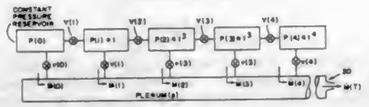
3,414,191
EXPOSURE METER FOR PHOTOGRAPHIC PURPOSES
Carl Koch, Vordersteig 2, Schaffhausen, Switzerland
Filed Oct. 7, 1965, Ser. No. 493,702
Claims priority, application Germany, July 28, 1965, K 56,746
6 Claims. (Cl. 235—64.7)



1. Exposure meter for photographic purposes comprising a brightness value scale and three associated indicators movable in relation to the brightness value scale, two of the indicators are limiting value indicators and one is a mean value indicator, means to couple the limiting value indicators for the automatic and mechanical formation of the mean value and which will supply the exposure value and serving for the determination of the time and aperture data by means of which, at any selected fixed setting of the indicators in relation to one another, a relative movement of the three indicators is possible in relation to the brightness value scale and by the coupling means for arresting the limiting value indicators in relation to the brightness value scale, while the second limiting value scale and the mean value scale are adjustable in relation to one another and in relation to the brightness value scale and the first-mentioned limiting value indicator.

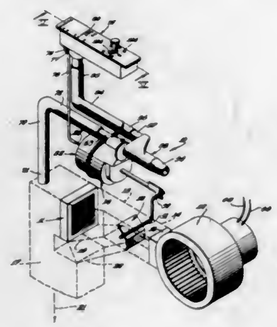
3,414,192
POLYNOMIAL GAS FLOW REGULATOR SYSTEM
Thomas A. Barr, Jr., Huntsville, Ala., and Robert F. Mayo, Newport News, Va., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 23, 1967, Ser. No. 619,127
6 Claims. (Cl. 235—200)

A gas flow regulator system including a plurality of pressure regulators in the form of tanks or programmable regulators connected in series by sonic orifices. Each regulator produces one term of a temporal polynomial. At least one of the regulators is supplied by a pressure



source, and each regulator supplies pressure to the next succeeding regulator and to a common plenum line which has a sonic throttle on its output end.

3,414,193
TEMPERATURE CONTROL SYSTEM
Rudolph J. Franz, Arlington Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Aug. 5, 1966, Ser. No. 570,523
5 Claims. (Cl. 237—2)



A temperature control system for use in an automobile including a variable speed air blower for varying the flow rate of air across a heat exchanger coil and an adjustable damper for diverting a portion of the air around the coil. The speed of the air blower and the setting of the damper are both controlled by a vacuum operated servo unit connected to the intake manifold of the engine.

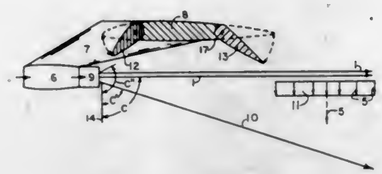
3,414,194
RACING TRACK
David L. Seitzinger, Erie, and Richard L. Weidler, Girard, Pa., assignors to Louis Marx & Co., Inc.
Filed Oct. 24, 1965, Ser. No. 504,610
9 Claims. (Cl. 238—10)



A racing track which consists of a plurality of track section each having a roadway portion and a terrain portion with the roadway portion terminating at two sides of the track section on center of the track section so that the track sections can be assembled together in substantially

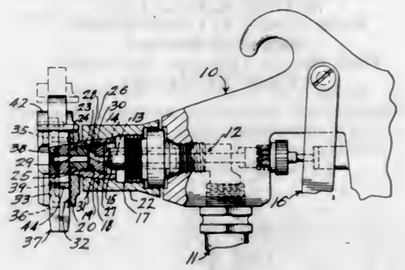
any random manner to create closed circuit courses of various configurations for a toy vehicle. Conductors are embedded in the roadway section and are preferably of a spiral configuration.

3,414,195
SWEEPING JET WING AIRCRAFT WITH ACTUATOR STRIP FLAP AND EMERGENCY VTOL CAPABILITY
Walter Selden Saunders, 2316 Stadium Road, Charlottesville, Va. 22903
Application May 24, 1965, Ser. No. 457,919, now Patent No. 3,276,724, dated Oct. 4, 1966, which is a continuation-in-part of application Ser. No. 136,293, Sept. 6, 1961, now Patent No. 3,194,512. Divided and this application June 17, 1966, Ser. No. 569,780
The portion of the term of the patent subsequent to July 13, 1982, has been disclaimed
19 Claims. (Cl. 239—11)



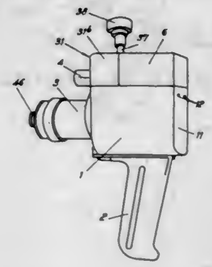
In connection with a sweeping jet wing aircraft, the method of sweeping at least a portion of the jet efflux in such a way that the direction of the induced flow will be transverse to the direction of the jet efflux and the direction of sweeping.

3,414,196
SELF-CLEANING TIP FOR AIRLESS SPRAY GUNS
Thomas B. Legeza, Toledo, and William D. Gauthier, Sylvania Township, Lucas County, Ohio, assignors to The De Vilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed Jan. 9, 1967, Ser. No. 607,992
5 Claims. (Cl. 239—106)



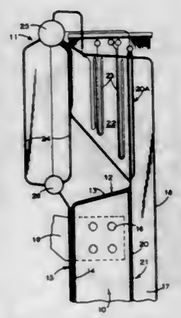
This invention comprises a nozzle assembly for a high pressure airless-type spray gun in which the very small discharge orifice is subject to clogging, thereby radically altering the spray pattern and fluid discharge rate of the gun. A slider is provided which may be removed in a direction transverse to the axis of the spray gun, reversed and replaced so that the clogged orifice may be cleaned by material flow in a reverse direction. The slider may also be adjusted transversely to bring different ones of a plurality of discharge orifices into operative position. A hydraulically actuated seal prevents leakage at the interface between the slider and the guide ways of the assembly in which it moves.

3,414,197
WIRE-PULLING ASSEMBLY PERMITTING THE SELECTIVE FORMATION OF A WELDING GUN OR A METALLISATION GUN
Pierre Proust, 7 Rue de Chantilly, Paris, 9eme, France
Filed Mar. 13, 1967, Ser. No. 622,661
Claims priority, application France, Mar. 15, 1966, 53,421
15 Claims. (Cl. 239—289)



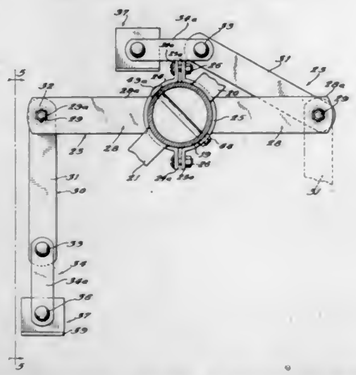
Wire pulling assembly permitting the selective formation of a welding gun or a metallisation gun, comprising an insulating casing of a low density material provided with a removable handle, the casing supporting a drive roller and a motor for driving said roller, the wire being driven by friction out of its passage between the driving roller and a retractable pawl which can be fixed in a controllable manner, a detachable support which carries a head corresponding to the type of gun which it is desired to produce, the support being provided with at least one duct for the passage of a gas, and the assembly being provided with easily connectable means on the casing or the support for connecting the detachable various customary electrical, hydraulic or pneumatic circuits necessary for the operation of a welding gun or a metallisation gun.

3,414,198
TWO FUEL BURNER ARRANGEMENT
William C. Wolfe, Rittman, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 8, 1966, Ser. No. 541,295
2 Claims. (Cl. 239—416.1)



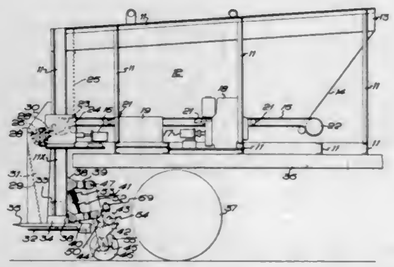
A liquid fuel burner for alternate supply of high heat and low heat value liquid fuels, where the atomizing steam for each liquid fuel is supplied to the burner with the specific fuel at a selected differential pressure.

3,414,199
STARTER MEANS FOR FLAIL-TYPE MATERIAL SPREADER
Robert G. Ferris, Harvard, Ill., assignor to Starline, Inc., a corporation of Illinois
Filed Sept. 16, 1965, Ser. No. 487,728
17 Claims. (Cl. 239—658)



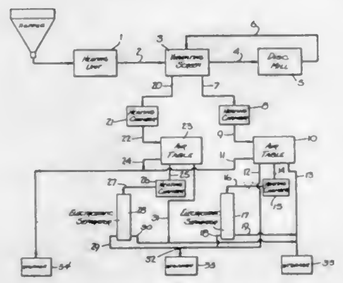
A flail type material spreader is provided at either one or both ends of the shaft with a specialized flail structure in the form of a short radial rigid bar on the shaft, a first arm relatively loosely pivoted at the outer end of the bar, a second arm relatively loosely pivoted at the outer end of the first arm, and a flail head relatively loosely pivoted at the outer end of the second arm, with all three pivots parallel to the axis of the shaft and the total play on the pivots being small enough that the flail head cannot strike the container end wall. The described double jointed structure eliminates flail and shaft damage found in prior art single jointed end flails.

3,414,200
VEHICLES FOR SPREADING DISCRETE MATERIALS
Frederick Ralph Savory, Sutton-in-Ashfield, Nottinghamshire, England, assignor to Steel Construction & Engineering Co. (Notts) Limited
Filed Jan. 11, 1967, Ser. No. 608,569
Claims priority, application Great Britain, Jan. 13, 1966, 1,619/66
14 Claims. (Cl. 239—673)



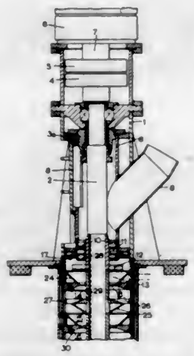
Control means for a hopper vehicle with discharging means for spreading discrete material over road or other ground surfaces comprises a control wheel resiliently urged into contact with the road or other ground surface during spreading and driving a governor controlling the speed of independent drive means for the discharging means, the control wheel being mounted for limited transverse movement with respect to the vehicle in response to other than straight forward movement of the vehicle, whereby the discharging means is driven strictly in accordance with the general rate of travel of the vehicle and, accordingly, the density of distribution of the material can be maintained at the predetermined optimum density under any road, weather and traffic conditions.

3,414,201
TALC BENEFICIATION METHOD
Peter H. Bixby, Madison, N.J., assignor to Resource Processors, Inc., Hoboken, N.J., a corporation of Georgia
Continuation-in-part of application Ser. No. 401,395, Oct. 5, 1964. This application Nov. 2, 1967, Ser. No. 685,227
13 Claims. (Cl. 241—4)



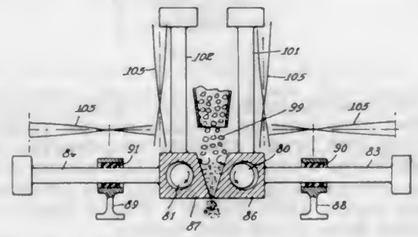
A method for separating talc ores into platy and non-platy particles for removing non-talc particles from talc ore is disclosed. The method contemplates crushing the ore and separating it into size groupings and heating the groupings and passing the groupings through a fluid separator to separate the particles in each of the groupings into platy and non-platy talc particles. Some of the particles are then passed through an electrostatic separator for further separation. The use of the fluid separator can be dispensed with under certain circumstances.

3,414,202
MIXING APPARATUS
Walter Gresch, 55 Lachmattstrasse, Muttenz, Switzerland
Filed Mar. 14, 1966, Ser. No. 533,967
1 Claim. (Cl. 241—42)



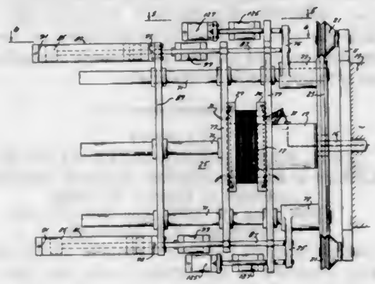
An apparatus for performing mixing, reaction and dissolving processes and preventing the formation of partially solved agglomerates, thereby reducing the effective power requirement for the process and so obviating stressing the material. The apparatus has a subdivided tubular housing vertically mounted, provided with fixed and rotatable elements plus nozzle feed members for injecting liquid into the chambers; all rotary or fixed blade-elements being so inclined that materials introduced by a chute at the upper part are conveyed vertically downwards.

3,414,203
APPARATUS FOR CRUSHING ROCK MATERIAL AND THE LIKE UTILIZING COMPLEX SONIC WAVE ACTION
Albert G. Bodine, 7877 Woodley Road, Van Nuys, Calif. 91406
Continuation-in-part of application Ser. No. 341,608, Jan. 31, 1964. This application Nov. 7, 1966, Ser. No. 592,517
10 Claims. (Cl. 241—202)



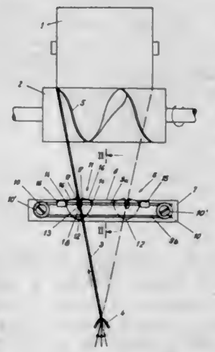
1. In a crushing apparatus:
a pair of opposed crusher members, at least one of which is vibratory toward and away from the other;
means for feeding material to be crushed between said jaws;
a sonic wave generator adapted to deliver a complex alternating output force; and
an elastically vibratory wave transmission system comprising a member of solid elastic material having a range of elastic vibration intercoupled between said generator and said vibratory jaw so as to receive said alternating force, undergo corresponding elastic vibration and impart vibration to said vibratory jaw;
said sonic wave generator having a complex gyratory force output which vibrates said jaw both sidewise and in up and down directions.

3,414,204
STATOR WINDING MACHINE
Bruno R. Friedrich, Milwaukee, Wis., assignor to Henry J. Gorski, Milwaukee, Wis.
Filed Feb. 9, 1965, Ser. No. 431,324
18 Claims. (Cl. 242—1.1)



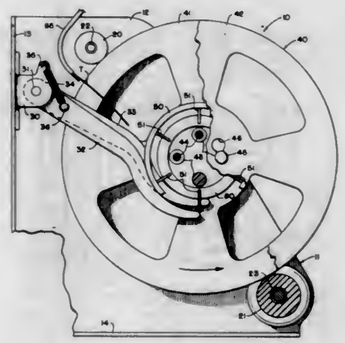
A machine for winding electric motor stators in which hydraulically operated rings engage and support opposite ends of a stator. The rings pivotally carry spring-biased fingers which support a first coil being wound onto the stator after which the rings are moved apart to a second position allowing the fingers to receive a second coil at predetermined positions, followed by separation of the rings to a third position where the wound stator is free of the rings.

3,414,205
THREAD GUIDING DEVICE HAVING A MOVABLE THREAD GUIDE
Paul Aschwanden, Arth, Switzerland, assignor to Aktiengesellschaft Fr. Mettler's Sohne Maschinenfabrik Arth, Arth, Switzerland
Filed Feb. 27, 1967, Ser. No. 618,954
Claims priority, application Switzerland, Apr. 4, 1966, 4,903/66
8 Claims. (Cl. 242—43)



A thread winding machine wherein one or more threads are guided onto a spool by a grooved or slotted drum and including a thread guide freely movable on a rod located parallel to the drum axis, the guide being moved in response to the traverse of the thread or threads guided thereby.

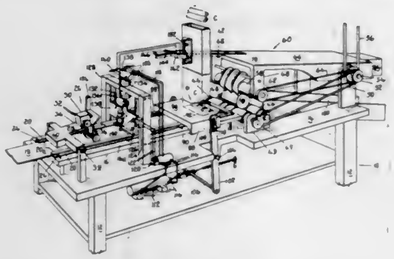
3,414,206
SELF-THREADING TAPE REEL
Robert J. Ramig, Jr., Niles, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,680
16 Claims. (Cl. 242—55.11)



A tape winding mechanism including a rotatably supported tape reel having a plurality of triangularly shaped toothed projections extending inwardly from one of its

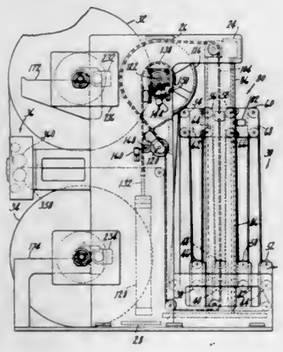
flanges and a pair of individually spring loaded fingers for urging a tape to be wound into engagement with the projections initially angularly so that at least one of the projections engages the tape to start the winding thereof and subsequently cylindrically so that the tape disengages itself from the projections.

3,414,207
WINDING APPARATUS
Howard A. Maynard, Toronto, Ontario, Canada (22 Elkhorn Drive, Willowdale, Ontario, Canada)
Filed July 26, 1965, Ser. No. 474,652
11 Claims. (Cl. 242—56)



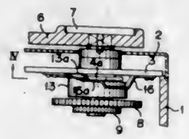
An apparatus for winding a flexible web into rolls of a predetermined length having a reciprocal carriage which delivers a spool to a cluster of rollers which rotate the spool, a friction wheel to drive the web to the rollers, directing faces for guiding the end of the web onto the spool, a guillotine which cuts off a predetermined length of the web and ejector for discharging a formed roll from the rollers.

3,414,208
APPARATUS FOR CONTROLLING THE UNWINDING OF WEB
Richard A. Butler, Jr., Brookline, and Edward P. Ziedelis, Canton, Mass., and Richard T. Martin, Chicago, Ill., assignors, by mesne assignments, to Richard A. Butler, Jr., Brookline, Mass.
Filed Sept. 2, 1966, Ser. No. 577,024
15 Claims. (Cl. 242—58.1)



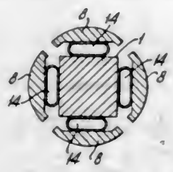
1. Apparatus for controlling the unwinding of web from a supply roll to a web consuming machine comprising at least two sets of idler rolls and two sets of dancer rolls, each set including at least two spaced apart rolls aligned in the direction of web movement for defining a web path in which a bight of web turning near its midpoint about a single roll is disposed essentially within another bight of web also turning near its midpoint about a single roll and in which each bight extends between dancer and idler rolls.

3,414,209
FILM WINDING MECHANISM FOR CAMERAS
Shuji Kimura, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Jan. 31, 1967, Ser. No. 612,955
Claims priority, application Japan, Feb. 5, 1966, 41/9,488
5 Claims. (Cl. 242—71.5)



Film winding mechanism for cameras including a ratchet wheel having spaced gaps mounted on the film winding shaft. A film advancing lever, mounted on the shaft, charges a spring during film advance and is thereafter returned to its initial position. The spring has an offset portion which engages a tongued flange on the winding flange at said initial position.

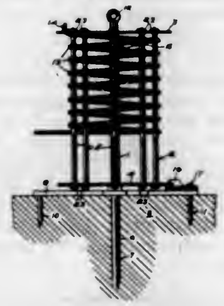
3,414,210
EXPANDING ARBOR FOR WINDING AND UNWINDING OF STRIPS
Jean Gaudin, Montigny-les-Cormeilles, France, assignor to Societe de Constructions Mecaniques de Creil, Creil, Oise, France, a corporation of France
Filed Feb. 24, 1967, Ser. No. 618,531
Claims priority, application France, Feb. 25,1966, 51,036
4 Claims. (Cl. 242—72)



An expanding arbor comprising a cone of polygonal cross-section having outer segments slidably mounted thereon. Inflatable flat tubular members are disposed between the core and segments to allow of free lateral deformation of said members and cause expansion of the segments to hold a coil of material.

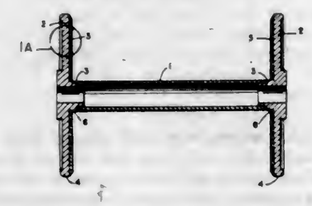
3,414,211
REEL FOR LAWN MOWER CONTROL
Clifford J. Roberts, Hitchin, England, assignor of one-half to George H. Nadel
Filed May 10, 1967, Ser. No. 637,563
4 Claims. (Cl. 242—85)

A rachet selected one-way rotatable drum on a vertical axle mounted in the ground pays out line which is wrapped around the drum to control a self-propelled mower attached to the end of the line. The diameter of the drum can be selected to determine the width of the spiral path followed by the mower and the rachet permits the drum to rotate when the line has been unwound to a preselected stop, thereby providing a circular path



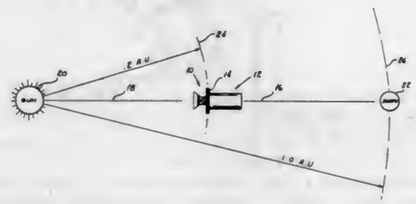
at the selected maximum diameter until the mower is shut down.

3,414,212
WARP BEAM FOR TEXTILE APPARATUS
Hubert Baggen, Oberbruch, Josef Effern, Heinsberg, and Wolfgang Kahlert, Oberbruch, Germany, assignors to Glanzstoff A.G., Wuppertal, Germany
Filed Dec. 20, 1966, Ser. No. 603,196
Claims priority, application Germany, Dec. 22, 1965, V 30,001
5 Claims. (Cl. 242—118.7)



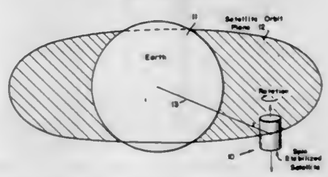
A warp beam used for conveying threads or yarns in textile apparatus which consists of a tubular shaft with attached circular end flanges composed of a light metal with the inner facing surfaces of the flanges being covered by a thin steel plate to provide resistance to abrasion by threads being conveyed on the warp beam and to impact damage. The inner facing surfaces of the steel plate are preferably coated with a hard chrome layer.

3,414,213
INTERNAL REFLECTION TEMPERATURE CONTROLLED SUN SENSOR
Alfred E. Eckermann, Hasbrouck Heights, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 13, 1966, Ser. No. 549,956
9 Claims. (Cl. 244—1)



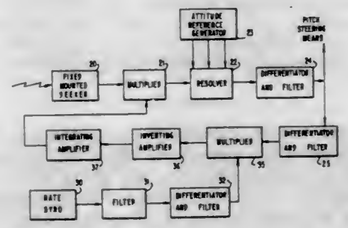
A sun sensor for use in a space vehicle in controlling the operation of the vehicle, the sensor including an internally reflecting conical lens having a ring segment which has a polished front surface acting as a shade for the sensor to prevent incident sunlight from striking the internal elements and sides of the sun sensor and heating it, the conical lens of the sensor having an apex angle for providing a broader null output so that the critical angle exiting at the surface of the lens occurs at other than the normal incident ray angle and further provides in the arrangement of the conical lens, means for internally reflecting substantially all the rays of the sun that may enter the angular cone so as to effect a total internal reflection for protecting the sensor and the sensor detecting cells as well as the space vehicle against the direct rays of the sun, and in addition including a disc acting as a shade for the whole vehicle to prevent incident sunlight from striking the sides of the vehicle and heating it.

3,414,214
SATELLITE POSITIONING SYSTEM
Martin Robinson, Malibu, and Robert L. Barton, Canoga Park, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed May 31, 1966, Ser. No. 554,039
10 Claims. (Cl. 244—1)



A satellite stabilization technique using a two pulse attitude control is described. A pair of earth sensors located in a spin stabilized satellite each detect segments of the earth and transmit pulses to a ground station on earth which utilizes the pulses to determine the orientation of the satellite in a given orbit plane. Deviation of the satellite in the orbit plane is detected by the time difference between successive pairs of pulses of each of the earth sensors. Ground-controlled signals computed on the ground are transmitted to the satellite for firing repositioning mechanisms to reorient the satellite into the preferred position within the orbit plane as indicated by identical time sequence between successive pulses from each earth sensor. The system is particularly useful in a synchronous or 24-hour orbit satellite system in which the satellite appears to hover in a given location in the sky with respect to the earth.

3,414,215
AUTOMATIC SEEKER GAIN CALIBRATOR
Willis G. Martin and Roy F. Dutton, Orlando, Fla., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 21, 1966, Ser. No. 535,862
11 Claims. (Cl. 244—3.15)



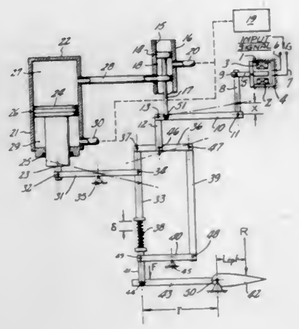
This invention relates to an automatic seeker gain calibrator arrangement, particulraly adapted for use in

missile guidance, in which means are provided for calibrating the seeker gain characteristic by adjustment of the gain of a multiplier operating on the seeker output signal so as to eliminate any residual body attitude rate signals in the steering signal.

3,414,216
FORCE BALANCE OUTPUT CONTROL MECHANISM

Jack O. Nash, Manchester, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware

Filed Oct. 18, 1966, Ser. No. 591,373
12 Claims. (Cl. 244—3.21)

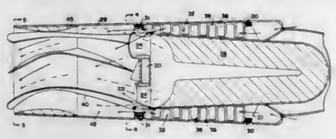


Control apparatus having an electrical input signal corresponding to actual dynamic response of the flight vehicle, said electrical input signal being converted into an amplified force output wherein each finite value of the amplified force is proportional to a finite value of input signal. An internal position feedback loop is connected between the electrical signal pilot valve input shaft and the force amplified output shaft. The amplified force output is applied to the flight vehicle steering element to provide a steering force that is proportional to the magnitude of the electrical input signal.

3,414,217
THRUST AUGMENTATION AND SPIN STABILIZATION MECHANISM FOR ROCKET PROPELLED MISSILES

Lawrence W. Kesting, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 16, 1967, Ser. No. 624,668
10 Claims. (Cl. 244—3.23)

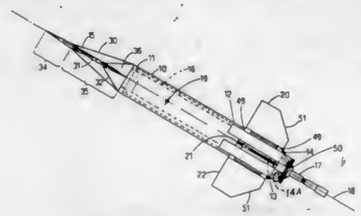


A missile which utilizes the gas discharges from two sets of nozzles to augment the thrust of the missile and to produce counteracting torques which drive the rotor and blades of an air compressor. The discharge from a plurality of canted nozzles in the rocket motor is directed against vanes which are disposed in the combustion chamber and rigidly attached to the shroud of the missile. Air is admitted through a diffuser and is compressed by a compressor and directed to the combustion chamber to mix with the gaseous discharge to expand the mixture in the combustion chamber which is exhausted through a shroud nozzle containing a continuation of the vanes in the combustion chamber. The reaction on the canted nozzles in the rocket motor, the impulse on the vanes in the combustion chamber and the reaction on the vanes in the shroud nozzle produce counter torques which activate the air compressor which compresses the air flowing from the diffuser to the combustion chamber. In the combustion chamber, air is mixed with the combustion products from the solid propellant and is heated by these products and the combustion products are further oxidized by the air. This causes an expansion of the mixture in the combustion chamber which augments the thrust delivered by the rocket motor.

3,414,218
AIR DROPPABLE APPARATUS

Clarence J. Russnak, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed June 22, 1967, Ser. No. 648,080
7 Claims. (Cl. 244—138)

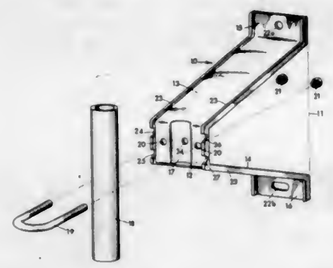


A cylindrical housing with an X-shaped spear or spike with a conical section adjacent one end of the housing and a set of stabilizing fins at the opposite or upper end which have a tapered upper edge for accommodating rotochute blades when the blades are just beginning to rotate. An antenna extends coaxially upwardlly past the rotochute. Provisions are made for attaching a parachute in lieu of using a rotochute.

3,414,219
BRACKET

Norman H. Siegel, Syracuse, N.Y., assignor to All-State Stamping Corporation, Syracuse, N.Y., a corporation of New York

Filed Jan. 26, 1967, Ser. No. 611,903
10 Claims. (Cl. 248—65)

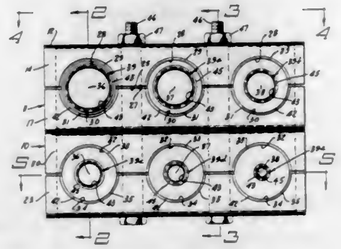


A wall bracket, particularly adapted for the rigid mounting of either a gas meter pipe or a gas meter channel-type bar has a one-piece frame in the general shape of a truncated triangle. The flat top of the triangle has a recessed groove for receiving the meter pipe longitudinally of the bracket, the pipe being secured to the bracket by U-bolt means. The edges of the frame are turned outwardly and notched at the top of the triangle to receive the arms of a meter bar having a channel-shaped or I-shaped cross-section, the meter bar being secured to the bracket by bolting means through an aperture in the recessed groove.

3,414,220
CLAMP MEANS

William R. Walker, Metamora, Mich., assignor to Hydro-Craft, Inc., Detroit, Mich., a corporation of Michigan

Filed Dec. 30, 1966, Ser. No. 606,411
9 Claims. (Cl. 248—68)

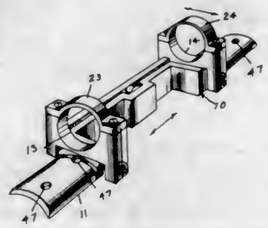


A clamp assembly comprising, at least a pair of aligned U-shaped elongated members disposed with one member inverted and on top of the other, each of said U-shaped members having a pair of spaced apart side walls, each of said side walls of each U-shaped member being provided with a plurality of longitudinally spaced apart semi-circular holes along the free edges thereof, the semi-circular holes in the one U-shaped member being aligned with the semi-circular holes in the other U-shaped member to form a plurality of pairs of transversely spaced circular holes, a connection fitting seated in the U-shaped members at each pair of aligned spaced apart circular holes, and means for securing the pair of U-shaped clamping members together.

3,414,221
MOUNT FOR TELESCOPE SIGHT

Carl E. Nelson, Kellettville, Pa. 16330

Filed Dec. 27, 1966, Ser. No. 604,827
10 Claims. (Cl. 248—205)

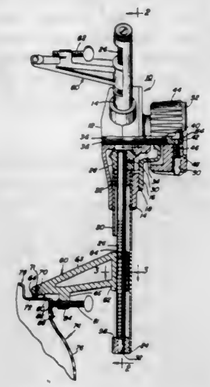


The telescope mount disclosed herein is made up of a base bar with a lateral groove. A saddle with two spaced telescope receiving parts in supported on the base. The base bar has slots in it which engage the points of screws on the saddle. A cam is provided on the saddle to move the saddle forward and rearward. Thus, as the saddle moves forward and rearward, the front of the saddle will move up and the rear of the saddle will move down and vice versa to adjust the elevation of the telescope relative to the rifle on which it is mounted.

3,414,222
WHEEL GAUGE ADAPTER

Walter V. Alley, Libertyville, and Richard H. Helgren, Waukegan, Ill., assignors to Ammco Tools, Inc., North Chicago, Ill., a corporation of Illinois

Filed Apr. 5, 1967, Ser. No. 628,687
9 Claims. (Cl. 248—226)

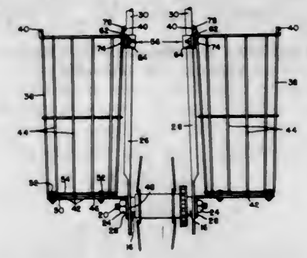


An adapter assembly for attachment to the rim of a wheel includes three symmetrically arranged jaws mounted on arms radiating from a central housing with each jaw having one fixed and one adjustable rim engaging surface. A manually rotatable member having thereon a planar magnetic mounting surface is mounted on the housing to enable radial adjustment of the jaws.

3,414,223
BASKET ATTACHMENT FOR BICYCLES

Ruben L. Pawsat, Maysville, Ky., assignor to Wald Manufacturing Company, Incorporated, Maysville, Ky., a corporation of Kentucky

Filed Dec. 23, 1966, Ser. No. 604,399
15 Claims. (Cl. 248—230)



A simple, inexpensive, efficient device for supporting and clamping a wire basket upon a bicycle brace member which supports a polo seat, said device having hook members facilitating application and removal using common tools.

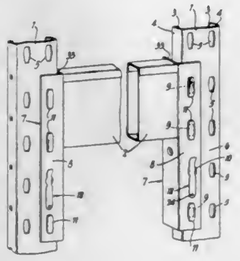
3,414,224
INTERLOCK STRUCTURAL MEMBERS

Leonard Thomas Robilliard and David Charles Watford, Middlesex, England, assignors to Dexion Limited, Middlesex, England, a corporation of Great Britain

Filed Mar. 28, 1966, Ser. No. 541,915
7 Claims. (Cl. 248—243)

1. A racking structure composed of upright and beam components provided with interengageable connection

means; comprising, a first of said components having at least one locking device pivotally mounted on said first component and having a protrusion thereon passing through a hole in said first component; a second of said components having a second hole therein registerable with said first hole in said first component and having one dimension smaller than the corresponding dimension of said first hole in said first component so as to expose a portion of the face of said second component through said first hole when said first and second holes are in alignment; said second hole being adapted to be automatically engaged by said protrusion of said locking de-

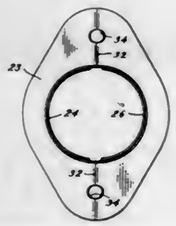


vice when said first component is presented to said second component for interengagement of the connection and hold-out means on said protrusion of said locking device engageable with said exposed face of said second component beside said second hole, without relative movement between said first and second components, by which it is held out of engagement and against re-engagement with said second component during removal of said first component from said second component once the device has been deliberately released from said second component.

3,414,225
MOUNTING MEANS FOR THERMALLY RESPONSIVE SWITCHES

Philip L. Lester, Lexington, Ky., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Nov. 4, 1966, Ser. No. 592,109
6 Claims. (Cl. 248—361)

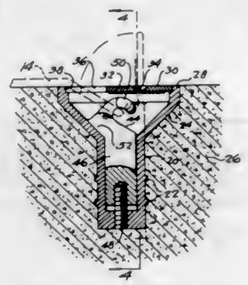


A mounting bracket for mounting thermally responsive electric switches in heat transfer relationship with a mounting surface comprising a generally annular flange having an upstanding wall with gripping surfaces thereon. Two different gripping surfaces are shown. The annular flange is pre-bent into a first position allowing ingress and egress of the switch and which is biased by means of fasteners into a second position in which the switch is not only tightly gripped but is also forced into firm physical contact with the mounting surface.

3,414,226
POOL COVER ANCHOR

Henry A. Patnaude, 831 Los Molinos Way, Sacramento, Calif. 95825

Filed Aug. 17, 1967, Ser. No. 661,303
9 Claims. (Cl. 248—361)

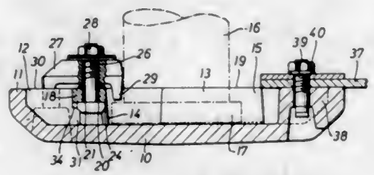


A pool cover anchor adapted to be embedded in concrete comprising a hollow housing having a cylindrical portion with annular securing bosses thereon and a frustoconical portion on the top thereof, a hook removably mounted inside the housing and a hinged cover for covering substantially all of the housing is disclosed.

3,414,227
FOOT PLATE FOR PIT PROPS

Franz Beulker, Werne an der Lippe, and Heinrich Behr, Altlunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar bei Lunen, Westphalia, Germany, a corporation of Germany

Filed Feb. 6, 1967, Ser. No. 614,130
Claims priority, application Germany, Feb. 9, 1966, G 33,965
14 Claims. (Cl. 248—357)

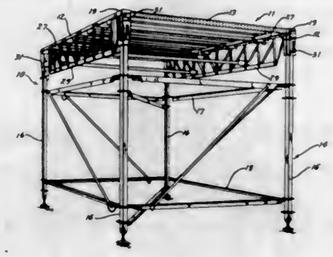


Foot plate arrangement for mounting thereon a support prop having a bottom end peripheral mounting bead, having pocket means for receiving the prop bottom end, and bolt head holding means disposed adjacent the packet means including bolt shank engaging cooperative edge portions situated remote from the pocket means and corresponding bolt head engaging underside surfaces spaced vertically and laterally from the adjacent foot plate portions sufficiently to define a free space thereat permitting free access to the underside surfaces remote from the pocket means, to insert a bolt with its head against said underside surfaces and its shank extending upwardly past said edge portions in seating engagement therewith for connection with a dog for the bead of the prop without hindrance caused by the presence of the prop on the foot plate.

3,414,228
CONNECTING MEMBER FOR METAL FORM STRUCTURES

Ralph L. Jennings, Des Moines, Iowa, assignor to Economy Forms Corporation, Des Moines, Iowa, a corporation of Iowa

Filed May 18, 1966, Ser. No. 550,972
4 Claims. (Cl. 249—18)



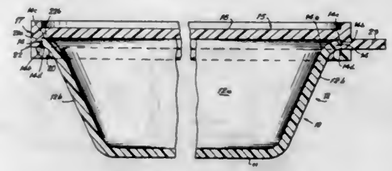
1. In a shoring structure for metal concrete forms including:
(a) frame means having four corner posts with horizontal top surfaces,
(b) a pair of oppositely arranged parallel truss assemblies having top horizontal surfaces, each truss assembly extended between and connectable to a pair of corner posts with the top surfaces thereof in the plane of the top surfaces of said corner posts,
(c) a plurality of transversely extended connecting members secured to each truss assembly in a longitudinally spaced relation and below the plane of the top surface thereof,
(d) each connecting member having opposite end portions projected laterally outwardly from a corresponding truss assembly.
(e) each of said end portions being formed with an upright slot open at the upper end thereof, each slot having a first vertical side wall normal to a side edge of the top surface of a truss assembly and an opposite side wall having a lower vertical section and an upper section inclined away from said first side wall, and
(f) a metal form including a top flat surface with depending end flanges, each of said end flanges having a thickness substantially equal to a width of a slot between the vertical portions of the side walls thereof, and a height such that when received in a slot the top surface of said form is in the plane of the top surfaces of said truss assemblies,
(g) said top surface of the metal form having a length equal to the distance between the top surfaces of said truss assemblies whereby on positioning of said end flanges within transversely oppositely arranged slots said flanges are guided by said inclined slot wall sections to positions between the vertical portions of the slots to releasably hold the top surface of the metal form adjacent to and in the plane of the top surfaces of said truss assemblies.

3,414,229
ICE TRAY HAVING READILY REMOVABLE COVER

Carl-Gustaf Norberg, Banhagen, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed July 6, 1966, Ser. No. 563,206
7 Claims. (Cl. 249—121)

A removable flexible cover which overlies an ice tray having an outward flaring rim at the open top thereof, a resilient U-shaped section of the cover extending about the periphery thereof having a closed end contacting the outermost edge of the rim and spaced arms respectively contacting the top and bottom surfaces of the rim, the aforementioned resilient U-shaped section having adja-

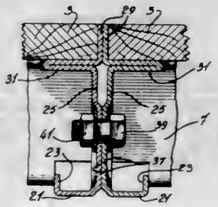


cent portions separated from one another and a resilient inverted L-shaped section which extends between and bridges the separated U-shaped sections and has a vertical arm contacting the outermost edge of the rim and a horizontal arm contacting the top surface of the rim.

3,414,230
BOUNDARY FRAME MEMBERS FOR MOULDING PANELS

Louis P. Brosseau, 7600 Place d'Aubigny, Ville d'Anjou, Montreal, Quebec, Canada

Filed Jan. 25, 1966, Ser. No. 522,948
3 Claims. (Cl. 249—193)



A boundary frame member comprising an elongated metal strip having, in cross-section, a flat edge extending in to a double ply rib projecting at right angles thereto, a web portion extending from the rib parallel to the flat edge and recessed therefrom in the direction of the rib. The web portion defining at the end away from the flat edge a hook-shaped reinforcing flange projecting in the direction of the rib. The web portion having along the center line thereof a series of bulges defining flat protruding surfaces along its length flush with the edge and the flat edge being punched out at intervals in between the bulges to provide clearance openings for tie bars.

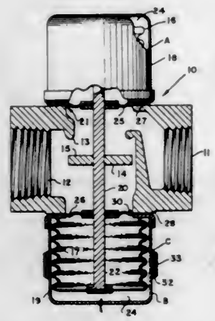
3,414,231
ELECTRIC VALVE

Kenneth G. Kreuter, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Feb. 17, 1964, Ser. No. 345,287
2 Claims. (Cl. 251—11)

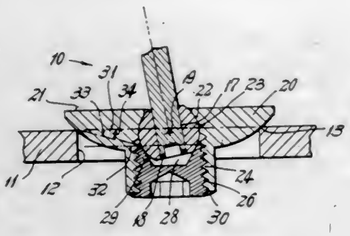
1. Ambient temperature compensated valve comprising a valve body with inlet and outlet ports, a valve seat defining a valve opening in the body between the ports, a valve stem extending through the valve opening, said valve stem having each end extending from each side of the valve body, a valve head mounted on the mid-portion of said valve stem below the valve seat, a vapor filled power unit connected on each end of the valve stem, said units being normally responsive only to ambient temperature, each unit including a spring acting bellows with the top connected to each respective end of the valve stem, each power unit being sealed from the controlled

fluid in the valve body by a diaphragm having an effective fluid pressure area equal to that of the valve head and said power units being of equally charged capacity to compensate for ambient temperature variations, said



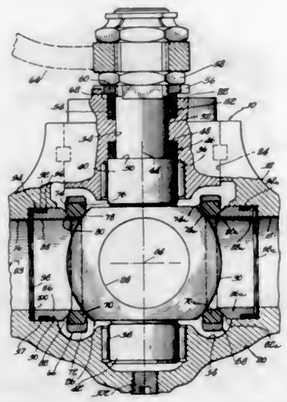
bellows normally biasing said valve to open position away from said valve seat, and an electric heater means adjacent one of said vapor power units for expanding the vapor in said power unit, to thereby move said valve toward said seat.

3,414,232
GIMBAL VALVE
Robert R. Hellman, Bridgeport, Conn., assignor to Westport Development & Manufacturing Company, Inc., Milford, Conn., a corporation of Connecticut
Filed Aug. 8, 1966, Ser. No. 570,915
7 Claims. (Cl. 251—86)



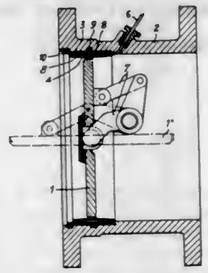
1. A gimbal valve for cooperation with a valve seat defining an opening to regulate closure of the opening comprising an elongate actuator having at least the side surfaces of an end portion formed to constitute segments of a sphere having a center, a stopper having a base and sealing sides extending from said base, said stopper being formed with a bore that has a portion having side constituting segments of a hemisphere having a center within the bore and adjacent the base of the stopper and another portion adjacent the other end of the stopper, and a plug positioned in the another portion of said bore and having a recess formed with diverging sides, said stopper being positioned on said actuator to have both centers coincide, said sealing sides of the stopper being dimensioned with respect to the valve seat to engage said valve seat in a first plane lying between the base of the stopper and the common center and said diverging sides of said plug being dimensioned to engage the spherical surfaces of the actuator in a second plane on the other side of the common center.

3,414,233
BALL VALVE
Werner K. Priese, Barrington, and David J. Davies, Naperville, Ill., assignors to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois
Filed Oct. 20, 1966, Ser. No. 588,066
16 Claims. (Cl. 251—172)



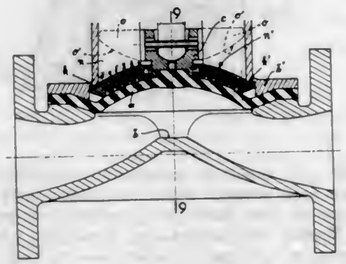
1. A ball valve comprising, in combination, valve body means defining an internal valve chamber and two flow passages opening into said chamber, a flow control ball disposed rotatably within said chamber and having an external surface of spherical curvature, said body means defining a control bore opening outwardly from said chamber, a control stem integral with said ball and extending outwardly through said control bore, said body means defining an inner annular well encircling said control stem and opening inwardly, an inner annular stem seal formed of yieldable material and having an axial thickness which is at least equal to the radial thickness of the seal, said inner stem seal being disposed in said inner well in encircling relation to said stem, a circular inner seal compressor supported on said stem and extending outwardly into said inner well into compressive engagement with said inner seal, said body means defining an outer annular well encircling said stem and opening outwardly, an outer annular stem seal formed of yieldable material and being disposed in said outer well in encircling relation to said stem, a circular outer seal compressor encircling said stem in axially movable relation thereto and extending inwardly into said outer well into compressive engagement with said outer seal, stem seal tightening means coacting with said outer seal compressor and said stem to react inwardly on said outer seal compressor and outwardly through to said stem on said inner seal compressor to tighten said outer and inner stem seals to the same degree while incidentally displacing said ball along the axis of said control stem, bearing means supported on said body means and journalling said ball for rotation about the axis of said control stem, two hollow generally cylindrical valve seat supports slidably supported on said body means in coaxial alignment with said respective passages and extending into opposite sides of said chamber to form inward continuations of said respective passages, spring means coacting with said respective seat supports to yieldably urge translation of the latter toward said ball, an annular seat support seal coacting with each of said seat supports and said body means to form therebetween a fluid-tight seal permitting translation of the coacting seat support toward and away from said ball, each of said seat supports having a differential piston area thereon continuously exposed to the fluid pressure in the adjacent passage and providing in response to fluid pressure in the adjacent passage a pressure force on the seat support urging the latter toward said ball, each of said seat supports defining on the inner end thereof an annular seat support surface having an inwardly convex spherical curvature corresponding to the spherical curvature of said external ball surface, two annular valve seats intervening between said ball and said respective seat supports, and each of said annular valve seats defining two annular sealing surfaces of concave spherical curvature fitting sealably against said external ball surface and the seat support surface of the adjacent seat support.

3,414,234
PRESSURIZED FLUIDTIGHT SYSTEM FOR THROTTLE VALVES
Marie Charles Emile Henrion, 11 Rue Hermite, Nancy, France
Filed Oct. 24, 1965, Ser. No. 504,364
Claims priority, application France, Nov. 24, 1964, 996,158
3 Claims. (Cl. 251—173)



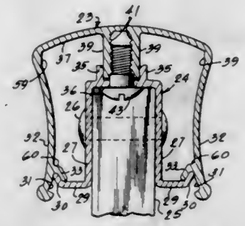
A fluidtight chamber fitted within a cylindrical recess in the casing of a throttle valve between the wall of the recess and the throttle valve in its closed operative position. Said chamber is constituted by two coaxial outwardly convex ferrules welded along their cooperating edges adapted to slidingly engage the transverse walls of the recess upon admission of fluid into the chamber, the two ferrules of which bulge consequently outwardly in opposite directions and produce through the dual deformation of both ferrules thrusts in opposite directions on the two elements to be fluidtightly engaged by the ferrules.

3,414,235
DIAPHRAGM CARRYING SYSTEMS
Henry Marie Joseph Georges Lumpp, 7 Rue Grolee, Lyon, France
Filed Dec. 27, 1965, Ser. No. 516,245
Claims priority, application France, Dec. 30, 1964, 45,452; Dec. 23, 1965, 46,740
3 Claims. (Cl. 251—331)



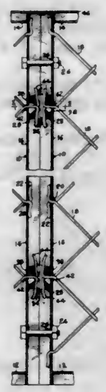
A diaphragm valve or a pump has a diaphragm that is supported by an assembly of concentric rings that slide on each other and that bear alternately, at their edges opposite the membrane, against fixed fingers and movable fingers, with the point of the transfer of the support from the fixed fingers to the movable fingers, and vice versa, moving progressively upon movement of the membrane actuator.

3,414,236
HAND RAIL
Burton L. Siegal, Skokie, Ill., assignor to Kenron Aluminum & Glass Corporation, Niles, Ill., a corporation of Illinois
Filed Aug. 18, 1966, Ser. No. 573,241
8 Claims. (Cl. 256—22)



Foldable hand rail in the form of a downwardly opening channel having side walls diverging at their lower ends, the insides of which form wedging surfaces. The diverging side walls engage outwardly extending feet of an inner channel, pivoted to the pickets of the hand rail. Means located between the pickets are provided to draw the hand rail toward the channel and wedge the channel into clamping engagement with the pickets by wedging movement of the diverging side walls of the rail along the outwardly extending feet of the inner channel, to thereby provide a rigid hand rail structure free from rattling.

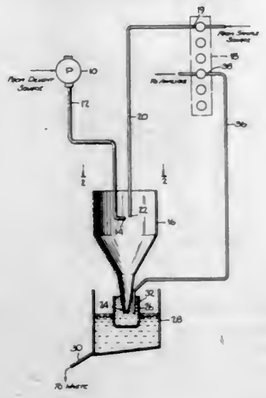
3,414,237
WOVEN WIRE PARTITION
Walter A. Bishoff, Sr., Louisville, and Leonard B. Ulery, Jeffersontown, Ky., assignors to Logan Co., Louisville, Ky., a corporation of Kentucky
Filed May 23, 1967, Ser. No. 640,695
7 Claims. (Cl. 256—24)



Block members are placed in the adjacent vertical channels forming part of the frames of woven wire partitions to prevent the edges of the channels when brought into engagement with each other from slipping laterally

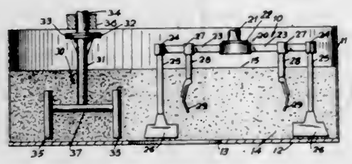
and "telescoping" relative to each other, to facilitate the assembling of the channels, the blocks being so constructed as to receive and provide for the crimping of certain of the wires of each panel, thus eliminating the necessity for welding or otherwise fixing the blocks in the channels.

3,414,238
CONTINUOUS DILUTION APPARATUS
Eugene W. Catanzaro, Paramus, N.J., assignor to Technicon Corporation, a corporation of New York
Filed Aug. 18, 1966, Ser. No. 573,258
5 Claims. (Cl. 259—4)



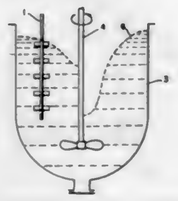
An apparatus for diluting a stream of liquid preparatory to analysis which comprises a nozzle directed tangentially toward the inner surface of a funnel-like mixing chamber and a conduit for delivering liquid into a diluent stream just issuing from said nozzle. The apparatus further includes a small capacity overflow container positioned to receive the mixed liquid and diluent stream, and a second conduit to remove a sample to be tested from said container. Accurate volumetric flow-rate pumps are employed to deliver the liquid and diluent stream to the chamber and to remove the sample from the container.

3,414,239
AUXILIARY MIXING TOOL FOR MIXING DEVICE HAVING A MAIN MIXING TOOL
Wilhelm Eirich, Bahnhofstrasse 19, and Gustav Eirich, Walldurnerstrasse 40, both of Hardheim, Nordbaden, Germany
Continuation-in-part of application Ser. No. 586,898, Oct. 14, 1966. This application Feb. 13, 1968, Ser. No. 705,167
Claims priority, application Germany, Mar. 12, 1964, E 26,602
5 Claims. (Cl. 259—104)



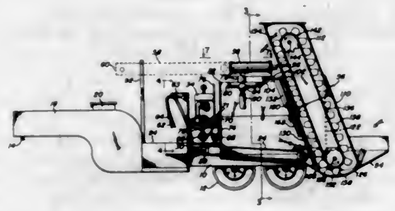
The disclosure is directed to mixing devices of the type including a substantially horizontal mixing pan for containing material to be mixed, a main mixing tool rotated about a substantially vertical main axis, and at least one auxiliary mixing tool rotated about an upright auxiliary axis spaced radially from the main axis toward the periphery of the pan. In accordance with the disclosure, the auxiliary mixing tool comprises an upright shaft rotatable about the auxiliary axis, rod mounting means extending diametrically of the upright shaft at a point thereof substantially below the normal level of the material in the pan, and a pair of substantially rectilinear and elongated cylindrical rods secured to diametrically opposite ends of said rod mounting means, these rods extending substantially parallel to the upright shaft. The rod mounting means and the cylindrical rods are arranged to be completely immersed within the material below the upper level thereof, with the auxiliary tool being rotated at a velocity which is very substantially higher than the angular velocity of the main mixing tool.

3,414,240
BAFFLES FOR AGITATED VESSELS
Hans Jung and Walter Zapf, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed May 18, 1967, Ser. No. 639,431
Claims priority, application Germany, May 21, 1966, B 87,229
2 Claims. (Cl. 259—107)



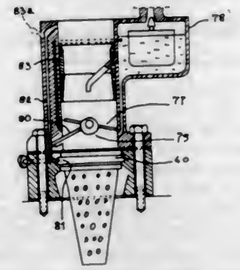
Baffles for agitated vessels provided with a motor-driven impeller which comprise a stationary support member parallel to the stirrer and two rows of vanes mounted radially on the support member.

3,414,241
TENDER FOR HIGHWAY RESURFACING EQUIPMENT
Alphonse D. De Shano, 950 Noyes Ave., Hamilton, Ohio 45015
Filed June 12, 1967, Ser. No. 645,325
17 Claims. (Cl. 259—153)



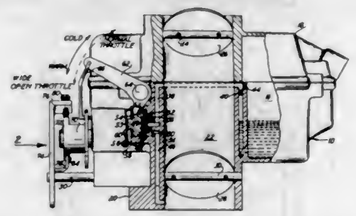
Tender for highway resurfacing equipment loads, transports, and unloads slurry ingredients with substantial savings of time, labor, and transport equipment personnel. Tender incorporates high headroom components which may be collapsed or otherwise compacted to permit unrestricted highway travel beneath bridges, underpasses, and the like. Its use eliminates roadside stockpiling of slurry ingredients and attendant contamination thereof, and eliminates search for suitable stockpiling sites. Included in the apparatus is a novel collapsible materials elevator, and other conveyor elements hydraulically operated and controlled for efficient handling of slurry materials.

3,414,242
DEVICE FOR BALANCED HOMOGENIZATION OF AIR AND LIQUID FUEL MIXTURES IN INTERNAL COMBUSTION ENGINES
René Bouteleux, 5 Rue Dulong, Rouen, France
Filed Dec. 30, 1966, Ser. No. 606,296
Claims priority, application France, Dec. 30, 1965, 44,343; May 23, 1966, 7,145; Nov. 22, 1966, 7,164
2 Claims. (Cl. 261—18)



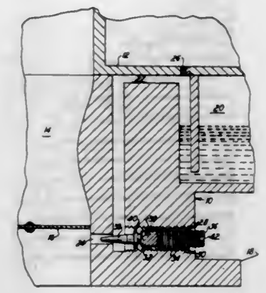
A device for homogenizing the mixture of air and liquid fuel for an internal combustion engine for reducing the portion of unburnt motor fuel when the engine is idling. A ring-shaped groove and a diaphragm consisting of a perforated truncated cone surrounded by an equally cone-shaped cavity, the diaphragm located below the groove, air channels connecting the groove with the atmosphere.

3,414,243
CARBURETOR HAVING A COLD STARTING ENRICHMENT MECHANISM
Harry A. Baczkowski and Robert S. Harrison, Detroit, and Charles K. Weslock, Harper Woods, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,078
9 Claims. (Cl. 261—39)



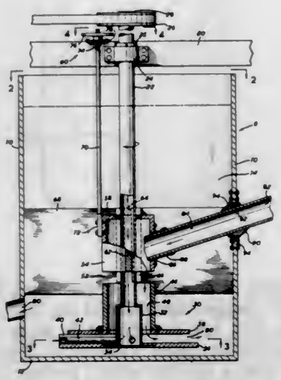
A fuel conduit connects a chamber formed in the carburetor body with the fuel bowl and the carburetor induction passage posterior of the throttle blade. Positioned in the chamber adjacent the inlet of the fuel conduit is a disphragm that is urged away from the inlet but seats thereon to halt fuel flow when engine manifold vacuum exceeds a predetermined value. A control lever connected to a thermally responsive element and the throttle blade permits a spring to move the diaphragm to its seat at normal temperature and at wide open throttle only.

3,414,244
IDLING FUEL LIMITING DEVICE
Robert V. Patterson, Jr., Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 630,869
6 Claims. (Cl. 261—41)



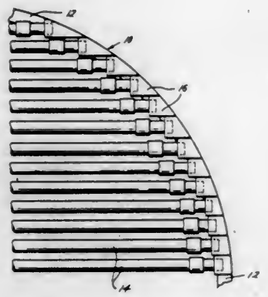
This device prevents an increase by personnel in the field of the maximum amount of fuel supplied to an engine through the idling system of a carburetor. A sleeve threadably engages the carburetor body and an idling control needle having a tapered control portion threadably engages the sleeve with the control portion projecting into the idling fuel supply passage. A shoulder formed on the portion of the control needle inside the supply passage bears against the sleeve when the needle is threaded out of the sleeve a certain distance, and means are provided to lock the sleeve to the carburetor body.

3,414,245
FROTH FLOTATION APPARATUS OR PUMP DEVICE
David Frazer, 247 Lakeshore Drive, Apt. 4, Toronto, Ontario, Canada
Filed May 7, 1965, Ser. No. 454,057
4 Claims. (Cl. 261—87)



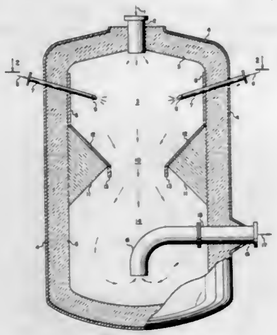
Froth flotation apparatus having an impeller which discharges gas at the periphery of the impeller, the gas passing by way of a hollow shaft and passage in the impeller, and an inverted cup movable to and away from the impeller for regulating the recirculation of the pulp and also for admitting slurry from an inlet source. An additional feature is that the appartus may be used as a pump.

3,414,246
TOWER TRAY
Frank G. Weeden and Gail W. Graves, Houston, Tex., assignors to John L. Dore Co., Houston, Tex., a corporation of Texas
Filed Dec. 19, 1966, Ser. No. 602,781
5 Claims. (Cl. 261—113)



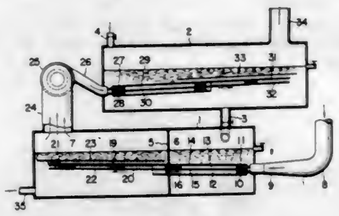
This invention relates to an adjustable corrosion-resistant tower tray, comprising an annular support with bosses to secure rods in adjustably spaced relation thereon, in order to provide slots between adjacent rods of desired width. The circular tray is adapted for use in process vessels, absorption and distillation towers, and the like.

3,414,247
SYNTHESIS GAS QUENCHER
Saverio A. Sama, Thornwood, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,908
14 Claims. (Cl. 261—118)



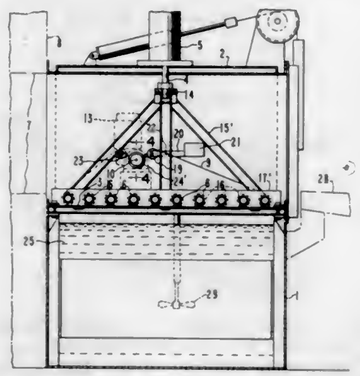
An apparatus is provided for quenching hot synthesis gas to a lower temperature without the formation of solid free carbon. The hot gas stream is passed downwards through a refractory-lined cylindrical container, which is provided with a central venturi passage in which gas flow is accelerated. The venturi configuration, consisting of a refractory projection with a central opening, divides the container into upper and lower chambers. A metallic lining extends over the inner surface of the refractory lining in the upper chamber, and over the upper surface of the refractory projection. A plurality of ducts are provided to spray a quench liquid into the hot synthesis gas in the upper chamber.

3,414,248
APPARATUS FOR PURIFYING CONTAMINATED GASES
Mitsuji Iwanaga, 2177 Suwano-machi, Kurume-shi, Fukuoka-ken, Japan, and Hiroshi Idemitsu, 275 4-chome, Fukuoka-shi, Fukuoka-ken, Japan
Filed June 22, 1965, Ser. No. 465,944
Claims priority, application Japan, June 27, 1964, 39/36,635; Mar. 3, 1965, 40/16,275
1 Claim. (Cl. 261—122)



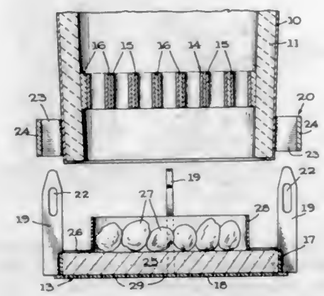
A device for the purification of contaminated gases having at least one closed tank which contains a relatively shallow purifying liquid bath and means for the introduction of said gas which have a flattened configuration disposed in the tank, further a flat perforated plate with a large number of small holes connected to the introducing means. A blower is connected to the bath, and a baffle plate is disposed above the plate leaving a small space therebetween. The width and length of the baffle plate is larger than the perforated plate so that the former covers the latter from above. The baffle plate also is below the upper bath level and is slightly inclined from horizontal so as to guide the stream of gas bubbles emanating from the perforated plate in an upward direction.

3,414,249
FLUID TREATING TRANSFER MECHANISM
Harold E. Mescher, Pico Rivera, and Robert L. Morton, Santa Ana, Calif., assignors to Pacific Scientific Company, Commerce, Calif., a corporation of California
Filed June 10, 1966, Ser. No. 556,639
2 Claims. (Cl. 266—6)



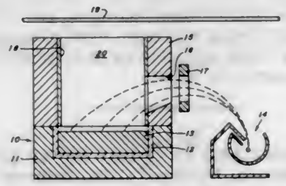
A vertically movable carriage for heat treating furnaces having work carrying rollers driven by a sprocket chain held taut by a weighted idler and positioned by the latter so as to engage a fixed drive sprocket whenever the carriage moves upwardly to its loading and unloading position.

3,414,250
LADLE FOR USE IN TREATMENT OF MOLTEN METAL
William E. Snow, Birmingham, Ala., assignor to American Cast Iron Pipe Company, Birmingham, Ala., a corporation of Georgia
Filed July 31, 1967, Ser. No. 657,146
10 Claims. (Cl. 266—34)



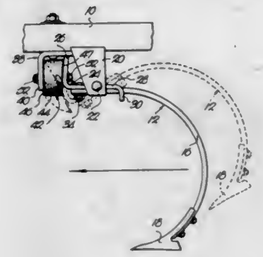
A ladle for use in the treatment of molten metal having a refractory-lined metal shell open at both top and bottom, a separately formed bottom closure detachably connected to the shell, and a wall of refractory material fixed to and extending transversely across the interior of the shell at a position adjacent, but spaced above, the bottom end thereof, the space between the wall and the bottom closure being adapted to contain a quantity of treating material in lump-like form, and the wall having a plurality of vertically extending openings therein for permitting contact between molten metal in the ladle and the treating material. The openings in the wall may be formed by ceramic tubes having inside diameters less than the minimum lump size of the treating material so as to prevent the treating material from floating upwardly to the surface of the molten metal.

3,414,251
METAL VAPORIZATION CRUCIBLE WITH UPSTANDING WALLS FOR CONFINING AND CONDENSING VAPOR
Waldo Rall, Fox Chapel Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Continuation of application Ser. No. 482,193, Aug. 24, 1965. This application Jan. 19, 1968, Ser. No. 703,509
2 Claims. (Cl. 266—39)



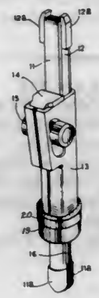
A crucible for holding molten metal, provided with a wall around the metal bath and extending upwardly therefrom to confine vapor ascending from the bath surface and condense vapor not moving directly toward the material above the bath to be coated by condensation thereon. Metal condensed on the wall runs down back into the bath.

3,414,252
FARM IMPLEMENT HAVING ELASTOMER MOUNTING
Glenn E. Frager and Bill J. Pfenninger, Hutchinson, Kans., assignors to Krause Corporation Inc., Hutchinson, Kans., a corporation of Kansas
Filed May 3, 1966, Ser. No. 547,249
3 Claims. (Cl. 267—1)



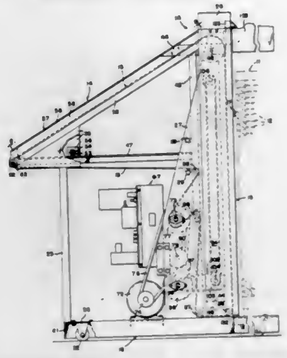
A tool mount for a farm implement comprising a pivoted tool carrier provided with a plate on one end and between the pivot point and a plate on the implement frame. An elastomer between the plates is secured to each plate respectively and swinging of the tool carrier imparts deformation stresses of shear, tension and compression in the elastomer whereby the elastomer yieldably resists said swinging movement.

3,414,253
FASTENING DEVICES
Charles Mewse, deceased, late of Welwyn Garden City, England, by Mary Mewse, executrix, Welwyn Garden City, England, assignor to Avdel Limited, Welwyn Garden City, England, a joint-stock company of England
Filed Apr. 8, 1965, Ser. No. 446,748
Claims priority, application Great Britain, Apr. 10, 1964, 14,838/64
3 Claims. (Cl. 269—47)



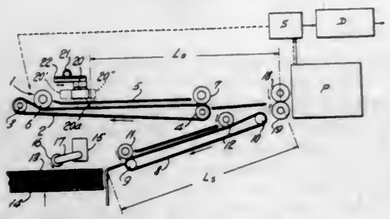
A fastening device for temporarily clamping together apertured sheets comprises a bifurcated claw member with an outward projection at the free end of each limb, a spreader slidable between the limbs to force them apart and attached to a sleeve through which the limbs pass, a locking device of the roller and inclined ramp type between the sleeve and the claw member to lock the sleeve against movement away from free end of the claw member, and a cup-shaped aperture member at one end of the sleeve which is spring urged to press the sheets into contact with the outward projections on the claw member.

3,414,254
SHEET COLLATING DEVICE
Donald L. Snellman and Jack D. Keeler, Seattle, Wash., assignors to Norfin, Inc., Seattle, Wash., a corporation of Washington
Filed Jan. 17, 1966, Ser. No. 521,077
28 Claims. (Cl. 270—58)



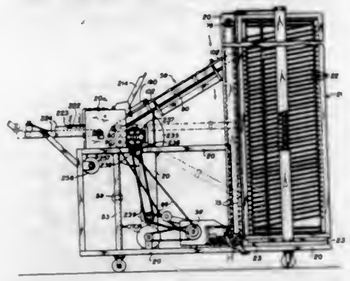
A sheet collator distributor for receiving sheets on one side thereof and distributing the sheets on the other side at preselected vertical positions for reception by a column of bins. A continuous tape conveyor includes an upwardly inclined section for receiving the sheets and a substantially vertical section for conveying the sheets downwardly. A deflector mechanism is mounted for vertical travel up and down the vertical section of the conveyor with its position being controlled by an electrical control system so as to cycle through a set of preselected vertical positions. The signal for activating the deflector is actuated by the passage of a sheet from the conveyor over the deflector and into a bin. Non-moving extensible tape members are connected so as to move with the deflector assembly and overlie the conveyor tape so as to hold the moving sheet against the vertical tapes during the downward course. The upwardly inclined infeed piece section of the conveyor is provided with diverging conveyor tapes in order to laterally tension the movable sheets and individually mounted freely rotatable ball members are used to hold the incoming sheets against the diverging tapes.

3,414,255
PAPER FEEDING DEVICE FOR COPYING MACHINES
Minoru Umahashi, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Filed Aug. 19, 1966, Ser. No. 573,628
Claims priority, application Japan, Aug. 21, 1965, 40/50,927
9 Claims. (Cl. 270—58)



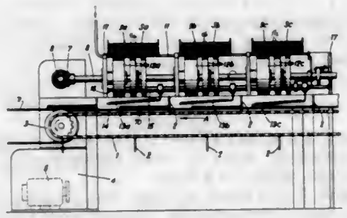
In a copying machine, feed means for sensitized paper adapted to adjust the speed of advance of said paper in relation to the original sheet to insure continued alignment of said sheets as they progress through the machine.

3,414,256
SHEET SORTER HAVING POCKET INDEXING MEANS
Luis Mestre, 305 E. 46th St., New York, N.Y. 10017
Filed Oct. 12, 1966, Ser. No. 586,152
18 Claims. (Cl. 270—58)



A sheet sorter having a column of vertically spaced pockets and a pivoted delivery conveyor. The forward end of the delivery conveyor is indexed between any desired group of successive pockets in the column. Means are provided to control the delivery of more than one sheet to any pocket or to skip delivery of a sheet to any pocket with the skip deflector ahead of the indexing trigger.

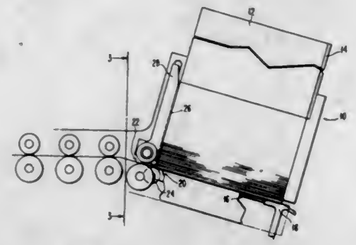
3,414,257
SHEET FEEDING AND COLLATING APPARATUS
Hans Muller, Zofingen, Switzerland, assignor to Grapha Maschinenfabrik Hans Muller A.G., Zofingen, Switzerland
Filed Nov. 1, 1966, Ser. No. 591,302
Claims priority, application Switzerland, Nov. 8, 1965, 15,397/65
14 Claims. (Cl. 270—58)



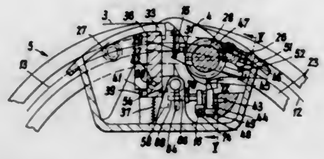
A sheet collating machine of the type having a plurality of stations, an intercepting platform at each station and a conveyor adjacent the platforms. The conveyor has an entraining finger which strips sheets off the intercepting platforms. The intercepting platforms are reciprocated parallel to the conveyor whereby a sheet achieves a certain velocity before being contacted by an entraining finger to minimize damage to the sheets.

3,414,258
RECORD CARD FEEDING APPARATUS
Edgar Alan Brown, Saratoga, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 12, 1966, Ser. No. 601,055
5 Claims. (Cl. 271—44)

A record card feeding apparatus including a hopper having a side member mounted a small angle from the vertical and a back member mounted a small angle backward from the card feeding direction. A card throat member is mounted at the front of the hopper to prevent all but the bottom card in the stack from being fed from the hopper, and a selectively actuable picker knife for feeding the bottom card from the stacker. The number of cards in the stacker is unlimited by considerations of card damage or feeding reliability.

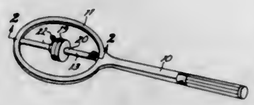


3,414,259
GRIPPER DEVICE FOR A SHEET FEEDER OF A PRINTING PRESS
Werner Koch, Gotzenhain, and Friedrich Preuss, Neu-Isenburg, Germany, assignors to Roland Offsetmaschinenfabrik Faber & Schleicher A.G., Offenbach am Main, Germany, a firm
Filed May 29, 1967, Ser. No. 642,080
Claims priority, application Germany, June 1, 1966, R 43,383
7 Claims. (Cl. 271—82)



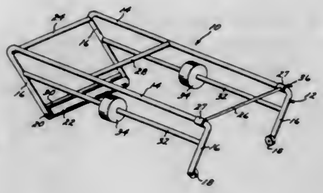
A gripper device for a sheet feeder of a printing press which adapts itself automatically to different paper gauges by limiting the gripper movement to a predetermined angle and by arresting the gripper rests at a predetermined level in reference to the sheet feeder. Such arrest of the gripper rests is automatically released upon completion of a gripping operation and automatically restored before the beginning of a new gripping operation.

3,414,260
ADJUSTABLE WEIGHT EXERCISER FOR AN ATHLETIC IMPLEMENT
Jimmy A. Gust, 3231 Santa Fe Ave., Long Beach, Calif. 90810
Filed Oct. 21, 1965, Ser. No. 499,588
2 Claims. (Cl. 272—57)



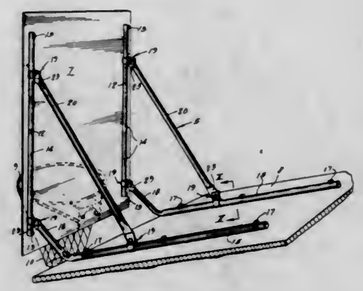
Athletes frequently desire an exerciser which is a part of some athletic implement with which the user might be adept, such as a tennis racket, a golf club, a baseball bat, or the like. Furthermore, the weight can be adjusted on the athletic implement to exercise certain muscles of the user. Thus the exercising weight can be moved to a position eccentric to the longitudinal center line of the athletic implement.

3,414,261
WEIGHT LIFTER'S EXERCISING DEVICE
Paul E. Huebner, 1608 Espinosa Circle, Palos Verdes Estates, Calif. 90274
Filed Jan. 17, 1966, Ser. No. 520,944
1 Claim. (Cl. 272—81)



A weight lifting frame having two spaced longitudinal side rails joined at each end by a pair of transverse bars. Connected to each side rail is a longitudinally adjustable weight. One end of the frame has a weighted cylindrical roller extending between the side rails. The other end of the frame has a wheel connected at the bottom of each side rail. The user may lift with his feet against the transverse bar at the weighted roller end or with his hands against the transverse bar at the other end. The roller and wheels facilitate transportation of the device.

3,414,262
ADJUSTABLE BASKETBALL BACKBOARD BRACKET STRUCTURE
Lavergne I. Lounsbury, 2130 Cleveland Ave., Chicago, Ill. 60614
Filed Oct. 23, 1965, Ser. No. 503,577
8 Claims. (Cl. 273—1.5)

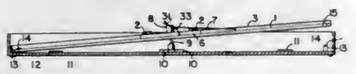


An adjustable basketball backboard bracket structure has cylindrical board bars secured to the back face of a backboard, cylindrical base bars to be secured to a supporting surface and brace bars between the board bars and the base bars. Clamps connect the brace bars to the other bars and comprise arcuate clamping fingers engaging 90° but less than 180° about the back bars and base bars with the tips of the fingers clear of the surface-opposing portions of the engaged bars for free adjustment therealong. In one form the base bars have cantilever arms angled generally forwardly and upwardly. In another form the base bars are of U-shape with arms attached to the board bars.

3,414,263
TABLE GAME SIMULATING A FOOTBALL CONTEST

Louis D. Buchsieb, 4602 Mt. La Platta Drive, San Diego, Calif. 92117

Filed Mar. 29, 1965, Ser. No. 443,267
5 Claims. (Cl. 273—94)

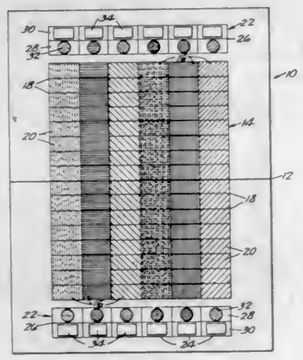


A game of skill for simulating a football contest between two opposing teams. An elongated plate has a playing surface simulating that of a football field, and a fulcrum means for selectively tilting the plate in one of two opposite directions. There are pluralities of offense and defense pieces suitable for free movement along the playing surface. A support means adjacent to but outside of the playing surface is slidable along the length thereof, and carries a retaining means for the offense pieces. This retaining means is pivotal about a transverse axis on the support and includes bar means spaced from and on one side of the pivot axis. Thus the retaining means is reversible by flipping it over substantially 180° when the plate is tilted in an opposite direction. The releasing means preferably includes a second retaining means pivotal about the transverse axis so as to permit release of separate groups of offense pieces at spaced intervals.

3,414,264
GAME APPARATUS WITH BOARD HAVING DIFFERENTLY COLORED GAME PIECE PATHS

Raymond L. Schriber, 16 Ferndale St., St. Paul, Minn. 55119

Filed Dec. 20, 1965, Ser. No. 514,938
2 Claims. (Cl. 273—134)

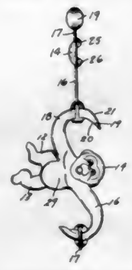


A game board having thereon a plurality of lengthwise extending, parallel, side-by-side strips of different colors with each strip being arranged into a file of squares and each strip having at each end thereof a starting square and a counting square on which starting and counting pieces repose, each counting piece having a blank face with the opposite face being marked with indicia, the indicia on each of the counting pieces of each set of counting pieces being different from those of the other counting pieces of the same set and each set of counting pieces having the same indicia thereon, and dice having faces of colors matching the colors of the playing strips for governing the movement of the playing pieces from end to end of each playing strip.

3,414,265
INTERCONNECTABLE TOY ELEMENTS HAVING HOOK MEMBERS

Leonard Marks, New York, N.Y. (64—39C, 186th Lane, Fresh Meadows, N.Y. 11365)

Filed Feb. 25, 1965, Ser. No. 435,381
2 Claims. (Cl. 273—156)

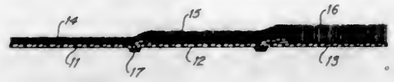


Briefly stated, the invention comprises the provision of a plurality of similar devices, each including a body portion, from which extend the first and second arms or hooks which are oppositely disposed, and being selectively interconnectable with similar devices to form a chain. The mass center of each device is disposed on one side of a plane passing through the contact portions of the first and second interconnected arms or hooks, so that it is possible to hold a first of such devices and pick up in series a number of similar devices from a table or other horizontal surface.

3,414,266
GOLF PRACTICE PUTTING RUG

William Mitchell, 30 E. 21st St., New York, N.Y. 10010

Filed Jan. 20, 1966, Ser. No. 522,000
1 Claim. (Cl. 273—176)



A golf rug having three longitudinal area strips, each having a different pile height and disposed in a graduated manner from least height to tallest height. These area strips are sewn together with the aid of narrow demarcation strips of contrasting color disposed therebetween.

3,414,267
GOLF SWING TRAINING DEVICE

Robert B. Engle, 13322 Cherry, Westminster, Calif. 92683, and Stanley E. Norton, Corona, Calif. (13322 Cherry, Westminster, Calif. 92683)

Filed Oct. 3, 1966, Ser. No. 583,669
9 Claims. (Cl. 273—186)

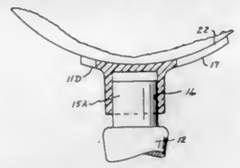


A target element having a penetrable target opening therein is supported on a vertically adjustable resilient post and positioned adjacent the golfer's hands as he addresses a golf ball. An extension element is adapted to be secured to the handle of a golf club which, if properly swung, will result in said extension element passing through the penetrable target opening and snatching the target element from the post.

3,414,268
GOLF TEE WITH SEAT FORMED BY COACTING CENTRAL PART AND RADIATING PETALS

Harry H. Chase, 115 Union Ave., Nutley, N.J. 07110

Filed Sept. 24, 1965, Ser. No. 490,021
5 Claims. (Cl. 273—211)

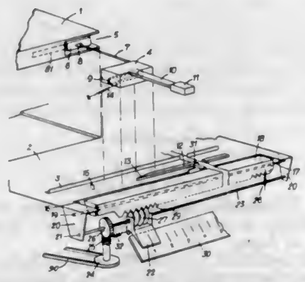


The ball supporting portion of the tee is made of flexible material and comprises a central disk part integral with an attaching portion for connecting such ball supporting portion to a shaft, and a plurality of separate petals radiating outwardly from the disk part so that their upper surfaces throughout their areas form a conically-shaped annular seat for the ball.

3,414,269
RECORDING AND/OR PLAYBACK APPARATUS

Arne Appel, St. Michael im Lungau, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,181
Claims priority, application Austria, Mar. 12, 1965, A 2,242/65
7 Claims. (Cl. 274—4)



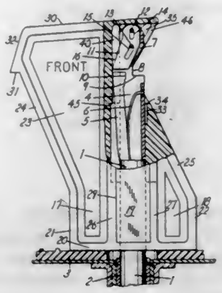
Apparatus incorporating an indicator, indicating the length of tape taken from a supply magazine and of which a pointer is automatically reset to zero by means of a tape threading slide for transporting a tag at the leading end of the tape from the supply magazine to a take-up reel. The pointer is reset to zero when the tag arrives at the take-up reel.

3,414,270
RECORD HOLDER ADAPTER FOR AUTOMATIC RECORD CHANGERS

Robert L. Van Antwerp, Benton Harbor, Mich., assignor to Maestro Corporation, Stevensville, Mich., a corporation of Michigan

Continuation of application Ser. No. 451,793, Apr. 29, 1965. This application Sept. 19, 1966, Ser. No. 586,916
5 Claims. (Cl. 274—10)

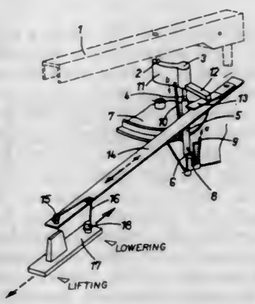
A record holder adapter comprising a one-piece member having an upright passage adapted to receive the record spindle therein. The adapter is provided with a first pair of substantially vertical walls adjacent the lower end thereof, to which is connected a second pair of substantially parallel inclined walls, on the upper end of which is a third pair of substantially parallel inclined walls. The intersection between the second and third walls on one side of the adapter defines a record support position substantially in the plane of the support shelf formed on the spindle. The intersection between the second and third edges on the other side of the adapter defines a shoulder positioned slightly above the record support position. The adapter is provided with a slot therein communicating with the passage adjacent the lower end of the adapter for permitting the adapter to pivot relative to the spindle.



3,414,271
DEVICE FOR LIFTING AND LOWERING A PICK-UP HEAD SUPPORTED TO BE VARIABLE IN HEIGHT

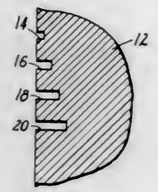
Kurt Eisemann, Berlin, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 1, 1967, Ser. No. 642,836
Claims priority, application Germany June 10, 1966, P 39,669
2 Claims. (Cl. 274—15)



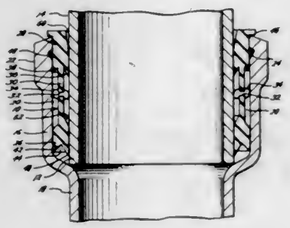
A mechanism for lifting and lowering the pick-up head on a gramophone record in which a lifting arm for the pick-up arm is supported by an oil-filled damper in the form of a sleeve and a spindle contained therein; the spindle being secured to the lifting arm and the assembly being held together by means of a tension spring. The lower end of the sleeve is coupled to the profiled edge of a lifting cam for the automatic movement of the pick-up. The pick-up arm is also manually controlled by a manually slidable lever having a resilient ramp engaging a projecting part of the lifting arm.

3,414,272
PISTON RINGS
John B. Rogers, Jr., 1209 Summit, Muskogee, Okla. 74401
Filed Mar. 11, 1966, Ser. No. 533,690
5 Claims. (Cl. 277—2)



A piston ring provided with a plurality of spaced sequentially deeper annular grooves on the outer periphery of the body portion to provide visual means for determination of the amount and rate of wear on the piston ring during use thereof.

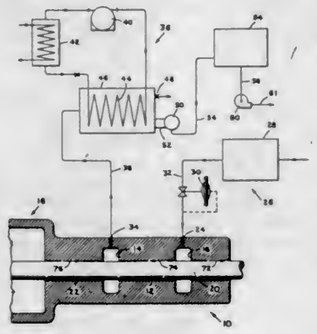
3,414,273
SEAL FORMING MEANS FOR PIPE JOINTS OF THE BELL AND SPIGOT TYPE
Joe D. Sumner, 6903 Alderney, Houston, Tex. 77055
Filed June 16, 1966, Ser. No. 557,974
3 Claims. (Cl. 277—11)



A seal forming device for use in a pipe joint of the bell and spigot type comprising a generally tubular shaped member formed of resilient material to be positioned in the bell end of one pipe section in surrounding relation to the spigot end of another pipe section to form a sealed joint. The seal forming member is formed with longitudinally spaced, thickened wall portions for sealing engagement with the bell and spigot and a thinner intermediate wall portion which is perforated and through which retainer elements of generally H-shape, formed of metal or the like, are extended and which are formed with curved faces positioned for rocking engagement with the inner surface of the bell and the exterior surface of the spigot to permit the spigot to be easily inserted in the bell through the seal forming member and to exert a camming action thereon to hold the bell and spigot assembled when the spigot is inserted.

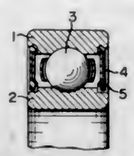
3,414,274
CONTROLLED LEAKAGE, CLOSE CLEARANCE SEAL SYSTEM
David Aronson, Upper Montclair, N.J., assignor to Harrworth, Inc., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,374
3 Claims. (Cl. 277—15)

This invention relates to seal systems of the controlled leakage close clearance type for rotary fluid machines wherein a sealing gland is provided for the rotary shaft or member at the point where it extends through the housing for the rotary fluid machine which sealing gland includes a mixing chamber, a sealing gas chamber and a clearance space in the sealing gland about the rotary shaft which communicates at one end with the working fluid in the rotary fluid machine and coacts with the mixing chamber and the sealing gas chamber so as to permit working fluid to flow from one direction through the clearance space to the mixing chamber and pressurized sealing gas from the sealing gas chamber to flow through the clearance space



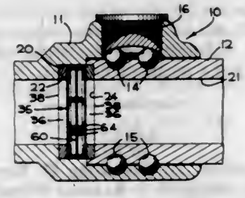
in a direction opposite from the working fluid; the quantity of working fluid flowing through the clearance space to the mixing chamber being controlled by the pressure of the sealing gas as regulated by a pressure regulator operatively responsive to the pressure in the sealing gas chamber which pressure in the sealing gas chamber is in turn controlled as a function of a sized orifice in an associated condenser which draws off the mixture of working fluid and sealing gas from the mixing chamber; the working fluid being condensed therein and recycled and a predetermined volume of sealing gas being passed through the sized orifice to maintain the desired control.

3,414,275
SEALED BEARING
Tadanobu Takahashi, Fujisawa-shi, Japan, assignor to Nippon Seiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Dec. 13, 1965, Ser. No. 513,278
Claims priority, application Japan, Dec. 21, 1964, 39/98,387
5 Claims. (Cl. 277—53)



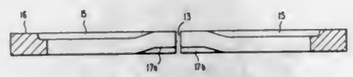
This invention relates to an improved sealed bearing with a seal maintained out of contact with the inner bearing race and forming labyrinths within the sealed space between a seal lip of a seal plate and the inner bearing race, a seal step being provided at a portion of the outer surface of the inner bearing race; the seal step having a shoulder portion, and the seal lip having an edge portion, the edge portion of the seal lip and the seal step facing each other with a certain angle in the radial direction of the bearing to provide a reduced clearance between the edge portion and the seal step.

3,414,276
PACKING FOR FLUID JOINT
Armand L. Faccou, Santa Ana, and Landis H. Perry, Newport Beach, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 30, 1964, Ser. No. 379,222
6 Claims. (Cl. 277—95)



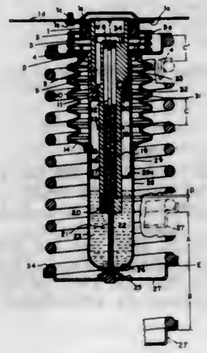
6. A packing especially adapted for sealing fluids at elevated temperatures and pressures, comprising an annular metallic seal of generally U-shaped cross-section including a generally cylindrical intermediate wall and a pair of confronting side walls projecting from the intermediate wall and terminating in peripheral edges which define the inner diameter of the seal, an energizer for the seal including a slender circular central rib generally round in cross-section and extending about the interior of the intermediate wall, and a plurality of slender resilient generally U-shaped fingers generally round in cross-section secured to the rib in circumferentially spaced relation therearound and projecting from the rib radially inwardly toward said side walls of the seal for resiliently urging said side walls apart, the engagement of said fingers with said side walls being confined to the engagement of the ends of said fingers with said side walls closely adjacent said peripheral edges thereof, each end of each finger being spaced from the ends of adjacent such fingers when said energizer is relaxed but being substantially contiguous to the adjacent ends of the adjacent fingers when said energizer is installed, thereby providing a substantially continuous circular line of pressure against each side wall.

3,414,277
TORSION PISTON RING
Erhard Schmidt, Nurtingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 5, 1965, Ser. No. 423,516
Claims priority, application Germany, Jan. 10, 1964, D 43,320
13 Claims. (Cl. 277—214)



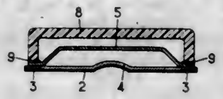
1. A torsion piston ring having a substantially concentrically extending material recess along at least one of the surfaces meeting at the inner upper corner of the ring of originally rectangular cross-sectional area which extends over the major portion of the ring circumference, the material recess being displaced within the area of the ring ends toward the inner lower part of the cross-sectional surface of the ring.

3,414,278
BODY-POSITIONING SUSPENSION SYSTEM FOR AUTOMOTIVE VEHICLES
Leopold F. Schmid, Stuttgart, Germany, assignor to Firma Alfred Teves Maschinen- und Armaturenfabrik KG., Frankfurt am Main, Germany, a corporation of Germany
Filed July 11, 1966, Ser. No. 564,149
Claims priority, application Germany, Aug. 2, 1965, Sch 37,486
5 Claims. (Cl. 280—6)



Self-leveling suspension device in which a hydraulic piston and cylinder is positioned between the body of the vehicle and a fluid-containing reservoir feeding a rod-type pump to force fluid into the piston-and-cylinder assembly upon relative reciprocation of the body and axle of the vehicle while a pin forms a valve stem controlling the draining of the cylinder to re-establish the position of the vehicle body after loading has altered it.

3,414,279
ANTIVIBRATORY MEMBER FOR SKIS
Pierre Allain, Les Essarts, Uriage, France
Filed Apr. 3, 1967, Ser. No. 627,968
Claims priority, application France, Apr. 5, 1966, 56,540
8 Claims. (Cl. 280—11.13)

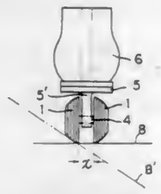


Means for damping the vibrations of a ski which comprises an elongated rigid channel member the edges of which are fastened to the longitudinal edges of the upper surface of the ski proper, preferably through an intermediate strip of spongy resilient material.

3,414,280
ROLLER SKATE HAVING LAMINATED WHEELS
Kazuo Ohashi, 5-6-10 Koishikawa, Bunkyo-ku, Tokyo, Japan
Filed Sept. 7, 1966, Ser. No. 577,767
Claims priority, application Japan, Jan. 24, 1966, 41/5,686
1 Claim. (Cl. 280—11.19)

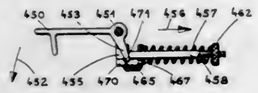
An improvement in a roller skate comprising rollers mounted in pairs with the annular surfaces thereof curving outward from the outer ends of their common axis, each

roller consisting of a plurality of laminations extending transversely with respect to said axis, the hardness of said



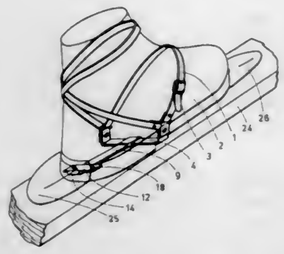
laminations increasing from the larger end to the smaller end of each roller.

3,414,281
VERTICAL HOLDING REAR SAFETY DEVICE FOR SKIS
Georges P. J. Salomon, 34 Ave. de Loverchy, Annecy, France
Filed Feb. 23, 1966, Ser. No. 538,502
Claims priority, application France, Feb. 24, 1965, 6,924; June 14, 1965, 20,753
3 Claims. (Cl. 280—11.35)



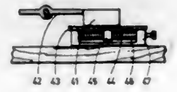
A vertical holding rear safety device for skis which comprises a pivotally mounted angle piece having a first arm to hold down the rear on a ski boot and a second arm compressed by a spring to hold down the first arm, the lifting of the boot compresses the spring and actuates a rocking lever which engages a fixed abutment and maintains the spring in the compressed position and liberates the pivoting action of the angle piece.

3,414,282
SKI BOOT HARNESS HAVING A REAR SAFETY THRUST MEMBER
Georges P. J. Salomon, 34 Ave. de Loverchy, Annecy, France
Filed June 7, 1966, Ser. No. 555,857
Claims priority, application France, June 8, 1965, 19,957
15 Claims. (Cl. 280—11.35)



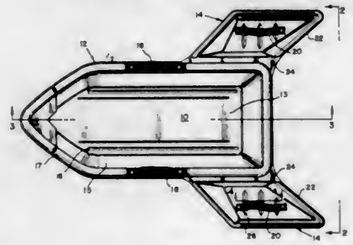
A leather band connected between a portion of the shank strap under the boot and a portion of said ski also located beneath the boot.

3,414,283
DEVICE FOR ADJUSTING THE SAFETY OPENING OF MAGNETIC ATTACHMENTS FOR SKI
Georges P. J. Salomon, 34 Ave. de Loverchy, Annecy, France
Filed June 20, 1966, Ser. No. 558,652
Claims priority, application France, June 25, 1965, 22,484
4 Claims. (Cl. 280—11.35)



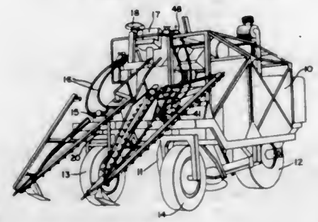
A setting device for the safety opening of a magnetic attachment for ski in which the setting is obtained in modifying the ratio between the stress on the ski boot and the pull of the magnetic element.

3,414,284
SLED
John N. Rosekrans, Jr., and John G. Bowes, San Francisco, Calif., assignors to Kransco Manufacturing, Inc., San Francisco, Calif., a corporation of California
Filed June 22, 1966, Ser. No. 559,615
2 Claims. (Cl. 280—21)



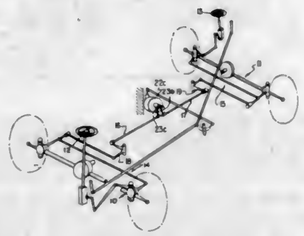
A sled comprising a body of generally tub-shaped configuration having drag devices secured thereto to effect its braking and steering. The drag devices comprise wings mounted at the rear and to either of the body for selective and independent depression into engagement with a medium on which the body is supported. Resilient connections between the body and the respective wings normally maintain the wings elevated from engagement with a medium on which the body is supported.

3,414,285
CANE HARVESTER AND METHOD OF HARVESTING CANE
Harold A. Willett, Thibodaux, La., assignor to Cane Machinery & Engineering Company, Inc., Thibodaux, La., a corporation of Louisiana
Filed Aug. 22, 1966, Ser. No. 574,095
4 Claims. (Cl. 280—43.23)



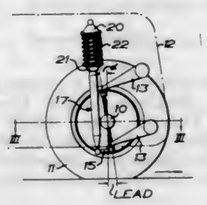
According to the disclosure, one front wheel of a cane harvester is capable of lifting and lowering movements from and into supporting contact with the ground without any way affecting the permanent support of the harvester by the two rear wheels and the companion steerable front wheel for the purpose of effecting short sharp turns of the vehicle in entering, leaving and re-entering the square of growing cane whereby a novel construction of harvester results also in a novel method of operating the harvester in a cane field with appreciable saving of time in gathering the crop which is an important consideration in Louisiana in the beating the arrival of the first killing frost.

3,414,286
MULTI-WHEEL STEERING SYSTEM FOR MOTOR VEHICLES
Alfred H. Müller, Waiblingen, and Helmut Höhn, Gaggenau, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 10, 1966, Ser. No. 533,331
Claims priority, application Germany, Mar. 10, 1965, D 46,736
16 Claims. (Cl. 280—91)



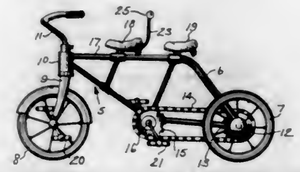
A multi-wheel steering system for motor vehicles in which the steering linkages of the steerable axles are connected with each other by a power-transmitting member which is of subdivided construction, whereby one part of the power-transmitting member is coordinated to the front axle or axles, another part to the rear axle or axles, and the parts of the power-transmitting member are connected with each other by at least one disengageable coupling. The coupling includes a rigid housing having two toothed axially fixed disks connected to the two parts of the power-transmitting member, a toothed fixed coupling part, and a single clutch member axially movable to selectively lock the disks together, or lock either one of the disks to the housing.

3,414,287
STEERING AND STABILIZING FRONT WHEEL SUSPENSION FOR MOTOR CARS
Axel Hugo Welertz, Bellevuevagen 24, Malmo, Sweden
Filed May 16, 1966, Ser. No. 550,378
5 Claims. (Cl. 280—96.2)



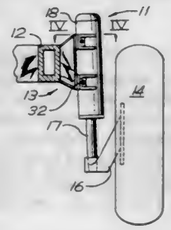
The steerable wheels of an automobile have between an arm directed rearwardly from each steering knuckle, and the frame a strut transmitting to the knuckle from the frame a force depending on the weight and momentum of the frame and the load carried thereby.

3,414,288
DUAL PROPULSION TRICYCLE
Stephen O. Stanfield, Arlington, Calif. (Box 885, Star Route, Lytle Creek, Calif. 92358)
Filed July 10, 1967, Ser. No. 652,197
1 Claim. (Cl. 280—231)



A dual propulsion tricycle embodying a frame substantially similar to that of a bicycle except for the rear wheel mounting which is spread apart to provide bearings for a pair of laterally spaced rear wheels. The vehicle is propelled by two cyclists seated in tandem relation, the front rider manipulating the steering and front wheel drive which are conventional for a tricycle, the other rider adding to the propulsion through the conventional sprocket and chain drive of a bicycle; the front seat including in combination a back rest and, for the rear rider, a crossbar with suitable hand grips.

3,414,289
MOUNTING STRUCTURE FOR INDIVIDUALLY SUSPENDED VEHICLE WHEELS
Jackson C. Medley, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 22, 1966, Ser. No. 567,185
7 Claims. (Cl. 280—106.5)

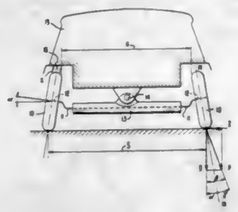


A wheel support is fastened to the vehicle frame by bolts transpierced through a pair of surfaces of the support which abut conforming surfaces of the frame. The pair of surfaces are oriented at an angle with respect to the direction of vehicle travel and with respect to each other whereby acceleration and braking forces are transmitted between the support and the frame in part by direct pressure of one surface against the abutting surface rather than wholly through the bolts.

3,414,290
VEHICLE SUSPENSION SYSTEM
Karl Wilfert, Gerlingen-Waldstadt, and Béla Barényi, Stuttgart-Vaihingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 7, 1966, Ser. No. 577,760
Claims priority, application Germany, Sept. 11, 1965, D 48,185
6 Claims. (Cl. 280—112)

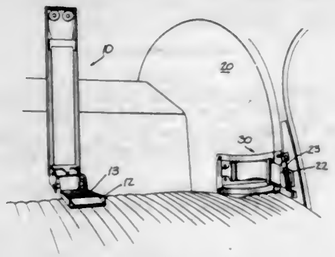
A wheel suspension with the opposite wheel axes each being inclined upwardly and outwardly to provide a constant wheel track and counteract centrifugal force during turning, with the wheel axle being mounted within a trans-

verse support member for pivotal movement about a transverse axis; the support member being mounted to the



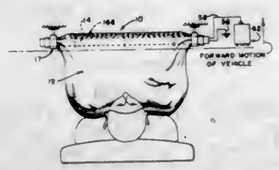
vehicle superstructure for pivotal movement about a longitudinal axis.

3,414,291
REAR SEAT BELT RETRACTOR SYSTEM
George H. Jantzen, New York, N.Y., assignor to M. Steinthal & Company Incorporated, New York, N.Y., a corporation of New York
Filed July 14, 1967, Ser. No. 653,483
11 Claims. (Cl. 280—150)



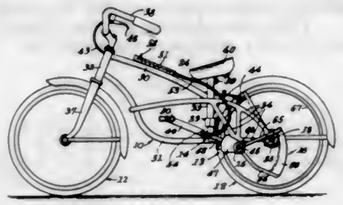
Retractors for both seat belt straps are provided passengers sitting three abreast in the rear seat. An outboard retractor is mounted in a cut-out in the rear wheel well so that the seat belt can be positioned along the vehicle side. An inboard retractor is mounted downwardly behind the rear seat backrest and has a snubber mechanism which is responsive to the presence and absence of the passenger and automatically retracts the belt when the passenger leaves the seat.

3,414,292
INFLATABLE SAFETY DEVICE
Sidney Oldberg, Birmingham, and William R. Carey, Farmington, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 1, 1966, Ser. No. 562,289
29 Claims. (Cl. 280—150)



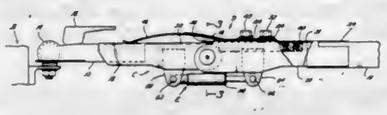
1. Safety apparatus for protecting an occupant of a vehicle, said safety apparatus comprising an expandable occupant restraint having a contracted condition, a reservoir for containing a supply of fluid, means operable to provide for fluid flow from said reservoir to said occupant restraint to dispose said occupant restraint adjacent an occupant of a vehicle during a collision for limiting movement of the occupant during such collision, said occupant restraint comprising confinement means formed of a material which is substantially irreversibly expandable to increase the volume thereof in response to movement of the occupant relative to the confinement means to absorb at least a part of the kinetic energy of the occupant created by such movement and thereby minimize rebound of the occupant therefrom.

3,414,293
BICYCLE GEAR
Kenneth W. Frye, South Pasadena, Calif. (2117 Lemon St., Alhambra, Calif. 91803)
Filed Apr. 24, 1967, Ser. No. 633,240
7 Claims. (Cl. 280—254)



Bicycle gear having pivoted treadle-like pedals that forwardly drive the rear wheel of a bicycle through a one-direction clutch so the wheel is free to continue to turn forwardly upon recovery movement of the pedals, which are arranged to move through an arc of about 45°. The pedals, in the general organization of a conventional bicycle frame and wheels, being arranged to move between high and low positions on either side of the horizontal. The gear includes means to extend the effective length of the treadles for increased power on upgrades.

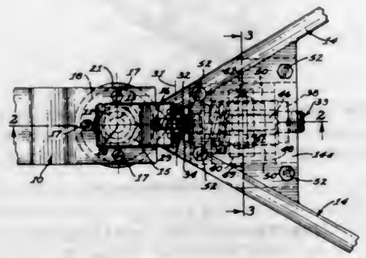
3,414,294
TRAILER HITCH
Arthur K. Moulton, 7616–D Glen Prairie, Houston, Tex. 77017
Filed Oct. 20, 1966, Ser. No. 588,029
5 Claims. (Cl. 280—489)



A pivotal joint for a trailer tongue or drawbar having two arms pivotally mounted to each other and an adjustably positioned spring exerting a force on said arms resisting pivotal movement of the arms in one direction.

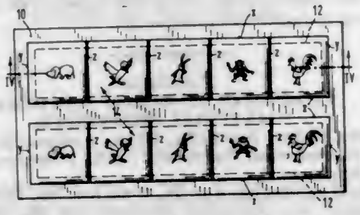
3,414,295
TWO-WAY FRICTION CONTROL HITCH
William L. Rendessy, 1230 E. Mercer Lane, Phoenix, Ariz. 85020
Filed Sept. 9, 1966, Ser. No. 578,185
2 Claims. (Cl. 280—511)

1. A two-way friction control hitch comprising in combination:
(A) a hitch ball mounted on a towing vehicle.
(B) a ball socket operatively connected to said hitch ball mounted on the vehicle to be towed,
(C) means interconnected between said towing vehicle and the vehicle to be towed to restrain pivotal movement between said ball and socket about a vertical axis through said ball and about a longitudinal horizontal axis of sidewise relative tilting of said vehicles comprising,
(D) a first friction clutch having,
(E) a clutch hub fixed about a vertical axis to the towing vehicle,
(F) a clutch disc rotatively journaled on said towing vehicle about said vertical axis to operatively engage said clutch hub,
(G) a shaft pivotally connected to said clutch disc for relative rocking about a transverse horizontal axis,



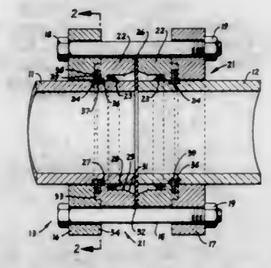
(H) a brake drum housing pivotally mounted on a horizontally longitudinally movable slide for relative rocking about a transverse horizontal axis on said slide,
(I) means in said brake drum housing for rotatively supporting said shaft in said brake drum housing for rocking about a longitudinal horizontal axis,
(J) a second friction clutch means operatively interconnected between said shaft and said brake drum housing,
(K) and guideway means between said slide and said vehicle to be towed for longitudinal horizontal movement of said slide on said vehicle to be towed.

3,414,296
PICTURE BOOK AND METHOD OF MAKING THE SAME
Friedrich Schneider, 9 Maximiliansplatz, 8 Munich 2, Germany
Filed Jan. 10, 1967, Ser. No. 608,428
9 Claims. (Cl. 281—39)



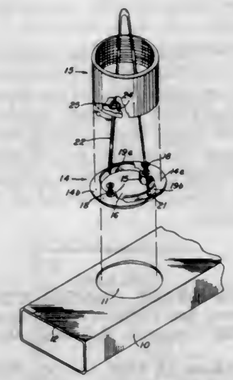
An accordion-type book consisting mainly of two elongated, imprinted foils of pliable plastic impervious to liquid water and having rims sealed to each other and a core of foam plastic or foam rubber between the foils. Transverse hinges are formed in the book by thinner and denser parts of the foam material, at least one of the foils being creased along the hinge. The books are made by interposing strips of the foam material between the foils and heat sealing the foils to each other about the strips while simultaneously forming the hinges by embossing.

3,414,297
PIPE COUPLING CONTAINING A DETACHABLE FLANGE
Andrew A. Pollia, San Francisco, Calif., assignor to Raphael T. Pollia, San Francisco, Calif.
Filed Apr. 9, 1965, Ser. No. 446,983
6 Claims. (Cl. 285—98)



A pipe coupling suitable for high pressure flanged pipe connections comprising at least one flanged pipe end which has a removable thrust flange ring and a sealing retainer ring adapted to abut the flange and provide a channel therebetween; a key formed to fit within said channel and into a pair of grooves formed on two opposed sides of the pipe within a common circle on the outer surface thereof; said sealing retainer ring being formed to provide an annular recess around the pipe end and open at the side toward the pipe end when in assembled position on the pipe, the annular recess also being bevelled outward at the open end; and a generally ring-shaped sealer composed of resilient material adapted to fit tightly within the annular space, said sealer having a substantially uniform tear-shaped cross-section adapted to fit with one side of the tear against the pipe.

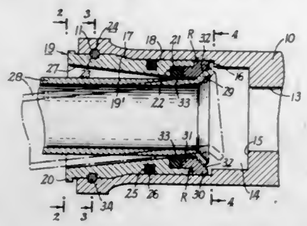
3,414,298
AFTERSET INSERT ASSEMBLY FOR AN UNDERFLOOR WIRING DUCT
De Forest D. Butler, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Aug. 9, 1967, Ser. No. 659,471
4 Claims. (Cl. 285—209)



A non-circular annular clamping element or adapter insertable through a circular opening in an upper wall of the duct has marginal areas engaging the inner surface of the upper wall adjacent the opening and threadedly receives a pair of screws which extend upwardly through

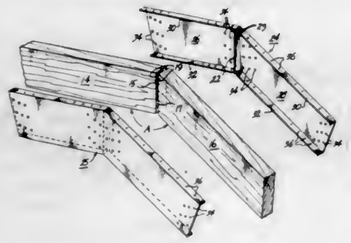
the opening. A tubular riser or insert of larger diameter than the diameter of the opening engages the upper wall around the opening and has a pair of inturned flanges provided with respective circumferential slots which receive the shank portions of the screws, respectively.

3,414,299
PIPE COUPLINGS
Homer D. Roe, Huntington, N.Y. (% Holmberg Inc., Melville, N.Y. 11746)
Filed Dec. 17, 1965, Ser. No. 514,643
3 Claims. (Cl. 285—234)



A flexible pipe coupling characterized by an outer casing, an intermediate sleeve and an inner tube, with the tube being flared at one end, the sleeve having a truncated longitudinal cross-section so that the tube is angularly movable with respect to the sleeve.

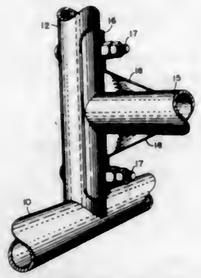
3,414,300
STRUCTURAL CONNECTION
Victor L. Spane, Rte. 2, Box 79a, Stanwood, Wash. 98292
Filed July 25, 1966, Ser. No. 567,652
5 Claims. (Cl. 287—20.92)



The mitered abutting ends of an angularly disposed pair of timbers have a metal plate therebetween. Common side faces and inner and outer edges of the timbers adjacent the angle are embraced by a U-shaped angular metallic channel to which the metal plate is integrally attached. The U-shaped channel is secured to the timbers, and the timbers are secured together into a rigid structure by plural fasteners passing from external of the channel into the timber structure.

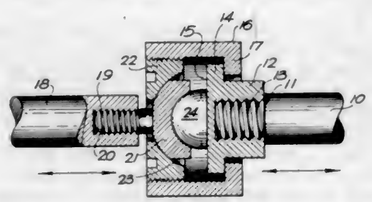
3,414,301
SHOE BRACE CONSTRUCTION
Robert W. Crowe, San Gabriel, Calif., assignor to Dentin Manufacturing Company, Bellwood, Ill., a corporation of Illinois
Filed June 22, 1966, Ser. No. 559,631
4 Claims. (Cl. 287—54)

In tubular frame construction, frame tubes are tightly joined under tension by a connector tube having at its end a spring sleeve, the inner face of the sleeve being slightly less in radius that the radius of the frame tube to which it is joined. Connector means, such as bolts and screws, force the spring sleeve to expand so as to engage the tubular frame and the sleeve grips under spring tension the frame tube. The connector tube is



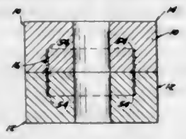
provided with a gusset web which maintains the connector tube against twisting force, and the draw connector means extend through the sleeve in line with the gusset webs.

3,414,302
COUPLING FOR MISALIGNED RECIPROCAL SHAFTS
Herbert A. Priest, Alpena, Mich., assignor to Universal Fluid Dynamics Company, Alpena, Mich., a corporation of Michigan
Filed Dec. 23, 1966, Ser. No. 604,397
1 Claim. (Cl. 287—87)



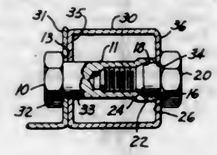
The coupling disclosed is for misaligned shafts where a wide range of adjustment is necessary and includes a clamping ring having an inturned annular flange at one end defining an opening which receives the flanged fitting of one shaft and permits substantial lateral movement thereof. The spacing element which slides on the inner face of the flanged fitting, and which operates in the socket of the body member carried by the other shaft is of sufficient size and of sufficient axial dimension to permit the body member of the second shaft to turn a substantial distance out of alignment.

3,414,303
COMPOSITE SINTERED POWDERED MATERIAL WORKPIECE
John Haller, Northville, Mich., assignor to Haller Incorporated, Northville, Mich., a corporation of Michigan
Original application Apr. 24, 1964, Ser. No. 362,317, now Patent No. 3,320,663. Divided and this application Feb. 8, 1967, Ser. No. 614,608
5 Claims. (Cl. 287—104)



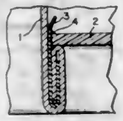
A coupled composite sintered powdered material article consisting of a plurality of components abutting one another and containing recesses of undulatory or zigzag longitudinal section in which are seated the opposite ends of a correspondingly-configured coupling member.

3,414,304
APPARATUS FOR FASTENING A DISCONTINUOUS BODY TO ANOTHER STRUCTURE AND THE RESULTING JOINT
Joseph H. Miller, Torrance, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California
Filed Nov. 22, 1966, Ser. No. 596,335
1 Claim. (Cl. 287—189.36)



This invention relates to a fastening device for fastening a discontinuous body to another structure, and also relates to the joint comprising the discontinuous body and the other structure. A sleeve member is provided having an axial bore and a threaded portion therein; and a bolt member is provided to mate with the threaded portion in the bore of the sleeve member. One member is passed through an outer wall of the discontinuous body remote from the wall of a contiguous structure and the other member is passed through the wall of the structure. Upon engagement of the threaded portions and relative rotation of the members, the relative axial movement between the two members causes a portion of the sleeve member to expand thereby limiting the approach of the head of the bolt member toward the head of the sleeve member and thereby clamping the full section of the discontinuous body to the contiguous structure and preventing deformation of the discontinuous body. According to a preferred form of the invention, the wall of the discontinuous body remote from the wall of the contiguous structure is clamped between the expanded portion of the sleeve and the head of the bolt.

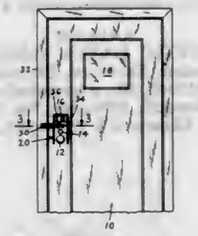
3,414,305
PLASTIC-METAL JOINT AND METHOD FOR PRODUCING THE SAME
Robert Willis Minogue, Bothell, Wash., assignor to Heath Northwest, Inc., Seattle, Wash., a corporation of Washington
Filed July 7, 1966, Ser. No. 563,563
6 Claims. (Cl. 287—189.365)



A joint-structure and method of forming the same wherein a panel of rigid material is secured to malleable sheet material by folding a strip of flexible sheet material into the edge of the malleable sheet material and bonding the rigid sheet to the flexible strip.

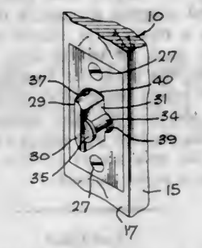
3,414,306
DOOR KNOB, LOCK AND SLIDE BOLT PROTECTOR
Albert A. Bernstein, 49 Cranberry St., Brooklyn, N.Y. 11201
Filed July 12, 1965, Ser. No. 471,143
2 Claims. (Cl. 292—1)

1. Means for protecting a door knob, lock, slide bolt and chain lock on a door comprising; a frame; said frame being provided with a top member disposed above said door knob, lock, slide bolt and chain lock; two side walls extending downwardly from the side edges of said top member thereby enclosing said door knob, lock, slide bolt and chain lock so that they cannot be reached from out-



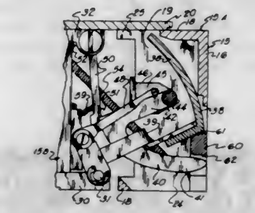
side the door; one of said side walls having an opening therein to accommodate the slide bolt or chain lock; and a strap connected across the back portion of the frame thereby providing a means for fastening said frame to the door; said door knob, lock, slide bolt and chain lock being easily accessible through the front of said frame.

3,414,307
DEADLOCKING LATCH CONSTRUCTION
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90281
Filed Mar. 13, 1967, Ser. No. 622,628
4 Claims. (Cl. 292—2)



This invention relates to the structure of a deadlocking bar and face plate. The deadlocking bar has an end portion of enlarged diameter adapted to be received in a complementary recess in a faceplate when the door upon which it is mounted is in the closed position.

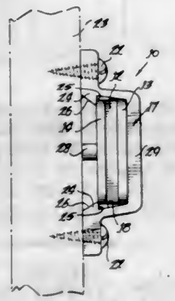
3,414,308
LATCH MECHANISM
Edward A. Rollor, Jr., 903 Wisteria Drive, Marietta, Ga. 30060
Filed Sept. 19, 1966, Ser. No. 580,384
10 Claims. (Cl. 292—229)



A door latch mechanism adapted to fit into a V-shaped groove in the edge of a door and including a housing slotted to receive a keeper. A swingable plate covers the

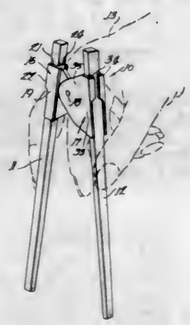
slot and is keeper-actuated to engage and swing a spring-retracted hooked-end bolt into engagement with the keeper. A swingable catch means, biased to hold the bolt in latched position, is freed by an axially movable knob spindle to release the latch.

3,414,309
MAGNETIC CATCH ASSEMBLY
Howard G. Tresemer, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed June 30, 1966, Ser. No. 561,779
2 Claims. (Cl. 292—251.5)



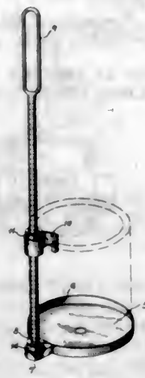
A magnetic catch assembly with an integral plastic housing having an integral stud centrally positioned in the housing and adapted to receive through an opening in the housing a rectangular shaped magnet and a pair of pole pieces, each of which have a central opening loosely receiving the stud, the housing having a pair of integral tabs to retain the magnet and pole pieces in the housing, with the housing also having an integral rib aligned with the stud to provide a fulcrum for pivotal movement of the pole pieces relative to the housing to properly engage a strike surface.

3,414,310
CHOPSTICK HOLDER
Hiroshi Ono, 4326 W. Division St., Chicago, Ill. 60651
Filed Oct. 31, 1966, Ser. No. 590,956
5 Claims. (Cl. 294—16)



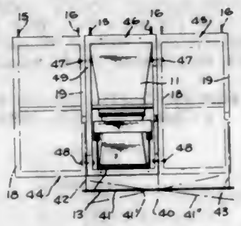
A chopstick holder for a pair of chopsticks to guide the chopsticks in a plane providing accurate closing of the tips using a pair of pivoted guide members with a spring member biasing the guide members to open position. Each guide member has a channel to frictionally retain a chopstick therein and one or more inwardly extending guide flanges interleaved together and joined by a pivot pin.

3,414,311
HOLDER FOR PAINT CANS
Frank Anthony Trimboli, 137 Mechanic St., Red Bank, N.J. 07701
Filed Apr. 5, 1967, Ser. No. 628,649
3 Claims. (Cl. 294—34)



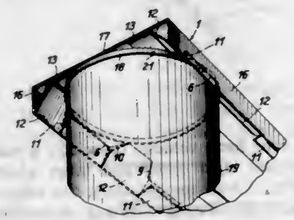
Base for supporting a paint can having a screw socket at one side with which is engaged a screw rod having a handle at the upper end for suspending and rotating the same and over which rod a can engaging clamp arm is loosely sleeved and held in adjusted position by an overstanding nut on the upper portion of the rod.

3,414,312
MODULE CONCRETE HANDLING BUCKETS
Leslie H. Garlinghouse, Pasadena, Calif., assignor to Garlinghouse Brothers, Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 3, 1967, Ser. No. 613,836
5 Claims. (Cl. 294—71)



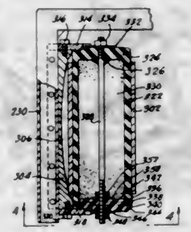
The invention relates to the placing of concrete and has special reference to a bucket assembly of modular units, all substantially alike, which can be releasably attached together in any multiple number depending upon the quantity of concrete sought to be handled. Each of the modules include a substantially rectangular frame having flat lateral sides, with a hopper, clam shell gates at the bottom of the hopper, and a hydraulic ram for actuating the gates contained inside of the frame. The clam shell gates are geared to each other so that when the ram actuates one of them, the other is likewise opened or closed, as the case may be, to discharge the contents of the hopper in small or large increments. As many modules as needed are mounted side by side and anchored together so that they can be lifted as a single unit. The modules are adapted to be firmly anchored together by bolting, so that they may be readily disengaged, moved singly and then reassembled with as many modules again bolted together as may be required. Once in place, over the area where concrete is to be deposited, the modules may be jointly or individually operated to deposit concrete, simultaneously or sequentially. When not all of the concrete is to be deposited, the clam shell gates are closed and the multiple unit moved along to the next location.

3,414,313
DEVICE FABRICATED FROM ONE CUT FOR HOLDING AND CARRYING CONTAINERS
Hellmuth Schwarz, Hamburg, Germany, assignor to Bruno Schwarz, Hamburg-Bergedorf, Germany
Filed Oct. 20, 1966, Ser. No. 588,079
Claims priority, application Germany, Oct. 21, 1965, V 29,567; Dec. 22, 1965, V 29,999
6 Claims. (Cl. 294—87.2)



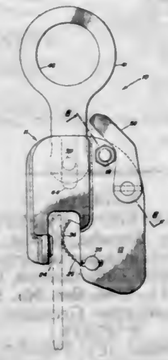
A package forming device preferably constructed of a sheet paper material used to handle and interconnect a plurality of containers, such as cans, having an upper peripheral beaded end wherein the containers are maintained in engagement with the device by spaced-opposed lugs engaging the underside of the container beads. The lugs being hinged and including a free end wherein individual containers may be removed from the device without affecting the interconnection between the other containers and the device.

3,414,314
BUFFER MEMBER FOR TREE SHAKING DEVICE
Jack L. Martin, 5144 Western Ave., Olivehurst, Calif. 95961
Filed Mar. 6, 1967, Ser. No. 620,809
2 Claims. (Cl. 294—103)



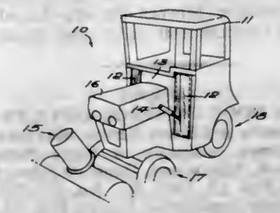
A resilient cylindrical container having a removable end closure which is filled with pulverulent material and a bolt extending longitudinally of the cylindrical member for retaining the closure member in place, said resilient cylindrical member forming a buffer member for a tree shaking device is disclosed.

3,414,315
LIFTING CLAMP
Paul V. O'Quinn, Jacksonville, Fla., assignor to J. C. Renfroe & Sons, Inc., Jacksonville, Fla., a corporation of Florida
Filed Oct. 19, 1966, Ser. No. 587,711
14 Claims. (Cl. 294—104)



There is disclosed a lifting clamp having a movable gripping jaw, a shackle, a linkage connecting the shackle to the movable jaw and a locking mechanism engageable with the linkage to lock the jaw in either opened or closed positions, the locking mechanism having opposed latch members connected together by a separable connection.

3,414,316
CLOSURE FOR TRACTOR CABS
Oscar Stanley Williams and Robert S. Williams, both of Arlington, Ind. 46104
Filed Oct. 13, 1966, Ser. No. 586,397
4 Claims. (Cl. 296—28)



A tractor cab having an opening provided in a wall thereof through which an operating lever of the tractor may extend, and closure means for the opening to permit manipulation of the lever while maintaining the opening substantially closed. The closure means is formed by two strips of flexible sheet material having edge portions which overlap each other at a corner portion of the opening, with one edge portion diverging with respect to the other so as to provide a point of minimum overlap in one position of the lever when this lever comes to rest in a normal position in the opening and yet permitting it to be manipulated to another position for operation of the tractor.

3,414,317
COMBINATION WEATHERSTRIP AND WINDSHIELD WASHER HOSE
Robert M. Mortimer, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,298
4 Claims. (Cl. 296—28)

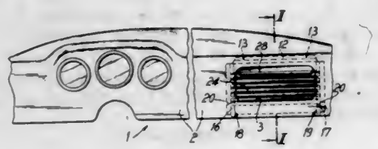
A weatherstrip located between a motor vehicle cowl and hood panel having as an integral appendage a fluid

conduit adapted to be connected to a source of pressurized windshield cleaning fluid. The fluid is directed onto the



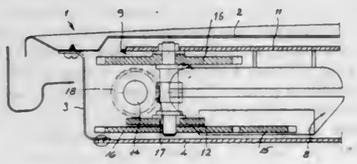
windshield by at least one nozzle assembly extending from the fluid conduit.

3,414,318
STORAGE COMPARTMENT IN MOTOR VEHICLES
Ferdinand Alexander Porsche, Stylist Doffingen, Kreis Boblingen, Germany, assignor to Firma Dr. Ing. H.C.F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Oct. 11, 1966, Ser. No. 585,808
Claims priority, application Germany, Oct. 15, 1965, P 37,874
3 Claims. (Cl. 296—37)



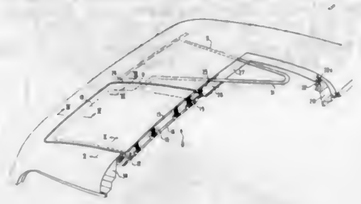
An instrument panel storage compartment provided with a horizontally ribbed synthetic flexible closure slidingly mounted in opposite channel members to be moved between a closed position retained by a magnetic latch and an open position between the cup-shaped compartment walls and a bottom instrument panel shield.

3,414,319
SUN ROOF CONTROL DEVICES
Alexandre Lecomte and Pierre Ventre, Billancourt, Hauts-de-Seine, France, assignors to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France
Filed Feb. 13, 1967, Ser. No. 615,725
Claims priority, application France, Feb. 18, 1966, 50,210
9 Claims. (Cl. 296—137)



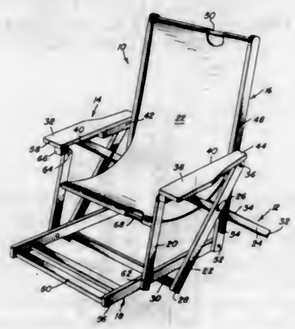
The present invention relates to control device for the sun roof of a vehicle which comprises a rigid movable panel displaceable in a frame structure provided with guideways, this device consisting of an electric-motor and reduction-gearing unit having a vertical axis and housed substantially in the thickness of the movable panel and adapted to transmit the torque to a pair of pinions having an horizontal axis and in constant meshing engagement with a pair of racks disposed laterally on either side of the longitudinal axis along which the panel is movable.

3,414,320
SLIDING ROOF, ESPECIALLY FOR MOTOR VEHICLES
Gerhard Heim, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 24, 1967, Ser. No. 618,488
Claims priority, application Germany, Nov. 11, 1966, D 51,523
22 Claims. (Cl. 296—137)



A sliding roof for a vehicle, especially a motor vehicle, which comprises rigid outer and inner plates interconnected by elastic wall means along the edges thereof to form an air-tight chamber having a variable volume, whereby the two plates are normally urged away from each other by resilient means such as coil springs arranged between the same, and the sliding roof is appropriately guided in guide rails arranged along the longitudinal edges of the roof aperture while the roof chamber thus formed can be selectively connected either with the atmosphere for securing the roof in a given position or with a source of vacuum to facilitate the sliding movements of the roof.

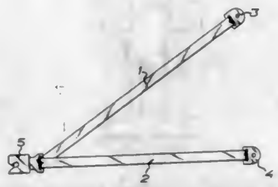
3,414,321
RECLINING LAWN CHAIR
Nils Beck, 308 Thompson St., Hanna, Ind. 46340
Filed Jan. 25, 1967, Ser. No. 611,762
4 Claims. (Cl. 297—29)



A foldable canvas chair having crossed legs supporting armrests and a back frame which is pivotally adjustable. A footrest is pivotally connected to the back frame above the ground. A canvas web extends between the upper end

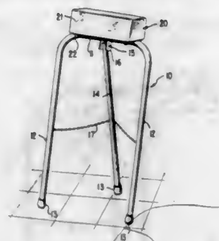
of the back frame and bars suspending the footrest from the armrests.

3,414,322
SAFETY SEAT BELTS
Hans G. Linderoth, Paris, France, assignor to AB Industrifjadrar, Monsteras, Sweden
Filed Oct. 18, 1966, Ser. No. 587,515
Claims priority, application Sweden, Oct. 22, 1965 13,676/65
6 Claims. (Cl. 297—389)



A safety seat belt for vehicles comprising a shoulder strap and a hip strap with the shoulder strap having a considerably greater plastic elongation than the hip strap.

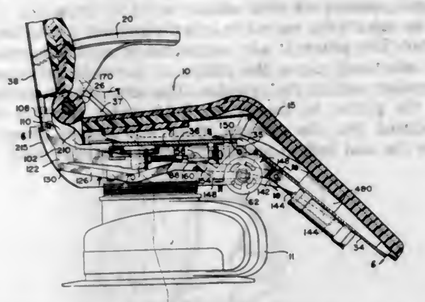
3,414,323
FOLDABLE PROP REST OR SEAT
Bernett W. Mitchum, 1619 Virginia Beach Blvd., Norfolk, Va. 23504
Filed Mar. 28, 1967, Ser. No. 626,450
4 Claims. (Cl. 297—461)



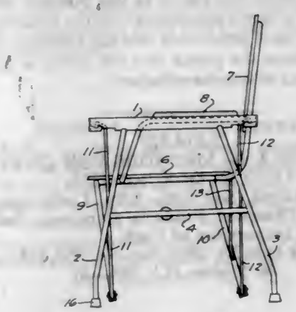
A lightweight foldable rest or seat which assumes an inclined position when opened for use, thereby forming a prop structure for the user when the user is leaning on the rest substantially in a sitting position.

3,414,324
ADJUSTABLE CHAIR
Norris O. Taylor, Swarthmore, Pa., Wilmer P. Uhler and John M. Gardella, Staten Island, N.Y., and Jim Cahlik, Parma, Ohio, assignors, by mesne assignments, to S. S. White Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 27, 1965, Ser. No. 475,181
8 Claims. (Cl. 297—90)

A chair is provided with pivotal connections between a seat rest and a back rest, and between the seat rest and a leg rest, also with a thrust connection between the back rest and the leg rest and further with a driving connection between the back rest and a motor carried by the seat rest, so that by operation of the motor the back rest and the leg rest are adjustably movable relative to one another and the seat rest. A continuous cushion extends over the seat rest and the leg rest to provide an uninterrupted cushioned surface over these parts for all positions of the leg rest and the seat rest.



3,414,325
ROCKING CHAIR
Arthur Jutila, Kankaanpaa, Finland
Filed Aug. 18, 1967, Ser. No. 661,698
2 Claims. (Cl. 297—281)

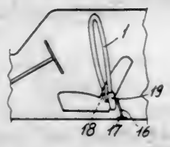


A rocking chair comprising a supporting frame and a chair swingably mounted thereon, said frame being formed of a pair of laterally spaced side members of A-shape having longitudinal top bars and having legs which slant downwardly and in fore-and-aft directions, and a brace member connecting the center bars of said side members, said chair including a back, a seat, and three legs of which a laterally spaced pair is disposed at the front or back and the third leg is disposed oppositely of said pair at the underside of the seat, a U-shaped hanger having its upper ends articulated to the horizontal top bars of the side members and its bight articulated to the bottoms of said pair of legs, and a V-shaped hanger having its upper ends articulated to the top bars of the side members and its lower apex articulated to the bottom of said third leg.

3,414,326
SELF-FASTENING SEAT BELT
Giulio Raffaelli, Via del Duomo 12, Lucca, Italy
Filed Mar. 21, 1967, Ser. No. 624,804
Claims priority, application Italy, Mar. 26, 1966, 16,026/66; June 3, 1966, 18,646/66
7 Claims. (Cl. 297—385)

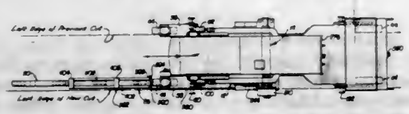
A self-fastening seat belt comprising a unitary inflatable tubular belt fixedly connected to a vehicle at one end thereof and attached to a positioning means at the other end thereof. The positioning means is effective to selectively extend and retract the seat belt and to selectively inflate and deflate the seat belt to cause the seat belt to assume a predetermined configuration. The positioning

means includes a cylinder positioned beside a seat opposite the fixed end of the seat belt having a piston slidably carried therein. The cylinder is connected to a conventional pressurized fluid source so as to cause the piston to be selectively moved in a first direction within the cylinder. The piston is also connected to an elastic member to selectively cause the piston to move in the opposite direction within the cylinder. The seat belt is connected to the piston so that when fluid under pressure is introduced into the cylinder, fluid will also be introduced into the seat belt to render the same relatively rigid. This



moves the piston in the first direction within the cylinder to lengthen the seat belt, while at the same time forcing the seat belt to assume a predetermined configuration. When fluid under pressure is not introduced into the cylinder, the elastic means moves the piston in the direction opposite to the first direction within the cylinder until the piston reaches a predetermined position. A locking means is effective to retain the piston in this position until fluid under pressure is again introduced into the cylinder. When the pressure is again introduced into the cylinder, the locking means releases the piston and the piston is moved in the first direction within the cylinder.

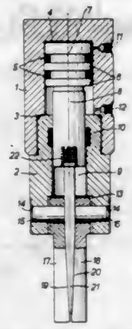
3,414,327
APPARATUS AND METHODS FOR CUTTING CONCRETE SURFACES
Benjamin L. Austin, Salt Lake City, Utah, assignor to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Filed June 13, 1966, Ser. No. 557,039
46 Claims. (Cl. 299—1)



A wheeled frame supports a rotatable cutter for cutting concrete roadway surfaces to remove irregularities. A sensing device engages the roadway in advance of the frame and automatically effects vertical adjustment of the cutter ot determine the depth of cut in response to the profile of the roadway sensed by the device. A blender adjusts the height of one end of the cutter to correspond to the height of an adjacent previously cut surface. Another blender adjusts the height of the opposite end of the cutter to cause the cutter to take a light cut in roadway depressions so that the cutter operates upon the whole area of the roadway traversed by the cutter.

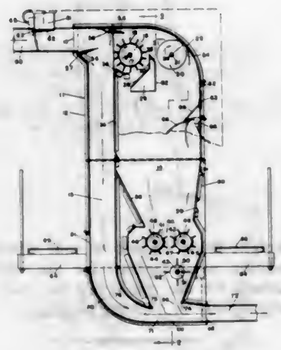
3,414,328
HYDRAULICALLY ACTUATED TOOL FOR THE MECHANICAL BREAKING OF ROCKS BY MEANS OF A WEDGE SLIDABLE THROUGH INSERT PIECES
Helmut Darda, Blumberg, Baden, Germany
Filed Aug. 4, 1966, Ser. No. 570,353
Claims priority, application Germany, Aug. 11, 1965, D 47,943
14 Claims. (Cl. 299—22)

A hydraulically actuated tool for breaking rocks and the like in which elongated insert members arranged about a slender wedge may be inserted in a prebored hole of a rock so that the latter may be broken during advance of the wedge relative to the insert members and resulting spreading of the latter, and in which the wedge is advanced by hydraulically operated cylinder and piston means constructed to provide proper guiding and protec-



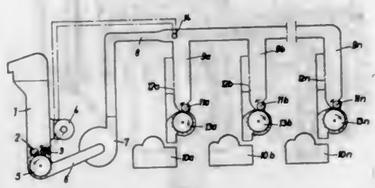
tion of upper portions of the wedge and insert members during operation of the tool.

3,414,329
PNEUMATIC COTTON FEEDER WITH BYPASS
Rufus Archie Whitener, Big Spring, Tex., assignor to Continental/Moss-Gordin, Incorporated, Prattville, Ala., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,902
10 Claims. (Cl. 302—23)



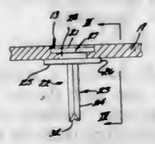
A cotton feeder for use with a stream of air comprising an induction tube for feeding cotton into the stream of air and flowing the air and cotton toward a storage bin, a bypass conduit for directing the stream of air around the storage bin, movable baffles for selectively directing the cotton from the stream of air into the storage bin or with the stream of air through the bypass conduit, feed rollers in the bin for feeding the cotton at a uniform rate from the storage bin back into the stream of air, and an air inlet opening in the induction tube upstream of the bin which is opened in response to a predetermined volume of cotton present in the bin, to decrease the flow of air through the induction tube.

3,414,330
PNEUMATIC FEEDING ARRANGEMENT FOR SUPPLYING FIBROUS MATERIALS
Hermann Trützschler, Rheydt, Germany, assignor to Trutzschler & Co., Rheydt-Odenkirchen, Germany, a corporation of Germany
Filed Nov. 16, 1966, Ser. No. 594,810
Claims priority, application Germany, Sept. 3, 1966, T 31,980
5 Claims. (Cl. 302—28)



A pneumatic feeding apparatus having a main supply duct, feeding means associated with such supply duct, a multiplicity of subsidiary ducts leading from said main duct, means for discharging the pneumatically fed material in such apparatus, wherein such subsidiary duct has a substantially air-tight discharge means and has an air discharge means spaced from the discharge means toward the main duct, and wherein the apparatus has a sensing device in the main duct operative to control the feeding of material to the main duct as required by the degree of filling of the subsidiary ducts.

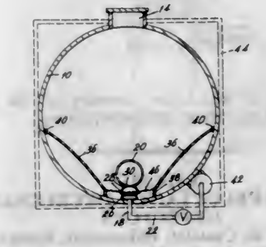
3,414,331
VALVE FOR AIR FILM CONVEYORS
Daniel A. Fogg, White Cloud, Mich., assignor to Rapistan Incorporated, Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 9, 1967, Ser. No. 614,928
7 Claims. (Cl. 302—29)



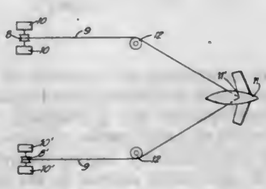
A valve to be used in the openings through the platen of an air film conveyor, which valve, by means of air pressure differential, automatically substantially shuts off the flow of air through the valve when no article is superimposed over and obstructs the discharge end of the valve. The valve is of the normally open type and closes in response to an increase in the pressure differential between the valve's discharge end and the air chamber. The valve includes a bypass bleed passage to reduce the air pressure differential to that which will cause the valve to open when the valve's discharge is obstructed.

3,414,332
SHIPPING VESSEL
John W. Merrill, Dunellen, N.J., assignor to Union Carbide Corporation, a corporation of New York
Original application May 6, 1965, Ser. No. 453,696, now Patent No. 3,365,241. Divided and this application Apr. 12, 1967, Ser. No. 650,147
6 Claims. (Cl. 302—29)

1. A metallic vessel 30 to 40 feet long for transporting and delivering bulk granular materials comprising, a pneumatic discharge assembly for said materials which comprises, a conveying channel situated in the lower portion of said vessel having slots therein at spaced intervals and a tubular air conduit member situated proximate said channel, said conduit member having valve assemblies mounted thereon positioned to open and close said slots sequentially when said conduit member is inflated and deflated, means for inflating and deflating said conduit member, means for applying air pressure in said vessel to fluidize said bulk granular materials, means for creating and maintaining an air pressure differential between the interior of said vessel and said conveying channel for discharging said materials from said vessel, through said slots and out said channel.



3,414,333
VEHICLE BRAKING SYSTEMS
Jean Merle, La Tronche, France, assignor to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, and Societe Francaise Aeronautique et Maritime, both of Grenoble, Isere, Farnce, both corporations of France
Filed Jan. 27, 1965, Ser. No. 428,490
Claims priority, application France, Jan. 29, 1964, 4,647; Feb. 7, 1964, 4,648; Sept. 29, 1964, 4,725
16 Claims. (Cl. 303—21)

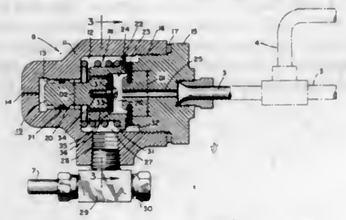


A method and braking system which embodies aircraft arresting gear connected to a hydraulic brake adjusted by variably positioned shutters. The shutters are controlled by the torque of an auxiliary hydraulic brake connected to the arresting gear.

3,414,334
DELAYING ACTION EQUALIZER VALVE
James A. Payne, Warren, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 354,235, Mar. 24, 1964. This application Mar. 30, 1966, Ser. No. 540,144
9 Claims. (Cl. 303—6)

A hydraulic braking system having disk type brake and drum brake with a novel valve positioned in the hydraulic system for delaying the application of the disk brakes until a predetermined pressure has been applied to the drum brakes so that the disk and drum brakes will be

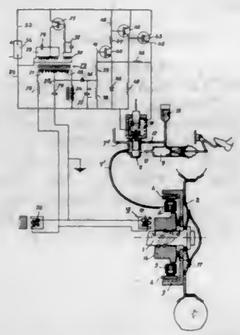
actuated together. The novel valve operating sequentially as a relief valve, a pressure reducing valve and subsequently ceasing to affect the pressure of the hydraulic fluid supplied to the wheel brake cylinders.



3,414,335
VARIABLE-RELUCTANCE DECELERATION DETECTORS

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Aug. 26, 1966, Ser. No. 575,439
Claims priority, application France, Sept. 9, 1965, 30,951
7 Claims. (Cl. 303—21)



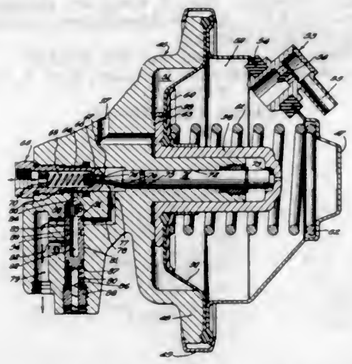
A device for controlling the actuation of a fluid actuated braking system in automotive vehicles and comprising a fixed magnetic pickup and a magnetic mass-inertial member responsive to wheel motion to move axially with respect to the pickup thereby varying the reluctance. An oscillator feeds alternating current to the pickup which in turn controls a threshold amplifier adapted to actuate an electromagnetic valve in the braking system. The mass and member are so mounted that limited angular movement with respect to the wheel will cause the above-mentioned axial movement thereby effecting the desired control function.

3,414,336
SKID CONTROL SYSTEM

Rupert Lloyd Atkin, Grosse Pointe Woods, and Gilbert H. Drutchas, Birmingham, Mich., assignors to TRW, Inc., Cleveland, Ohio, a corporation of Ohio

Filed May 9, 1967, Ser. No. 637,216
16 Claims. (Cl. 303—21)

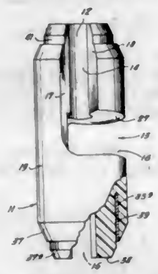
A skid control system including means for detecting an impending wheel lock condition and for responding with a control signal to manipulate a valve means within the hydraulic brake lines connecting a master cylinder and wheel brake motor means to release the pressure applied to the motor means. The valve means used to control the flow of pressure to the wheel brakes and to release that pressure upon an impending wheel skid condition has a by-pass line and an associated second valve means within the by-pass line to by-pass the anti-skid device when an excessive hydraulic pressure is applied to the braking system.



3,414,337
ROD GUIDE

Donald E. Sable, 4413 Windsor Parkway, Dallas, Tex. 75205

Filed May 18, 1966, Ser. No. 551,161
10 Claims. (Cl. 308—4)

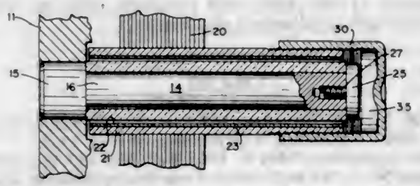


A sucker rod guide having a resilient tubular body provided at least at one end thereof with an arcuate recess in which an arcuate resilient fastener or clip of smaller diameter of curvature than the recess is insertable to stress the body to cause it to firmly grip a sucker rod when mounted thereon.

3,414,338
GAS BEARING ADAPTER

Stanley Wallerstein, Smithtown, N.Y., assignor to Fairchild Hiller Corporation, Bay Shore, N.Y., a corporation of Maryland

Filed Oct. 22, 1965, Ser. No. 500,674
5 Claims. (Cl. 308—9)

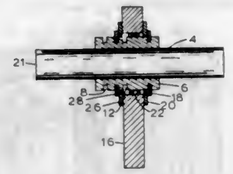


A gas bearing and method of making the same, which bearing material of a predetermined shape is place on a bearing adapter.

3,414,339
OIL-FREE BEARING ASSEMBLY

Robert B. Hay, 100 Appleton St., North Andover, Mass. 01845

Filed Apr. 4, 1966, Ser. No. 539,692
3 Claims. (Cl. 308—26)

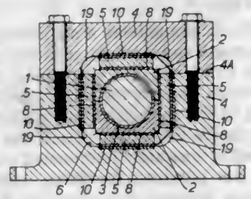


A bearing assembly in which the bearing is simply and quickly, yet firmly mounted in a housing and which can accommodate housings of different dimensions. The assembly comprises a bearing having at least three spaced grooves about the sleeve thereof, a resilient mounting which fits snugly about said sleeve and is positioned between at least two of said grooves, a housing having an aperture therein which aperture fits snugly about said resilient mounting to give a friction fit, a washer about said sleeve on each side of said aperture, and a snap ring pressing against the outside of each washer, said snap ring being positioned and being held firmly in place by said grooves in said sleeve.

3,414,340
JOURNAL BEARING ASSEMBLIES

Leonard Heath, London, England, assignor to The Glacier Metal Company Limited, Wembley, England, a British company

Filed Apr. 8, 1966, Ser. No. 541,253
Claims priority, application Great Britain, Apr. 8, 1965, 14,978/65
8 Claims. (Cl. 308—72)

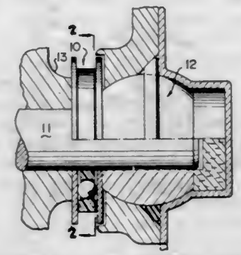


The journal bearing assembly of the present invention comprises a journal member having a bearing surface, and a bearing member having an inner bearing surface formed for engagement with bearing surface of the journal member and a plurality of outer bearing surfaces. A housing surrounds but is spaced from the bearing member, said housing being provided with a plurality of inner bearing surfaces confronting the said outer bearing surfaces of the bearing member. A plurality of intermediate devices between and in sliding contact with said inner and outer bearing surfaces permitting limited angular movement of the axis of the bearing member with respect to the housing.

3,414,341
RETAINER WITH SEALS FOR THRUST BEARINGS

William Walter Murphy, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed Apr. 11, 1966, Ser. No. 541,745
15 Claims. (Cl. 308—235)

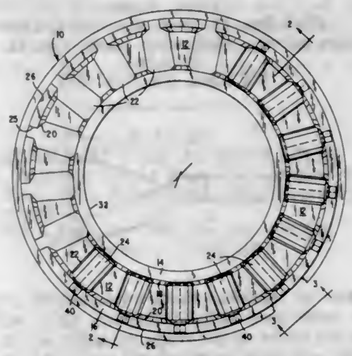


An axial thrust bearing retainer is provided, which may be constructed of a plurality of pieces, having pockets for receiving rolling elements therein, with sealing lips extending axially outwardly from each side of the retainer, and stops or abutment flanges extending axially from each side of the retainer for a distance less than the axial extension of associated sealing lips. The retainer may have rolling elements of various configurations, and is generally disposed between two washer-like members, for rolling contact of the rolling members thereagainst. The retainer may also have lubricating holes extending axially therethrough.

3,414,342
SELF-LUBRICATING THRUST BEARING

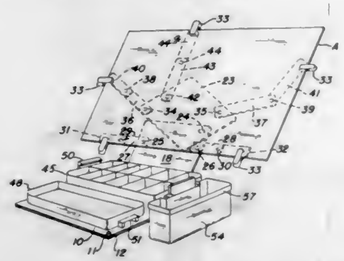
Lawrence E. Root, Syracuse, N.Y., assignor to Rollway Bearing Company, Inc., Syracuse, N.Y., a corporation of New York

Filed Feb. 6, 1967, Ser. No. 614,068
1 Claim. (Cl. 308—235)



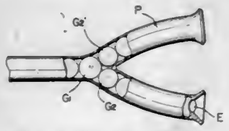
An improved lubricated thrust bearing roller cage assembly having a thrust disc abutting the outer end of a roller mounted in each roller receiving slot in the cage assembly. Lubricant is fed under pressure thru the inner side of the cage assembly thru each of the rollers to each of the thrust pads.

3,414,343
ARTIST'S PAINTING KIT
Carroll E. Thomas, 157 Marina Blvd., San Rafael, Calif. 94901
Filed Jan. 16, 1967, Ser. No. 609,536
10 Claims. (Cl. 312—231)



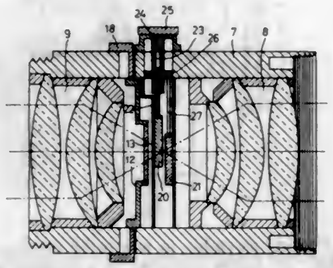
The combined portable case and artist's equipment of the present invention comprises a case compartment provided with a hingedly connected lid for, on the one hand, compactly housing all of such equipment and, on the other hand, for functionally coacting in combination with a hingedly connected base plate and an adjustable easel for setting up and maintaining the easel in optimum position for an artist's use and for firmly supporting a paint containing box having a lid detachably secured thereof and serving as a palette when removed and secured on said base plate in an inverted position. The paint containing box detachably supports suitable water containers, and the base plate pivotally supports an auxiliary palette. The easel is provided with extension members enabling the placement and maintenance thereon of any selected one of a plurality of artist's sheets of different sizes, and also is provided with means for holding the easel with or without adjusted extension members in a predetermined angular relationship with the base plate, preferably at approximately thirty-five degree angle with respect to the horizontal.

3,414,344
FLEXIBLE OPTICAL SYSTEM FOR TRANSMITTING LIGHT OR OPTICAL IMAGES
Michi Mukojima, 2–241 Tozuka-cho, Shinjuku-ku, Tokyo, Japan
Filed Jan. 12, 1965, Ser. No. 424,949
Claims priority, application Japan, Jan. 18, 1964, 39/2,183
4 Claims. (Cl. 350—35)



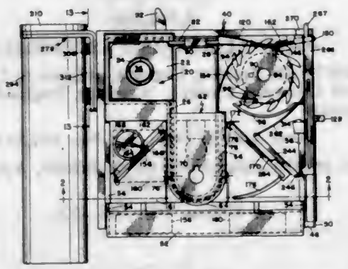
A series of spherical lenses consecutively arranged in contact with each other transmits light and images through the entire series. When the index of refraction of lenses of equal diameter is suitably matched to the number of lenses in the series, a real image of an object touching the first lens in the series can be produced at the surface of the last lens, and many combinations of refractive index, lens diameter, and number of lenses are possible when conventional objectives and oculars are used. A series of spherical lenses in contact with each other and contained in a flexible tube conduct light and images in curved and bifurcated paths.

3,414,345
ILLUMINATION DEVICE FOR MICROSCOPES
Friedrich Karl Möllring, Aalen, Wurttemberg, Germany, assignor to Carl-Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim on the Brenz, Wurttemberg, Germany, a corporation of Germany
Filed Mar. 18, 1965, Ser. No. 440,816
Claims priority, application Germany, Mar. 21, 1964, Z 10,722
4 Claims. (Cl. 350—87)



An illumination device for a microscope in which a continuous adjustment of the light intensity and also a continuous homogenization of the illuminous area is possible.

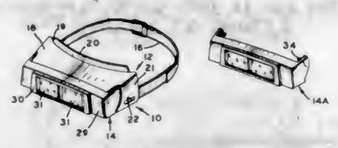
3,414,346
STEREOSCOPIC VIEWER
William Halco, 8—330 Broadway, Chula Vista, Calif. 92010
Filed Mar. 20, 1964, Ser. No. 353,347
10 Claims. (Cl. 350—135)



The viewer accommodates a stereoscopic film strip as initially processed and without separation and mounting of the stereo pairs, the film strip being interwound with a pull strip which protects the film in addition to carrying titles relating to the subject matter. At each advancement of the film strip the title of the next frame becomes visible to one eye and is separately illuminated within the viewer. Adjustments are provided for focus, interocular separation, differences between the vision of the two eyes and exaggerated stereo effect for extreme close-ups. Film strip advancement is constant to ensure proper framing and the film strip is self-feeding through the viewer at the start.

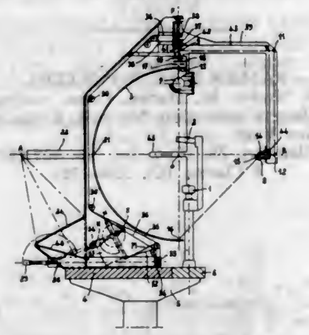
3,414,347
BINOCULAR WITH PIVOTED LENS PLATE
Morton Stoltze, Bronx, N.Y., assignor to Edroy Products Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 30, 1965, Ser. No. 443,949
1 Claim. (Cl. 350—145)

1. A magnifying binocular provided with an adjustable head-band for mounting on the user's head and including a main frame with a curved rear edge having an upwardly extending flange to engage the user's forehead and a lens plate provided with a front wall and magnifying lenses mounted therein and pivotable on the main frame for rotatable movement from its functional lower position within the line of sight into a raised position outside the line of sight, providing a change from magnified position to normal position in the line of sight, the main frame and the lens plate provided with flat top plates and pairs of opposed, downwardly extending end sections to form a hood-like structure, the pair of end sections of one of the members having recesses to receive the end plates of the



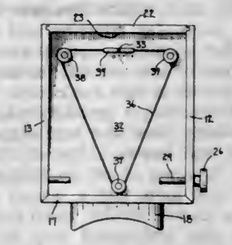
other member in nested relation, one pair of said end sections having pivot openings and the other pair having pivot pins received in the pivot openings to permit the lens plate to be raised above the line of sight, and detent means for retaining the lens plate in raised and in lowered positions comprising a radial rib in one of the members extending through the axis of the pivot pins, and a pair of radial detents receiving the rib carried by the other member, the lens plate being detachable from the main frame by flexing one of the members with respect to the other to detach said pivot from said opening.

3,414,348
HEMISPHERICAL EYE TEST PERIMETER WITH COUPLED TEST LIGHT SPOT AND RECORDING LIGHT SPOT PROJECTORS
Paul Frédéric Marie Gambs, 15 Rue Jean Larrive, Lyon, France
Filed Oct. 4, 1962, Ser. No. 228,495
Claims priority, application France, Oct. 24, 1961, 41,961
4 Claims. (Cl. 351—24)



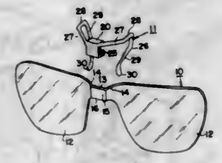
1. A perimeter of the class described, comprising: means defining a substantially hemispherical projection surface extending between vertically spaced poles with a substantially semicircular horizontal equator; first spot projecting means movable along an equatorial path including an extension of said equator, said first projecting means projecting said spot obliquely with respect to a horizontal radius passing through said first projecting means; means for rotating said first projection means about a horizontal radial axis, the obliquity of said projection causing said spot to move along a particular meridian of said projection surface determined by the position of said source along said equatorial path; means defining a plane projection surface; second spot projection means movable in a spherical path; means constraining the optical axis of said second projection means to pass continuously through a fixed point and to project a spot on said plane surface; means constraining said first and second spot projecting means to move in unison through equal angular displacements along equatorial paths; and means constraining said first projection means to be rotated about said radial axis and said second projection means to be displaced along a meridian in unison with equal angular displacements; and means for selectively producing said angular displacements, said means for producing said angular displacements comprising an elongated member rotatable about its horizontal axis; a control member pivoted to said elongated member for angular displacement about a transverse axis perpendicularly intersecting said longitudinal axis at a fixed point; means responsive to pivotal movements of said control member about said longitudinal axis connected to said first and second spot projection means to cause said displacements along equatorial paths; and means responsive to pivotal movements of said control about said transverse axis connected to said first and second spot projection means to cause said rotation of said first projection means and said displacement of said second projection means along a meridian.

3,414,349
EYE DOMINANCE TESTING MACHINE
Steven A. Vencel, Bloomington, Ind., and Kent L. Gray, Mount Pleasant, Mich., assignors to Indiana University Foundation, Bloomington, Ind.
Filed Nov. 27, 1964, Ser. No. 414,274
5 Claims. (Cl. 351—36)



An eyepiece for both eyes, and a field board spaced behind it. Blinder plates behind the eyepiece and mounted near it on a rod for adjustment to permit view of the board with both eyes; then only one eye; then only the other eye. An alignment rod between the blinder plates and field board and movable laterally by turning a knob for alignment with a line on the field board as the user sees it.

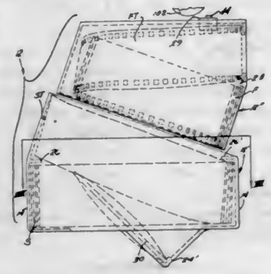
3,414,350
AUXILIARY CLIP-ON SPECTACLES
Albert G. McNeill, Maple Glen, Pa., assignor to Bachmann Bros., Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed June 17, 1965, Ser. No. 464,680
2 Claims. (Cl. 351—58)



An auxiliary spectacle for attachment to eye-glasses which includes a unitary lens structure having a pair of side-by-side lens parts and a connecting bridge, and a unitary clip structure which includes a snap engaged about

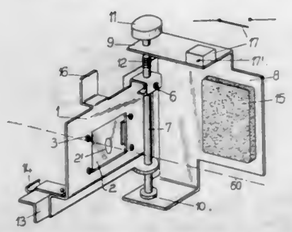
the bridge and a pair of legs extending from the snap into spaced facing relation with respective lens parts.

3,414,351
COMBINED AND CORRELATED FILMSTRIP LOOP AND SOUND LOOP APPARATUS
Stephen A. Platt, 1100 Fulton St., Grand Haven, Mich. 49417
Filed Mar. 10, 1966, Ser. No. 533,215
11 Claims. (Cl. 353—15)



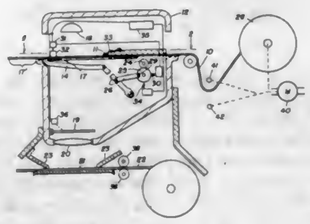
1. Apparatus for synchronized optical showing of photographic frames on a continuous filmstrip loop and audio production from a continuous sound strip loop comprising: a filmstrip and sound strip cartridge; said cartridge comprising a first filmstrip housing portion having a first circular filmstrip-track means for retaining all but one turn of a circular continuous filmstrip loop, and a second circular filmstrip track means divergent from said first filmstrip track means for retaining said one turn in a separated circular condition; optical viewing apparatus adjacent a portion of said second filmstrip track means for viewing of frames in said one circular turn; said cartridge further comprising a second sound strip housing portion cooperatively associated with respect to said first housing portion, and having a first circular sound strip track means for retaining all but one turn of a continuous circular sound strip loop, and a second circular sound strip loop, and a second circular sound strip track means divergent from said first sound strip track means for retaining said one turn of said sound strip loop in a separated circular condition; audio sound head pick-up means adjacent a portion of said second sound strip track for cooperation with said one circular turn of sound strip; and operatively interconnected filmstrip and sound strip advancing means for synchronized advancement thereof.

3,414,352
MECHANISM FOR FOCUSING SLIDE PROJECTORS
Hans Werner Johannsen, Frankfurt am Main, and Walter Keller, Schwalbach, Taunus, Germany, assignors to Braun Aktiengesellschaft
Filed Dec. 5, 1966, Ser. No. 599,170
Claims priority, application Germany, Dec. 11, 1965, B 84,938
13 Claims. (Cl. 353—101)



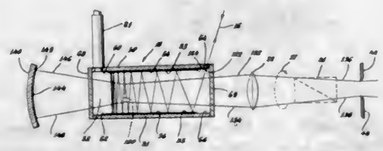
A slide projector with two built-in focusing marks. These marks are moved by carrier means into position on either side of the image plane, and the projector is focused so that both marks are sharply projected. Then, the marks are moved out of position, leaving the image plane vacant for the insertion of a slide.

3,414,353
WEB DRIVING MECHANISM
David N, Schwardt, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 12, 1965, Ser. No. 447,384
5 Claims. (Cl. 355—71)



A projection printer receives a film strip containing a plurality of image frames and having a plurality of apertures. Each aperture is located at a specific position relative to each image frame. A reciprocating claw is engageable with the apertures in the film for sequentially advancing the image frames to a printing position for exposing a photosensitive paper. Substantially automatic operation is achieved by control means including timer means. The control means initiates and terminates the exposure cycle, advances an unexposed portion of the photosensitive paper into a printing position, and controls the claw driving mechanism for advancing the next film image into printing position following exposure of the paper.

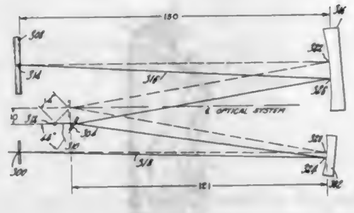
3,414,354
RAMAN SPECTROMETERS
Edouard H. Siegler, Jr., Darien, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 28, 1964, Ser. No. 407,187
8 Claims. (Cl. 356—75)



A Raman spectrometer uses a laser beam to excite the sample. The beam is caused to traverse the sample many times by reflecting it back and forth between two facing reflecting surfaces, one on each side of the sample, thereby increasing the total excitation flux. Preferably, the reflecting surfaces are very slightly canted from exact parallelism so as to cause successive reflected beam paths to become closer and closer, thus concentrating the flux density. Ultimately the reflected beam will reverse its path, almost doubling the excitation flux within the sample. The configuration of the two reflecting surfaces and the sample volume is preferably made to match the

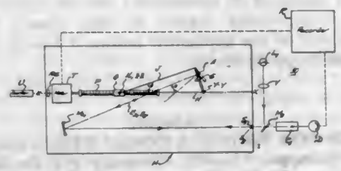
shape of the entrance slit of the monochromator collecting the scattered Raman re-radiation.

3,414,355
SPECTROMETER WITH A GRATING MOUNTED FOR MOTION ABOUT TWO AXES
William G. Fastie, Owings Mills, Md., and Richard K. Brehm, Lexington, Mass., assignors, by mesne assignments, to Fisher Scientific Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 10, 1964, Ser. No. 373,908
16 Claims. (Cl. 356—100)



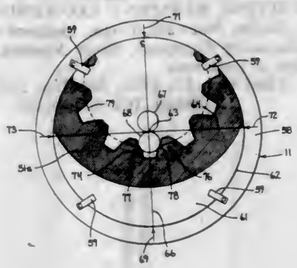
A plane grating vacuum spectrometer includes *f*/40 entrance slit optics, a ten inch spherical collimating mirror, a five by ten inch plane grating, a twenty-four inch spherical camera mirror of 500 cm. focal length and exit slit optics which receives a twenty inch plate holder. The plane grating is mounted for rotation about the axes—a first axis in the face of the grating and a second axis offset 18.42 cm. from the first axis. Both mirrors are also mounted for rotation about axes parallel to the rulings of the grating and rotation of the mirrors and grating is coordinated to maintain minimum coma centered at the exit slit.

3,414,356
MONOCHROMATOR HAVING LINEAR READOUT OF WAVENUMBER
Henry H. Cary, Alhambra, Calif., assignor to Applied Physics Corporation, Monrovia, Calif., a corporation of California
Filed Aug. 1, 1956, Ser. No. 601,493
13 Claims. (Cl. 356—100)



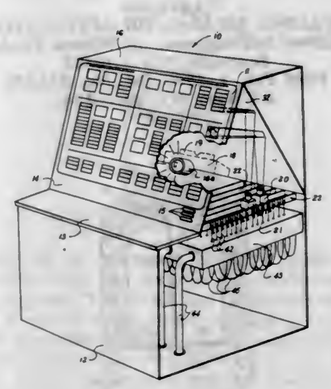
8. A spectrometer comprising:
a plane diffraction grating;
a support rigidly carrying the grating for rotation about an axis parallel to its grating lines;
means for imparting motion to the grating comprising a lever arm rigid with said support and an actuating member movable along the straight edge of said lever arm with a point of said actuating member maintained a fixed distance from said straight edge; and
means for moving said actuating member comprising a lead screw operable to move the actuating member in a direction such that said point moves in a fixed straight line that passes through said axis of rotation.

3,414,357
INSPECTION APPARATUS AND METHOD
Phillip E. Patrick, 4740 Payton St., Lawrence, Ind. 46226
Filed June 22, 1966, Ser. No. 559,445
8 Claims. (Cl. 356—165)



1. A method of inspection of an item having first and second pairs of spaced protrusions, and comprising the steps of:
projecting a magnified image of predetermined portions of said first pair onto a chart;
moving said item to a first location establishing tangency of said image of said predetermined portions with a circle on said chart;
moving a measuring instrument to register said first location;
projecting a magnified image of predetermined portions of said second pair onto said chart;
moving said item to a second location establishing tangency of said image of said predetermined portions of said second pair with a circle on said chart;
and moving a measuring instrument to register said second location.

3,414,358
OPTICAL MONITOR PANEL
Francis D. Griffin, Merritt Island, Fla., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 19, 1966, Ser. No. 566,392
6 Claims. (Cl. 356—166)



A panel consisting of a translucent screen with test or meter information being projected onto it from the rear. With the exception of command switches at the bottom

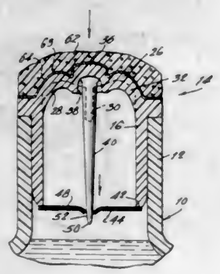
of the panel, the entire panel information is a compilation of light projections. One master projector projects all of the panel nomenclature such as titles, sub-titles, division lines, and component identifications. Smaller individual projectors provide panel viewing of analog and discrete functions.

3,414,359
WRITING ELEMENT CONSTRUCTION
Curtis L. Malm, Norwalk, Conn., assignor to Paper Mate Manufacturing Company, Santa Monica, Calif., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,173
12 Claims. (Cl. 401—109)



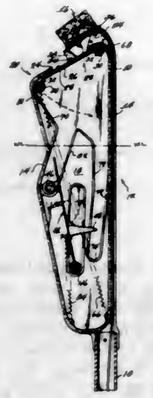
A simple writing assembly with a concealed retract-project mechanism wherein a rear barrel section is provided with a hollow rear portion mounted for rotation: a hollow translating plunger has a rear end portion slidable into the rotatable rear portion and a front portion provided with external feed threads adapted to engage internal feed threads fromed adjacent the front end of the rear barrel section. The plunger is retained for limited axial movement by a hollow junction having external threads in fixed engagement with some of the internal feed threads of the rear barrel section and other threads for engagement with internal connecting threads on a front barrel section.

3,414,360
SEALING MEANS FOR APPLICATOR
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Feb. 1, 1966, Ser. No. 535,272
4 Claims. (Cl. 401—134)



An applicator comprising a body including a retainer ring provided with an imperforate frangible seal. The retainer ring has a resilient cover support opposite from the seal. A plunger is carried by the support for penetrating and breaking the seal upon depression of the support.

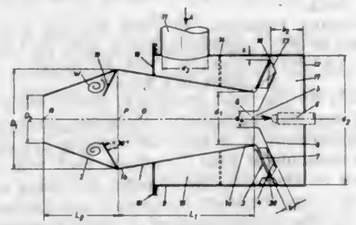
3,414,361
MOPPING DEVICE
Robert E. Olson, Tucson, Ariz., assignor to Reoco, Inc., Tucson, Ariz., a corporation of Arizona
Filed June 20, 1966, Ser. No. 558,671
10 Claims. (Cl. 401—191)



An improved mopping device is provided with means for moving an applicator portion into and out of a head which contains or receives a reservoir of liquid. The applicator is moved into the reservoir by placing the mopping device in a position that permits an opening of a sealing door associated with the reservoir in the head. The applicator is swung into the interior of the reservoir by an actuating means, and continued movements of the applicator within the reservoir are dictated by guide tracks carried on interior surfaces of the reservoir. A compressing means is carried within the reservoir for movement relative to the applicator once the applicator is inside the reservoir, and guide tracks automatically dictate a sequence of movements for the applicator and for the compressing means so that excess liquid is squeezed out of the applicator before it leaves the reservoir of the mopping device.

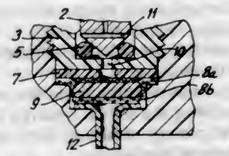
3,414,362
BURNER FOR FIRING A COMBUSTION CHAMBER
Fritz Schoppe, Munich, Germany (% Dr.-Ing. F. Schoppe, 24 Max-Ruttgers-Str., 8026 Ebenhausen, Isartal, Germany)
Filed Apr. 13, 1967, Ser. No. 630,580
Claims priority, application Germany, Apr. 15, 1966, S 38,832
18 Claims. (Cl. 431—58)

A burner for firing a combustion chamber having a flame tube which widens conically in the direction of the main flow of the throughput flow, to which the fuel can be fed in through a central injection port at the intake end of the flame tube, where the combustion air also is fed in partly via a twisting device with predominantly radially directed guide vanes and also partly through the injection port, and with an accelerating nozzle connected with the outlet end of the flame tube for the production of a flame gas jet whose velocity at the outlet end of the accelerating nozzle has a dynamic pressure value amounting to 5–10 times the pressure in the combustion chamber acting on the flame gas jet (this latter pressure is the result of buoyancy per unit area exerted on the flame jet by gases within the combustion chamber). The twisting device and the dimensions of the flame tube are designed



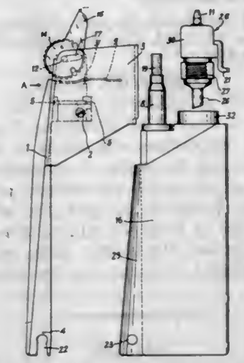
to provide a negative pressure formed in the center of the intake end of the flame tube whose numerical value is at least 10 to 20 times greater than the average stagnation pressure of the throughput flow measured at the half length of the flame tube at the site of the highest velocity of the velocity profile at that location.

3,414,363
LIQUIFIED GAS CIGARETTE LIGHTERS
André Marcel Rosfelder, 77 Viale Pasteur, Rome, Italy
Filed Dec. 28, 1965, Ser. No. 516,878
9 Claims. (Cl. 431—88)



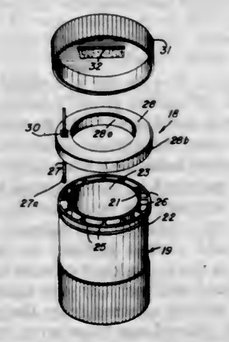
A liquid gas cigarette lighter provided with simple means for regulating the flow of gas to a burner valve. An expansion chamber is provided in the lighter at the inlet end of the burner valve and contains a pair of woven mesh material disks separated by a soft depressable gas impervious disk positioned between an inlet opening to the chamber and the outlet opening from the chamber to the burner valve. Means are provided in the lighter for varying the compressible force exerted on the expansion chamber so that the amount of gas passing over the woven mesh material disks is regulated by the extent to which the compressible disk is forced into the openings in the mesh. Easily operable means are associated with the lighter for moving the valve between its open and closed positions and for concurrently igniting the gas when the valve is opened. Alternatively, the lighter may be ignited manually or automatically. To afford automatic operation, an electric circuit is provided with a switch which closes the circuit upon a change in the position or orientation of the lighter casing. The electric circuit opens the valve by means of a solenoid and also affords the generation of a spark for the ignition of the gas delivered through the valve.

3,414,364
GAS LIGHTER HAVING A DISPOSABLE FUEL CONTAINER
André Bert, Les Comtamines, Annecy-le-Vieux, Haute Savoie, France
Filed Dec. 27, 1965, Ser. No. 516,597
Claims priority, application France, Dec. 30, 1964, 433
5 Claims. (Cl. 431—143)



A pyrophoric cigarette lighter having a disposable fuel container which itself constitutes the main body of the lighter, complemental securing means forming part of the container and cooperating with corresponding complemental securing means carried by a separate igniting mechanism and a separate pressure reducer and burner unit for operatively and detachably affixing said unit and said mechanism to said disposable container.

3,414,365
SAFETY KIT FOR SPORTSMEN
Ivan R. Cranston, 1514 S. 4th St. W., Missoula, Mont. 59801
Filed May 11, 1967, Ser. No. 637,816
9 Claims. (Cl. 431—291)



A safety kit for sportsmen, having a folded sheet of plastic, coiled cord, and a match and candle unit packed in a carrying case. The match and candle unit has a housing with a central compartment containing a candle and a set of surrounding compartments containing matchsticks. An annular closure on the housing covers the surrounding compartments but has an aperture through which matchsticks may be dispensed upon rotation of the closure on the housing. A removable cap covers both the closure and the central compartment. The candle has a combustible jacket with a filler of wax therein, the jacket constituting the sole wick of the candle.

CHEMICAL

3,414,366
COLORING LEATHER

Lars E. Nordstrom, Linden, and John F. Wagoner, Williamsport, Pa., and Robert M. Lollar, Sheboygan, Wis., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 287,183, June 12, 1963. This application Nov. 12, 1963, Ser. No. 323,150

8 Claims. (Cl. 8—12)

Leather, such as aldehyde-tanned and resin-impregnated leather, is colored by dissolving dye in a solvent miscible in all proportions with water to form a water-solvent solution and the leather is immersed in the solution. Pressure of about 50–400 pounds per square inch is applied to the leather to compress the leather to about 5–15 percent and to force the dye solution through the resin into the leather, the leather being repeatedly compressed and released to knead the dye solution into the leather.

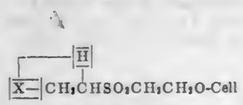
3,414,367
PROCESS FOR MAKING N-SUBSTITUTED AMINOETHYLSULFONYLETHYL ETHERS OF CELLULOSE

Clark M. Welch and John D. Guthrie, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation-in-part of application Ser. No. 70,891, Nov. 21, 1960. This application Nov. 6, 1963, Ser. No. 321,979

27 Claims. (Cl. 8—17)

11. As a colored polymeric material, the ternary addition product of a colored aromatic amine, divinyl sulfone, and cellulose, the said ternary addition product being represented by the structure:



in which structure X with the associated hydrogen atom as indicated is an amino group containing-dye selected from the group consisting of basic fuchsin, Acridine Red, p-aminoazobenzene, and auramine; and —Cell is a divinyl sulfone-crosslinked cellulose chain, said ternary addition product being prepared by (1) reacting in aqueous solution and at a temperature not exceeding about 45° C., about from ½ to 1 mole of said colored aromatic amine per mole of said divinyl sulfone to form a reaction product which is the 1:1 adduct of said colored aromatic amine and divinyl sulfone, (2) extracting said reaction product with a solvent selected from the group consisting of benzene and chloroform to remove unreacted divinyl sulfone therefrom, (3) treating cellulose with an aqueous solution of the divinyl sulfone-free reaction product and about from 1 to 2.5 weight percent, based on the aqueous solution, of an alkaline catalyst selected from the group consisting of alkali metal carbonates, alkali metal bicarbonates, alkali metal hydroxides, quaternary ammonium bicarbonates, quaternary ammonium carbonates, and quaternary ammonium hydroxides, and (4) heating the thus-treated cellulose at a temperature of about from 80° to 160° C. for about from 2 to 10 minutes, the shorter times being employed with the higher temperatures, to form said ternary addition product.

3,414,368
RESIST PRINTING METHOD FOR HYDROPHOBIC FIBERS

Kazuo Kitamura and Norihiro Minemura, Iwakuni-shi, Japan, assignors to Teijin Limited, Umeda, Kita-ku, Osaka, Japan

No Drawing. Filed June 30, 1964, Ser. No. 379,368
Claims priority, application Japan, July 18, 1963, 38/38,819; Mar. 26, 1964, 39/16,616
6 Claims. (Cl. 8—64)

A process for the resist printing of hydrophobic fibers, yarns, fabrics, etc., particularly polyesters, characterized by the employment of at least one disperse dye containing in its molecule at least 2 radicals, each with an unshared pair of electrons, the disperse dye being capable of forming a copper chelate compound, and further characterized by the employment of a resist printing paste containing a copper compound capable of forming a chelate with said disperse dye. The printing of the resist printing paste can be accomplished either before or after the dyeing of the fiber, etc., with the disperse dye, the dyed fabric being finished by a subsequent aqueous washing and drying.

3,414,369
MODIFICATION OF CELLULOSIC TEXTILES WITH BIS(DIMETHYLOLDIHYDROXYETHYLENEUREA) p-DIOXANE

Elwood J. Gonzales, Kenner, and Ruth R. Benerito, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Feb. 11, 1965, Ser. No. 432,022, now Patent No. 3,383,390, dated Apr. 16, 1968. Divided and this application Sept. 13, 1967, Ser. No. 680,595

1 Claim. (Cl. 8—116.3)

1. A process for imparting "wash-and-wear" property to cellulosic textiles comprising

(a) wetting the cellulosic textile with an aqueous solution containing about from 0.22 to 0.50 mole per liter of solution of bis(dimethyloldihydroxyethyleneurea)p-dioxane,

(b) removing excess solution from the wetted cellulosic textile by passing the textile through squeeze rolls to obtain a wet pickup of about 90% by weight based on the weight of the textile,

(c) drying the wet impregnated textile at about from 25° to 60° C. for about from 7 to 60 minutes, the longer time invervals being used with the lower temperatures, and

(d) curing the dry impregnated textile at about from 120° to 160° C. for about from 3 to 10 minutes, the longer time intervals being used with the lower temperatures.

3,414,370
PROCESS AND COMPOSITION FOR STERILIZING SURGICAL SUTURES

Ludwig Baumgartner, Nurnberg, Germany, assignor to Pfrimmer & Co., Erlagen, Bavaria, Germany

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,115
Claims priority, application Germany, Jan. 31, 1963, P 31,035
16 Claims. (Cl. 21—58)

A solution for sterilizing surgical sutures such as catgut or synthetic surgical sutures with or without needles which comprises an alcohol solution, a small quantity of an epoxide sterilizing agent, a small amount of an acid selected from the group consisting of aliphatic saturated and unsaturated monocarboxylic acids and di-carboxylic acids, aromatic mono-carboxylic acids and dicarboxylic

acids and a base present in an amount sufficient to approximately neutralize the acid, said base being selected from the group consisting of alkylamines and alkylolamines.

3,414,371
LOW PRESSURE SYNTHESIS OF ELECTRICALLY CONDUCTIVE PLATINUM COBALT OXIDE FROM A PLATINUM HALIDE AND AN OXIDE CONTAINING COBALT

Donald B. Rogers, Carrcroft Crest, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 31, 1967, Ser. No. 612,774
8 Claims. (Cl. 23—50)

Process for preparing an electrically conductive oxide of the formula

$$Pt_{1+x}Co_{\frac{2-2x}{3}}O_4$$

where x is 0.6–0.8, by reacting a platinum halide, particularly $PtCl_2$, with an oxidic reagent containing cobalt such as a cobalt oxide, alkali metal or rare earth cobaltate at 600–850° C. and autogenous pressure.

3,414,372
MANUFACTURE OF FERRITE MONOCRYSTALS

Max Paulus and Charles Guillaud, Paris, France, assignors to Centre National de la Recherche Scientifique, Paris, France, a corporation of France

Filed Mar. 26, 1963, Ser. No. 268,173
Claims priority, application France, Mar. 29, 1962, 892,623
7 Claims. (Cl. 23—51)

1. A method of producing a ferrite monocrystal from a solid polycrystalline aggregate of an initial material, comprising preparing a mixture constituted by a solid solution of oxides including Fe_2O_3 which will form a polycrystalline aggregate at a given temperature, including in said mixture, to form a completed mixture, a finely divided crystal-promoting substance which will not enter into solution at said given temperature but will enter into solid solution at a higher critical temperature below the fusion point of said aggregate and which will tend to promote growth of crystals by producing discontinuity in the size of crystals at said critical temperature, said crystal-promoting substance consisting of a metallic oxide in the form of particles whose dimensions lie between ten and one thousand angstrom units and in an amount between 0.1 and 1.0 molecular percent related to the total of the other constituents, whereby the ratio between the diameters of the crystals after and before the critical temperature is of the order of 20 to 100, heating said completed mixture to said given temperature to form an elongated solid polycrystalline body, thereafter heating a transverse zone of said body which zone incorporates a single crystal to provide a temperature gradient from a temperature below said critical temperature to a temperature above said critical temperature but below said fusion point of the aggregate, whereby said substance enters into solid solution, and progressively traversing said heated zone along said body to promote the growth of a single crystal from said aggregate.

3,414,373
PREPARATION OF ACTIVE CUPROUS HALIDE SORBENTS BY TWO-STAGE DECOMPLEXATION

Merlan M. Lambert, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 9, 1966, Ser. No. 532,837
10 Claims. (Cl. 23—97)

Active cuprous halide sorbents are prepared by contacting raw salt with a conditioning ligand in the presence of a close boiling olefin, separating the complexed salt, stripping to remove monoolefin while partially decomplexing the salt, and then fully decomplexing the salt.

3,414,374
COMPLEXES OF NITROGEN, PHOSPHORUS, OXYGEN AND ALUMINUM AND/OR CHROMIUM AND METHOD OF PRODUCING THE SAME

Ernest Stossel, 203 W. 81st St., New York, N.Y. 10024

No Drawing. Filed Apr. 29, 1965, Ser. No. 451,959
25 Claims. (Cl. 23—105)

A complex containing complexed nitrogen, phosphorus and oxygen, and having the general empirical formula:

$$[P_r(N)_o(O)_{2o+r-w}(H_2O)]_p$$

wherein n is a number within the range from about 0.1 to about 3, w is a number within the range from 0 to about 100, P is a number within the range from about 1 to about 100, r is a number within the range from 1 to 2, h is a number within the range from about 0 to $(4-n)$ and R is selected from the group consisting of hydrogen and organic radicals having from one to about thirty carbon atoms, and a process for forming the complex by reacting an aqueous acidic solution comprising phosphate and said metal with a nitrogen compound having an

$$-NH$$

group in the molecule, the hydrogen atom attached to nitrogen being labile, at an elevated reaction temperature within the range from about 150° C. up to the decomposition temperature of the reaction product, whereby during said reacting the pH of the reaction mixture will increase, and, as the pH increases, decreasing the proportion of water to phosphate sufficiently to prevent precipitation of phosphate salt, and prevent hydrolysis of the ionic complex.

3,414,375
TWO-STAGE PROCESS FOR THE PREPARATION OF POTASSIUM METAPHOSPHATE

Alphonse Leroy and Ludovic Gijsemans, Tessenderlo, and Fernand Peerts, Heverle, Belgium, and Georges Hulot, Paris, Jean Martin, Ermont, and Jean René Andrieu, Villiers-le-Bel, France, assignors of fifty percent each to Produits Chimiques du Limbourg, Brussels, Belgium, and Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture, Paris, France

No Drawing. Filed July 20, 1964, Ser. No. 383,990
Claims priority, application France, Aug. 7, 1963, 944,030, Patent 1,377,348
21 Claims. (Cl. 23—106)

Producing potassium metaphosphate by the successive steps of:

(a) Partially reacting phosphoric acid and potassium chloride at about 120–300° C.; and

(b) Rapidly increasing the temperature of the resultant reaction mass from step (a) to about 560–850° C. to obtain additional potassium metaphosphate, said rapid temperature increase being at a sufficiently high rate to substantially obviate any formation of a pasty, sticky phase.

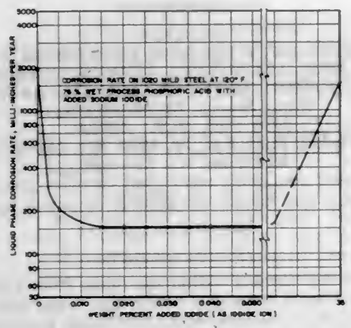
3,414,376
CORROSION INHIBITOR FOR PHOSPHORIC ACID

William P. Banks, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Mar. 28, 1966, Ser. No. 537,751
6 Claims. (Cl. 23—165)

Corrosivity of merchant grade wet process phosphoric

acid toward ferrous metals is greatly reduced by addition



of at least about 50 p.p.m. iodide ion and about 2–35 weight percent sulfuric acid.

3,414,377
PRODUCTION OF CHLORINE

Robert Bauwens, Colombes, and Jean Molliere, Huninge, France, assignors, by mesne assignments, to Ugine Kuhlmann (societe anonyme), Paris, France, a corporation of France

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,555
Claims priority, application France, Jan. 7, 1965, 1,152
8 Claims. (Cl. 23—167)

Process for producing chlorine from hydrogen chloride, wherein mixtures of hydrogen chloride, sulphur dioxide, and possibly sulphur trioxide oxygen containing gases are treated in the presence of a catalyst, thus making it possible to produce chlorine and sulphuric acid in one and the same operation.

3,414,378
PRODUCTION OF AMORPHOUS FERRIC OXIDE

Donald F. Stedman, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company of Canada

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,946
13 Claims. (Cl. 23—200)

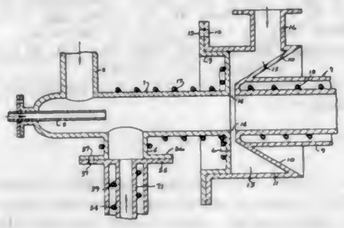
A process for the production of highly amorphous ferric oxide in which ferrous oxalate is formed and spread as a thin layer on a supporting surface acting as a heat sink. The temperature of the thin layer is controlled to be below the temperature of crystalline formation and the ferrous oxalate decomposes directly to a highly amorphous form of ferric oxide.

3,414,379
MANUFACTURE OF TITANIUM DIOXIDE

Raymond J. Wigginton, Grimsby, William N. Dear, Theydon Bois, and William R. Culfeather, Cleethorpes, England, assignors to Laporte Titanium Limited, London, England, a British company

Filed June 1, 1965, Ser. No. 459,995
Claims priority, application Great Britain, June 3, 1964, 23,043/64
9 Claims. (Cl. 23—202)

A process and apparatus for the production of titanium dioxide by the vapor phase oxidation of titanium tetrachloride. Separate streams of titanium tetrachloride and an oxidizing gas are separately preheated and introduced into a reaction zone where they react to form finely divided titanium dioxide. At least a portion of the oxidizing gas is preheated by admixing at least a portion of the oxidizing gas with a fuel gas to provide a combustible gaseous mixture, igniting the combustible mixture to form a flame and passing the flame through a distributed electrical discharge whereby the gaseous mixture is heated to a temperature within the range of from about 2,500° C. to about 3,500° C. All of the oxidizing gas introduced into the reaction zone may be preheated by admixture with the fuel gas and passage through the distributed elec-

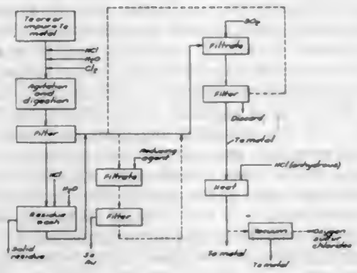


trical discharge, or only a portion of the oxidizing gas may be so preheated. The portion of the oxidizing gas which is preheated by passage through a distributed electrical discharge may be preheated by one such discharge or by passage through a plurality of such distributed electrical discharges.

3,414,380
EXTRACTION OF TELLURIUM FROM TELLURIUM-BEARING ORES

William A. Mod, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 9, 1965, Ser. No. 478,298
2 Claims. (Cl. 23—209)



This invention relates to a method of recovering tellurium from tellurium-bearing ores which comprises digesting the tellurium-bearing ore at a temperature of from about 25 to about 108° C. in an aqueous solution of HCl containing an excess of chlorine, separating the undigested material therefrom, treating the remaining solution with sufficient reducing agent to cause the precipitation of selenium and gold therefrom without precipitating a substantial quantity of tellurium, separating the selenium and gold thus precipitated, treating the remaining aqueous phase with SO_2 to cause precipitation of the tellurium contained therein and separating the tellurium thus precipitated from the aqueous solution. The tellurium product produced thereby is then converted to a high purity tellurium by heating in an atmosphere of anhydrous HCl at a temperature above about 150° C., then applying a vacuum thereto or by alternatively applying vacuum and inert gaseous purges to such heated material.

3,414,381
METHOD FOR PRODUCING LOW DENSITY GRAPHITE STRUCTURES

Franciszek Olstowski, Freeport, and John D. Watson, Sr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

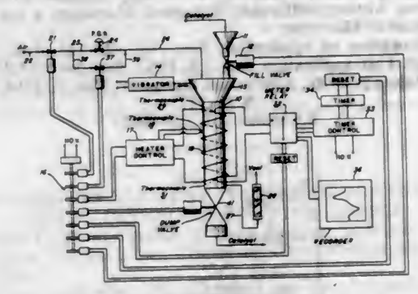
No Drawing. Filed Apr. 4, 1966, Ser. No. 539,631
7 Claims. (Cl. 23—209.1)

1. A process for the preparation of relatively low density graphite compacts which comprises
(a) treating vermicular graphite with an expanding agent,
(b) compressing the treated vermicular graphite into an integral compact having a density of at least 0.3 gm./cc., and
(c) treating such compact with a peroxide solution for a period sufficient to produce expansion of such compact.

3,414,382
METHOD AND APPARATUS FOR DETERMINING THE AMOUNT OF CARBON DEPOSITED ON CATALYST

Sixt Frederick Kapff and Lawrence T. Wright, Homewood, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Dec. 14, 1964, Ser. No. 418,182
8 Claims. (Cl. 23—230)



A method and apparatus for determining the amount of carbon deposited on catalyst utilizing a chamber having a sample inlet and outlet means, heater means, heater control means, gas flow regulator means, and recorder means adapted to receive an output signal for producing a record of the differential temperature versus time to measure the coke content of the sample in a method where the rate of progress of a combusion zone in a solid catalyst bed provides the measure of the carbon content on the catalyst sample.

3,414,383
DETERMINATION OF THYROXINE

Beverley E. P. Murphy, Montreal, Quebec, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

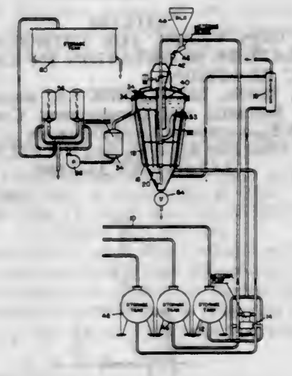
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,432
15 Claims. (Cl. 23—230)

Measurement of thyroxine in solution by competitive binding to TBG, including precipitating proteins with a lower alkanol, equilibrating with barbital-buffered solution of TBG, and labeled thyroxine, removing unbound thyroxine with an anion exchanger and determining the labeled thyroxine released from, or remaining bound to the globulin by counting techniques.

3,414,384
APPARATUS FOR PURIFYING BRINE

Alfred Goerg, Bionay, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

Application Feb. 19, 1963, Ser. No. 261,936, now Patent No. 3,257,165, which is a continuation-in-part of application Ser. No. 29,076, May 13, 1960. Divided and this application Sept. 27, 1965, Ser. No. 505,423
Claims priority, application Switzerland, May 15, 1959, 73,255/59; Apr. 8, 1960, 4,028/60
2 Claims. (Cl. 23—270)



There is provided a process for the purification of brine as well as an apparatus for carrying out such purification process. The process accomplishes the purification, by the addition thereto of lime and alkyl carbonate, wherein the lime is added continuously to the hot upward-flowing brine, while stirring moderately, in a first reaction zone at such a rate that the brine leaving this zone has a pH value of at least 10.0; a part of the percipitated sludge is maintained in contact with the brine in a reaction zone; the velocity of flow of the brine decreases on account of the upwardly widening cross-section of the brine and is such that the brine does not carry any sludge along with it. Alkyl carbonate is then added continuously in a second reaction zone, following the first zone, until an excess of alkyl carbonate can be detected. The velocity of flow in the settling associated with the second zone being such that the sludge then precipitated is not carried along with the brine. The apparatus comprises a substantially vertical vessel having an upwardly widening conical upper portion and a lower portion constituting a settling chamber, a substantially central tube that extends below and above the liquid level in the upper portion of the vessel and constitutes an outlet for the lime, a discharge device at the lower end of the settling chamber, and at least one inlet opening for brine located approximately at the upper end of the settling chamber.

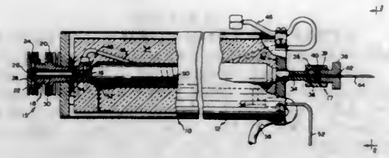
3,414,385
CARBON SKELETON DETERMINATOR

Morton Beroza, 821 Malta Lane, Silver Spring Md. 20901, and Herbert Goldsmith, % National Instrument Labs, Inc., 12300 Parklawn Drive, Rockville, Md. 20852

Filed Feb. 7, 1964, Ser. No. 343,250
5 Claims. (Cl. 23—288)

The invention relates to chromatography and constitutes a catalyst filled tube heated by a heating element. A hydrogen supply line passes adjacent the catalyst tube,

and is also heated by the element, so that preheated hydrogen passes through the catalyst tube. A charging port



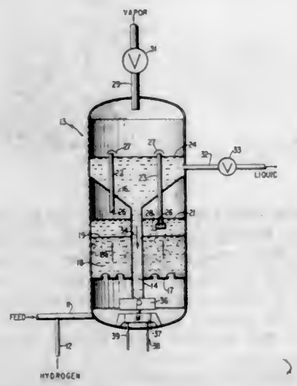
is provided so that a sample to be hydrogenated may be introduced therethrough directly to the heated catalyst.

3,414,386

REACTION VESSEL FOR IMPROVED TEMPERATURE REGULATION IN EXOTHERMIC REACTIONS.

Emory D. Mattix, Lake Charles, La., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,142
3 Claims. (Cl. 23—288)



A generally vertical reaction vessel containing a recycle conduit having an enlarged upper end in peripheral contact with the wall of the reactor. Vertical conduits passing through the enlarged upper end of the recycle conduit provide means for gas and liquid to pass from the reactor space below the enlarged upper end of the recycle conduit to the reactor space above the enlarged upper end. In the space above the recycle conduit, liquid is allowed to separate from gas. Liquid substantially free of gas may then be recycled to control temperature differences within the reactor.

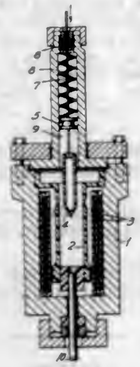
3,414,387

PROCESS FOR GROWING SINGLE CRYSTALS OF SULFIDES, SELENIDES AND TELLURIDES OF METALS OF GROUPS II AND III OF PERIODIC SYSTEM

Leonid Andreevich Sysoev, Ulitsa Krasnoarmeiskaya 12, kv. 10; Leonid Viktorovich Konvisar, Ulitsa Krasnoznamennaya 7/9, kv. 4; and Emmanuil Kelmanovich Raiskin, Ulitsa Kultury 3, kv. 44, all of Kharkov, U.S.S.R.

Filed Jan. 5, 1966, Ser. No. 518,887
1 Claim. (Cl. 23—301)

A process in which single crystals of sulfides, selenides, and tellurides of metals of the Groups II and III, are produced by placing a powder of a sulfide, selenide, or telluride in a graphite container, after which an atmosphere of a gas, which is chemically non-inert towards the crucible material and the single crystal being grown, is charged into the container, the gas being a compound of carbon and the metalloid of the material to be



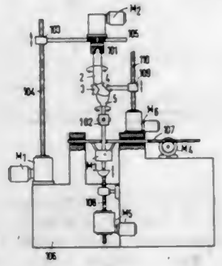
crystallized, after which the container is sealed and the starting material is then melted and cooled to grow a single crystal in the gas atmosphere.

3,414,388

METHOD AND APPARATUS FOR INCREASING THE CROSS SECTION OF A CRYSTALLINE ROD DURING CRUCIBLE-FREE ZONE MELTING

Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Continuation of application Ser. No. 428,933, Jan. 29, 1965. This application Aug. 29, 1967, Ser. No. 664,211
Claims priority, application Germany, Feb. 1, 1964, S 89,317
8 Claims. (Cl. 23—301)



A semiconductor rod fixed at both ends by end-holders, at least one of which is mounted for rotation is zone refined by a traversing annular heater. The rod end-holders are displaceable relative to each other and transverse to the vertical axis of the rod.

3,414,389

REMOVAL OF CALCIUM SULFATE SOLIDS FROM SULFURIC ACID SLURRIES

William H. Ehlig, Baytown, Tex., and Thomas P. Turnbull, Memphis, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 9, 1965, Ser. No. 431,268
7 Claims. (Cl. 23—304)

By-product calcium sulfate solids present in sulfuric acid slurries employed in processes for producing hydrogen fluoride can be efficiently removed therefrom by controlling the composition of the slurry such that the

total fluoride content expressed as hydrogen fluoride does not exceed 2% by weight and the water content does not exceed 10% by weight, maintaining the slurry at a tem-



perature not exceeding 125° C. until crystallization of the solids occurs and separating the crystals thus formed by filtration, centrifugation or other physical means.

3,414,390

PHOSPHORUS TRIOXIDE METAL COMPOUNDS

Jean G. Riess, Brentwood, and John R. Van Wazer, Ladue, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 21, 1965, Ser. No. 465,743
14 Claims. (Cl. 23—315)

The present invention relates to new chemical compounds which embody a phosphorus trioxide moiety, combined with metal complexes such as carbonyls, wherein metal atoms are bridged by P—O—P linkages. The compounds of the invention are useful as gasoline additives.

3,414,391

FERROUS DIE ELEMENT FORMED OF POWDERED METAL IMPREGNATED WITH COPPER

Joseph L. Brab, Cincinnati, Ohio, assignor to Porter Precision Products, Inc., Cincinnati, Ohio, a corporation of Ohio

Original application Dec. 13, 1963, Ser. No. 330,486, now Patent No. 3,343,954, dated Sept. 26, 1967. Divided and this application June 21, 1967, Ser. No. 656,980
3 Claims. (Cl. 29—182.1)

A die element for use in punch presses in metal stamping operations in which the die element is formed of a sintered powdered metal alloy comprising a matrix containing at least 75% iron and fractional percentages of alloy metals distributed throughout the matrix and with voids throughout the matrix comprising not greater than 25% of the mass. The voids in the matrix are infiltrated with copper which increases the density of the die element and adds to its physical impact strength in tension and compression sufficiently to permit the die element to be mounted in a die set and utilized in the punching of sheet metal in a conventional ratio of hole diameter to sheet metal thickness.

3,414,392

GELS AND METHOD OF MAKING SAME

Gail T. Pruitt, Dallas, Tex., assignor to The Western Company of America, Fort Worth, Tex., a corporation of Delaware

Filed July 24, 1964, Ser. No. 384,964
13 Claims. (Cl. 44—7)

A gel having utility as a flame fuel. The gel is the reaction product of an unsaturated fatty acid, an aqueous solution of a base and a surfactant, when in the presence of a normally liquid organic fuel material. The base is preferably sodium hydroxide. The surfactant is preferably an N-substituted polyamine or an ethylene oxide adduct. Linoleic or linolenic acids are exemplary of unsaturated fatty acids.

3,414,393

GASOLINE COMPOSITIONS CONTAINING DIPHOSPHONATES

Steven J. Fitch, Creve Coeur, and Riyad R. Irani, Florissant, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Original application Feb. 9, 1963, Ser. No. 271,607, now Patent No. 3,299,123. Divided and this application Aug. 29, 1966, Ser. No. 590,449
2 Claims. (Cl. 44—76)

The present invention relates to and covers gasoline compositions which contain organo-methylene diphosphonic esters such as for example tetramethyl methylene diphosphonate.

3,414,394

SINTERED GLASS ARTICLE AND METHOD OF MAKING

William J. Poad, Toledo, Ohio, asssignor to Owens-Illinois, Inc., a corporation of Ohio

Filed June 21, 1965, Ser. No. 465,665
2 Claims. (Cl. 65—18)

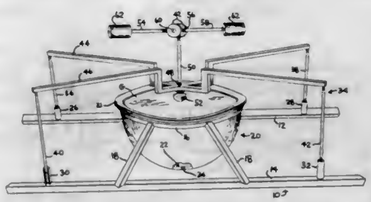
An ultra-fine sintered glass filter having a pore size less than 1.4 microns and greater than 0.9 micron, said filter composed of a fine layer intimately bonded to a coarse layer, and wherein the final filter is produced by screening, compacting and sintering the respective glass frits.

3,414,395

METHOD AND APPARATUS FOR SHAPING GLASS SHEETS

Thomas J. Reese, Sarver, and Russell J. Corsi, Tarentum, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania

Filed Mar. 3, 1964, Ser. No. 349,103
12 Claims. (Cl. 65—107)

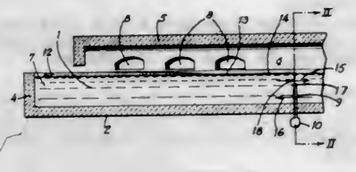


1. A method of bending a glass sheet having a section of concave elevation that is intermediate that of a flat glass sheet and that of a spherical section into a spherical section comprising mounting said glass sheet over a spherical shaping surface having an upwardly facing contour of concave cross-section, heating said glass sheet to its deformation temperature to cause said sheet to sag downward toward said shaping surface, applying mechanical force downward against the central region of the upper surface of said glass sheet during said heating to accelerate said downward sagging until the central region of the glass sheet is sagged into close proximity to said shaping surface, discontinuing the application of said mechanical force before the central portion of said glass sheet contacts said shaping surface, and continuing said heating after said mechanical force is discontinued until the lower surface of said glass sheet sags without further applying said mechanical force to conform to said shaping surface.

3,414,396
PROCESS FOR HOMOGENIZING GLASS BY GAS INJECTION

Edgard Brichard, Jumet, Belgium, assignor to Glaverbel S.A., Brussels, Belgium

Filed June 7, 1965, Ser. No. 461,654
Claims priority, application Belgium, June 5, 1964, 648,943/64
3 Claims. (Cl. 65—134)

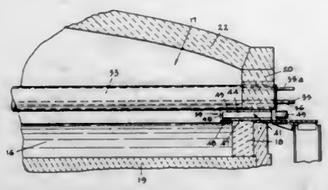


In a glass melting system having a melting zone and an extraction zone connected with each other and in which zones a current of molten glass moves from the melting zone to the extraction zone over another current of molten glass which is cooler than the first-mentioned current and which flows in the opposite direction, a method and apparatus for injecting a gas under pressure substantially at the level defining the boundary between the two currents so that the gas only passes through glass forming a part of the first-mentioned current.

3,414,397
SHEET GLASS MANUFACTURE

James T. Zellers, Jr., Charleston, W. Va., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Apr. 2, 1965, Ser. No. 445,025
10 Claims. (Cl. 65—196)



A cylindrical muffle positioned above and extending transversely of the stream of molten glass flowing into the drawing area of a sheet glass furnace, with a support member beneath each end of the muffle for supporting same and means associated with the support members for supplying heat to the molten glass adjacent the edges of the stream.

3,414,398
METHOD FOR THE SELECTIVE CONTROL OF YELLOW OXALIS WITH THIOCYANATE

Ralph L. Chacon, 1850 N. Whitley Ave., Los Angeles, Calif. 90028

No Drawing. Filed July 23, 1965, Ser. No. 474,462
7 Claims. (Cl. 71—65)

A method for selectively controlling the growth of yellow oxalis (*Oxalis corniculata*) present in dichondra and grass lawns is provided which comprises applying an aqueous solution containing sodium thiocyanate or potassium thiocyanate in a concentration and amount sufficient to destroy the yellow oxalis but insufficient to destroy material quantities of the dichondra and grass lawns.

3,414,399
METHOD FOR CONTROL OF PLANT GROWTH

Edward D. Weil, Lewiston, and Edwin Dorfman, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 11, 1959, Ser. No. 839,309
2 Claims. (Cl. 71—115)

1. A method for the control of plant growth which comprises applying to the locus to be treated a phytotoxic amount of a compound selected from the group consisting of 5-amino-2,3,6-trichlorobenzoic acid, its alkali metal salts, its ammonium salts, its lower alkyl amine salts, its sulfuric acid addition salt and its hydrochloric acid addition salt.

3,414,400
HERBICIDAL COMPOSITIONS

Shiro Watanabe, Osaka-shi, Japan, assignor to Daikin Kogo Kabushiki Kaisha, Osaka-shi, Japan

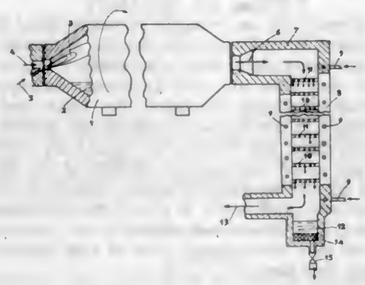
No Drawing. Filed June 14, 1966, Ser. No. 557,385
Claims priority, application Japan, June 16, 1965, 40/36,135
9 Claims. (Cl. 71—118)

A herbical composition, and process for the use thereof, the protection of monocotyledonous plants comprising, as the effective components thereof, 2'-methyl-4'-chlorophenoxyaceto-3-trifluoromethylanilide and 4-di-n-propylamino-3,5-dinitro-1-trifluoromethylbenzene in a 4:1 to 1:2 weight ratio.

3,414,401
PROCESS FOR OBTAINING SOLID ZINC FROM ZINC VAPOUR CONTAINING GASES

Pierre Marie Fourt, Saint-Cloud, France, assignor to Societe Metallurgique d'Imphy, Paris, France, a company of France

Filed Mar. 8, 1966, Ser. No. 532,720
Claims priority, application France, Mar. 11, 1965, 8,865
2 Claims. (Cl. 75—25)

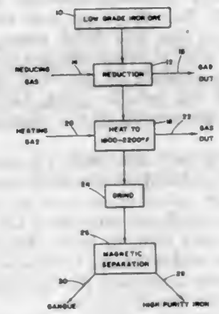


Zinc oxide is directly reduced in a rotating furnace heated by a flame burning in the presence of added industrial oxygen and the zinc containing vapours from the furnace are cooled in one or more hoods having substantially vertical axes and cooled walls with water injected into the vapours and recovered together with the metallic zinc at the base of the hoods.

3,414,402
BENEFICIATION OF LOW GRADE IRON ORES

William Volk and Clarence A. Johnson, Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 411,988, Nov. 18, 1964. This application June 16, 1967, Ser. No. 646,568
7 Claims. (Cl. 75—26)



A process for beneficiation of low grade, normally non-magnetic, iron ores utilizing either a fluidized bed or dilute phase reduction technique to produce a mixture of reduced metallic iron and gangue, followed by a controlled heat treatment step of the mixture after which a relatively simple grinding permits facile and high yield magnetic separation of the iron from the gangue.

3,414,403
SILVER SEPARATION FROM AN ACID SOLUTION

Lane A. Bray and Robert Lee Moore, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,402
6 Claims. (Cl. 75—118)

1. A process for the extraction of silver values from an aqueous solution, comprising adjusting the pH value of said solution to between about 2 and 3; contacting said solution with a substantially water-immiscible benzyl phenol and a substantially water-immiscible dialkyl phosphoric acid in which the alkyl group contains from 4 to 10 carbon atoms in a substantially water-immiscible aliphatic hydrocarbon, whereby said silver values are taken up by said organic phase; and separating said organic phase from said aqueous phase.

3,414,404
METHOD FOR TREATING FERROUS METALS

John C. Robertson, Midland, Mich., and Oliver Osborn, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

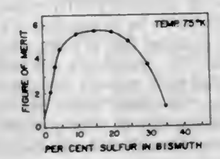
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,632
7 Claims. (Cl. 75—130)

A process for treating ferrous based melts with thorium which comprises introducing into a melt an addition agent comprised of a thorium halide and a reducing agent for the thorium halide which is capable of reducing the thorium halide to thorium metal while in the molten metal bath.

3,414,405
ALLOYS FOR MAKING THERMOELECTRIC DEVICES

Joseph V. Fisher, Valencia, Pa., assignor to Semi-Elements, Inc., Saxonburg, Pa.

Filed Aug. 16, 1965, Ser. No. 480,027
10 Claims. (Cl. 75—134)



This patent discloses certain binary alloys of bismuth with effective amounts of dopant element of the group S, Se, Te, Pb, Tl, Hg, Au and As. When grown as single crystals made from material of at least 99.9% purity, and containing the herein-taught amounts of dopant element, the alloys exhibit high thermoelectric figures of merit, such as about 5 or 6 using the Peltier effect alone.

3,414,406
ALUMINIUM ALLOYS AND ARTICLES MADE THEREFROM

William M. Doyle and Stanley J. Ashton, Slough, England, assignors to High Duty Alloys Limited, Slough, England

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,598
Claims priority, application Great Britain, Aug. 28, 1964, 35,443/64
24 Claims. (Cl. 75—142)

Copper-, manganese-, and titanium-containing aluminium alloys are given improved working properties and substantially increased creep resistance by inclusion of 0.1 to 0.5 weight percent of magnesium. The addition of silver, from 0.2 to 0.4 weight percent improves the working properties of these alloys.

These novel alloys have the following compositions, by weight:

	Percent
Copper	5 to 7
Titanium	0.01 to 0.3
Manganese	0.01 to 0.5
Silicon	0.1 to 0.35
Magnesium	0.1 to 0.5
Iron	up to 0.4
Silver	up to 0.5
Aluminium (and impurities)	Balance

These alloys are especially adapted for forging, stamping, extrusion and rolling in fabrication of aero-engine components and aircraft skin and structural members. To develop the optimum properties for such service, after working the alloy articles are solution heat-treated for up to 30 hours at 515°–550° C., quenched and thereafter artificially aged for 5–36 hours at 170°–250° C.

3,414,407
ALUMINUM-ZINC-MAGNESIUM ALLOY

Albert Jager, Rome, N.Y., assignor to Revere Copper and Brass Incorporated, New York, N.Y., a corporation of Maryland

No Drawing. Filed Apr. 26, 1966, Ser. No. 552,363
3 Claims. (Cl. 75—146)

1. An extrudable free machining aluminum base alloy consisting essentially of about 2 to 5.5% zinc, about 0.25 to 2.5% magnesium, about 0.3 to 2.5% bismuth or lead or both, and the balance aluminum.

3,414,408
BRIQUETTING PROCESS

Walter W. Eichenberger, 2615 W. 10th St., Erie, Pa. 16505

No Drawing. Continuation-in-part of application Ser. No. 309,329, Sept. 16, 1963. This application May 17, 1966, Ser. No. 550,623
3 Claims. (Cl. 75—214)

Disclosed herein is a process of manufacturing briquettes for use in metallurgical products as an alloying agent. The material to be briquetted is enclosed in a container made of material that is compatible with the metallurgical process. The containers are provided with holes so that any liquid that may be entrained on the material can escape from the holes when the container with the material in it is pressed in a briquetting press. The containers are strong enough to hold the material when briquetted in integral body.

3,414,409
PARTICLE TRANSFER

Charles F. Gallo, Jr., Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 30, 1965, Ser. No. 452,290
11 Claims. (Cl. 96—1.4)

This application relates to a reproduction method wherein the image areas of an electrically attractable marking particle developed image are selectively transferred from a photoconductive layer to a copy sheet by illuminating the photoconductive layer with actinic radiation, the image area transfer being achieved in the substantial absence of transfer of isolated marking particles from background areas.

3,414,410
RECORDING PROCESS

Richard F. Bartlett, Lexington, Carl F. W. Ekman, Bedford, and Juliette F. Pian, Burlington, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware

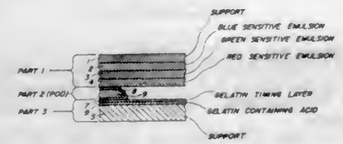
Filed Apr. 15, 1964, Ser. No. 359,956
14 Claims. (Cl. 96—27)

A dye-sensitized copy medium comprising a photosensitive semiconductor is exposed to an image pattern of radiation which desensitizes the dye-sensitized medium to activating radiation in those portions which are struck by this desensitizing radiation. This thus-imaged copy medium is then uniformly exposed to activating radiation to activate those portions of the copy medium which remain sensitive to this radiation. The activated portions of the copy medium are then developed by contacting with suitable image-forming materials.

3,414,411
DYE BLEACH PROCESS

Stephen Michel and George M. Reitter, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 10, 1965, Ser. No. 512,907
17 Claims. (Cl. 96—29)



6. In the method of providing dye images in an imagewise exposed photographic element having a support coated with an alkali-permeable colloid layer containing silver halide and having in association therewith a non-diffusible bleachable dye, which includes contacting said layer in the presence of a silver halide developer with an alkaline processing solution to raise the pH of the emulsion to a level at which development of silver halide to metallic silver takes place, reducing the pH to a level at which bleaching of the metallic silver to silver ion takes place, complexing the silver ion with a silver complexing agent, and bleaching the dye imagewise in the presence of the silver complexing agent in the areas of metallic silver image, the improvement comprising:

(a) introducing into said layer at least a sufficient quantity of the salt of an acid which, when converted to its free acid form, lowers the pH of the layer to a level at which the dye is bleached imagewise in the presence of the silver complexing agent in areas of the metallic silver, said salt of an acid being non-detrimental to the photographic element; and

(b) contacting said layer with a processing web having free acid substituents which exchange hydrogen ion with the cation of said salt of an acid, thereby converting a sufficient amount of said salt of an acid to its free acid form to lower the pH of said layer to a level at which the dye is bleached.

10. An integral three-part photographic element useful in the silver dye bleach process:

Part 1 comprising a support having thereon an alkali-permeable layer containing light sensitive silver halide, said layer having in association therewith a bleachable dye;

Part 2 comprising a pressure rupturable pod containing an alkaline processing solution which, when contacted with said layer of Part 1, raises the pH thereof to a level at which silver halide is developed imagewise to metallic silver when a silver halide developer is present; and

Part 3 comprising a web having free acid substituents;

Parts 1 and 3 during processing being in superimposed relation with said layer facing said web, and Part 2 being positioned between Parts 1 and 3;

At least one of said Parts 1 and 2 containing a silver halide developer; and

At least one of said Parts 1 and 2 containing a sufficient quantity of the salt of an acid which, when converted to its free acid form, lowers the pH of said layer of Part 1 to a level at which the dye is bleached imagewise in the presence of a silver complexing agent in areas where metallic silver is present, said free acid substituents in said web being capable of converting at least a sufficient amount of said salt of an acid to its free acid form whereby the pH of said layer of Part 1 is reduced to a level at which said dye of Part 1 is bleached imagewise in the areas of the metallic silver image, at least one of Parts 2 and 3 containing a silver complexing agent, and at least one of Parts 1, 2 and 3 containing a dye bleach catalyst.

3,414,412
PRODUCING A MANDARIN-LIKE FLAVORING COMPOSITION BY ADMIXING THYMOL AND METHYL-N-METHYL ANTHRANILATE

Erwin Kovats, Ruschlikon, Zurich, Switzerland, assignor to Firmenich et Cie., Geneva, Switzerland

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,428
Claims priority, application Switzerland, Mar. 29, 1963, 4,007/63
8 Claims. (Cl. 99—140)

1. The method of producing a synthetic flavoring composition which comprises forming an admixture consisting essentially of methyl N-methyl-anthranilate and thymol in a relative proportion so as to impart a mandarin-like flavor and aroma to foodstuffs and beverages.

3,414,413
EDIBLE COMPOSITION AND METHOD OF MAKING THE SAME

Harry M. Levin, Philadelphia, Pa., assignor to HCA Food Corporation, Baltimore, Md., a corporation of Maryland

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,883
5 Claims. (Cl. 99—144)

A mayonnaise like food product in which the emulsion is fortified by not more than 1% by wt. of sodium carboxy methyl cellulose to resist oil and water separation when subjected to low temperatures or jostling.

3,414,414
PORTION PACKED SOLUBLE FOOD PRODUCT PACKAGE

William C. Christine, Catasauqua, and Joseph E. Pierce, Allentown, Pa., assignors, by mesne assignments, to A.E.I. Corporation, Bethlehem, Pa., a corporation of Delaware

Filed July 23, 1965, Ser. No. 474,276
1 Claim. (Cl. 99—171)



A display package wherein a plurality of containers filled with soluble foodstuffs are enclosed in blisters formed on a base member with perforated means on said member for individually removing the filled containers.

3,414,415
THAW INDICATOR

Robert L. Broad, Jr., 2209 Woodland St., Decatur, Ala. 35602

Continuation-in-part of applications Ser. No. 199,812, June 4, 1962, and Ser. No. 267,743, Mar. 25, 1963. This application Oct. 22, 1965, Ser. No. 501,724
12 Claims. (Cl. 99—192)

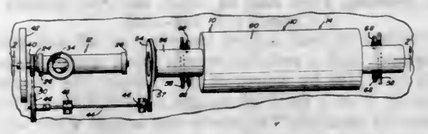


1. A thaw indicator; comprising capillary means having first and second portions connected in series; said first portion having a first, precisely adjusted capillary capability; said second portion having a second, precisely adjusted capillary capability greater than said first capillary capability; said first and second capillary capabilities being precisely adjusted relative to each other so that when a diffusion agent is fed into said capillary means through the first portion thereof the migration rate of the agent along the second portion is a predetermined and precisely adjusted fraction of the migration rate along said first portion; a diffusion agent in contact with said first portion; and an enclosure surrounding the first and second portions in such a manner as to allow migration of the diffusion agent through the first portion to the second portion.

3,414,416
FEED PELLET MAKING MACHINE

Claude F. Maxwell and Pairlee M. Maxwell, both of P.O. Box 33, Peach Orchard, Mo. 63872

Filed Sept. 15, 1967, Ser. No. 667,892
10 Claims. (Cl. 99—235)



A feed extruding machine adapted to receive an amount of moist compressible food material and operative to compress and extrude the food material in a horizontal direction from a discharge point on the machine for downward gravity discharge into the elevated end of a generally horizontally disposed but slightly inclined drum driven for slow rotation and including heating means operative to heat the inner surfaces of the drum.

3,414,417
SCREENING INKS WITH SUBLIMABLE SOLIDS

Lewis F. Miller, Wappingers Falls, and Gary J. De Paolo, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 334,544, Dec. 30, 1963. This application Aug. 18, 1966, Ser. No. 573,171
9 Claims. (Cl. 106—26)

To a wet ink composition comprising metal powder pigment, vitreous binder, organic binder material and solvent, and which is adapted to be deposited in a given line pattern on a substrate, solidified on the substrate by drying and fused to the substrate by firing, is added a small percentage of a sublimable solid. The additive assures that the dry line has the same dimensions as the wet ink deposit.

3,414,418
REFRACTORY COMPOSITION AND METHOD OF MAKING REFRACTORY SHAPES

David H. Hubble and William H. Powers, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,624
2 Claims. (Cl. 106—57)

An alumina refractory composition which contains small percentages of SrO and ZrO_2. Composition is prepared by mixing the latter two materials with lightly calcined alumina, briquetting the mixture, and firing the briquettes at a temperature of about 2800° to 3100° F. The briquettes are then ground, and the grains pressed into bricks and fired. The bricks have superior hot strength and good resistance to thermal shock.

3,414,419
REFRACTORY RAMMING COMPOSITION
Grant M. Farrington, Jr., Marlton, N.J., and Frederic C. Verduin, Linthicum Heights, Md., assignors to General Refractories Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Oct. 3, 1966, Ser. No. 583,921
7 Claims. (Cl. 106—58)

A refractory ramming composition bonded with a bodied linseed oil in an amount of from about 1.5 to about 4%, by weight, based upon the weight of the composition.

3,414,420
OIL WELL CEMENT AND METHOD OF MAKING THE SAME
Sam Maravilla, Lansing, Ill., and Joseph E. Kopanda, Crown Point, Ind., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Jan. 28, 1965, Ser. No. 428,851
2 Claims. (Cl. 106—92)

A retarded oil well cement including an oil well portland cement, and a retarder present in an amount equal to 0.08 to 0.13% by weight of the cement. The retarder consists of 1 to 8 parts by weight of a modified starch to 1 part of dextrine. The starch has a cold water solubility range of 20 to 30% and the dextrine a cold water solubility range of 12 to 35%. The cement is made by grinding the modified starch at a maximum temperature of 100° F. to such fineness that it will pass a 200 mesh sieve, and then mixing the three ingredients at a maximum temperature of 140° F.

3,414,421
SEALING WAX
Merritt A. Robinson, San Anselmo, Calif., assignor to Harold B. Sherfy, San Francisco, Calif.
No Drawing. Continuation-in-part of application Ser. No. 498,115, Oct. 19, 1965. This application Feb. 21, 1967, Ser. No. 617,454
2 Claims. (Cl. 106—173)

Sealing wax is provided in which shellac (ordinarily present in sealing wax) is replaced in whole or in part with a cellulose plastic material such as ethyl cellulose. The wax contains substantial quantities of wood rosin, hydrocarbon wax and a filler. A small amount of blending agent is included if the components are not miscible. A pigment and a scent may be added in a small amount.

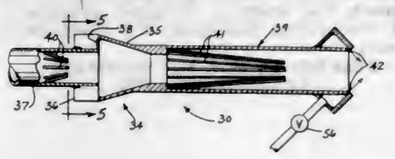
3,414,422
CHEMICALLY TREATED CLAYS
Joseph Iannicelli and James B. Whitley, Macon, Ga., and John Wesly Balentine, Borger, Tex., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
No Drawing. Filed May 2, 1966, Ser. No. 546,587
5 Claims. (Cl. 106—288)

The disclosure teaches the brightening of clay by treating a clay slurry with a concentrated mineral acid and subjecting the clay acid mixture to high shear at an elevated temperature followed by washing the acid from the clay.

3,414,423
PROCESS FOR ERASING AND REGENERATING THERMOGRAPHIC MATERIALS
Scheuring S. Fierke and Martin Goldman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 4, 1965, Ser. No. 506,325
8 Claims. (Cl. 117—2)

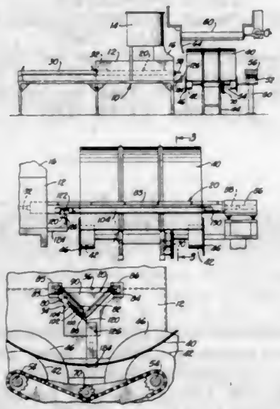
1. A process for erasing and regenerating thermographic copying sheets containing an image area of a complex formed from quinone and dihydroxybenzene components comprising (A) dissociating the complex into the corresponding quinone and dihydroxybenzene products by subjecting the complex to an organic solvent and (B) substantially removing the organic solvent from the copying sheet.

3,414,424
METHOD FOR SPRAYING FIBERS AND RESINOUS MATERIALS
Donald J. Peeps, Rossford, and Joseph H. McNinch, Jr., Columbus, Ohio, assignors to The DeVilbiss Company, Toledo, Ohio, a corporation of Ohio
Application Feb. 19, 1965, Ser. No. 437,629, now Patent No. 3,249,307, which is a continuation-in-part of application Ser. No. 230,916, Oct. 16, 1962. Divided and this application Nov. 19, 1965, Ser. No. 508,807
2 Claims. (Cl. 117—5.1)



1. In a method for depositing a mixture of resinous material and reinforcing fibers on a mold surface, said method comprising the steps of supplying cut fibers to a conduit, introducing conveying air under pressure into said conduit for conveying said cut fibers through said conduit, forcing said cut fibers toward the center of said conduit, dissipating excess conveying air laterally and rearwardly from the main fiber mass while continuing to convey said cut fibers with the remaining air, discharging said cut fibers from a fiber spray nozzle, providing a spray of resinous bonding material which converges with said stream of cut fibers after discharge of said fibers from said conduit, and depositing the resultant mixture upon a working surface.

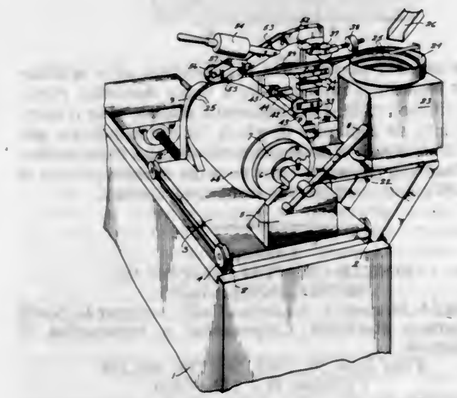
3,414,425
METHOD FOR APPLYING A PARTICULATE MATERIAL TO A BODY
Albert F. Gerlovich, Fanwood, N.J., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California
Filed Sept. 14, 1964, Ser. No. 396,124
6 Claims. (Cl. 117—18)



A method is described for applying a particulate material such as a polyethylene to the inner surface of a drum.

The drum is supported on its side for rotation about its longitudinal axis, and a heater is disposed above it for maintaining it at a predetermined temperature. An elongated trough positioned adjacent an open end of the drum is filled with a predetermined amount of the particulate material. The drum is rotated and as it rotates, the elongated trough is extended longitudinally into the drum through its open end. The particulate material is discharged in a curtain from an elongated slotted opening in the trough so that the inner surface of the rotating drum becomes uniformly coated with the material.

3,414,426
MEANS FOR AND METHOD OF APPLYING MOSAIC TO CURVATE SURFACES
Robert O. Hughes and Lawrence D. Orser, Cedar Falls, Iowa, and Nicholas L. Etten, deceased, late of Cedar Falls, Iowa, by Eileen Etten, executrix, Cedar Falls, Iowa, assignors to Chamberlain Manufacturing Corporation, a corporation of Iowa
Filed Aug. 21, 1959, Ser. No. 835,817
16 Claims. (Cl. 117—18)

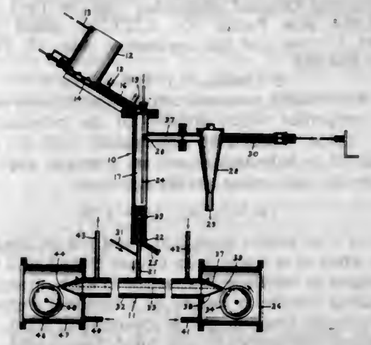


1. The method of applying mosaic to a curvate surface, including the steps of rotating an object having a curvate surface, feeding pellets aligned in single file in a stream to the external surface of the object and adhesively attaching the pellets to the object, and spraying a plastic material over and between the attached pellets.

3,414,427
COATING CATALYST
Joseph Peppo Levy, Harrow, England, assignor, by mesne assignments, to Sperry Rand Limited, London, England, a company of England
No Drawing. Filed May 5, 1965, Ser. No. 453,497
Claims priority, application Great Britain, May 7, 1964, 19,002/64
6 Claims. (Cl. 117—47)

A method of catalysing a surface of a material to be plated by a chemical reduction plating process. The catalysing method comprises treating the surface to be plated before immersion in the plating bath with a catalyst comprising a solution of a complex of palladium chloride dissolved in an organic solvent. Said complex comprises palladium chloride with hydrogen halide and water which is evaporated to a condition not dryer than a paste.

3,414,428
CHROMIZING COMPOSITIONS AND METHODS AND CONTINUOUS PRODUCTION OF CHROMIUM HALIDES FOR CHROMIZING
Walter R. Kelly, Geddes, and William B. Lauder, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,084
13 Claims. (Cl. 117—66)



This invention relates to compositions and methods for chromizing of ferrous metal and to the continuous production of anhydrous chromous chloride and chromous bromide; compositions for chromizing comprise a compacted solid intimate mixture of a chromic halide and an activating metal selected from the group consisting of aluminum, zinc, chromium, iron, nickel, magnesium and mixtures thereof.

3,414,429
METHOD OF RENDERING GLASS SURFACES ABRASION-RESISTANT AND ARTICLE PRODUCED
Howard G. Bruss, Jr., Toledo, Ohio, Walter J. Schlientz, Rome, Ga., and Bradley E. Wiens, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Dec. 7, 1965, Ser. No. 512,239
10 Claims. (Cl. 117—69)

1. A method for increasing the abrasion resistance of a glass surface which comprises treating said surface at a pyrolyzable temperature with a compound selected from the group consisting of titanium and tin which compound is pyrolyzable to form an oxide coating of the metal on said glass surface, cooling said treated surface to a temperature below 450° F. and then spraying onto said surface an emulsion containing salts of higher fatty alcohol sulfates and mixtures thereof.

3,414,430
MAGNETIC SIGNAL STORING ELEMENTS COMPRISING A VACUUM-EVAPORATED MAGNETIZABLE COATING APPLIED TO A NON-MAGNETIC SUPPORTING MEMBER PROVIDED WITH AN ELASTOMERIC ADHESIVE LAYER
Charles Maho, Kontich, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company
No Drawing. Filed Sept. 17, 1963, Ser. No. 309,380
Claims priority, application Belgium, Sept. 18, 1962, 41,967; Oct. 2, 1962, 42,005, 42,007
2 Claims. (Cl. 117—71)

Magnetic signal storing elements such as rigid or flexible supports of tape, disc or drum form, provided with vacuum-evaporated magnetizable coatings of specified iron-cobalt-chromium, iron-nickel-aluminum, or iron-nickel-molybdenum alloys applied to a subbing layer of a synthetic elastomer of butadiene-acrylonitrile or ali-

phatic polyesteramide modified with a diisocyanate, for improved smoothness, tenacity and adhesion.

3,414,431
ANTI-STATIC CYCLIC IMIDE ADDITION PRODUCTS

William J. Shibe, Jr., Riverton, N.J., and Marcus Sittenfield, Philadelphia, Pa., assignors to Hollichem Corporation, Camden, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 20, 1962, Ser. No. 181,204, now Patent No. 3,223,711, dated Dec. 14, 1965. Divided and this application Aug. 18, 1965, Ser. No. 480,804

3 Claims. (Cl. 117—121)

An electrically non-conductive substance having antistatic properties which consists of the substance being either coated, blended or impregnated with the reaction product of a halo-amine and an aromatic cyclic imide wherein the halo-amine has the structure:

$$(R_3N)_nEX_{m-n}(n-1)X$$

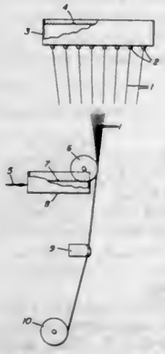
where m is an integer from 3 to 4 and n is an integer from 1 to 4 when m is 4 and is an integer from 1 to 3 when m is 3, where at least one R attached to each nitrogen atom is attached thereto by means of a terminal carbon atom and is selected from the group consisting of alkyl, alkenyl, alkadienyl, hydroxyalkyl and alkyl benzyl, the straight chains of which have from 4 to 22 carbon atoms, and lower polyoxyalkylene having a total of 4 to 22 carbon atoms, any remaining R's being selected from the group consisting of hydrogen, alkyl groups having from 1 to 5 carbon atoms, phenyl and benzyl, where E is selected from the group consisting of zinc, copper, cobalt, magnesium, manganese, aluminum, boron and iron, and where X is a halide, the cyclic imide being a member of the group consisting of benzosulfimide, phthalimide, naphthalimide, benzoxazolinone, benzothiazolinone, and their lower alkyl, halo and methoxy analogs.

3,414,432
SIZING GLASS FIBERS WITH POLYBUTADIENE-DICARBOXYLIC ACID ANHYDRIDE AMINO SALT ADDUCTS

Joseph X. Mertzweiller, Baton Rouge, and Neville L. Cull, Baker, La., and Roger S. Hawley, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,760

15 Claims. (Cl. 117—126)



1. A method for treating glass fibers which comprises applying to said fibers an aqueous sizing composition containing a water-soluble binder comprising a polymer adduct salt selected from the group consisting of:

(1) organic amine and ammonium salts of unsaturated polycarboxylic acid anhydride adducts of butadiene polymers, said butadiene polymers having a molecular weight ranging from about 300 to about 4,000,

(2) the monoamide partial organic amine salts of said adducts wherein said organic amide contains a primary or secondary organic group, and

(3) the partial organic ester-partial organic amine and ammonium salts of said adducts;

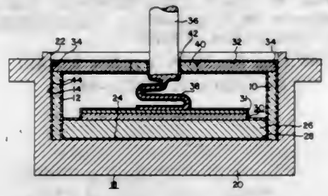
said salts having a molecular weight ranging from about 500 to about 6,000; and drying said sized glass fibers.

3,414,433
ENCAPSULATION OF SEMICONDUCTOR

William Van Bramer, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 7, 1965, Ser. No. 470,109

8 Claims. (Cl. 117—200)



The exposed portion of a P-N junction of a semiconductor element is protected by a vapor deposited elastomeric silicone resin. The elastomeric silicone resin is introduced into an enclosure in which the semiconductor element is disposed. The elastomeric silicone resin is then vaporized and deposited on at least the exposed portion of the P-N junction of the semiconductor element.

3,414,434
SINGLE CRYSTAL SILICON ON SPINEL INSULATORS

Harold M. Manasevit, Anaheim, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,205

7 Claims. (Cl. 117—201)

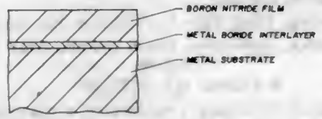
A composite of single crystal silicon epitaxially disposed on an electrically insulating substrate of spinel. Suitable spinels include $MgAl_2O_4$, $ZnAl_2O_4$, $FeAl_2O_4$, $MnAl_2O_4$, $MnCrO_4$, $MgCr_2O_4$, $FeCr_2O_4$, Fe_3O_4, $MnCr_2O_4$, Co_3S_4, Ni_3S_4 and $MgFe_2O_4$. The product is useful in the fabrication of electrically isolated microelectronic circuits.

3,414,435
PROCESS FOR MAKING BORON NITRIDE FILM CAPACITORS

Robert J. Patterson, Dallas, and Rolf R. Haberecht, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 12, 1963, Ser. No. 330,023

16 Claims. (Cl. 117—212)



1. A process for manufacturing an electrical capacitor comprising the steps of:

adherently depositing a pure boron nitride film on a metal electrode over a boron-metal interlayer which is chemically bonded to said metal electrode and

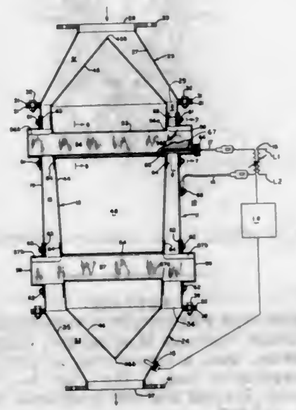
depositing an electrode film on the boron nitride film.

3,414,436
RESISTANCE MASSECUITE HEATER

Frank B. Price, Edgewater, Richard J. Morroni, Denver, and Ned L. Lucas, Wheatridge, Colo., assignors to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware

Filed Sept. 16, 1966, Ser. No. 579,875

14 Claims. (Cl. 127—19)



Method and apparatus for heating substantial volumes of viscid materials such as massecuite and the like including inner and outer electrodes forming annular elongated restricted treatment passage of increasing dimensional area from inlet to outlet for confining flow of massecuite. Outer electrode having transition means and inner electrode having tapered end walls terminating in apex at each end forming inlets and outlets to treatment passage which are substantially coaxial with said passage for directing continuous massecuite flow into and from treatment passage. Upstream and downstream beams of insulator material for supporting inner electrode within outer electrode and insulating between same. Electric voltage impressed across electrodes for producing current flow in massecuite transversely of its direction of flow in treatment passage establishing a current density in massecuite on the order of .01 ampere per square centimeter.

3,414,437
FLUID CIRCULATING BATTERY SYSTEM

George J. Doundoulakis, Belmore, and Emmanuel Carathanassis, New York, N.Y., assignors to Electromechanical Devices, Inc., % Michalos & Michalos, New York, N.Y., a corporation of New York

Filed May 13, 1963, Ser. No. 279,748

8 Claims. (Cl. 136—6)

1. A battery comprising means defining a positive electrode chamber and a negative electrode chamber ionically connected to said positive electrode chamber, fluid electrolyte in said positive and negative electrode chambers electrically charged polarized cathodic and anodic materials of the solid particle type for the respective polarities movably carried in suspension in said fluid electrolyte in each of the respective chambers, ionically permeable filter means separating said positive and negative electrode chambers and preventing movement of said cathodic and anodic materials from one chamber to the opposite chamber while permitting movement of anions and cations between the chambers, and an electrode terminal means in each of said chambers operable to allow said suspended cathodic and anodic materials to exchange electrical charges therewith.

3,414,438
FUEL CELL HAVING SINTERED POROUS ELECTRODE CONSISTING OF ELECTRICALLY CONDUCTIVE MATERIAL AND OF BORON

Ingemar Lindholm, Bo Mueller, and Olle Mjörne, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Continuation of application Ser. No. 397,696, Sept. 21, 1964. This application Jan. 30, 1967, Ser. No. 612,730

Claims priority, application Sweden, Sept. 27, 1963, 10,557/63

6 Claims. (Cl. 136—86)

A fuel cell with at least one porous electrode consisting essentially of a body material produced by sintering a mixture of particles of an electrically conductive material and of boron, and by possibly dissolving out the boron, at least partially of the body material.

3,414,439
FUEL CELL AND PROCESS OF USING WITH RUTHENIUM-TANTALUM ALLOY CATALYST

Otto J. Adlhart, Newark, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Continuation-in-part of application Ser. No. 314,672, Oct. 8, 1963. This application Mar. 13, 1967, Ser. No. 622,571

13 Claims. (Cl. 136—86)

This disclosure pertains to fuel cells using catalytic fuel electrodes. These electrodes assist in efficiently converting the fuel utilized into electrical energy. Certain catalysts greatly lessen then energy lost due to polarization during operation of the fuel cell.

3,414,440
GAMMA MANGANESE DIOXIDE, METHOD OF PREPARING AND DRY CELL TYPE BATTERY EMPLOYING GAMMA TYPE MANGANESE DIOXIDE

William G. Moore, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 2, 1964, Ser. No. 394,068

14 Claims. (Cl. 136—107)

1. A gamma type manganese dioxide characterized by the presence therein of occluded micron size particles of carbon having a chain-like structure.

3,414,441
ELECTROLUMINESCENT JUNCTION DEVICE INCLUDING A BISMUTH DOPED GROUP III(*a*)–V(*a*) COMPOSITION

Murray Gershenzon, Morris Plains, and David G. Thomas and Forrest A. Trumbore, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 26, 1966, Ser. No. 545,291

3 Claims. (Cl. 148—33)

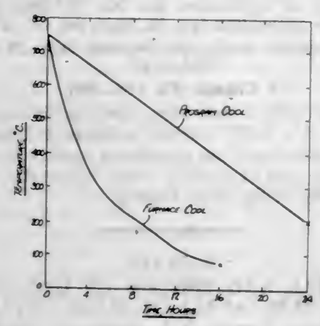
An electroluminescent p-n junction device including a bismuth doped Group III(*a*)–V(*a*) composition, consisting of (a) the nitrides of gallium, aluminum, indium and boron, (b) the phosphides of gallium, aluminum, boron and indium, or (c) Group III(*a*)–V(*a*) compound mixtures, with bismuth being present in an amount ranging from 10^{16}–10^{19} atoms per cubic centimeter.

3,414,442

HEAT TREATMENT OF ALLOY CAST IRON

Roger Kearsley Greenwood, Pedmore, Stourbridge, and Cedric George Westwood, Kidderminster, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 10, 1966, Ser. No. 556,759
Claims priority, application Great Britain, June 17, 1965, 25,706/65
12 Claims. (Cl. 148—141)



1. A heat treatment process for improving hardness, toughness, and impact fatigue life of alloyed white cast irons comprising about 2.8% to 3.7% carbon, about 0.5% to 3.0% silicon, about 0.2% to 1.5% manganese, about 4% to 8% nickel, about 4% to 15% chromium, balance iron with residual impurities, which comprises:

(a) heating the cast iron to a temperature of about 450° C. to about 800° C. in order to transform the retained austenite present in the as-cast condition;

(b) maintaining this temperature for a period sufficient to transform substantially all the retained austenite;

(c) slowly cooling the cast iron to about 200° C. at a rate not exceeding about 50° C. per hour.

3,414,443

SOLIDIFIED PARAFFIN WAX OR LITHIUM METAL MATRIX WITH METAL HYDRIDE DISPERSED THEREIN AND PREPARATION

James Richard Edward Pheasant, Westtown, and William B. Tarpley, Jr., West Goshen, Pa., and Charles Dana McKinney, Jr., Brandywine Hundred, Del., assignors to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,200
4 Claims. (Cl. 149—20)

An incendiary composition comprising a gelled normally solid but meltable fuel, finally divided solid fuel partices uniformly dispersed therein, with said finely divided solid fuel particles having a heat of combustion of greater than 5.0 Kcal./ml. and a gelling agent incorporated into said meltable solid.

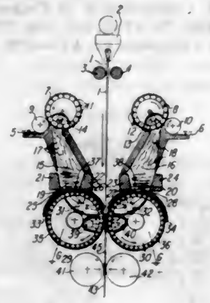
3,414,444

METHOD OF MAKING A PARALLEL FIBERWEB

Emilian Bobkowicz and Andrew John Bobkowicz, both of 1155 Dorchester Blvd. W., Suite 905, Montreal 2, Quebec, Canada

Filed June 7, 1965, Ser. No. 461,912
27 Claims. (Cl. 156—62.4)

A method and apparatus for causing staple fibers to pass through an electrostatic field and thereby assume an orientation parallel to each other and then causing



the fibers to adhere to an adhesive substrate to form a sliver.

3,414,445

METHOD FOR PRODUCING WINDOW PANELS

Dee R. Orcutt, Natrona Heights, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Original application Aug. 2, 1963, Ser. No. 299,582, now abandoned. Divided and this application Sept. 8, 1965, Ser. No. 485,892
7 Claims. (Cl. 156—106)

1. In a method of fabricating laminated window panels comprised of a plurality of rigid, transparent plies bonded together by an organic synthetic resinous interlayer material and containing at least one other component disposed in the marginal area outside the viewing area of said panel comprising the steps of

preparing a panel assembly by arranging the plies, organic synthetic resinous interlayer material, and said component in the desired assembled relation, and

subjecting said panel assembly to sufficient heat and pressure to laminate said assembly into a composite unit,

the improvement comprising

applying said other component during said panel assembly in the form of a substantially uncured fiber glass reinforced thermosetting resin in intimate surface-to-surface contact with at least one other component of said panel assembly and

curing said fiber glass reinforced thermosetting resin component to a relatively rigid member simultaneously with said lamination of said assembly, said cured, relatively rigid member maintaining substantially the same intimate surface-to-surface contact with said other component as when it was applied in the uncured state.

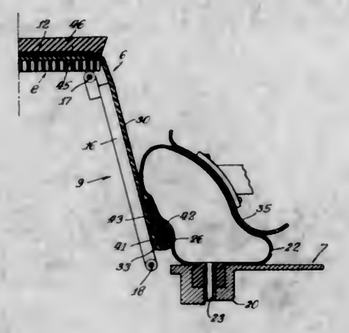
3,414,446

METHODS FOR BUILDING PNEUMATIC TIRES

Thomas H. Pearce, Niles, Mich., and Larry C. Frazier, Prescott, Ariz., assignors to National-Standard Company, Niles, Mich., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 502,064
7 Claims. (Cl. 156—128)

4. In a method of forming a tire from a tubular cylinder of tire carcass material, the steps comprising displacing an intermediate portion of the tubular cylinder into substantially torus configuration to provide a crown portion substantially of the diameter of the tire and with annular side wall portions extending inwardly from the periphery of the opposite edges of said crown portion to end portions of said tubular cylinder, maintaining said side wall portions under tension while displacing said intermediate portion of said tubular cylinder into said torus configuration, applying bead rings to said side wall portions radially outwardly of the end portions of said tubular cylinder,



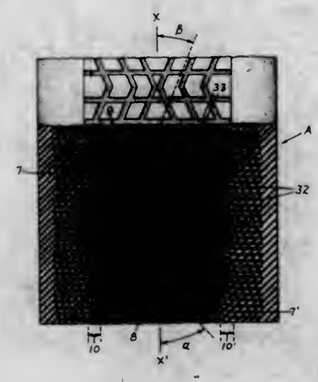
turning said end portions of said tubular cylinder over said bead rings and into engagement with said side wall portions radially outwardly of said bead rings, and then applying a tread component to said crown portion.

3,414,447

METHOD OF MAKING PNEUMATIC TIRE COVERS

Georges Louis Travers, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France

Original application May 7, 1965, Ser. No. 454,005, now Patent No. 3,327,753, dated June 27, 1967. Divided and this application Jan. 12, 1967, Ser. No. 608,914
Claims priority, application France, May 14, 1964, 1,804, Patent 1,413,102
11 Claims. (Cl. 156—131)



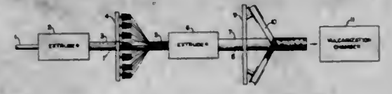
In the manufacture of radial carcass tires, a tread reinforcing ply of cords and at least one carcass ply of cords are assembled on a tire building drum with the cords of the carcass ply extending parallel with the axis of the drum and with the cords of the tread reinforcing ply inclined to the carcass cords. The tread, sidewalls and beads are assembled on the drum and the assembly is subjected to traction by converting it to approximate tire shape thereby to cause the cord portions of the carcass ply underlying the tread to be inclined relative to the cord portions which extend radially in the sides of the tire between its tread and its beads.

3,414,448

METHOD OF PRODUCING REINFORCED HOSE

Donald E. Harpfer, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Mar. 1, 1965, Ser. No. 436,249
1 Claim. (Cl. 156—149)



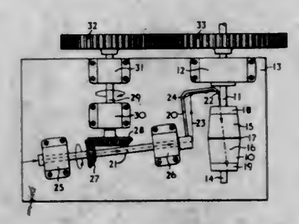
A method of producing a reinforced hose by extruding an inner tube of rubber on a flexible mandrel, applying a reinforcement layer around the inner tube, extruding an outer cover layer of rubber over the reinforcement layer, wrapping a removable cloth restraining layer around the cover layer and vulcanizing the wrapped assembly under heat and pressure. After vulcanization, the restraining layer is removed and the vulcanized hose is removed from the mandrel. Since a flexible mandrel is used, the hose may be cured either in an elongated vulcanization chamber, or may be coiled on a drum and vulcanized in an autoclave.

3,414,449

FLEXIBLE DIAPHRAGMS AND METHODS AND APPARATUS FOR THE MANUFACTURE THEREOF

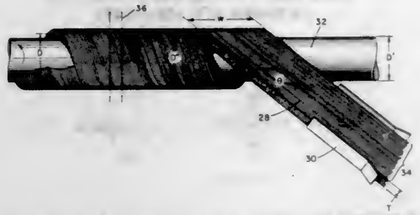
Barry Owen Beach, Castle Bromwich, Birmingham, England, assignor to Dunlop Rubber Company Limited, London England, a British company

Filed Mar. 20, 1964, Ser. No. 353,415
Claims priority, application Great Britain, Mar. 23, 1963, 11,602/63
6 Claims. (Cl. 156—173)



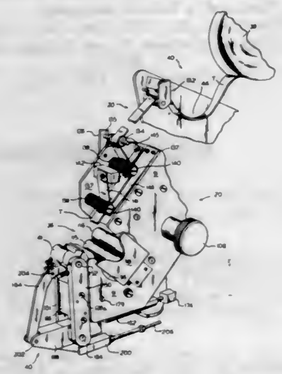
1. A method of manufacturing a resilient diaphragm comprising winding filamentary material around a rotating former, the filamentary material being laid on the former so that each turn of the material around the former lies in a plane which is inclined relative to the axis of rotation of the former, rotating the former about its axis at a predetermined speed relative to the speed at which the material is applied thereto so that the filamentary material progressively extends over the former surface, continuing the winding process to produce a double layer of filamentary material on the former in which all regions of the layer have lengths of material disposed in two directions at opposite angles relative to the axis of the former, applying unvulcanized elastomeric material to said filamentary material to hold the filamentary material in its wound form, removing the wound filamentary material from the former and shaping the wound filamentary material into a cup-shaped form.

3,414,450
METHOD OF MAKING A MOLDED TOOTHED GEAR OF RESIN-IMPREGNATED FIBROUS STRIPS
William L. Graves, Newark, Del., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 25, 1964, Ser. No. 413,774
4 Claims. (Cl. 156—192)



A method of forming gear teeth from fabric material includes the steps of forming thin strips of resin impregnated material into a wrapper strip. The wrapper strip is then helically wound about a mandrel at a predetermined angle. The resin impregnated strips are normal to the angle of helix of the gear teeth to be formed.

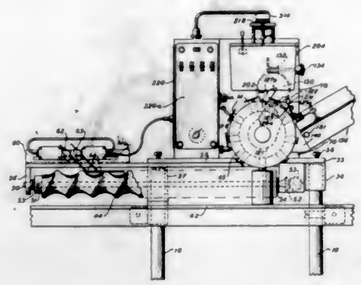
3,414,451
APPARATUS FOR WRAPPING PRESSURE SENSITIVE TAPE AROUND AN ELONGATED ARTICLE
Henry J. Sejda, Lake County, Ind., assignor to Cee-Kay Industries, Inc., Chicago, Ill.
Continuation-in-part of application Ser. No. 270,894, Apr. 5, 1963. This application Oct. 23, 1965, Ser. No. 503,778
13 Claims. (Cl. 156—353)



An apparatus for wrapping pressure sensitive tape around an article has a rotatable chuck in which said article is received with an initial bight of the tape and a tape feed mechanism providing an initial loop in the tape prior to feeding the same to the article.

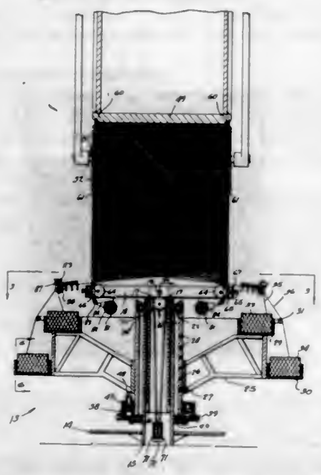
3,414,452
LABELER
Ruslon John Smith, Scranton, Pa., assignor to Eureka-Carlisle Company, a corporation of Delaware
Continuation of application Ser. No. 372,195, June 3, 1964. This application Aug. 22, 1967, Ser. No. 662,547
32 Claims. (Cl. 156—357)

Apparatus for disposition proximate an article carrying conveyor including a worm gear adapted to coact with the conveyed articles to properly space same to receive a glued label, or the like, from a vacuum wheel disposed for rotation about a horizontal axis. The vacuum wheel mounts a plurality of nozzles each adapted to receive a label from a stack of labels disposed in a label magazine and to convey same passed a glue dispenser, which drops a spot of hot melt glue thereon, and into engagement with the article to be labeled. A drive



motor and vacuum system are disposed beneath the conveyor. Sensing fingers are disposed proximate the worm gear to synchronize label pick-up and a light source and cell cooperate to sense the presence of labeler on the wheel to control release of the glue. The magazine is formed with adjustable side plates and resilient wheels to insure proper label feed.

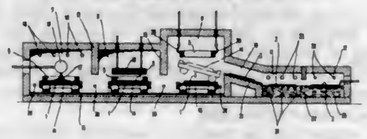
3,414,453
APPARATUS FOR MAKING LAMINATED WEBS OF FILAMENTARY REINFORCING MATERIAL
J. Warne Carter, 2206 Weeks Park Lane, Wichita Falls, Tex. 76308
Filed Dec. 11, 1964, Ser. No. 417,638
24 Claims. (Cl. 156—426)



A machine for making laminated webs from plastic filamentary strands consisting of a base having a hollow upstanding tubular post with a platform pivoted to the post. A table is journaled on the top end portion of the post carrying spools of plastic strands. A horizontal rotary drum is mounted above the post. A cross-arm is mounted on the top end of the post. An endless cable has a loop portion extending through the post, where it is crossed,

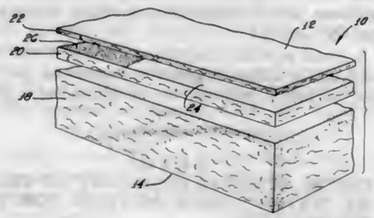
with the two sides of the cable engaging drive pulleys and extending around opposite end portions of the drum, downwardly therefrom, and thence inwardly and down through the post, driven so that the side portions of the cable subjacent the drum move simultaneously upwardly at the same rate. The table is rotated while strands are fed to the upwardly-moving side portions of the cable causing the strands to cross and overlap. An endless clamping belt engages over the drum, and additional strands are fed respectively under and over the overlapped strands to form inside and outside longitudinal additional layers of strands. Protective flexible edge strips are fed through the opposite side portions of the cable underlying the strands, being severed as the laminated web moves between the clamping belt and the drum. Additional inside and outside removable flexible cover strips are fed to the web as it moves between the clamping belt and the drum. Heaters act on the web as it moves around the drum. The completed web is rolled up on a receiving roller.

3,414,454
FLAT GLASS SHEET AND METHOD AND APPARATUS FOR MAKING SHEET
Bernard Long, 63 Rue de Rome, Paris 8eme, France
Filed Oct. 28, 1964, Ser. No. 407,023
Claims priority, application France, Nov. 7, 1963, 952,993
24 Claims. (Cl. 161—1)



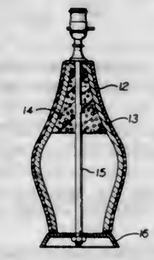
1. Fire polished flat glass of preselected thickness having continuous rounded, fire polished edges and flat, fire polished surfaces merging smoothly into the respective edges.

3,414,455
RADIANT ENERGY REFLECTIVE AND TRANSLUCENT STRUCTURES OF FIBER-REINFORCED PLASTICS
Edgar F. Twomey, Jr., Glendale, Calif., and Joseph W. Robbins, Grants Pass, Oreg., assignors to E. F. Twomey Co., Inc., Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 458,803, Apr. 12, 1965. This application Sept. 12, 1967, Ser. No. 684,079
7 Claims. (Cl. 161—5)



A multiple ply structure is bonded into a homogeneous panel structure by a synthetic plastic resin. A relatively thick layer of chopped strand glass fibers has applied to it on one side a sheet of paper of open porous construction and on the side of the sheet of paper facing away from the relatively thick layer is a deposit of aluminum flakes scattered over the surface in spaced relationship so that a desired amount of light will pass between the flakes. The flakes are applied so that most of them lie flat on the sheet of paper, and all three layers are bonded together with an impregnation of synthetic plastic resin which penetrates the spaces between the metal flakes, the fibers of the paper and the glass fibers, there being just enough resin to form a very thin film over the metal flakes so that, when the structure is placed with the metal flake side facing the sun, the sun rays which are to be reflected need pass through only a very thin layer of plastic before being reflected back through the same thin layer and thereby avoid heating up the structure.

3,414,456
MOLDED HOLLOW ARTICLES OF MANUFACTURE
Arthur H. Roberts, Brooklyn, N.Y.
(12 Lynnwood Drive, Westbury, N.Y. 11590)
Continuation-in-part of application Ser. No. 22,002, Apr. 13, 1960. This application July 30, 1965, Ser. No. 475,989
19 Claims. (Cl. 161—7)

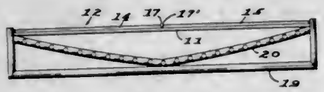


This invention involves composite articles of manufacture having two components. The outer layer component ("skin") is a premolded pliable plastic illustrated e.g. by vinyl chloride in a plasticized and polymerized state, ethylene in a polymerized state, a polyurethane elastomer and a flexible polyester resin. The inner layer component comprises a filler and the elastomer solids of a latex as a bonding agent. Illustrative to the elastomer are: natural rubber, copolymers of acrylic esters and acrylic acids, of vinyl chloride and acrylic esters, of vinyl chloride and acrylic acids. Clay, whiting and silica illustrate the fillers. the inner layer is a highly pigmented composition and contains a substantial proportion of coarse particles of the fillers. An illustration of a process of manufacturing the articles of manufacture is to form the skin from plastisol by casting into a seamless die, removing the gelled and fused hollow outer layer from the die, casting the filler-containing latex composition in the premolded skin, and drying the inner layer until the water is evaporated. The wall thickness of the outer layer is about 15½ to 250 mils. The articles of manufacture are impact resistant.

3,414,457
LAMINATED GLASS ASSEMBLY
Ormund I. Rugg, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,861
4 Claims. (Cl. 161—38)

A bent, laminated glass assembly is formed by superimposing two pieces of flat glass, each having a straight edge on the surface of a single sheet of flat glass. The straight edges of the two pieces of glass are placed in an abutting relationship with one another. The unitary undersheet of glass is then bent in a direction away from the superimposed pieces of flat glass thereon to form a sharp bend in the undersheet. During the bending of the

undersheet, the straight edges of the two pieces of flat glass are maintained in an abutting relationship and co-



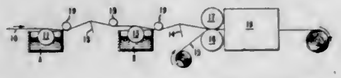
extensive with the center line of the bend of the undersheet of glass.

3,414,458

NON-CRACKING TUFTED CARPET WITH NONWOVEN SECONDARY BACKING AND METHOD OF MAKING SAME

Richard I. Lacy, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 16, 1965, Ser. No. 514,414
3 Claims. (Cl. 161—67)



1. A method for preparing a tufted carpet having a nonwoven secondary backing and resistant to cracking comprising coating the underside of a tufted primary carpet backing with a latex formulation having a filler-to-rubber ratio of from 0 to 1:1 on a weight basis, applying a second coating of a latex formulation having a filler-to-rubber ratio of at least 2:1, bringing a bonded nonwoven fabric into contact with the second coating and drying the resulting structure.

3. A tufted carpet produced by the process of claim 1.

3,414,459

COMPRESSIBLE LAMINATED PAPER STRUCTURE

Edward Ronald Wells, Cincinnati, Ohio, assignor to The Proctor & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 1, 1965, Ser. No. 429,330
9 Claims. (Cl. 161—131)



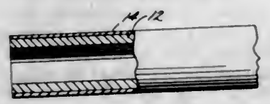
Compressible laminated paper structures for use as paper toweling, paper tissues and other household papers. The compressible paper structures are formed by embossing identical raised patterns of discrete protuberances on two extensible paper sheets, adhesively joining the mated distal surfaces of the embossed protuberances and calendering the resulting laminated paper structure to improve compressibility and handle.

3,414,460

REINFORCED STRUCTURAL PRODUCT AND METHOD FOR MAKING SAME

James E. Hassert and Elias D. Hontz, Wilmington, Del., assignors to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed May 17, 1965, Ser. No. 456,389
23 Claims. (Cl. 161—143)



A reinforced structural product is prepared by (1) removing the oxidized surface of a base, e.g. a tube, made of a mixture of oxidizable thermosetting synthetic resin and a high-temperature resistant inorganic material which is either siliceous, e.g. asbestos, or carbon, e.g. graphite or coke, and (2) then filament winding around the surface a layer of glass fiber impregnated with a polyester resin or an epoxy resin.

3,414,461

NOVEL WOOD STRUCTURES AND THEIR MANUFACTURE

Gordon E. Brown and Richard R. Huff, Seattle, Wash., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 24, 1963, Ser. No. 311,240
6 Claims. (Cl. 161—151)

1. The method of making a wood product having a functional overlay thereon, which method comprises:

(a) applying to the surface of a wood substrate a coating of an aqueous thermosetting resin solution in proportions of from about 0.5 to 10 pounds, based upon resin solids, per one thousand square feet of substrate surface,

(b) applying to the coated surface a layer of a mixture comprising

(1) wood fibers having a bulk density of up to about 0.16 grams/cc. and

(2) from about 5 to 50 weight percent, of resin solids based upon dry wood fibers, of an aqueous phenol-formaldehyde resole resin solution,

(c) applying to the surface of the fibrous layer a coating of an aqueous phenol-formaldehyde resole resin solution in proportion of from 1 to 15 pounds, based upon resin solids, per one thousand square feet of substrate surface, and

(d) subjecting the resulting assembly to heat and pressure to consolidate the assembly;

said aqueous phenol-formaldehyde resole resin solutions employed in steps (b) and (c) being independently selected aqueous solutions of an alkaline catalyzed phenol-formaldehyde condensate having a number average molecular weight of up to about 5000 and containing an average of from 1.3 to 3.0 mols of combined formaldehyde per mol of phenol; the total moisture content of the several components of the overlay as applied in steps (a), (b) and (c) and as measured just prior to hot-pressing and expressed as percent by weight of water based upon the dry wood fiber being within the range of from about

$$\text{minimum moisture content} = \frac{\overline{M}n}{240} + 15$$

to about

$$\text{maximum moisture content} = \frac{\overline{M}n}{200} + 40$$

wherein $\overline{M}n$ is the number average molecular weight of the aqueous phenol-formaldehyde resole resins employed in steps (b) and (c).

3. A wood product comprising a wood substrate having a functional overlay cohesively bonded to at least one surface thereof, as prepared by the method of claim 1.

3,414,462

GYPSUM ARTICLES RESISTANT TO EROSION BY WATER AND A METHOD FOR THEIR PRODUCTION

Gerald Waterworth Cafferata, Nottingham, England, assignor to BPB Industries Limited

No Drawing. Filed May 25, 1964, Ser. No. 370,095
Claims priority, application Great Britain, June 7, 1963, 22,897/63
6 Claims. (Cl. 161—166)

Cast gypsum articles resistant to erosion by water are produced by forming a mix of water and ingredients consisting essentially of plaster and a lime selected from a group consisting of calcium, dolomitic and magnesium lime and mixtures thereof, compressing the mix to at least 100 p.s.i. and causing the molded mix to set. Erosion resistance is further improved by carbonating the lime on the exposed surface.

3,414,463

ORGANOPOLYSILOXANE MODIFIED WITH AN ORGANOPHOSPHORUS COMPOUND AND USE THEREOF

Amy L. Jasinski, Reston, Va., assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 418,549, Dec. 15, 1964. This application Jan. 4, 1968, Ser. No. 695,551
20 Claims. (Cl. 161—191)

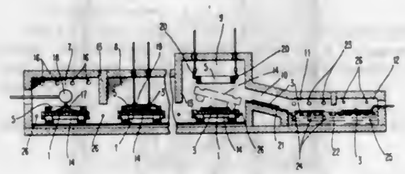
A method for incorporating an organophosphorus compound into an organopolysiloxane composition and the products produced therefrom. The organophosphorus modified organopolysiloxane composition is useful in laminating and adhesive applications.

3,414,464

FLAT GLASS AND METHOD AND APPARATUS FOR MAKING FLAT GLASS

Bernard Long, 63 Rue de Rome, Paris 8eme, France

Filed Dec. 8, 1964, Ser. No. 416,710
Claims priority, application France, Dec. 13, 1963, 957,200; Oct. 27, 1964, 992,898
14 Claims. (Cl. 161—192)



1. A glass sheet of less than equilibrium thickness having a circumscribing rounded, fire-polished edge and fire-polished broad surfaces merging smoothly into said edge.

3,414,465

SEALED GLASS ARTICLE OF MANUFACTURE

Nils Tryggve E. A. Baak, Ridgefield, Conn., and Charles F. Rapp, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation-in-part of applications Ser. No. 465,381, June 21, 1965, and Ser. No. 517,071, Dec. 28, 1965. This application May 12, 1966, Ser. No. 549,459
20 Claims. (Cl. 161—193)

1. An article of manufacture comprising a fused quartz surface coated with a bonding material wherein said bonding material is a solder glass having the following range in composition:

Component:	Mole percent
SiO_2	50–90
Al_2O_3	5–30
Cu_2O	5–30
NiO	0–6
Fe_2O_3	0–6
AlF_3	0–6

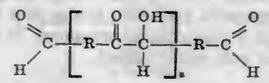
3,414,466

BENZOIN-TYPE HOMOPOLYMERS AND GLASS FABRIC LAMINATES THEREOF

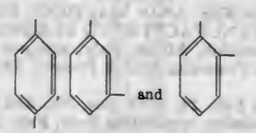
Rudolf Wehr, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 4, 1963, Ser. No. 328,099
6 Claims. (Cl. 161—198)

1. A homopolymer having the structure



where R is selected from the group consisting of



a 0.5% solution of said homopolymer in dimethylformamide having an inherent viscosity of at least 0.05 and wherein *n* is the number of recurring units in the polymer.

6. A laminate comprising layers of glass fabric bonded together with a polymer according to claim 2 which has been cross-linked.

3,414,467

GYPSUM WALLBOARD AND PROCESS OF MAKING THE SAME

Peter J. Ferrara, New York, N.Y., assignor to Keep Chemical Company, New York, N.Y., a corporation

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,351
4 Claims. (Cl. 161—266)

A process for producing gypsum plaster wallboard is disclosed in which there is incorporated into a slurry of gypsum and water a mixture of raw or unmodified starch and an enzyme capable of modifying the starch in situ. The resulting mixture is thoroughly blended, deposited between paper liners and allowed to set. The set forms are then dried. The resulting wallboard is characterized by its enhanced strength, rigidity, hardness, resistance to compression, etc.

The starch is used in an amount of from 0.05% to 0.60% referred to the gypsum, and the enzyme (potency of 5.0 D.U.) in an amount of from 0.10% to 0.75% referred to the starch.

3,414,468

PROCESS OF REGENERATING PULPING LIQUOR FROM CELLULOSE DIGESTION WASTE LIQUOR

George G. Copeland, Rushville, Ind., assignor to Copeland Process Corporation, Oak Brook, Ill., and Container Corporation of America, Chicago, Ill., both corporations of Illinois

Filed Aug. 13, 1965, Ser. No. 479,460
4 Claims. (Cl. 162—30)

Disclosed is a process for reconverting lime mud to lime for use in reforming alkaline pulping liquor. The process comprises adding black liquor, desirably containing about 50–70% solids, to lime mud to form an admixture containing about 40–70% solids and with the ratio of black liquor to lime mud being about 1:4 to 1:20, and then calcining the admixture to form lime. By adding the black liquor to the lime mud some of the required heat is supplied.

3,414,469
TREATMENT OF FLASH DRIED PULP TO REDUCE NODULES THEREIN

James R. Brown, Joseph Marton, and James R. Rowley, Charleston, S.C., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

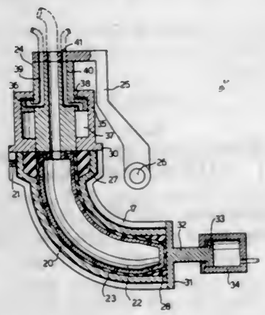
No Drawing. Filed Aug. 19, 1965, Ser. No. 481,097
5 Claims. (Cl. 162—84)

A method reducing nodule formation in flash dried pulp wherein the pH of alkaline digested pulp slurry is adjusted to between 5 and 8 and certain inorganic sulfur containing compounds are added to the pulp slurry while such slurry is at a pulp consistency above 25 percent and the thus treated pulp is then dried.

3,414,470
PROCESS AND MACHINE FOR MANUFACTURING ELBOWS

Giorgio Marchioli, Milan, Italy, assignor to Societe Anonyme Francaise Eternit Prouvy, Thiant, Nord, France

Filed Feb. 24, 1965, Ser. No. 434,959
Claims priority, application Italy, Feb. 26, 1964, 4,620/64; Jan. 19, 1965, 2,012/65
11 Claims. (Cl. 162—218)



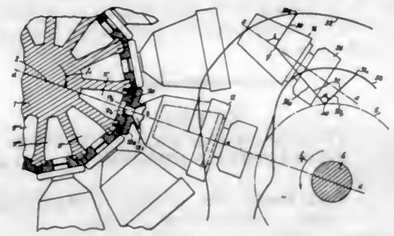
A process and machine for manufacturing pipe elbows having a curved intermediate portion and straight end portions, one of the end portions being shaped in the form of a socket. A split mold having permeable walls is positioned around a core having a rigid hollow body with permeable walls, a rubber jacket surrounding the hollow body, and a pair of removable annular elements normally positioned on the ends of the hollow body and being shaped to form the parts of the core which would normally hinder relative rotation of the core and the type section to be molded. A slurry of fibers and binder is introduced into the cavity between the core and the mold and is simultaneously compressed and dehydrated. The annular elements are removed to allow the rest of the core to be withdrawn from the molded pipe section by rotating that portion of the core about the axis of curvature of the pipe section.

3,414,471
PULP MOLDING APPARATUS

Roger Hochart, Rambervillers, France, assignor to Henry Boucher Fils & Cie, Rambervillers, Vosges, France, a corporation of France

Filed June 11, 1964, Ser. No. 374,378
Claims priority, application France, Mar. 26, 1964, 968,844
1 Claim. (Cl. 162—392)

A pulp molding apparatus having a first drum carrying a plurality of molds and a second drum carrying a plurality of plungers for the molds. Apparatus for bringing the axis of each of said plungers successively into coincidence with the axis of a corresponding mold, which includes cam means, levers and arms connected so that each

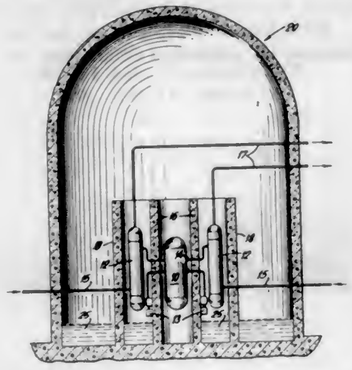


plunger undergoes a simultaneous pivotal and translational motion toward a mold to remove a molded article from the mold.

3,414,472
NUCLEAR REACTOR DIRECT PRESSURE SUPPRESSION CONTAINMENT

Charles T. Chave, Wellesley, Mass., assignor to Stone & Webster Engineering Corporation, Boston, Mass., a corporation of Massachusetts

Filed July 12, 1966, Ser. No. 564,647
16 Claims. (Cl. 176—37)



Direct pressure suppression in a nuclear reactor containment structure is achieved by providing a liquid reservoir of predetermined volume and specific gravity established at a point which is less than that of water so that steam condensing at the surface will sink into the reservoir. The sinking condensate causes circulation within the reservoir, enabling the reservoir to continually absorb steam until thermal equilibrium is reached. The liquid reservoir is preferably comprised of water diluted with either a fluid or particulate solid material so as to be in the form of either a solution, emulsion or solid-water suspension. Also preferably, the fluid additive material is selected so as to have a low vapor pressure to minimize the amount of vaporization generated upon steam condensation.

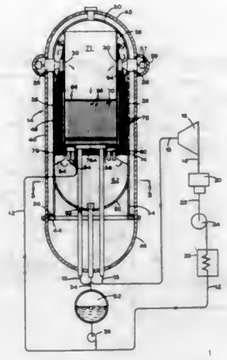
3,414,473
VAPOR-COOLED REACTOR SYSTEM

Donald C. Schluderberg, Gordon R. Winders, and John S. Dossett, Lynchburg, Va., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 3, 1966, Ser. No. 583,519
13 Claims. (Cl. 176—56)

A nuclear reactor comprising a containment vessel occupied by a reactor vessel containing a cylindrical shell

in its upper portion and a vapor separating chamber in its lower portion. The shell encloses a nuclear core, is fitted with circulators forcing vapor through the core, and cooperates with the reactor vessel to provide a vapor flow path from the separating chamber to the circulators. Vapor from the separating chamber is directed to the circulators and forced through the core wherein it is super-

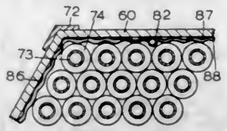


heated. Part of the superheated vapor is directed to a prime mover and another part to a desuperheater wherein its excess heat is used to evaporate feedwater which is supplied at a rate in excess of the total vapor demand. The resulting saturated vapor is directed to the separating chamber and thence to the circulators.

3,414,474
NUCLEAR REACTOR FUEL ELEMENTS

Kenneth MacGregor Swanson, Thurso, Caithness, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Dec. 19, 1966, Ser. No. 602,824
Claims priority, application Great Britain, Aug. 8, 1966, 35,465/66
5 Claims. (Cl. 176—68)

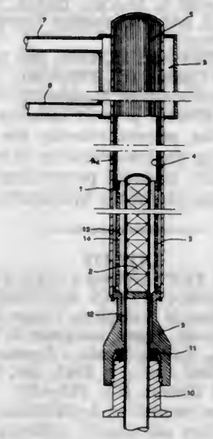


A fast nuclear reactor fuel element has sheathing forming an external and an internal wall, both exposed to the same flowing coolant, ceramic nuclear fuel contained in the sheathing and having a density less than maximum theoretical so as to provide distributed voidage in the fuel, the fuel closely contacting the inner face of the internal wall while a growth-accommodating gap exists between the fuel and the inner face of the external wall, the gap serving to insulate the fuel from the external wall so that its operating temperature is raised compared with that of the fuel contacting the internal wall which thus lowers the compressive creep resistance of the fuel and induces irradiation-induced swelling to be absorbed in the distributed voidage of the fuel. The gap can have crinkled foil of a refractory metal within it to partially support the fuel, and the external sheathing wall can constitute a shell containing coolant tubes forming the sheathing internal wall and on which columns of hollow fuel pellets can be stacked.

3,414,475
HEAT PIPES

Peter Fiebelmann, Besozzo, Italy, assignor to European Atomic Energy Community (Euratom), Brussels, Belgium

Filed May 13, 1966, Ser. No. 550,029
Claims priority, application Germany, May 20, 1965, E 29,347
13 Claims. (Cl. 176—72)

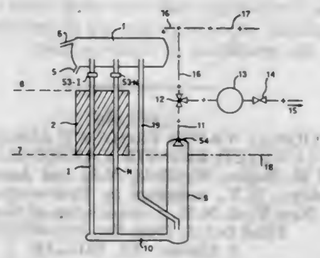


A tubular heat pipe comprising an evaporization zone, with an internally mounted fissile heat source, and a condensation zone, with external secondary cooling means. The pipe is at least partially filled with a liquid coolant which evaporates in the evaporization zone and returns, after condensing, along the inner surface of the pipe walls to the evaporization zone. A circular gap is formed between the tube wall and the heat source with a capillary inlet.

3,414,476
LIQUID POISON SAFETY SYSTEM FOR A NUCLEAR REACTOR

Sergio Galli de Paratesi, Varese, Francois Genet, Ispara, Luciano Ghiurghi, Varese, Alberto Agazzi, Bergamo, and Mario Morbello, Besozzo, Italy, and Armando Broggi, Santa Fe, Argentina, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium

Filed Mar. 9, 1967, Ser. No. 621,893
Claims priority, application Belgium, Mar. 22, 1966, 25,619
6 Claims. (Cl. 176—86)



In a nuclear reactor, a system for selectively introducing a poison solution to stop the reactor or a washing solution to clean the system. The system includes a plurality of vertical rods in the reactor connected to top and

bottom headers located on the respective ends of the reactor. An accumulator is connected to both of the headers and to valve means which selectively introduces the poison solution or washing solution.

3,414,477
BIOSYNTHESIS OF PROTEIN FROM HYDROCARBONS USING AN ANTIBIOTIC
John D. Douros, Millington, Lars A. Naslund, Roselle Park, and Carleton J. McCoy, Union, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,844
4 Claims. (Cl. 195—28)

In a bacterial fermentation process for the preparation of a high protein-content product utilizing a C_1–C_{35} hydrocarbon feed, the process wherein the improvement comprises increasing the concentration of essential amino acids in nutritionally balanced proportions by the incorporation of streptomycin in the hydrocarbon medium.

3,414,478
PROCESS FOR PREPARING L-GLUTAMINE BY FERMENTATION METHOD
Yuichi Noguchi, Junichi Nakajima, Tetsuo Uno, and Toru Nakanishi, Hofu-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a Japanese corporation
No Drawing. Filed Dec. 17, 1965, Ser. No. 514,663
13 Claims. (Cl. 195—29)

1. A method for producing L-glutamine by fermentation which comprises aerobically culturing a strain of a micro-organism having L-glutamic acid-producing ability in an aqueous nutrient medium therefor, said nutrient medium containing more than 10^{-7} mole of a member selected from the group consisting of Zn, Mo and a mixture of Zn and Mo in solution therein.

3,414,479
PROCESS FOR THE PREPARATION OF BACTERIAL ALPHA-AMYLASE
Robert A. Wynes and Norman E. Lloyd, Clinton, Iowa, assignors to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 455,009, May 11, 1965. This application Dec. 28, 1967, Ser. No. 694,050
8 Claims. (Cl. 195—66)

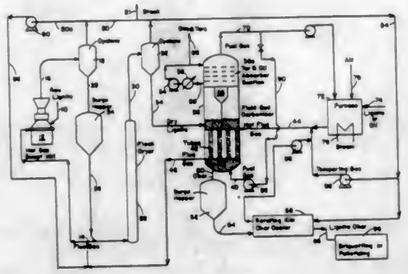
Yields of alpha-amylase obtained in submerged fermentation of *Bacillus subtilis* may be increased by carrying out the fermentation in a nutrient medium containing an organosilicone copolymer having an inverse solubility coefficient whereby the copolymer is substantially soluble in water at temperatures below normal fermentation temperatures and substantially insoluble in water at fermentation temperatures. A suitable organosilicon copolymer with these solubility characteristics is marketed by Union Carbide Corporation under the trade name L–520. These organosilicon copolymers also act as anti-foaming agents during the production of alpha-amylase.

3,414,480
FRACTIONAL VAPOR PRODUCT ABSORPTION OF FLUIDIZED LIGNITE CARBONIZATION
Harold H. Stotler, Westfield, N.J., and Asmund Boyum, Brooklyn, N.Y., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Oct. 1, 1965, Ser. No. 492,222
5 Claims. (Cl. 201—15)

1. A process for the carbonization of lignite containing volatile constituents which comprises:

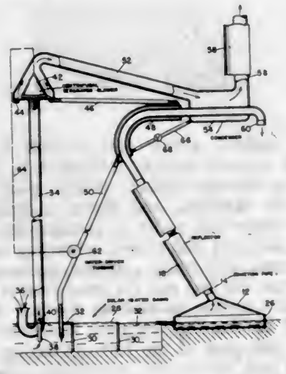
(a) maintaining a dense phase fluidized bed of particles of lignite in a carbonization zone to distill from said particles volatilizable constituents thereby producing a carbonized material, wherein the heat required for carbonization is supplied by hot flue gas passing through a series of vertical heat exchange tubes located within the fluidized bed;

(b) separating a substantial portion of the entrained solids from the volatizable constituents leaving the carbonization zone in a solid-gas separating zone and returning separated solids to the carbonization zone;



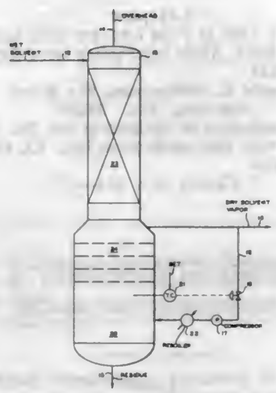
(c) recovering condensible oil and tar from the hot volatile constituents leaving the solids-gas separating zone by rapid cooling of these constituents in an absorption zone, and wherein a portion of the non-condensible gases leaving said zone are recycled to the bottom of the carbonization zone to provide fluidizing gas, and wherein the remainder of non-condensible gases are used as fuel to supply at least a portion of the hot flue gases passed through the heat exchange tubes in the carbonization zone.

3,414,481
EDUCTION DISTILLATION SYSTEM FOR TREATING SALT WATER TO PRODUCE FRESH WATER
Herbert C. Kelly, Jr., 5222 Cromwell Court, San Diego, Calif. 92116
Filed Oct. 22, 1965, Ser. No. 500,552
8 Claims. (Cl. 202—234)



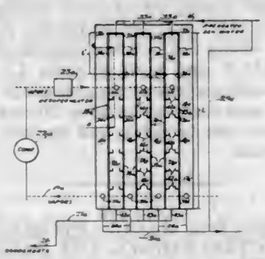
This is a system for raising water, for example, from the surface of a body of naturally occurring water up a nearby hillside to a condenser and storage means at the top. The water is raised in the form of vapor continuously and progressively heated and accelerated as its rises.

3,414,482
PREVENTING FRACTIONATOR REBOILER FOULING
John M. Folz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,333
3 Claims. (Cl. 203—2)



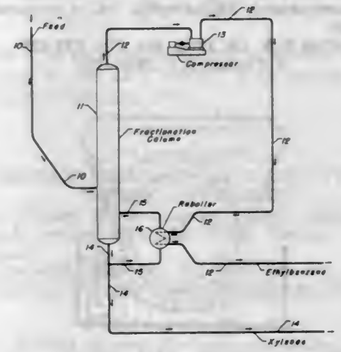
Method for preventing fouling of a reboiler supplying heat for a fractionating column comprising withdrawing a side stream comprising vapors from an intermediate portion of the column, pressuring and heating the side stream, and introducing the pressured and heated side stream into the reboiler section of the column to directly heat bottoms liquid therein.

3,414,483
SELECTED FILM VELOCITY DISTILLATION
George L. Henderson, Seattle, Wash., assignor of six percent to F. V. Lockman and ninety-four percent to Joseph B. Ward, Calvin B. Lake, M. F. Riback and George Henderson
Continuation-in-part of application Ser. No. 233,608, Oct. 29, 1962. This application Jan. 27, 1966, Ser. No. 532,036
11 Claims. (Cl. 203—10)



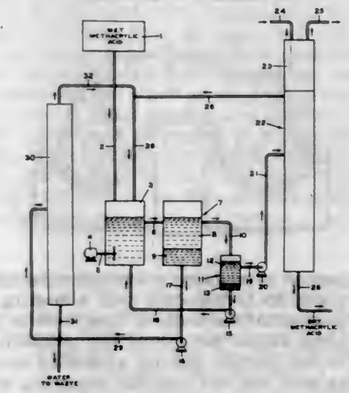
8. A method for evaporating brine which comprises passing said brine downwardly as a flowing film over a heat transfer wall, passing steam into contact with the opposite side of said heat transfer wall at a temperature between about 3° F. and about 15° F. above the temperature of said flowing film, condensing at least a portion of said steam as a film on said opposite side, preventing the buildup of said condensate film to a thickness in excess of about 0.005", maintaining a vertically downward velocity on said brine film at the uppermost heat transfer level of said heat transfer wall at least equivalent to the velocity achieved by a free falling film of said brine on a smooth vertical wall after a fall of about 3 feet and evaporating from said flowing brine film between about 10 and about 30 pounds of water per hour per square foot of heat transfer wall.

3,414,484
PROCESS FOR SEPARATING ETHYLBENZENE FROM C_8 AROMATIC HYDROCARBONS BY SUPER-DISTILLATION WITH VAPOR COMPRESSION-REBOILER HEAT EXCHANGE
Don B. Carson, Mount Prospect, and Ted B. Haufe, Western Springs, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,613
8 Claims. (Cl. 203—26)



Method for separating ethylbenzene from other C_8 aromatic hydrocarbons via fractionation means. These means include the use of a heat pump to supply heat to the fractionator reboiler.

3,414,485
PROCESS FOR DRYING METHACRYLIC ACID BY EXTRACTION AND AZEOTROPIC DISTILLATION
George B. H. Speed, Pensacola, Fla., assignor to Escambia Chemical Corporation, Pace, Fla., a corporation of Delaware
Filed May 17, 1967, Ser. No. 639,236
12 Claims. (Cl. 203—43)



Water is removed from methacrylic acid in a two-stage process. In the first stage, the methacrylic acid, containing a significant amount of water, is extracted with

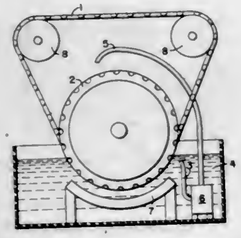
an organic solvent which organic solvent is at most only slightly soluble in water and in which methacrylic acid is more soluble than in water, and which organic solvent forms a minimum-boiling azeotrope with water. After extraction, the aqueous layer and the organic solvent layer which form are separated and the organic solvent layer, containing methacrylic acid, is subjected in the second stage to azeotropic distillation at a reduced pressure thereby removing as a distillate the organic solvent and any residual amounts of water. The bottoms-product of the distillation is substantially dry methacrylic acid of high purity.

3,414,486

METHOD FOR PRODUCING FLAKES OF NICKEL

George F. Nordblom, Yardley, and George W. Bodamer, Cheltenham, Pa., assignors, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware

Filed Feb. 18, 1966, Ser. No. 528,429
5 Claims. (Cl. 204—10)



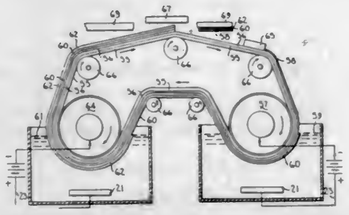
Small flakes of metallic nickel, about 1/16-inch square and about 0.000040 inch thick, are deposited from solution onto a cylindrical cathode. A gridded belt made from an electrically non-conducting material is wrapped about at least a portion of the cathode surface. Flakes are removed from the cathodes by sprays of electrolyte or other fluids. The flakes are suitable for use in nickel-alkaline batteries.

3,414,487

METHOD OF MANUFACTURING PRINTED CIRCUITS

John D. Helms and Herbert L. Brown, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,228
4 Claims. (Cl. 204—11)



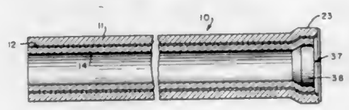
1. The method of producing a conductive pattern comprising applying to a conductive face a masking layer, removing portions of the masking layer to form therein openings which expose portions of said conductive face according to said pattern, applying a releasing layer over the masking layer and said openings, immersing the face with the masking and releasing layers thereon in an electroplating bath wherein the face is the negative pole, the total resistance of the masking and releasing layers in areas where they coexist on the face preventing electroplating over such areas on the releasing layer, the releasing layer being of less resistance than said total resistance so that where it alone covers the conductive face over the openings it becomes plated with conductive material in response to the negative polarity of the face areas in the openings, and thereafter separating the plated pattern and the releasing layer.

3,414,488

PERMANENT MOLD FOR USE IN THE MANUFACTURE OF PIPE AND METHOD OF PRODUCING SUCH MOLD

Harold E. Willingham, Sky Drive, Anniston, Ala. 36201

Continuation-in-part of application Ser. No. 453,218, May 4, 1965. This application Dec. 13, 1966, Ser. No. 601,422
7 Claims. (Cl. 204—37)



A method of producing a permanent mold including sand blasting a hollow body, inserting an anode within the same, immersing the mold body and anode in an electrolytic bath, causing current to flow from the body to the anode, and then reversing the current to cause the current to flow from the anode to the body to electrically deposit material from the electrolytic bath onto the body.

3,414,489

BONDABLE COATING ON ALUMINUM AND METHOD OF APPLYING IT

Narvel L. Rogers, Hurst, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 13, 1966, Ser. No. 520,344
8 Claims. (Cl. 204—38)

1. A method for forming a corrosion-resistant adhesive-bondable surface on aluminum and aluminum alloys, comprising cleaning and rinsing the metal surface, removing scale and oxides on the metal by subjecting it to deoxidizing conditions, anodizing the surface to form a coating of aluminum oxide, rinsing the anodized aluminum in room temperature water, thereafter immersing it for several minutes in a sealing and bonding solution maintained at about 180–195° F. and a pH of about 2.5 to 3.7; said sealing and bonding solution comprising high purity water to which has been added about 50 to 200 p.p.m. of chromic acid (chromium trioxide), and thereafter drying the treated aluminum.

3,414,490

PROCESS FOR MANUFACTURING AN ELECTROLUMINESCENT DEVICE

William A. Thornton, Jr., Cranford, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

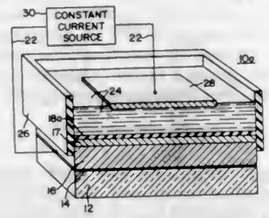
Filed Feb. 16, 1966, Ser. No. 527,786
5 Claims. (Cl. 204—38)

1. The method of providing an aluminum oxide dielectric breakdown layer over a partially completed electroluminescent device, wherein said partially completed device comprises a first electrode carried by a substrate, and a substantially continuous electroluminescent phosphor layer disposed over said first electrode, said method comprising the steps of:

forming an aluminum metal layer over said phosphor layer;

exposing said aluminum metal layer to an anodizing-supporting electrolyte;

anodizing said aluminum metal layer by applying an anodizing potential across said electrolyte and said first electrode to cause an anodizing electric current to pass through said partially completed electro-



luminescent device and said aluminum metal layer; and

continuing to apply said potential across said electrolyte and said first electrode until said aluminum metal layer is substantially entirely converted to aluminum oxide.

3,414,491

ELECTRODEPOSITION OF NICKEL

Arthur H. Du Rose, Euclid, and William J. Pierce, Lyndhurst, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,603
11 Claims. (Cl. 204—49)

This invention comprises a nickel plating process and a nickel electroplating bath containing coumarin or certain derivatives thereof for providing leveling and other desirable characteristics. The tendency of the coumarin and related compounds to produce byproducts which cause disadvantageous results in the type of plating is avoided by also having present in the bath an acetylenic compound having the formula

$$HC{\equiv}C{-}CH_2(OC_2H_4)_nOH$$

wherein n equals 1–3.

3,414,492

CHROMIUM PLATING PROCESS

George E. Oleson and Roger M. Woods, Fairfax, Va., assignors to Corillium Corporation, Arlington, Va., a corporation of Virginia

No Drawing. Filed Dec. 14, 1965, Ser. No. 523,818
12 Claims. (Cl. 204—51)

1. A process of producing electrodeposited blue-grey chromium coatings comprising plating an object in an aqueous bath comprising about 110 to about 450 grams per liter of chromic anhydride and about 75 to about 265 grams per liter of chloroacetic acid, using a current density of about 50 to about 600 amperes per square foot and a temperature of about 60° F. to about 100° F., for a period of time sufficient to give a chromium coating of desired thickness.

3,414,493

ELECTRODEPOSITION OF COPPER

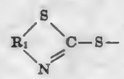
Fred I. Nobel and Barnet D. Ostrow, Roslyn, N.Y. (both % Lea-Ronal Inc., 130—19 180th St., Jamaica, N.Y. 11434)

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,084
8 Claims. (Cl. 204—52)

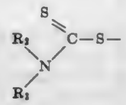
1. A process for producing bright and smooth copper deposits which comprises electrodepositing copper from an aqueous acidic solution of at least one copper salt in which there is dissolved a water soluble brightener having the structural formula:

$$G(RCHO)_m{-}(CH_2)_n{-}SO_3M$$

wherein R is a hydrogen or an alkylene radical having 1 to 3 carbon atoms, m and n are integers of which m is at least 1 and n is from 3 to 8, M is H, Na or K, and G is a corbon-nitrogen-sulfur radical having the structural formula:



or



in which R_1 is an aromatic radical or its alkyl derivative, and R_2 and R_3 are alkyl radicals, in an amount sufficient to provide a brightening effect.

3,414,494

METHOD OF MANUFACTURING PURE NICKEL HYDROXIDE

Charles Cuenot, Sainte-Suzanne, France, assignor to Le Nickel, societe anonyme, Paris, France, a French company

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,434
Claims priority, application France, Apr. 30, 1965, 15,327
4 Claims. (Cl. 204—96)

1. A method of manufacturing pure nickel hydroxide which comprises the steps of effecting the anodic corrosion of nickel mat anodes having the following contents by weight: nickel 76% to 83%, sulfur 23% to 16%, cobalt 0.30% to 0.40%, iron 0.04% to 0.08%, copper 0.050% to 0.065%, by direct electrolytic action in anode compartments of an electrolysis cell divided into compartments which contains as an electrolyte an aqueous solution of a water-soluble salt selected from the group consisting of the chlorides and sulfates of sodium, potassium, magnesium and calcium, to form an anolyte having a high-nickel salt content selected from the group consisting of the chloride and sulfate, in an acid medium having a pH value ranging from 2 to 4, diffusing the anolyte towards the anode compartments of the electrolysis cell through fabric partitions separating the anode compartments from the cathode compartments, precipitating the nickel in the cathode compartments in the form of nickel hydroxide, in a basic medium having a pH value ranging from 8 to 10, continuously extracting from the electrolysis cell the nickel hydroxide suspension contained in the electrolyte, decanting said suspension in a static decanter for concentrating the suspension from 4 to 6 grams of nickel per liter to 25 to 30 grams of nickel per liter, and a series of filtrations of the concentrated suspension in conjunction with the washing of the nickel hydroxide with water and repulping stirring, said series comprising three stages of filtering and washing with water on the filter, and two intermediate repulping steps.

3,414,495

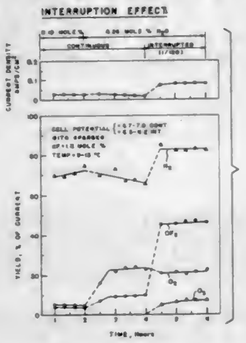
METHOD OF ELECTROLYTIC PRODUCTION OF OXYGEN DIFLUORIDE

John A. Donohue, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Feb. 24, 1966, Ser. No. 529,718
7 Claims. (Cl. 204—101)

1. A process for producing oxygen difluoride from hydrogen fluoride and water which process comprises passing an electrical current through a liquid electrolyte positioned in an electrolytic cell, said liquid electrolyte

being maintained at a temperature of less than 250° C. and consisting essentially of hydrogen fluoride, alkali metal fluoride within the range of about .2 to 5.0 mole percent and water within the range of about .1 to 2.0

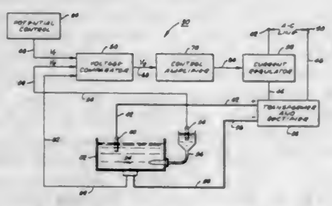


mole percent, periodically interrupting the flow of said current for a time and withdrawing from said cell gases containing oxygen difluoride, said interrupting causing greater yield of oxygen difluoride, based on current passed than without said interrupting.

3,414,496
CONTROLLED POTENTIAL PROTECTION OF METALLIC VESSEL-LATEX SOLUTION SYSTEMS

John D. Sudbury and William P. Banks, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,496
6 Claims. (Cl. 204—147)



1. A method for protecting against corrosion and deposition plating within a metallic vessel containing a latex solution, comprising the steps of:

sensing the potential of the metallic vessel;

passing a direct current flow through said latex solution and said metallic vessel as a cathode; and

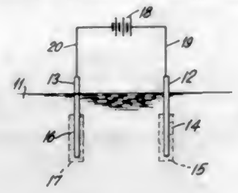
controlling the direct current flow in response to a difference between said sensed potential of the metallic vessel and a predetermined control point voltage to maintain said vessel at a predetermined potential.

3,414,497
METHOD OF CLARIFYING A POLLUTED AQUEOUS LIQUID

Masakuni Kanai, No. 1051 Wadahoncho, Suginami-ku, Tokyo, Japan

Continuation-in-part of application Ser. No. 502,799, Sept. 28, 1965. This application July 7, 1967, Ser. No. 651,798
Claims priority, application Japan, Oct. 5, 1960, 35/40,262; June 29, 1961, 36/22,732
10 Claims. (Cl. 204—149)

A method of clarifying a polluted aqueous liquid, such as sewage, by removing turbidity therefrom by iontophoresis, is disclosed, in which a pair of electrodes are positioned in spaced relation in the polluted aqueous liquid and a source of D.C. potential is connected across the electrodes. A fluoride compound is added to the liquid between the electrodes, a preferred fluoride compound being CaF. The potential applied between the electrodes is at least equal to the decomposition potential of the fluoride compound in water to promote the dissociation



of CaF into positive calcium ion and negative fluoride ion. The fluoride ions migrate toward thte positive electrode and react with organic and inorganic substances in the liquid to form highly polarized, relatively solid compounds which tend to settle and leave substantially clear water. The calcium ion, for example, will migrate toward the negative electrode. The fluoride will unite, for example, with silica to form SiF_4, resulting in mud and pure water.

3,414,498
CROSS-LINKING OF POLYMERIC SUBSTANCES WITH ACETYLENE AND IONIZING RADIATION

Yasuo Shinohara and Kenji Yamaguti, Ohtsu-shi, and Teruo Nagai, Seta-machi, Kurita-gun, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

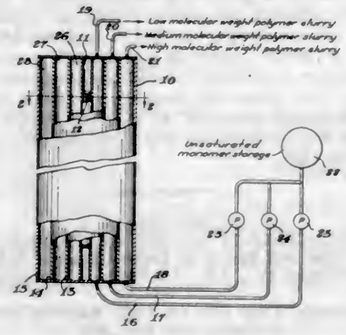
No Drawing. Filed Mar. 30, 1964, Ser. No. 355,942
Claims priority, application Japan, Apr. 9, 1963, 38/18,765; Aug. 7, 1963, 38/40,636
9 Claims. (Cl. 204—159.13)

A process for reforming a polymer by cross-linking which comprises the steps of subjecting a high polymer to irradiation by ionizing radiation and setting up cross-linkages therein to reform said polymer, said process including the step of contacting the polymer with acetylene for a period before, during or after the irradiation step.

3,414,499
SIMULTANEOUS POLYMERIZATION OF A PLURALITY OF MONOMER STREAMS IN A SINGLE REACTOR USING IONIZING RADIATION

John B. Gardner, Lake Jackson, Tex., Charles F. Smith, Tulsa, Okla., and Billy G. Harper, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 25, 1965, Ser. No. 435,299
4 Claims. (Cl. 204—159.22)

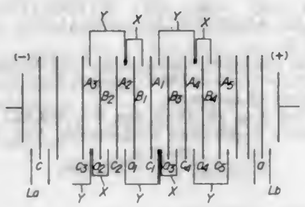


This invention relates to a device and a process for simultaneously polymerizing a plurality of streams of unsaturated monomeric materials with ionizing radiation. The central core of the reactor contains a source of high energy radiation and is surrounded by a plurality of concentric tubular reactor shells to form a plurality of annular spaces at different distances from the core. One or more radiation polymerizable monomers are simultaneously passed through the annuli of the reactor to produce separate polymer streams. In this manner, different monomers are simultaneously but separately polymerized or a single monomer is polymerized to separate products having different molecular weight ranges while effectively utilizing the energy from the radiation source.

3,414,500
METHOD FOR SEPARATING ISOTOPES

Hidetake Kakihana and Maomi Seko, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan, and Hidetake Kakihana, Tokyo, Japan, as joint owners

Filed July 27, 1964, Ser. No. 385,298
Claims priority, application Japan, Aug. 2, 1963, 38/40,311
16 Claims. (Cl. 204—180)



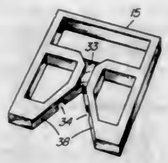
A method of obtaining isotopes in the ion state utilizing an electrodialysis apparatus consisting of a plurality of cation permselective membranes and anion permselective membranes alternately arranged between an anode and a cathode, which comprises feeding an electrolyte solution containing isotopes to be separated in the ion state into a compartment which is constituted by the cation permselective membrane on the cathode side and the anion permselective membrane on the anode side, passing a direct electric current through the apparatus whereby the isotopic ions to be separated migrate selectively through membranes of the same charge into the adjacent compartments, refluxing the solution from the compartment successively into every other compartment in a direction opposite to that of the electromigration of isotopes, and obtaining lighter istope ions in the compartment near the electrode in the direction of electromigration and heavier isotopes in the compartment near the electrode in a direction opposite to that of the electromigration.

3,414,501
METHOD AND APPARATUS FOR SHAPING, SHARPENING AND POLISHING RAZOR BLADES

James B. Kruger, Staunton, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

Filed Dec. 21, 1964, Ser. No. 419,836
6 Claims. (Cl. 204—206)

An apparatus and method for electrolytically shaping a cutting edge on a continuous length of razor blade stock in which the blade stock is advanced edgewise through an electrolytic machining chamber spacedly adjacent working faces of cathode electrodes in the machining chamber to effect electrolytic removal of metal from the stock in correspondence with the shape of the cathode electrode working faces, the continuous length of razor blade stock being rendered anodic in the electrolytic circuit by advancing it through a liquid contactor bath connected with the positive terminal of a DC power source preliminary to its entry into the machining chamber, the



cathode electrodes each being provided with slotted electrolyte feed passages outletting at the working faces for delivering fresh electrolyte to the gap between the working faces and the edge surface being formed on the stock.

3,414,502
ELECTROPLATING APPARATUS FOR USE WITH A PHONOGRAPH RECORD MATRIX

Louis R. Porrata, Cliffside Park, N.J., and Clive R. Young, Terre Haute, Ind., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed Jan. 18, 1965, Ser. No. 426,303
7 Claims. (Cl. 204—281)



An electroplating fixture which masks the rim of an object to be electroplated in an electroplating bath from the bath and which includes a loop of elastomeric material formed with two opposed inner side faces which define a longitudinal recess in the loop adapted to receive the rim of the object.

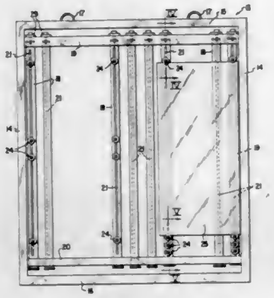
3,414,503
APPARATUS FOR COATING THE SURFACE OF PLATES UNIFORMLY BY CATHODE SPUTTERING

Edgard Brichard, Jumet, Belgium, assignor to Glaverbel, S.A., Watermael-Boitsfort, Belgium

Filed Mar. 8, 1965, Ser. No. 437,889
Claims priority, application Luxembourg, Mar. 12, 1964, 45,647
12 Claims. (Cl. 204—298)

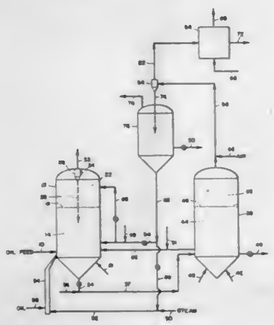
An apparatus for the coating of surfaces of large, flat objects by cathodic volatilization of the coating material in a vacuum, the apparatus including means for holding the object in a plurality of vertical, parallel planes and at least one linear cathode electrode associated electrically with at least one anode electrode, the cathode electrode being provided with the coating material and extending parallel to the planes in which the objects are to be held,

the length of the cathode electrode extending entirely across the regions to be occupied by the objects, the apparatus further including means for moving the cathode electrode parallel to the planes in which the objects will



be held in a direction transverse to the cathode electrode length and for a distance sufficient to cause the electrode to completely traverse the regions in which the objects are to be held.

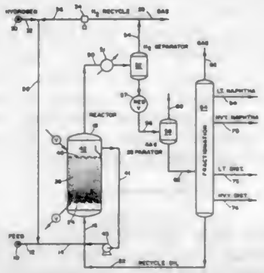
3,414,504
FLUID COKING PROCESS
Morey E. Oldweiler, Whippany, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 27, 1966, Ser. No. 590,083
1 Claim. (Cl. 208—53)



The present disclosure relates to a fluid coking process wherein secondary air is added to a flue gas containing entrained coke particles whereby the CO is combusted to CO_2 and at least a portion of the coke solids are combusted. The heat of the combustion from the secondary air induced combustion is utilized to heat the entrained coke particles which are returned to the coking zone. Pollution control benefits are obtained due to lower concentrations of CO and entrained coke particles released to the atmosphere.

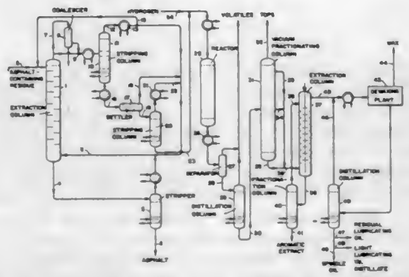
3,414,505
HYDROCRACKING OF DISTILLATES
Percival C. Keith, Peapack, and Michael C. Chervenak, Pennington, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 325,300, Nov. 21, 1963. This application Nov. 9, 1966, Ser. No. 593,037
2 Claims. (Cl. 208—108)

This invention pertains to a highly flexible distillate cracking process for making a wide array of distillate and gasoline products of completely satisfactory quality. It comprises essentially the conversion of liquid gas oil having a boiling range of about 325° to about 1100° F.



to a high quality heater oil and desulfurized lighter material by use of an ebullated bed technique employing a dual function catalyst.

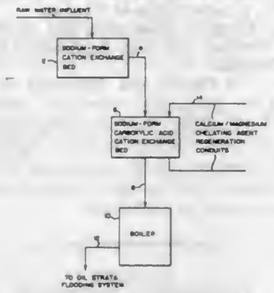
3,414,506
LUBRICATING OIL BY HYDROTREATING PENTANE-ALCOHOL-DEASPHALTED SHORT RESIDUE
Nicolaas Van Lookeren Campagne, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 10, 1964, Ser. No. 388,402
Claims priority, application Netherlands, Aug. 12, 1963, 296,536
2 Claims. (Cl. 208—309)



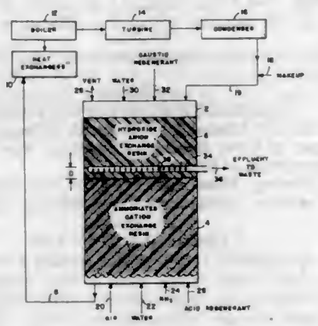
1. A process for extracting lubricating oils and potential lubricating oils from asphalt-containing residues which comprises contacting the residues with a solvent mixture consisting essentially of a C_4–C_7 aliphatic hydrocarbon and a C_1–C_4 alcohol, the concentration of alcohol in the solvent mixture being dependent upon the alcohol carbon number and varying between the range of 15–35 percent by volume for methanol and the range of 55–80 percent by volume for butanol, said hydrocarbon having a boiling point lower than said alcohol, separating an asphaltic raffinate phase from an oleaginous extract phase, evaporating solvent hydrocarbon from the extract phase which results in the formation of a liquid alcohol phase and a de-asphalted oil phase, and recovering de-asphalted oil.

3,414,507
METHOD FOR TREATING HIGH HARDNESS WATER HAVING MAJOR AMOUNTS OF SODIUM THEREIN
Calvin Calmon, Springfield Township, Burlington County, N.J., assignor to Ritter Pfaudler Corporation, a corporation of New York
Filed Aug. 30, 1965, Ser. No. 483,612
7 Claims. (Cl. 210—32)

A process of softening water which comprises: pretreating the same with a strong cation exchanger to reduce the hardness to less than 30 p.p.m.; and then removing the remaining hardness by treatment with carboxylic acid cation exchanger. The exchanger is periodically regenerated by a chelating agent or a strong inorganic acid.



3,414,508
CONDENSATE PURIFICATION PROCESS
Samuel B. Applebaum, Philadelphia, and George J. Crits, Havertown, Pa., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 411,241, Nov. 16, 1964. This application Mar. 21, 1967, Ser. No. 624,947
6 Claims. (Cl. 210—32)



A condensate purification process involves demineralization in a mixed bed exchanger, including anion exchange resin granules of relatively lower density and at least ultimately ammoniated cation exchange resin granules of relatively higher density under conditions minimizing alkali metal leakage. The result is attained by preventing access of alkali regenerant to the cation exchange resin. The resins are separated into layers and regeneration is accomplished either in the same vessel or in different vessels.

3,414,509
DESALINIZATION OF AQUEOUS SOLUTIONS
Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Original application June 19, 1964, Ser. No. 376,561, now Patent No. 3,351,549, dated Nov. 7, 1967. Divided and this application Aug. 29, 1967, Ser. No. 663,989
5 Claims. (Cl. 210—32)

A composition suited for use in a process for separating water from an aqueous salt solution. Suitable compositions are water-insoluble polymers of an aromatic, ethylenically unsaturated amino acid, the acid-acting group of which being selected from carboxyl and sulfonic. The compositions are further characterized in that the acid-acting group is substituted on a carbon atom separated from the carbon atom bearing the amino group by not more than five intervening carbon atoms. A preferred specie is an aromatic unsaturated amino acid containing a nuclear vinyl radical.

3,414,510
METHOD FOR SELECTIVELY REMOVING CHROMATES
Alfred W. Oberhofer, Alsip, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 29, 1968, Ser. No. 709,182
8 Claims. (Cl. 210—37)

Removal of chromate ions from water containing a large amount of total dissolved solids by contacting the water with an acidified weakly basic anion exchange resin, preferaoly in microporous form, to selectively remove chromates from the water.

3,414,511
METHOD OF REMOVING OIL FROM POLLUTED WATER USING EXPANDED VERMICULITE
Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Mar. 10, 1967, Ser. No. 622,097
8 Claims. (Cl. 210—40)

Exfoliated vermiculite is floated on oil polluted water to absorb oil which is removed from the water by skimming the vermiculite from the water.

3,414,512
METHOD OF FLOCCULATING SOLIDS
Tegner A. Johnson, Grand Rapids, Minn., assignor to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Nov. 30, 1966, Ser. No. 597,898
2 Claims. (Cl. 210—51)

Many ore concentrating processes involve the use of large quantities of water. Before such water can be reused in the process or drained into streams or lakes, it may be necessary to settle out suspended solids. A common flocculating agent for hastening settling of the solids is a combination of caustic soda and starch. This flocculent is ineffective when used in surface drainage water from certain sources. The present invention provides a method of overcoming this difficulty by adding a combination of reagents to the water. The reagents are magnesium sulfate, manganese sulfate, and calcium hydroxide. The caustic starch flocculent becomes effective when used in surface drainage water which has been treated with these additional reagents.

3,414,513
PROCESS OF TREATING A DIGESTED DILUTED SEWAGE SLURRY
Frank C. Buhl, Birmingham, Mich., and Ronald D. Lees, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 15, 1966, Ser. No. 594,399
7 Claims. (Cl. 210—54)

1. Process of treating a digested diluted sewage slurry which comprises contacting said sewage slurry with an acrylamide-beta methacrylyloxyethyltrimethylammonium methyl sulfate copolymer, thereby (1) increasing the rate at which suspended solids flocculate and settle out of said sewage and (2) increasing the amount of suspended solids which flocculate and settle out.

3,414,514

PROCESS OF DEWATERING A CONCENTRATED SEWAGE SLURRY

Frank C. Buhl, Birmingham, Mich., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,398

9 Claims. (Cl. 210—54)

1. Process of dewatering a concentrated sewage slurry which comprises contacting said sewage slurry with an acrylamide-beta methacrylyloxyethyltrimethylammonium methyl sulfate copolymer, and then dewatering said resulting slurry.

3,414,515

COLOR IMPARTING COMPLEXES OF STARCH ETHERS FOR SWIMMING POOLS

Charles L. Mehltretter and William B. Roth, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,744

1 Claim. (Cl. 210—62)

Swimming pools can be disinfected with nonirritant iodine instead of chlorine and at the same time be given a stable, highly attractive green to blue coloration that maskes the expected yellow tint of the uncomplexed excess iodine by using in lieu of chlorine the deeply blue iodine complex of a hydroxyalkyl ether of amylose and of amylose-containing starches having a D.S. of 0.014–0.050 or by forming the said complex in situ.

3,414,516

NYLON BEARING MATERIAL

Wilbert M. Lair and John S. Taylor, Newark, Del., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 463,565, June 14, 1965. This application May 5, 1966, Ser. No. 556,530

11 Claims. (Cl. 252—12)

A self-lubricating bearing element having a low coefficient of friction comprising a substantially non-porous load bearing body of nylon having substantially uniformly dispersed therein colloidal sized particles of a sorbent with sorbed lubricant.

3,414,517

METHOD OF PROTECTING METAL SURFACES AGAINST ABRASIVE WEAR

Benjamin Mosier, Houston, Tex., and Miles R. McCorkle, Oswego, Paul L. Du Brow, Chicago, and Byron E. Marsh, Western Springs, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 341,435, Jan. 30, 1964. This application Dec. 15, 1966, Ser. No. 601,833

4 Claims. (Cl. 252—33)

Dilute solutions of water-soluble sulfonated fatty acid esters (viz. the methyl ester of alpha-sulfo stearic acid and its sodium salt) are employed in aqueous mediums to protect metal surfaces, particularly the wear surfaces of submersible oil well pumps, against abrasive wear. The sulfonated fatty acid esters contain the sulfur in a C—S linkage, as distinguished from the C—O—S linkage of sulfated fats.

3,414,518

PREPARATION OF CARBOXYLIC ACID-KETONE MIXTURE FROM CERTAIN OLEFIN MIXTURES

Michael Dubeck, Birmingham, and Lawrence C. Mitchell, Clawson, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Oct. 1, 1964, Ser. No. 400,941. Divided and this application Feb. 8, 1968, Ser. No. 719,283

4 Claims. (Cl. 252—55)

A process for preparing carboxylic acid-ketone mixtures by (a) ozonizing non-vinylidene-vinylidene olefin mixtures in a lower alkanol reaction medium (b) then oxidizing the ozonized olefin mixture in the presence of an aqueous mineral acid using an oxygen containing gas. The product is useful as a lubricant.

3,414,519

CORROSION INHIBITOR

Eric Beynon, Suffern, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 471,495, June 21, 1965. This application July 7, 1967, Ser. No. 659,263

7 Claims. (Cl. 252—75)

For use in an aqueous cooling liquid for an internal combustion engine containing a water-miscible alcohol as the principal non-aqueous ingredient, a combination of corrosion inhibitors consisting of, based on the alcohol present, from about 0.7 to about 10 weight percent of a borate of an alkali or an alkaline earth metal, from about 0.007 to about 4 weight percent of a nitrite of an alkali or an alkaline earth metal, from about 0.007 to about 4 weight percent of benzotriazole and/or a related compound, and from about 0.1 to about 20 weight percent of an oil inhibitor which is a polar-type oil.

3,414,520

DETERGENT COMPOSITION

Francis Robert Maxwell McDonnell, Bebington, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Apr. 21, 1965, Ser. No. 449,895

Claims priority, application Great Britain, Apr. 27, 1964, 17,276/64

6 Claims. (Cl. 252—110)

1. A spray-dried soap powder having a reduced tendency to form scum when used in hard water and a reduced tendency to form surface clots when added to water, said powder consisting essentially of by weight of the powder:

from 30 to 60% of soap;

from 2.5 to 20% of sodium tripolyphosphate;

from 1 to 10% of a neutralised sulphation product of an ethylene oxide adduct, containing a polyethylene oxide chain of up to 20 ethylene oxide units, of a C_{10-22} aliphatic alcohol where the neutralising cation is an alkali-metal, ammonium or substituted ammonium ion.

3,414,521

ACID CORROSION INHIBITORS

Fred N. Teumac, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,602

10 Claims. (Cl. 252—149)

The invention is a method of pickling and cleaning a metal above hydrogen in the electromotive series in which the metal is contacted with an aqueous acid containing a small but effective amount up to 0.5 percent by weight of (1) an amino thiol or amino thioether, such compounds being further characterized by the amino nitrogen and sulfur atoms being separated from each other by

divalent two carbon atom hydrocarbon groups or (2) an N,N′ ethylene thiourea.

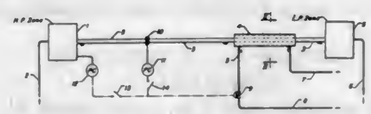
3,414,522

THROTTLING LIQUID STREAMS CONTAINING PARTICLE-FORM SOLIDS

James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 79,662, Dec. 30, 1960. This application July 28, 1965, Ser. No. 479,030

8 Claims. (Cl. 252—317)



Method of transferring a solids-containing liquid stream from a high pressure zone to a low pressure zone, without use of a control valve, by passing said stream through an unobstructed elongated conduit sized to impose substantial frictional pressure loss on the stream, and varying the viscosity of the stream flowing therethrough in such a manner as to regulate some other process variable such as flow rate or pressure. Stream viscosity is preferably varied by heating or cooling. Specific applications of this method include transfer of hydrogel spheres in a catalyst manufacturing process, and control of slurry streams in a fluid catalytic cracking process.

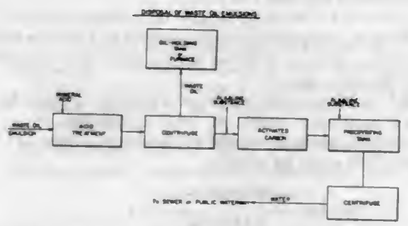
3,414,523

DISPOSAL OF WASTE OIL EMULSIONS

Joseph T. Jockel, River Vale, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 30, 1964, Ser. No. 400,345

13 Claims. (Cl. 252—324)



A process for disposing of waste oil-in-water emulsions by acidifying the emulsion, centrifuging the resulting emulsion to separate an oil phase which is recovered and a water phase, passing the water phase through an adsorbent and treating it with a base and disposing of the treated water phase.

3,414,524

CATALYSIS

James W. Abson, Cheadle Heath, Stockport, Manfred Landau, Cheadle Hulme, Maurice C. Langton, Withington, Manchester, and Alan Molyneux, Ashton-on-Mersey, Sale, England, assignors to Simon-Carves Limited, Cheadle Heath, Stockport, England

Filed Sept. 18, 1964, Ser. No. 397,388

Claims priority, application Great Britain, Sept. 25, 1963, 37,663/63; July 23, 1964, 29,651/64

10 Claims. (Cl. 252—410)

Inactive catalytic material is activated or reactivated by contacting the material with a bacteria containing solution. Particularly useful are the sulfate-reducing bacteria which reduce the metal sulfate content of catalytic material containing an excess of metallic sulfate.

3,414,525

CATALYST MANUFACTURE

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,624

7 Claims. (Cl. 252—453)

Preparation of catalyst by dispersing a crystalline aluminosilicate in a silica sol, effecting gellation of the sol and aging the gel at an alkaline pH, thereafter adjusting the pH of the gel to from about 3.5 to about 5.0, commingling a partial hydrolysis product of aluminum sulfate with the aforesaid silica gel, and then completing the hydrolysis of said partial hydrolysis product in admixture with the silica gel containing the aluminosilicate.

3,414,526

FLAME-RETARDANT, NONSHRINKING UREA-FORMALDEHYDE FOAMS

Paul J. Mason, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,864

9 Claims. (Cl. 260—2.5)

A nonshrinking, flame-retardant, solid urea-formaldehyde foam prepared from a mixture of (a) an aqueous solution of a urea-formaldehyde resin (b) a polyethylene glycol having a molecular weight between about 200 and 600 (c) furfuryl alcohol and (d) an aqueous solution of a foaming agent and an acid curing agent.

3,414,527

DIHYDROPYRANYL ESTER BLENDS

Josef Sikora, St. Hilaire, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed May 31, 1966, Ser. No. 553,642

Claims priority, application Great Britain, July 6, 1965, 28,575/65

20 Claims. (Cl. 260—2.5)

Novel foamed cellular polymeric materials from blends of dihydropyranyl group containing esters useful for upholstery mattresses, etc.

3,414,528

BLOWN SPONGE RUBBER

Warren S. Hall, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,092

14 Claims. (Cl. 260—2.5)

Rubber sponge, having improved physical properties, is produced by compounding a polymer that contains carbon-tin bonds with a blowing agent and thereafter causing the blowing agent to foam the resulting composition.

3,414,529

CURABLE ELASTOMERIC EPICHLOROHYDRIN POLYMER COMPOSITIONS AND METHOD FOR CURING SAID COMPOSITIONS

Harold A. Green, Havertown, and Elwood E. Huntzinger, Springfield, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 9, 1967, Ser. No. 681,900

5 Claims. (Cl. 260—2)

Curing or vulcanizing of elastomeric epichlorohydrin homopolymers and copolymers with curing compositions including triethylenediamine or a C-methyl triethylenediamine. The preferred compositions also include a diazaheteromonocyclic compound such as an alkyl imidazole or mercaptoimidazoline.

3,414,530

GRAFT POLYMERS OF POLYALKYLENE OXIDES ON STARCH AND DEXTRIN

Albert Zilkha, Jerusalem, Menashe Tahan, Beersheba, and Gabriel Ezra, Haifa, Israel, assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,669

Claims priority, application Israel, Dec. 23, 1965, 24,857

9 Claims. (Cl. 260—9)

Graft copolymers of polyalkylene oxides on starch and dextrin polysaccharides having utility as adhesives, emulsifiers and thickeners are prepared by reacting under aprotic conditions the alkali metal alkoxide derivative of the polysaccharide with one or more of the alkylene oxides.

3,414,531

DECORATIVE COATING COMPOSITION FOR ACETAL PLASTIC SURFACES

Russell L. Sears, St. Clair Shores, and Robert G. Latham, Farmington, Mich., assignors, by mesne assignments, to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,657

9 Claims. (Cl. 260—15)

The present invention relates to a decorative coating for direct application to acetal plastic surfaces comprising as a film-forming composition a three component system comprising a mixture of tris-β-chloro ethyl phosphate; a partial ester of a polysaccharide selected from the group consisting of nitrocellulose, cellulose acetate propionate and ethyl cellulose; and one of the resins selected from the group consisting of urea formaldehyde resins and amino formaldehyde resins.

3,414,532

STABILIZATION OF POLYPROPYLENE AGAINST DEGRADATIVE DETERIORATION ON LONG-TERM EXPOSURE TO ELEVATED TEMPERATURES ABOVE 525° F.

Arthur C. Hecker, Forest Hills, N.Y., and Aaron Rosenbaum, Millburn, and Norman L. Perry, Wayne, N.J., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York

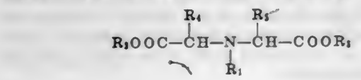
No Drawing. Continuation-in-part of application Ser. No. 104,514, Apr. 21, 1961. This application Apr. 19, 1965, Ser. No. 449,277

25 Claims. (Cl. 260—23)

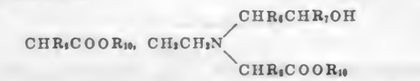
Stabilizer combinations are provided, useful in the stabilization of polypropylene against degradative deterioration in physical properties as a result of long-term exposure to elevated temperatures. The stabilizer combinations contain an aminoacetic acid compound and another polypropylene stabilizer, such as a polynuclear phenol, an organic phosphite, a polyvalent metal salt of an organic acid, and/or a thiodipropionate. A mononuclear phenol also can be employed with these stabilizer combinations.

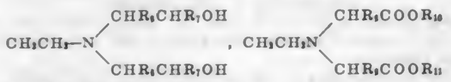
In addition, polypropylene compositions are provided which contain as a stabilizer the aminoacetic acid compound, alone, or with one or more of the above-mentioned stabilizers.

The aminoacetic acid compound has the formula:



wherein R_1 is selected from the group consisting of CHR_6CHR_7OH,

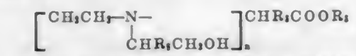




and a polymeric chain of *n* units



where *n* is an integer from 1 to 7, and a polymeric chain of *n* units of



where *n* is an integer from 1 to 7; and wherein R_4, R_5, R_6, R_7, R_8, and R_9 are selected from the group consisting of hydrogen, alkyl groups of from one to three carbon atoms and hydroxyalkyl groups containing from one to four carbon atoms; and R_2, R_3, R_{10} and R_{11} are selected from the group consisting of hydrogen, aliphatic, cycloaliphatic, aromatic and heterocyclic groups having from one to about eighteen carbon atoms.

3,414,533

MOLDING MATERIALS BASED ON BITUMEN AND ETHYLENE COPOLYMERS

Hans-Georg Trieschmann, Hambach, Weinstrasse, and Leo Unterstenhoefer, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,118

Claims priority, application Germany, Apr. 14, 1965, B 81,449

6 Claims. (Cl. 260—28.5)

1. A molding material containing:

(A) 30 to 99 parts by weight of bitumen having a penetration of from 1 to 210;

(B) 0.5 to 69.5 parts by weight of a copolymer of 30 to 97% by weight of ethylene and 70 to 3% by weight of a vinyl ester and/or an acrylic ester and/or methacrylic ester; and

(C) 0.5 to 30 parts by weight of a polyisobutylene having a molecular weight of 1000 to 200,000,

the total of the parts by weight of the components (A) to (C) being 100 parts by weight.

3,414,534

ADHESIVE COMPOSITIONS COMPRISING VINYL CHLORIDE POLYMER, POLYMERIZABLE MATERIAL AND LEAD CONTAINING STABILIZER

John Jackson Huitson, Banstead, and George Colin William Randall, Sutton, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Continuation-in-part of application Ser. No. 258,597, Feb. 14, 1963. This application Aug. 23, 1965, Ser. No. 481,911

Claims priority, application Great Britain, Mar. 10, 1962, 9,313/62; Aug. 22, 1962, 32,161/62

5 Claims. (Cl. 260—31.6)

An adhesive vinyl polymer composition comprising a vinyl chloride polymer, a stabilizer which is selected from basic lead carbonate, di-basic lead phosphite, tri-basic lead sulphate or the lead salts of an organic acid containing less than 10 carbon atoms per molecule; a polymerization catalyst which acts as a free radical initiator, and as the sole polymerizable organic compound certain specified allyl compounds such as triallyl phosphate.

3,414,535

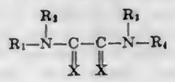
POLYVINYL CHLORIDE STABILIZED BY OXAMIDES

Wendell A. Barnes, Cheswick, and Norman W. Franke, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,709

7 Claims. (Cl. 260—31.8)

A composition of matter comprising a resinous vinyl chloride homopolymer; between 20 and 80 weight percent of the homopolymer of a neutral branched-chain alkyl ester plasticizer and between 0.5 and 10 weight percent of the vinyl chloride homopolymer of an oxamide. The oxamide has the formula:



where *x* is selected from the group consisting of oxygen and sulfur; and R_1, R_2, R_3 and R_4 can be the same or different and are selected from the group consisting of hydrogen and a saturated alkyl radical having between 1 and 20 carbon atoms.

3,414,536

POLYPHENYLENE ETHERS STABILIZED WITH PHOSPHORAMIDES AND TETRA-ALKYLAMMONIUM-TETRAFLOUROBORATE

Klaus E. Holoch, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,039

7 Claims. (Cl. 260—45.9)

A stabilized polyphenylene ether composition consisting of a major portion of a polyphenylene ether and a minor portion of a stabilizer consisting essentially of a hexaalkylphosphoric triamide and a tetraalkylammonium-tetrafluoroborate.

3,414,537

STABILIZATION OF POLYAMIDES

Gerardus P. Dikötter, Geleen, and Arnoldus A. W. Schaapveld and Pierre J. Franssen, Stein, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,465

Claims priority, application Netherlands, Feb. 4, 1965, 6501394

2 Claims. (Cl. 260—45.75)

Stabilizers for polyamide compositions are disclosed, composed of the complex compounds of a copper salt and lysine hydriodide.

3,414,538

POLYOLEFINS STABILIZED WITH A THREE-COMPONENT SYSTEM

Eberhard Prinz and Otto Mauz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,610

Claims priority, application Germany, Sept. 5, 1963, F 40,673

3 Claims. (Cl. 260—45.85)

Stabilization of polyolefins with phenol derivatives, aromatic amines, substituted aminophenols and organic sulfides; stabilization of polyolefins with a synergistic, three component mixture of a bisphenolalkanoic acid derivative, an organic phosphite and an aliphatic thioether.

3,414,539

PROCESS FOR STABILIZING CIS 1,4-POLYBUTADIENE WITH TETRA-ALKYL BISPHENOL

Wendell S. Cook, Canal Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,607

4 Claims. (Cl. 260—45.95)

Polybutadiene produced by lithium-based catalyst and containing 30 to 40 percent cis-1,4-structure is stabilized against deterioration during shear agitation by 2,2′,6,6′-tetra-t-butyl-4,4′-biphenol.

3,414,540

METHODS OF MAKING ORGANOPOLYSILOXANE FLAKES

Duane C. Nugent, Perrysburg, and Dale C. Woodward, Sylvania, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed May 11, 1967, Ser. No. 637,662

11 Claims. (Cl. 260—46.5)

Methods of reproducibly making solid gel-free flakes of solvent-soluble organopolysiloxane precured polymers, the flakes having a melting point of about 50° C. to 65° C., being tack free at room temperature, and being substantially free from gel. The flakes are easily dissolved in solvents such as butanol and acetone for coating, laminating and molding applications.

3,414,541

THERMOPLASTIC RESIN REACTION PRODUCT OF 1,4-BIS(p-HYDROXYCUMYL)BENZENE WITH EPICHLOROHYDRIN

Oliver A. Barton, Florham Park, and Walter W. Littell, Mount Tabor, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed July 13, 1964, Ser. No. 381,973

7 Claims. (Cl. 260—47)

This specification discloses a novel high molecular weight thermoplastic resin and a process for preparing it whereby 1,4-bis(p-hydroxycumyl)benzene is reacted with epichlorohydrin in a molar ratio of 1:1.02 to 1:1.07 in the presence of an alkali. The polymers of the invention are useful for the preparation of molded articles, self-sustaining films, and adhesives.

3,414,542

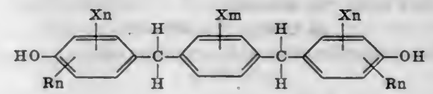
POLYCARBONATES

John Vitrone, Parsippany-Troy Hills Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Sept. 25, 1961, Ser. No. 140,220, now Patent No. 3,232,993, dated Feb. 1, 1966. Divided and this application July 12, 1965, Ser. No. 471,473

4 Claims. (Cl. 260—47)

Polycarbonates are formed by the reaction of phosgene with halogenated bisphenols of the formula:



wherein R is a member of the group consisting of hydrogen and alkyl radicals, preferably lower alkyl radicals (i.e., containing from 1 to 4 carbon atoms), X is a halogen, *n* is an integer from 0 to 4 and *m* is an integer from 1 to 4. X may be the same or different halogens, but, in each case, is preferably chlorine. These polycarbonates are flame resistant and have high glass transition and fusion temperatures. They may be molded into tough, clear and nonflammable films.

3,414,543

HETEROCYCLIC POLYMERS PREPARED FROM THE REACTION OF TETRACARBOXYLIC ACID DIANHYDRIDES AND TETRAMINES

Robert Michael Paufler, Olympia Fields, Ill., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 427,129, Jan. 21, 1965. This application May 19, 1967, Ser. No. 639,603

15 Claims. (Cl. 260—47)

A shapeable linear amino polyamide acid and the corresponding polyheterocyclic compound to which it is converted by heating. The process of preparing the above polymers by reacting a tetraamine and a tetracarboxylic acid dianhydride.

3,414,544

METHOD OF PREPARING COPOLYMERS OF FORMALDEHYDE AND FURFURAL

François Meiller, Palaiseau, France, assignor to Produits Chimiques Pechiney Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed May 4, 1964, Ser. No. 364,810

Claims priority, application France, May 6, 1963, 933,793

19 Claims. (Cl. 260—67)

New heat-stable high molecular weight polyoxymethylene copolymers containing from 0.5 to 20% of recurrent oxyfurfurylidene radicals and method of producing them by copolymerization under anhydrous oxygen-free conditions in the presence of an organic anionic catalyst.

3,414,545

FULLY CONJUGATED AROMATIC POLYMERS

Hartwig C. Bach., Durham, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,330

10 Claims. (Cl. 260—78)

Fully conjugated, heat resistant aromatic polymers having particular utility as semiconductors are prepared by oxidative coupling of a monomer containing glycyl methylene groups. The formation of polymer is by carbon-carbon double bond formation through the carbon atoms of the methylene groups.

3,414,546

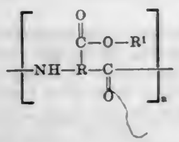
AROMATIC POLYAMIDE-ESTERS FROM AMINO ARYL DICARBOXYLIC ACID DIESTERS

James H. Werntz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 395,069, Sept. 8, 1964. This application Apr. 14, 1967, Ser. No. 630,848

11 Claims. (Cl. 260—78)

New polyamide-esters of the recurring unit



process of making them and their corresponding polyimides the esters being useful as adhesives and coatings and the polyimides as films and other shaped articles.

3,414,547

POLYMERIZATION PROCESS

Ralph B. Thompson, Hinsdale, and Myron J. Jursich, Chicago, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 13, 1963, Ser. No. 287,476

16 Claims. (Cl. 260—78.5)

1. In a batch polymerization method where the monomer compositions are only added at the initiation of the polymerization reaction, which comprises the steps of adding a free radical-producing catalyst selected from the group consisting of peroxidic and redox catalysts to a solution containing at least one water-dispersible monomer having an ethylenically unsaturated group and containing in a side chain, a hydrophilic group from the class consisting of carboxylic acid, carboxylic acid anhydride, carboxylic acid amide, hydroxy, pyridine, pyrrolidone, hydroxy alkyl ether, alkoxy, and carboxylic acid salt groups, said monomer being capable of addition polymerization, and allowing polymerization of said monomer to occur in the presence of said catalyst; the improvement which comprises addition to the partially polymerized monomer of at least a catalytic amount of an organic azo compound containing an acyclic azo group having bonded to each nitrogen a discrete carbon atom of the class consisting of aliphatic and cycloaliphatic carbon atoms, at least one of said discrete carbon atoms being tertiary and one of the carbon atoms bonded to said tertiary carbon atom having its remaining valences satisfied only by the elements selected from the group consisting of oxygen and nitrogen, said addition being carried out at a time when at least one-half of the exotherm of said polymerization reaction has occurred, said carrying out a post-polymerization reaction step in presence of said azo catalyst whereby at the termination of said reaction step unreacted starting monomer content is substantially reduced.

3,414,548

ADDITION POLYMERS OF DICYCLO PENTADIENE ISOCYANATES AND VINYLIC COMPOUNDS

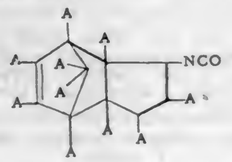
Herbert Bartl, Cologne-Stammheim, and Gerhard Muller and Rudolf Merten, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 20, 1965, Ser. No. 457,478

Claims priority, application Germany, May 26, 1964, F 42,990

6 Claims. (Cl. 260—85.5)

A process for preparing copolymeric polyisocyanates by reacting the polycycloaliphatic isocyanate addition product of carbamic acid-O-alkyl or -aryl esters with dicyclopentadienes with a compound containing at least one vinyl group, wherein the polycycloaliphatic isocyanate has the structure



wherein A is a member selected from the group consisting of hydrogen, halogen, an alkyl radical, a cycloalkyl radical, an aryl radical, an alkoxy radical, an alkoxy carbonyl radical and an aroxy radical.

3,414,549

VINYL-BIS(TRIFLUOROMETHYL) CARBINOL AND COPOLYMERS

John R. Schaefgen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,081

7 Claims. (Cl. 260—85.5)

Vinyl-bis(trifluoromethyl) carbinol and vinylethynyl-bis(trifluoromethyl) carbinol are disclosed and are useful in fiber-forming copolymers with acrylonitrile. Such fibers exhibit improved soiling resistance and hot-wet recovery properties.

3,414,550

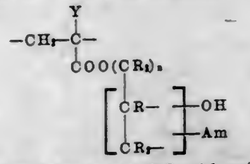
CHELATING RESINS FROM EPOXYALKYL ACRYLATE POLYMERS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by mesne assignments, of seventy-five percent to said D'Alelio and twenty-five percent to Walter J. Monacelli, Cleveland Ohio

No Drawing. Continuation-in-part of application Ser. No. 28,561, May 12, 1960. This application May 13, 1965, Ser. No. 455,616

10 Claims. (Cl. 260—86.7)

The disclosure of this application involves a cross-linked chelating resin having the formula:



wherein Y, R, *n* and Am are as defined hereinafter, which is illustrated by the method of preparing such polymers which comprises the reaction of a cross-linked polymer having a repeating unit of the acrylate type with an oxirane radical in the ester group thereof, said oxirane structure being reacted with an amino acid of the type described hereinafter. A typical polymer is one having repeating units derived by the polymerization of glycidyl acrylate thereafter having the oxirane ring of the glycidyl group reacted with an aminoacid, such as one having the radical —$N(CH_2CHOOH)_2$ therein.

3,414,551

MODIFICATION OF CRYSTALLINE PROPYLENE POLYMERS

Donald E. Reid and Harold M. Spurlin, Wilmington, Del., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 24, 1965, Ser. No. 466,815

5 Claims. (Cl. 260—88.2)

1. A process for reacting maleic anhydride with a crystalline propylene polymer which comprises fluidizing said polymer in particulate form in contact with vapors of maleic anhydride and an organic peroxygen compound in an atmosphere of inert gas at a temperature of from about 80° C. up to a temperature about 10° below the melting point of the polymer in the absence of a solvent for the polymer for a time to cause chemical reaction of the polymer with from about 0.2 to 10% of maleic anhydride, based on the weight of the polymer.

3,414,552

SIMULTANEOUS HYDROLYSIS AND POLYMERIZATION OF ACRYLAMIDES

Clyde Stephen Scanley, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut

Filed June 29, 1964, Ser. No. 378,578

6 Claims. (Cl. 260—89.7)

A simultaneous process for the polymerization and hydrolysis of an acrylamide at a temperature of from about 5° C. to 100° C. and in the presence of a catalyst and an alkaline hydrolyzing agent wherein a neutral alkaline metal salt is added to the reaction media in an amount ranging from about 8% to about the saturation point of said salt in the reaction media.

3,414,553

POLYMERIZATION OF STYRENE

Roland J. Kern, Miamisburg, Ohio, assignor to Monsanto Company, a corporation of Delaware

Filed Mar. 31, 1955, Ser. No. 498,254

11 Claims. (Cl. 260—93.5)

1. A process for making crystalline polystyrene which comprises polymerizing styrene in the substantial absence of a solvent, at a temperature within the range of from —40° C. to the boiling point of styrene, and in admixture with a catalyst prepared by the interaction of a trialkylaluminum, wherein each alkyl radical has from 2 to 12 carbon atoms, with titanium tetrachloride, the mole ratio of aluminum to titanium being within the range of from 0.3:1 to 10:1 and the amount of said catalyst being within the range of from 0.1 to 5 weight percent based on the weight of styrene.

3,414,554

POLYMERIZATION PROCESS AND CATALYST

Gerald R. Kahle and Charles W. Moberly, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed July 6, 1965, Ser. No. 469,874

6 Claims. (Cl. 260—93.7)

A catalyst formed by admixing a compound of the formula R_mMX_n wherein R is selected from the group consisting of a saturated acyclic hydrocarbon radical, a saturated cyclic hydrocarbon radical, an aromatic hydrocarbon radical, and combinations thereof, having 1 to 20 carbon atoms, M is a metal selected from the group consisting of aluminum, gallium, indium, and thallium, wherein X is a halogen, *m* is at least 1 and $m+n$ is 3, a titanium chloride-aluminum chloride complex having the approximate formula $TiCl_3 \cdot \frac{1}{3}AlCl_3$ and iodine when used to polymerize an aliphatic 1-olefin having up to 8 carbon atoms per molecule results in the formation of solid polymers having a higher flexural modulus and a lower xylene-soluble content.

3,414,555

NOVEL NICKEL CONTAINING SUBSTANCES AND THEIR USE AS POLMERISATION CATALYSTS IN PREPARATION OF POLYOLEFINS

Derek Keith Jenkins, Southampton, and Donald George Timms, East Boldre, England, assignors to The International Synthetic Rubber Company Limited, Southampton, England, a corporation of the United Kingdom

No Drawing. Filed Nov. 23, 1965, Ser. No. 509,423

Claims priority, application Great Britain, Nov. 24, 1964, 48,304/64

9 Claims. (Cl. 260—94.3)

An olefin polymerization catalyst comprising the reaction product of a zerovalent nickel-phosphorus compound of the formula $Ni(PA_xB_{3-x})_4$ wherein A is alkyl, cycloalkyl, aryl, substituted aryl, substituted alkyl, alkoxy, aryloxy or hydrogen; B is halogen or psuedo halogen; and *x* is a whole number in the range 0–3, and, a transition metal compound containing at least one halogen-to-metal bond, and optionally, a transition-metal-free Lewis acid.

3,414,556
CHLORINATED POLYETHYLENE

William M. Bungo, Parsippany, and Carl R. Eckardt, Morris Plains, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 15, 1965, Ser. No. 448,283
7 Claims. (Cl. 260—94.9)

A new process for chlorinating polyethylene comprising the steps of:

(a) preparing an aqueous slurry containing up to about 22% by weight of a particulate polyethylene wax having a molecular weight of no greater than about 18,000 and an average particle size of no greater than about 600 microns:

(b) contacting said slurry with up to 1 part by weight of chlorine per part of unchlorinated wax per hour at a temperature of up to about 70° C. for a time sufficient to afford a chlorinated polyethylene wax containing up to about 75% by weight of chlorine:

(c) after chlorination of said wax has commenced, contacting said wax with from about 0.05% to about 0.75% by weight of oxygen based on unchlorinated wax, said contacting with oxygen being substantially completed before said wax reaches a chlorine content of greater than about 45% by weight; and

(d) separating the thus chlorinated polyethylene wax from said slurry.

3,414,557
MASTICATING POLYBUTADIENE TO REDUCE COLD FLOW

Gerard Kraus, Bartlesville, Okla., and James J. Brennan, Jr., Scituate, Mass., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Application June 22, 1962, Ser. No. 204,639, now Patent No. 3,238,187, dated Mar. 1, 1966, which is a continuation-in-part of applications Ser. No. 127,101, and Ser. No. 127,102, July 27, 1961. Divided and this application Aug. 30, 1965, Ser. No. 483,825
6 Claims. (Cl. 260—94.7)

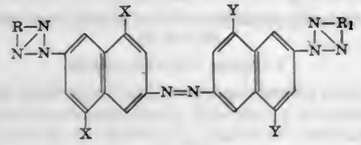
1. A method of reducing cold flow in unvulcanized polybutadiene containing at least 40 percent cis -1,4 configuration which comprises masticating said polybutadiene for at least 0.5 minute under high shear conditions in which the maximum velocity gradient is at least 150 reciprocal seconds while excluding oxygen from said polybutadiene, said polybutadiene reaching a temperature of about 240 to 460° F.

3,414,558
BIS TRIAZOLE AZO DYESTUFFS

Horst Nickel and Fritz Suckfüll, Leverkusen, and Karl-Heinz Schündehutte, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,438
Claims priority, application Germany, Sept. 11, 1964, F 43,957
4 Claims. (Cl. 260—157)

Bis-triazole azo dyestuffs of the formula:



wherein R and R_1 represent aromatic radicals such as naphthylene in which the nitrogen atoms of the triazole groups are in the o-position to one another; one X is a sulfonic acid group and the other X is hydrogen or a sulfonic acid group; one Y is a sulfonic acid group and the other Y is hydrogen or a sulfonic acid group.

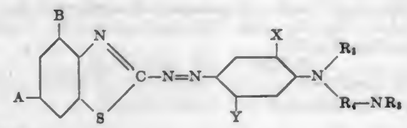
Many of the dyestuffs of this class dye cotton and other materials to yellow shades with excellent light fastness.

3,414,559
BENZOTHIAZOLE AZO DYES

Mario Francesco Sartori, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 274,338, Apr. 19, 1963. This application Oct. 11, 1965, Ser. No. 494,875
6 Claims. (Cl. 260—158)

Water-soluble cationic, and water-insoluble pendant tertiary amino, benzothiazole azo dyes which can be used in the dyeing of acid-modified acrylic and acid-modified polyester fibers. The following formula illustrates the basic benzothiazole azo structure of these dyes:



wherein

A is H, CH_3, lower alkoxy, Cl, Br, NO_2, CN, CF_3, R—CO—, R—SO_2—, $R_1R_2NSO_2$— or lower alkyl-O—CO— with the proviso that when B is H, CH_3 or lower alkoxy then A is Cl, Br, NO_2, CN, CF_3, R—CO—, R—SO_2—, $R_1R_2NSO_2$— or lower alkyl-O—CO—;

R is lower alkyl, CF_3, cyclohexyl, 2-hydroxyethyl, and phenyl which may be substituted with Cl, Br, NO_2, or lower alkyl;

R_1 is H, lower alkyl, or 2-hydroxyethyl;

R_2 is a lower alkyl, 2-hydroxyethyl, benzyl, or phenyl radical;

B is H, CH_3, lower alkoxy, Cl, Br, NO_2, or CN with the proviso that when A is H, CH_3 or lower alkoxy then B is Cl, Br, NO_2 or CN;

X is H, Cl, Br, CH_3, C_2H_5, or lower alkoxy;

Y is NH_2, H, Cl, Br, CH_3, C_2H_5, lower alkoxy, QCONH— or QSO_2NH—, wherein Q is lower alkyl, or phenyl which may be substituted with Cl, Br, NO_2, or lower alkyl with the proviso that when Y is NH_2 then X is Cl, Br, CH_3, C_2H_5 or lower alkoxy;

R_3 is H, lower alkyl, 2-hydroxyethyl, 2-cyanoethyl or lower alkoxyalkyl;

R_4 is an alkylene radical of 2 to 4 C-atoms;

NR_5 represents

$$NR_6R_7 \text{ and } \overset{+}{N}R_6R_7R_8\ A^-$$

wherein

R_6 is lower alkyl, 2-hydroxyethyl, or benzyl;

R_7 is lower alkyl, 2-hydroxyethyl, or benzyl;

R_8 is lower alkyl, 2-hydroxyethyl, or benzyl;

A^- is a water-solubilizing anion such as a chloride ion, a bromide ion, a lower alkyl sulfate ion, a zinc trichloride ion, a p-toluene sulfonate ion, and the like.

The dyes are used in the dyeing of acid-modified acrylic fibers and acid-modified polyester fibers.

3,414,560
POLYFUNCTIONAL LEVOGLUCOSAN ETHERS

Lawrence G. Carlberg, Tacoma, Wash., and Fraidoun Shafizadeh, Missoula, Mont., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

No Drawing. Filed Dec. 6, 1966, Ser. No. 599,368
4 Claims. (Cl. 260—209)

Allyl ether derivatives of levoglucosan made by reacting levoglucosan with an allyl halide are useful intermediates in the production of polyfunctional epoxide resins made by reaction of the allyl ether derivative with an epoxidizing agent. Specific compounds are triallyl levoglucosan and triglycidyl levoglucosan.

3,414,561
PROCESS FOR THE MANUFACTURE OF HYDROXOCOBALAMINE FROM CYANOCOBALAMINE

Jean Boige, 53 Ave. Vercingetorix, Aulnay-sous-Bois, Seine St-Denis, France

No Drawing. Filed May 13, 1966, Ser. No. 549,815
Claims priority, application France, May 21, 1965, 17,936
9 Claims. (Cl. 260—211.7)

Cyanocobalamine is converted to hydroxocobalamine by establishing a solution of cyanocobalamine and an ionizable ferrous salt, the solution having a pH between 3 and 5 and an oxidative potential. A strong base is gradually added until the pH is about 6.2 and the solution changes to a reducing solution. Upon reduction of the cobalt, the cyanide groups are precipitated as ferrous ferrocyanide and the precipitate is removed. Thereafter, the cobalt is oxidized to produce hydroxocobalamine, by bubbling an oxidizing gas through the solution. In this way, uncontrolled reduction and degradation of cobalamine are avoided.

3,414,562
PROCESS FOR PREPARING 1,3,4,5-TETRAHYDRO-5-PHENYL-2H-1,4-BENZODIAZEPIN-2-ONES

Giles Allan Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application June 15, 1964, Ser. No. 375,292, now Patent No. 3,370,091, dated Feb. 20, 1968. Divided and this application Apr. 21, 1967, Ser. No. 632,530
8 Claims. (Cl. 260—239.3)

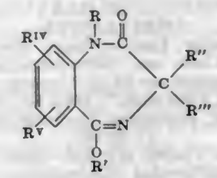
A process for preparing 1,3,4,5-tetrahydro-5-phenyl-2H-1,4-benzodiazepin-2-ones which are a known pharmaceutically useful class of compounds.

3,414,563
CERTAIN 3H-1,4-BENZODIAZEPIN-2(1H)-ONES

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Continuation-in-part of application Ser. No. 392,905, Aug. 28, 1964. This application Mar. 25, 1966, Ser. No. 537,276
4 Claims. (Cl. 260—239.3)

This invention is directed to compounds of the formula:



wherein

R represents lower alkyl

R' represents lower alkyl

R'' represents hydrogen or lower alkyl

R''' represents hydrogen, lower alkyl or phenyl; and

each of R^{IV} and R^{V}, independently, represents hydrogen, halo, lower alkyl, lower alkoxy, loweralkylthio, or loweralkylsulfonyl

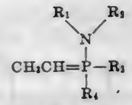
These compounds are useful as tranquilizers.

3,414,564
PROCESS FOR THE PRODUCTION OF 17-ETHYLIDENE STEROIDS

Alan Martin Krubiner, Cedar Grove, and Eugene Paul Oliveto, Glen Ridge, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,346
15 Claims. (Cl. 260—239.5)

A process for the preparation of 17-ethylidene steroids or 17-ethylidene-desA-steroids is described which comprises reacting 17-oxo-steroids of the androstane series or of the desA-androstane series with a compound of the formula



wherein each of R_1 and R_2 is independently lower alkyl or phenyl-lower alkyl or R_1 and R_2 taken together are oxa-lower alkylene or lower alkylene; and each of R_3 and R_4 is independently a moiety of the formula



phenyl or substituted phenyl. The compounds produced by this process are useful as intermediates in the preparation of known pregnano steroids.

3,414,565
3,5-CYCLO-6β,19-OXIDO STEROIDS AND PROCESSES FOR THEIR PREPARATION

Samuel Ladabaum, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed May 6, 1963, Ser. No. 278,413
Claims priority, application Mexico, May 7, 1962, 67,279
11 Claims. (Cl. 260—239.55)

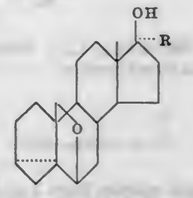
Novel 3,5-cyclo-6β,19-oxido steroids which are useful for the preparation of the corresponding known and useful 19-nor steroids and which are also anabolic-androgenic, progestational, and anti-inflammatory agents and processes for the preparation of such compounds.

3,414,566
17 - SUBSTITUTED - 3α,5 - CYCLO - 6β,19 - OXIDO-5α-STEROIDS AND PROCESS FOR PREPARING THE SAME

Katsumi Tanabe, Rinji Takasaki, Ryozo Hayashi, Yasuhiro Morisawa, and Teruo Hashimoto, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Continuation of application Ser. No. 489,756, Sept. 23, 1965. This application Dec. 21, 1966, Ser. No. 603,682
Claims priority, application Japan, Sept. 28, 1964, 39/55,448
7 Claims. (Cl. 260—239.55)

1. A compound selected from the class of the compounds having the formula



wherein R represents an alkyl group containing 1–6 carbon atoms, an alkenyl group containing 2–6 carbon atoms, an alkynyl group containing 2–6 carbon atoms or a halogenoethynyl group.

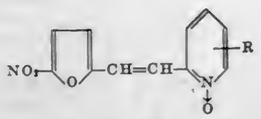
3,414,567

2 - [2 - (5 - NITRO - 2 - FURYL) - VINYL] - PYRIDINE-N-OXIDES AND PROCESSES FOR PREPARING THEREOF

Shinsaku Minami, Yamatokoriyama-shi, Akio Fujita, Iberagi-shi, and Jun-Ichi Matsumoto, Osaka-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,930
Claims priority, application Japan, Nov. 11, 1963, 38/62,211
7 Claims. (Cl. 260—240)

1. A compound of the formula



wherein R is alkyl having 1 to 3 carbon atoms.

3,414,568

METHOD OF MAKING MESO-SUBSTITUTED MEROCYANINE AND CARBO-CYANINE DYES

Pierre Collet and Marcel Compere, Vincennes, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 13, 1964, Ser. No. 367,247
Claims priority, application France, Dec. 9, 1963, 956,506
14 Claims. (Cl. 260—240.6)

Quaternary salts of diheteroatomic acetylenic compounds are prepared advantageously by a single step reaction of an ortho-substituted aniline with an acetylenic acid chloride, and these quaternary salts are used to advantage to make meso-substituted carbocyanine dyes and meso-substituted merocyanine dyes useful in photography.

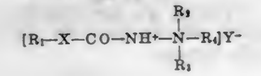
3,414,569

ETHYLENICALLY UNSATURATED QUATERNARY AMMONIUM HYDRAZIDES AND THEIR PREPARATION

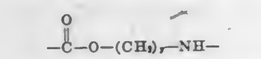
Horst Wieden, Dormagen, Helmut Kleiner, Cologne-Stammheim, Jenö Szita, Dormagen, and Günther Nischk, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,432
Claims priority, application Germany, Feb. 21, 1964, F 42,080
12 Claims. (Cl. 260—247.1)

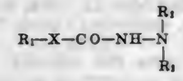
Ethylenically unsaturated quaternary ammonium compounds of the formula



in which R_1 is alkenyl (e.g. C_{2-3} alkenyl) or aralkenyl (e.g. styryl); X is a direct bond or



wherein y is a whole number from 2 to 4; R_2 and R_3 each is alkyl (e.g. C_{1-3} alkyl); R_2 and R_3 when taken together forming an alkylene radical optionally containing hetero atoms (e.g. morpholino); R_4 is alkyl (e.g. C_{1-4} alkyl) or benzyl; Y^- is the anion of an aromatic sulfonic acid (e.g. benzene or toluene sulfonic acid), of a monoalkyl sulfuric acid (e.g. monomethyl sulfuric acid) or of a hydrohalic acid; and R_4 and Y^- when taken together representing the anion of an aliphatic sulfobetaine (e.g. having 3–4 alkyl carbon atoms); produced by reacting a corresponding C_{3-4} aliphatic sultone or organic alkyl or benzyl ester (e.g. an aromatic sulfonic acid ester, a monoalkyl sulfuric acid ester or a hydrohalic acid ester having an R_4 group as ester moiety), with an unsaturated N,N-disubstituted acid hydrazide of the formula



in which R_1, X, R_2 and R_3 are the same as defined above, in a liquid medium, e.g. at a temperature between 0 to 150° C., and separating the formed ethylenically unsaturated quaternary ammonium compound from the reaction medium; and being capable of improving considerably the anti-static properties of high molecular weight polymers.

3,414,570

N^2,N^4,N^6-TRIPICRYLMELAMINE

Michael D. Coburn, White Rock, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 8, 1966, Ser. No. 556,822
1 Claim. (Cl. 260—249.6)

A heat-resistant explosive that is insensitive to impact and chemically described as N^2,N^4,N^6-tripicrylmelamine.

3,414,571

PROCESS FOR PRODUCTION OF MELAMINE FROM UREA

Harry W. Haines, Jr., and Sam P. Robinson, Houston, Tex., assignors to Melamine Research Corporation, Washington, D.C., a corporation of Maryland

Filed Sept. 16, 1966, Ser. No. 579,922
19 Claims. (Cl. 260—249.7)

An improved process for the production of melamine from urea, employing a two-stage process, in which the urea is thermally decomposed in a first-stage fluidized bed in the presence of ammonia, and the decomposition products converted in the second stage in the presence of specific crystalline zeolite catalysts, the reaction temperature in the second stage being controlled by a liquid ammonia quench.

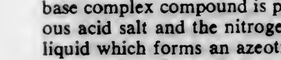
3,414,572

BASIC SUBSTITUTED ALKYLXANTHINE DERIVATIVES

Karl Heinz Klingler, Langen, Hesse, Germany, assignor to Deutsche Gold- and Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Sept. 7, 1966, Ser. No. 577,608
Claims priority, application Germany, Sept. 9, 1965, D 48,167
3 Claims. (Cl. 260—256)

Novel basic substituted alkylxanthine compounds of the formula



wherein T is a 1,3-dilower alkyl xanthinyl-(7)- or a 3,7-dilower alkyl xanthinyl-(1)-radical, R is hydrogen or alkyl or 1 to 6 C atoms and R^1 is a hydroxy aryl and the pharmacologically acceptable acid addition salts which have a favorable effect on coronary blood circulation and heart action and in addition a strong broncholytic action.

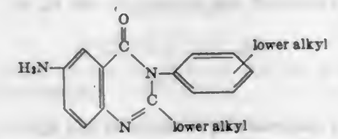
3,414,573

CERTAIN 3-ALKYLPHENYL-QUINAZOLONES

Hermann Breuer, Hans Hoehn, and Egon Roesch, Regensburg, Germany, assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 282,223, May 22, 1963. This application Dec. 16, 1964, Ser. No. 418,909
Claims priority, application Germany, June 27, 1962, C 27,325
5 Claims. (Cl. 260—256.4)

This invention relates to new quinazolone derivatives of the formula



and to acid addition salts thereof. These compounds are produced by catalytic reduction of the corresponding nitro, nitroso, acylamino or benzylamino compounds. They are useful as sedatives, hypnotics, anticonvulsants and especially as muscle relaxants.

3,414,574

CERTAIN PYRIMIDO(4,5-b)INDOLES AND INTERMEDIATES EMPLOYED IN THEIR PREPARATION

Albert J. Frey, Essex Fells, Goetz E. Hardtmann, Florham Park, and Hans Ott, Convent Station, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed Apr. 21, 1967, Ser. No. 632,552
4 Claims. (Cl. 260—256.4)

The compounds are of the class of 3-amido-3,4-dihydro-4-oxo-pyrimido[4,5-b]indoles which may be substituted at the 2-position by a linear alkyl group having from 1 to 3 carbon atoms, and may also be substituted at the 5-, 6-, 7- or 8-position by chloro or methoxy, e.g., 3-formamido-3,4-dihydro - 4 - oxo-pyrimido[4,5-b]indole. The compounds are obtainable by reacting an appropriate 2-aminoindolo-3-carboxylic acid lower linear alkyl ester with hyrazine to form the corresponding hydrazide which is then reacted with a linear fatty acid having from 1 to 4 carbon atoms. The compounds are useful as antihypertensives and diuretics.

3,414,575

ANHYDROUS CRYSTALLINE COMPLEXES OF COBALTOUS SALTS AND NITROGENOUS BASES

Owen L. Stafford and Joseph D. Brubaker, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 9, 1964, Ser. No. 417,237
3 Claims. (Cl. 260—270)

An anhydrous crystalline cobalt acid salt-nitrogenous base complex compound is prepared by adding the cobaltous acid salt and the nitrogenous base to an inert organic liquid which forms an azeotrope with water and in which the complex is insoluble at room temperature, heating the liquid and distilling out the water-containing azeotrope until the distillation residue is substantially free of water, cooling the resulting solution to crystallize the complex compound and separating the crystalline complex from the liquid. A catalyst for the polymerization of conjugated diolefins is prepared by mixing the above complex with an alkylaluminum halide.

3,414,576

7-N-DODECYLOXY AND 7-BENZYLOXY-4-HYDROXY-3-CARBALKOXY QUINOLINES

John Potts Cairns and Walter Hepworth, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 11, 1966, Ser. No. 526,694
Claims priority, application Great Britain, Mar. 9, 1965, 9,979/65; June 24, 1965, 26,821/65; Dec. 2, 1965, 51,232/65
15 Claims. (Cl. 260—287)

Derivatives of 4-hydroxyquinoline-3 - carboxylic esters in which the 7-position of the quinoline nucleus bears an alkoxy or aralkoxy substituent, and the 6-position optionally bears an alkyl, alkenyl or alkoxy substituent. The quinoline derivatives are useful for the prophylactic treatment of coccidiosis in poultry or other domestic animals.

3,414,577

QUATERNARY AMMONIUM SALTS OF AJMALINE

Johannes Keck, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 384,765, July 23, 1964, which is a continuation-in-part of application Ser. No. 244,872, Dec. 17, 1962. This application Oct. 7, 1965, Ser. No. 493,932
Claims priority, application Germany, Jan. 10, 1962, T 21,400
11 Claims. (Cl. 260—294.7)

Novel quaternary ammonium salts of ajmalines having anti-arrythmia activity in warm-blooded animals.

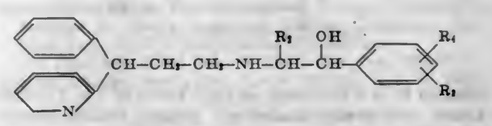
3,414,578

1 - (3',4' - DI - LOWER-ALKYLPHENYL)-2-[PHENYL-PYRIDYL - (2') - PROPYLAMINO]-PROPANOL-(1) AND DERIVATIVES THEREOF

Gustav Ehrhart, Bad Soden, Taunus, Ernst Lindner and Günter Härtfelder, Frankfurt am Main, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,816
Claims priority, application Germany, Nov. 5, 1965, F 47,601
2 Claims. (Cl. 260—296)

1. A phenylpropane of the general formula



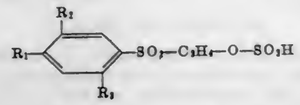
wherein R_2 represents hydrogen or the methyl group, R_3 and R_4 represent alkyl groups containing at most 4 carbon atoms, and a pharmaceutically acceptable acid addition salt thereof.

3,414,579
PROCESS FOR PREPARING ACID SULFURIC ACID ESTERS FROM AROMATIC COMPOUNDS CONTAINING β - HYDROXY-ETHYLSULFONYL GROUPS

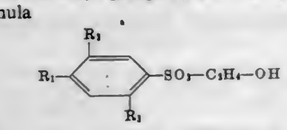
Hermann Remy, West Warwick, R.I., assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 5, 1965, Ser. No. 430,771
Claims priority, application Germany, Feb. 18, 1964, F 42,033
3 Claims. (Cl. 260—310)

There is disclosed herein a process for making a dyestuff intermediate compound of the formula



wherein R_1 is a hydrogen, hydroxyl, amino, aminomethyl, lower alkoxy or methylpyrazolone group, R_2 is a hydrogen, lower alkoxy, amino or aminobenzoylamino group, and R_3 is a hydrogen, chlorine, bromine, lower alkyl, lower alkoxy or carboxyl group, by esterifying a compound of the formula



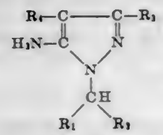
with amidosulfonic acid at an elevated temperature in the presence of an inert organic solvent.

3,414,580
METHOD FOR THE PRODUCTION OF SUBSTITUTED 5-AMINOPYRAZOLES

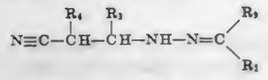
Hans Höhn, Regensburg, Germany, assignor to Chemische Fabrik von Heyden A.G., Munich, Germany, a corporation of Germany

No Drawing. Filed July 2, 1964, Ser. No. 380,027
Claims priority, application Germany, July 24, 1963, C 30,526
7 Claims. (Cl. 260—310)

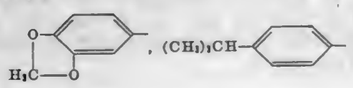
A process for producing substituted 5-aminopyrazoles suitable for use as dyestuff components, sensitizer and medicaments wherein the 5-aminopyrazole has a formula



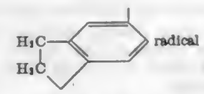
and which involves the cyclization of a compound selected from the group consisting of aldehyde and ketone hydrazone derivatives of β-cyano-alkyl hydrazines and having substantially the structural formula



wherein R_1 is a hydrogen, an alkyl group of 1 to 5 carbon atoms, cyclopentyl, cyclohexyl, phenyl, benzyl, phenylethyl, isopropylphenyl, diphenylmethyl, furfuryl, pyridine, thiophene, dimethylaniline, methoxyethyl, methoxyphenyl, chlorophenyl,



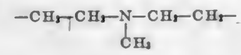
or



R_2 is a hydrogen, methyl, ethyl or phenyl radical or R_1 and R_2 is



forming a common ring between R_1 and R_2, or



forming a common ring between R_1 and R_2; and R_3 is a hydrogen, methyl, ethyl, propyl, phenyl, furyl or thenyl radical, and R_4 is a hydrogen, methyl, thenyl or phenyl radical.

3,414,581
PRODUCTION OF INDAZOLE-(3)-CARBOXYLIC ACIDS

Matthias Seefelder, Ludwigshafen (Rhine), and Herbert Armbrust, Frankenthal, Palatinate, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,099
Claims priority, application Germany, Feb. 25, 1964, B 75,573
9 Claims. (Cl. 260—310)

Process of providing indazole-(3)-carboxylic acids by reacting a 2-diazophenylglyoxylic acid with dithionous acid or dithionite at −20° to +100° C. and a pH of 0 to 12. The products are especially useful as intermediates for dyes.

3,414,582
4-(DIALKYLAMINOETHOXYPHENYL) PYRAZOLES

Marcel Descamps, 28 Avenue de Crainhem, Crainhem, Belgium, and Fernand Binon, Brussels, Belgium (141 Avenue Ste Anne, Stroombeek-Bever, Belgium)

No Drawing. Continuation-in-part of application Ser. No. 362,469, Apr. 24, 1964. This application Apr. 13, 1966, Ser. No. 542,200
Claims priority, application Great Britain, Apr. 30, 1963, 17,050/63, 17,051/63
8 Claims. (Cl. 260—310)

4-(dialkylaminoethoxyphenyl) pyrazoles and their method of preparation. The compounds have anti-inflammatory, anti-oedematous and analgesic activity.

3,414,583
COPPER HEXADECAFLUOROPHTHALOCYANINE

David Edward Mudge Wotton, Avonmouth, England, assignor to Imperial Smelting Corporation (N.S.C.) Limited, London, England, a company of Great Britain

No Drawing. Filed June 4, 1965, Ser. No. 461,519
Claims priority, application Great Britain, June 25, 1964, 26,281/64
1 Claim. (Cl. 260—314.5)

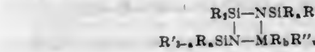
1. Copper hexadecafluorophthalocyanine.

3,414,584
SILICON- AND NITROGEN-CONTAINING FOUR-MEMBERED RING COMPOUNDS AND PROCESS FOR PREPARING

Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 210,245, July 16, 1962. This application Dec. 12, 1966, Ser. No. 600,781
Claims priority, application Switzerland, July 17, 1961, 8,344/61
The portion of the term of the patent subsequent to Jan. 18, 1983, has been disclaimed
19 Claims. (Cl. 260—326)

Silicon- and nitrogen-containing four-membered ring compounds of the formula



and a process for making them by reacting an organotrisilazane compound of the formula

$$R'_{3-a}R_aSiNHSi(R)_2NHSiR_aR'_{3-a}$$

with a Grignard derivative or the organotrisilane in the form of an alkali salt with an equimolar quantity of a halide of the formula X_nMR_{v-n} wherein X is a halogen atom, n is at least 2, v is the valence of M and M is selected from the class consisting of silicon, boron and phosphorus.

3,414,585
INTERMEDIATES FOR PYRROLO[2,1-b][1,3] OXAZIN-6-ONES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Original application Feb. 16, 1965, Ser. No. 433,181, now Patent No. 3,334,095, dated Aug 1, 1967. Divided and this application Mar. 15, 1967, Ser. No. 623,237
15 Claims. (Cl. 260—326.5)

Pyrrolo[2,1-b][1,3]oxazin-6-ones useful as sedatives are prepared by heating in inert solvent the corresponding intermediates, e.g., N-(3-hydroxypropyl)-3-(p-methyl benzoyl) propionamide.

3,414,586
ACETOAMIDO DERIVATIVES

Susumu Umemoto, Sakai-shi, and Toyoyuki Shimizu, Nishinomiya-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,861
Claims priority, application Japan, Oct. 1, 1963, 38/53,074
2 Claims. (Cl. 260—328)

This application relates to certain novel acetoamide derivatives having tranquillizing activity.

3,414,587
4 - (1,2,3,4,5,6,7,8 - OCTAHYDRO - 1,8 - DIOXO - 9-XANTHENYL)-BENZENE-SULFONAMIDE AND DERIVATIVES

Hanns Hanina Lehr, Montclair, and Milan Mitrovic, Nutley, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 9, 1965, Ser. No. 507,053
8 Claims. (Cl. 260—335)

Anthelmintic 4-(1,2,3,4,5,6,7,8-octahydro - 1,8 - dioxo-9-xanthenyl)-benzenesulfonamide and derivatives are prepared by condensation of p-sulfamoylbenzaldehyde with a 1,3-cyclohexanedione or with a 5,5-di-lower alkyl-1,3-cyclohexanedione.

3,414,588
CONDENSATION OF ALDEHYDES WITH UNSATURATED COMPOUNDS

Daniel G. Jones, Pennington, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,094
16 Claims. (Cl. 260—340.7)

A process for producing Prins-type condensation products which comprises effecting reaction between an aldehyde, e.g., formaldehyde, and an ethylenically unsaturated compound, e.g., isobutylene, at a temperature from about room temperature to about 400° C. in the presence of a catalyst consisting essentially of a base exchanged crystalline alumino-silicate containing active cation sites within an ordered internal structure, e.g., a rare earth exchanged faujasite.

3,414,589
1′-CYCLOBUTENO-(3′,4′;16α,17α) DERIVATIVES OF THE PREGNANE SERIES

John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed July 11, 1966, Ser. No. 568,062
19 Claims. (Cl. 260—397.1)

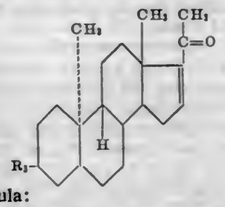
Novel 1′-cyclobuteno-(3′,4′;16α,17α) derivatives of the pregnane series having progestational activity.

3,414,590
9β,10α-$\Delta^{6,16}$-BISDEHYDRO PROGESTERONES AND INTERMEDIATES IN THE PREPARATION THEREOF

Engbert Harmen Reerink, Pieter Westerhof, and Hendrik Frederik Louis Scholer, Van Houtenlaan, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 472,694, July 16, 1965. This application Nov. 14, 1966, Ser. No. 594,258
5 Claims. (Cl. 260—397.3)

1. 9β,10α-steroids of the formula:



in which formula:

R_3 is a member selected from the group consisting of

3-keto-4-dehydro-,
3-keto-4,6-bisdehydro-,
3-keto-1,4-bisdehydro and the
3-keto-1,4,6-trisdehydro-group.

3,414,591
NOVEL METHOD FOR PRODUCING 9β,10α-6-METHYLENE TESTOSTERONE

Harmen van Kamp, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1965, Ser. No. 470,913
Claims priority, application Great Britain, Apr. 9, 1965, 15,186/65
1 Claim. (Cl. 260—397.4)

Produce 3 - keto - 4 - dehydro - 6 - trihalomethyl 9β,10α steroid of the androstane series by treating corresponding 3-hydrogen compound with enolalkylating compound and then with trihalomethane without separation of the 3-enolether intermediate. Further the resultant 3-keto-4-dehydro-6-trihalomethyl 9β,10α steroid is converted to the corresponding 6 methylene compound by treatment

with chromous chloride in the presence of hydrochloric acid. This abstract is not intended to be a description of the invention defined by the claims.

3,414,592
6,7-HALOMETHYLENE ANDROSTANES AND ESTRANES AND PROCESSES FOR THEIR PREPARATION
Colin C. Beard, Boulder, Colo., and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Continuation-in-part of application Ser. No. 486,226, Sept. 9, 1965. This application Oct. 22, 1965, Ser. No. 502,375
25 Claims. (Cl. 260—397.4)

Novel 6,7-halomethylene androstanes and estranes which are, inter alia, anabolic and progestational agents and processes for the preparation of such compounds.

3,414,593
ALPHA-SULFO PEROXY FATTY ACID DETERGENT COMPOSITIONS
Peter Robson, Whitley Bay, Northumberland, England, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 16, 1965, Ser. No. 480,135
Claims priority, application Great Britain, Aug. 20, 1964, 34,074/64
3 Claims. (Cl. 260—400)

Novel alpha-sulfo peroxy fatty acid compounds as detergents and bleaching agents; and detergent compositions containing said alpha-sulfo peroxy fatty acid compounds.

3,414,594
PREPARATION OF CARBOXYLIC ACIDS FROM OLEFINS
Michael Dubeck, Birmingham, and Lawrence C. Mitchell, Clawson, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,941
14 Claims. (Cl. 260—413)

A process for preparing carboxylic acids and ketones by (a) ozonizing olefins in a lower alkanol reaction medium (b) then oxidizing the ozonized olefin in the presence of an aqueous mineral acid, using an oxygen containing gas. Non-vinylidene olefins yield carboxylic acids; vinylidene olefins yield ketones. Air or oxygen are preferred as oxidizing agents in step (b). An example of a suitable mineral acid is sulfuric acid. The acids or ketones produced have at least one carbon atom less than the starting olefin. The process is described as a batch process and a continuous process.

3,414,595
PREPARATION OF ALKYL TIN COMPOUNDS
Vincent Oakes, St. Helens, England, assignor to Pure Chemicals Limited, Liverpool, England, a British company
No Drawing. Filed Aug. 25, 1965, Ser. No. 482,604
Claims priority, application Great Britain, Aug. 27, 1964, 35,101/64
3 Claims. (Cl. 260—429.7)

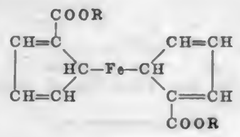
A method of preparing alkyltin trihalides which comprises heating an alkyl halide and stannous halide in the presence of a catalyst. In the preferred embodiment the catalyst is an organic Lewis base. The organic Lewis base may be either a strong Lewis base such as a hydrocarbon phosphite, a hydrocarbon phosphine, a dialkyl formamide, or a sulphone; a moderately strong Lewis base containing two or more basic groups such as hydroxyl, thioether, ether, mercaptan, carbonyl, nitrile, ester, or amide; or a simple compound having the aforementioned basic groups in the presence of certain metals or metallic salts. It is preferred to use reaction temperatures above about 120° C.

3,414,596
BISCYCLOPENTADIENYL-METAL CARBORANE POLYESTERS
Marvin M. Fein, Westfield, and Nathan Mayes, Ironia, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed June 29, 1965, Ser. No. 468,161
39 Claims. (Cl. 260—429)

Novel biscyclopentadienyl-metal carborane polyesters having recurring units of the formula

$$\text{—O—(CH}_2\text{)}_n\text{A(CH}_2\text{)}_n\text{OOC—D—M—D—CO—}_n$$

wherein A is the radical of a carborane isomer, D is a disubstituted cyclopentadienyl radical and M is iron, ruthenium or osmium radical, are prepared by reaction a carboranyl (A) diol with a metallocene of iron, ruthenium or osmium of the formula:



wherein R is selected from the group consisting of hydrogen and alkyl radicals having from 1 to 4 carbon atoms.

The compounds have utility as additives to ultraviolet-resistant coatings.

3,414,597
METALLOCENYLARYL-SUBSTITUTED ORGANOSILICON MATERIALS
Edward V. Wilkus, Albany, and Abe Berger, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 1, 1964, Ser. No. 415,185
6 Claims. (Cl. 260—429)

There are provided organosilicon materials substituted with metallocenylaryl radicals. These materials can be made by effecting reaction between the Grignard of a haloarylmetallocene, for example, the Grignard of p-bromophenylferrocene, and a halosilylorganic material such as a halosilane, as shown by the following equation,

$$R_3SiX + XMgR''Z \rightarrow R_3SiR''Z + MgX_2$$

where Z is a metallocene. The metallocenyl-substituted materials of the present invention can be converted to polymers, or employed as U.V. stabilizers for organopolysiloxane polymers.

3,414,598
METHOD OF PREPARING ZINC CARBOXYLATE COORDINATED COMPLEXES OF AROMATIC ZINC DITHIOPHOSPHATES
Edwin M. Nygaard, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,762
12 Claims. (Cl. 260—429.9)

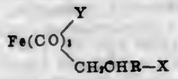
Zinc carboxylate-coordinated zinc dithiophosphate aromatic salts are prepared by the method of reacting an aromatic dithiophosphoric acid with from 10% to 60% molar excess of zinc oxide and either a carboxylic acid or a zinc carboxylate containing from 1 to 20 atoms, in the presence of water and a solvent.

3,414,599
ORGANIC MERCURY COMPOUNDS AND METHODS FOR THEIR PREPARATION
James D. Allen, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 24, 1965, Ser. No. 509,615
9 Claims. (Cl. 260—431)

Organomercury compounds are produced by simultaneously reacting a triolefin such as 1,2-bis(3-cyclohexene-1-yl)ethylene, with a mercuric salt of a carboxylic acid and an alcohol such as methanol.

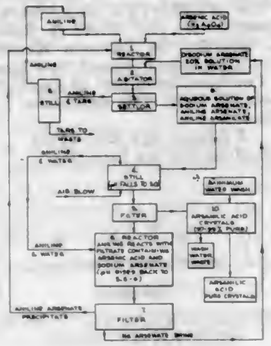
3,414,600
ORGANOTRICARBONYL FERRATES AND THE PREPARATION THEREOF
Pierre Jean Antoine Chabardes, Pierre Gandilhon, and Charles Camille Dominique Grard, Lyon, and Michel Pierre François Thiers, Brignais, France, assignors to Rhone-Poulenc S.A.
No Drawing. Filed Aug. 8, 1966, Ser. No. 570,700
Claims priority, application France, Aug. 16, 1965, 28,441
18 Claims. (Cl. 260—439)

1. An organometallic compound of formula



wherein X is a member selected from the group consisting of —CN, —CHO, —COOH, and carbalcoxy groups, R is a member selected from the group consisting of hydrogen and lower alkyl radical, and Y is a member selected from the group consisting of hydrogen, an alkali metal, the ammonium radical and a radical of formula $—CH_2CHR_1X_1$ in which R_1 and X_1 are defined as R and X.

3,414,601
PROCESS FOR RECOVERY OF ARSANILIC ACID
Lewis P. Harris, Fanwood, and Earl F. Rothemich, Califon, N.J., assignors to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 20, 1966, Ser. No. 521,890
14 Claims. (Cl. 260—442)



1. In the process for recovering arsanilic acid from a mixture containing excess aniline and the arsanilic acid in the form of the aniline arsanilate, the improvement comprising the steps of

(a) adding to said mixture a solution having a specific gravity in the range of 1.07–1.3 and having as the solute a solid which is insoluble in aniline and non-reactive with aniline, aniline arsenate and aniline arsanilate, said solution being added in a proportion of about 1–3 volumes per volume of said mixture;
(b) thoroughly mixing said solution and said mixture containing aniline arsanilate at a pH in the range of 5–6;
(c) allowing the resultant mixture to separate into a non-aqueous layer and an aqueous layer;
(d) separating said non-aqueous layer from said aqueous layer;
(e) distilling aniline from said non-aqueous layer;
(f) distilling aniline and water from said aqueous layer until the pH drops to approximately 2.5–4;
(g) allowing the residue from said distillation of said aqueous layer to cool to approximately room temperature, whereby arsanilic acid crystals are precipitated therefrom;
(h) separating said arsanilic acid crystals from the solution from which they were precipitated;
(i) introducing aniline into said separated solution from which said arsanilic acid crystals have been separated until a pH of 5–6 has been reached and allowing said aniline to react with arsenic acid in said solution to form aniline arsenate;
(j) allowing said solution containing aniline arsenate to cool and stand until aniline arsenate crystals are precipitated therefrom; and
(k) separating said aniline arsenate crystals from the said solution from which they were precipitated.

3,414,602
ZEOLITE N AND PROCESS FOR PREPARING SAME
Nancy A. Acara, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 1, 1965, Ser. No. 468,910
4 Claims. (Cl. 260—448)

A novel crystalline zeolitic molecular sieve having the composition expressed in terms of mole ratios of oxides

$$0.83\pm0.05Na_2O:0.03\pm.01[(CH_3)_4N]_2O:Al_2O_3.2.0\pm0.2SiO_2:yH_2O$$

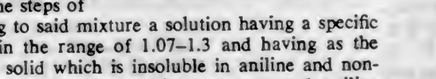
is prepared from conventional silicon and aluminum sources, caustic and tetramethylammonium hydroxide.

3,414,603
METHOD OF PURIFYING ORGANOCHLOROSILANES
Abraham I. Mlavsky, Lexington, Mass., assignor to Tyco Laboratories, Inc., Waltham, Mass., a corporation of Massachusetts
No Drawing. Filed Mar. 16, 1965, Ser. No. 440,316
8 Claims. (Cl. 260—448.2)

The method of removing metallic elements from organochlorosilanes by passing the contaminated organochlorosilanes through absorption columns containing an anion exchange resin having attached to its polymer chain selected nucleophilic quaternary ammonium groups or nucleophilic tertiary amine groups.

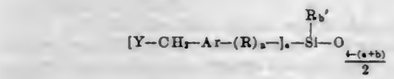
3,414,604
ORGANOFUNCTIONAL SILANES AND SILOXANES
Enrico J. Pepe, Kenmore, and Bernard Kanner, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,492
17 Claims. (Cl. 260—448.8)

Organofunctional silanes of the formula



wherein Ar is an arylene radical; R is an alkylene radical; R' is a monovalent hydrocarbon radical; X is —OR' and

R' is as defined above; Y is R'O—, R'COO—, or R'O—$(R''O)_p$— wherein R' is as defined above; R'' is an alkylene radical of at least two carbon atoms; *p* is at least 1; *n* is 0 or 1; *a* is 1 to 3; *b* is 0 to 2 and the sum of *a*+*b* does not exceed 3; and organosiloxanes containing at least one unit of the formula:



wherein Ar, R, R', Y, R'', *p*, *n*, *a*, *b* and the sum of *a*+*b* are the same as defined above. The silanes are used to prepare siloxanes useful as lubricants, hydraulic fluids, coating resins for metals and fibers, elastomers, and nonionic surfactants.

3,414,605
SYNTHESIS OF ACRYLONITRILE USING SILICIDE CATALYST

Darrell W. Walker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 10, 1965, Ser. No. 507,249
5 Claims. (Cl. 260—465.3)

A process for the preparation of acrylonitrile wherein acetylene and hydrogen cyanide are reacted in the presence of a metal silicide catalyst under suitable reaction conditions to provide said acrylonitrile.

3,414,606
PRODUCTION OF ACRYLONITRILE AND METHACRYLONITRILE

Siegfried Winderl, Ludwigshafen (Rhine), Herwig Hoffmann, Frankenthal, Pfalz, Christof Palm, Mannheim, Heinz Nohe, Ludwigshafen (Rhine), Karl Baer, Weinheim, Bergstrasse, and Hartwig Harders, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 1, 1966, Ser. No. 539,320
Claims priority, application Germany, Apr. 10, 1965, B 81,388
9 Claims. (Cl. 260—465.3)

Production of acrylonitrile or methacrylonitrile by reacting propylene or isobutylene, ammonia and oxygen in the vapor phase in the presence of a catalyst consisting substantially of a mixture of metal oxides, an analysis of said mixture showing the presence of (A) 0.1 to 20% by weight of arsenic pentoxide, (B) 1 to 50% by weight of tungstic oxide, and (C) 1 to 50% by weight of molybdenum trioxide, the three components (A), (B) and (C) constituting at least 45% by weight of the active components of the catalyst which also contains (D) 0.1 to 10% by weight, calculated as oxides, of at least one of the metals lead, alkali metals and metals of atomic numbers 22 to 30 inclusive the total content of the components of group (D) in the catalyst not exceeding 55% by weight of the active components and possibly (E) up to 40% by weight silver calculated as silver oxide and the total amount of the components of groups (D) and (E) in the catalyst being up to 55% by weight of the active components.

3,414,607
NOVEL CYCLOPROPANECARBOXYLIC ACID ESTERS

Keimei Fujimoto, Minoo-shi, Yositosi Okuno, Nishinomiya-shi, Kenzo Ueda, Toyonaka-shi, Sadao Horie, Suita-shi, Toshio Mizutani, Ikeda-shi, and Katsuji Nodera, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,504
Claims priority, application Japan, Feb. 19, 1965, 40/9,525; Feb. 20, 1965, 40/9,851; Dec. 29, 1965, 40/81,792; Jan. 6, 1966, 41/769
5 Claims. (Cl. 260—468)

A process for the production of cyclopropanecarboxylic acid esters by reacting chrysanthemum monocarboxylic acid or its functional derivatives with a benzyl derivative. The product of this reaction has insecticidal properties.

3,414,608
PROCESS FOR THE MANUFACTURE OF BIS-(β-HYDROXYETHYL) TEREPHTHALATE

Yasuhiro Fujita, Ohtake-shi, Isao Nakamura, Yamaguchi-ken, and Junichi Hijii, Ohtake-shi, Japan, assignors to Mitsui Petrochemical Industries, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 30, 1965, Ser. No. 452,368
Claims priority, application Japan, May 15, 1964, 39/27,241, 39/27,242
6 Claims. (Cl. 260—475)

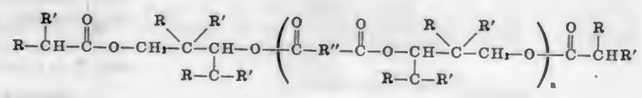
A process for the manufacture of bis-(β-hydroxyethyl) terephthalate by reacting terephthalic acid with ethylene oxide in the presence of a tertiary amine catalyst, characterized in that the reaction is carried out in an inert liquid solvent medium of halogenated hydrocarbon or alkyl esters of carboxylic acid esters such as chloroform, carbon tetrachloride, monochloroethane, dichloroethane, trichloroethane, tetrachloroethane, chlorobenzene, bromoform, bibromoethane, ethyl acetate, butyl acetate, methyl propionate, ethyl propionate, butyl propionate and ethyle benzoate. These compounds can be converted into polyethylene terephthalate useful for the production of fibers and films.

3,414,609
DICARBOXYLIC ACID ESTERS OF 2,2,4-TRIALKYL-3-HYDROXYPENTYL ALKANOATES

Hugh J. Hagemeyer, Jr., and Alfred G. Robinson, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 161,358, Dec. 22, 1961. This application Mar. 7, 1966, Ser. No. 532,053
7 Claims. (Cl. 260—475)

1. The product having the formula:



wherein R and R' are lower alkyl radicals and R'' is selected from the group consisting of: alkylene, alkenylene and cycloalkylene radicals of 1–8 carbon atoms; arylene radicals of the benzene series containing 6–9 carbon atoms; the radicals —R'''—S—R'''— and

—R'''—O—R'''—

wherein R''' is a lower alkylene radical; and the carbon-carbon bond of oxalic acid; and wherein *n* is an integer from 1 to 5.

3,414,610
PRODUCTION OF ADDITION COMPOUNDS CONTAINING FORMIC ACID

Kuno Wagner and Hans Holtschmidt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 18, 1965, Ser. No. 434,177
Claims priority, application Germany, Mar. 14, 1964, F 42,315
9 Claims. (Cl. 260—501.11)

Production of addition compounds of tertiary organic base and formic acid of the type $R_2N.(HCOOH)_n$ in which the 3 radicals R may be the same or different and in which 2 of such radicals R may form a heterocyclic ring system with the N atom, *n* being 2–8, by reacting at least 2 mols of formic acid per mol of the corresponding tertiary organic base at about 10–150° C. and then subjecting the resulting product to reduced pressure distillation whereby to convert the product to such addition compound form.

3,414,611
METHOD FOR THE RESOLUTION OF RACEMIC GLUTAMIC ACID AND ITS SALTS

Gentaro Noyori, Tokyo, Makoto Honda, Musashino-shi, and Teiko Watanabe, Tokyo, Japan, assignors to Asahi Kasei Kabushiki Kaisha, Kita-ku, Osaka, Japan, and The Noguchi Institute, Itabashi-ku, Tokyo, Japan

Filed July 21, 1965, Ser. No. 474,217
Claims priority, application Japan, July 24, 1964, 39/41,739
16 Claims. (Cl. 260—534)

For resolving racemic glutamic acid, the racemic acid is added to a solution containing the D- or L-form. The opposite form then goes into solution and the form originally contained in the solution remains in solid phase and is separated.

3,414,612
METHOD FOR PREPARING ACYL FLUORIDES

Henry H. Tan and Elmore L. Martin, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 29, 1964, Ser. No. 421,989
6 Claims. (Cl. 260—544)

Process of carbonylating either tertiary butyl chloride or bromide or 1,2-dichloro or dibromo-2-methylpropane, with carbon monoxide using anhydrous hydrogen fluoride as a catalyst, at from 0 to 75° C. and a pressure of from 10 to 1,000 atmospheres to produce the corresponding 2,2-disubstituted propionyl fluoride.

3,414,613
BIS(TRIPHENYLHALOPHOSPHINIMINIUM) THIONYL HALIDES

Rolf Appel, Bonn, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 13, 1963, Ser. No. 330,249
5 Claims. (Cl. 260—551)

Novel bis(triphenylhalophosphiniminium) thionyl halides having the formula:

$$[(A_3P{:}N{.}X)_2SO]X_2$$

in which A is phenyl and X is chlorine or bromine are prepared by the reaction of N-halotriphenylphosphinimine with either thionyl chloride or thionyl bromide. The products contain available chlorine or bromine and are useful as bleaching and sterilizing agents.

3,414,614
ACETAMIDINE DERIVATIVES

Marc Julia, Paris, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed July 23, 1965, Ser. No. 474,456
Claims priority, application France, July 31, 1964, 983,870
9 Claims. (Cl. 260—558)

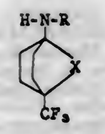
The invention provides new 2-benzamidoacetamidines which have useful pharmacological properties, e.g. as antidepressants.

3,414,615
4-TRIFLUOROMETHYLBICYCLO[2.2.2]-OCTANE-1-AMINES AND OCT-2-ENE-1-AMINES

Walter A. Gregory, Wilmington, and Joel G. Whitney, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,858
5 Claims. (Cl. 260—563)

1. A compound selected from the group consisting of (a) compounds of the formula:



where

R is selected from the group consisting of hydrogen, methyl and ethyl, and

X is selected from the group consisting of —CH_2CH_2— and —CH=CH—; and

(b) salts of the compounds of Formula (a) formed with a non-toxic anion.

3,414,616
CARBON CATALYSIS OF CONDENSATION OF CARBONYL COMPOUNDS AND AMINES

Charles G. Summers, Scott Depot, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 370,049, May 25, 1964. This application Apr. 13, 1966, Ser. No. 542,205
18 Claims. (Cl. 260—566)

1. In a process for the production of imines by reacting carbonyl compounds with primary amines whereby the double bond of the carbonyl groups is linked to nitrogen of the primary amine, the improvement which comprises adding to the reactants a catalyst consisting essentially of carbon having a total acidity of at least about 0.4 milliequivalents per gram, the ratio of said carbon catalyst to other carbon present being not more than about 2.5 to 1 parts by weight.

3,414,617
N-ALKYLATED DERIVATIVES OF 2-AMINO-2-HYDROCARBYLTHIOMETHYL OR MERCAPTOMETHYL-1,3-PROPANEDIOLS

Clarence R. Bresson and Raymond L. Cobb, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,892
10 Claims. (Cl. 260—570.5)

N-alkylated derivatives of 2-amino-2-hydrocarbylthiomethyl-1,3-propanediols are produced by reacting 2-amino-2-hydrocarbylthiomethyl-1,3-propanediols with organic

halides. Thiols can be produced by reacting arylmethylated or alkarylmethylated derivatives of the above compounds with an alkali metal in the presence of ammonia.

3,414,618
MONO-p-TERTIARY ALKYL DIARYLAMINES

Donald R. Randell, Cheshire, England, assignor to The Geigy Company Limited, Manchester, England

No Drawing. Original application Feb. 10, 1965, Ser. No. 431,709. Divided and this application Feb. 10, 1966, Ser. No. 526,401
Claims priority, application Great Britain, Feb. 11, 1964, 5,593/64; Feb. 29, 1964, 8,579/64
8 Claims. (Cl. 260—576)

The compounds:
N-p-tertiary octyl-phenyl-α-naphthylamine,
N-p-tertiary octyl-phenyl-β-naphthylamine,
N-p-tertiary butyl-phenyl-β-naphthylamine,
N-p-tertiary butyl-phenyl-α-naphthylamine,
N-p-tertiary pentyl-phenyl-α-naphthylamine,
N-p-tertiary pentyl-phenyl-β-naphthylamine,
N-p-tertiary hexyl-phenyl-α-naphthylamine, and
N-p-tertiary hexyl-phenyl-β-naphthylamine,

are useful as antioxidants for incorporation into a synthetic lubricant susceptible to oxidative deterioration.

3,414,619
PURIFICATION OF AROMATIC DIAMINES

James M. Cross, New Martinsville, Clyde D. Campbell, Wheeling, and Sidney H. Metzger, New Martinsville, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 438,390, Mar. 9, 1965. This application June 30, 1965, Ser. No. 468,599
6 Claims. (Cl. 260—582)

Reaction of o-aromatic diamines with carbon dioxide catalyzed with alkali metal or alkaline earth metal compounds to produce benzimidazolinones. Removal of o-aromatic diamines from diamine mixtures by selective reaction of the o-aromatic diamines with carbon dioxide catalyzed with alkali or alkaline earth metal compounds.

3,414,620
MULTIFUNCTIONAL AMINE COMPOUNDS AND METHODS FOR THEIR PREPARATION

Clarence R. Bresson and Raymond L. Cobb, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,876
14 Claims. (Cl. 260—584)

A method of preparing mercapto-substituted amines which comprises reacting an oxazoline compound with an organic thiol compound to form a reaction mixture, hydrolyzing the reaction product, with a mineral acid, and recovering the mercapto-substituted amines. In addition, the oxazoline-organic thiol reaction mixture can be treated with a thioic acid prior to hydrolysis to yield the mercapto-substituted amines.

3,414,621
METHOD FOR THE PREPARATION OF AMINES FROM OXAZOLINES

Clarence R. Bresson and Raymond L. Cobb, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,885
6 Claims. (Cl. 260—584)

Hydroxy-substituted amine compounds containing at least one substituent in the 2-position selected from the group consisting of mercaptomethyl and hydrocarbothiomethyl are prepared by contacting an oxazoline having at least one hydroxymethyl substituent at the 4-position with a hydrocarbon sulfonyl halide, treating the resulting product with an alkali metal mercaptide and hydrolyzing the reaction product with a mineral acid to produce said hydroxy-substituted amine compounds.

3,414,622
PRODUCTION OF HEXAMETHYLENEDIAMINE

William B. Hayes, Odessa, Tex., assignor to El Paso Products Company, Odessa, Tex., a corporation of Texas

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,238
10 Claims. (Cl. 260—585)

Preparation of hexamethylenediamine, useful as an intermediate in the production of nylon which comprises the sequential steps of (1) oxy-dehydro-halogenating n-propane by reaction with a hydrogen halide and an oxygen-containing gas at a temperature of about 900° to 1100° F. in the presence of a ferric halide catalyst to produce an allyl halide; (2) condensing said allylic halide with propylene under pyrolysis conditions at a temperature of about 900° to 1100° F. for a time sufficient to effect substantial condensation thereof whereby said allyl halide and propylene are converted to 1,5-hexadiene; (3) hydrobrominating said 1,5-hexadiene by reaction with an excess of hydrogen bromide at a temperature of about −20° C. to 40° C. to obtain 1,6-dibromohexane; and (4) subjecting said 1,6-dibromohexane to ammonolysis by reaction with a molar excess of ammonia at a temperature of about 0° to 100° C. to obtain the corresponding alpha,omega-alkylenediamine.

3,414,623
POLYAMINE PRODUCTION

William B. Hayes, Odessa, Tex., assignor to El Paso Products Company, Odessa, Tex., a corporation of Texas

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,244
11 Claims. (Cl. 260—585)

Preparation of alpha,omega-alkylenediamines useful as intermediates in the production of nylon which comprises the sequential steps of (1) oxy-dehydro-halogenating a saturated aliphatic hydrocarbon having at least three carbon atoms by reaction with a hydrogen halide and an oxygen-containing gas at a temperature of about 900° to 1100° F. in the presence of a ferric halide catalyst to produce an allylic halide; (2) condensing said allylic halide with an olefin under pyrolysis conditions at a temperature of about 900° to 1100° F. for a time sufficient to effect substantial condensation thereof whereby said allylic halide is converted to its corresponding biallylic derivative; (3) hydro-halogenating said biallylic derivative by reaction with an excess of hydrogen bromide at a temperature of about −20° C. to 40° C. to obtain the corresponding alpha,omega-dibromoalkane; and (4) subjecting said alpha,omega-dibromoalkane to ammonolysis by reaction with a molar excess of ammonia at a temperature of about 0° to 100° C. to obtain the corresponding alpha-omega-alkylenediamine.

3,414,624
ALKALI METALATED TERTIARY PHOSPHINES AND THE PREPARATION THEREOF

Donald J. Peterson, Springfield Township, Hamilton County, and Hugh R. Hays, Colerain Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 478,480, Aug. 9, 1965. This application Mar. 1, 1967, Ser. No. 619,548
13 Claims. (Cl. 260—606.5)

Tertiary phosphines of the form $RR'PCH_3$ are metalated at the methyl position by organometallic compounds of the form R"M. R, R' and R" can be alkyl or aryl, and M can be sodium, potassium or lithium.

3,414,625
PROCESS FOR PREPARING TERTIARY PHOSPHINES

Joseph G. Natoli, Old Bridge, and Alfred A. Lach, Perth Amboy, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,735
10 Claims. (Cl. 260—606.5)

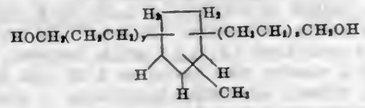
In accordance with certain of its aspects, the process of this invention for preparing trialkylphosphine may comprise (1) reacting a lower alkyl Grignard reagent with phosphorous trihalide in the presence of an organic ether thereby forming product mixture containing trialkylphosphine, organic ether, and magnesium halide; (2) adding to said product mixture water in amount at least sufficient to convert substantially all of said magnesium halide to magnesium halide hexahydrate; (3) separating said magnesium halide hexahydrate from said product mixture thereby forming a magnesium halide-free product mixture; (4) adding to said magnesium halide-free product mixture, water and acid selected from the group consisting of hydrogen halide and sulfuric acid thereby forming an aqueous phase containing trialkylphosphine salt; (5) separating organic ether from said magnesium halide-free product mixture thereby forming an ether-free product mixture; (6) adding base to said magnesium halide-free and ether-free product mixture in said aqueous phase thereby forming trialkylphosphine; and (7) recovering said trialkylphosphine.

3,414,626
DI(ω-HYDROXYALKYL)METHYL-CYCLOPENTANES

Erich Marcus, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Dec. 28, 1962, Ser. No. 247,838. Divided and this application Mar. 20, 1967, Ser. No. 624,189
3 Claims. (Cl. 260—617)

This invention relates to the production of di(ω-hydroxyalkyl)methylcyclopentane of the formula:



wherein y and z designate integers of from 0 to 8, by reacting 1,3-butadiene with an isoalkylaluminum, optionally growing the resulting polymer with ethylene, oxidizing the polymer, and then hydrolyzing the oxygenated polymer.

3,414,627
PROCESS FOR THE PREPARATION OF VINYL FLUORIDE

Dario Sianesi, Milan, Renzo Fontanelli, Rome, and Giuseppe Nelli, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Nov. 19, 1964, Ser. No. 412,315
Claims priority, application Italy, Nov. 22, 1963, 23,869/63
5 Claims. (Cl. 260—653.4)

Process for preparing vinyl fluoride which comprises introducing a flow of gaseous vinyl chloride into a liquid acid phase containing hydrogen fluoride and passing the reaction products into a pyrolysis chamber at a temperature from 400 to 800° C. at about atmospheric pressure.

3,414,628
PREPARATION OF TETRAFLUOROMETHANE

Joachim Massonne, Hannover-Kleefeld, Germany, assignor to Kali-Chemie Aktiengesellschaft, Hannover, Germany

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,415
Claims priority, application Germany, Dec. 28, 1965, K 58,025
4 Claims. (Cl. 260—653.8)

Trifluoromethane is reacted with an excess of elementary fluorine to obtain tetrafluoromethane substantially free of perfluorinated higher alkanes.

3,414,629
CYCLOOLIGOMERIZATION

Marvin A. McCall and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 13, 1965, Ser. No. 455,636
9 Claims. (Cl. 260—666)

A cyclooligomerization catalyst system comprising zerovalent nickel complexed with an organo-phosphorus complexing ligand and containing an excess of at least 24 moles of the organo-phosphorus complexing ligand per mole of nickel and processes employing these catalysts for the production of cyclooctadiene from a 1,3-diene.

3,414,630
METHOD FOR SEPARATING META-PARA XYLENE MIXTURES

Theodore H. Szawlowski, Lake Park, Fla., and Charanjit Rai, Somerset, N.J., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Continuation-in-part of applications Ser. No. 562,960, Ser. No. 562,961, and Ser. No. 562,962, June 30, 1966; and Ser. No. 625,274, Dec. 27, 1966. This application Feb. 27, 1967, Ser. No. 618,990
52 Claims. (Cl. 260—674)

The fractional crystallization of p-xylene from meta-para xylene mixtures is carried out at below the normal meta-para binary eutectic freezing point of the feed mixture. Crystallization of the meta-para eutectic is inhibited by adding to the feed mixture a small proportion, not more than about 3 mole-percent, of a sufficiently soluble organic compound containing at least one of the hetero-atoms, oxygen, sulfur, nitrogen, phosphorus, silicon, boron and halogen.

3,414,631
OXYDEHYDROGENATION PROCESS

Robert K. Grasselli, Garfield Heights, and James L. Callahan, Bedford Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 10, 1965, Ser. No. 463,036
13 Claims. (Cl. 260—680)

Conjugated dienes, such as butadiene, are prepared from monoolefins, such as butene-1, by oxydehydrogenation over a catalyst, such as $Ni_{10.5}FeBi_{0.5}Sb_{0.5}Mo_{12}O_{55}$.

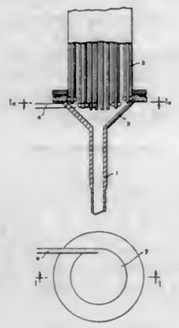
3,414,632
PROCESS AND APPARATUS FOR CRACKING HYDROCARBONS

Karl Buschmann, Neustadt ander Weinstrasse, and Hermann Meyer, Helmut Nonnenmacher, and Armin Schweitzer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed May 14, 1965, Ser. No. 455,705
Claims priority, application Germany, May 16, 1964, B 76,815
19 Claims. (Cl. 260—683)

Process and apparatus for thermally cracking hydrocarbons to produce olefines in a cracking tube and for quenching the hot gases in an expanded quench zone in

which the connecting member between the cracking tube and the quench zone has a circular cross-section and in



which steam is passed tangentially into said connecting member.

3,414,633

DIMERIZATION OF INTERNAL MONOOLEFINS

Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,423

7 Claims. (Cl. 260—683.15)

Dimers of internal monolefins are formed by contact with a catalyst formed by mixing at least one rare earth halide and yttrium halide with at least one alkali metal aluminum hydride.

3,414,634

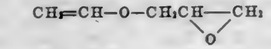
COPOLYMERS OF VINYL GLYCIDYL ETHER

Howard Sorkin, Berkeley Heights, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,556

4 Claims. (Cl. 260—837)

Vinyl glycidyl ether of the formula



is copolymerized with trifluoroethyl vinyl ether to form a copolymer which may be cured.

3,414,635

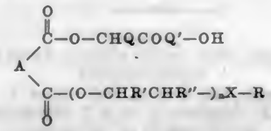
HYDROXYALKYL ESTERS IN SURFACE COATINGS

Gayle D. Edwards and Harold G. Waddill, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,499

8 Claims. (Cl. 260—851)

1. In a method for the preparation of a thermosetting enamel by cross-linking a copolymer by heating with an amino-formaldehyde resin, said copolymer being prepared from a hydroxyalkyl ester of an unsaturated acid and at least one ethylenically unsaturated compound, the improvement wherein the hydroxyalkyl ester is one having the formula:



wherein A represents the nucleus of an ethylenically unsaturated dicarboxylic acid, Q, Q′, R′ and R″ are selected from the group consisting of hydrogen, methyl, ethyl, phenyl, chloromethyl and hydroxymethyl, R is selected from the group consisting of C_1–C_{18} alkyl, phenyl and alkylphenyl wherein the alkyl group contains from 1 to 15 carbon atoms, X is selected from the group consisting of oxygen and sulfur and *n* is a number of from 1 to about 70.

3,414,636

ELASTIC-THERMOPLASTIC COPOLYMERS WITH GOOD THERMAL- AND LIGHT-STABILITY

Karl-Heinz Ott, Cologne-Stammheim, Harry Rohr, Cologne, Karl Dinges, Cologne-Stammheim, and Karl-Heinrich Knapp, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 20, 1964, Ser. No. 383,936

Claims priority, application Germany, Aug. 23, 1963, F 40,572

8 Claims. (Cl. 260—876)

A copolymer mixture of a rubber-elastic copolymer or graft copolymer of butadiene and a thermoplastic copolymer of styrene and acrylonitrile or of alkyl derivatives thereof stabilized with a synergistic mixture of 2,2′-methylene-bis-4-methyl-6-cyclohexylphenol and zinc sulphide.

3,414,637

PROCESS FOR PREPARING PROPYLENE/ETHYLENE BLOCK COPOLYMERS

Alva M. Jones, Jerome A. Planchard, Jr., Raymond A. Speed, and Billy E. Claybaugh, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed Dec. 19, 1963, Ser. No. 331,750

5 Claims. (Cl. 260—878)

1. A method of obtaining a sharp block copolymer product having an infrared 720 cm.$^{-1}$/730 cm.$^{-1}$ absorbance ratio from 1.3 to 1.7 which comprises passing through a reaction zone having an *L/D* ratio from 50 to 500, without substantial backmixing, a continuous charge stream consisting of separately introduced streams of:

(a) a mixture of:
- 100 parts by weight of a diluent hydrocarbon,
- from 3.5 to 47.5 parts by weight of a polymer consisting of from 5 to 20 weight percent living polypropylene chains and correspondingly from 95 to 80 weight percent polypropylene homopolymer,
- and from 0.25 to 10.0 parts by weight of unreacted propylene, in contact with from 0.01 to 0.30 part by weight of a catalyst consisting of $TiCl_3 \cdot \frac{1}{3}AlCl_3$ modified with from 0.5 to 7.0 mols of triethyl aluminum or diethyl aluminum chloride per mol of $TiCl_3 \cdot \frac{1}{3}AlCl_3$, and

(b) sufficient ethylene to obtain upon reaction a copolymer product containing from 6 to 10 weight percent reacted ethylene, under conditions including:
- an ethylene charge rate from 0.5 to 7.5 pounds per hundred pounds of diluent,
- a temperature from 120° to 175° F.,
- a pressure from 20 to 150 p.s.i.g., and
- a residence time from 0.25 to 120 minutes.

3,414,638

GRAFT COPOLYMER OF ETHYLENE/VINYL ACETATE AND POLYMERIZED VINYL CHLORIDE, STYRENE AND ACRYLONITRILE

Dietrich Hardt, Bonn, Herbert Bartl, Cologne-Stammheim, Wilhelm Göbel, Cologne-Flittard, and Karl Dinges, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,127

Claims priority, application Germany, Apr. 22, 1965, F 45,876

4 Claims. (Cl. 260—878)

Copolymers having a K-value of 50 to 90 and based on the polymerization of styrene and acrylonitrile in a weight ratio of 6:4 to 8:2 in the presence of a graft copolymer of grafting substrate of a copolymer of ethylene and vinyl acetate and a grafting monomer of vinyl chloride.

3,414,639

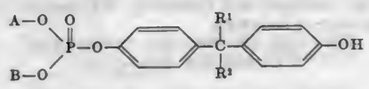
DIARYL ALKYLENEDIPHENOL PHOSPHATES

James J. Hodan, Williamsville, William L. Schall, Buffalo, and Arlen W. Frank, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

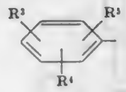
No Drawing. Filed May 27, 1965, Ser. No. 459,431

8 Claims. (Cl. 260—953)

1. A compound having the formula



wherein R^1 and R^2 are independently selected from the group consisting of hydrogen, alkyl and aryl, and A and B are radicals independently selected from the following structure



wherein R^3, R^4 and R^5 are independently selected from the group consisting of hydrogen, alkyl and α-alkyl benzyl.

3,414,640

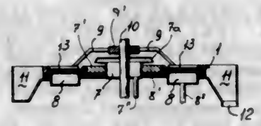
METHOD OF PRECIPITATING AND FORMING GRANULES FROM CELLULOSE ESTERS

Giuseppe Garetto, Verbania, Novara, and Clemente Canciani, Susello-Ghiffa, Novara, Italy, assignors to Rhodiatoce S.p.A., Milan, Italy, an Italian corporation

Filed Oct. 21, 1965, Ser. No. 499,134

Claims priority, application Italy, Feb. 18, 1965, 1,420

6 Claims. (Cl. 264—13)



A method for the continuous precipitation of cellulose alkylate esters and the production of granules thereof, in which the cellulose alkylate solution is fed upwardly through a perforated surface upon which is disposed a thin film of the precipitating liquid and the surface is swept by a blade to sever the coagulated granules as they form on the perforated surfaces.

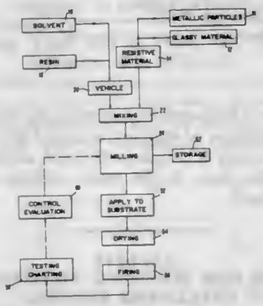
3,414,641

METHOD OF FABRICATING RESISTOR COMPOSITIONS

Lewis F. Miller, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 30, 1965, Ser. No. 475,985

5 Claims. (Cl. 264—40)



A method for controlling electrical properties, such as resistance and temperature coefficient of resistance, of a resistor paste by correlating such properties with the number of passes to which the composition is subjected on a roll mill. Once the correlation is established, the electrical properties of a particular composition may be predicted from the number of passes of such a composition on the roll mill.

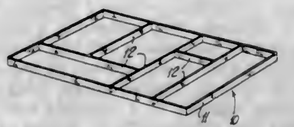
3,414,642

METHOD OF MANUFACTURING ORNAMENTAL PLASTIC PRODUCTS

Peter Baum, La Grangeville, N.Y., assignor to Robinson, Lewis, and Rubin, New York, N.Y., a corporation of New York

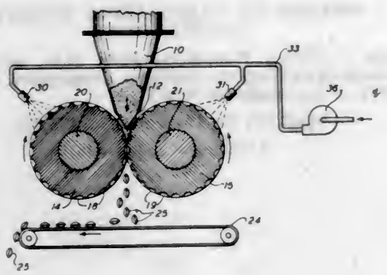
Filed Mar. 11, 1966, Ser. No. 533,519

7 Claims. (Cl. 264—73)



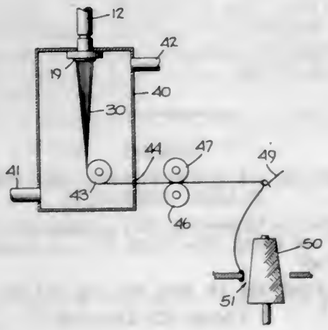
The method of making an ornamental plastic product wherein pellets of plastic material are placed in a tray having removable partitions, heating the pellets to congeal them in each area and then removing the partitions and reheating the pellets to produce a unitary sheet.

3,414,643
LIME FINES BRIQUETTING
William D. Collie, Benton, Ky., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 19, 1965, Ser. No. 480,964
5 Claims. (Cl. 264—109)



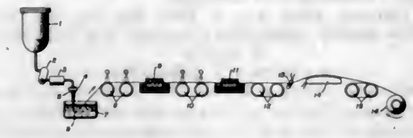
Lime fines are briquetted by introducing them into mold cavities, the surfaces of which are coated with an aqueous solution containing a polyoxyethylated alkylphenol, and compressing the fines in the mold cavities to form the fines into briquets.

3,414,644
METHOD FOR SPINNING BICOMPONENT CELLULOSE ESTERS
William J. Myles, Charlotte, N.C., and Roland K. Kunkel, Berkeley Heights, N.J., assignors to Celanese Corporation, a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,137
8 Claims. (Cl. 264—168)



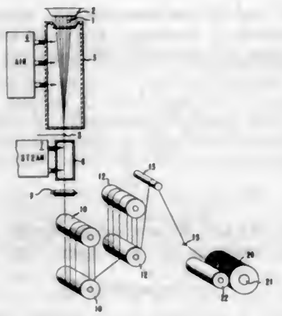
1. A process comprising passing a spinning solution of a saponifiable cellulose ester containing a minor proportion of a quaternary ammonium salt and a spinning solution of a cellulose ester in the absence of said quaternary ammonium salt through separate zones, bringing streams of said solutions together at a common juncture under conditions such that substantially no mixing of said solutions takes place and passing a single stream containing separate portions of said solutions into an evaporative atmosphere for the solvent to form a filament composed of two portions of said cellulose ester in eccentric relationship, one portion containing said quaternary ammonium salt dispersed throughout while the other portion is free of said salt.

3,414,645
PROCESS FOR SPINNING WHOLLY AROMATIC POLYAMIDE FIBERS
Herbert S. Morgan, Jr., Apex, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 19, 1964, Ser. No. 376,363
17 Claims. (Cl. 264—210)



The solution spinning of aromatic polyamides is improved by using a dry jet-wet spinning process wherein the polymer solution immediately after extrusion is led through a gaseous medium for a short distance, about ⅛ to 1½ inches, before entering the coagulation bath.

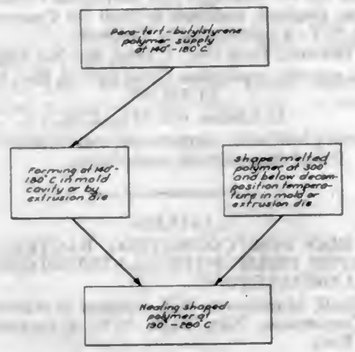
3,414,646
COUPLED PROCESS FOR THE PRODUCTION OF POLYCARBONAMIDE FILAMENTS
Gilbert Pitzl, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,822
5 Claims. (Cl. 264—210)



A "coupled" process for the production of polycarbonamide filaments which includes extruding, quenching in a gaseous non-aqueous atmosphere, treating with steam while the temperature of the filaments is in the range of T_{fd} to T_{fd} +60° C., then drawing. T_{fd} is the force-to-draw transition temperature of the filaments.

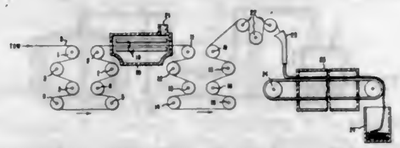
3,414,647
SHAPED ARTICLES OF CRYSTALLINE POLY (PARA - TERT. - BUTYLSTYRENE)POLYMER AND METHOD OF MAKING THE SAME
Frank L. Saunders and Everett H. Richardson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 22, 1964, Ser. No. 387,254
6 Claims. (Cl. 264—235)

A method for making shaped articles of crystalline linear poly(para-tert.-butylstyrene) which method comprises forming a heat-plastified non-crystalline homopolymer of para-tert.-butylstyrene, rich in the isotactic structure, at temperatures between 140° and 180° C., into a desired shape and thereafter heating said shaped polymer



at temperatures between 190° and 280° C. to effect rapid crystallization of the shaped polymer.

3,414,648
DRAWING AND CRIMPING TOWS OF ASYMMETRICALLY BIREFRINGENT POLYESTER FILAMENTS
Don H. Higginbotham, Ayden, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,530
5 Claims. (Cl. 264—237)



A process is disclosed for drawing and crimping polyester filaments which have been asymmetrically quenched during melt spinning. A tow of the filaments is drawn during passage through a hot gas, passes from draw rolls into a cool air jet which cools and opens the tow, and is conveyed through a relaxation chamber. Tension is maintained on the tow until just prior to the air jet. Large unopened groups of filaments are avoided when the conditions are such that the moisture content of the opened tow is less than 2% when the tension is released.

3,414,649
DEVICE AND METHOD FOR MANUFACTURING OF SPIRALS AND/OR RINGS
Arne Valmar Heede, Ivar Aasens vei 25D, Oslo, Norway; Sverre Fredriksen, Brudeberget, Drammen, Norway; and Tor Noldus Nilsen, Hannebjergvei 12, Rungsted Kyst, Denmark
Filed Aug. 13, 1964, Ser. No. 389,266
Claims priority, application Norway, Aug. 16, 1963, 149,755
4 Claims. (Cl. 264—297)

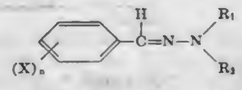
Spirals or rings are formed from lengths of sheet material by passing them on a conveyor belt that extends between and about two rolls and that passes beneath and is deflected by a spindle adjacent one roll. Upon passage beneath the spindle, the sheet material is stretched and deformed so that it takes a permanent arcuate set. The spindle may rotate with the belt and be decelerated relative to the belt to alter the curvature of the treated material along its length thereby to form a



spiral. An inclined plate above the belt adjacent the spindle provides a discharge chute down which the formed rings or spirals can roll.

3,414,650
SUNSCREENING METHODS
Sigmund C. Catino, Castleton, and Albert F. Strobel, Delmar, N.Y., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Filed July 8, 1964, Ser. No. 381,226
8 Claims. (Cl. 424—60)

A sunscreening composition and a method of employing the same, said method comprising protecting human skin against the burning rays of actinic radiation by applying to the skin a compound represented by the formula:



wherein:

(A) X is a substituent selected from the group consisting of lower alkyl, halogen, oxy, alkylsulfonyl, carboxamido, and sulfonamido,

(B) n is an integer from 0 to 5 except when X is oxy n is an integer from 1 to 2,

(C) R_1 and R_2 are independently selected from the group consisting of hydrogen, alkyl, alkenyl, cycloalkyl and cycloalkenyl, at least one of R_1 and R_2 being other than hydrogen.

3,414,651
PURIFICATION OF INTERFERON-CONTAINING MATERIAL
Karl Heinz Fantes, Bushey, England, assignor to Glaxo Laboratories Limited, Greenford, England, a British company
Filed Nov. 30, 1964, Ser. No. 414,879
Claims priority, application Great Britain, Dec. 10, 1963, 48,761/63
13 Claims. (Cl. 424—86)

A process is provided for the purification of aqueous crude interferon material containing unwanted protein wherein the unwanted protein is precipitated without precipitating interferon by means of a water-soluble salt providing iodide or thiocyanate ions at a pH not greater than 5.0. A preferred procedure is to adsorb the interferon and unwanted protein on an adsorbent, such as Doucil or Alusil, at a pH less than 6.0, elute with an aqueous solution of a salt providing iodide or thiocyanate ions at a pH greater than 5.5, and subsequently adjust the pH of the eluate to below 5.0 to precipitate unwanted protein which is removed. Interferon is precipitated by addition of a water-miscible organic solvent, such as methanol or acetone, the precipitate is redissolved in water or aqueous medium buffered at pH 7.5, discarding any insoluble material. The resulting interferon solution is contacted with an anion exchange resin, such as diethylaminoethyl cellulose, and separated therefrom, whereby further unwanted protein is removed leaving an interferon filtrate having a purification factor up to 6000× the starting material.

3,414,652
MIXTURES OF EPN AND HYDROXAMATE CARBAMATES

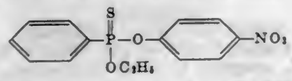
James B. Buchanan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 484,121, Aug. 31, 1965. This application Aug. 1, 1966, Ser. No. 569,110

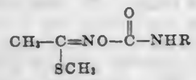
3 Claims. (Cl. 424—218)

This application relates to insecticidal mixtures. More particularly it is directed to mixtures of ethyl p-nitrophenyl thionobenzenephosphonate hereinafter called EPN and a hydroxamate carbamate selected from methyl O-(methylcarbamyl) thiolacetohydroxamate, methyl O-(carbamyl) thiolacetohydroxamate and their mixtures.

EPN has the following structural formula:



The hydroxamate carbamates have the following structural formula:



in which R is hydrogen or methyl.

3,414,653
COMPOSITIONS AND METHODS FOR CONTROLLING FUNGI USING 3-IMINO-1,2-DITHIOLE COMPOUNDS

Johannes Th. W. Montagne and Barrington Cross, Sittingbourne, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,222

Claims priority, application Great Britain, Dec. 6, 1965, 51,574/65

14 Claims. (Cl. 424—277)

3-imino-1,2-dithiole compounds useful as fungicides, such as 3H-1,2-benzodithiol-3-one oxime.

3,414,654
METHOD FOR COMBATING BACTERIA IN VAPOR PHASE WITH 1,1,3-TRICHLOROTRIFLUOROACETONE

Cyril Woolf, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 21, 1966, Ser. No. 559,064

3 Claims. (Cl. 424—331)

1. The method for combating bacteria which comprises treating bacteria with a bactericidally effective amount of 1,1,3-trichlorotrifluoroacetone in vapor phase.

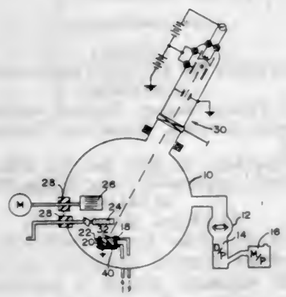
ELECTRICAL

3,414,655
APPARATUS FOR EVAPORATION OF LOW TEMPERATURE SEMICONDUCTOR MATERIAL BY ELECTRON BEAM IMPINGEMENT ON THE MATERIAL AND COMPRISING MEANS FOR DRAINING ELECTRIC CHARGE FROM THE MATERIAL

Lloyd R. Allen, Belmont, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 26, 1966, Ser. No. 524,962

3 Claims. (Cl. 13—1)



Electron beam evaporation of boron and other low temperature semiconductor material is facilitated by use of a grounding stud to drain charge which accumulates on the zone of the material struck by the electron beam.

3,414,656
ELECTRIC ARC FURNACE WITH IRON CORE CHOKE MEANS ON ELECTRODE SUPPLY CONDUCTORS

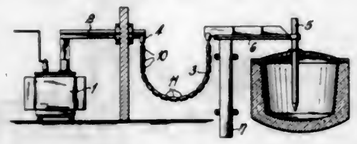
Hermann Karl Lünig, Duisburg, Germany, assignor to Demag Elektrometallurgie G.m.b.H., Duisburg, Germany

Filed Oct. 22, 1965, Ser. No. 501,751

Claims priority, application Germany, Jan. 28, 1965, D 46,377

8 Claims. (Cl. 13—9)

An electric arc furnace has movable electrodes and current conductors connecting the electrodes to a source of current and each including a flexible portion. Individual and separate choke elements, in the form of annular iron cores, are placed around at least the flexible portions of



the conductors to adjust the inductances to equalize the currents. The choke elements may replace a corresponding number of individual insulating elements surrounding the flexible portions of the conductors.

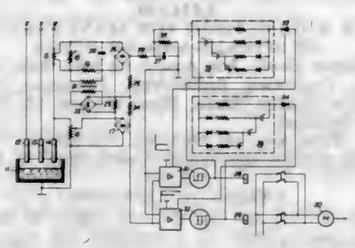
3,414,657
AUTOMATIC CONTROL SYSTEM

Ferdinand Karl Beck, Vienna, Austria, assignor to Wiener Schwachstromwerke Gesellschaft m.b.H., Vienna, Austria

Filed Jan. 5, 1967, Ser. No. 607,501

Claims priority, application Austria, Jan. 13, 1966, A 282/66

18 Claims. (Cl. 13—13)



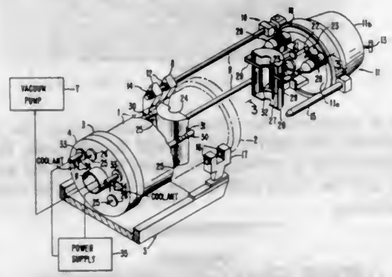
A control system, especially suited for electrode position control of arc furnaces, wherein the time constant of a compensating signal depends on the magnitude of a deviating signal. The changing time constant is accomplished from utilizing a non-linear resistance combination.

3,414,658
HIGH VACUUM FURNACE HAVING IMPROVED SUPPORT STRUCTURES FOR THE DOOR AND HEATING ELEMENTS

Mark O. Uitz, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Nov. 23, 1966, Ser. No. 596,683

14 Claims. (Cl. 13—20)



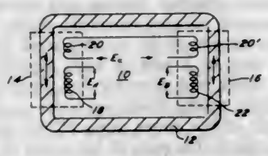
A door on one end of the furnace is supported on rods to permit sliding the door away from the end of the container and the door is hinged to the rods to permit rotation of the door away from the container. A semicylindrical heater element fixedly mounted within the container and a similar element mounted on the inside of the door together form a cylindrical "hot zone" when the door is closed. Each of the heater elements is mounted on a pair of water cooled support members which provide reliable electrical connection to the heater elements when the furnace is in operation.

3,414,659
METHOD AND APPARATUS FOR INDUCTION HEATING AND STIRRING

Theodore R. Kennedy, Willingboro, N.J., assignor to Inductotherm Corporation, Rancocas, N.J.

Filed Oct. 24, 1965, Ser. No. 504,655

21 Claims. (Cl. 13—26)



A method and apparatus is disclosed for increasing coil heating efficiency while simultaneously obtaining effective molten metal stirring using a polyphase source The benefits of the invention are obtained by coupling a full coil to a partial coil to obtain efficient heating while maintaining sufficient magnetic coupling between coil parts for stirring.

3,414,660
MEANS FOR PROTECTION AGAINST AND/OR INDICATION OF FAULTS IN CORELESS INDUCTION FURNACES, HEATING FURNACES AND THE LIKE

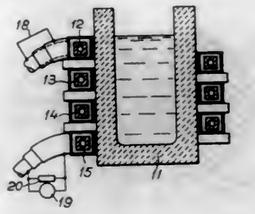
Ivar Becklus, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Nov. 29, 1965, Ser. No. 510,245

Claims priority, application Sweden, Dec. 16, 1964, 15,196/64

1 Claim. (Cl. 13—27)

1. Means for protection against faults in a coreless induction furnace, said furnace comprising a crucible surrounded by coil turns covered by insulation, comprising, at least partly around said insulation, an uninterrupted metal cover conducting in the longitudinal direction of the current conductor, the conductor of the coil and the metal



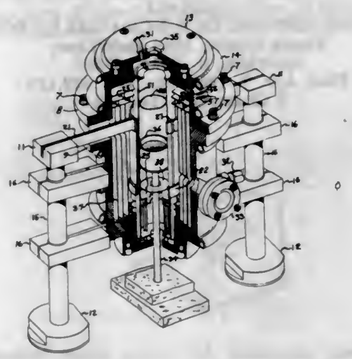
cover being coupled together at one coil end, said conductor and metal cover being coupled together at the other coil end across a voltage sensitive member, said member being affected upon short circuits or other insulation faults.

3,414,661
HIGH TEMPERATURE FURNACE

Thomas B. Reed, Concord, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

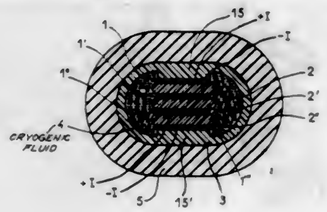
Filed May 19, 1965, Ser. No. 457,037

5 Claims. (Cl. 13—31)



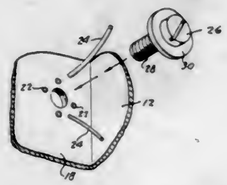
1. A direct resistance heated furnace comprising, a furnace body, a tantalum heating element, a source of electric power, said source of electric power supplying heating current to said heating element, a source of cooling fluid, said fluid caused to circulate through said furnace body maintaining said furnace at a preselected temperature, a zirconia tube dividing the interior of said furnace into two compartments, one containing said heating element and another surrounding a work area, fibrofax packing sealing the contact area of said zirconia tube and said furnace, said tantalum heating elements disposed in close proximity with said zirconia tube, tantalum heat shield, said heat shield disposed between said heating element and said furnace body thereby confining the heat within said furnace, ceramic heat shields disposed within said tube at each end, a source of argon gas coupled to said heating element compartment, a source of oxidizing gas coupled to said work area within said zirconia tube.

3,414,662
SUPERCONDUCTIVE ELECTRIC CABLE
Georges Klein, Paris, and Edmond Kloeckner, Bures-sur-Yvette, France, assignors to Compagnie Generale d'Electricite, Paris, France
Filed Nov. 10, 1966, Ser. No. 593,358
Claims priority, application France, Nov. 10, 1965, 38,009
13 Claims. (Cl. 174—15)



This application describes a cable construction including a cable core comprising a stacked alternate arrangement of conductive bands and insulating bands, which stack is supported within a duct carrying a cryogenic fluid capable of contacting directly at least portions of the conductors. Surrounding the fluid carrying duct is a thermally insulating envelope. The individual conductors of each stack carry current in a direction opposite to the current flowing in the two conductors adjacent thereto so that the resultant field generated thereby is maintained below the critical value at which the superconductive properties of the conductor may be undesirably affected by this field. Direct currents as well as alternating and multi-phase currents may also be advantageously transmitted by this cable.

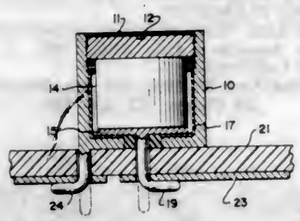
3,414,663
GROUND CONNECTION FOR OUTLET BOXES
James Glader, 1405 Park Lane, Mobridge, S. Dak. 57601
Filed Apr. 7, 1967, Ser. No. 629,132
1 Claim. (Cl. 174—51)



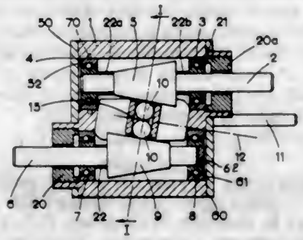
A ground connection for outlet boxes including a tapped hole in the wall of an outlet box, a screw to enter the hole and plain holes adjacent the tapped hole to receive ground wires in position to be overlaid and secured by the screw head or by a washer mounted on the screw.

3,414,664
MOUNTING FOR INTERCHANGEABLE CIRCUIT ELEMENTS
Robert A. Kratochvil, Des Plaines, Ill., assignor to Beltone Electronics Corporation
Filed Feb. 4, 1966, Ser. No. 525,055
4 Claims. (Cl. 174—52)

A mounting for a "pellet-type" circuit element on a circuit board. A small conductive casing is provided with a contact at one end of the casing and a conductor connecting the contact with a first terminal on the board. A "pellet-type" circuit element is inserted into the casing through an open opposite end until it contacts the contact and the open end is closed by a conductive cap which threadedly engages the open end of the casing. The cap is tightened until it bears against the element and compresses it between the cap and contact thus forming an electrically conductive circuit between the contact, the element, the cap and the casing. The conductive casing includes a conductor for electrically connecting the casing to a second terminal on the board to complete the circuit. Insulation is provided between the element and the casing and the open end of the casing may be mounted in a housing.



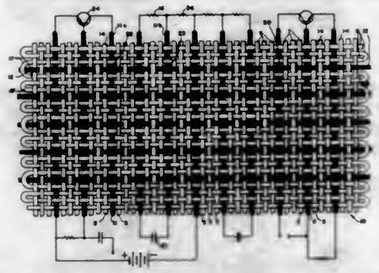
3,414,665
SPEED CHANGING MECHANISM
Joseph Reginald Parrish, Richmond, Surrey, England, assignor to Parrish Instruments Limited, Richmond, Surrey, England, a British company
Filed June 30, 1966, Ser. No. 561,966
1 Claim. (Cl. 74—193)



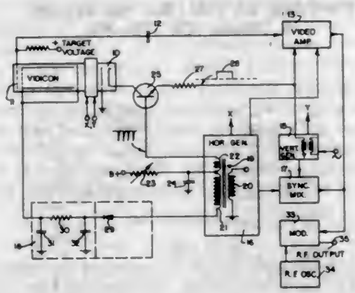
The speed changing device includes a housing in which spaced oppositely inclined driving and driven cones are mounted on spaced parallel rotatable shafts respectively. The rotary movement of the driving cone is transmitted to the driven cone by a pair of balls mounted in a cage between said cones and movable longitudinally thereof. Ball race bearings having inner and outer cages positioned at opposite ends of the cones, support the shafts. Sleeves on the shaft maintain the ends of the cones in spaced relation to the inner cage of the bearing. A plug surrounding each shaft adjacent the large end of each cone is threaded into the housing and is adjustable to exert thrust on the outer cage of the ball race in a direction axially toward the adjacent cone thereby urging said cones toward one another and pressing the cones in wedging fashion against said pair of balls.

3,414,666
WEAVED ELECTRONIC EQUIPMENT
George J. Doundoulakis, North Bellmore, and Helias Doundoulakis, Baldwin, N.Y., assignors to Electro-mechanical Devices, Inc., New York, N.Y., a corporation of New York
Filed Oct. 14, 1963, Ser. No. 315,900
3 Claims. (Cl. 174—68.5)

A woven electrical connector with wires and dielectric threads making up the warp members interwoven with other wires and dielectric threads making up the fill. The weaving pattern is governed to produce contact between warp and fill wires only at certain crossover locations, resulting in a specific network which, with the addition of specific electrical components, becomes a complete electrical circuit. Also included is means for producing the networks in quantities and for producing finished circuits incorporating the networks. Production of finished circuits is facilitated by novel clamping means to hold the terminals of the electrical components.



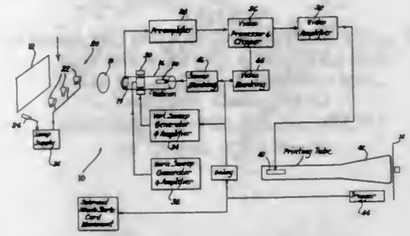
3,414,667
BEAM CURRENT STABILIZING CIRCUIT
De Loss J. Tanner, Bensenville, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 17, 1965, Ser. No. 456,198
9 Claims. (Cl. 178—7.2)



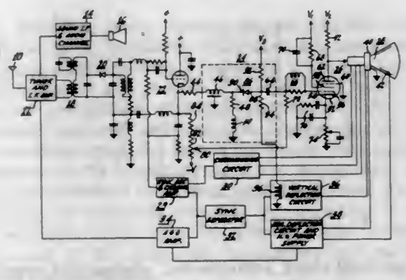
The output of a horizontal blanking transformer is rectified and coupled to a vidicon for supplying a direct current potential to the focus and accelerating electrodes thereof. The collector of an NPN transistor is connected to the cathode of the vidicon and the emitter is connected to a vertical blanking generator. A direct current potential source is connected by a variable resistor to the secondary winding of the horizontal blanking transformer and the base electrode of the transistor is connected to the junction point of the variable resistor and secondary winding. As the current in the vidicon is reduced due to cathode aging, the bias on the base of the transistor changes to drive the transistor harder thereby increasing the current through the vidicon in an amount proportional to the amount decreased by cathode aging thereby maintaining a constant direct current therethrough.

3,414,668
FACSIMILE SYSTEM WITH VIDICON RESCANNING DURING RETRACE
Roman A. Adams, Skokie, and John J. Maginot, Jr., Des Plaines, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed May 18, 1965, Ser. No. 456,632
3 Claims. (Cl. 178—7.7)

A facsimile system comprising a vidicon scanning tube including an electron gun to produce an electron beam for scanning the mosaic screen of said tube, means for projecting an optical image on said screen, means for deflecting the electron beam to scan said screen, said deflecting means comprising a line scanning sweep generator and a frame scanning sweep generator for causing deflection of the electron beam along rectangularly related axes, said frame scanning sweep generator comprising means for generating a sawtooth sweep signal having a gradually rising scanning portion and an abruptly declining retrace portion, and means for blanking the electron beam during only a portion of said retrace whereby a portion of the mosaic screen is rescanned by the beam during the remaining portion of the retrace, said frame scanning sweep generator comprising means for producing a retrace signal having an abruptly declining blanked portion and a gradually declining rescanning portion, said rescanning portion being at a scanning rate comparable to the rate during the gradually rising scanning portion.



3,414,669
BLANKING CIRCUITS FOR TELEVISION RECEIVERS
Donald H. Willis, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,130
8 Claims. (Cl. 178—7.5)

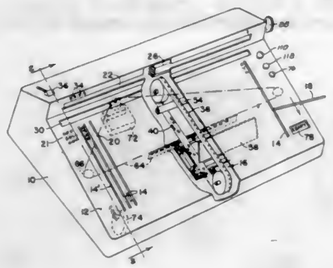


A circuit for applying retrace blanking pulses to a low impedance point in television receivers. Means are provided to forward bias a rectifier, serially coupled between source of composite video signals and a video amplifier stage, to normally conduct. A blanking pulse occuring during retrace interval, sufficient in amplitude and polarity, is applied to the junction of the rectifier to render it non-conductive and to insure complete blanking of the television picture tube.

3,414,670
CODED DATA ENTRY AND TRANSMISSION APPARATUS
Harry Place, Silver Spring, Md., assignor to Rixon Electronics, Inc., a corporation of Maryland
Filed Oct. 1, 1964, Ser. No. 400,694
14 Claims. (Cl. 178—17)

Data encoding and transmission apparatus having a console whose major exposed face presents the narrow edges

of multiple, interchangeable side-by-side stacked alpha/numeric coding modules, each of which includes a stylus-settable tape having readable code markings on a portion thereof available for readout within the console by a trans-



versely traveling reading carriage, to provide variable message format, review-before-transmission, item correction and change, items-required indication, and other features. Provisions for code-bit mode conversion, error checking, and busy indication are included.

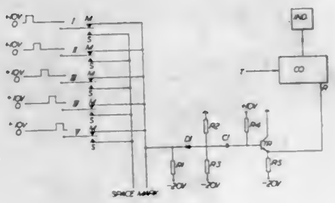
3,414,671

APPARATUS FOR CHECKING THE ADVANCEMENT OF THE TAPE IN A TAPE READER

Kaare R. Meisingset, Stabekk, Terje Thauland, Ronde, Odd Kvingedal, Oslo, and Ivar Mo, Veitvet, Norway, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 16, 1963, Ser. No. 316,656

3 Claims. (Cl. 178—42)



A tape feed check arrangement, wherein the detection of the transitions from no hole to hole and vice versa, occurring in any one of the character element positions of a perforated tape, is used for resetting a counting device which is triggered in synchronism with the tape advance arrangement.

3,414,672

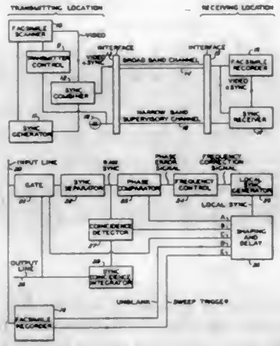
FACSIMILE RECORDING SYSTEM WITH TRANSMITTER INHIBIT MEANS

Stephen E. Townsend, Rochester, and John L. Wheeler, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 26, 1964, Ser. No. 406,281

10 Claims. (Cl. 178—69.5)

A facsimile recording system which includes transmitting and remote receiving locations. Means are provided for synchronizing a facsimile scanner at the transmitting location with a facsimile recorder at the remote receiving location. If the scanner and recorder are out of synchronism, means are provided for inhibiting transmission



of the scanner information during the period of non-synchronization.

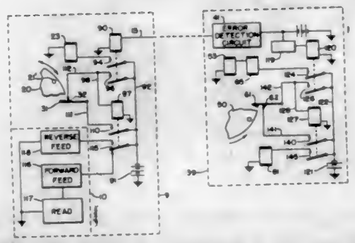
3,414,673

RECORD ERROR CORRECTION SYSTEM

Robert E. Arko, Mount Prospect, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,598

16 Claims. (Cl. 178—92)



1. A telegraphic transmission system including:
a tape controlled transmitter having means for feeding tape in a normal and in a reverse direction;
a recorder for receiving messages transmitted by the transmitter and having means for erasing message portions after they are received;
means for detecting the recording of an erroneous character by the recorder;
means responsive to the detection of an erroneous character by the detecting means for causing the transmitter to stop advancing tape in the normal direction, to stop transmitting and to start retracting tape in the reverse direction;
means for measuring the amount the tape is retracted and for producing an output whenever a predetermined amount of tape is retracted in the reverse direction;
means responsive to an output from the measuring means on the transmitter for causing the transmitter to stop retracting tape in the reverse direction, to start advancing tape in the normal direction and to resume transmitting:
means responsive to the detection of an error by the detecting means for causing the recorder to erase a portion of a previously recorded message upon such detection; and

means for measuring the amount of tape which is fed through the recorder after the erasure of the message is commenced and for stopping the erasure of characters after an amount of tape equal to the amount of tape retracted by the transmitter has been passed through the recorder.

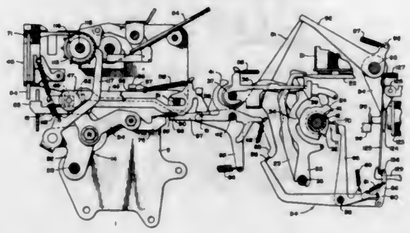
3,414,674

FUNCTION SUPPRESSING MECHANISM FOR PRINTING TELEGRAPH REPERFORATORS

Robert E. Arko, Mount Prospect, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,712

10 Claims. (Cl. 178—92)



In a typing reperforator of the type including a selector clutch for rotating a plurality of selector cams, a function clutch for operating the perforator driving and tape feed mechanisms of the reperforator and a cam rotated in response to tripping of the selector clutch for actuating a lever to trip the function clutch, a device for selectively preventing operation of the perforator driving and tape feed mechanisms of the reperforator comprising an electromagnet that is actuated upon receipt by the reperforator of predetermined signals and means responsive to actuation of the electromagnet for preventing the lever from tripping the function clutch upon actuation by the cam.

3,414,675

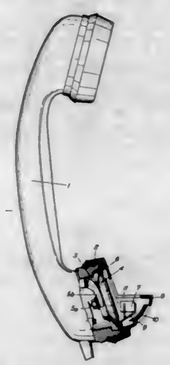
TELEPHONE HANDSET WITH PRESSURE GRADIENT MICROPHONE SUBSTITUTED FOR CARBON MICROPHONE

Otto Marschall, Schafberg, Austria, assignor to Akustische u. Kino-Geräte Gesellschaft m.b.H., Vienna, Austria

Filed July 30, 1965, Ser. No. 476,083

Claims priority, application Austria, Aug. 11, 1964, A 6,896/64

5 Claims. (Cl. 179—1)



A replaceable unit for the carbon microphone button of a telephone handset includes an imperforate plate replacing the buton and completely closing off the button cavity, a transistor amplifier within the cavity, and a ventilated housing member replacing the cap. Mounted on the plate within the housing member is a pressure-gradient microphone oriented with its gradient axis directed toward the sound inlet opening and spaced from the plate for sound access to both its front and rear ends through openings of the housing member.

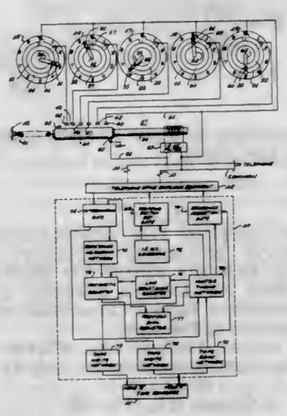
3,414,676

AUTOMATIC INTERROGATION SYSTEM FOR UTILITY METERS AND THE LIKE

Veron E. Long, 14315 Chandler Blvd., Van Nuys, Calif. 91401

Filed July 19, 1965, Ser. No. 472,917

18 Claims. (Cl. 179—2)



An automatic meter reading system, operable through telephone lines, including equipment for automatically measuring and recording a resistance corresponding to a respective meter dial position. The system includes equipment for sequentially dialing a plurality of subscribers' telephone numbers, activating the reading equipment if the respective telephone line is not in use, measuring the impedance of the telephone line alone, sequentially measuring the combined impedance of the telephone line and a plurality of resistance elements corresponding to meter dial positions, subtracting the telephone line impedance from each of the combined impedances and recording each of the differences.

3,414,677

TIME-BANDWIDTH REDUCTION BY DIVIDING BINARY TYPE SIGNAL INTO GROUPS AND PRODUCING CODED SIGNAL OF PREDETERMINED CHARACTERISTIC IN RESPONSE TO EACH GROUP

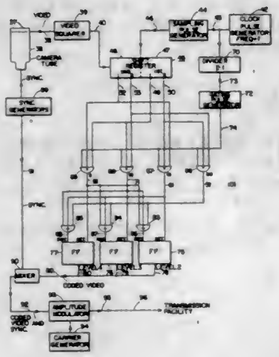
Robert V. Quinlan, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,308

14 Claims. (Cl. 179—15.55)

A binary type signal is divided into successive groups of plural binary elements with the plural elements of each group being simultaneously sampled to produce one coded signal unit in response to each group having a duration equal to the duration of the groups and a characteristic (amplitude, frequency or the like) determined by the

binary state and sequence of binary states of the sampled elements. The coded signal unit is transmitted to a receiver



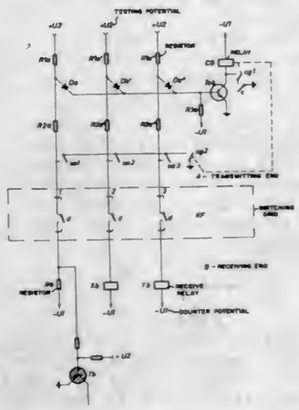
and decoded according to its characteristic to recover the original binary type signal.

3,414,678

CIRCUIT FOR TESTING THE COMPLETENESS OF CONNECTIONS BETWEEN ELEMENTS IN A TELEPHONE SYSTEM PRIOR TO SIGNALLING

Walter Hackenberg, Hirschlanden, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 15, 1965, Ser. No. 472,116
Claims priority, application Germany, July 25, 1964, St 22,459
6 Claims. (Cl. 179—18)



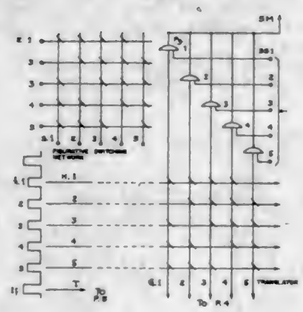
A system is provided for checking connections between control facilities in a telephone system. For example, it may be desirable to check connections between a register and a marker which are temporarily interconnected. To make the check, or test, a potential is applied to all the signal wires at the transmitting end. Transmission is enabled only when a definite potential is received through a test circuit, including a gate circuit, from the signal wires at the receiving end.

3,414,679

ANALOG NETWORK TELEPHONE SWITCHING SYSTEM

Albert Regnier, Issy-les-Moulineaux, and Jean-Jacques René Paul de Buck, Paris, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 30, 1964, Ser. No. 400,600
Claims priority, application France, Oct. 3, 1963, 949,414
5 Claims. (Cl. 179—18)



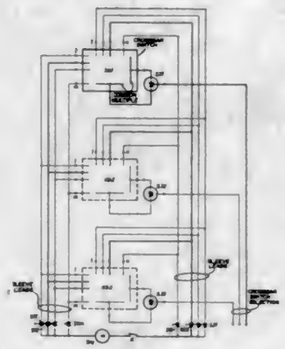
The invention provides a network of gates which simulate the crosspoints in a switching network. A train of time related pulses are applied to the gates. As these pulses flow through the gates time related signals are detected and used to select the crosspoints actually operated in the network to complete a switch path.

3,414,680

ELECTRONICALLY CONTROLLED CROSSBAR SWITCHING NETWORK

Wolfgang Grobe, Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 30, 1965, Ser. No. 476,064
Claims priority, application Germany, Aug. 5, 1964, St 22,503
7 Claims. (Cl. 179—18)



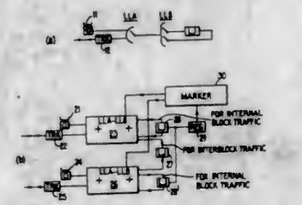
A plurality of crossbar switches have electronic switches at each of their inputs and outputs, a vertical and a horizontal multiple being coupled to a common electronic switch. A selection of an input and an output switch selects a crosspoint in each crossbar switch. A selection of a common switch localizes the connection to a single crosspoint in a single crossbar switch.

3,414,681

SPEECH CONTACT NETWORK IN A TELEPHONE SYSTEM

Evert O. Ekbergh, Hagersten, and Per G. Jonsson, Rosmnge, Sweden, assignors to International Standard Electric Corporation

Filed Sept. 24, 1965, Ser. No. 489,977
Claims priority, application Sweden, Oct. 9, 1964, 12,590/64
5 Claims. (Cl. 179—18)



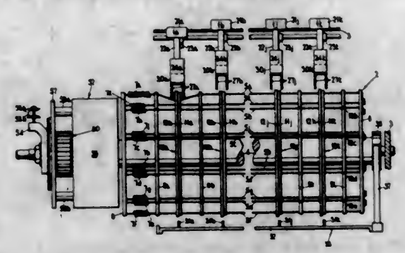
Apparatus is provided in a switching network including a register and marker whereby calls are established through a common subscriber multiple connecting both a plurality of subscribers and trunks and wherein line links are included as intermediate link connections in the link selector stage. The links which are utilized in the common multiple have interchangeable input and output sides.

3,414,682

DIGITAL DATA STORE FOR PULSE CODE TELEPHONE SIGNALLING

Arthur Edward Harrold, Hurworth-on-Tees, England, assignor to The General Electric Company Limited, London, England

Filed Oct. 6, 1965, Ser. No. 493,580
Claims priority, application Great Britain, Oct. 6, 1964, 40,708/64
16 Claims. (Cl. 179—90)



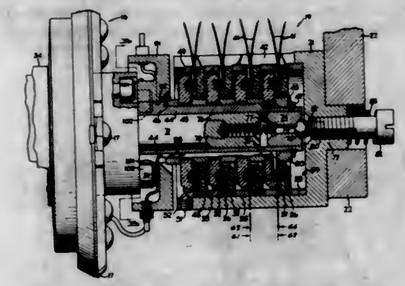
A key-board type digital data store for use as a pulse code dialer. The buttons urge tensioned conductors into contact with another conducting element whereupon the conductor is latched in the "closed circuit" position. The tensioned conductors are arranged around the periphery of wafer type support members which are axially mounted and rotate with a center shaft. A tensioned conductor and its respective conducting element make up a switch that closes the path to program the pulse train generator to send out the respective number of pulses.

3,414,683

ADJUSTABLE FLUID ROTARY BEARINGS FOR USE IN A SYNCHRONOUS TRANSFORMER ROTARY HEAD RECORDER

Dale P. Dolby, East Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Apr. 2, 1964, Ser. No. 356,893
11 Claims. (Cl. 179—100.2)



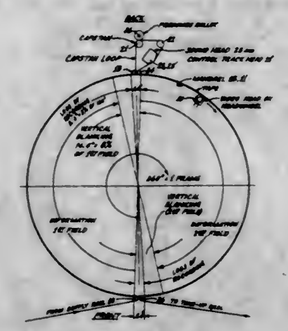
A rotating head drum for magnetic tape recording and reproducing is mounted on the shaft of an electric motor, and signals to and from the rotating heads are coupled to stationary circuits through transformers. One half of each transformer is mounted on a sleeve that is slidably mounted on the shaft and keyed thereto and each rotating transformer half axially faces the corresponding other half, which is stationary. The sleeve is springloaded to urge the corresponding transformer halves together, and an adjustable stationary thrust bearing is provided to engage the extending end of the sleeve to adjust the transformer spacings. A variation of the arrangement includes an air bearing for the motor shaft, in which the head drum acts as an air thrust bearing for the shaft.

3,414,684

VIDEO RECORDER AND/OR REPRODUCER WITH INTERMEDIATE TAPE DRIVE

Abraham Lichowsky, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware

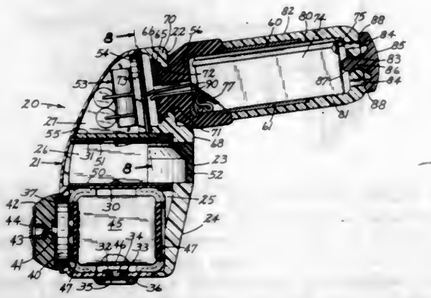
Filed Feb. 5, 1965, Ser. No. 430,536
9 Claims. (Cl. 179—100.2)



A technique for reduction of tape stretch variations in tape recorders where the tape is pulled around a mandrel. The reduction of tape stretch is accomplished by locating the tape drive capstan at a point which is intermediate of the entry and exit points of the tape wrap

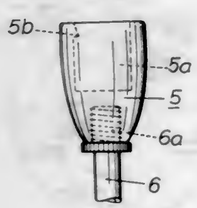
around the mandrel. Where a full tape wrap of 360 degrees is formed, the capstan can be located 180 degrees around the wrap with the tape leaving the mandrel at this 180 degree point and passing over the capstan before returning to the mandrel. Thus, the tape pulled by the capstan is in contact with only 180 degrees of the mandrel.

3,414,685
IN-THE-EAR HEARING AID
Robert L. Gelb, Wayzata, and Richard T. Martin, Minneapolis, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 23, 1965, Ser. No. 489,513
8 Claims. (Cl. 179—107)



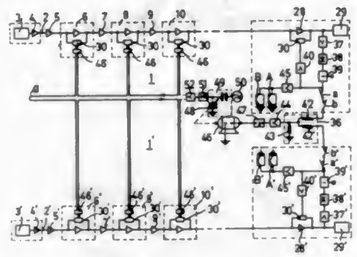
A hearing aid apparatus having an acoustic receiver member extending outwardly from the upper portion of a front face of a housing, the upper portion of the housing being angulated so that the receiver angle approximates the normal angle of the ear canal with the ear concha. The lower portion of the housing front face being angulated to approximate the angle of the ear concha. The receiver is mounted with respect to the housing by means of a cup-shaped retainer supporting one end of the receiver while a hollow cap member encloses the remainder of the receiver.

3,414,686
QUICK CHANGE ADAPTER FOR MICROPHONES
Karl Reinthaler, Vienna, Austria, assignor to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria
Filed Oct. 6, 1964, Ser. No. 401,878
Claims priority, application Austria, Oct. 7, 1963, A 8,017/63
3 Claims. (Cl. 179—149)



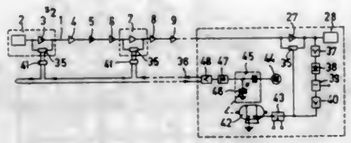
A quick change adapter for attaching a portable microphone to a base, generally a table mount or a stand. The adapter includes a clamping element for retaining the microphone, a detent actuated locking element for positively fastening the adapter to the base and an articulated joint for enabling movement of the microphone when the microphone is attached to the base.

3,414,687
TRANSMISSION SYSTEM HAVING A PLURALITY OF SEPARATE PARALLEL TRANSMISSION LINES AND COMMON CONTROL OF INTERMEDIATE REPEATER STATIONS IN THE TRANSMISSION LINES
Willem Hermes and Jan Verhagen, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,535
Claims priority, application Netherlands, Feb. 12, 1964, 6401184
12 Claims. (Cl. 179—170)



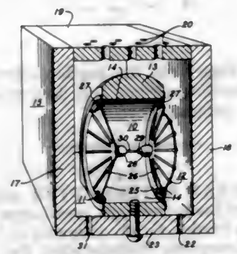
A signal transmission system of the type in which a plurality of transmitting stations are interconnected to a plurality of final stations by way of separate parallel transmission lines including at least one repeater station having an adjustable level control. Pilot signals transmitted by the transmitting stations are separated in the corresponding final stations to produce separate control signals, and these control signals are combined to produce an average control signal for controlling, in common, all intermediate repeaters having adjustable level controls. Level control devices in the final stations are controlled only by their respective separate control signals.

3,414,688
COMMUNICATION SYSTEM HAVING LEVEL CONTROL MEANS FOR REPEATERS CONNECTED ALONG A TRANSMISSION CABLE
Willem Hermes, Joseph Frederik Lansu, and Jan Verhagen, Hilversum, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,642
Claims priority, application Netherlands, Feb. 12, 1964, 6401183
15 Claims. (Cl. 179—170)



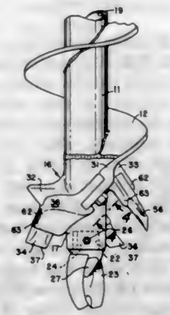
A level control system for a communication system of the type having a transmitter station and a receiver station interconnected by a transmission cable which includes a plurality of repeaters. A pilot receiver in the receiver station produces a direct current signal responsive to the level of a received pilot signal, and this control signal is employed to adjust the level of some of the repeaters, by way of level control impedances, to produce a pilot signal at the receiver of opposite polarity (i.e. so that the received pilot signal differs from its nominal level but in the opposite direction). The control signal is also employed to control the receiver station to adjust the received pilot signal to its nominal level.

3,414,689
SHOCK-MOUNTING FOR ELECTRO-MECHANICAL TRANSDUCER
Hermann K. Gummel, North Plainfield, and Vincent L. Rideout, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 28, 1965, Ser. No. 467,212
6 Claims. (Cl. 179—184)



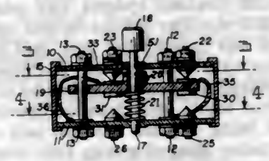
This application describes a shock mounting for a semiconductor electromechanical transducer. The transducer is mounted between two substantially identical diaphragms, and disposed within an enclosure which permits acoustical pressure to be applied equally to the two diaphragms. When dropped or subjected to other severe shock, both diaphragms experience the same transient mechanical motion so that the net stress on the transducer is small. However, both diaphragms are fully subjected to useful acoustical pressure for maximum response.

3,414,690
AUGER HEAD WITH ODD NUMBER OF ARMS
Gerald A. Petersen, % Petersen Engineering Co., Inc., 950 Kifer Road, Sunnyvale, Calif. 94086
Continuation-in-part of application Ser. No. 514,883, Dec. 20, 1965. This application Dec. 27, 1966, Ser. No. 604,670
8 Claims. (Cl. 175—391)



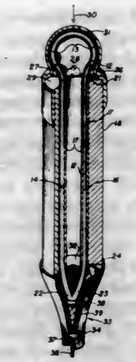
An odd number of arms are provided on an earth auger head, each supporting at least one replaceable tooth and at least some arms having detachable tooth holder plates to which the teeth are detachably secured. Several of the teeth are disposed to cut the bottom of the hole and at least one tooth to cut the side. The teeth are arranged so that the torques transmitted by digging action of the various teeth are balanced. Tooth holders are attached to the auger arms in such manner that both side thrust and down thrust on the teeth are resisted by interfitting portions of the respective parts and thus a single bolt or other fastener is sufficient to secure the plate to the arm.

3,414,691
SWITCH FOR SELECTIVELY CONNECTING TWO ELECTRICAL POWER SOURCES IN EITHER PARALLEL OR SERIES RELATIONSHIP
Richard L. Smith, 140 W. 25th St., Durango, Colo. 81301
Filed Jan. 23, 1967, Ser. No. 610,917
4 Claims. (Cl. 200—16)



Top and bottom insulated discs fixedly positioned in vertically spaced, parallel relation with an insulated contact plate positioned for vertical movement therebetween, the top disc having electrical contacts on its bottom, the bottom disc having electrical contacts on its top and the contact plate having contacts respectively exposed on both its top and bottom so that when said plate is urged upwardly, it will close circuits with the contacts of the top disc and when urged downwardly, it will close circuits with the contacts on the bottom disc.

3,414,692
COAXIAL LOOP SHOCK SENSOR SWITCH
Darwin R. Henley, Newark, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 31, 1967, Ser. No. 643,319
8 Claims. (Cl. 200—61.08)

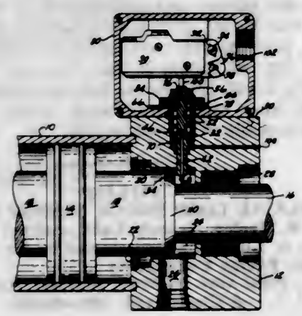


A shock sensor switch comprising an insulated wire loop coated with a conductive material which comprises conductor particles disposed throughout, a polymerizable binder matrix which, in addition to coating the wire loop, extends across the loop forming a continuous rigid film which supports the wire loop against deformation by edge-on impact of a shock wave.

3,414,693
CYLINDER HEAD LIMIT SWITCH ASSEMBLY
Tindale P. Watson and Robert D. Vandenburgh, Jackson, Mich., assignors to The Tomkins-Johnson Co., Jackson, Mich., a corporation of Michigan
Filed Apr. 29, 1966, Ser. No. 546,286
6 Claims. (Cl. 200—82)

1. Expansible chamber motor apparatus comprising, in combination, a cylinder having an end, a head enclosing said cylinder end and mounted thereon, said head includ-

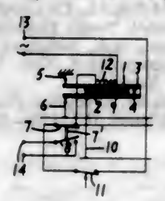
ing an exterior surface and an inner surface, piston structure reciprocably mounted within said cylinder, an actuating surface defined on said piston structure disposed toward said head whereby said surface is located adjacent said head inner surface upon said piston structure being located adjacent said head, a threaded opening defined in said head intersecting said head exterior surface, a smooth cylindrical first bore defined in said head coaxial with and intersecting said threaded opening and said head inner surface, a radial shoulder defined in said opening at the intersection of said opening and bore, said bore being of lesser diameter than said opening, a cylindrical casing having an inner end and an outer end and a threaded outer surface received within said threaded opening, said casing inner end being disposed adjacent said radial shoulder and said casing being of greater axial length than said opening whereby said casing outer end extends from said opening and projects beyond said head exterior surface, a cylindrical chamber defined in said casing coaxial there-



with intersecting said casing inner end and defining a radial face disposed toward said casing inner end and axially spaced therefrom, said chamber having a diameter greater than that of said first bore, a second bore defined in said casing coaxial therewith intersecting said chamber face and said casing outer end, said second bore being of lesser diameter than said chamber, a plunger having a first cylindrical inner end portion reciprocally received within said first bore adapted to extend inwardly beyond said head inner surface, an enlarged circumferential flange reciprocably received within said chamber and an upper end portion reciprocably mounted within said second bore and adapted to extend therethrough, a compression spring within said chamber interposed between said face and said flange biasing said plunger toward said head inner surface, said plunger being of greater length than the distance from said head inner surface to said casing outer end whereby said plunger outer end extends from said second bore upon said plunger inner end being engaged by said piston actuating surface.

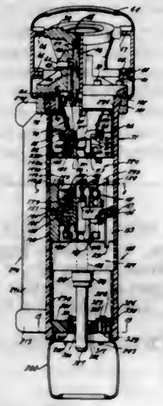
3,414,694
COMPENSATED THERMALLY-RESPONSIVE AUTOMATIC CONTROL SYSTEM
Johannes Vagn Baatrup, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Oct. 19, 1966, Ser. No. 587,758
Claims priority, application Germany, Oct. 19, 1965, D 48,453
7 Claims. (Cl. 337—1)

An automatic thermally-responsive control apparatus comprising a two-position switch for controlling two operative conditions of a controlled circuit. A compensator bimetallic sensor cyclically actuates the switch in response to impulsing, and therefore heating, of a heating element in a heating circuit, in which another bimetallic sensor operative jointly with the compensator sensor and



responding to heat from the heating element controls a switch in the heating circuit and determines the overall number of the impulsing cycles.

3,414,695
MULTI-BREAK INTERRUPTER ASSEMBLY
James R. McCloud, Burbank, and Lorne D. McConnell, Sierra Madre, Calif., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 21, 1965, Ser. No. 465,530
8 Claims. (Cl. 200—150)

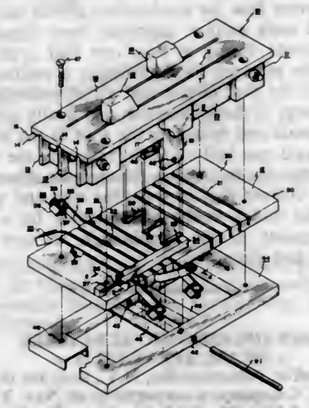


An oil circuit breaker interrupter structure having two series-connected breaks and a series disconnect where the interrupter structure carries axially-spaced fixed contacts which each consist of two pluralities of contact segments which are biased toward contact with respective elongated movable contacts. The movable contacts are carried on the rungs of a movable ladder which terminates in a disconnect contact segment. Interrupter plates within the interrupter chamber enclose the contact breaks formed between the stationary contacts and their cooperating movable contact. A movable disconnect contact carried on the end of a cross bar engages the disconnect contact on the bottom of the movable ladder and moves the ladder upward against the force of biasing springs to close the ladder contacts.

3,414,696
MULTIPLE-CIRCUIT ELECTRIC SWITCHBOARD
Robert A. Greenwall, Jr., Salt Lake City, Utah, assignor to B. J. Management Corporation, Salt Lake City, Utah, a corporation of Utah
Filed Feb. 28, 1967, Ser. No. 619,350
10 Claims. (Cl. 200—168)

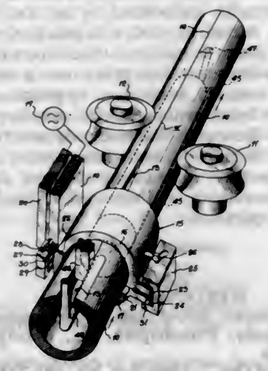
A multiple-circuit switchboard of the type wherein conductive bars are fitted into respective slots of a series of mutually parallel slots in the surface of an insulative base

for traversal and selective contact by movable switch means in closing selected electrical circuits. The conductive bars are of strap-like configuration and are mounted edge-wise within the respective slots, with their top edges aligned in coplanar relationship. To provide most advantageously for connection with respective electrical circuits, the ends of successive conductive bars are preferably extended outwardly from the insulative base angularly from the plane of the aligned top edges so that such ends



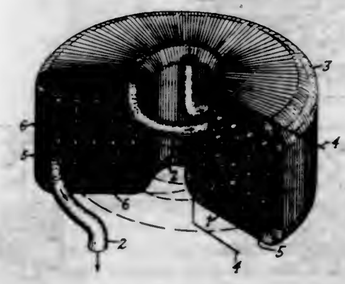
at a given side of such base are directed oppositely and are, thus, widely separated. To effectively support longitudinal strip portions of a longitudinally slotted front panel, that is customarily provided for guiding the respective movable switch means in this type of switchboard, longitudinal plates are preferably provided between such strip portions and the insulative base, and tongues, depending from some of such plates, are preferably provided for releasable fastening to a base frame so as to retain the front panel and insulative base in position.

3,414,697
TUBE WELDING BY INDUCTION HEATING
Wallace C. Rudd, Larchmont, N.Y., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 25, 1965, Ser. No. 435,260
11 Claims. (Cl. 219—8.5)



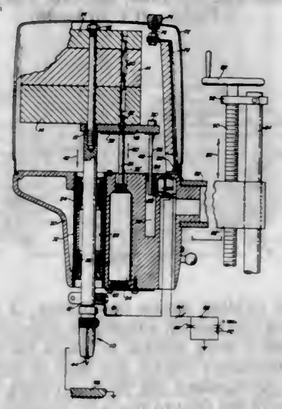
An induction coil for high frequency welding of longitudinal seams in tubing is made of separable parts which are clamped together in use. Separation of the parts permits coil replacement and/or side passage of the tubing stock. The coils have one or more turns, continuous internal cooling passages, and may include a nose-like extension which functions through proximity to concentrate current along the converging edges of the tubing.

3,414,698
HIGH VOLTAGE TRANSFORMER TYPE HEATER FOR HEATING FLUIDS
Burnice D. Bedford, Scotia, and George W. Kessler, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 27, 1965, Ser. No. 505,351
13 Claims. (Cl. 219—10.51)



A fluid heater comprising a high voltage transformer primary winding that is wound around a fluid conducting coil of pipe that acts as a substantially short-circuited transformer secondary winding. Means are provided to pass fluid through the coil of pipe in heat exchange relationship therewith so the fluid absorbs a major portion of the heat generated by the inherently inefficient transformer action of the invention.

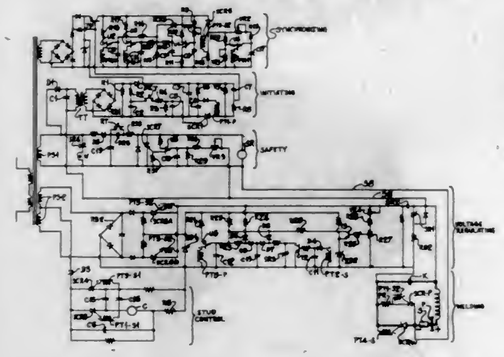
3,414,699
GRAVITY DROP STUD WELDING APPARATUS
Albert Neumeier, Milwaukie, and Johan L. Van Gulik, Lake Oswego, Oreg., assignors to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Aug. 24, 1964, Ser. No. 391,554
9 Claims. (Cl. 219—95)



A percussion type stud welding apparatus is described in which the stud is caused to fall freely downward into contact with the workpiece entirely by the force of gravity and arc welded to such workpiece. The stud holder and support plunger are held above by the workpiece by a fluid actuated piston separate from such plunger. The

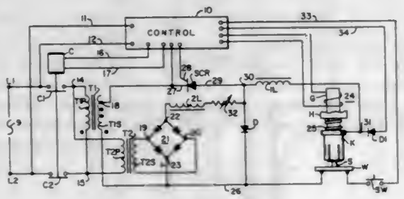
stud holder is of the collapsible type which automatically releases the stud upon impact with the workpiece to prevent rebound.

3,414,700
WELDING STUDS TO WORKPIECES
Paul A. Glorioso, Amherst, Ohio, assignor to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed Oct. 20, 1965, Ser. No. 498,802
11 Claims. (Cl. 219—98)



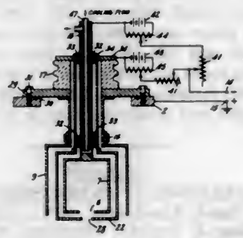
A stud welding circuit employs a capacitive power source and is capable of producing an extended pilot arc. The main power source which charges the capacitive power source also is connected across the stud and workpiece during the pilot arc to provide power for the pilot arc and prevent undue drain on the capacitive power source. The main power source is then disconnected from the capacitive power source prior to the initiation of the main welding arc, the power for which is supplied from the capacitive power source.

3,414,701
STUD WELDER CONTROL CIRCUIT
Marvin A. Guettel, Milwaukee, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Jan. 12, 1966, Ser. No. 520,278
7 Claims. (Cl. 219—98)



1. A stud welding device comprising: a stud holding and retracting mechanism adapted to sequentially position a stud against a work surface to which the stud is to be welded, to thereafter retract the stud to produce a predetermined gap between the stud and work surface, and finally to return the stud to the weld position on the work surface, a source providing half cycles of alternating polarity current, means energized by the source providing full wave direct current to a pilot arc circuit between the stud and work surface, said pilot arc circuit current having a low value which will produce a pilot arc across the gap as the stud is retracted from the work surface, circuit elements comprising an inductance, a diode and a unidirectional conducting device having a control electrode for switching the device from a nonconducting to a conducting state in response to an input signal, a first circuit connecting the stud, the work surface, the inductance and the device in series across the source, a second circuit connecting the stud, the work surface, the inductance and the diode in a series circuit and control means adapted to supply signals to the pilot arc means, the stud holding and retracting mechanism and the control electrode for initiating the pilot arc current and retracting the stud during pilot arc current flow for establishing a pilot arc between the stud and work surface, supplying input signals to the control electrode during at least one half cycle concurrently with the pilot arc for establishing a welding current flow through the first circuit and simultaneously storing electrical energy in the inductance, and finally terminating the input signals and returning the stud to the weld position during said one half cycle for releasing the electrical energy stored in the inductance through the second circuit to provide a current flow between the stud and work surface when the stud is in the weld position for a time interval subsequent to the termination of current flow through the first circuit.

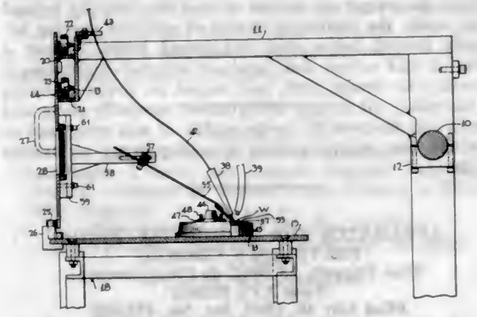
3,414,702
NONTHERMIONIC ELECTRON BEAM APPARATUS
Lynn H. Stauffer, Pattersonville, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 28, 1965, Ser. No. 459,650
9 Claims. (Cl. 219—121)



A device for generating an electron beam by nonthermionic means includes a hollow imperforate cathode structure having an electron beam exit aperture, the cathode beam concentrically surrounded by an electrically conductive shield. A desired mode of operation, wherein the electron beam issues from the cathode aperture with convergence and subsequent divergence over a wide range of electron beam intensity, is obtained by positioning an electrode structure between the cathode structure and shield and concentric therewith. The electrode structure is of the same shape as the cathode, having an aperture aligned with the cathode aperture. Adjustment of a low electrical potential between cathode and electrode maintains the desired mode of operation.

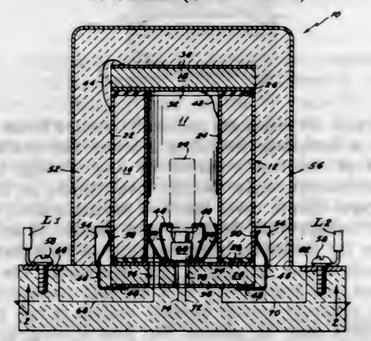
3,414,703
WELDING FIXTURE
William C. Cooper, Royal Oak, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1965, Ser. No. 493,724
4 Claims. (Cl. 219—158)

A welding fixture for protecting the operator and workpiece and including a shield having a sighting window placed between the operator and the workpiece and a portion of the shield structure is also positioned above and closely adjacent the workpiece to prevent spattering



the remainder of the workpiece during the welding operation.

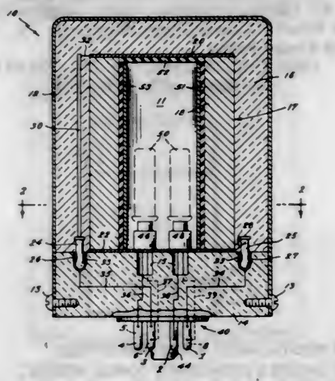
3,414,704
SELF-REGULATING HEATING DEVICE
Charles D. Flanagan, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,165
18 Claims. (Cl. 219—210)



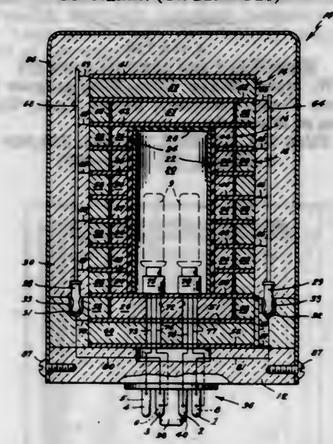
Method and means for providing a relatively constant ambient temperature for temperature sensitive devices is disclosed. The method includes the steps of forming an enclosure, in which the controlled ambient will be effected, at least partially, of a positive temperature coefficient of resistance (hereinafter referred to as PTC) material and applying a voltage to the PTC material. When used as taught by the invention, the material acts as a heater and also as its own temperature regulator. The enclosure is formed, at least partially, by various structures or means including a single hollow cylindrical element and a disc-shaped PTC block sandwiching a thermal conductor in which is located a cavity. In these embodiments, the direction of current flow through the PTC elements is approximately parallel to the direction of heat flow into the cavity.

3,414,705
COMPONENT OVEN
Leo Marcoux, Pawtucket, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 435,166, Feb. 25, 1965. This application Oct. 24, 1965, Ser. No. 508,643
23 Claims. (Cl. 219—210)

Method and means for providing a relatively constant ambient for temperature sensitive devices is disclosed. The method includes the steps of forming an enclosure, in which the controlled ambient will be effected, at least partially of a positive temperature coefficient of resistance (hereinafter referred to as PTC) material and applying a voltage to the PTC material. The material acts as a heater and also as its own temperature regulator. The enclosure is formed, at least partially, by various structures or means including a single hollow cylindrical element, a stack of annular discs and two or more pieces of PTC material. Another embodiment discloses a design particularly useful with transistor-type devices while yet another is particularly useful with diode-type devices.



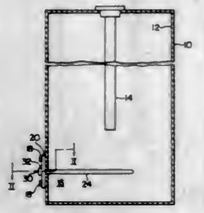
3,414,706
SELF-REGULATING HEATING DEVICE
Charles D. Flanagan, Attleboro, Mass., and Leo Marcoux, Pawtucket, R.I., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,277
13 Claims. (Cl. 219—210)



Method and means for providing a relatively constant ambient temperature for temperature sensitive devices in which a plurality of heater elements composed of material having a positive-temperature coefficient of resistance (hereinafter referred to as PTC) are placed adjacent one another in ascending order of PTC anomaly temperatures resulting in a temperature control gain in the direction of the higher PTC anomaly temperatures. One embodiment shows a first set of stacked annular PTC discs placed within a second set of stacked annular PTC discs and electrically connected in parallel thereto. The constant ambient temperature is thus provided in the

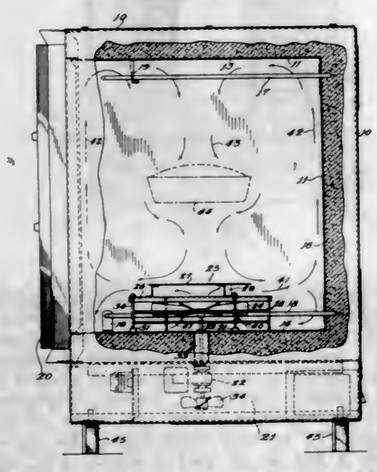
center of the inner set. More than two sets of discs may be employed as well as configurations other than annular.

3,414,707
ELECTRIC WATER HEATER
George C. Aldous, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1966, Ser. No. 529,791
4 Claims. (Cl. 219—322)



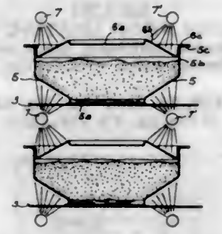
1. An electric water heater comprising:
a tank having a protectively coated interior;
a sacrificial metal anode in said tank;
a heating element for immersion in said tank, said heating element including a tubular metallic sheath about an internal, insulated resistance element having opposite end connectors projecting out of the respectively opposite ends of said sheath;
a mounting plate for said heating element including a pair of openings receiving said opposite ends of said sheath in through projecting relation;
means mechanically securing said sheath to said plate;
a body of electrical insulating material molded in place on the exterior face of said plate to encompass said sheath ends with said end connectors projecting out of said body; and a coating of metal, less noble in the electropotential series than said sheath metal, covering said sheath and said mounting plate.

3,414,708
FORCED CONVECTION OVEN
Michael W. Maier, Beaver Dam, Wis., assignor to Malleable Iron Range Company, Beaver Dam, Wis., a corporation of Wisconsin
Filed Oct. 22, 1965, Ser. No. 500,960
8 Claims. (Cl. 219—400)



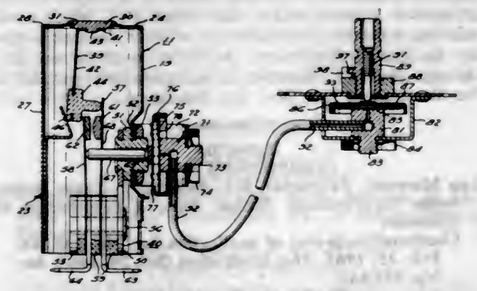
1. A forced convection oven comprising an oven enclosure having four walls, a top, and a bottom, an axial delivery fan located near said bottom, a ring-shaped baffle located near said fan in substantially surrounding relationship, and an imperforate baffle located above the opening in said ring-shaped baffle, said baffles cooperating to direct the output air stream of said fan laterally toward said walls, the intake air stream of said fan moving laterally inward below said ring-shaped baffle, at least a part of said output and input air streams constituting a pirmary air stream path, said output air stream inducing a secondary air stream which moves upwardly along said walls and downwardly in the middle of said oven, and an electric heat source located in said primary air stream path.

3,414,709
APPARATUS FOR RE-HEATING FOODS PREVIOUSLY COOKED
Yves Tricault, 23 Blvd. de Montmorency, Paris XVI, France
Filed July 30, 1965, Ser. No. 476,068
Claims priority, application France, Aug. 3, 1964, 983,969; Oct. 30, 1964, 993,260
3 Claims. (Cl. 219—411)



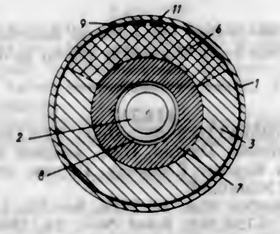
Apparatus for reheating previously cooked foods which includes a receptacle including a lower dish made of a material of low heat conductivity and of high specific heat and an upper metallic dish cover resting on the rim of the lower dish to cover the food but maintained out of physical contact with the food, and sources of infra-red radiation for subjecting the receptacle to such radiation from both above and below the receptacle. The trays are stored and transported in a wheeled oven-cart. The cart has vertically spaced exposed shelves at one end on which trays may be placed for inter-leaving between vertically spaced sets of radiant heaters mounted on a co-operating wheeled apparatus.

3,414,710
THERMOSTATIC SWITCH ASSEMBLY AND SENSOR
Charles S. Mertler, Mansfield, Ohio, assignor, by mesne assignments, to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Sept. 9, 1965, Ser. No. 486,026
15 Claims. (Cl. 219—450)



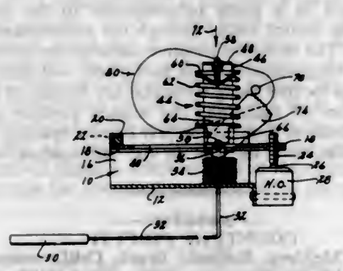
A thermostatic switch assembly wherein temperature responsive means such as a bimetal blade senses the temperature of an appliance and controls electrical switch contacts in turn controlling electrical energy flowing to the appliance to change the temperature thereof. Actuator means is provided to adjust the temperature of operation of the switch contacts from a remote location, with either a hydraulic or a mechanical linkage between the remote location and the switch assembly.

3,414,711
HEATING ROLLER ASSEMBLY
Louis Guyet, Colmar, and Jacques Menault, Venissieux, France, assignors to Crylor, Paris, France, a French body corporate
Filed Mar. 21, 1966, Ser. No. 535,973
Claims priority, application France, Mar. 22, 1965, 10,206
4 Claims. (Cl. 219—469)



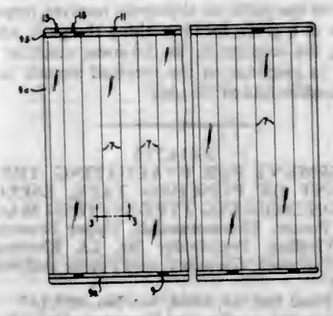
The invention provides a heating roller assembly, e.g., for heat treating fibres or fabrics, the assembly including a hollow rotating cylinder heated by radiation from a fixed member located inside the cylinder. The internal and external surfaces of the cylinder and heating element respectively have an emission factor close to that of a black body. A thermistor is located on the surface of the fixed member and is insulated from the heating element effective to control the heating of the element responsive to the temperature detected by the thermistor.

3,414,712
CONDITION CONTROL MECHANISM
Gary F. Woodward, Ann Arbor, Mich., assignor to American Standard Inc., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 514,073
10 Claims. (Cl. 219—491)



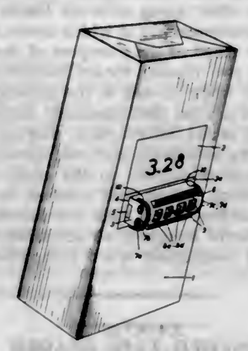
1. In combination, a condition responsive power means operable to develop a first graduated work force; spring means operable to develop a restraining force opposing the work force; a condition control device movable by the resultant of the work force and restraining force to prevent the condition from straying appreciably from a preselected setting; and means for varying the value of the restraining force to thus vary the condition setting; said varying means including mechanism for changing the line of action of the spring means relative to the line of action of the power means.

3,414,713
ELECTRICALLY HEATED GLASS CLOSURE
Lester F. Reifeiss and James A. Reynolds, Conway, Ark., assignors to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,505
2 Claims. (Cl. 219—522)



An electrically heated glass lid for refrigerated merchandising cabinets has a plurality of electrically conductive heating wires extending across the lid between opposed panes of glass, the wires being attached to bus bars constituted by strips of metal foil extending along the side margins of the glass, the strips having an adhesive on one side thereof. Adjacent terminals are attached to the strips, and project beyond the edges of the panes. The panes are bonded together by a laminate of plastic sheet material.

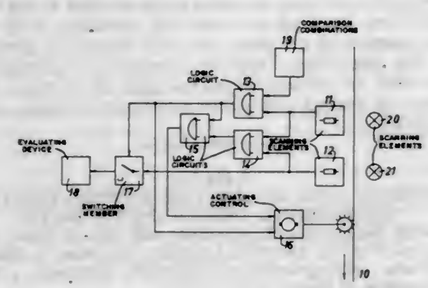
3,414,714
METHOD AND MEANS FOR AUTOMATICALLY REGISTERING MERCHANDISE DATA
Martin Hergt, Bad Oeynhausen, and Albert Klaar and Emil Fenrich, Bielefeld, Germany, assignors to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany
Filed Feb. 3, 1964, Ser. No. 342,857
12 Claims. (Cl. 235—61.6)



The method of entering merchandise data into a registering business machine includes attaching to each individually transportable unit of merchandise an electronic transmitter and radiating therefrom a code signal indicative of the data to be registered; moving the merchandise unit along a given path, the action range of the radiating signal being substantially limited to the vicinity of the moving unit along the path; receiving the code signal at a given locality of the path; and controlling the business machine in response to the received signal to register the merchandise data of the unit. A system for carrying

out the foregoing method in combination with a registering business machine includes an electronic code-signal radiation transmitter attached, when in use, to one of respective units of merchandise and having a code signal indicative of the data to be registered for the merchandise unit; structure defining a given travel path for merchandise units, each of the transmitters having an effective action range substantially limited to the vicinity of the unit travelling on the path; an electronic receiver responsive to the signals at a given location along the path, and means connecting the receiver to the business machine for controlling it in response to the received signals to register the merchandise data of the unit.

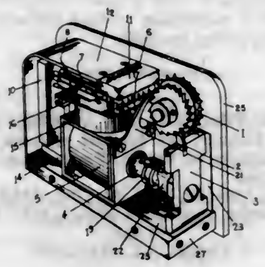
3,414,715
ARRANGEMENT FOR EVALUATING THE DATA CONTENT OF PUNCHED TAPE, ESPECIALLY FOR CONTROLLING TYPE-SETTING MACHINES
Wolfgang Peuser, Ebermannstadt, Upper Franconia, and Oskar Vierling, Pretzfelder Str. 23, Ebermannstadt, Upper Franconia, Germany; said Peuser assignor to said Vierling
Filed Oct. 28, 1964, Ser. No. 407,167
Claims priority, application Germany, Oct. 31, 1963, V 24,784
4 Claims. (Cl. 235—61.7)



The control of the feed velocity of a punch tape in which the elements of coded information are arranged parallel to each other along different tracks of the tape to be scanned simultaneously in which control mechanism for changing the speed of the transport of the punch tape is provided and two reading means located directly one behind the other when viewed in the direction of movement of the tape to read simultaneously successive coded combinations of coded information. Storage means are present for storing non-functional code combinations and comparison means responsive to the code combination read by the reading means first reached by the punch tape and the non-functional code combination supplied by the storage means to supply an accelerating signal for the tape control mechanism when comparison is established.

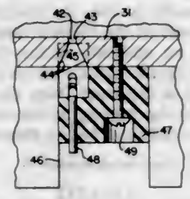
3,414,716
PUNCHED TAPE READER
John Paul Jones, Jr., Norristown, Pa., assignor to Navigation Computer Corporation, Norristown, Pa., a corporation
Filed Oct. 17, 1963, Ser. No. 316,840
7 Claims. (Cl. 235—61.11)

A punch tape reader for purposes of reducing standby power and to provide a compact assembly requiring little maintenance uses solenoid operation of a ratcheting mechanism to advance the tape step by step when receiving an electrical pulse. In order to sense chadless tape movable sensing pins combined with a switch readout assembly are also positioned by solenoid action to pass through holes in the tape and provide static electrical readout signals. To increase operating speed, reduce noise and provide better ratcheting action a resilient bumper



is positioned to reverse the solenoid direction near the end of its stroke using the energy stored in the bumper.

3,414,717
INFORMATION SENSING STATION
Cebern B. Trimble, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Original application Mar. 14, 1960, Ser. No. 14,888, now Patent No. 3,158,305, dated Nov. 24, 1964. Divided and this application Oct. 12, 1964, Ser. No. 402,998
2 Claims. (Cl. 235—61.11)

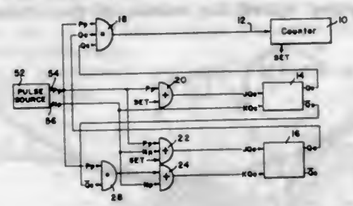


An information sensing station for high-speed record-media-handling apparatus. A source of radiation, a slot in the station, an a plurality of radiation-sensitive elements for sensing information from the record media are arranged in a plane perpendicular to the path of travel of the record media through the information sensing station. The radiation-sensitive elements are positioned with their longitudinal axes in said plane, and their sensing portions located along a circular arc having its center at the source of radiation. The sensing portions of the radiation-sensitive elements project into an opening which communicates with the slot in the information sensing station.

3,414,718
COUNTING CIRCUIT
Melvin R. McElroy, Redondo Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation of application Ser. No. 89,949, Feb. 17, 1961. This application Dec. 16, 1964, Ser. No. 421,743
24 Claims. (Cl. 235—92)

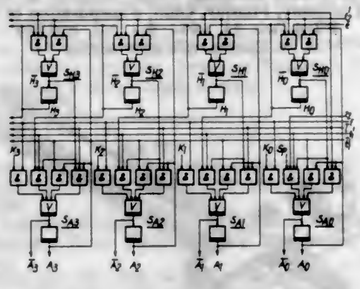
A numerical control positioning system employing a basic unidirectional counter which is programmed by a tape for driving a positioning servo. The unidirectional counter is included which contains the increments of travel that a machine tool must make before it reaches its predetermined position. A storage device is included for accepting a limited number of "wrong-way" pulses and provides the capability of accounting for these pulses

without introducing error into the counting process. When one train of pulses is selected as "right-way" pulses, the occurrence of pulses which are indicated as "wrong-way"



pulses in the other train, the other train of pulses inhibits counting of "right-way" pulses for as many "wrong-way" pulses as may occur.

3,414,719
MULTIPLE-STAGE STATIC COUNTER HAVING MAIN AND AUXILIARY STORES
Dieter Petzold, Berlin-Neukolln, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Jan. 18, 1965, Ser. No. 426,003
Claims priority, application Germany, Jan. 16, 1964, L 46,821
23 Claims. (Cl. 235—92)



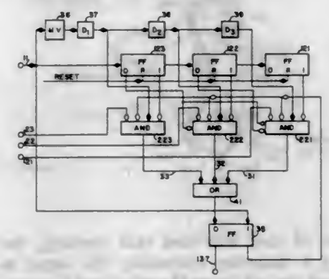
A counting arrangement in which a multiple-stage static counter, each of whose stages has a main store and an auxiliary store, is controlled by timely staggered counting signals and auxiliary counting signal which are applied to the main and auxiliary stores, respectively. A coincidence circuit is connected to the static counter and to a preselection register which is capable of receiving a preselected number, which coincidence circuit produces a coincidence signal that is present so long as the count of the counter is the same as the preselected number written into the preselection register. Means are connected to the coincidence circuit for deriving from it a timely displaced signal which appears when both the coincidence signal and an auxiliary counting signal are present. The thus-derived signal is effective to reset the counter and/or to interrupt the counting operation of the counter.

3,414,720
PULSE RATE MULTIPLIER
Claude P. Battarel, Newtonville, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,818
5 Claims. (Cl. 235—164)

1. Multiplier logic circuitry for operation with serial data pulses and parallel binary signals, said circuitry comprising:

(a) a binary counter to count the individual data pulses, said counter having a plurality of stages corresponding to the orders of said binary signals and each of said stages being adapted to assume a selected condition to represent a digit of the number of data pulses counted;

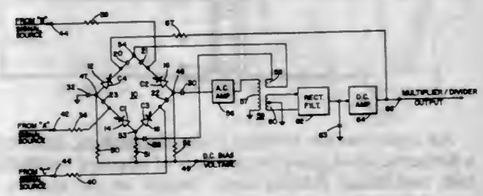
(b) means to provide a plurality of sensing pulses occurring in a timed sequence during each interval defined by a pair of successive data pulses



(c) means to determine the numerical relation between each of the parallel signals and a corresponding counter stage, said relations being determined sequentially in response to said sensing pulses; and

(d) means to selectively produce an output signal in response to the first of said parallel signals and corresponding stages that exhibit a predetermined relation.

3,414,721
MULTIPLIER-DIVIDER INCLUDING A BRIDGE CIRCUIT
Donald S. Oliver, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 17, 1965, Ser. No. 480,315
12 Claims. (Cl. 235—195)

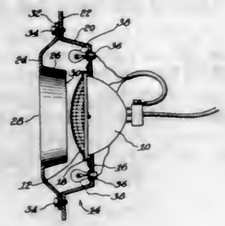


An analog-arithmetic circuit having four variable-capacitance diodes of identical characteristics, i.e., capacitance vs. voltage characteristics. Three of the diodes receive DC input signals for varying their respective capacitances with the fourth diode receiving a DC signal indicative of the output signal of the circuit for rebalancing the bridge such that the output signal is indicative of the arithmetic product-quotient of the three input signals. The variable-capacitance diodes are DC isolated and AC coupled together. Various interconnections of bridges utilizing the described cooperative relationship between the diodes are illustrated.

3,414,722
AUTOMOBILE HEADLIGHT SYSTEM
Oswald J. B. Caron, 2–E Dunstable Road, Nashua, N.H. 03060
Filed July 1, 1966, Ser. No. 562,285
5 Claims. (Cl. 240—7.1)

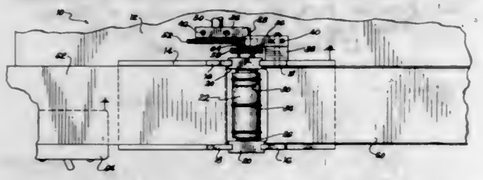
1. An automobile head light system comprising a sealed beam head light having a front lens having a circular periphery, an annular lip surrounding said lens, a hollow annular translucent dome having a center opening centered on said lens and having a larger diameter than said lens, and a hollow truncated cone open at both

ends, the larger end connected to the center opening of said dome and having essentially the same diameter as said opening, the axis of said cone being aligned with



the centers of said lens and said opening, the smaller end having a diameter essentially the same as that of said lens and spaced apart therefrom and means securing said dome to said lip.

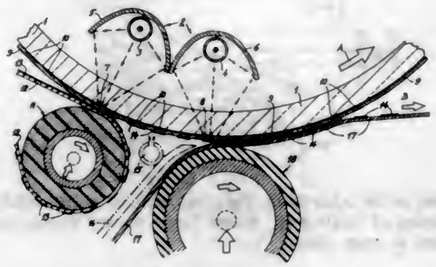
3,414,723
APPARATUS FOR ELECTROSTATIC LINE PRINTING
Richard J. Pleitt, Chicago, and Earl B. Relph and Lawrence Krater, Mundelein, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Mar. 16, 1964, Ser. No. 352,261
2 Claims. (Cl. 250—49.5)



An apparatus for forming latent electrostatic images on a dielectric sheet comprising a pair of opposed conductive rolls and image defining areas formed on the surface of one of the rolls and extending outwardly from the surface. A power supply is provided, and the rolls are included within the electrical circuit, and the dielectric sheet passing between the rolls will complete the circuit so that electrostatic charges are formed on the sheet in conformance with the images defined by one of the rolls. The dielectric sheet can then be passed to a developing station for treatment in accordance with conventional procedures.

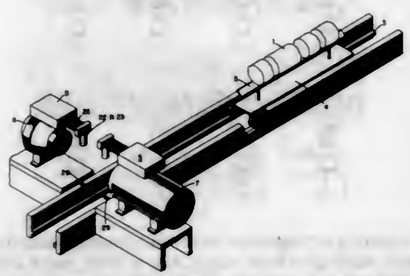
3,414,724
METHOD AND APPARATUS FOR DUPLICATING TEXT, PICTURES AND THE LIKE ON UNPREPARED COPY RECEIVING SHEETS
Sven Bertil Kvarnegard, Enebyberg, Sweden, assignor to Aktiebolaget Carl Lamm, Maskinaffar, Stockholm, Sweden, a joint-stock company of Sweden
Filed Dec. 1, 1965, Ser. No. 510,833
Claims priority, application Sweden, Dec. 11, 1964, 15,055/64
6 Claims. (Cl. 250—65)

A thermographic copying method and apparatus for repeated positive reproduction of an original onto copy sheets, which comprises a rotary glass drum having an internal source of infrared radiation, the original to be copied being mounted with the heat-responsive indicia thereon in contact with the external surface of the drum and a belt carrying a coating of a heat-fusible dye composition is arranged to be pressed by a roller against the back of the original to cause the dye to be picked up by it at those heated places in register with the indicia to be copied; then a second roller presses a copy sheet of paper against the outside of the original to



pick up an imprint of the dye image therefrom whereupon the copy sheet is separated from the original. The latter is then re-coated with dye and the cycle repeated.

3,414,725
APPARATUS FOR THE DETERMINATION OF OPACITY TO RADIATION PER UNIT OF THICKNESS OF OBJECTS
Hilton B. Evans, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Dec. 21, 1964, Ser. No. 420,001
6 Claims. (Cl. 250—83.3)

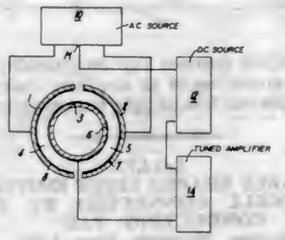


The present invention comprises a radiation measuring device for determining opacity to radiation per unit of thickness of objects which may vary in thickness comprising in combination, means for projecting a relatively narrow beam of radiation through said objects, radiation measuring means for measuring the intensity of the radiation passing through said objects, measuring means for measuring the thickness of said objects at the points through which said radiation passes, computing means for compiling the outputs from said radiation detector and said thickness measuring device to directly indicate a variable which is dependent on the opacity to radiation per unit thickness of the object. Such determinations of unit opacity to radiation are particularly useful in the evaluation of geological specimens including those obtained by core drilling.

3,414,726
IONIZATION CHAMBER FOR HIGH-TENSION ALTERNATING CURRENT OPERATION
Jean Chameroy, Guyancourt, France, assignor to Société Anonyme dite: Groupement Atomique Alsacienne Atlantique, Le Plessis-Robinson, France
Filed Nov. 3, 1964, Ser. No. 408,567
Claims priority, application France, Nov. 9, 1963, P.V. 953,293
6 Claims. (Cl. 250—83.6)

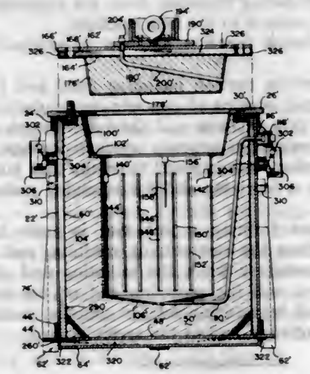
1. An ionization chamber adapted to be energized by high voltage alternating current comprising:

two substantially identical high voltage electrodes;
a collecting electrode;
two substantially identical ionization compartments, each said compartment being defined between a different one of said high voltage electrodes and said collecting electrode;
means for maintaining said collecting electrode at a constant voltage;



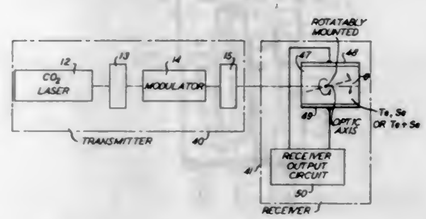
means for supplying one of said high voltage electrodes with a first alternating current; and
means for supplying the other of said high voltage electrodes with a second alternating current of the same amplitude and opposite phase as said first alternating current;
whereby an alternating ionization current is generated at said collecting electrode, having a frequency double the frequency of the supply current.

3,414,727
SHIPPING CONTAINER FOR RADIOACTIVE MATERIAL INCLUDING SAFETY SHIELD MEANS
Charles F. Bonilla, Tenafly, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,776
20 Claims. (Cl. 250—108)



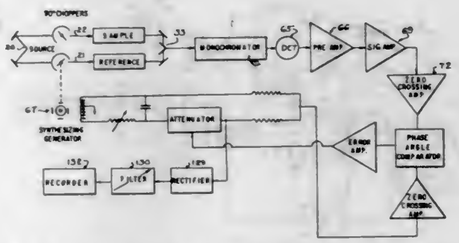
A shipping container for radioactive material includes a central cavity surrounded by radiation shielding material. The shielding material is in turn surrounded by a safety shield means including an enclosed space having a shield substance therewithin which melts at a temperature lower than the radiation shielding material and is adapted to flow out of the enclosed space through discharge means when subjected to external heat.

3,414,728
INFRARED MODULATORS AND DETECTORS EMPLOYING SINGLE CRYSTAL Te OR Se
Chandra K. N. Patel, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,973
6 Claims. (Cl. 250—199)



In the infrared modulating and detecting apparatus disclosed, the infrared radiation is transmitted through an active element that is a single crystal consisting essentially of elemental material selected from the group consisting of elemental tellurium, elemental selenium and a mixture of elemental tellurium and elemental selenium. An electro-optic modulator, a Faraday modulator and a traveling-wave-type detector are disclosed.

3,414,729
PHASE NULL SPECTROPHOTOMETER
Charles W. Warren, Weston, Conn., assignor to Instruments and Communications, Inc., Wilton, Conn, a corporation of Connecticut
Filed Sept. 22, 1964, Ser. No. 398,255
17 Claims. (Cl. 250—214)

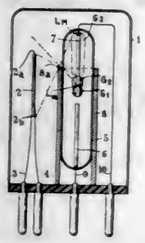


A spectrophotometer arrangement employing reference and sample beam signals chopped (alternated) at a particular phase angle and recombined by a detector; synthesized reference and sample signals synchronously generated by the chopping means and having the same relative phase separation as the beam signals; the recombining of the synthesized reference and sample signals in a ratio to provide the same phase angle as the said combined beam signal; the use of the ratio of the synthesized signals as an accurate determination of the ratio of the beam signals.

3,414,730
PHOTORHEOSTAT INCLUDING DISCHARGE LAMP AND MASKING MEANS AND UTILIZING LENGTH OF DISCHARGE
Michel Nicolas, Bievres, France, assignor to Compagnie Industrielle Francaise des Tubes Electroniques, Societe Anonyme, Courbevoie, France, a French company
Filed Jan. 27, 1966, Ser. No. 523,332
Claims priority, application France, Feb. 5, 1965, 4,509
14 Claims. (Cl. 250—217)

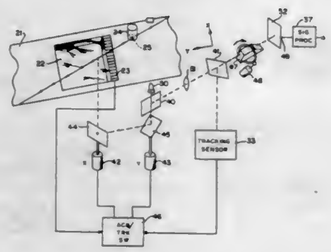
1. A photorheostat comprising a variable light source consisting of a discharge lamp incorporating an anode and

a cathode between which a variable voltage is applied, said cathode being parallel to the longitudinal axis of the lamp, a photoelectric cell disposed in front of said discharge lamp, and a screen disposed between said discharge lamp and said photoelectric cell, said screen extending along a certain length and overlapping the cathode end



adjacent to the anode in order to prevent the direct transmission to said photoelectric cell of the light flux emitted from the end portion of the cathode which is adjacent to the anode, whereby, at the beginning of the discharge, the photoelectric cell is illuminated only by diffuse light.

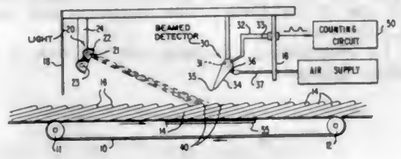
3,414,731
PACKAGE CLASSIFICATION BY TRACKING THE PATH OF A CIRCULAR LABEL AND SIMULTANEOUSLY SCANNING THE INFORMATION ON THE LABEL
Arthur B. Sperry, Weston, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,297
7 Claims. (Cl. 250—219)



1. A mark sensing system operative to read a label containing data circularly disposed therein comprising, a source of light for illuminating said label, means operative in response to light from a portion of said label to track said label as it moves across a field of view, scanning means operative to circularly scan light from said label, and a photosensitive detector operative to receive light from said label.

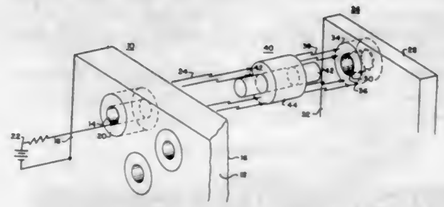
3,414,732
COUNTER FOR FOLDED PAPER OBJECTS
Jerry A. Stegenga, Coral Gables, Fla., assignor to Milgo Electronic Corporation, Miami, Fla., a corporation of Florida
Filed Oct. 19, 1965, Ser. No. 497,918
4 Claims. (Cl. 250—223)

This invention provides a highly directive photocell detector unit employed in a counting circuit to register passage of edge lighted newspapers, and the like, moving in a stream on a conveyor illuminated from above to create a shadow advancing ahead of each folded paper or from the direction of the detector to present a brightly lighted leading edge, in either case operating a counting circuit. A separate housing for the lamp permits a high intensity illumination and a slit opening for a housing



enclosing the cell provides high directionality and at the same time permits use of an airstream cleansing the slit aperture to prevent loss of light transmissivity.

3,414,733
ANNULARLY SHAPED LIGHT EMITTER AND PHOTOCELL CONNECTED BY PLUG-IN LIGHT CONDUCTING PAD
Irwin Wunderman, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 15, 1965, Ser. No. 432,767
9 Claims. (Cl. 250—227)

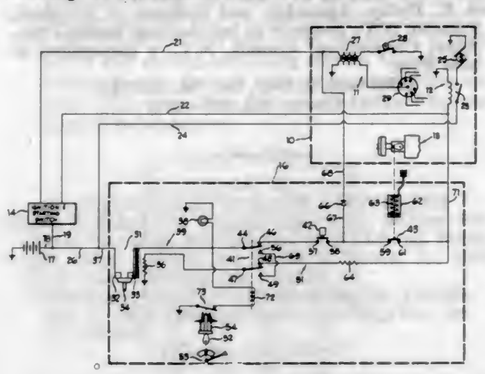


1. A radiation coupled semiconductor device comprising:
a first substrate portion including first and second semiconductor regions of opposite conductivity type;
a first junction between said first and second semiconductor regions of opposite conductivity type, said first junction having a radiating end and being operable for producing radiation from the radiating end of a plane tangent to the first junction;
means for biasing the first junction to produce said radiation;
a second substrate portion including third and fourth semiconductor regions of opposite conductivity type;
a second junction between said third and fourth semiconductor regions of opposite conductivity type, said second junction being spaced from the first junction and having a receiving end for receiving radiation; and
coupling means forming a path that is more highly refractive than the surrounding medium, said path being in contiguity when the radiating end of the first junction and the receiving end of the second junction and being arranged for coupling radiation from the radiating end to the receiving end.

3,414,734
AUTOMATIC ENGINE STARTING SYSTEM
Philip S. Konrad, Prospect Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 24, 1967, Ser. No. 618,422
3 Claims. (Cl. 290—38)

An auxiliary automatic starting circuit for an automotive vehicle includes a circuit breaker having a heater element which is in parallel with the starting system and is energized through a resistor to control the cranking

interval of the engine when cranked by the automatic circuit and to quickly disable the automatic circuit by shorting out the resistor when the gear selector is moved



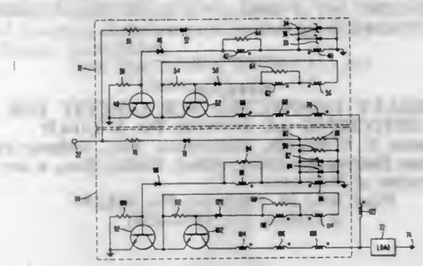
out of "Park" position preventing unauthorized movement of the vehicle while under the control of the automatic circuit.

3,414,735
VARIABLE TIME CONSTANT LEARNING MEANS
Robert P. Harris, St. Louis County, Mo., Jerome L. Krasner, Cambridge, Mass., and Michael Koenig, Creve Coeur, Mo., assignors, by mesne assignments, to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 511,431
16 Claims. (Cl. 307—201)

1. Means simulating learning and forgetting processes comprising an electronic circuit having an input adapted to be connected to an input signal source, means connected to said input including means capable of storing a charge at a predetermined charging rate in response to the receipt of input signals, means for dissipating a charge from the charge storing means at times when a previous charge has been stored and when no input signal is present of sufficient magnitude to cause additional charge to be accumulated on said charge storing means, and means responsive to the occurrence of a charge of predetermined magnitude on the charge storing means for changing the charging and discharging rates thereof.

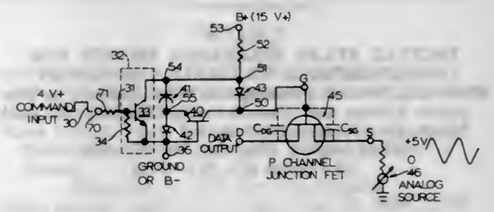
3,414,736
REDUNDANT CURRENT DRIVER
John D. Hagee, Havertown, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 26, 1963, Ser. No. 325,958
11 Claims. (Cl. 307—219)

4. The combination comprising:
first means responsive to an electrical waveform for causing electric current to flow through a load;
second means, electrically connected in parallel with said first means and responsive to said electrical waveform, for causing electric current to flow through said load; and



transformer coupling means, electrically connected between said first means and said load and coupled to said second means and responsive solely to conduction in said first means for disabling said second means whenever said first means is causing said electric current to flow through said load.

3,414,737
FIELD EFFECT TRANSISTOR GATING CIRCUIT
John Oliver Bowers, Jr., Maitland, Fla., assignor to Dynatronics, Inc., Orlando, Fla., a corporation of Florida
Filed Sept. 8, 1965, Ser. No. 485,762
8 Claims. (Cl. 307—243)



A field effect transistor (FET) gating circuit is disclosed which has the features of precluding the flow of gate current when the FET is enabled while simultaneously discharging the inherent source to gate and drain to gate capacitances of the FET. A diode is connected between a source of inhibiting voltage and the gate electrode of the FET. A driver transistor is connected via a diode to the gate electrode. When the driver transistor is saturated, the gate electrode is connected to ground and the field effect transistor is enabled. A discharge circuit for the inherent capacity of the field effect transistor and for containing isolation between the gate electrode and the source of analog signals being gated includes a capacitor connected between the source of inhibiting voltage and ground through a diode and a discharge transistor connected between the gate electrode and the junction of the capacitor and diode. When the driver transistor is saturated, the discharge transistor is rendered conductive, thereby establishing a path for rapidly discharging the inherent capacitances of the FET instantaneously at the onset of the command level which saturates the driver transistor. The capacitor in the discharge circuit also discharges. It, however, controls the discharge through the other transistor so that the discharge path is open only

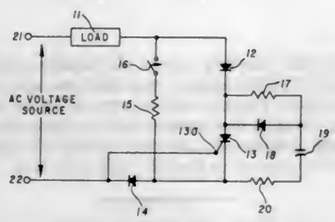
at the onset of the command signal level. When the capacitor discharges to the diode cutoff voltage, conduction through the discharge transistor stops. By virtue of the diode and the inhibited discharge transistor, there are no paths to ground from the gate electrode of the FET. Thus, current flow through the gate electrode by virtue of the source driving current are precluded.

3,414,738

SERIALLY CONNECTED SCR CIRCUIT FOR SWITCHING AC POWER TO A LOAD

Benjamin F. Gilbreath, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,197
8 Claims. (Cl. 307—252)



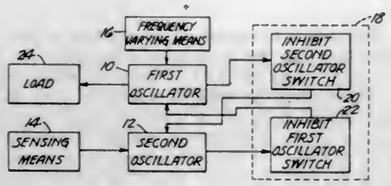
A gated switching circuit for supplying a limited number of pulses of electrical power to a load, including an alternating power source, a load, a first rectifier, a second rectifier and a gated switch, all serially connected with means for providing to the switch a gating current and a holding current.

3,414,739

DIGITAL PULSE SELECTION DEVICE FOR MONITORING A VARIABLE CONDITION

Richard L. Paidosh, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 13, 1966, Ser. No. 520,408
14 Claims. (Cl. 307—271)



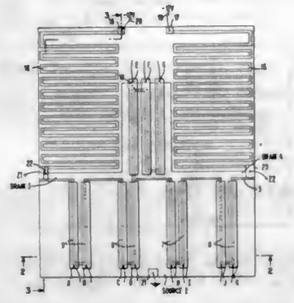
A digital pulse selection device is shown for monitoring a variable condition wherein the device includes a first oscillator which produces a first series of digital pulses at a fixed pulse repetition frequency and a second oscillator which is responsive to a sensing means for monitoring a variable condition and which produces a second series of digital pulses having a pulse repetition frequency which is a function of the sensing means and a switching means is responsive to the variable frequency of the second oscillator and when the frequency thereof is equal to or exceeds the frequency of the first oscillator disables operation of the first oscillator terminating the first series of digital pulses which represents that the monitored variable condition is equal to or exceeds a predetermined variable condition.

3,414,740

INTEGRATED INSULATED GATE FIELD EFFECT LOGIC CIRCUITRY

Jack R. Dailey, Apalachin, and Nicholas M. Guydosh, Endicott, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 8, 1965, Ser. No. 485,761
16 Claims. (Cl. 307—304)



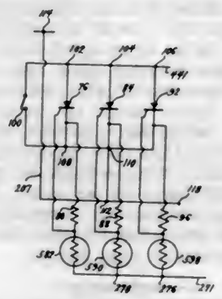
A multifunction logic element is fabricated in the form of a field effect device of the insulated gate type. The device includes a substrate of one conductivity type and at least three regions of opposite conductivity type separated by elongated channels. Metallic gates overlay the channels to selectively connect the regions to each other in response to input signals. Loads are formed by diffusing elongated strips of the opposite conductivity type into the substrate and are connected to all except one of said regions. Operating potentials can be connected to the regions so as to operate the device in the inverting or noninverting mode. By selective connection of certain of the gates to each other and/or to selected voltage sources, the device can be operated to perform various logical functions.

3,414,741

CONTROL SYSTEMS

Owen E. Reinert, St. Louis, Mo., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 12, 1965, Ser. No. 439,367
15 Claims. (Cl. 307—310)



14. A control system which includes a current-controlling element and a protective arrangement therefor and which comprises:

(a) a current-controlling element with a recess therein,

(b) a thermistor mounted in said recess in said current-controlling element, and thus in intimate heat-transferring relation with said current-controlling element,

(c) a circuit that determines the conductivity of said current-controlling element,

(d) a connection between said thermistor and said circuit which enables a predetermined change in the resistance of said thermistor to decrease the current flowing through said current-controlling element,

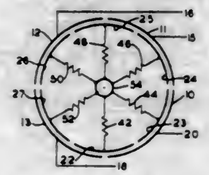
(e) said thermistor and said circuit responding to heating of said current-controlling element to reduce the current flowing through said current-controlling element while permitting said current-controlling element to be conductive.

3,414,742

ELECTROSTATIC ENERGY CONVERTER

Marvin J. Fisher, 320 Country Club Drive, Ballwin, Mo. 63011; Wayne R. Huelskoetter, 3013 McLeod, Burnsville, Minn. 55378; and David D. Lynch, Jr., 1230 Carol Ann, Kirkwood, Mo. 63122

Continuation-in-part of application Ser. No. 269,380, Apr. 1, 1963. This application Oct. 12, 1966, Ser. No. 586,299
14 Claims. (Cl. 310—5)



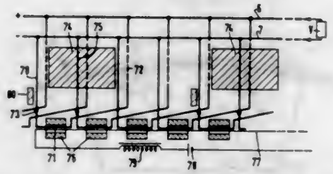
1. An electrostatic energy converting device useful as a motor or generator comprising a rotor member and a stator member, each provided with a plurality of conducting surfaces, the conducting surfaces of one of said members adapted to be energized by a polyphase alternating current source in order to induce electrical charges on the conducting surfaces of said other member, and charge controlling means, electrically cooperating with each of said conducting surfaces of said other member, for controlling the movement of said induced electrical charges and establishing a resultant net torque between said rotor and said stator to produce energy conversion.

3,414,743

COMMUTATING ARRANGEMENTS FOR ELECTRIC MACHINES WITH SUPERCONDUCTING ARMATURE WINDINGS

Wilhelm Kafka, Tennenlohe, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany

Filed Mar. 11, 1966, Ser. No. 533,549
Claims priority, application Germany, Apr. 1, 1965, S 96,318
6 Claims. (Cl. 310—10)



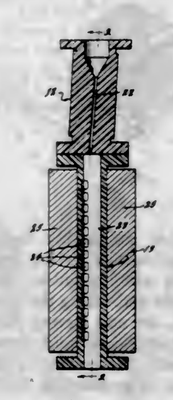
1. In a direct current machine comprising a superconducting armature coil, said coil comprising a plurality of loops, each of said loops respectively including a portion which functions as a switching path which is alternately switched between the normally conducting and the superconducting states and magnetic means for providing a magnetic field, relative motion between said field and said portions causing said switching of said portions; the improvement which comprises saturating magnetic coil means associated with said loops to render variable the inductance in said loops to thereby produce a finite current-free period in said loop at substantially the zero current point.

3,414,744

MAGNETOHYDRODYNAMIC GENERATOR

Michael Petrick, Joliet, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 3, 1965, Ser. No. 511,565
6 Claims. (Cl. 310—11)



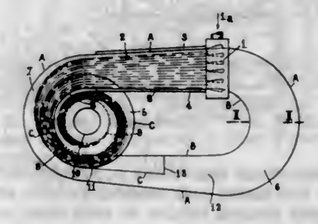
1. A magnetohydrodynamic generator comprising an elongated duct having a flat plate as one side thereof, means for establishing a magnetic field through said duct, means for directing a liquid metal onto said flat plate at an angle of between 3° and 12° and for causing the liquid metal to flow rapidly along the plate as a thin film, and means for collecting the electric current generated thereby.

3,414,745

POWER PLANT FOR TRANSFORMING ENERGY BY UTILIZATION OF THE MAGNETOHYDRODYNAMIC EFFECT

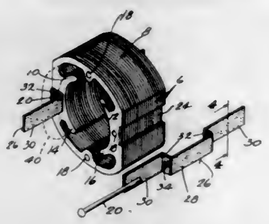
René Bidard, Paris, France, assignor to Cie Electro-Mecanique, Paris, France, a body corporate of France

Filed Jan. 7, 1966, Ser. No. 519,202
Claims priority, application France, Jan. 29, 1965, 3,706
12 Claims. (Cl. 310—11)



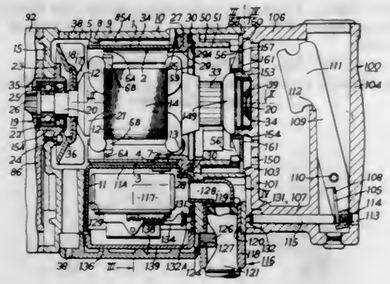
1. In a power plant operating on the magnetohydrodynamic principle for transformation of energy and wherein flow of an electro-conductive fluid is confined to at least one self-contained loop circuit which traverses at least one magnetohydrodynamic conversion apparatus with a transverse magnetic field, the improvement wherein said loop circuit and all parts of said conversion apparatus traversed by said electro-conductive fluid are located completely in said magnetic field so that none of the electro-conductive fluid either enters or leaves said field, and wherein means are provided to inhibit circulation of eddy currents within said fluid.

3,414,746
DYNAMOELECTRIC MACHINE FIELD CORE WINDING AND METHOD OF CONSTRUCTION
Roy J. Melvin, Waterford, Wis., assignor to MSL Industries, Inc., Racine, Wis., a corporation of Minnesota
Filed Apr. 1, 1966, Ser. No. 539,459
9 Claims. (Cl. 310—42)



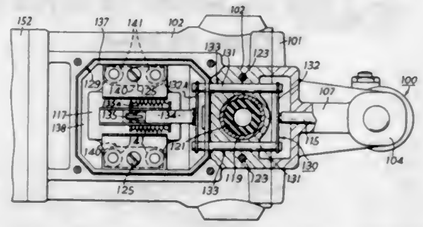
1. A field member comprising the combination with an assembly of laminations having registering apertures to receive rivets, of winding guides and clamping strips having offset portions embracing the laminations and having projecting ends, the coil having its turns individually wound upon the laminations and about such ends, and having terminal leads, the ends of said strips encircling the coil as a means of positioning the turns and anchoring the leads.

3,414,747
ELECTRIC MOTORS
David Norman William Badcock, London, England, assignor to Kango Electric Hammers Limited, London, England, a British company
Continuation of application Ser. No. 360,630, Apr. 17, 1964. This application Aug. 9, 1967, Ser. No. 659,534
Claims priority, application Great Britain, Apr. 22, 1963, 15,820/63
9 Claims. (Cl. 310—50)



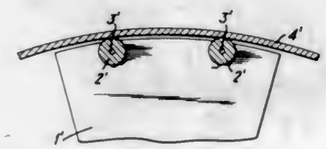
An electric motor for driving a portable power tool. The motor has casing end members which are rigidly but detachably secured relative to each other and which have bearings to receive the armature of the motor. A sleeve is disposed axially against one end member and extends toward the other end member. It is of electrically insulating material, and is open at the end nearer the other end member. The sleeve has an internal abutment surface disposed adjacent and facing axially away from the one end member. A stator assembly is wholly accommodated within the length of the sleeve and is in axial abutment with the internal abutment surface. Spring means is provided between the other end member and the stator assembly to press the assembly against the abutment surface within the sleeve and to press the sleeve against the abutment surface within the main housing. The arrangement is such that the various elements are held in place by a single resilient means and the construction can be dismantled and assembled easily.

3,414,748
PORTABLE TOOLS
David Norman William Badcock, London, England, assignor to Kango Electric Hammers Limited, London, England
Original application Apr. 17, 1964, Ser. No. 360,630. Divided and this application May 17, 1967, Ser. No. 641,741
Claims priority, application Great Britain, Apr. 22, 1963, 15,820/63
3 Claims. (Cl. 310—50)



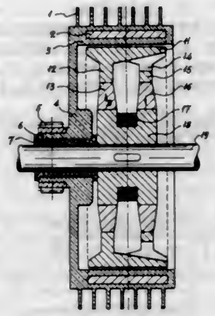
A portable electrically driven power tool comprising a housing portion, an electric motor mounted in the housing portion, a hand grip, supporting strut means extending between the housing portion and the hand grip, a switch for the motor which switch is mounted in the housing portion, an operating lever for the switch which lever is mounted wholly on the hand grip, a separate motion transmitting device operatively interconnecting the operating lever and the switch, and a cable entry assembly accommodated within the housing portion, the hand grip and the switch being disposed one on each side of and coplanar with the cable entry assembly, and the motion transmitting device comprising twin switch actuating elements extending past opposite sides of the cable entry assembly.

3,414,749
COOLING AND SECURING MOTOR LAMINATIONS
Karl Abegg, Oberreiden, Switzerland, assignor to Maschinenfabrik Oerlikon, Zurich, Switzerland
Filed Mar. 29, 1965, Ser. No. 443,395
Claims priority, application Switzerland, Apr. 1, 1964, 4,261/64
5 Claims. (Cl. 310—52)



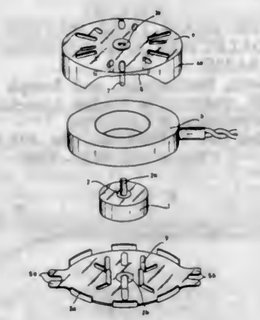
An electric motor construction comprises a surrounding outer housing wall, a bundle of laminations within the wall at a spaced location from the interior thereof and rod members extending through the laminations and secured directly to the housing wall for securing the laminations in position within the motor housing. The rod members are constructed as tubes and a liquid coolant is circulated through the cooling conduits defined by these tubes. The rod members are also coated with a material of high thermal conductivity, for instance resin.

3,414,750
DIACHRONOUS ELECTROMAGNETIC COUPLING
José Ignacio Martin Artajo, Alberto Aguilera 25, Madrid, Spain
Filed Jan. 8, 1965, Ser. No. 424,366
Claims priority, application Spain, Jan. 13, 1964, 295,262
10 Claims. (Cl. 310—105)



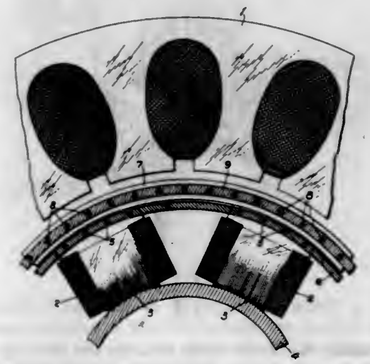
A magnetic coupling for transmitting a drive between coaxial rotary driving and driven assemblies. These assemblies include an inner assembly and an outer assembly surrounding and spaced from the inner assembly. The outer assembly is in the form of a cylindrical drum or casing which carries short-circuited conductors as well as magnetically permeable components. The inner assembly includes substantially rigid, ring-shaped, magnetically permeable bodies at least some of which are permanent magnets. While the inner assembly does not require an exciting coil, such a coil may be included for control purposes in certain installations. In certain installations these assemblies are axially shiftable one with respect to the other so that the extent to which the outer assembly overlaps the inner assembly can be regulated.

3,414,751
SYNCHRONOUS ELECTRICAL MOTOR
Paul Andre Bossard, Cluses, France, assignor to Ets. Carpano & Pons, Cluses, France, a company
Filed Jan. 25, 1968, Ser. No. 700,568
Claims priority, application France, Feb. 27, 1967, 96,612
4 Claims. (Cl. 310—164)



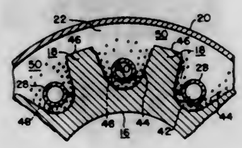
A pulsating synchronous electric motor is made with a permanently magnetized rotor of high coercivity and a stator having a cylindrical coil carrying the inductive winding and a cage of stator poles formed by the assembly of two flanges mounted on the sides of the coil, two poles of the first flange having a given polarity penetrate in the cage and between them are disposed two poles of opposite polarity of the second flange, the arrangement of the stator poles being such that in the polar diagram of the motor the axes corresponding to the polar step of the rotor pass through the axes of symmetry of the poles of the first flange and by the axes of the spaces separating two consecutive poles of the second flange.

3,414,752
ROTOR ARRANGEMENT FOR A SYNCHRONOUS MOTOR DRIVE
Stanley A. Cory, Canoga Park, Calif., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 8, 1966, Ser. No. 556,218
4 Claims. (Cl. 310—269)



1. Rotor apparatus for a synchronous motor comprising:
- a magnetic ring;
- a plurality of salient poles attached to said magnetic ring, said ring to act as a magnetic return path for said poles;
- a plurality of rotor bars in said poles;
- a first pair of annular end rings terminating the ends of said rotor bars;
- an exciting coil wound around each of said salient poles; and
- a peripheral ring of hysteresis material formed to surround the periphery of said poles.

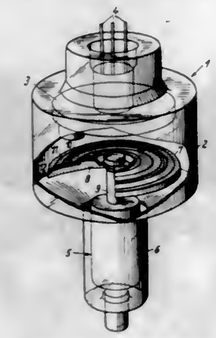
3,414,753
REMOVAL OF VAPORIZED COOLING LIQUID FROM HEAT EXCHANGE ELEMENT BY POWER JETS
Robert M. Hruda, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 1, 1964, Ser. No. 415,097
2 Claims. (Cl. 313—35)



1. A method of cooling a heat exchange member having a plurality of fins extending therefrom, said method comprising the steps of immersing said heat exchange

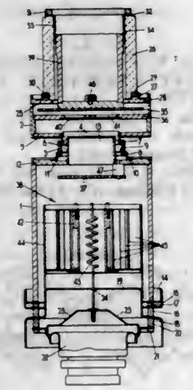
member into a cooling liquid, supplying sufficient thermal energy to said heat exchange member so that the vapor of said cooling liquid is formed on the surface of said heat exchange member, and directing said cooling liquid onto said heat exchange member with sufficient force to break up and remove the vapor of said cooling liquid from said heat exchange member.

3,414,754
ANODE PLATE FOR X-RAY TUBES
Adolf Elsas, Zeckern, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Nov. 16, 1966, Ser. No. 594,816
Claims priority, application Germany, Nov. 20, 1965, S 100,578
9 Claims. (Cl. 313—60)



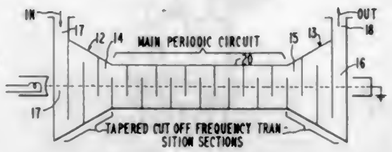
An anode for X-ray tubes wherein the electron impact area consists of an alloy of refractory metal comprising an alloy of tungsten-iridium consisting of iridium contents in the range of between 0.05 and 3%.

3,414,755
EROSION PREVENTION IN GAS-FILLED ELECTRIC DISCHARGE DEVICE
Basil Offor Baker, Rickmansworth, and Robert Joseph Wheldon, Chalfont St. Peter, England, assignors to The M-O Valve Company, Limited, London, England, a British company
Filed July 11, 1966, Ser. No. 564,279
Claims priority, application Great Britain, July 9, 1965, 29,319/65
8 Claims. (Cl. 313—193)



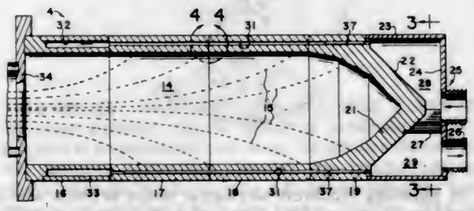
A gas-filled electric discharge device including an electrode in which is formed an elongated aperture through which the discharge passes, a region of the aperture being of reduced width so as to reduce erosion of an adjacent electrode which would otherwise occur due to focussing of high energy electrons onto the surface of the adjacent electrode by virtue of the configuration of the electric field in operation between the region of the aperture and the adjacent electrode.

3,414,756
IMPEDANCE MATCHED PERIODIC MICROWAVE CIRCUITS AND TUBES USING SAME
George K. Farney, New Providence, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Dec. 28, 1965, Ser. No. 516,939
10 Claims. (Cl. 315—3.5)



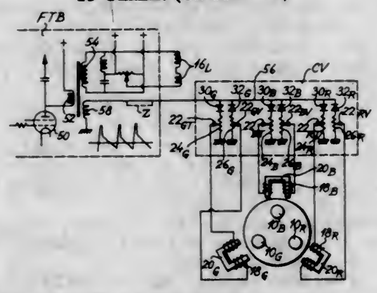
Improved periodic slow wave circuits are disclosed together with tubes using same. The periodic slow wave circuits are arranged in the tubes for interaction with the stream of electrons to produce output microwave energy. A transmission line is provided for extracting the output wave energy from the slow wave circuit for transmission to a suitable load. The slow wave circuit includes a main circuit portion having a dispersive characteristic with an upper and lower cutoff frequency to define the bandedges of an operating bandpass characteristic. The electron stream producing means causes a substantial percentage of the electrons of the stream to have velocities which will be synchronous with the phase velocity of wave energy on the periodic circuit at frequencies corresponding to at least one of the bandedges of the slow wave circuit. The slow wave circuit includes a main circuit portion and a terminal periodic transition circuit portion. The transition circuit portion is tapered in cutoff frequency to provide greater bandwidth at one or both of the bandedges of the transition circuit section of the periodic microwave circuit for heavily coupling the bandedges of the main circuit to the resistance of the load, thereby loading down the bandedges and preventing oscillation at these frequencies.

3,414,757
HIGH POWER BEAM TUBE HAVING IMPROVED BEAM COLLECTOR AND METHOD OF FABRICATING SAME
Martin E. Levin, Burlingame, and Joseph J. Dill, Santa Clara, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Oct. 7, 1965, Ser. No. 493,802
7 Claims. (Cl. 315—5.38)



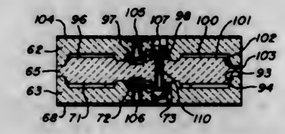
A high power beam tube is disclosed. The beam tube includes an electron gun for forming and projecting a beam of electrons having an average power in excess of 100 kw. over an elongated beam path to a beam collecting structure for collecting the beam and dissipating the energy thereof. A microwave interaction circuit is disposed along the beam path intermediate the gun and the collector. The collector structure includes a plurality of ring-like tubular copper segments coaxially aligned and joined together at their abutting ends in a gas-tight manner to define the side walls of a beam collecting cavity within which the beam is collected. The tubular segments of the collector each include an array of circumferentially spaced apart bores arranged around the tubular segments and passing through the segments from one end to the other. Adjacent ones of the tubular segments are aligned so that the bores of adjacent ones of the segments are in registration with each other to define an array of coolant channels passing the length of the collector body. Collector structures of this type are especially useful when the diameter of the beam collecting cavity is greater than six inches in diameter and the collector has a weight in excess of 200 pounds, since constructing the beam collector in ring segments greatly facilitates handling and machining of such large and heavy structures.

3,414,758
APPARATUS FOR REPRODUCING COLORED TELEVISION SIGNALS
Olav Ebbesen Grue, 17 Guldregnvaenget, Virum, Copenhagen, Denmark
Filed July 10, 1964, Ser. No. 388,330
Claims priority, application Great Britain, July 11, 1963, 27,532/63
13 Claims. (Cl. 315—13)



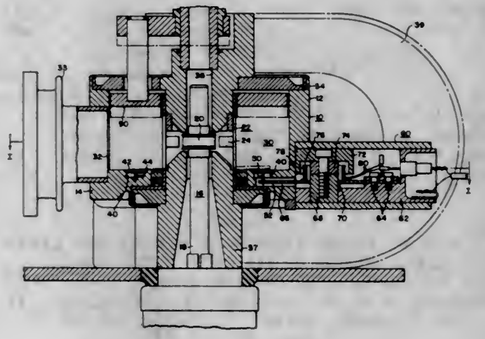
An electron beam dynamic convergence system for color television wherein rectifiers are connected between the source of convergence corrections signals and each end of each convergence coil with a separate potentiometer connected in series with each rectifier to adjust the dynamic convergence of each beam independently on each side of a middle zone of the picture screen.

3,414,759
SPARK GAP UNIT FOR LIGHTNING ARRESTERS
Thomas R. Connell, Wadsworth, and Robert E. Putt, Clinton, Ohio, assignors to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Dec. 1, 1966, Ser. No. 598,467
11 Claims. (Cl. 315—36)



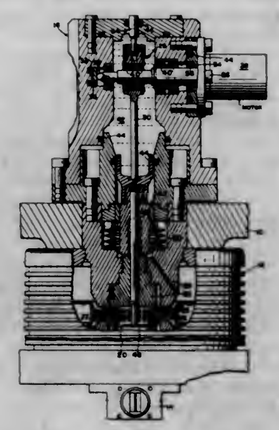
A spark gap unit for lightning arresters with a central gap plate and an end plate on each side thereof defining spark chambers for two series connected spark gaps. It provides the functions and results of the prior art many-plate gap units with improved manufacturing procedures.

3,414,760
A FREQUENCY DIVERSITY COAXIAL MAGNETRON
Kenneth D. Powell, Lancaster, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1965, Ser. No. 496,351
6 Claims. (Cl. 315—39.59)



A coaxial magnetron is described in which a small mass tuning member is provided within the coaxial cavity resonator which is driven by an elongated flexible member attached to the tuning member.

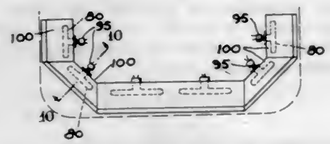
3,414,761
DITHER TUNER FOR A COAXIAL MAGNETRON
George E. Glenfield, Scotch Plains, N.J., assignor to S-F-D Laboratories, a corporation of New Jersey
Filed Sept. 16, 1965, Ser. No. 487,697
4 Claims. (Cl. 315—39.61)



A dither tuned coaxial magnetron is disclosed. The coaxial magnetron tube includes an evacuated envelope structure containing an anode electrode structure having a circular array of coupled anode resonators coaxially

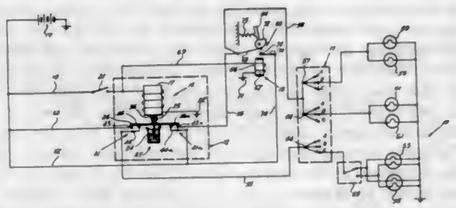
disposed of a circular electric mode cavity resonator coupled to the anode resonators via an array of coupling slots. The coupling slots serve to lock the π mode of the anode resonators to the circular electric mode of the cavity resonator. An axially translatable end wall of the circular electric mode resonator is provided for tuning the resonant frequency of the cavity resonator and the coupled anode resonators for tuning the output frequency of the tube. A cathode electrode structure is coaxially disposed of the anode to produce a magnetron interaction region therebetween. An elongated tuner actuating shaft is coupled to the movable tuning wall and extends through the vacuum envelope of the tube via a vacuum tight bellows. A motor driven crankshaft is coupled via a yoke to the outer end of the tuner actuating shaft for dithering of the shaft and its dependent tuner at a relatively high rate as of 20 to 160 cycles per second to produce frequency modulation of the output frequency of the tube. The motor is affixed to the outside of a housing and the housing is filled with a viscous fluid such as oil. The oil surrounds the crankshaft, yoke, and tuner actuating shaft for dampening the oscillatory motion of the tuner.

3,414,762
FILAMENT LAMP WITH BASE STEM ADAPTABLE FOR CONNECTION TO DIFFERENT SOCKETS
Leo Wyzykowski, 5027 Commor, Detroit, Mich. 48212
Continuation of application Ser. No. 565,355, July 11, 1966. This application Jan. 18, 1968, Ser. No. 699,976
3 Claims. (Cl. 315—64)



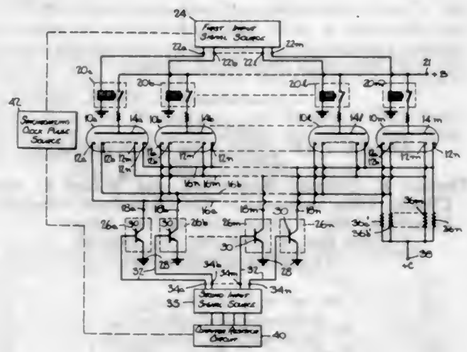
The present application discloses an improved electric bulb intended, in addition to its other purposes, to eliminate in motor vehicles the use of electric bulbs of projector type, such as head lights, parking lights, and signal lights providing sharp localized illumination and to substitute therefor bulbs with elongated bodies housing similarly elongated filaments which may be as long as 6" whereby a substantially continuous chain of bulbs is produced in a luminous panel, giving more uniformly distributed illumination. The bulb, a plurality of which is used in an elongated reflecting panel, is of a combined nature and in addition to its use in motor vehicles as a signal light can also serve in a house lighting circuit for purposes such as a night bulb. In order to perform such combined function, the bulb includes a base stem whereby the bulb can be installed in an automotive reflector without rotation, since even limited rotation would not be practicable there because of elongated shape of the bulb. In accordance with the invention, the bulb is installed by a straight line push into its socket which includes a guiding lug received in a slot formed by the ends of the thread coils of the bulb's base stem. The separate coils form a helical thread intended for inserting the bulb into a conventional house lighting internal socket. The bulb includes two elongated filaments adapted to have impressed thereon a house lighting current or a battery current, selectively. The disclosed construction of the base stem of the bulb provides for electrical connection with each respective circuit in either operative position of the bulb which position is determined by the locating means, to provide for horizontal positioning of the bulb to form a substantially continuous illuminating band in an automotive reflector.

3,414,763
HEADLAMP CONTROL SYSTEM FOR TURNING OFF THE LAMPS AFTER A PREDETERMINED DELAY PERIOD
Willis L. Kibler, Detroit, Mich., assignor to The Delman Company, Detroit, Mich., a corporation of Tennessee
Filed Feb. 3, 1967, Ser. No. 613,913
5 Claims. (Cl. 315—80)



A headlight system for an automotive vehicle in which a solenoid-actuated time delay unit is incorporated in the light circuit for operation in response to an opening of the ignition circuit for the vehicle engine, to automatically turn off the lights after a predetermined period following the opening of the ignition circuit. A prolonged operation of the headlights, through inadvertence of the vehicle operator to turn them off, is thus eliminated. The light system also includes an auxiliary manually controlled switch, in addition to the usual light control switch on the vehicle, for turning on the lights, when the engine ignition circuit is open. This auxiliary switch is rendered inoperative on closing of the ignition circuit to provide for a normal operation of the light system for road travel and the setting of the time delay unit to open the light system in response to an opening of the ignition circuit.

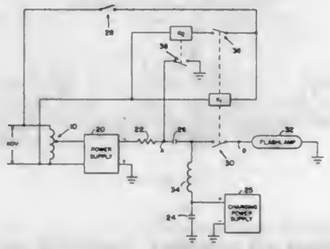
3,414,764
CIRCUIT FOR CONTROLLING THE DISPLAYING OF SELECTED INDICIA BY INDICATOR TUBES IN A DISPLAY SYSTEM FOR ELECTRONIC COMPUTERS AND THE LIKE
Takuya Kawamoto and Sawako Kawamoto, Setagaya-ku, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Mar. 14, 1966, Ser. No. 534,244
Claims priority, application Japan, Mar. 15, 1965, 40/15,164
5 Claims. (Cl. 315—84.6)



In a display system for electronic computers and the like which comprises a number of indicator tubes, such as cold cathode tubes, each having a plurality of cathode electrodes respectively configured to indicate particular indicia and an anode electrode common to all cathode electrodes in the same tube, each cathode electrode

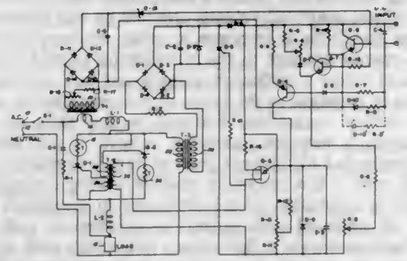
in each tube is connected together with the correspondingly configured cathodes in the other tubes to a respective first switching device and the anode electrode of each tube is connected individually to a respective second switching device, the first switching devices are selectively actuated in sequence, and the second switching devices are selectively actuated in sequence and in synchronism with the actuation of the first switching devices.

3,414,765
FLASHLAMP CIRCUIT WITH A HIGH TRIGGERING CONDENSER AND A LOAD CONDENSER IN PARALLEL
William B. McKnight, Somerville, William F. Otto and Ralph W. Hawkins, Huntsville; and James R. Dearman, deceased, late of Huntsville, by Dorothy H. Dearman, administratrix, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 3, 1967, Ser. No. 615,294
7 Claims. (Cl. 315—173)



A pulse triggering circuit for supplying high electrical power pulses to energize flashlamps used in high energy laser systems. A first capacitor is charged by first and second series connected power sources, which supply very high direct current voltages. A second capacitor is charged by the second power source, simultaneously with the first capacitor. A solenoid controlled, vacuum switching circuit is activated at the required time to switch the capacitors to a load circuit. By the switching action, the capacitors are paralleled across the load and discharge therethrough. The solenoid controlled switches open the discharge path and thereby allow the capacitors to be recharged, prior to another firing.

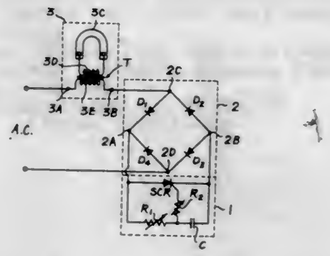
3,414,766
POWER CONTROL CIRCUIT
Kenneth H. Miller, 1607 Westmoore, Austin, Tex. 78723
Filed Oct. 19, 1965, Ser. No. 497,885
22 Claims. (Cl. 315—194)



A circuit for controlling electrical power supplied to a load from an A.C. voltage source, particularly for incandescent lamp loads, comprises electronic switch means, control means having a capacitor which is charged for

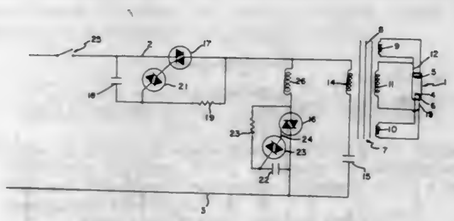
producing a signal when discharged to control the conduction of the switch means, and another electronic switch means for preventing the recharging of the capacitor during the remainder of the half cycle of the A.C. voltage during which it is discharged.

3,414,767
LIGHT FLASHER CIRCUIT
Ken Hashimoto, Tokyo, Japan, assignor to Fuji Neon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Oct. 20, 1965, Ser. No. 498,556
1 Claim. (Cl. 315—200)



This invention relates to a lighting flasher comprising a delay circuit comprising a silicon control rectifying element and a timing element, a single-phase full-wave rectifying circuit connected to the output terminals of the delay circuit, and a lighting apparatus in series between an alternating current power source and the input terminal of said rectifying circuit.

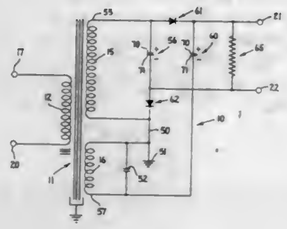
3,414,768
SEMICONDUCTOR BALLAST FOR DISCHARGE LAMP
Sandford C. Peek, Jr., Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 520,037
6 Claims. (Cl. 315—240)



A circuit for operating one or more electric discharge lamps from an alternating current line with reduced inductive ballast, in which a gated two-way semiconductor is in series with a transformer and condenser, and another gated two-way semiconductor is across the series circuit of transformer and condenser. The lamp or lamps are in series with the secondary of the transformer, although they can be used in place of the transformer if the line voltage is sufficient for starting and operating them. A small inductance is preferably placed in series with the shunting semiconductor to insure that the shunting semiconductor unit will not be triggered until after the series unit is triggered. The triggering can be done by a voltage

divider across each gated semiconductor, the divider including a resistance and condenser in series. A diode semiconductor can be in series with the gate of one or of each of the gated semiconductors.

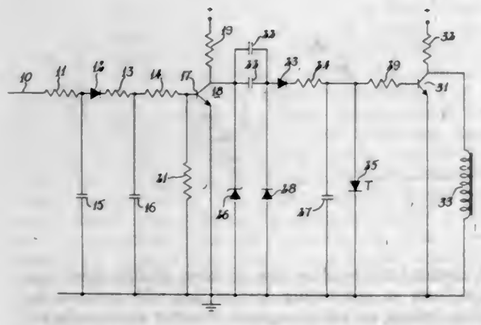
3,414,769
POWER SUPPLY WITH SIMULTANEOUSLY PEAKING POSITIVE AND NEGATIVE OUTPUT VOLTAGES
Robert R. Hoffman, Huntington, Ind., assignor to Wabash Magnetics, Inc., Huntington, Ind., a corporation of Indiana
Filed Feb. 14, 1966, Ser. No. 527,134
6 Claims. (Cl. 317—2)



A power supply which produces between one output terminal and ground a comparatively steady positive direct current potential, and produces between another output terminal and ground a periodically peaking negative direct current potential, the positive and negative potentials reaching their respective peak values simultaneously.

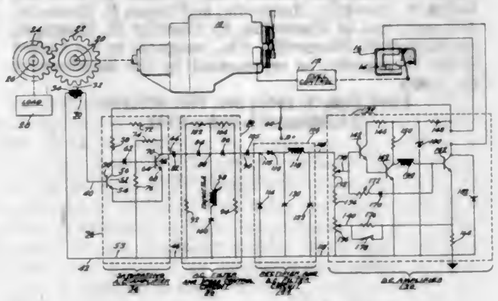
Such a power supply may be used as a part of corona producing means for use in an electrostatic copier.

3,414,770
SPEED CONTROL APPARATUS
Carl J. Pudewill, Chicago, Ill., assignor to Sun Electric Corporation, a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,375
1 Claim. (Cl. 317—5)



A circuit for monitoring a pulse train having a pulse repetition rate which is proportional to a speed to be measured. A standardized pulse is applied to the parallel combination of a charge accumulating capacitor and a tunnel diode each time a pulse occurs. The tunnel diode, which is connected to discharge the capacitor, exhibits an abrupt increase in resistance when the current flowing there through exceeds a predetermined value. Increases in the pulse repetition frequency increases the net current flow through the tunnel diode, causing it to abruptly increase in resistance at a predetermined frequency and provide an output indication.

3,414,771
ELECTRIC GOVERNOR SYSTEM FOR SENSING AND CONTROLLING ENGINE SPEED
Merton I. Rosenberg and Walter G. Bohaker, Springfield, Mass., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Nov. 12, 1965, Ser. No. 507,392
5 Claims. (Cl. 317—5)

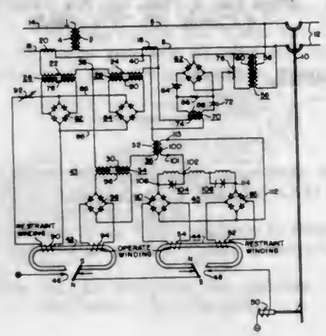


A pick-up coil responds to rotation of the teeth of a gear in an engine to produce a signal having a frequency proportional to engine speed. This signal is passed in series through a saturating amplifier, which removes R.M.S. variations, through a high-pass filter having a steep, adjustable low-frequency passband edge, and then in succession through a rectifier, a low-pass filter and a D.C. amplifier to the control winding of a rotary solenoid for operating the fuel-control in a direction to oppose engine speed changes when said frequency increases into the range of said passband edge.

3,414,772
DIFFERENTIAL RELAY WITH RESTRAINING MEANS RESPONSIVE TO TRANSFORMER BANK VOLTAGE
William K. Sonnemann, Roselle Park, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1966, Ser. No. 561,505
13 Claims. (Cl. 317—14)

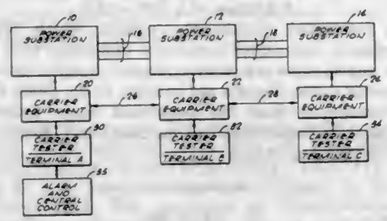
1. In a protecting device, a switching apparatus comprising operate and restraint energizable control elements and circuit controlling means actuated by said elements to a first condition in response to ratios of energization of said operate element to the energization of said restraint element below a critical magnitude and to a second condition in response to the ratios of said energization above said critical magnitude, first and second pairs of input terminals, a network connected to both of said pairs of terminals and including a pair of output terminals energized with a first electrical quantity having a magnitude which is a function of the difference in magnitude of a pair of electrical input quantities supplied to said pairs of input terminals, a first circuit connecting said operate element to said output terminals for energizing said operate element as a function of the magnitude of the said first electrical quantity, a third pair of input terminals, and a second circuit connecting said restraint element to said third pair of input terminals for energizing said restraint element by a control electrical quantity supplied

to said third pair of input terminals, said second circuit including a magitude sensing device, said magnitude sensing device being effective to prevent energization of said



restraint element by said control quantity at magnitudes below a predetermined critical magnitude and to permit energization of said restraint element at magnitudes above said critical magnitude.

3,414,773
AUTOMATIC RELAY CARRIER CIRCUITRY FOR TESTING MULTIPLE TERMINAL POINTS EMPLOYING TIMER SAMPLING MEANS
Marion D. Knox, Edmond, Okla., assignor to Wayne Electronic Products Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Aug. 25, 1966, Ser. No. 575,033
16 Claims. (Cl. 317—28)



1. Automatic relay carrier testing apparatus for use with protective relay systems for high voltage transmission lines, which systems include a carrier-current transmitter and receiver interconnected between each transmission line terminal point, comprising:

control means at each terminal connected to energize the respective transmitter;

first program switch means providing a plurality of first control outputs to a first one of said control means;

first drive means connected to actuate said first program switch means through a predetermined program to provide a desired sequence of control outputs;

means for energizing said first drive means only during spaced intervals;

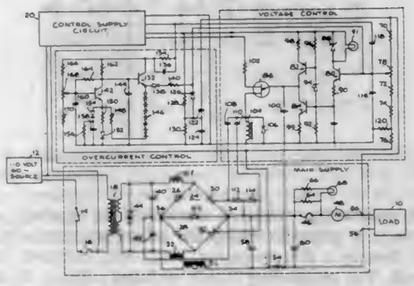
second program switch means providing a plurality of second control outputs to a second one of said control means;

second drive means connected to actuate said second program switch means through a predetermined program to provide a desired sequence of control outputs;

means controlled by actuation of said first program switch means for energizing said second drive means to function in synchronism with said first drive means;

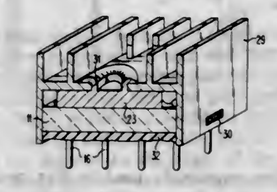
whereby said first and second control outputs energize their respective transmitters in a predetermined order to verify the operation of the carrier-current equipment.

3,414,774
VOLTAGE AND CURRENT REGULATED POWER SUPPLY CIRCUIT INCLUDING SELF-PROTECTIVE FEATURES
Nathaniel Motta, Pasadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California
Filed Oct. 16, 1964, Ser. No. 404,465
5 Claims. (Cl. 317—33)



An arrangement for controlling the amount of charging current delivered to a battery is provided which senses the voltage across the battery. If the current supplied to the battery rises above a predetermined value, a current control circuit is brought into operation which supplies current until a value is reached which can result in damage to the circuit. It then turns off the flow of current. If the conditions of the battery returns to a permissible one, provision is made for the automatic restoration of the current. Cessation of battery charging caused by transient non-recurrent overloads are avoided.

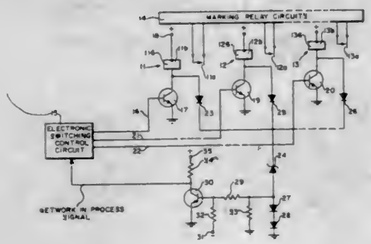
3,414,775
HEAT DISSIPATING MODULE ASSEMBLY AND METHOD
Eugene H. Melan, Poughkeepsie, and Howard F. Tepper, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 3, 1967, Ser. No. 620,437
7 Claims. (Cl. 317—100)



Active and passive circuit elements are joined to the conductive pattern formed on the surface of a pinned, microminiature ceramic substrate. A copper rivet has a

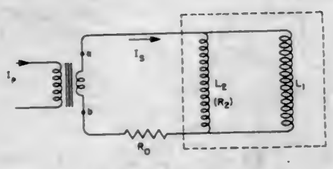
base plate secured against the surface of the substrate in close thermal relationship to the elements, and a tubular stud projecting upwardly therefrom. An apertured, finned copper cap is placed over the stud. Its sidewalls are crimped against the sidewalls of the substrate while the stud is flared over the cap opening. The assembly is capable of rapid removal of heat while providing environmental protection for the circuit elements.

3,414,776
RELAY RELEASE MONITOR
Johannes Draayer, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,585
6 Claims. (Cl. 317—123)



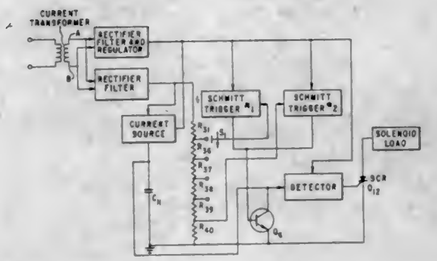
A monitoring circuit is connected to windings of all relays in a group in which the relays are controlled one at a time by a fast operating, electronic, common control circuit. The monitoring circuit includes a Zener diode and a transistor switch connected between the windings and an in-process control input of the common control circuit. In response to release of a relay by operation of the much faster operating control circuit, the monitoring circuit senses the collapsing field of the relay which is being released to prevent the common control circuit from actuating any of the relays until contacts of this last-operated relay are completely open.

3,414,777
AUTOMATIC SUPERCONDUCTING PUMP
Henry L. Laquer, Espanola, and Keith J. Carroll and Edward F. Hammel, Los Alamos, N. Mex., assignors to The United States of America as represented by the United States Atomic Energy Commission
Filed June 1, 1966, Ser. No. 555,930
2 Claims. (Cl. 317—123)



The switches previously used in flux pumps, i.e., an incremental method for energizing superconducting magnet coils by repetitive electrical energy injection, are eliminated by introducing a secondary superconducting coil (of low inductance) in parallel with the larger superconducting main coil (higher inductance).

3,414,778
SOLID STATE OVERLOAD CURRENT CONTROLLER
Benjamin F. Gilbreath, Richardson, and Donald L. Brown, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,279
9 Claims. (Cl. 317—148.5)

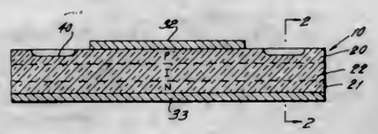


Disclosed is an electrical circuit for controlling current flow. The control circuit activates a circuit breaker when the electrical current increases to a normal overload. The circuit breaker does not activate either at normal current levels or at very high current overloads, thus allowing current to flow. In the latter case the very high overload current allows a fuse to interrupt the current flow.

3,414,779
INTEGRATED PARAMETRIC AMPLIFIER CONSISTING OF A MATERIAL WITH BOTH SEMICONDUCTIVE AND PIEZOELECTRIC PROPERTIES
John Bohm, Montreal, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Dec. 8, 1965, Ser. No. 512,311
6 Claims. (Cl. 317—234)

An integrated parametric amplifier which utilizes a piezoelectric acoustical transducer integrated with a nonlinear capacitance p-n semiconductor junction that forms a varactor diode. Signals are coupled to the diode through the transducer from an acoustical wave propagating piezoelectric semiconductor medium and from associated electrical contacts.

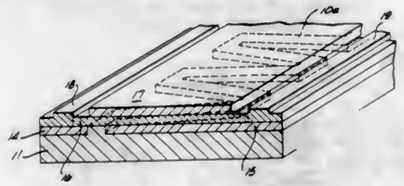
3,414,780
HIGH VOLTAGE SEMICONDUCTOR DEVICE WITH ELECTRICAL GRADIENT-REDUCING GROOVE
Edward J. Diebold, Palos Verdes Estates, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Jan. 6, 1966, Ser. No. 519,036
8 Claims. (Cl. 317—234)



A high voltage semiconductor wafer having at least one region of P-type conductivity and one region of N-type conductivity is provided with a groove in one of

said regions adjacent the periphery of the wafer. The groove extends into the region to a depth where the concentration of the dopants of that region are almost zero. The width of the groove is of the order of five to ten times its depth. Since the lateral conductivity of the wafer is very poor and since the groove is substantially wider than the thickness of the wafer, the electrical gradient in the groove will be low and spread out while the electrical gradient on the outer rim will be also low since the voltage will not reach laterally outwardly to this outer rim portion.

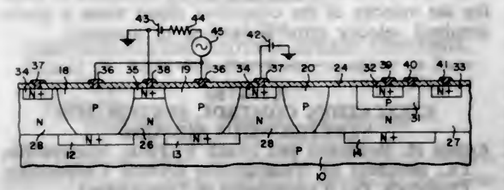
3,414,781
FIELD EFFECT TRANSISTOR HAVING INTERDIGITATED SOURCE AND DRAIN AND OVERLYING, INSULATED GATE
Hans G. Dill, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 22, 1965, Ser. No. 427,264
10 Claims. (Cl. 317—235)



1. A field effect transistor which comprises: semiconductor material having adjacent a surface thereof first and second interdigitated areas of one conductivity type separated by a channel area of opposite conductivity type; and

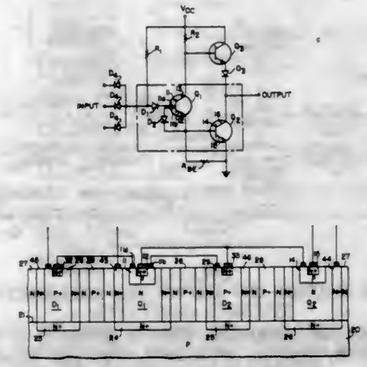
a metal gate overlying and insulated from substantial interdigitated portions of the first and second areas and the intervening channel area.

3,414,782
SEMICONDUCTOR STRUCTURE PARTICULARLY FOR PERFORMING UNIPOLAR TRANSISTOR FUNCTIONS IN INTEGRATED CIRCUITS
Hung C. Lin, Silver Spring, and Edmund A. Karcher, Severna Park, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 3, 1965, Ser. No. 511,439
5 Claims. (Cl. 317—235)



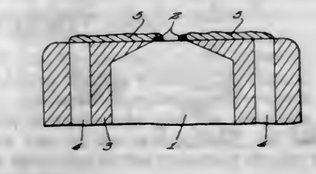
A unipolar transistor structure, particularly applicable to integrated circuits, made by utilizing lateral diffusion of impurities to provide small channel dimensions and other desirable qualities.

3,414,783
ELECTRONIC APPARATUS FOR HIGH SPEED TRANSISTOR SWITCHING
James O. Moore, Elkridge, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 14, 1966, Ser. No. 534,153
4 Claims. (Cl. 317—235)



A transistor switching circuit is provided including two serially connected transistors of which the first has a diode connected across its base and emitter for increased charge storage capability and improvement of the switching characteristics of the second transistor.

3,414,784
ELECTRICAL STRUCTURAL ELEMENT HAVING CLOSELY NEIGHBORING TERMINAL CONTACTS AND METHOD OF MAKING IT
Reinhard Dahlberg, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Continuation of application Ser. No. 753,565, Aug. 6, 1958. This application Dec. 8, 1966, Ser. No. 600,245
Claims priority, application Germany, Sept. 27, 1957, S 55,311
4 Claims. (Cl. 317—235)

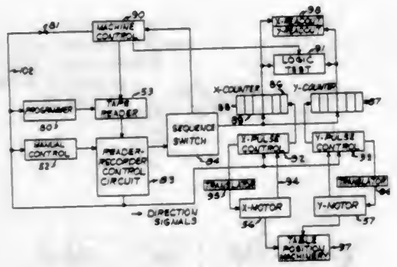


An electrical device such as a transistor which has a semi-conductor body formed with two parts with the second part extending from the first part and having a smaller cross-sectional area than the first part and with the first and second body portions covered by insulated material except for the top surface of the second body portion. Electrodes are formed on the edges of the top surface of the second body portion and conductors extend through the insulating material. Conductive coating is formed of layers which extend between respective conductors and with respective electrodes on the second body portion so as to form a compact and efficient transistor device.

3,414,785
CONTROL CIRCUIT FOR NUMERICALLY POSITIONED TABLE

Donald W. Orahood, Raymond A. Slenys, and Creighton Stanley Warren, Chicago, Ill., assignors to International Telephone and Telegraph Corporation, a corporation of Maryland

Filed Sept. 12, 1963, Ser. No. 308,388
37 Claims. (Cl. 318—18)

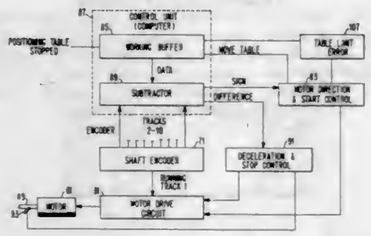


A numerical positioning table is driven in X and Y directions by separate drive units, each unit including a stepping motor and a feed screw. A counter, for each direction, stores as indication of the total number of steps which the table is required to take in that direction in order to reach a commanded location. Then, a pulse source simultaneously and sequentially steps the motor and subtracts counts from the counters until they reach their zero count, at which time the table is in position and the counting stops. Special circuit controls increase the stepping speed to provide a very high speed of table travel.

3,414,786
STEPPING MOTOR SERVO

Thomas E. Kasmer, Johnson City, and William C. Ogden, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 500,686
14 Claims. (Cl. 318—18)



1. A computer-controlled stepping motor servo comprising

a stepping motor including a fixed member and a rotatable member movable by incremental steps upon the application of commands to the motor, one step per command, said motor being movable between initial and desired step positions,

encoder means having a running track of equally spaced indicia corresponding in number to the number of steps of said motor and other indicia giving a unique representation of the actual angular position of the rotatable member for each of its steps,

means for detecting said indicia as said rotatable member moves, and for generating a command corresponding to each of the running track indicia which are detected,

means for providing a start command to the motor,

means for supplying a representation of the desired step position to which the motor is to be moved, and

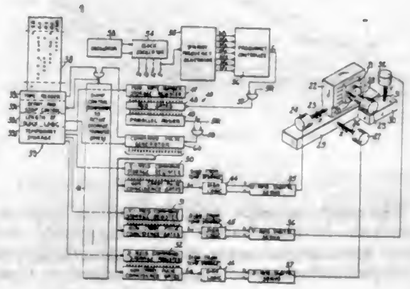
means for computing the difference in steps between the initial and desired step positions and for driving the motor a number of steps equal to this computed difference less one step which is skipped to account for the extra step introduced by the start command,

the command corresponding to said skipped step being skipped at a predetermined distance in steps before the desired step position to cause the motor to decelerate.

3,414,787
NUMERIC CONTROL AND SERVO SYSTEM

Johann F. Reuteler, Elmwood, and Edward E. Kirkham, Manchester, Conn., assignors to Pratt & Whitney, Inc., a corporation of Delaware

Filed Mar. 4, 1964, Ser. No. 349,222
30 Claims. (Cl. 318—18)



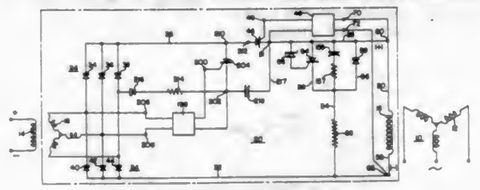
This disclosure relates to a servo system which comprises a means for supplying a command signal indicative of the extent of movement and velocity of movement of a controlled object and a means for deriving a feedback signal indicative of the actual extent of movement and velocity of movement of the object. The command and feedback signals are compared to derive a signal indicative of the error between the commanded and actual velocity. The error signal is integrated to provide a representation of the difference between the commanded position and the actual position and further produce a velocity signal proportional to the position representation. The velocity signal and the feedback signal are compared to derive a signal proportional to a new velocity of the controlled object required to eliminate the error. The disclosure also relates to a technique of limiting the velocity of the controlled object when a predetermined velocity error is reached or exceeded.

3,414,788
EXCITATION CONTROL SYSTEM FOR SYNCHRONOUS MOTORS

Arthur H. Hoffmann and Frank V. Frola, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 1, 1965, Ser. No. 460,265
8 Claims. (Cl. 318—176)

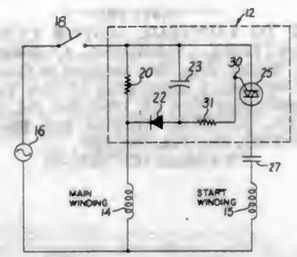
A control system for applying field excitation to a brushless synchronous motor. This system includes a field discharge resistor controlled by a semiconductor discharge switch and has means for insuring that the discharge switch is turned off before the exciter switch is turned on to apply field excitation, thus eliminating the necessity for additional circuitry to turn off the discharge switch.



3,414,789
SOLID-STATE MOTOR STARTING CIRCUIT

Robert E. Prouty, Logansport, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed May 24, 1966, Ser. No. 552,527
3 Claims. (Cl. 318—221)



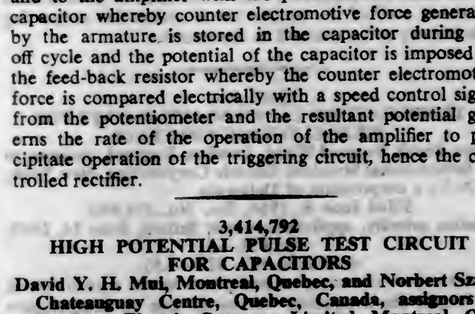
A control circuit employing an integrated, multifunction semiconductor device for controlling the flow of current through the start winding of a split-stator induction motor. A current sensing resistor connected in series with the main (or "run") winding of the motor produces an AC voltage drop whose magnitude is proportional to the magnitude of current flowing in the main winding. A single-phase diode bridge rectifier circuit is employed to convert this current-related AC voltage into a DC control signal whose magnitude varies in direct relation to the current in the main winding. This DC control signal is applied directly to the control electrode of the semiconductor switch which is in turn connected in series with the start winding.

3,414,790
PHOTOELECTRIC MOTOR SPEED CONTROL

Samuel H. Auld, Wichita, Kans., assignor to Lear Jet Corporation, Wichita, Kans., a corporation of Delaware

Filed Aug. 21, 1964, Ser. No. 391,262
18 Claims. (Cl. 318—313)

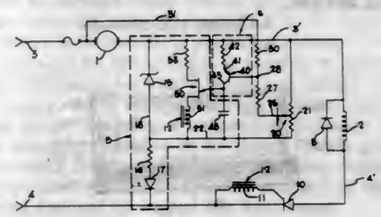
1. A control system for driving a motor at a uniform speed of rotation comprising sensor means coupled to the motor providing pulses at a rate proportional to its speed of rotation, circuit means responsive to the sensor pulses for producing a series of corresponding like electrical pulses that are spaced apart in-time in accordance with the motor speed, means converting the said electrical pulses series into a control signal of magnitude corresponding to their said in-time spacing, and amplifying means responsive to the control signal and in circuit with the motor for supplying current thereto in amounts to maintain its speed substantially constant.



3,414,791
CONTROLLED RECTIFIER DC MOTOR SPEED CONTROL CIRCUIT

Robert D. Munson, Jennings, Mo., and Philip M. Gundlach, Belleville, Ill., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

Filed Nov. 26, 1965, Ser. No. 509,877
4 Claims. (Cl. 318—331)



A control circuit electrically connected in series with the armature and in parallel with the controlled rectifier, including a triggering circuit electrically connected to the controlled rectifier, an amplifier electrically connected to the triggering circuit, a potentiometer electrically connected to the amplifier, a switch, operative only during the off cycle, electrically connected to the armature, a capacitor electrically connected to said switch, and a feed-back resistor, electrically connected to the switch and to the amplifier with the potentiometer and to the capacitor whereby counter electromotive force generated by the armature is stored in the capacitor during the off cycle and the potential of the capacitor is imposed on the feed-back resistor whereby the counter electromotive force is compared electrically with a speed control signal from the potentiometer and the resultant potential governs the rate of the operation of the amplifier to precipitate operation of the triggering circuit, hence the controlled rectifier.

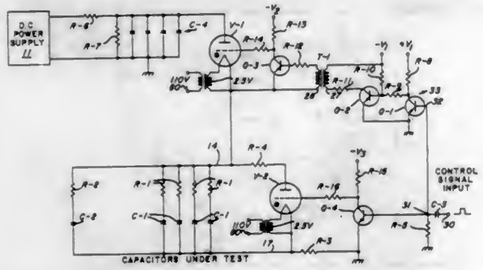
3,414,792
HIGH POTENTIAL PULSE TEST CIRCUIT FOR CAPACITORS

David Y. H. Mui, Montreal, Quebec, and Norbert Szasz, Chateauguay Centre, Quebec, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed June 23, 1965, Ser. No. 466,344
11 Claims. (Cl. 320—1)

An accelerated life testing circuit for capacitors which rapidly subjects test capacitors to a large number of charges and discharges. A first series circuit loop is closed

by a control circuit to connect the test capacitors in series with a direct current voltage source. The control circuit then opens the first series circuit loop and closes a second



series circuit loop which provides a discharge path for the capacitors. The control circuit alternately opens and closes the two series circuit loops so that the capacitors are alternately charged and discharged.

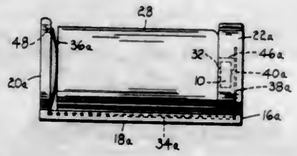
3,414,793

HEARING AID BATTERY CHARGER

Carl C. Jasperson, Box 737, Dallesport, Wash. 98617

Continuation-in-part of application Ser. No. 495,101, Oct. 12, 1965. This application Aug. 28, 1967, Ser. No. 667,034

3 Claims. (Cl. 320—5)



The instant battery charger includes a body portion and opposite parallel end walls. An electrically conducting strip extends along the end walls and along the body portion of the holder. The portion of the strip which extends along the end walls has terminals, and a charging battery, such as a flashlight battery, is seated on the body portion and is included in a charging circuit with the electrically conducting strip and a battery to be charged. In one embodiment of the invention a removable insert has a socket to support a battery. In another embodiment one end wall of the holder has a socket for supporting the battery to be charged in the circuit.

3,414,794

TEMPERATURE COMPENSATING UNIT FOR PIEZOELECTRIC CRYSTALS

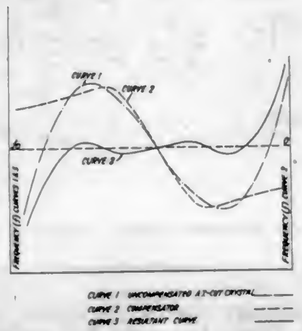
Alan Frank Bernard Wood, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,063

Claims priority, application Great Britain, June 14, 1965, 25,071/65

6 Claims. (Cl. 310—8.9)

A temperature compensated piezoelectric crystal circuit in which the frequency variations due to temperature changes are minimized, including a first piezoelectric crystal having a given frequency-temperature characteristic which is to be compensated, a second piezoelectric crystal having a frequency-temperature characteristic which is at least partially the inverse of that of the first crystal and an RC network coupled to said second crystal and augmenting the inverse characteristic thereof, said second crystal being in series combination with the resistor of the RC combination, and the capacitor being shunted across both the second crystal and resistor, the second crystal and the resistor being in series with the



first mentioned piezoelectric crystal, thereby providing that the resonant frequency of the circuit will remain substantially constant over a given temperature operating range.

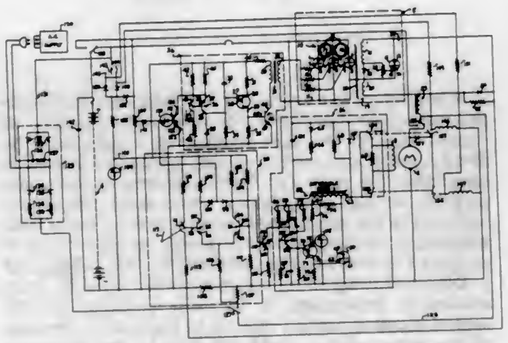
3,414,795

CIRCUIT TO CONTROL MOTOR CURRENT OR BATTERY CHARGING CURRENT

Earnest F. Weiser, Erie, Pa., assignor to General Electric Company, a corporation of New York

Original application Nov. 20, 1964, Ser. No. 412,809, now Patent No. 3,378,746. Divided and this application Dec. 29, 1967, Ser. No. 694,738

3 Claims. (Cl. 320—9)



A battery-powered D-C motor control system in which unidirectional pulses from a chopper circuit can be for energizing a D-C motor or for charging a battery, with the circuitry used for motor control purposes also aiding in controlling the battery charging.

3,414,796

MAGNETICALLY CONTROLLED BATTERY CHARGE AND DISCHARGE CIRCUIT

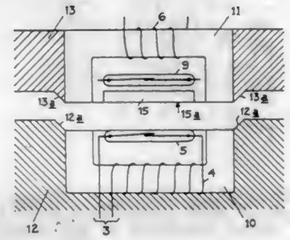
Andre Jean Henquet, Boulogne, Hauts-de-Seine, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 23, 1966, Ser. No. 596,586

10 Claims. (Cl. 320—14)

7. An automatic switching means in combination with a battery operated device and a battery recharger circuit comprising: a primary winding of a transformer adapted

to be connected to a source of power; a secondary winding for said transformer being movable into and out of flux linking relation with said primary winding; a rechargeable battery connected to said secondary winding through suitable rectifier means; a magnetically controllable switch connected to said battery for controlling cur-



rent flow from the battery, said switch being located near and movably mounted with said secondary winding; and a permanent magnet mounted to control operation of said switch so that when said coils are in flux linking relation said switch is open and when said primary coil is moved out of flux linking relation said switch is opened.

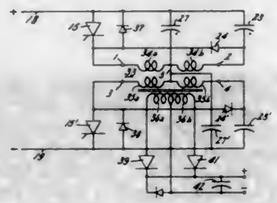
3,414,797

POWER CONVERTER EMPLOYING INTEGRATED MAGNETICS

Raymond Evan Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 20, 1966, Ser. No. 551,607

29 Claims. (Cl. 321—2)



A power converter circuit is described which includes at least one semiconductor controlled conducting device such as a silicon-controlled rectifier or triac bidirectional conducting device. A unitary, multi-function inductive device, such as an output transformer, is provided which has a plurality of elemental inductive portions which exhibit predesigned leakage inductive reactance. The unitary multi-function inductive device is connected in circuit relationship with the semiconductor controlled conducting device and a source of electric energy in a manner such that the predesigned leakage inductive reactance interacts with the actual inductive reactance of the elemental inductive portions of the unitary multi-function inductive device to cause selected ones of the elemental inductive portions to perform multiple different functions during operation of the power circuit. In preferred embodiments, the unitary multi-function inductive device comprises a single magnetically permeable core and a multiplicity of windings wherein the interaction of the predesigned leakage reactance causes selected ones of the windings to perform multiple different functions.

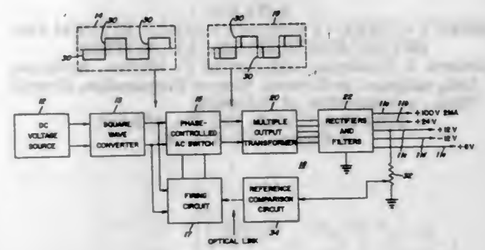
3,414,798

CONSTANT VOLTAGE POWER SUPPLY UTILIZING INDEPENDENT REFERENCE AND CONTROL CIRCUITS COUPLED TO EACH OTHER BY AN OPTICAL LINK

Jorgen Louis Nielsen, Penfield, N.Y., assignor to Anchor Coupling Co., Inc., Libertyville, Ill., a corporation of Illinois

Filed Sept. 1, 1966, Ser. No. 576,623

6 Claims. (Cl. 321—2)



A regulated power supply is disclosed including an alternating current switch having silicon controlled rectifiers which are responsive to a control signal and keys a line voltage on and off in accordance with the control signal. The line voltage is applied to rectifier and filter networks to produce direct current output voltages. One of these control voltages is applied to a comparison circuit which includes a light producing element. The light beam produced by this element is variable in accordance with the difference between a reference voltage and the power supply output voltage from the rectifiers and filters. A firing circuit including a unijunction transistor having a light dependent resistor in its timing circuit provided for generating the control signal to the firing circuit. The light dependent resistor is optically coupled to the light producing element by way of the light beam.

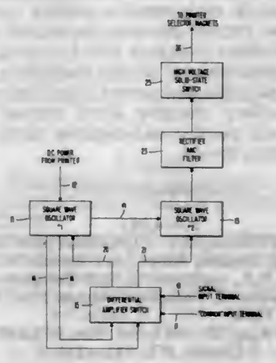
3,414,799

LOW LEVEL POLAR SIGNAL CONVERTER FOR PRINTER APPARATUS

William A. Lacher, North Wales, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 9, 1966, Ser. No. 600,423

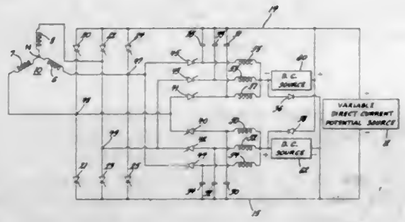
12 Claims. (Cl. 321—2)



Apparatus for converting low voltage, low current signals into signals of higher current and higher voltage

for the control of remote printing apparatus requiring no independent power supply and including switch means which is responsive to polar input signals referenced to an arbitrarily selected potential on a common input line and which is highly sensitive to voltage changes near the reference potential regardless of the degree to which the input signal waveforms are sloped or become deteriorated, as will be further explained below.

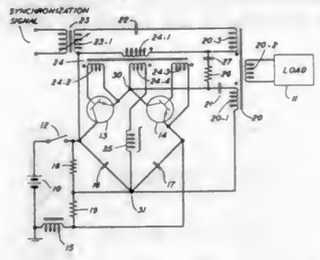
3,414,800
DIRECT CURRENT COMMUTATION SYSTEM FOR BRUSHLESS ELECTRICAL MOTORS
Leonard J. Sheldrake and Jerrold L. Mullen, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,662
5 Claims. (Cl. 321—5)



1. In a direct current commutation system for brushless type electrical motors comprising at least a bridge type commutating switching circuit including a positive and a negative polarity bank of silicon controlled rectifier commutating switching devices connected across the positive and negative polarity terminals of a main direct current potential source and a plurality of electrical charge storage devices, each corresponding to one of said commutating switching devices, for storing an electrical charge, the combination with said electrical charge storage devices of first and second auxiliary charging direct current potential sources, first circuit means for connecting those said electrical charge storage devices corresponding to the said commutating switching devices included in said positive polarity bank across said main direct current potential source and one of said auxiliary charging direct current potential sources, second circuit means for connecting those said electrical charge storage devices corresponding to the said commutating switching devices included in said negative polarity bank across said main direct current potential source and the other one of said auxiliary charging direct current potential sources and a unidirectional current translating device included in each said first and second circuit means for isolating said auxiliary charging direct current potential sources from said positive and negative banks of commutating switching devices.

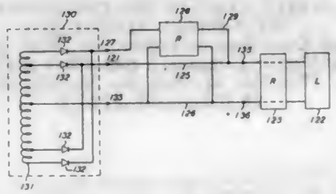
3,414,801
INVERTER SYMMETRY CORRECTION CIRCUIT
John D. Bishop, Basking Ridge, and Joseph W. Ianniello, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Apr. 25, 1967, Ser. No. 633,448
5 Claims. (Cl. 321—16)

In a bridge type inverter a saturable core inductor is connected between the output diagonals of the bridge through an auxiliary winding of the switching transistor drive transformer and a series R–C network is connected between the drive transformer primary winding and one of the output diagonals to induce symmetry correc-



tion signals in the drive transformer, thereby assuring a symmetrical output waveform of the inverter.

3,414,802
STACKED SERIES REGULATOR
Thomas G. Harrigan, Lake Hiawatha, and William E. Jewett, Basking Ridge, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 18, 1966, Ser. No. 543,319
6 Claims. (Cl. 321—16)

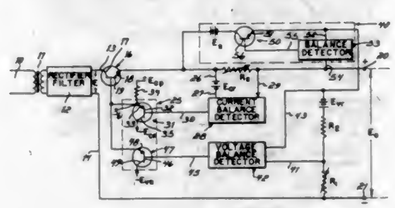


An efficient votlage regulating system comprises two variable series impedance regulators with outputs in parallel. The first regulator operates efficiently with a minimum voltage drop across it when the input voltage is normal. The second regulator, operating from a higher input voltage, is adjusted to supply a slightly lower output voltage than the first regulator supplies. The second regulator is therefore normally cut-off and operates only when the output voltage falls because of a larger drop in the input voltage than the first regulator can absorb. Where a slight step in load voltage is undesirable the output of the second regulator is connected to the first regulator's input. Where large excursions in input voltage are bidirectional three regulators are connected with their outputs in parallel.

3,414,803
CONSTANT CURRENT CONSTANT VOLTAGE REGULATOR
Paul W. Glasgow, Oakhurst, Robert A. La Falce, Neptune, and John D. Baugher, Little Silver, N.J., assignors to The Rowan Controller Company, Westminster, Md., a corporation of Maryland
Filed Aug. 24, 1966, Ser. No. 574,783
6 Claims. (Cl. 323—4)

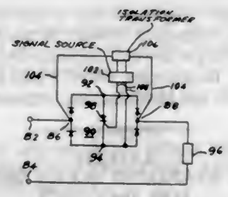
A regulator having a series control transistor and a current sensing resistor to provide constant voltage or current. A constant current mode of operation is provided utilizing the current sensing resistor when the output voltage is below a preselected value. A bridge circuit provides a constant voltage mode of operation when the

output voltage attains the preselected value. A pair of transistors switch the regulator from one mode to the other. A buffer circuit, connected across the sensing re-



sistor, eliminates the error produced by current required for constant voltage regulation while operating in the constant current mode.

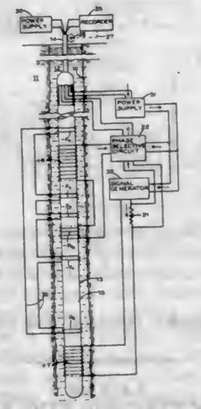
3,414,804
CONTROL SYSTEMS
Owen E. Reinert, Richmond Heights, Mo., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Mar. 10, 1960, Ser. No. 14,087
12 Claims. (Cl. 323—22)



4. A control system that can be used with circuits to which alternating current is supplied and that can be used to control the application of current to a load and that comprises rectifying means and a controlled rectifier connected across the output of said rectifying means, said controlled rectifier having the cathode and gate thereof connectable to a signal source that can supply pulses to said cathode and gate and thereby render said controlled rectifier conductive, said controlled rectifier responding to the falling of current to zero during each half cycle of the alternating current to become non-conductive, thereby obviating all need of a commutating capacitor for said controlled rectifier, said load being connected between one of the input terminals of said rectifying means and one side of line, whereby said controlled rectifier and said rectifying means cause alternating current to flow toward said load although said controlled rectifier passes only uni-directional current, said controlled rectifier in conjunction with said rectifying means serving as an alternating current switch.

3,414,805
INDUCTION LOGGING APPARATUS HAVING FLOATING COILS
Georges Attali, Ridgefield, Conn., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed May 1, 1967, Ser. No. 635,139
14 Claims. (Cl. 324—6)

Electromagnetic induction type apparatus for investigating subsurface earth formations traversed by a bore-hole. A new coil construction technique is described. The technique makes use of "floating coils," that is, coils hav-



ing no direct electrical circuit connection to the remainder of the coil system apparatus.

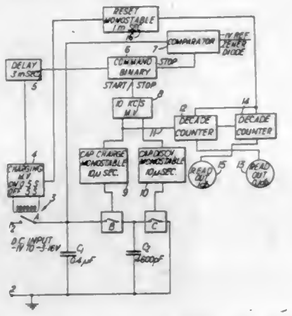
3,414,806
CONNECTION INDICATOR FOR CONNECTOR HAVING A RESISTIVE PIN
William F. Carr, Santa Monica, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Continuation-in-part of application Ser. No. 313,064, Oct. 1, 1963. This application Apr. 3, 1967, Ser. No. 627,890
6 Claims. (Cl. 324—65)

An indicator for determining whether or not the halves of a two-piece electrical connector are properly connected together. A resistive pin in a plug engages the receptacle of a socket and presents no more resistance across the connection when properly connected than the resistance in other pin and receptacle connections. However, when the connection is not properly connected, a portion of the resistance on the pin is in the circuit in which ohmic readings are taken and presents a higher resistance to the circuit, which indicates that the connection is not properly made.

3,414,807
DIGITAL VOLTMETER EMPLOYING DISCHARGE OF A LARGE CAPACITOR IN STEPS BY A SMALL CAPACITOR
Hugh Maitland Evans, Newbridge, Wales, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 25, 1964, Ser. No. 377,893
4 Claims. (Cl. 324—111)

Apparatus is provided for measuring the ratio of two potentials. A first capacitor is charged to an unknown potential. A second, and much smaller, capacitor is then alternately connected across the first capacitor and short circuited repeatedly until the potential on the first capacitor has decreased to equal a reference potential. A counter

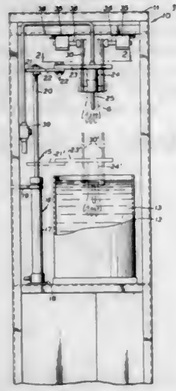
measures the number of times the second capacitor is discharged thereby providing a count proportional to the ratio of the unknown potential and the reference potential.



3,414,808
ELECTRONIC-ELECTROLYTIC APPARATUS FOR GLOVE TESTER

Francis W. Thomas, Massillon, Ohio, assignor to Midwestern Equipment Company, Inc., Massillon, Ohio, a corporation of Ohio

Filed Oct. 19, 1965, Ser. No. 497,817
7 Claims. (Cl. 324—54)



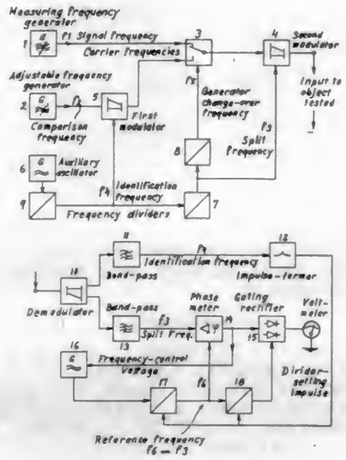
An apparatus for immersing and testing a glove in an electrolytic bath where the gloves are held by a magnetic clamping device, an elevator assembly immerses the gloves in the electrolytic bath, an electronic detection device is connected between the clamping device and the electrolytic bath to indicate defects in the gloves, and electrical cycle control circuitry actuates the elevator assembly and times the operation of the electronic detection device.

3,414,809
METHOD AND APPARATUS FOR MEASURING GROUP DELAY OVER FOUR-POLE NETWORKS BY USING A SINGLE IDENTIFICATION FREQUENCY WITH NO NEED FOR AN ADDITIONAL REFERENCE CONNECTION BETWEEN SENDER AND RECEIVER

Günther Hoffmann, Eningen unter Acholm, and Frank Coenning, Reutlingen, Germany, assignors to Wandel u. Goltermann, Reutlingen, Germany

Filed July 9, 1965, Ser. No. 470,828
Claims priority, application Germany, Aug. 8, 1964, W 37,350
18 Claims. (Cl. 324—57)

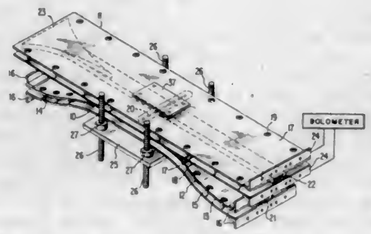
A method and apparatus for measuring group delay over four-pole networks with no need for an additional reference connection between sender and receiver by using a single identification frequency which is generated by an auxiliary oscillator at the sending station and also by a separate oscillator at the receiving station which operate at higher frequencies and which are connected in each case to a frequency divider to produce the identification frequency, a lower reference frequency and still lower auxiliary frequencies, all of which are in harmonic relationship with the identification frequency.



3,414,810
VOLTAGE STANDING WAVE INDICATORS FOR H-GUIDES

Leo Birenbaum, Bronx, N.Y., assignor to Polytechnic Institute of Brooklyn, Brooklyn, N.Y., a corporation of New York

Filed Sept. 17, 1965, Ser. No. 488,068
6 Claims. (Cl. 324—58)

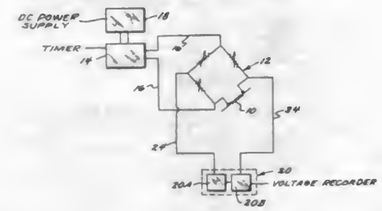


There is disclosed by the hereinafter specification a VSWR indicating apparatus for use in and with an H-guide microwave transmission system. The apparatus generally comprises a pair of superposed H-guide sections including means for electrically coupling the H-guide sections together. Mechanical means are disclosed for moving one H-guide section relative to the other section for the purpose of changing the position of the electrical coupling between the guide sections. The indicating apparatus is provided with means for coupling it into an H-guide transmission system and to an energy indicating device such as a bolometer.

3,414,811
METHOD AND APPARATUS FOR TESTING THE RESISTANCE CHARACTERISTICS OF SELF-HEATED ELECTRICAL RESISTORS

Glenn W. Carter, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr.

Filed Aug. 24, 1964, Ser. No. 391,379
12 Claims. (Cl. 324—62)

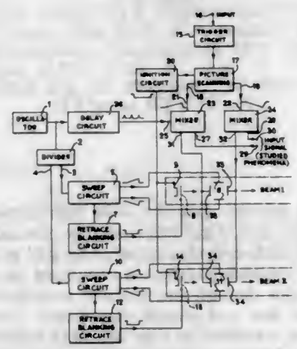


The method and means of testing the resistance characteristics of electrical devices by imposing a high voltage through an electrical device having a lower known power rating, and then measuring the change in resistance and temperature of the electrical device during the period of high voltage. The testing appartus is a Wheatstone bridge which is connected through a timer to a source of D.C. power. An oscilloscope or two axis pen recorder are electrically connected to the Wheatstone bridge to measure the time of voltage input and change of resistance, and an infrared temperature measuring unit positioned in the proximity of the electrical device being tested is optionally connected to the recording device to reflect changes in temperature of the resistance in the electrical device during the input of high voltage.

3,414,812
DEVICE FOR MEASURING TIME INTERVALS BETWEEN INSTANTS MARKING THE COURSE OF THE PHENOMENON

Robert L. Niel, Bourg-la-Reine, France, assignor to Commissariat à l'Energie Atomique, Paris, France, a French body corporate

Filed July 26, 1966, Ser. No. 567,957
Claims priority, application France, July 29, 1965, 26,420
4 Claims. (Cl. 324—68)

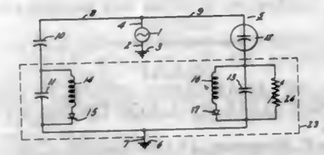


Device comprising means for displaying at a constant speed two groups of interlaced parallel lines on a record, such as the screen of a cathode tube, a generator for displaying markers providing regular intervals on these lines, and means for displaying the beginning and the ending of the phenomenon on the record by measuring markers, whereby the duration of the phenomenon is equal to the number of intervals recorded on the screen between the measuring markers.

3,414,813
CORONA POWER MEASUREMENT DEVICE

James C. Fraser, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Aug. 27, 1965, Ser. No. 483,162
3 Claims. (Cl. 324—72)

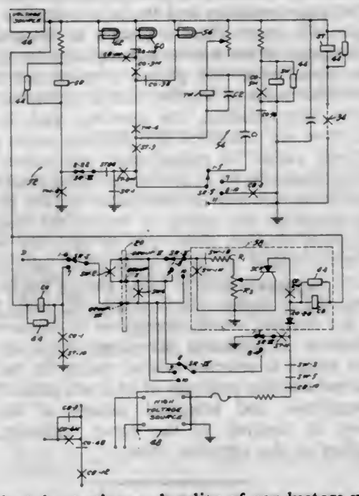


A device for measuring power consumption in a corona-type silent electrical discharge device comprising a voltage branch including a high and a low voltage capacitor and a parallel charge branch including the discharge device and a low voltage capacitor, each branch being connected across a high voltage, high frequency A-C source. Upon adjustment of a charge branch shunt resistor to a zeroing point, a voltage coil and a charge coil respectively shunting the low voltage capacitors rotate with respect to one another in a meter arrangement to indicate corona discharge power.

3,414,814
METHOD OF AND APPARATUS FOR TESTING CROSS SECTION AND CONTINUITY OF AND THE SEPARATION BETWEEN A PLURALITY OF CONDUCTORS

Oswald I. Gilbertson, Nutley, and Orest Kaczmarsky, Old Bridge, N.J., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 31, 1964, Ser. No. 422,711
7 Claims. (Cl. 324—73)



A method for testing a plurality of conductors wherein a relatively high value of current of predetermined magnitude and duration is passed through the conductors to test the adequacy of the cross section thereof, followed by applying a relatively low current through said conductors to test the continuity thereof, and impressing a voltage between adjacent conductors for testing the adequacy of separation therebetween. The current test steps are sequential as stated above.

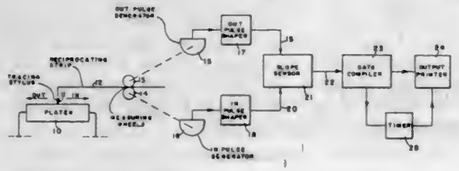
The apparatus contemplates means for accomplishing the above results and includes: a source supplying a current of fixed magnitude for carrying out the cross sectional

test and an electrical power source for supplying the continuity test current and the adequacy of separation test voltage. Said apparatus also encompasses stepper and timing means for controlling the application of the test currents and test voltage to the conductors for desired time durations and also for correlating the tests with connection of the conductors in series and parallel circuit arrangements.

3,414,815
METHOD OF ANALYZING COMPLEX WAVES REPRESENTABLE BY A CONTINUOUS PLANE CURVE

Theodore E. Simonton, 11 Lincklaen St., Cazenovia, N.Y. 13035

Continuation of application Ser. No. 403,827, Oct. 14, 1964. This application Sept. 7, 1967, Ser. No. 666,217
10 Claims. (Cl. 324—77)



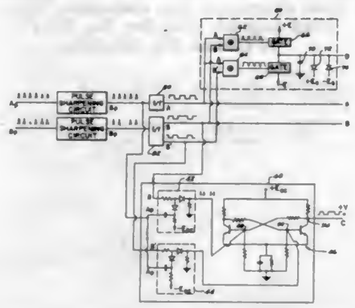
A continuous inventory is maintained of the curve of a complex wave, whether periodic or aperiodic, the ordinate lengths of the upswings being considered as additions to inventory and the ordinate lengths of the downswings being considered as withdrawals from inventory, subject to the proviso that the inventory can never be less than zero. Accordingly, any initial downswing of the curve is discarded, as is also any portion of a subsequent downswing in excess of that necessary to reduce the inventory to zero. The time period between one condition of zero inventory and the next is termed a "tittle." In a periodic curve, there is always an integral number of tittles, usually but not necessarily one, in each period of the curve when the period is measured from one absolute minimum to another. Either before or after the inventory determination, the upswings and downswings of the curve are converted into separate series of pulses, respectively called "in pulses" and "out pulses," each of which corresponds to a unit of ordinate length. The in and out pulses are used to determine "critical points" that are substantially the points at which the slope of the curve passes through zero. The in and out pulses are separately counted in serial order, and each out pulse is treated as canceling an in pulse having the same scalar position. All in pulses are counted, but only those out pulses are counted which correspond to downswings that are effective in reducing inventory. Sequences of the counted pulses at selected critical points fix the ordinate lengths and abscissa positions of what are called "volleys." The amplitude and temporal pattern of the volleys furnishes an analysis of the curve, including various parameters of the complex wave.

3,414,816
APPARATUS FOR MEASURING SKEW IN A TAPE TRANSPORT

Richard Tobey and Alan K. Jennings, Anaheim, Calif., assignors to Dartex, Inc., Anaheim, Calif.

Filed July 23, 1965, Ser. No. 474,252
2 Claims. (Cl. 324—83)

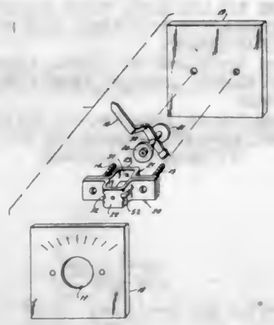
Apparatus for measuring skew in a tape transport, comprising a special tape having pulses recorded on two tracks extending along opposite edges of the tape and capable of being read by two laterally spaced heads. Each pulse from one track switches a binary signal to a positive level, while a pulse from the other track switches the binary signal to a negative level. The binary signal is passed through a low pass filter to a volt meter to measure the level of static skew. The binary signal is also passed through any one of several band-pass filters to a volt meter to determine dynamic skew at each band of frequencies.



3,414,817
SENSITIVE HIGH CURRENT AMMETER HAVING PLURAL MAGNETIC ARMATURES RESPONSIVE TO PARALLEL CONDUCTORS

Ivan L. Blowers, Otsego, Mich., assignor to Kal-Equip Company, Otsego, Mich., a corporation of Michigan

Filed Oct. 23, 1965, Ser. No. 504,017
5 Claims. (Cl. 324—146)

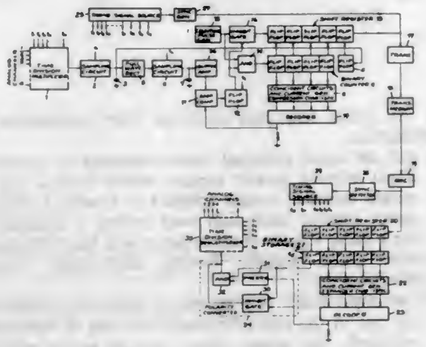


1. A high current ammeter; said high current ammeter including a dial, a pointer rotatably movable with respect to said dial, a shaft connected to said pointer, first and second permanent magnets connected to said shaft at opposite ends thereof, and first and second conductors; each of said first and second conductors comprised of generally flat members having opposing re-entrant portions therein defining a cage; said first and second conductors connected in parallel with one another; said shaft disposed within said cage and pivotally mounted at either end thereof to a portion of the said re-entrant portion of said first and second conductors, respectively; said first and second permanent magnets being adjacent said first and second conductors, respectively; said first and second permanent magnets being rotated in the same direction responsive to current flow in said first and second conductive members, respectively.

3,414,818
COMPANDING PULSE CODE MODULATION SYSTEM

Berthold Reidel, Stuttgart, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,369
Claims priority, application Germany, June 3, 1964, St 22,202
15 Claims. (Cl. 325—38)

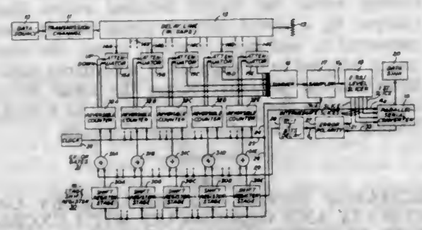


The compressor-encoder includes a detector to detect the polarity of a bipolar PAM signal and produce a polarity control signal, a full wave rectifier to convert the bipolar signal to a unipolar PAM signal, a counting coder subjected to a compressing characteristic of only one polarity to produce PCM signals, a decoder to decode the output of the coder, and an amplitude comparator coupled to the decoder and rectifier to control the read out of the coder when the compressed, decoded signal equals the value of the output signal from the rectifier. These PCM signals and the control signal are transmitted to an expander-decoder having a complementary expanding characteristic of only one polarity to produce the unipolar signal from the PCM signal which then is converted to a bipolar signal under control of the control signal.

3,414,819
DIGITAL ADAPTIVE EQUALIZER SYSTEM

Robert W. Lucky, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 27, 1965, Ser. No. 483,129
13 Claims. (Cl. 325—42)

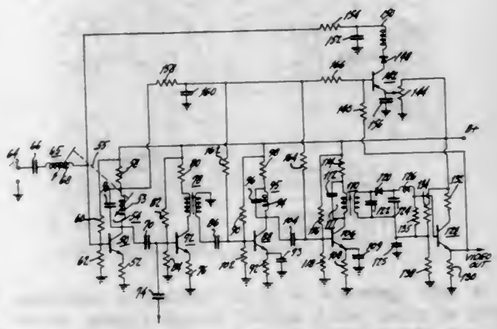


An adaptive transversal equalizer system for multilevel digital data in which attenuators connected to equally spaced taps therealong are incrementally adjusted according to a correlation of the polarity of each received data symbol with an error polarity component to minimize intersymbol interference. The error polarity component is obtained fom the difference between the actual level of each received signal sample and the normalized digital encoding level assigned thereto. For smoothing purposes correlation results are averaged in reversible digital counters and tap attenuators are adjusted only upon overflow of such counters.

3,414,820
DELAYED AGC SYSTEM UTILIZING THE PLATEAU REGION OF AN AMPLIFIER TRANSISTOR

Karol Siwko and Lucius Ponder Thomas, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed Feb. 24, 1965, Ser. No. 434,873
16 Claims. (Cl. 325—410)

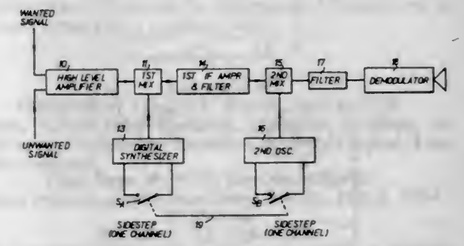


A delayed action AGC system wherein the gain of the RF stage is delayed with respect to the IF stage. The derived control voltage is fed back to the base of an RF amplifier transistor so that a variation in the control voltage causes a similar variation in the transistor collector current. A second amplified control voltage is derived from the collector of the RF transistor and is used to control the gain of subsequent IF stages. The delay is caused by the operation of the RF transistor in its plateau region wherein its gain remains constant for increases in collector current up to a certain point, after which its gain decreases.

3,414,821
RADIO RECEIVER HAVING A PLURALITY OF I.F. STAGES WITH MEANS TO REJECT INTERFERING SIGNALS

Arthur Bickers, Rowlands Castle, and Alan F. Evers, Portsmouth, England, assignors to Plessey-UK Limited, Ilford, England, a British company

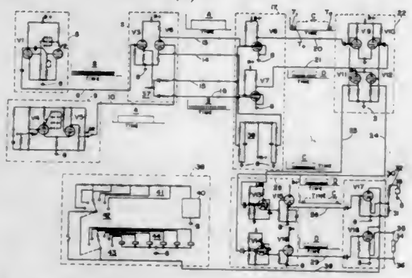
Filed Sept. 2, 1964, Ser. No. 394,082
Claims priority, application Great Britain, Sept. 6, 1963, 35,337/63
3 Claims. (Cl. 325—433)



Radio receiver having at least two I.F. stages each stage having a mixer and a local oscillator wherein the local oscillators of the first two stages are actively associated with switch means operable for changing simultaneously

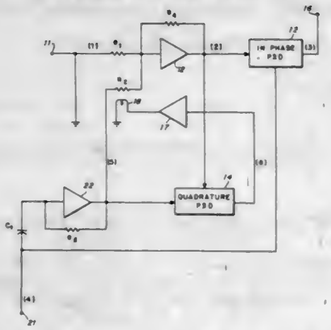
and by the same amount the frequency of each oscillator thereby to change the first intermediate frequency for the avoidance of an unwanted signal whilst maintaining constant the second intermediate frequency.

3,414,822
REPETITIVE PULSE SIGNAL GENERATOR WITH GATED LOAD SWITCHING CONTROL
Charles T. Davey, Dresher, Raymond G. Amicone, Springfield, and Victor W. Goldie, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 10, 1966, Ser. No. 519,786
5 Claims. (Cl. 328—60)



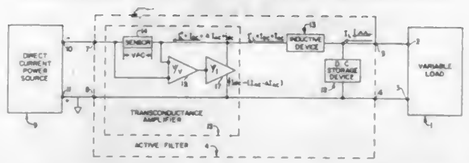
A pulse generator or pulser provides a continuous train of pulses which are fed through a phase splitter to each of two gating amplifiers only one of which conducts at a time. Through one amplifier pulsed-energy is fed to a dummy load circuit electrically matched to the device under test. A pulse application gate is excited to cause a rectangular pulse to be applied to the phase splitter to drive the normally-conducting gate off and the other gate on for a predetermined time with the result that the pulse energy is shifted from the dummy load circuit to the device under test. The pulsed energy is switched from the dummy load circuit to the device under test during the charge interval or pulse-off time of the pulser so that the change in load has no effect on the pulse amplitude supplied to the device under test.

3,414,823
PHASE SENSITIVE DEMODULATOR
Richard L. Knox, San Diego, Calif., assignor, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 424,000
6 Claims. (Cl. 328—133)



A phase sensitive demodulator is provided which includes phase sensitive detectors and amplifiers connected thereto in order to eliminate an unwanted signal portion.

3,414,824
ACTIVE LOW PASS FILTER
Hans E. Weidmann, Whitefish Bay, and Douglas J. Wiest, Shorewood, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 11, 1966, Ser. No. 564,212
11 Claims. (Cl. 328—167)



1. An active low pass electrical filter comprising, in combination:

a pair of input terminal means adapted to receive a direct current power supply source and a pair of output terminal means adapted to receive a variable direct current load, said load having a tendency to draw pulse signals in accordance with load variations, said pulse signals having alternating current components;

a low impendance sensing means extending intermediate one of the input terminals and one of the output terminals that passes direct current power received at the input terminal means, the sensing means developing an electrical potential in accordance with small alternating current components flowing between the input and output terminal means;

an inductive acting device extending intermediate the sensing means and the output terminal means, the inductive acting device providing a high impedance patch between the sensing means and the output terminal means for the alternating current components of the pulse signals and a low impedance path for the direct current power delivered by a direct current power supply source;

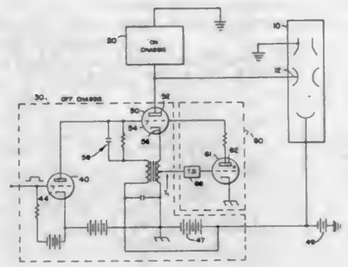
a transconductance amplifier intermediate the input terminal means and the inductive acting device, the transconductance amplifier receiving at its input a potential in accordance with the potential developed across the sensing means, said potential controlling the conductive state of the transconductance amplifier, the output of the transconductance amplifier extending between the inductive acting device and a reference plane, the transconductance amplifier when in a conductive state providing a low impedance path for by-passing alternating current signals to the reference plane and away from said input terminal means;

a direct current electrical energy storage means extending across the output terminal means that is charged by a direct current power supply source connected to said input terminal means, the storage means adapted to be supplied in accordance with the direct current potential across the input terminal means and to supply electrical energy to a load extending across the output terminal means.

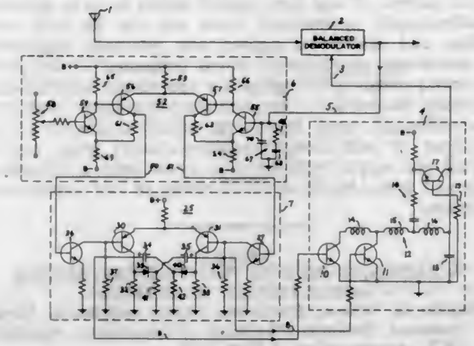
3,414,825
DISCHARGE DEVICE CONTROLLED BY ON CIRCUIT AND OFF CIRCUIT WITH EXCESSIVE CURRENT-LIMITING MEANS IN OFF CIRCUIT
Alexander A. Gorski, Cinnaminson, N.J., and Chris Pappas, Lansdowne, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 18, 1966, Ser. No. 573,765
4 Claims. (Cl. 328—232)

A protection circuit for an electrical circuit for component equipment protection against excessive current

damage. The protection circuit will activate when necessary and will automatically reset when danger is past. The circuit includes a thyratron in parallel with a klystron and a vacuum tube switch, and a time delay circuit for monitoring the current level and activating the thyratron when the current level becomes excessive. Activating the thyratron shorts the current to a common return before a circuit damaging current level is reached.

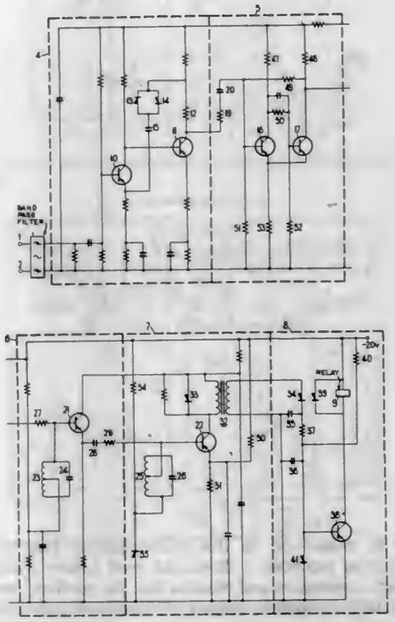


3,414,826
VOLTAGE-CONTROLLED OSCILLATOR
Johannes J. Vandegraaf, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Apr. 3, 1967, Ser. No. 628,062
10 Claims. (Cl. 329—124)



A voltage-controlled, variable frequency oscillator is described in which time-ratio control of a pair of switches controlling the magnitude of the tank circuit inductance is utilized to vary the frequency of the oscillator. A modified Hartley oscillator is provided which includes a pair of switching transistors to insert and remove inductance from the frequency-determining circuit. The switching transistors are switched at a fixed rate, which is high relative to the oscillator frequency. The interval for each switch may be varied, so that the oscillator frequency is a function of the duration the increment of inductance is switched out of the circuit during each switching cycle. A free-running multivibrator is used as a switching pulse generator, and it is controlled to vary the relative duty cycles of each of the active devices in the multivibrator thereby varying the duration of the switching pulse for each switch.

3,414,827
FREQUENCY-SHIFT DATA RECEIVER
Clive Rowland Warburton, Coventry, England, assignor to The General Electric Company Limited, London, England
Filed June 30, 1965, Ser. No. 468,330
Claims priority, application Great Britain, July 3, 1964, 27,553/64
7 Claims. (Cl. 329—134)

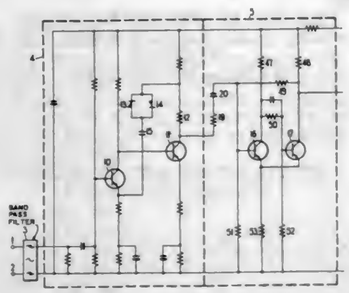


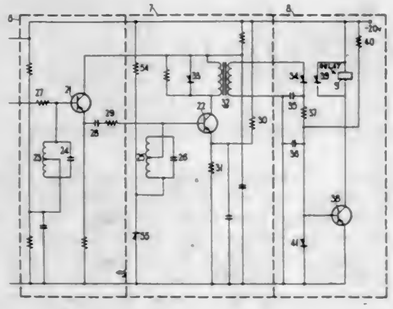
A frequency-shift binary data receiver in which the received signal is passed, after amplitude limiting, through a frequency-responsive circuit to a transistor switch. For one of the two input frequencies, the signal passed to the transistor switch is of sufficient amplitude to cause the switch to be "closed" for part of each cycle of that signal whereas the signal of the other input frequency is of insufficient amplitude to "close" that switch at all. The signal passed by the transistor switch is rectified to provide the output data signal. The frequency-responsive circuit is formed by a single tuned circuit having a resonant frequency lying outside the range of frequencies of the input signal to the receiver.

3,414,828
FREQUENCY-SHIFT DATA RECEIVER
William Alfred John Westover, Coventry, England, assignor to The General Electric Company Limited, London, England
Filed June 30, 1965, Ser. No. 468,499
Claims priority, application Great Britain, July 3, 1964, 27,554/64
6 Claims. (Cl. 329—134)

A frequency-shift data receiver in which a bistable circuit formed by a pair of transistors having a common emitter resistor is arranged to be triggered by the input signal. The bistable circuit normally supplies a signal having a square waveform and a fundamental frequency that at any instant is the same as that of the input signal,

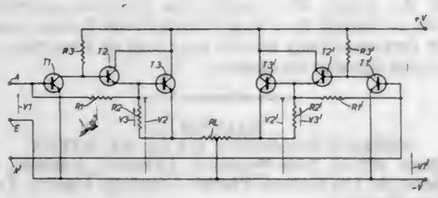
this signal being supplied to the frequency discriminator of the receiver. If, however, the level of the input signal is too low, the bistable circuit is not triggered and no





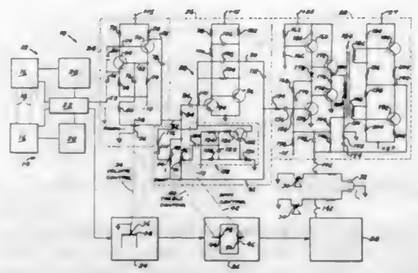
signal is passed on to the discriminator. The bistable circuit thus provides a threshold level below which the receiver is operative and ensures that the receiver does not give a false output in respect of low level input signals.

3,414,829
PUSH-PULL AMPLIFIERS WITH SIGNAL DEPENDENT CLASS A OR B OPERATION
Michael J. Gay, Northampton, England, assignor to Plessey-UK Limited, Ilford, England, a British company
Filed Mar. 23, 1965, Ser. No. 442,067
Claims priority, application Great Britain, Mar. 26, 1964, 12,972/64
5 Claims. (Cl. 330—15)



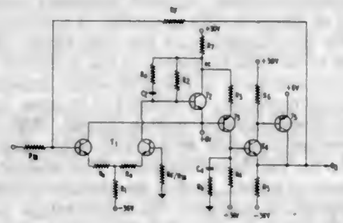
An amplifier arrangement capable of feeding a centre tapped load in class A push-pull for relatively small input signals and in class B push-pull for larger input signals and comprising two similar amplifying sections each having a gain defined by negative feed back which is automatically modified as the amplifier changes from one class of operation to the other such that the gain is maintained substantially constant for both classes of operation.

3,414,830
ELECTRICAL AMPLIFIER
George A. Hellwarth, 3 Highpoint Drive, Poughkeepsie, N.Y. 12603
Filed July 21, 1965, Ser. No. 473,585
9 Claims. (Cl. 330—15)



1. An electrical amplifier for amplifying electrical signals to be converted into audible sound signals, said amplifier comprising, in combination, volume control circuit means including volume amplification means, negative feedback means for varying the gain of said volume amplification means, and adjustable means forming a part of said negative feedback means for producing simultaneous complementary variation of the amount of negative feedback signal produced by said negative feedback means and the load impedance for said volume amplification means, tone control means connected to said volume control means and comprising the combination of operational amplifier means with selective bass and treble feedback means, said bass and treble feedback means being adjustable to vary the bass and treble signal outputs of said tone control means so as to produce substantially symmetrical boost and cut for both said bass and said treble signals, and relatively highpower operational amplification means connected to said tone control means, said high-power operational amplification means including a complementary-symmetry push-pull amplification stage, transformer means connected to the output of said complementary-symmetry stage and a push-pull output amplifier stage whose input is connected to and driven by the output windings of said transformer means.

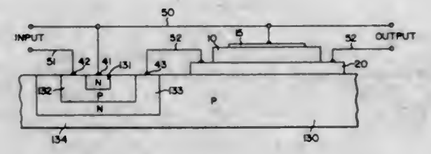
3,414,831
CASCADED CONNECTED TRANSISTORIZED OPERATIONAL AMPLIFIER
Melvin G. Wilson, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 6, 1965, Ser. No. 493,395
9 Claims. (Cl. 330—20)



A transistorized operational amplifier includes a differential input stage, a collector-to-base feedback stage, a grounded base stage, and an emitter follower inverter

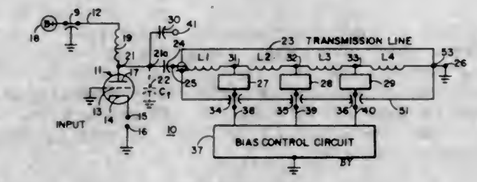
feedback pair. The circuit results in an overall imperviousness to power supply variations. The amplifier also includes two compound roll-off networks for preventing oscillations.

3,414,832
ACOUSTICALLY RESONANT DEVICE
William E. Newell, Wilkinsburg, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1964, Ser. No. 415,913
13 Claims. (Cl. 330—31)



A piezoelectric resonator is solidly joined to a solid body of material that may contain or support electronic elements. An interlayer structure having an acoustic impedance different than that of the resonator and that of the body and having an effective thickness to provide acoustic isolation between them is used.

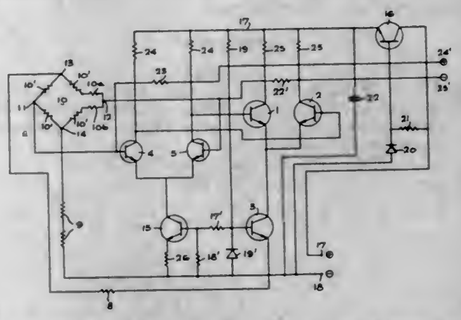
3,414,833
ELECTRONICALLY TUNABLE HIGH FREQUENCY NETWORK USING PIN DIODES
Peter M. Tolliver, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,121
7 Claims. (Cl. 330—53)



A plurality of PIN diodes are disposed laterally between the conductive members of a transmission line or cavity and at spaced positions. A bias control circuit selectively conditions different diodes from reverse to forward biased relationship. Inasmuch as the diodes are within the propagation path of electromagnetic waves, the resonant network presented to an external circuit, such as an amplifier, at the input end of the line can be electronically tuned by the bias control circuit.

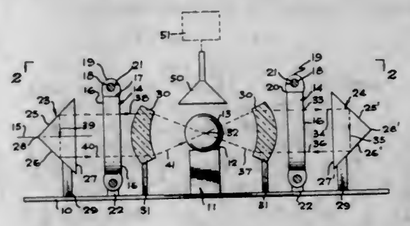
3,414,834
SIGNAL AMPLIFYING CIRCUITS
Reagh A. Stubbs, Long Beach, Calif., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 324,503, Nov. 18, 1963. This application Sept. 28, 1967, Ser. No. 671,268
2 Claims. (Cl. 330—69)

The output of, say, a bridge circuit is fed into a first differential amplifier. A second differential amplifier has a current path serially arranged with the input terminals of the first differential amplifier and an electric power source for the bridge. The second differential amplifier is fed by the signal from the first differential amplifier, with the desired output signal for the entire system being



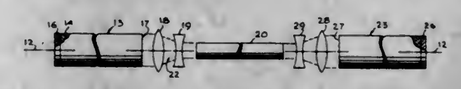
taken across output terminals of the two differential amplifiers.

3,414,835
CLOSED PATH LASER DEVICES
Wendell S. Miller, 1341 Comstock Ave., Los Angeles, Calif. 90024
Filed Aug. 15, 1962, Ser. No. 217,002
19 Claims. (Cl. 331—94.5)



1. The combination comprising a laser structure having light directing surfaces defining a closed path along which stimulated emission radiation is directed by said surfaces, said structure including a lasing material for producing stimulated emission radiation along said closed path, means for stimulating said lasing material, a work unit responsive to said radiation and positioned at a location for impingement on said unit of said radiation as it follows said closed path, and means for supporting said work unit at said location.

3,414,836
Q-SWITCHED LASER
George L. Clark, Sierra Madre, and Ralph F. Wuerker, Palos Verdes Estates, Calif., assignors to TRW Inc., a corporation of Ohio
Filed Nov. 18, 1963, Ser. No. 324,343
8 Claims. (Cl. 331—94.5)



A first and second element which respectively include media in which an inverted population condition can be established are positioned in tandem in a common radiation pathway, wherein a single multiple oscillatory mode can be established. The length of the second element is established in relation to the length of the first element to assure that the second element, when in an unpumped condition, will have a sufficient total attenuation to prevent optical frequency oscillation during a time interval

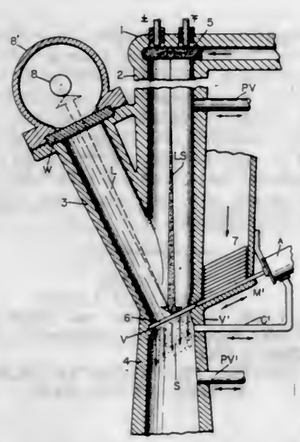
when the first element is being pumped to a predetermined desired population inversion level. Oscillation within the system is inhibited until a desired population inversion is established in the first element.

3,414,837
PLURAL FIBER OPTIC LASER CONSTRUCTION
Elias Snitzer, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Dec. 18, 1963, Ser. No. 331,540
4 Claims. (Cl. 331—94.5)



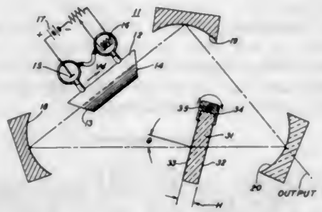
Laser structure comprising large plurality of similar thin, long fiber elements of solid laser material in side-by-side bunched relation but separated by lower index cladding material for providing a laser energy output beam of more uniform conditions. Absorbing means may be included for increasing output efficiencies.

3,414,838
EXPLODABLE LIGHT SOURCE AND LASER LIGHT GENERATOR
Jack De Ment, 4847 SE. Division St., Portland, Oreg. 97206
Filed Oct. 29, 1964, Ser. No. 407,461
7 Claims. (Cl. 331—94.5)



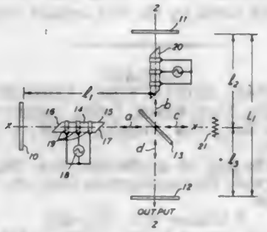
2. A laser light generator comprising a laser resonator optically coupled at one angle to a frangible optic member, said frangible optic member characterized as reflective to electromagnetic radiation and destructible by non-electromagnetic radiation, said non-electromagnetic radiation characterized as having a velocity less than the velocity of the said electromagnetic radiation; an explosive light source characterized as producing both electromagnetic and non-electromagnetic radiations, said explosive light source being optically coupled at a second angle to the said frangible optic member, said second angle being different from the said first angle, whereby upon actuation of the said explosive light source to produce both of the said radiations the electromagnetic radiation from the explosive light source is coupled by means of the said reflective frangible optic member with the said laser resonator; and a sink member for the said non-electromagnetic radiation and the debris from the frangible optic member which is struck subsequent to the said reflection therefrom said member, the said sink member being arranged at a third angle characterized as different from the said first angle, whereby the non-electromagetic radiations and said debris are diverted from the laser.

3,414,839
UNIDIRECTIONAL RING LASER
Thomas J. Bridges, Bernardsville, and William W. Rigrod, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 18, 1965, Ser. No. 465,136
8 Claims. (Cl. 331—94.5)



1. Apparatus adapted for the stimulated emission of radiation, comprising an optical ring resonator, active means disposed in said ring resonator to support stimulated emission radiations propagating in different directions around said ring resonator, means for exciting said material to enable said radiations, said resonator, active means, and exciting means being adapted to provide gain characteristics that are anisotropic with respect to said different directions, and tunable loss means disposed in said ring resonator and provided with sufficient disperson to promote propagation of a unidirectional traveling wave in said ring resonator.

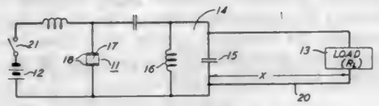
3,414,840
SYNCHRONIZATION OF POWER SOURCES
Mauro Di Domenico, Jr., Madison, and Harold Seidel, Fanwood, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 28, 1965, Ser. No. 490,985
4 Claims. (Cl. 331—94.5)



1. In combination:
first and second laser oscillators each comprising a first mirror, a laser medium, and each sharing in common a second mirror;

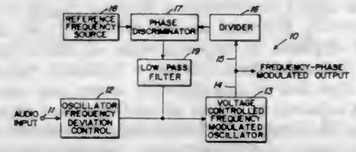
said first mirrors and said common second mirror forming a pair of resonant cavities;
a 3 db hybrid junction having two pairs of conjugate ports located within a common region of said cavities for coupling wave energy among said mirrors and out of said cavities;
the laser medium for each oscillator being located between one of said first mirrors and one port of one of said pairs of conjugate ports;
and means for extracting wave energy from said oscillators.

3,414,841
SELF-STARTING LSA MODE OSCILLATOR CIRCUIT ARRANGEMENT
John A. Copeland III, North Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Jan. 30, 1967, Ser. No. 612,598
7 Claims. (Cl. 331—107)



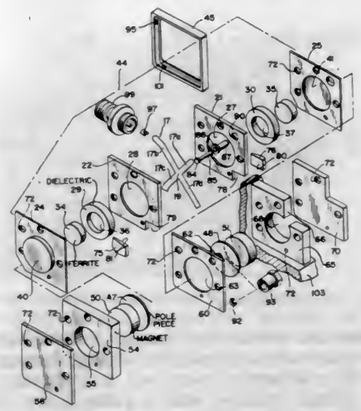
A load is connected to an LSA mode oscillator circuit by a transmission line a plurality of wavelengths long. When oscillations are initiated, the circuit is loaded by the characteristic impedance of the transmission line which is chosen to be sufficiently high for self-starting, but after several cycles it is loaded by the transformed resistance of the load, which is chosen to be lower than the transmission line characteristic impedance for more efficient sustained operation.

3,414,842
FREQUENCY MODULATED REFERENCE CONTROLLED OSCILLATOR
Samuel L. Broadhead, Jr., Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 21, 1965, Ser. No. 500,117
4 Claims. (Cl. 332—19)



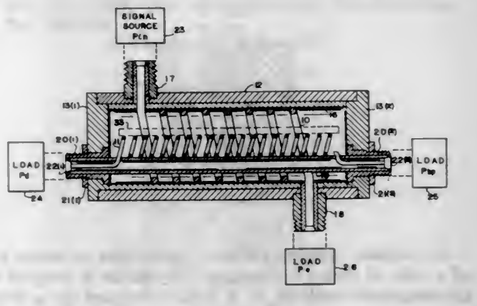
A frequency modulated reference controlled oscillator circuit receiving an audio input signal and having its modulated signal output connected back through a signal divider circuit to a phase discriminator also receiving an input signal from a frequency reference signal source at a submultiple level from the center frequency of the variable oscillator in the circuit, and with a phase modulator included between the reference signal source and the phase discriminator, and connected through a 6 db per octave network to the audio input for frequency modulation from within to above the operational bandwidth of the loop.

3,414,843
FOUR-PART MICROWAVE FERRITE CIRCULATOR
Joseph Nicholas Jansen, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,841
3 Claims. (Cl. 333—1.1)



A four-port circulator of the ferrite type having an annular dielectric transformer ring around the ferrite to tune the dielectric or zero circulator mode to the $n=1$ mode.

3,414,844
TRANSMISSION DEVICE FREQUENCY DEPENDENT WAVE
Electric Company, a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,956
John L. Putz, Palo Alto, Calif., assignor to General
7 Claims. (Cl. 333—10)

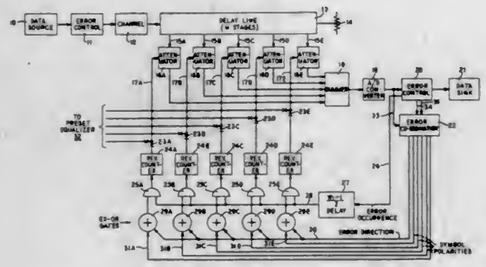


This invention relates to a gain equalizer for electromagnetic wave transmission which consists of first and second helices coupled for interchange of wave energy. The first helix which is connected to the input has a phase velocity characteristic which is independent of frequency while the second helix has a phase velocity characteristic which varies with frequency. The phase velocities of the two circuits are made equal at the frequency of maximum power from the input whereby excess power from the input is transmitted to the second helix and attenuated thereby equalizing the power output of the first helix. The device may be provided with an adjustment mechanism whereby the relative attenuation of various frequencies may be selected by modifying the degree of coupling between the helices.

3,414,845
AUTOMATIC EQUALIZER FOR DIGITAL TRANSMISSION SYSTEMS UTILIZING ERROR CONTROL INFORMATION

Robert W. Lucky, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 28, 1965, Ser. No. 490,961
10 Claims. (Cl. 333—18)

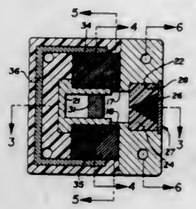


A preset time-domain equalizer for a digital data transmission system is made adaptive during message transmission to error patterns monitored in an associated error control circuit. Positive and negative error direction information derived from the error control circuit is correlated with symbol polarities and averaged in reversible counters. Counter overflows in either direction in turn control incrementation of tap attenuators in the equalizer to optimize the error rate of the system.

3,414,846
MICROWAVE ISOLATOR

Dwight A. Caswell, 15095 Fristvale Ave., Saratoga, Calif. 95070

Filed Nov. 23, 1966, Ser. No. 596,591
4 Claims. (Cl. 333—24.2)



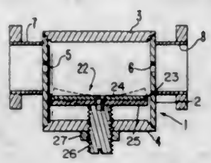
An isolator utilizing circulator principles in which one of a pair of joined rectangular waveguides is coupled by gyromagnetic material to a load contained in a shunt connected waveguide section of circular cross section. This provides for an improved impedance match over a wide band of operation.

3,414,847
HIGH Q REFERENCE CAVITY RESONATOR EMPLOYING AN INTERNAL BIMETALLIC DEFLECTIVE TEMPERATURE COMPENSATING MEMBER

Stanley L. Johnson, Marblehead, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed June 24, 1966, Ser. No. 560,312
5 Claims. (Cl. 333—83)

A temperature compensated microwave reference cavity resonator is disclosed. The reference cavity includes a cavity resonator dimensioned for operation on an excited mode of oscillation having a Q in excess of 5000. A coupling structure is provided for coupling to the fields of the excited mode of the resonator for coupling energy to a utilization device. A tuning structure is provided for tuning the reference frequency of the cavity resonator over a relatively wide band of frequencies. The tuning structure includes an axially movable plug or shaft having a metallic disc fixed to the inner end thereof for displacing induc-

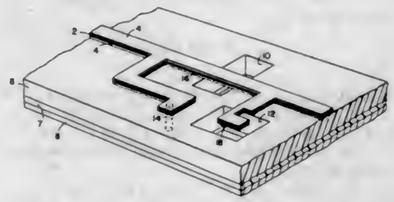


tive fields of the resonator for tuning thereof. The tuning disc is temperature compensated by making the disc of a pair of metallic plates one of the plates having a lower coefficient of thermal expansion than the other and with the lower thermal expansion member being disposed facing the interior of the cavity such that as the cavity increases in temperature the bimetallic tuning plate bows inwardly of the cavity for counteracting the tendency of the resonator to lower its resonant frequency.

3,414,848
MICROWAVE STRIP TRANSMISSION LINES

William J. Morrow, St. Petersburg, and Charles T. Rucker, Clearwater, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 1, 1966, Ser. No. 591,348
9 Claims. (Cl. 333—84)



1. A base microwave strip transmission line adaptable to house circuit components in juxtaposition with the strip line circuit comprising: a stripline circuit of conductive material; first and second thin layers of dielectric material disposed on opposite sides of said stripline circuit; a dielectric sheet having a thickness substantially greater than that of said dielectric layers; said sheet being disposed adjacent to a first of said layers of dielectric; a dielectric film; said film being disposed adjacent to said dielectric sheet; and a conductive ground plane disposed adjacent to said film.

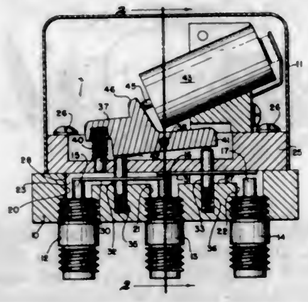
3,414,849
RADIO FREQUENCY COAXIAL SWITCHES

William G. Burt, Jr., Weston, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Delaware

Filed May 16, 1966, Ser. No. 550,242
9 Claims. (Cl. 333—97)

This invention relates to coaxial switches for radio frequency applications. In particular it concerns coaxial switches using double-ground-plane strip internal connections. In accordance with the invention, the center conductor of a double-ground-plane line connects selected

input and output connections together when it is moved to the normal mid position between the two ground planes. For disconnection the center conductor is moved

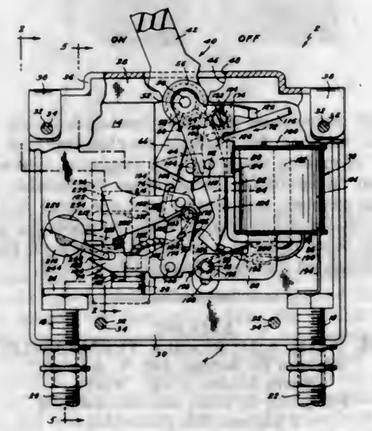


to a position in uniform electrical contact with one of the ground planes. In the disconnected position, the two ground planes form a waveguide below cutoff.

3,414,850
MULTI-PHASE CIRCUIT BREAKER GANGING DEVICE USING CIRCULAR COMMUNICATION BETWEEN PHASES

Lawrence E. Cooper, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 24, 1965, Ser. No. 504,397
9 Claims. (Cl. 335—8)

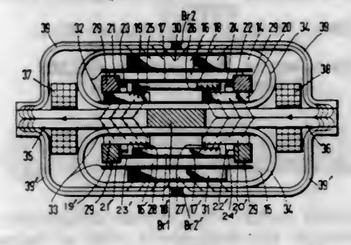


Multi-phase circuit breakers having means for tripping the phases sequentially or in cascade. Each unit is separately calibrated and trip free. The linkage means for operatively associating the movement of a contact arm of one unit with the tripping mechanism of others of the units in one embodiment comprise a rotary latching device and associated slides. The rotary linkage means extends from the first of the phase units to the last and is operative only to link the motion of the contact arm of the first unit to the tripping mechanism of the last unit. The slide linkage means are positioned between the units to a tripping mechanism of an adjacent unit. Each respective slide linkage means is slidable in a space between adjacent units. The contact arm of one unit moves the slide to trip the adjacent unit by striking the trip mechanism.

3,414,851
MULTIPLE CONTACT RELAY STRUCTURE AND SYSTEM

Gundokar Braumann, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Sept. 23, 1966, Ser. No. 581,559
Claims priority, application Germany, Sept. 30, 1965, S 99,785
36 Claims. (Cl. 335—106)

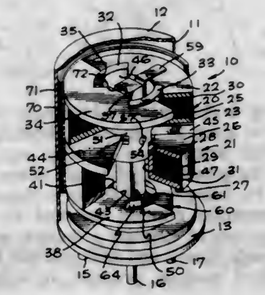


A relay structure comprises a magnetizable armature which can be actuated to assume a plurality of contact positions, by either movable permanent magnets or by electromagnetic means. The relay structure described herein, provides four possible relay positions. Further, a plurality of basic relay structures can be used in a relay circuit system, providing a multiplicity of through connections between the inputs and outputs of the system. Since the relay structure is comprised of components requiring little space, the relay system can be conveniently housed in a compact tubing, which may be sealed from the atmosphere, thereby increasing the useful life of the components.

3,414,852
MAGNETIC LATCHING RELAY

Robert L. Martin, La Canada, Calif., assignor to Consolidated Electronics Industries Corp., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 513,908, Dec. 13, 1965. This application Apr. 27, 1967, Ser. No. 634,144
7 Claims. (Cl. 335—170)



A bi-stable, switching device that is capable of alternately positioning a movable contact against one or another of two fixed contacts. Motion of the movable contact is controlled by energizing one or another of two coils with direct current to position the movable contact against the fixed contact which cooperates with the energized coil, while the other coil remains de-energized. When the movable contact has completed its movement to the fixed contact the coil is de-energized and the movable contact will remain held or latched in the position referred to by the magnetic field induced by the

permanent magnet elements where the air gap between the magnet and the movable contact is the smaller. When the latching is to be released, the other coil is energized. This will create a magnetic field stronger than the field created by the permanent magnet and the movable contact will shift to the opposite fixed contact.

3,414,853
MAGNETICALLY COUPLED MOMENTARY SWITCH

Gilbert M. Motis, 19434 Roscoe Blvd., Northridge, Calif. 91325

Filed July 14, 1966, Ser. No. 565,203
5 Claims. (Cl. 335—207)

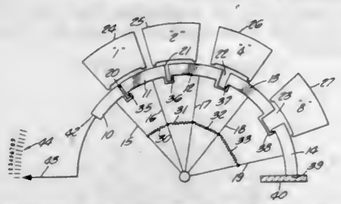


A momentary switch which utilizes the unequal magnetic coupling of first and second pairs of magnets to cause return of a contact assembly to the unactuated position of the switch if the actuating means is not released. The switch is actuated by pulling the actuating means, such as a cable, which moves a contact assembly into a closed contact position by separating the first magnet pair which has the lesser coupling force of the two magnetic coupled pairs of magnets in the unactuated condition. If the cable is not released, separation of the stronger coupled second pair occurs and the coupling force at this actuated position becomes less than that between the separated first pair allowing the first pair to recouple to break the contact.

3,414,854
BINARY DECODING POSITIONING DEVICE

William H. Saylor, 31791 S. Coast Highway, South Laguna, Calif. 92677

Filed Nov. 10, 1966, Ser. No. 593,384
14 Claims. (Cl. 335—268)



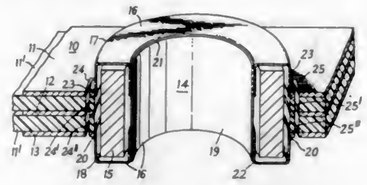
A positioning device operated by binary electrical signals provides an array of armatures abutting each other end-to-end, with stop means defining maximum gaps therebetween, the gaps being of binary power magnitudes and closeable by being energized by a respective binary signal, the composite position assumed by the device representing by way of example a decimal equivalent of the applied binary signal, and said position being useful to provide visual readout, printout, or other form of registration.

3,414,855
WIDE FREQUENCY BAND TRANSFORMER FOR PLATE TYPE TRANSMISSION LINES

Ernest William Rogers, Horley, England, assignor to Communications Patents Limited

Filed Apr. 3, 1967, Ser. No. 627,699
Claims priority, application Great Britain, May 27, 1966, 24,000/66
7 Claims. (Cl. 336—82)

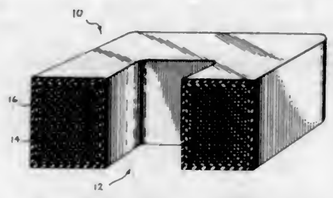
The invention is a wide frequency band transformer, e.g. 100–30,000 kc./s., for conductive plate type transmission lines, having low leakage inductance. The transformer has a toroidal core positioned in aligned holes in the transmission line plates. It has one single-turn winding, which extends the length of the core and has opposite ends connected to different plates along the whole circumference of the holes, and a plurality of multi-turn coils wound around the core and passing through further aligned holes angularly spaced apart around the first-mentioned holes.



3,414,856
INSULATED ELECTRICAL CONDUCTOR

Lawrence J. Guilbault, Akron, Ohio, and David G. Schwenker, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed Sept. 27, 1966, Ser. No. 582,277
7 Claims. (Cl. 336—205)



A high temperature protective insulation system for an electrical member, for example an electrical coil, and a method of making the same. The insulation system comprises an encapsulating envelope on the outside of the electrical member, including at least one layer of a cured electrically insulating epoxy resin composition and at least one outer layer of a cured alkyd material modified with a butylated melamine formaldehyde resin.

3,414,857
COIL WITH ADJUSTABLE PERMEABILITY

Richard H. Barden, 440 N. Adams, Sierra Madre, Calif. 91024

Filed May 9, 1966, Ser. No. 548,578
2 Claims. (Cl. 336—233)

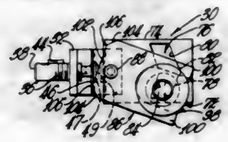


This invention relates to a means for adjusting the permeability of ring-shaped cores. An annular ring for a toroidal coil has an arcuately extending internal void that extends for a substantial portion of the arcuate length of the ring. Access is provided to this void, and a quantity of magnetizable material, discretely divided and dispersed in a settable medium, is injected into the void, without filling it, whereby further adjustment of the permeability can be made by injection of additional such material and medium.

3,414,858
TILT RESPONSIVE SAFETY SWITCH

John W. Huffman and Gerald Ronald Wharton, Mansfield, Ohio, assignors, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

Filed Feb. 23, 1966, Ser. No. 529,588
12 Claims. (Cl. 337—13)

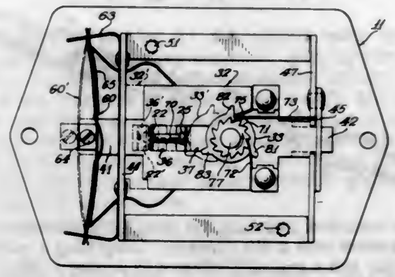


The invention embraces a tilt responsive safety switch or tip over switch particularly for mounting on an electrical appliance such as an electrically energizable space heater, the switch incorporating contacts which are automatically disengaged by relative slidable movement of a gravity-actuated slidable body whenever the appliance or space heater is tilted or is tipped over.

3,414,859
BIMETALLIC DRIVEN TIME DELAY RELAY

Robert E. Prouty, Logansport, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Aug. 8, 1966, Ser. No. 570,814
8 Claims. (Cl. 337—51)



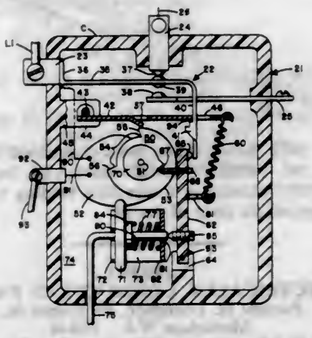
A bimetallic driven time delay relay switch. A bimetallic strip drives a plate with a ratchet mounted thereon back and forth as the strip snaps between its "hot" and "cold" positions. Each time the bimetallic strip shifts from the hot to the cold position, the ratchet engages a fixed pawl and is rotated one increment. After the ratchet has advanced a predetermined number of increments, a cam lobe attached to the ratchet engages with and closes a first switch as the bimetallic strip moves to its hot position. This first switch thereafter activates the bimetallic heater circuit and simultaneously closes a controlled external circuit. The heater circuit may be broken by a second switch, causing the ratchet to advance one increment upon cooling of the bimetallic strip, thereby disengaging the cam lobe from the first switch.

3,414,860
DEFROSTER CONTROL APPARATUS COMPRISING A TIMER SWITCH AND TEMPERATURE SENSING ELEMENT

William S. Tufts, Gahanna, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio

Filed Mar. 7, 1966, Ser. No. 532,439
14 Claims. (Cl. 337—302)

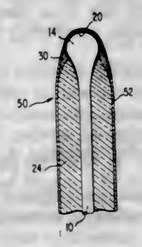
A defroster control for refrigeration equipment comprising a spring leaf contact member normally biased in one direction to close a first circuit and movable in the opposite direction to a second defrost cycle initiating position by an actuating arm mechanically connected and disconnected with the contact member by a latching mechanism which is operative to establish either of two spaced positions of the arm and contact member. The arm is moved to actuate the contact member, when latched to the latter, by a timer cam, the latch adapted to be actuated to effect a step movement of the contact member from the second circuit controlling position and the actuating arm to a position intermediate the first and second circuit controlling position and then upon a second actuation of the latch to the first circuit controlling position. The latch mechanism is actuated first by a temperature response element in response to a defrost temperature and is actuated secondly by a timer so that a delay in closing the first circuit occurs after a defrosting cycle in the refrigeration equipment.



3,414,861
THERMISTOR AND METHOD OF MANUFACTURE

John L. Lumley, State College, and Edward P. Jordan, Pennsylvania Furnace, Pa., assignors, by mesne assignments, to Research Corporation, New York, N.Y., a nonprofit corporation of New York

Filed Mar. 30, 1966, Ser. No. 538,802
11 Claims. (Cl. 338—22)



A thermistor constructed of a wire having an enlarged bulbous head at one end. A thermistor material covers the bulb, and is in turn covered by a conductive film, such as platinum deposited by a sputtering process. The wire is supported within a glass tube.

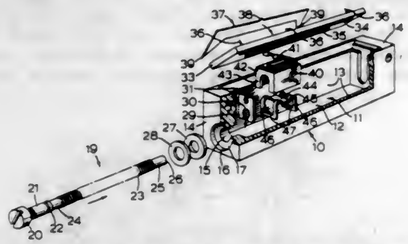
3,414,862
VARIABLE RESISTOR

Leon Ginsberg, Weston, Ontario, Canada, assignor to Precision Electronic Components Ltd., Toronto, Ontario, Canada, a company

Filed Mar. 24, 1967, Ser. No. 626,375
5 Claims. (Cl. 338—180)

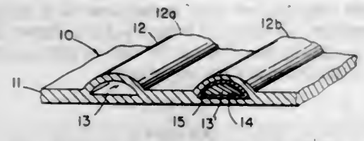
A miniature, hermetically sealed, variable resistor or potentiometer is provided with a lead screw drive to a contact carrier, the contact carrier being hollow and pro-

vided with an internally positioned resilient member engaging the lead screw. The resilient member engages the lead screw on opposite sides and is provided with spaced



members (47) which, when the carrier is in the limit of its travel, can "ratchet" over the threads of the lead screw if it is further rotated in a direction tending to move the carrier beyond its limit of travel.

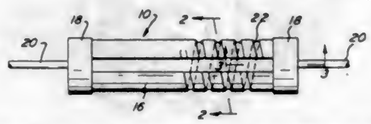
3,414,863
ELECTRICALLY CONDUCTING PANEL
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 389,848, May 28, 1956. This application Nov. 25, 1964, Ser. No. 432,033
9 Claims. (Cl. 338—244)



1. A heat transfer panel comprising in combination:
(a) a sheet-like material made of metal,
(b) said metal sheet having a passageway extending between the major surfaces thereof with portions of said sheet defining portions of said major surfaces serving as respective opposite walls of said passageway,
(c) an electrically conducting material having a cross section smaller than the cross section of said passageway and extending completely through said passageway,
(d) an insulating material disposed between said conducting material and the wall of said passageway and completely surrounding said conducting material,
(e) said insulating material serving to electrically insulate said conducting material from the metal of said panel, and
(f) electrically conducting connection means connected to said electrical conducting material disposed within said passageway,
(g) said electrical connecting means being insulated from the metal of said panel and extending beyond the panel for connecting said conducting material to a source of electrical power.

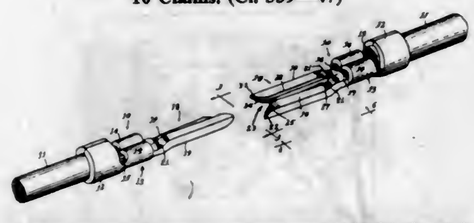
3,414,864
ELECTRICAL RESISTOR
Jonathan Barrington, Malvern, Pa., assignor to IRC, Inc., Philadelphia, Pa.
Filed June 8, 1967, Ser. No. 644,673
8 Claims. (Cl. 338—300)

An electrical resistor comprising a cylindrical substrate of an electrical insulating material having one or more longitudinally extending channels in its cylindrical surface. A film of an electrical resistance material is coated on the cylindrical surface of the substrate and the surface of the channel or channels. Terminals are connected to the ends of the substrate and the resistance material film. The resistance value of the resistor can be adjusted to a desired resistance value by small increments by removing narrow bands of the resistance material film from around the cylindrical surface of the substrate between the edges of the channel or channels leaving the surface of the



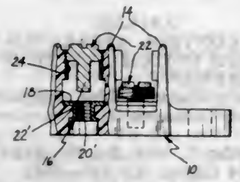
channel or channels coated with the resistance material film. The narrow bands of the resistance film can be removed by either cutting a helically extending groove through the resistance film on the cylindrical surface of the substrate so as to electrically isolate the bands, or by completely removing the resistance material, such as by grinding, to provide a gap in the resistance material film on the cylindrical surface of the substrate.

3,414,865
ELECTRICAL CONNECTORS
Billy Erik Olsson, Chicago, Ill., assignor to Wauconda Tool and Engineering Company, Inc., Algonquin, Ill., a corporation of Illinois
Filed Sept. 20, 1963, Ser. No. 310,308
10 Claims. (Cl. 339—47)



1. An electrical connector for detachable frictional interengagement with a like connector comprising a mounting portion and a mating portion, said mating portion including a pair of longitudinally extending contact fingers positioned relatively offset to each other, a pair of generally parallel guiding surfaces having oppositely disposed burnished bands and fracture bands therein, a pair of contact surfaces at right angles to said burnished bands, said fracture bands being adjacent said contact surfaces, and a pair of outwardly extending tips on said fingers curving away from each other on both the contact surfaces and said guiding surfaces.

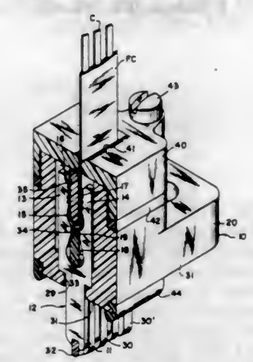
3,414,866
ELECTRICAL TERMINALS
Alexander R. Norden, 350 Central Park West, New York, N.Y. 10025
Filed May 8, 1967, Ser. No. 636,869
11 Claims. (Cl. 339—59)



A terminal block here has a laterally threaded screw-head in a yielding-plastic insulator block; being virtually immune to shaking out of the block; ideally having special

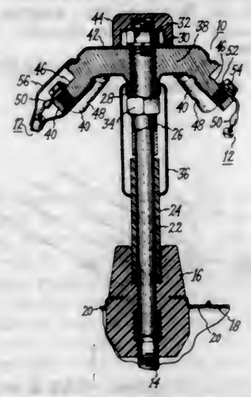
threads accommodating an inherent manufacturing out-of-step relation between mating threads at the head of the screw and at its shaft; and enabling insertion of a ring-type wire lug while the screw head supports the lower end of the screw clear of a metal insert in the terminal block.

3,414,867
TERMINATION OF CABLE
Lawrence R. Travis, Brockton, Mass., assignor to Electro Connective Systems, Inc., a corporation of Massachusetts
Filed Apr. 13, 1967, Ser. No. 630,598
5 Claims. (Cl. 339—99)



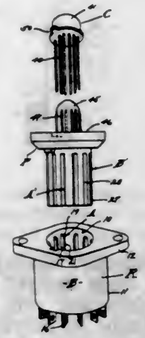
Termination device for flat electric cable including a contact element having conductor gripping jaws and a device for holding the jaws open against resilient biasing to permit insertion of a portion of a cable between the jaws and for releasing the jaws in response to such insertion such that the resultant inward motion takes place simultaneously with the cable insertion to provide a raking contact movement of the conductor gripping jaws as they grip the conductor.

3,414,868
TERMINATOR FOR CONNECTING A PLURALITY OF ELECTRICAL CABLES TO A SECONDARY OF AN ELECTRICAL APPARATUS
John G. Howe, Baltimore, Md., assignor to General Electric Company, a corporation of New York
Filed May 10, 1967, Ser. No. 637,436
2 Claims. (Cl. 339—116)



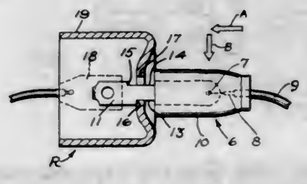
A terminator for connecting a plurality of secondary cables to the secondary lead of an electrical apparatus. The terminator is a metallic member having a central opening for connecting it mechanically and electrically to a secondary lead from an electrical apparatus. The terminator is provided with a plurality of finger members extending radially from the central portion of the terminator, each finger having a tapped hole for connecting a secondary cable mechanically and electrically to such finger. The central portion of the terminator and each finger is coated with electrical insulation. Sealing means in the form of rubber sleeves are also provided to seal each cable connection to each finger.

3,414,869
SOCKET AND CARRIER FOR MULTILEAD COMPONENTS
Don F. Pascua, 19323 S. Grandee Ave., Compton, Calif. 90220
Filed Oct. 3, 1966, Ser. No. 583,613
8 Claims. (Cl. 339—193)



This invention relates to a test socket for the reception and handling of small multilead electronic components, and provides a carrier that guidedly receives the multiplicity of leads projecting from an electrical component so as to maintain a separation between said leads and in order to support said component, while presenting a manually engageable part for mechanical insertion into a service receptacle, and all of which is useful in the production and testing of the circuits or like situations, where repeated insertions and/or handling of electrical components is required.

3,414,870
ELECTRICAL PLUG
Raymond Biszko, 129 Kanpnan Road, Tiverton, R.I. 02878
Continuation-in-part of application Ser. No. 494,135, Oct. 8, 1965. This application Aug. 2, 1966, Ser. No. 569,721
5 Claims. (Cl. 339—195)



1. An electrical plug construction comprising in combination: a plug body; at least two electrically conductive prongs extending outwardly in a substantially parallel

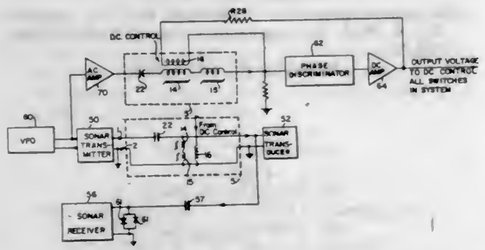
relationship from said plug body, said prongs being adapted for axial insertion through suitably spaced slots in the wall of a conventional electrical receptacle, and locking means on said prongs for cooperating with said wall to prevent removal in a reverse axial direction of said prongs from said receptacle, said locking means being operatively engaged with said wall by transverse displacement of said plug relative to said receptacle.

3,414,871
ELECTRICAL CONNECTOR HAVING A RESILIENT TONGUE MEANS CARRYING TWO DETENT FLAPS
Ulrich Tuchel, Neckartalstrasse 51, Heilbronn (Neckar), Germany
Filed Feb. 14, 1966, Ser. No. 527,239
Claims priority, application Germany, Feb. 13, 1965, T 27,986
18 Claims. (Cl. 339—217)



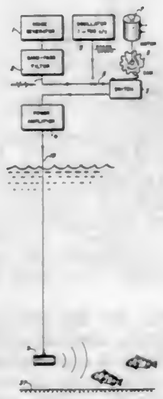
An electrical connector, defining either a plug or socket, made of a single stamped piece and having a tongue resiliently deflectable with respect to the remainder of the connector and carrying at least two detent flaps, each flap being arranged for preventing removal of the connector from the insulator in which it is to be mounted in a respective one of two opposite directions, the tongue being actuatable to be resiliently deflected in such a direction that the detent flap will be moved into a position for permitting the connector to be removed from the insulator in either direction without being hindered by the flap.

3,414,872
MAGNETIC TRANSMISSION LISTEN SWITCH FOR SONAR
Benjamin Barron, Malba, N.Y., assignor to Lear Siegler, Inc., Melville, N.Y., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,554
13 Claims. (Cl. 340—3)



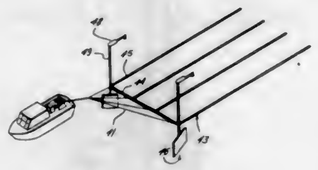
A magnetic switch formed by a saturable reactor which is switchable from a high to a low impedance state. In a preferred embodiment the residual inductance of the switch is offset by a capacitor which forms a series resonant circuit so the switch impedance in the low impedance state is essentially its direct current resistance. The switch is particularly useful in a transmit-listen type sonar system where it effectively isolates the transmitter from the receiver under operational control of the transmitter output signal.

3,414,873
FISH ATTRACTING APPARATUS
Joseph D. Richard, 3613 Loquat Ave., Miami, Fla. 33133, and Warren J. Wisby, 600 Roosevelt Blvd., Falls Church, Va. 22044
Continuation-in-part of application Ser. No. 454,418, May 10, 1965. This application July 12, 1967, Ser. No. 652,793
5 Claims. (Cl. 340—5)



An apparatus for attracting predatory fish by means of pulsed low frequency acoustic signals transmitted into the ocean. Acoustic noise pulses having frequency components predominently in the low audio and sub-audio portions of the spectrum are transmitted. The frequency content, modulation, and repetition characteristics of the transmitted acoustic pulses closely simulate the turbulence and vibratory sounds generated by injured or struggling fish.

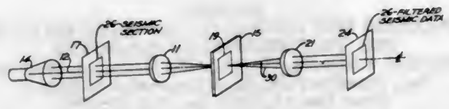
3,414,874
SEISMIC SURVEY SYSTEMS
Kenneth W. McLoad, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 24, 1967, Ser. No. 618,383
6 Claims. (Cl. 340—7)



A marine seismic cable system, which is provided with a plurality of transducers arranged along its length, is towed behind a ship for conducting a seismic survey. The transducers are constructed so that upon energization by shipboard apparatus, they act as individual sound

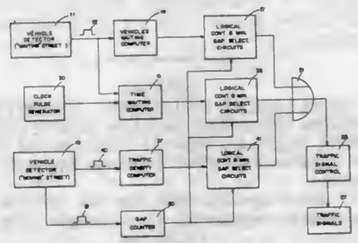
sources which when arranged in the elongated configuration of a cable provide an elongated, cylindrical acoustical source. The same transducers are also adapted to receive acoustical energy reflected from subsurface earth formations and transmit a signal indicative thereof to a recording apparatus aboard the ship.

3,414,875
PROCESSING OF SEISMIC DATA
Edgar S. Driver, Ross Township, Allegheny County, and Maurice E. Taylor, Monroeville, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,258
3 Claims. (Cl. 340—15.5)



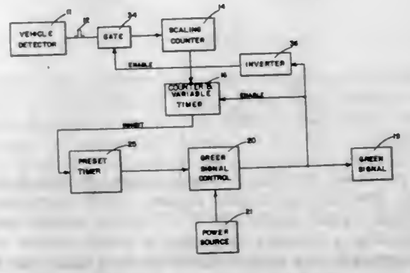
A seismic reflection filtering system employs a postulated acoustic impedance log section which has its Fourier transform generated, the amplitude function of the transform being recorded and used as a phaseless attenuation filter which is superimposed on a similarly generated Fourier transform of the seismic reflection data. The filtered seismic data is reconstructed by generating a Fourier transform of the seismic data transform including the superimposed amplitude function of the postulated section transform, so that multiples and noise are substantially eliminated from the seismic reflection data.

3,414,876
SELF-ADAPTIVE TIMING SYSTEM FOR TRAFFIC CONTROLLER
Vernor B. Cress, Jr., Rowland Heights, Peter F. Apitz, Placentia, Phillip G. Halamandaris, Fullerton, and Ross W. Wheeler and Eugene P. Hoyt, Santa Ana, Calif., assignors to Tamar Electronics Industries, Inc., Anaheim, Calif., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,474
11 Claims. (Cl. 340—36)



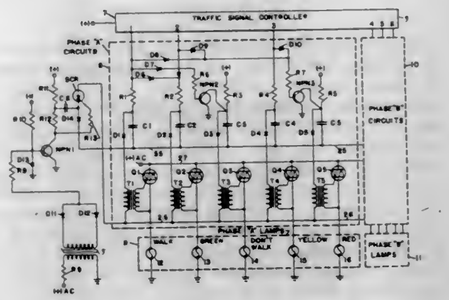
A traffic controller operates first and second sets of traffic signals for controlling traffic on first and second intersecting streets respectively. A gap counter which includes a vehicle detector operating in conjunction with a clock pulse generator and a shift register is utilized to generate a timing signal in accordance with the gaps between traffic on one of the streets. Separate computers, each of which includes a vehicle detector operating in conjunction with a digital counter, are utilized to compute the volume of traffic waiting at the traffic signal, the density of traffic on the moving street, and the time that vehicles have been waiting at the traffic signal respectively A logical gating control circuit is utilized to compare the outputs of each of the computers with the gap counter output to generate a timing signal in accordance with the relationship therebetween. This timing signal is used to control the green extension timing of the traffic controller.

3,414,877
SELF-ADAPTIVE TIMING SYSTEM FOR A TRAFFIC CONTROLLER
Vernor B. Cress, Jr., Rowland Heights, and Phillip G. Halamandaris, Fullerton, Calif., assignors to Tamar Electronics Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,201
9 Claims. (Cl. 340—37)



The number of vehicles arriving at an intersection during the red and yellow timing cycles of the traffic signal is detected by means of a vehicle detector and a signal in accordance therewith registered in a counter and variable timer. The output of the variable timer is coupled to a pre-set timer for the green timing cycle of the signal and inhibits the operation thereof until the variable timer has completed its timing cycle which is in accordance with the number of vehicles which have arrived. In this manner, the green timing cycle is extended for a period of time which is in accordance with the number of vehicles held waiting during the previous red and yellow timing cycles.

3,414,878
TRAFFIC SIGNAL LAMP CONTROL CIRCUIT
Barry L. Smith, Rochester, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Dec. 17, 1965, Ser. No. 514,500
6 Claims. (Cl. 340—41)

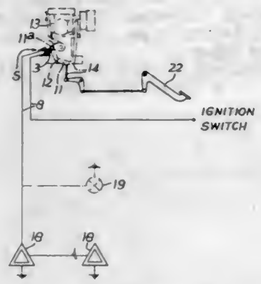


Apparatus for controlling traffic governing lamps having a gate controlled bi-directional static switch associated with each lamp for conducting alternating current to the lamp, and control circuitry for selectively determining the desired lamp by energization of its associated gate circuit.

3,414,879
ADVANCE BRAKE WARNING DEVICES FOR ROAD VEHICLES

Joseph R. Holland, North Hykeham, England, assignor to Pharmaceutical Plastics Limited, Lincoln, England, a British company

Filed July 15, 1965, Ser. No. 472,255
8 Claims. (Cl. 340—71)

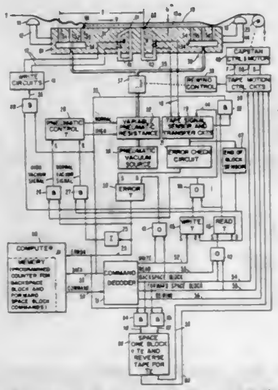


A pre-brake warning system in a road vehicle powered by an internal combustion engine, which comprises an electrical circuit connected to a current source and incorporating a warning lamp and a switch device which is operable by the vehicle accelerator to cause the lamp to light up whenever the driver releases the accelerator to decelerate the vehicle. The switch device comprises a two-part tubular housing containing two electrical contacts which are connected in the circuit, and a spring biased plunger which is movable by the accelerator to bridge the contacts. The switch device can be used as a slow-running adjusting screw in place of the conventional throttle-adjusting screw. A further, similar switch device operable by the vehicle clutch, may be provided in the circuit for preventing the warning lamp being illuminated each time the clutch is operated during a gear change.

3,414,880
SOURCE ERROR CORRECTION FOR RELATIVELY MOVING SIGNALS

Robert B. Humphrey, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 2, 1965, Ser. No. 469,113
11 Claims. (Cl. 340—146.1)

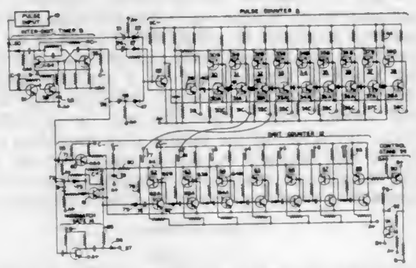


1. An error control system for recorded signals comprising
a surface for recording signals,
a transducer for said signals,
means for separating said surface and said transducer by a normal distance,
pneumatic control means for controlling said separating means to obtain said normal distance or a smaller distance,
means responsive to signals from said transducer for detecting an error in a data signal recorded on said surface,
and means responsive to an output signal from said detecting means, indicative of an error, for actuating said pneumatic control means to obtain said smaller distance between said surface and said transducer,
whereby error control for recorded signals is improved at said smaller distance.

3,414,881
DECODER FOR DIGITAL PULSE CODE INCLUDING TRANSISTORIZED COUNTERS

Ronald H. Chapman, Wheaton, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Jan. 15, 1965, Ser. No. 425,699
5 Claims. (Cl. 340—164)



Decoder for responding to digital pulse code including plurality of groups of pulses with transistorized pulse counter having stages selectively connected to coupling circuits of the stages of a transistorized digit counter. An interdigit timer applies a pulse at the end of each pulse group to the pulse counter to reset the same and to the digit counter to cause the same to step from one stage to the next. The digit counter can step to the next stage only when the coupling circuit thereof is enabled by a voltage applied thereto from the connected stage of the pulse counter.

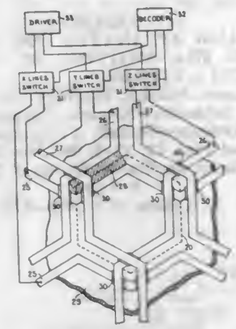
3,414,882
ELECTRICAL SWITCHING MATRICES

John Barron, Cambridge, and Victor Andrew John Maller, Stotfold, England, assignors to International Computers and Tabulators Limited, London, England, a British company

Filed Apr. 21, 1965, Ser. No. 449,718
Claims priority, application Great Britain, May 8, 1964, 19,369/64
6 Claims. (Cl. 340—166)

It is well known that switching cells in a continuous medium, such as in superconductive devices, for example, Crow cells, or in electro-optical crystals of, for example, barium titanate, may be formed and/or controlled by proportional electrical signals applied to conductors linked with an array of selected areas of the medium. Hitherto, in switching matrices of such cells, the conductor configuration required for controlling the selection of a specific area out of many has necessitated the constant reorientation of at least one of the conductors as it passes across the array, with the result that a considerable part of the length of this conductor is devoted to this reorientation rather than to the actual switching control of cells in the array. The present proposals show how, by arranging the positions of cells in the array along the sides

of notional rectilinear geometrical figures, a conductor configuration may be employed in which all the selection conductors consist of linear sections, each lying at an angle to its neighbours, so that each section is linked with

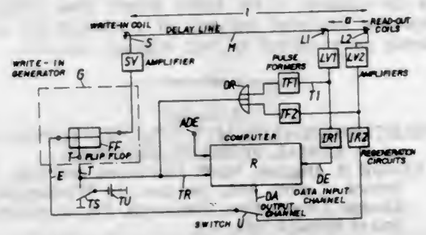


a different cell. The combined effect of all the conductors is to produce a pattern of rectilinear geometrical figures over the medium, in which each side of each of the figures is associated with a unique pair of selection conductors.

3,414,883
SYNCHRONOUS MEMORY SYSTEM

Volker Hildebrand, Constance, Germany, and Hansjörg Neumeister, Tokyo, Japan, assignors to Telefunken, Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed July 20, 1965, Ser. No. 473,319
Claims priority, application Germany, July 20, 1964, T 26,634
17 Claims. (Cl. 340—172.5)



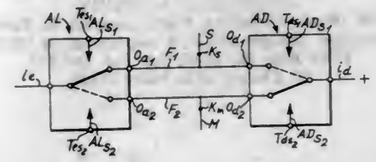
A synchronous memory system including a pulse delay line, a write-in generator for applying pulses to one end of the pulse delay line, and two feedback circuits coupled to the other end of the pulse delay line so as to receive pulses at different times. A computer is connected in series with one of the feedback circuits, and switch means is provided for selectively connecting the input of the write-in generator to the output of the computer or to the other feedback circuit. The delay time between the application of pulses to the two feedback circuits is equal to the data processing time of the computer.

3,414,884
ELECTRONIC PROCESS CONTROL DEVICES

Hermann Børge Funck Jensen, 16 Moller Meyersvej, Arhus, Denmark

Filed Dec. 20, 1965, Ser. No. 515,117
Claims priority, application Great Britain, Dec. 21, 1964, 51,855/64; Dec. 24, 1964, 52,431/64
29 Claims. (Cl. 340—172.5)

The invention relates to a logical element which, in addition to terminals for applying a set and a reset signal, has exterior terminals for providing direct passageways through the element; the invention also relates to logic designs formed by series connections of such logic elements whereby not only differences of numerical values can be recognized, but it is rendered possible to obtain a signal to the effect whether one numerical value is higher



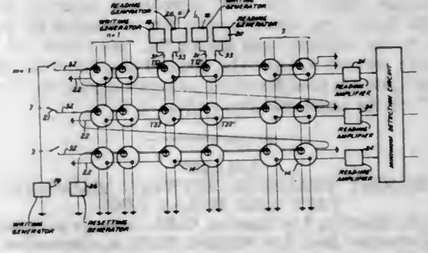
or lower than another numerical value and thereby to control a movement of a part from one position to a desired position in the correct direction depending on the difference of numerical values of the two positions.

The present invention relates to electronic process control devices or logic elements.

3,414,885
DISTINGUISHING MATRIX THAT IS CAPABLE OF LEARNING, FOR ANALOG SIGNALS

Peter Müller, Karlsruhe, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

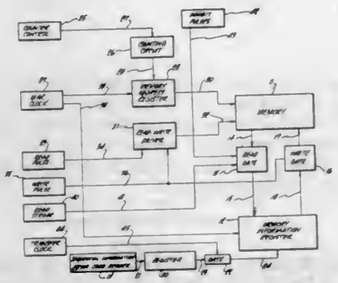
Filed Feb. 11, 1964, Ser. No. 344,119
Claims priority, application Germany, Feb. 20, 1963, St 20,319
10 Claims. (Cl. 340—172.5)



1. A system capable of learning, for distinguishing several patterns existing as analog signals, and capable of being assigned one or more pattern shapes or classes of significance, including: a matrix-type circuit arrangement comprising *m* rows and *n* double columns; connecting elements at the intersection of each row and column; first means for varying or changing during the learning phase the information-processing physical quantity stored in connecting elements of the first columns of the pairs of columns so that the information-processing physical quantity stored will become proportional to the applied attribute value, whereby a previously determined shape or significance is assigned to each row; second means for varying or changing during the confirming or learned phase the information-processing physical quantity stored in connecting elements of the second columns of said pairs of columns so that the stored value will become proportional to the applied attribute value of the offered pattern; said connecting elements acting commonly upon the row wire threaded therethrough during interrogation by the con-

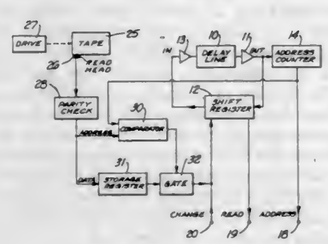
firming stage to produce a signal representative of the difference between the stored and the offered attribute values; and means responsive to the sum of the value differences of each row for identifying the row of the smallest value.

3,414,886
INFORMATION TRANSFER INTO A WORD-ADDRESSED MEMORY
Frank W. Wells, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 24, 1965, Ser. No. 466,723
10 Claims. (Cl. 340—172.5)



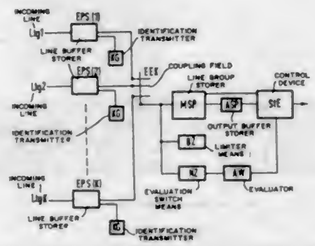
An improved memory system for transferring bits stored on a punched card into a word-addressed memory whereby updated characters are written into the memory as each row of the card is scanned and only a single memory cycle is needed for the updating of each character. During the scan of each card row, information bits previously stored in predetermined addresses of memory are transferred to particular bit positions of an information register and bits sequentially received from a card reader are transferred to the succeeding bit position of the register, both during the "read time" of respective memory cycles. The updated characters are then written into the predetermined addresses during the "write time" of the same memory cycles.

3,414,887
MEMORY TRANSFER BETWEEN MAGNETIC TAPE AND DELAY LINE
John R. Scantlin, Los Angeles, Calif., assignor to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,693
5 Claims. (Cl. 340—172.5)



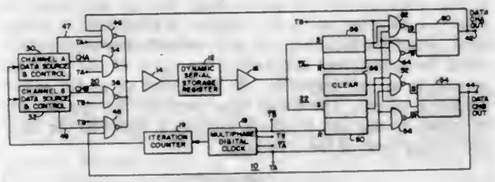
A digital bit memory including a high data rate recirculating delay line storage and a low data rate tape storage, with means for inserting a word from the tape into the delay line each time there is coincidence between tape and delay line addresses, providing the reliability of tape storage, the fast access of delay line storage, and continuous monitoring of the delay line data by tape data.

3,414,888
METHOD AND APPARATUS FOR THE RECORDING AND TRANSMITTING OF MESSAGES ON AND FROM A STORER
Horst Gehrmann, Munich, Winifried Graf, Munich-Solln, and Karl Schneider, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 21, 1966, Ser. No. 536,005
Claims priority, application Germany, Mar. 24, 1965, S 96,141
11 Claims. (Cl. 340—172.5)



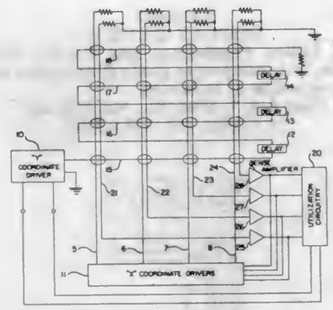
A storage communication arrangement for the recording and retransmitting of messages over several incoming lines, in which respective buffer storers are operative to store only a fractional segment of an average message on a corresponding line, and a group storer operatively connected with a plurality of buffer storers for receiving the contents of the buffer storers from which the respective fractional segments of a message are subsequently retransmitted in their original sequence.

3,414,889
ELECTRONICALLY MULTIPLEXED DYNAMIC SERIAL STORAGE REGISTER
Edward R. Higgins, North Linthicum, and John L. Patrick, Laurel, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 7, 1965, Ser. No. 485,293
2 Claims. (Cl. 340—173)



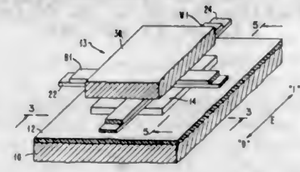
A multiphase clock controls the entry of binary data from separate input data channels into a delay line during an interation period of preselected duration. The data is stored as separate words having respective sets of bits registered during the respective clock phases. Data read from the line is reentered in the line in combination with new word data from the input data channels.

3,414,890
MAGNETIC MEMORY INCLUDING DELAY LINES IN BOTH ACCESS AND SENSE WINDINGS
Sidney J. Schwartz, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Sept. 28, 1964, Ser. No. 399,499
2 Claims. (Cl. 340—174)



Magnetic memory matrices, which have series-connected delay circuit devices that are interconnected between groups of memory elements which correspond to different memory bit positions of the memory to form sensing paths and drive addressing paths, are disclosed.

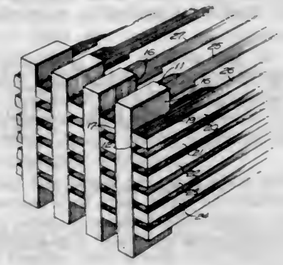
3,414,891
NONDESTRUCTIVE READOUT THIN FILM MEMORY
Gerhard Kohn, Thalwil, Zurich, Switzerland, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 30, 1964, Ser. No. 422,289
12 Claims. (Cl. 340—174)



1. A non-destructive read-out memory device comprising a memory cell including a magnetic film having uniaxial anisotropy of magnetization and magnetic element magnetically coupled with said film, said magnetic element being made of magnetic material having a given magnetic relaxation time, means including a source of drive pulses each having a duration less than that of said given time for producing a magnetic field varying the magnetization of said film and means for detecting variations of magnetizations in said film.

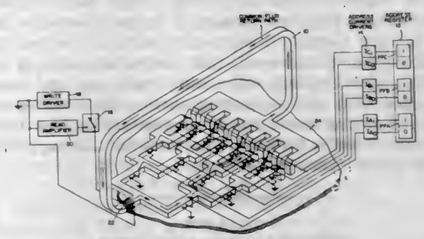
3,414,892
MEANS INTERCONNECTING PRINTED CIRCUIT MEMORY PLANES
Thomas L. McCormack, Chelmsford, Mass., Maurice A. Morin, Nashua, N.H., and Donald T. Staffiere, Wilmington, Mass.; said Morin and said Staffiere assignors to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 699,006
(Filed under Rule 47(b) and 35 U.S.C. 118)
6 Claims. (Cl. 340—174)

A system for interconnecting memory planes in a vertically stacked array. Connector boards are inserted into vertically aligned slots cut into the edge of the array at positions contiguous with printed drive conductors. The connector boards are formed of insulating material with



a series of conducting segments adjacent to and soldered to the drive conductors. Each segment is just large enough to contact two planes.

3,414,893
MULTICHANNEL TRANSDUCING HEAD WITH SELECTABLE FLUX PATHS
Edmund G. Coccagna, Villanova, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 15, 1965, Ser. No. 472,224
11 Claims. (Cl. 340—174.1)

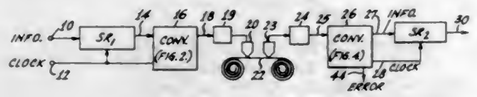


A magnetic head is disclosed for use in a magnetic recording system for writing a magnetized pattern upon a magnetic medium and for reading the pattern so written. The magnetic head portion of the device which includes the magnetic flux path gap is uniquely configured to provide a plurality of such magnetic paths each with its own gap. The head with such a gap configuration is then used with an appropriate selecting means to select any one of the plurality of paths and thereby enable one signal coil wound upon the common core portion of the head to selectively read or write in any one of a number of adjacent channels upon the magnetic medium.

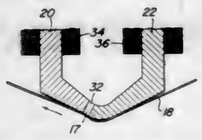
3,414,894
MAGNETIC RECORDING AND REPRODUCING OF DIGITAL INFORMATION
George V. Jacoby, Bala-Cynwyd, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,841
7 Claims. (Cl. 340—174.1)

A coder translates a conventional nonreturn-to-zero digital information signal to a signal in which there is a transition at the center of a bit cell representing a "1"

and there is a transition at the boundary between bit cells representing two successive "0's." This signal is recorded on a magnetic medium. The signal later reproduced from the magnetic medium is applied to a decoder which extracts a timing wave from the signal and uses the timing wave to translate the signal back to a conventional non-return-to-zero signal. The decoder includes means to detect an information bit drop-out and generate an error signal.

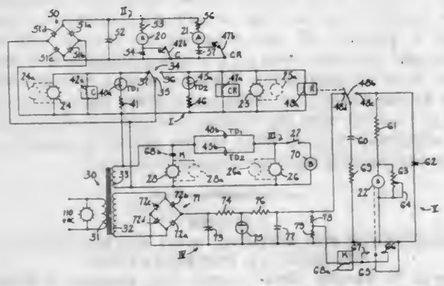


3,414,895
MAGNETIC HEAD WITH MEANS FOR ASSURING FIRM TAPE-HEAD CONTACT
Harry R. Allen, Jr., Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,609
4 Claims. (Cl. 340—174.1)



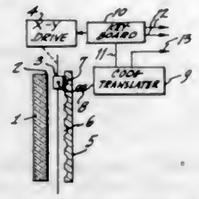
1. A magnetic head comprising, a core piece disposed for forming a gap therebetween, a spacer disposed within said gap for forming a supporting surface over which a record media is conveyed, coil means surrounding said core piece for creating a flux within said gap, and means associated with said supporting surface for exciting said conveyed record media into an undulatory motion urging said record media into firm contact with said supporting surface at the location of said gap.

3,414,896
RESPIRATORY MONITOR
Roy Victor Glick, White River Junction, Vt., and James D. McNeal, North Haven, and Anthony P. Costanzo, New Haven, Conn., assignors, by direct and mesne assignments, to Monitor Instrument Company, New Haven, Conn., a corporation of Connecticut
Filed Jan. 5, 1965, Ser. No. 423,532
13 Claims. (Cl. 340—309.1)



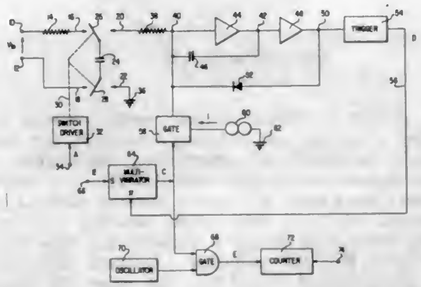
A monitoring apparatus for a respirator having indicating means responsive to the operation of the respirator, the indicating means comprising first means for indicating the inhalation and exhalation states of the respirator, and second means for measuring the length of time said first means is in either of said states, the improvement characterized in that the second means includes a series connection of an ampere meter, a capacitor and switching means connected in parallel with said capacitor for permitting said capacitor to charge and discharge in response to the operation of said first means.

3,414,897
DISPLAY DEVICE
James C. Miller, Pennington, and Charles M. Wine, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,205
10 Claims. (Cl. 340—324)



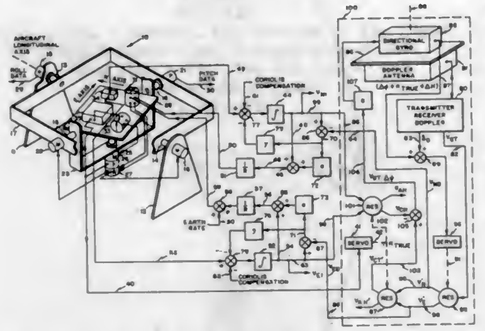
A display device using electroluminescent display symbols having segments which are selectively energized by a read-write head selectively positioned adjacent to the symbols. The read-write head is provided with radiation emitting means to energize the symbol segments and a radiation detecting means for checking the energized display segments.

3,414,898
ANALOG-TO-DIGITAL CONVERTER
David M. Barton, Bridgeton, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,770
5 Claims. (Cl. 340—347)



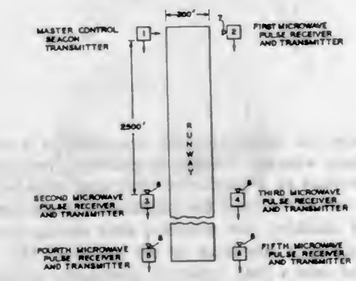
A floating storage capacitor is connected periodically between a pair of input terminals to receive an analog input voltage. During alternate periods, the storage capacitor is connected between ground or reference potential and an input terminal to an operational amplifier with capactive feedback. A charge which is transferred to the feedback capacitor is removed linearly by a constant current generator connected thereto. As a result of the linear discharge of the capacitor, the time it takes for the capacitor to discharge down to some predetermined level is directly proportional to the analog input voltage. Pulses at a predetermined rate are counted during the time of discharge thereby resulting in a digital count proportional to the analog input voltage.

3,414,899
APPARATUS FOR CALIBRATING DOPPLER-INERTIAL NAVIGATION SYSTEMS
Heinz Buell, Mount Kisco, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware
Filed July 18, 1967, Ser. No. 654,223
14 Claims. (Cl. 343—9)



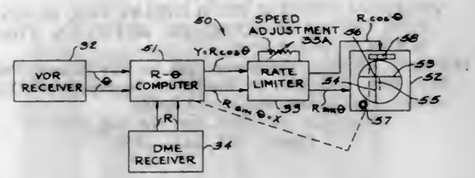
Apparatus for calibrating the alignment error between the Doppler antenna and the inertial platform produced by bending or flexure of the vehicle. A conventional directional gyro directly mounted on or near the Doppler antenna and approximately aligned to true north measures the true heading of the vehicle, the orientation error, and its own north alignment error. An error signal is extracted from this output proportional to the cross-track velocity error between the gyro and inertial platform and is fed back through a closed loop to the gyro's torquer for precessing its spin axis accordingly. Since the gyro's spin axis is effectively rotated into alignment with the inertial platform's reference axis, the north alignment error in the gyro's output is cancelled, the error input to the gyro's torquer is nulled, and the gyro becomes slaved to true north. Moreover, the output of the directional gyro now comprises only a measure of the true heading angle plus the orientation error and may therefore be used to accurately resolve the Doppler's ground track velocity information into true north and true east components. Accordingly transient errors in Doppler radar velocity resolution are avoided which would otherwise degrade the heading and the position accuracy of the stellar-inertial-Doppler system.

3,414,900
METHOD AND MEANS FOR SYNCHRONIZATION OF BEACON TRANSMITTERS FOR AN ALL-WEATHER APPROACH SYSTEM
Hayes B. Steinhauser, Lincoln Park, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 19, 1967, Ser. No. 646,856
6 Claims. (Cl. 343—102)



Means and method for synchronization of ground based beacon transmitters by a radio link so as to cause the transmitters to beam to an optical display carrier by an aircraft in flight, microwave radio signal pulses which follow one another in a fixed sequence in which all beacons emit their pulses within a fixed time interval. These signals from the beacon transmitters which are arranged along sides of a landing strip for the aircraft form an "edge light" image of the runway on the optical display and an image of substantial spacial identity to that of the physical array of the beacons on the ground to provide on the optical display a picture of the runway under adverse weather conditions.

3,414,901
AIRCRAFT NAVIGATION SYSTEM
Earl Stuart Perkins, Oak Brook, and Myron L. Anthony, La Grange, Ill., assignors, by mesne assignments, to Butler National Corporation, New Hope, Minn., a corporation of Delaware
Filed May 31, 1966, Ser. No. 559,650
35 Claims. (Cl. 343—107)

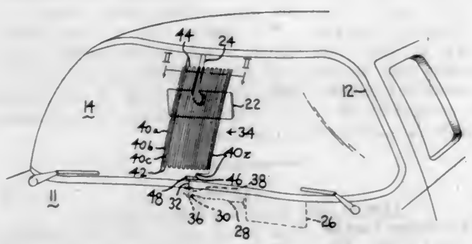


An aircraft navigation system, using bearing and distance signals from a remote navigation station, in which the response rate of the navigation indicator instrument is limited in accordance with maximum ground speed of the aircraft and inversely in accordance with the distance of the aircraft from the station. In the preferred form, the airborne equipment includes a bearing signal receiver (VOR) and a distance signal receiver (DME) both coupled to a computer or other signal-compounding device. One form of computer employs a rotary resolver that combines the bearing and distance signals to develop a displacement signal representative of displacement of the aircraft from a given track. An additional way-point resolver may be utilized, with the indicator instrument showing the aircraft position in terms of rectilinear coordinates relative to an arbitrary way point not necessarily coincident with location of the navigation station. Several forms of specific rate-limiting circuits and devices are shown in variation of the system, including particular servo devices and constant-current limiters. Rate limitation is effected before or after signal compounding. One modification includes an adjustable phase-lock circuit incorporated in the bearing signal receiver and controlled by the distance signal receiver. One form of safety catch-up circuit, allowing a short-term increase in the response rate of the indicator, is disclosed.

3,414,902
LAMINATED WINDSHIELD WITH RADIO ANTENNA
Hugh E. Shaw, Jr., New Kensington, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Filed Dec. 6, 1965, Ser. No. 511,708
4 Claims. (Cl. 343—713)

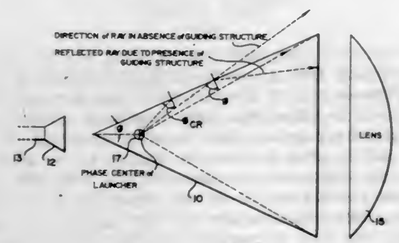
An automobile windshield carrying an antenna comprising electroconductive wire occuping an area having a substantially larger vertical dimension than a horizontal dimension. The antenna is arranged as a plurality of parallel wire elements constituting a major portion of the length of said wire and extending in substantially vertical planes. The area is centrally located so that it is spaced

from the windshield margin by sufficient distance to minimize any capacitance effect between the antenna and the



metal of an automobile body in which said windshield may be installed.

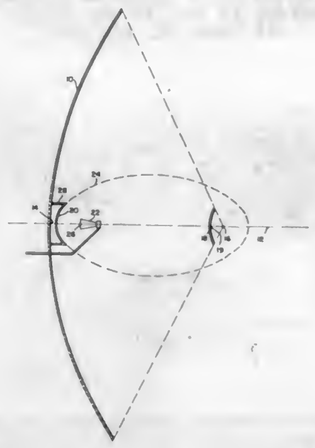
3,414,903
ANTENNA SYSTEM WITH DIELECTRIC HORN STRUCTURE INTERPOSED BETWEEN THE SOURCE AND LENS
Homer E. Bartlett, Melbourne, and Le Roy Pietsch, Palm Bay, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Mar. 10, 1965, Ser. No. 438,582
7 Claims. (Cl. 343—753)



An antenna system comprising a source of electromagnetic waves, a lens, and a dielectric horn structure interposed between the source and lens. The first null of the radiation pattern produced by the source is provided at an angle approximately equal to the sum of the guiding structure taper angle and the complement of the critical angle of the structure dielectric, the critical angle of the structure dielectric being the angle of incidence of internal electromagnetic waves on the boundary of the structure above which total reflection of the incident wave is achieved. Whereby all of the energy in the main lobe of the radiation pattern is confined interiorly of the guiding structure and directed toward the lens.

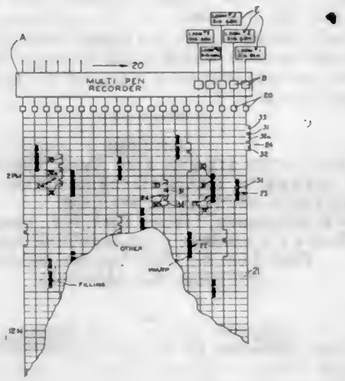
3,414,904
MULTIPLE REFLECTOR ANTENNA
James S. Ajioka, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,483
18 Claims. (Cl. 343—781)

1. An antenna comprising: a primary reflector the intersection of which with a given plane defines essentially a first parabola having a focal point in said plane, a secondary reflector the intersection of which with said plane defines essentially a second parabola having a focal point essentially coincident with the focal point of said first parabola, a feed reflector the intersection of which with said plane defines essentially a segment of an ellipse having first and second focal points, said first focal point being essentially coincident with the common focal points



of said first and said second parabolas, and a feed element disposed essentially at said second focal point and facing said feed reflector.

3,414,905
SYSTEM FOR MONITORING THE OPERATION OF A PLURALITY OF MACHINES
Martin F. O'Brien and Howard F. Moore, Greenville, S.C., assignors to Frontier Electronics, Inc., Greenville, S.C., a corporation of South Carolina
Filed Dec. 27, 1966, Ser. No. 611,205
15 Claims. (Cl. 346—33)



A system for monitoring the operation of a plurality of machines wherein a signal is produced responsive to the occurrence of a particular operating condition of a machine which indicates the unattended down-time of a particular machine, the attended time during shutdown and the cause of shutdown of the machine. The signals can be fed into a data collector, preferably in the form of indicia producing means operated by electromagnetic means.

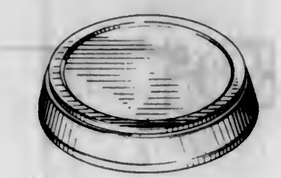
DESIGNS

DECEMBER 3, 1968

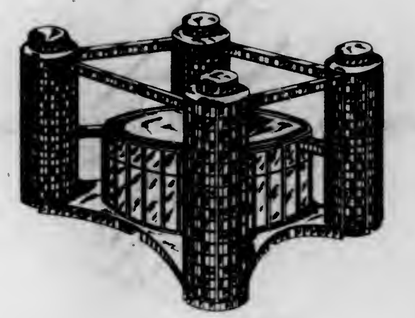
212,842
BOTTLE
John C. Coons, Covington, Ky., assignor to The Clorox Company, Oakland, Calif., a corporation of Ohio
Filed Dec. 4, 1967, Ser. No. 9,627
Term of patent 14 years
(Cl. D9—44)



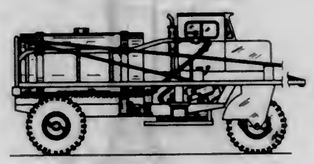
212,843
CLOSURE CAP OR THE LIKE
Alexander W. Hart and Daniel D. Acton, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Jan. 23, 1968, Ser. No. 10,278
Term of patent 14 years
(Cl. D9—267)



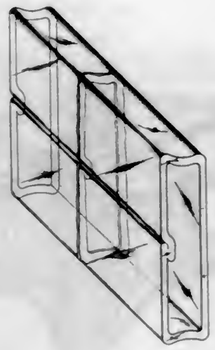
212,844
BUILDING COMPLEX
Charles F. Mullen, 243 W. Mount Royal Road, Milwaukee, Wis. 53217
Continuation-in-part of design application Ser. No. 5,049, Dec. 15, 1966. This application Nov. 9, 1967, Ser. No. 9,341
Term of patent 14 years
(Cl. D13—1)



212,845
FERTILIZER APPLICATOR
Russell E. Jones, Rte. 1, Kingston, Ohio 45644
Filed July 3, 1967, Ser. No. 7,695
Term of patent 14 years
(Cl. D14—3)



212,846
HOLLOW GLASS BUILDING BLOCK
Nikolai Pavlovich Kabanov, Nizhnaya Maslovka 6, kv. 6, Moscow, U.S.S.R.; Vitaly Sergeevich Schukin, Gorkovskoi oblasti, ul. Shkolnaya 1, kv. 5; Nikolai Mineevich Bystrov, Gorkovskoi oblasti, ul. Sonechnaya 6, kv. 45; and Georgy Alexandrovich Babinov, Gorkovskoi oblasti, ul. Solnechnaya 6, kv. 45, all of Bor, U.S.S.R.; and Pavel Ivanovich Moryashov, Ul. Sverdlova 29, kv. 57, Gorky, U.S.S.R.
Filed Oct. 2, 1967, Ser. No. 8,817
Claims priority, application Union of Soviet Socialist Republics Apr. 20, 1967
Term of patent 14 years
(Cl. D18—2)



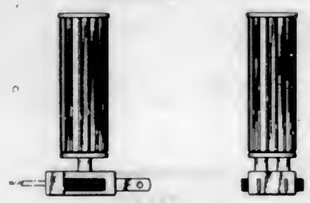
212,847
INCENSE BURNER
Joseph H. Jeitner, Sr., 3944 Richmond St., Philadelphia, Pa. 19137
Filed Feb. 26, 1968, Ser. No. 10,727
Term of patent 7 years
(Cl. D23—78)



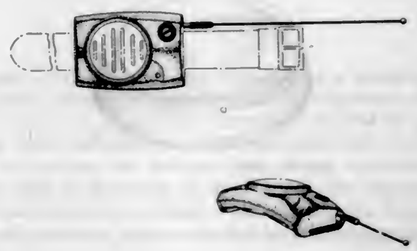
212,848
DENTAL TRAY FOR FULL JAW IMPRESSIONS
Gaylon T. Westlund, 4732 Virginia Ave., Minneapolis, Minn. 55428, and Nels E. Neslund, 4241 N. Twin Oak Lane, Robbinsdale, Minn. 55422
Continuation of design applications Ser. No. 6,403, Mar. 28, 1967, and Ser. No. 9,198, Oct. 30, 1967. This application Mar. 29, 1968, Ser. No. 11,537
Term of patent 14 years
(Cl. D24—1)



212,849
TELEVISION ANTENNA
Oscar Miller, 4 Overlook Park, Newton Center, Mass. 02159
Filed Nov. 28, 1967, Ser. No. 9,568
Term of patent 14 years
(Cl. D26—14)



212,850
CASE FOR A WRIST COMMUNICATION TRANSMITTER
Jack C. Roberts, Malibu, Calif., assignor to Saxton Electronics Corporation, Congers, N.Y., a corporation of New York
Filed Feb. 7, 1968, Ser. No. 10,483
Term of patent 14 years
(Cl. D26—14)



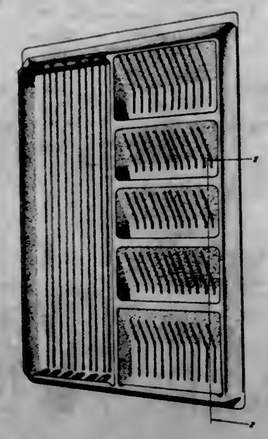
212,851
WIRELESS INTERCOM
Jack C. Roberts, Malibu, Calif., assignor to Saxton Electronics Corporation, Congers, N.Y., a corporation of New York
Filed Feb. 13, 1968, Ser. No. 10,562
Term of patent 14 years
(Cl. D26—14)



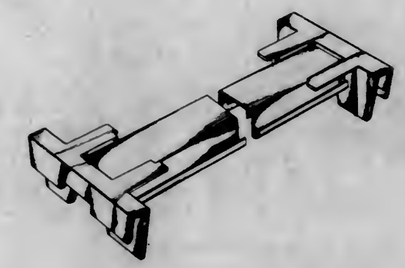
212,852
TOPIARY SHAPE OR THE LIKE
Herman Silverman, Doylestown, Pa. 18901
Filed Oct. 6, 1965, Ser. No. 87,349
Term of patent 14 years
(Cl. D29—1)



212,853
CUE AND BALL RACK
Jack D. Allen, Genoa Township, Delaware County, Ohio (5253 Nautilus Drive, Cape Coral, Fla. 33904)
Filed May 29, 1967, Ser. No. 7,297
Term of patent 14 years
(Cl. D33—3)

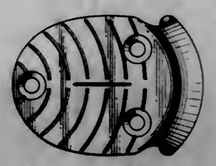


212,854
GARMENT HANGER BAR
Walton B. Crane, 4346 Matilija Ave., Sherman Oaks, Calif. 95681
Filed June 26, 1967, Ser. No. 7,593
Term of patent 14 years
(Cl. D33—8)

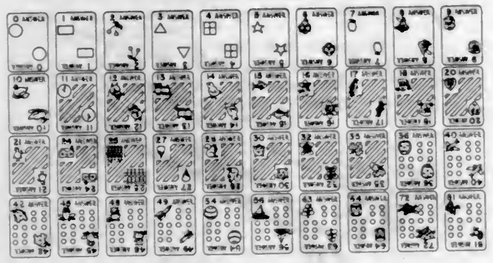


212,855
POCKET BILLIARD TABLE OR SIMILAR ARTICLE
Otto S. Nielsen, 4875 Sorrell Ave., Minneapolis, Minn. 55422
Filed July 10, 1967, Ser. No. 7,752
Term of patent 14 years
(Cl. D34—3)

212,856
PLATE FOR SKI BOOTS
Earl A. Miller, Orem, Utah 84057
Continuation of design applications Ser. No. 5,900 and Ser. No. 5,901, Feb. 21, 1967. This application Oct. 9, 1967, Ser. No. 8,932
Term of patent 14 years
(Cl. D34—14)



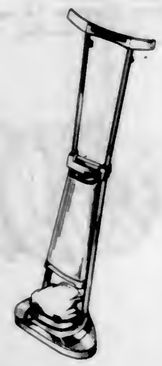
212,857
SET OF EDUCATIONAL PLAYING CARDS
Arvil Eugene Davis, 1509 11th St., Wichita, Tex. 76301
Filed Aug. 21, 1967, Ser. No. 8,327
Term of patent 14 years
(Cl. D34—13)



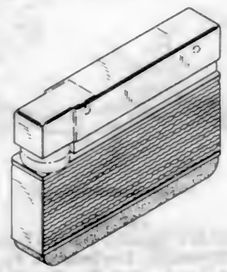
212,858
RIDING HORSE
Laurie Jay Campbell, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 27, 1967, Ser. No. 6,857
Term of patent 14 years
(Cl. D34—15)



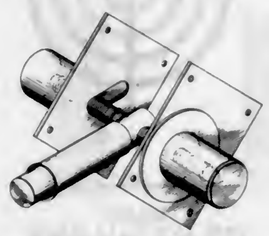
212,859
COMBINED FLOOR TREATING MACHINE AND LIQUID DISPENSER
Raymond Descarries, Montreal, Quebec, Edouard Gaudry, Cite St. Laurent, Quebec, and Paul E. Gaudry, Laval des Rapides, Quebec, Canada, assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Original design application May 9, 1967, Ser. No. 7,032, now Patent No. 211,263, dated June 4, 1968. Divided and this application Oct. 23, 1967, Ser. No. 9,704
Term of patent 14 years
(Cl. D37—3)



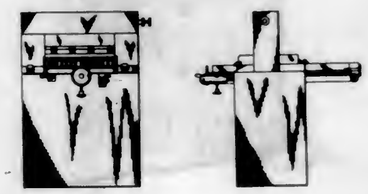
212,860
TABLE LIGHTER
Peter Rabe, Muhlheim am Main, Germany, assignor to Heinrich Maltner GmbH., Offenbach am Main, Germany
Filed Oct. 20, 1967, Ser. No. 9,083
Claims priority, application Germany Apr. 20, 1967
Term of patent 14 years
(Cl. D48—27)



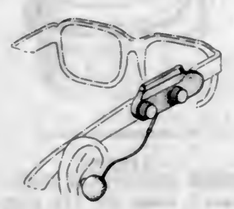
212,861
SLIDE BOLT DOOR LATCH
Ray Raymond, 3157 McKinley Blvd., Sacramento, Calif. 95816
Filed Feb. 5, 1968, Ser. No. 10,455
Term of patent 14 years
(Cl. D50—5)



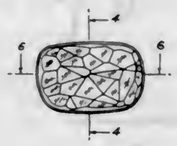
212,862
PAPER CUTTER
David O. Chase, Camillus, Philip H. Stevens, Syracuse, and Alan W. Brownlie, Skaneateles, N.Y., and John A. Malm, Rocky River, Ohio, assignors to The Chandler & Price Company, Cleveland, Ohio, a corporation of Ohio
Original design application Nov. 3, 1966, Ser. No. 4,542, now Patent No. 210,691, dated Apr. 2, 1968. Divided and this application Oct. 11, 1967, Ser. No. 10,592
Term of patent 14 years
(Cl. D55—1)



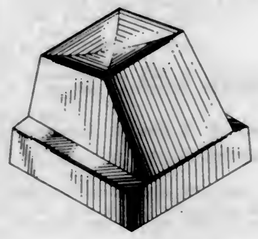
212,863
RADIO HOUSING FOR EYE GLASSES
Jack C. Roberts, Malibu, Calif., assignor to Saxton Electronics Corporation, Congers, N.Y., a corporation of New York
Filed Feb. 7, 1968, Ser. No. 10,470
Term of patent 14 years
(Cl. D56—4)



212,864
LENS FOR SPECTACLES
Richard Fraige, P.O. Box 1379, San Francisco, Calif. 94101
Filed Jan. 31, 1968, Ser. No. 10,383
Term of patent 14 years
(Cl. D57—1)



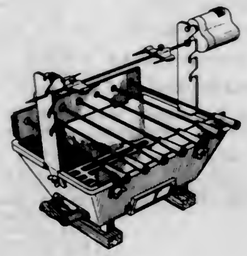
212,865
KEYBOARD KEYCAP
Dean C. Bowman, Oklahoma City, Okla., and Mark S. Mazzetti, Phoenixville, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 29, 1967, Ser. No. 8,785
Term of patent 14 years
(Cl. D64—11)



212,866
FOUNTAIN PEN
Roger Perraud, Paris, France, assignor to Société le Foyer et Cie, Paris, France
Continuation-in-part of design application Ser. No. 7,949, July 24, 1967. This application Oct. 2, 1967, Ser. No. 8,809
Claims priority, application France Jan. 23, 1967
Term of patent 14 years
(Cl. D74—17)



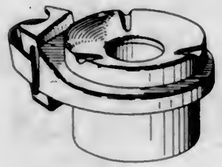
212,867
AUTOMATIC ROTISSERIE APPARATUS
Taizo Ishida, Tokiwa 4—2—14, Urawa-shi, Saitama-ken, Japan
Filed June 5, 1967, Ser. No. 7,372
Claims priority, application Japan Dec. 24, 1966
Term of patent 14 years
(Cl. D81—10)



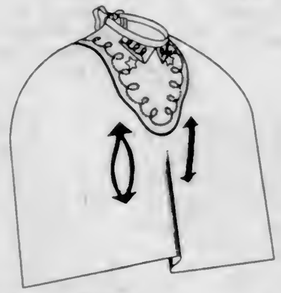
212,868
BLACKHEAD REMOVER TOOL
Gust A. Olson, 2030 Manning Ave., Los Angeles, Calif. 90025, and James S. Devine, 6029 Linda Way, Culver City, Calif. 90230
Filed Jan. 24, 1966, Ser. No. 740
Term of patent 14 years
(Cl. D83—12)



212,869
COMBINED ASH TRAY AND BRACKET
George W. Prisching, 921 S. Waverly St., Mount Prospect, Ill. 60056
Filed Mar. 30, 1967, Ser. No. 6,447
Term of patent 7 years
(Cl. D85—2)



212,870
CHILD'S BARBER APRON, OR SIMILAR ARTICLE
Miriam L. Bush, Box 231, High St., Three Bridges, N.J. 08887
Continuation of design application Ser. No. 1,891, Apr. 14, 1966. This application July 27, 1966, Ser. No. 3,224
Term of patent 14 years
(Cl. D86—10)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Automatic Electric Laboratories, Inc.: *See*—
Macrander, Max S. Re. 26,498.
Barbu, Richard J.: *See*—
Krauss, John, and Barbu. Re. 26,496.
Goodyear Tire & Rubber Co., The: *See*—
Stoker, Carl B., Jr. Re. 26,493.
Stoker, Carl B., Jr. Re. 26,494.
Greening, John H., to Micromatic Hone Corp. Electrolytic honing device. Re. 26,499, 12–3–68, Cl. 204—217.
Horton, Robert A.: *See*—
Watts, Claude H., and Horton. Re. 26,495.
Krauss, John, and R. J. Barbu, to Markbar Corp. Meat casing. Re. 26,496, 12–3–68, Cl. 66—193.
Macrander, Max S., to Automatic Electric Laboratories, Inc. Electronic switching network. Re. 26,498, 12–3–68, Cl. 179—18.
Markbar Corp.: *See*—
Krauss, John, and Barbu. Re. 26,496.
Micromatic Hone Corp.: *See*—
Greening, John H. Re. 26,499.
Picker Corp.: *See*—
Splain, Walter E. Re. 26,497.
Precision Metalsmiths, Inc.: *See*—
Watts, Claude H., and Horton. Re. 26,495.
Splain, Walter E., to Picker Corp. X-ray film exposure measuring system having means for terminating the exposure. Re. 26,497, 12–3–68, Cl. 250—95.
Stoker, Carl B., Jr., to The Goodyear Tire & Rubber Co. Skin-package. Re. 26,493, 12–3–68, Cl. 206—56.
Stoker, Carl B., Jr., to The Goodyear Tire & Rubber Co. Package. Re. 26,494, 12–3–68, Cl. 206—65.
Watts, Claude H., and R. A. Horton, to Precision Metalsmiths, Inc. Ceramic shell molds and methods of production. Re. 26,495, 12–3–68, Cl. 164—25.

LIST OF PLANT PATENTEES

Armstrong, David L., to Armstrong Nurseries, Inc. Rose plant. 2,849, 12–3–68, Cl. 24.
Armstrong Nurseries, Inc.: *See*—
Armstrong, David L. 2,849.
Mercuri, Pasquale, and G. Mercury. Carnation plant. 2,848, 12–3–68, Cl. 70.
Mercury, George: *See*—
Mercuri, Pasquale, and Mercury. 2,848.
Sitton, George D., Sr. Rose. 2,847, 12–3–68, Cl. 20.

LIST OF DESIGN PATENTEES

Acton, Daniel D.: *See*—
Hart, Alexander W., and Acton. 212,843.
Allen Jack D. Cue and ball rack. 212,853, 12–3–68, Cl. D33—3.
Anchor Hocking Glass Corp.: *See*—
Hart, Alexander W., and Acton. 212,843.
Babinov, Georgy A.: *See*—
Kabanov, Nikolai P., Schukin, Bystrov, Babinov, and Moryashov. 212,846.
Bowman, Dean C., and M. S. Mazetti, to General Electric Co. Keyboard keycap. 212,865, 12–3–68, Cl. D64—11.
Brownlie, Alan W.: *See*—
Chase, David O., Stevens, Brownlie, and Malm. 212,862.
Bush, Miriam L. Child's barber apron, or similar article. 212,870, 12–3–68. Cl. D86—10.
Bystrov, Nikolai M.: *See*—
Kabanov, Nikolai P., Schukin, Bystrov, Babinov, and Moryashov. 212,846.
Campbell, Laurie J. Riding horse. 212,858, 12–3–68, Cl. D34—15.
Chandler & Price Co., The: *See*—
Chase, David O., Stevens, Brownlie, and Malm. 212,862.
Chase, David O., P. H. Stevens, A. W. Brownlie, and J. A. Malm, to The Chandler & Price Co. Paper cutter. 212,862, 12–3–68, Cl. D55—1.
Clorox Co., The: *See*—
Coons, John C. 212,842.
Coons, John C., to The Clorox Co. Bottle. 212,842, 12–3–68, Cl. D9—44.
Crane, Walton B. Garment hanger bar. 212,854, 12–3–68, Cl. D33—8.
Davis, Arvil E. Set of educational playing cards. 212,857, 12–3–68, Cl. D34—13.
Descarries, Raymond, E. and P. E. Gaudry, to Electrolux Corp. Combined floor treating machine and liquid dispenser. 212,859, 12–3–68, Cl. D37—3.
Devine, James S.: *See*—
Olson, Gust A., and Devine. 212,868.
Electrolux Corp.: *See*—
Descarries, Raymond, E. and P. E. Gaudry. 212,859.
Fraige, Richard. Lens for spectacles. 212,864, 12–3–68, Cl. 57—1.
Gaudry, Edouard: *See*—
Descarries, Raymond, E. and P. E. Gaudry. 212,859.
Gaudry, Paul E.: *See*—
Descarries, Raymond, E. and P. E. Gaudry. 212,859.
General Electric Co.: *See*—
Bowman, Dean C., and Mazetti. 212,865.
Hart, Alexander W., and D. D. Acton, to Anchor Hocking Glass Corp. Closure cap or the like. 212,843, 12–3–68, Cl. D9—267.
Ishida Taizo. Automatic rotisserie apparatus. 212,867, 12–3–68, Cl. D81—10
Jeitner, Joseph H., Sr. Incense burner. 212,847, 12–3–68, Cl. D23—78.
Jones, Russell E. Fertilizer applicator. 212,845, 12–3–68, Cl. D14—3.
Kabanov, Nikolai P., V. S. Schukin, N. M. Bystrov, G. A. Babinov, and P. I. Moryashov. Hollow glass building block. 212,846, 12–3–68, Cl. D18—2.
Malm, John A.: *See*—
Chase, David O., Stevens, Brownlie, and Malm. 212,862.
Maltner, Heinrich, G.m.b.H.: *See*—
Rabe, Peter. 212,860.
Mazetti, Mark S.: *See*—
Bowman, Dean C., and Mazetti. 212,865.
Miller, Earl A. Plate for ski boots. 212,856, 12–3–68, Cl. D34—14.
Miller, Oscar. Television antenna. 212,849, 12–3–68, Cl. D26—14.
Moryashov, Pavel I.: *See*—
Kabanov, Nikolai P., Schukin, Bystrov, Babinov, and Moryashov. 212,846.
Mullen, Charles F. Building complex. 212,844, 12–3–68, Cl. D13—1.
Neslund, Nels E.: *See*—
Westlund, Gaylon T., and Neslund. 212,848.
Nielsen, Otto S. Pocket billiard table or similar article. 212,855 12–3–68, Cl. D34—3.
Olson, Gust A., and J. S. Devine. Blackhead remover tool. 212,868, 12–3–68, Cl. D83—12.
Perraud, Roger, to Societe Le Foyer et Cie. Fountain-pen. 212,866, 12–3–68, Cl. D74—17.
Prisching George W. Combined ash tray and bracket. 212,869, 12–3–68, Cl. D85—2.
Rabe, Peter, to Heinrich Maltner, G.m.b.H. Table lighter. 212,860, 12–3–68, Cl. D48—27.
Raymond, Ray. Slide bolt door latch. 212,861, 12–3–68, Cl. D50—5.
Roberts, Jack C., to Saxton Electronics Corp. Case for a wrist communication transmitter. 212,850, 12–3–68, Cl. D26—14.
Roberts, Jack C., to Saxton Electronics Corp. Wireless intercom. 212 851, 12–3–68, Cl. D26—14.
Roberts, Jack C., to Saxton Electronics Corp. Radio housing for eye glasses. 212,863, 12–3–68, Cl. D56—4.
Saxton Electronics Corp.: *See*—
Roberts, Jack C. 212,850.
Roberts, Jack C. 212,851.
Roberts, Jack C. 212,863.
Schukin, Vitaly S.: *See*—
Kabanov, Nikolai P., Schukin, Bystrov, Babinov, and Moryashov. 212,846.
Silverman, Herman. Topiary shape or the like. 212,852, 12–3–68, Cl. D29—1.
Societe Le Foyer et Cie: *See*—
Perraud, Roger. 212,866.
Stevens, Philip H.: *See*—
Chase, David O., Stevens, Brownlie, and Malm. 212,862.
Westlund, Gaylon T., and N. E. Neslund. Dental tray for full jaw impressions. 212,848, 12–3–68, Cl. D24—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 3RD DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Industrifjadrar: *See*—
Linderoth, Hans G. 3,414,322.
AB Torkapparater: *See*—
Bojner, Gustav and Gosta. 3,413,937.
A.E.I. Corp.: *See*—
Christine, William C., and Pierce. 3,414,414.
Abbiati, Lucio: *See*—
Guerri, Innocenti, and Abbiati. 3,414,133.
Abboud, Harry I. Sonic aerosol filtering devices. 3,413,781, 12–3–68, Cl. 55—292.
Abegg, Karl, to Maschinenfabrik Oerlikon. Cooling and securing motor laminations. 3,414,749, 12–3–68, Cl. 310—52.
Abex Corp.: *See*—
McCune, Robert B., and Wilson. 3,413,930.
Abowitz, Alexander. Fabric unraveling machine. 3,413,700, 12–3–68, Cl. 28—17.
Abowitz, Alexander. Yarn stacking device for knitting machines. 3,413,826, 12–3–68, Cl. 66—8.
Abson, James W., M. Landau, M. C. Langton, and A. Molyneux, to Simon-Carves Ltd. Catalysts. 3,414,524, 12–3–68, Cl. 252—410.
Acara, Nancy A., to Union Carbide Corp. Zeolite N and process for preparing same. 3,414,602, 12–3–68, Cl. 260—448.
Acme Highway Products Corp.: *See*—
Crone, Alfred F. 3,413,900.
Adams, Burton E.: *See*—
Behrns, William E. 3,413,935.
Adams, Edwin M., to General Motors Corp. Reveal molding installation and clip. 3,413,770, 12–3–68, Cl. 52—208.
Adams, Paul R., and J. W. Whitesel, to International Telephone and Telegraph Corp. Class of character control circuit for editorial correcting typewriter. 3,414,105, 12–3–68, Cl. 197—20.
Adams, Roman A., and J. J. Maginot, Jr., to A. B. Dick Co. Facsimile system and vidicon rescanning during retrace. 3,414,668, 12–3 68, Cl. 178—7.7.
Addoms, John F., Jr., and C. B. McGough, to Aerojet-General Corp. Method of making composite ultra-thin metal platelet having precisely controlled pattern of flow passages therein. 3,413,704, 12–3–68, Cl. 29—157.
Addressograph-Multigraph Corp.: *See*—
Wike, Albert F. 3,413,922.
Adlhart, Otto J., to Engelhard Industries, Inc. Fuel cell and process of using with ruthenium-tantalum alloy catalyst. 3,414,439, 12–3–68, Cl. 136—86.
Advanced Wyrepal Co., Inc., The: *See*—
Kovaleski, Joseph J. 3,413,834.
Aerojet-General Corp.: *See*—
Addoms, John F., Jr., and McGough. 3,413,704.
Lieberman, Irving, Knop, and Zernow. 3,413,833.
Aeroprojects Inc.: *See*—
Pheasant, James R. E., Tarpley, and McKinney. 3,414,443.
Aeroquip Corp.: *See*—
Elsner, Edwin C. 3,413,691.
Agazzi, Alberto: *See*—
Galli De Paratesi, Sergio, Genet, Ghiurghi, Agazzi, Morbello, and Brogg. 3,414,476.
Agett, Albert H., and W. L. Aspy, Jr., to Eastman Kodak Co. Apparatus for production of high-shrink yarn. 3,413,697, 12–3–68, Cl. 28—1.
Air Products and Chemicals, Inc.: *See*—
Green, Harold A., and Huntzinger. 3,414,529.
Villaume, Henry F., and Collins. 3,413,821.
Air Reduction Co., Inc.: *See*—
Collie, William D. 3,414,643.
Sorkin, Howard. 3,414,634.
Ajioka, James S., to Hughes Aircraft Co. Multiple reflector antenna. 3,414,904, 12–3–68, Cl. 343—781.
Aktiebolaget Electrolux: *See*—
Norberg, Carl-Gustaf. 3,414,229.
Aktiebolaget Hakanssons Industrier: *See*—
Nordstedt, Hans J., and Delin. 3,413,659.
Aktiebolaget Kamyr: *See*—
Laakso, Oliver A. 3,414,038.
Aktiebolaget Lamm, Carl: *See*—
Kvarnegard, Sven B. 3,414,724.
Aktiebolaget Vacuum-Extractor: *See*—
Uddenberg, Goran O. 3,414,011.
Aktiengesellschaft Fr. Mettler's Sohne Maschinenfabrik Arth: *See*—
Aschwanden, Paul. 3,414,205.
Akustische u. Kino-Gerate Gesellschaft m.b.H.: *See*—
Marschall, Otto. 3,414,675.
Reinthaler, Karl. 3,414,686.
Alamance Industries, Inc.: *See*—
Comer, Marvin B., and McCracken. 3,413,796.
Alberts, Jack B., to Halliburton Co. Oriented perforate test and cement squeeze apparatus. 3,414,071, 12–3–68, Cl. 175—4.51.
Aldous, George C., to Westinghouse Electric Corp. Electric water heater. 3,414,707 12–3–68, Cl. 219—322.
Allain, Pierre. Antivibratory member for skis. 3,414,279, 12–3–68, Cl. 280—11.13.

Allen-Bradley Co.: *See*—
Weidmann, Hans E., and Wiest. 3,414,824.
Allen, Harry R., Jr., to Honeywell Inc. Magnetic head with means for assuring firm tape-head contact. 3,414,895, 12–3–68, Cl. 340—174.1.
Allen, James D., to Phillips Petroleum Co. Organic mercury compounds and methods for their preparation. 3,414,599, 12–3–68, Cl. 260—431.
Allen, Lloyd R., to National Research Corp. Apparatus for evaporation of low temperature semiconductor material by electron beam impingement on the material annd comprising means for draining electric charge from the material. 3,414,655, 12–3–68, Cl. 13—1.
Alley, Walter V., and R. H. Helgren, to Ammco Tools, Inc. Wheel gauge adapter. 3,414,222, 12–3–68, Cl. 248—226.
Allied Chemical Corp.: *See*—
Barton, Oliver A., and Littell. 3,414,541.
Bungo, William M., and Eckardt. 3,414,556.
Kelly, Walter R., and Lauder. 3,414,428.
Mason, Paul J. 3,414,526.
Vitrone, John. 3,414,542.
Woolf, Cyril. 3,414,654.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Becklus, Ivar. 3,414,660.
Flinth, Rune. 3,413,846.
Lindholm, Ingemar, Mueller and Mjorne. 3,414,438.
All-State Stamping Corp.: *See*—
Siegel, Norman H. 3,414,219.
Amadyne, Inc.: *See*—
Feroy, Arne. 3,414,006.
American Bosch Arma Corp.: *See*—
Chmura, Theodore S., and Voigt. 3,413,924.
Rosenberg, Merton I., and Bohaker. 3,414,771.
American Cast Iron Pipe Co.: *See*—
Snow, William E. 3,414,250.
American Cyanamide Co.: *See*—
Scanley, Clyde S. 3,414,552.
Yelverton, Roy L., Jr. 3,413,683.
American Enka Corp.: *See*—
Breazeale, Francis B. 3,413,701.
American Factors Associates, Ltd.: *See*—
Price, Frank B., Morroni, and Lucas. 3,414,436.
American Gas Association: *See*—
Granryd, Eric C. U. 3,413,815.
American Machine & Foundry Co.: *See*—
Rudd, Wallace C. 3,414,697.
American Optical Co.: *See*—
Snitzer, Elias. 3,414,837.
American Radiator & Standard Sanitary Corp.: *See*—
Gallie, Daniel G. 3,414,188.
American Safety Table Co., Inc.: *See*—
Spinrad, Malcom, and Hoverter. 3,413,944.
American Standard Inc.: *See*—
Merchant, Leo F. 3,414,009.
Merchant, Leo F., and Grahl. 3,414,014.
Woodward, Gary F. 3,414,712.
American Sterilizer Co.: *See*—
Brown, Gilbert G. 3,413,987.
American Warming & Ventilating, Inc., The: *See*—
Johnson, Edward H. 3,413,905.
Amet, Andre R., to Ste Linvosges. Undersheet for beds and the like. 3,413,665, 12–3–68, Cl. 5—334.
Amicone, Raymond G.: *See*—
Davey, Charles T., Amicone, and Goldie. 3,414,822.
Amlott, Norman J., and J. D. Karn, to General Motors Corp. Air cleaner and silencer assembly. 3,413,780, 12–3–68, Cl. 55—276.
Ammco Tools, Inc.: *See*—
Alley, Walter V., and Helgren. 3,414,222.
Ampex Corp.: *See*—
Dolby, Dale P. 3,414,683.
Amphenol Corp.: *See*—
Beucus, Abraham J., and Forde. 3,413,823.
Anand, Davinder K., to United States of America, Navy. Heat pipe control apparatus. 3,414,050, 12–3–68, Cl. 165—32.
Anchor Coupling Co., Inc.: *See*—
Nielsen, Jorgen L. 3,414,798.
Anderson, Albin R., and B. J. Sadewicz, to Western Electric Co., Inc. Apparatus for cutting and bending wire leads. 3,414,024, 12–3–68, Cl. 140—1.
Anderson, Greenwood & Co.: *See*—
Greenwood, Marvin H. 3,414,008.
Anderson, Lloyd E., Sr.: *See*—
Rock, James H., Anderson, and Buckwalter. 3,413,813.
Andersson, Louis. Tuned resonance muffler. 3,414,078, 12–3–68, Cl. 181—48.
Andrieu, Jean R.: *See*—
Leroy, Alphonse, Gijsemans, Peerts, Huiot, Martin, and Andrieu. 3,414,375.
Anger, Heinrich: *See*—
Bues, Curt, Granzin, Pfeilderer, and Anger. 3,414,084.
Anker-Werke Aktiengesellschaft: *See*—
Hergt, Martin, Klaar, and Fenrich. 3,414,714.
Anstalt fur die Entwicklung von Erfindurgen und gewerblichen Anwendungen ENERGA: *See*—
Batou, Boris. 3,413,923.

Anthony, Myron L.: *See*—
Perkins, Earl S., and Anthony. 3,414,901.
Apitz, Peter F.: *See*—
Cress, Vernor B., Jr., Apitz, Halamandaris, Wheeler and Hoyt. 3,414,876.
Appel, Arne, to North American Philips Co., Inc. Recording and/or playback apparatus. 3,414,269, 12–3–68, Cl. 274—4.
Appel, Rolf, to Olin Mathieson Chemical Corp. Bis (triphenylhalophosphoniminium) thionyl halides. 3,414,613, 12–3–68, Cl. 260—551.
Applebaum, Samuel B., and G. J. Crits, to Crane Co. Condensate purification process. 3,414,508, 12–3–68, Cl. 210—32.
Applied Physics Corp.: *See*—
Cary, Henry H. 3,414,356.
Applied Power Industries, Inc.: *See*—
Master, Wesley R. 3,413,835.
Archer, Giles A., and L. H. Sternbach, to Hoffmann-La Roche Inc. Process for preparing 1,3,4,5-tetrahydro-5-phenyl-2H-1,4-benzodiazepin-2-ones. 3,414,562, 12–3–68, Cl. 260—239.3.
Argus Chemical Corp.: *See*—
Hecker, Arthur C., Rosenbaum, and Perry. 3,414,532.
Arko, Robert E., to Teletype Corp. Record error correction system. 3,414,673, 12–3–68, Cl. 178—92.
Arko, Robert E., to Teletype Corp. Function suppressing mechanism for printing telegraph reperforators. 3,414,674, 12–3–68, Cl. 178—92.
Armbrust, Herbert: *See*—
Seefelder, Matthias, and Armbrust. 3,414,581.
Armour and Co.: *See*—
Nordstrom, Lars E., Wagomer, and Lollar. 3,414,366.
Thomas, Brice L. 3,414,031.
Armour Industrial Chemical Co.: *See*—
Baarson, Robert E., and Ray. 3,414,128.
Mosier, Benjamin, McCorkle, Du Brow, and Marsh. 3,414,517.
Armstrong Cork Co.: *See*—
Goodhue, George L. 3,413,743.
Arnold, Anthony M. Garment hanger. 3,414,176, 12–3–68, Cl. 223—88.
Arnold, George H., to The General Electric Co. Ltd. Shaft-coupling mechanisms. 3,413,874, 12–3–68, Cl. 74—822.
Aronson, David, to Harrworth, Inc. Controlled leakage, close clearance seal system. 3,414,274, 12–3–68, Cl. 277—15.
Artajo, Jose I. M. Diachronous electromagnetic coupling. 3,414,750, 12–3–68, Cl. 310—105.
Artig, James L., to Artig Products, Inc. Pet animal shelter. 3,413,958, 12–3–68, Cl. 119—15.
Artig Products, Inc.: *See*—
Artig, James L. 3,413,958.
Asahi Kasei Kabushiki Kaisha and Noguchi Institute, The: *See*—
Noyori, Gentaro, Honda, and Watanabe. 3,414,611.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Kakihana, Hidetake, and Seko. 3,414,300.
Aschwanden, Paul, to Aktiengesellschaft Fr. Mettler's Sohne Maschinenfabrik Arth. Thread guiding device having a movable thread guide. 3,414,205, 12–3–68, Cl. 242—43.
Ashton, Stanley J.: *See*—
Doyle, William M., and Ashton. 3,414,406.
Aspy, William L., Jr.: *See*—
Agett, Albert H., and Aspy. 3,413,697.
Atkin, Rupert L., to TRW Inc. Oil gallery equipped pistons and methods of making same. 3,413,897, 12–3–68, Cl. 92—186.
Atkin, Rupert L., and G. H. Drutchas, to TRW, Inc. Skid control system. 3,414,336, 12–3–68, Cl. 303—21.
Atlas Copco Aktiebolag: *See*—
Persson, Jan E. 3,414,189.
Atlas-Pacific Engineering Co.: *See*—
Ellis, Robert G., and Singleton. 3,414,110.
Attali, Georges, to Schlumberger Technology Corp. Induction logging apparatus having floating coils. 3,414,805, 12–3–68, Cl. 324—6.
Augustine, Paul C., Jr., to Evans Products Co. Freight bracing device. 3,413,931, 12–3–68, Cl. 105—369.
Auld, Samuel H., to Lear Jet Corp. Photoelectric motor speed control. 3,414,790, 12–3–68, Cl. 318—313.
Austin, Benjamin L., to Christensen Diamond Products Co. Apparatus and methods for cutting concrete surfaces. 3,414,327, 12–3–68, Cl. 299—1.
Automatic Electric Laboratories, Inc.: *See*—
Draayer, Johannes. 3,414,776.
Automobiles M. Berliet: *See*—
Massard, Andre. 3,413,966.
Avdel Ltd.: *See*—
Mewse, Charles and Mary. 3,414,253.
Ayson, Richard, to General Signal Corp. Centrifugal pump. 3,413,926, 12–3–68, Cl. 103—111.
B. J. Management Corp.: *See*—
Greenwall, Robert A., Jr. 3,414,696.
BPB Industries Ltd.: *See*—
Cafferata, Gerald W. 3,414,462.
Baak, Nils T. E. A., and C. F. Rapp, to Owens-Illinois, Inc. Sealed glass article of manufacture. 3,414,465, 12–3–68, Cl. 161—193.
Baarson, Robert E., and C. L. Ray, to Armour Industrial Chemical Co. Nitrogenous material fractions obtained from gilsonite in froth flotation. 3,414,128, 12–3–68, Cl. 209—167.
Baatrup, Johannes V., to Danfoss A/S. Compensated thermally-responsive automatic control system. 3,414,694, 12–3–68, Cl. 337—1.
Babcock & Wilcox Co., The: *See*—
Schluderberg, Donald C., Winders, and Dossett. 3,414,473.
Wolfe, William C. 3,414,198.
Bach, Hartwig C., to Monsanto Co. Fully conjugated aromatic polymers. 3,414,545, 12–3–68, Cl. 260—78.
Bachman Bros., Inc.: *See*—
McNeill, Albert G. 3,414,350.
Baczkowski, Harry A., R. S. Harrison, and C. K. Weslock, to Ford Motor Co. Carburetor having a cold starting enrichment mechanism. 3,414,243, 12–3–68, Cl. 261—39.
Badcock, David N. W., to Kango Electric Hammers Ltd. Electric motors. 3,414,747, 12–3–68, Cl. 310—50.
Badcock, David N. W., to Kango Electric Hammers Ltd. Portable tools. 3,414,748, 12–3–68, Cl. 310—50.
Bade, Walter H.: *See*—
Justus, Edgar J., Dahl, Bade, and Hamilton. 3,414,044.
Badische Aniline- & Soda-Fabrik Aktiengesellschaft: *See*—
Buschmann, Karl, Meyer, Nonnenmacher, and Schweitzer. 3,414,632.
Jung, Hans, and Zapf. 3,414,240.
Seefelder, Matthias, and Armbrust. 3,414,581.
Trieschmann, Hans-Georg, and Unterstenhoefer. 3,414,533.
Winderl, Siegfried, Hoffmann, Palm, Nohe, Baer, and Harders. 3,414,606.
Baer, Karl: *See*—
Winderl, Seigfried, Hoffmann, Palm, Nohe, Baer, and Harders. 3,414,606.
Baggen, Hubert, J. Effern, and W. Kahlert, to Glanztoff AG. Warp beam for textile apparatus. 3,414,212, 12–3–68, Cl. 242—118.7.
Bak, Alex M., and R. P. Wojcik, to International Harvester Co. Paper padding and transport device. 3,413,668, 12–3–68, Cl. 11—1.
Baker, Basil O., and R. J. Wheldon, to The M-O Valve Co. Ltd. Erosion pre.ention in gas-filled electric discharge device. 3,414,755, 12–3–68, Cl. 313—198.
Baker Oil Tools, Inc.: *See*—
De Rochemont, John F. 3,414,058.
Balentine, John W.: *See*—
Iannicelli, Joseph, Whitley, and Balentine. 3,414,422.
Ballard, Wesley D., 50% to H. V. Gonzales. Junked metal compressing smasher. 3,413,914, 12–3–68, Cl. 100—100.
Banks, William P.: *See*—
Sudbury, John D., and Banks. 3,414,496.
Banks, William P., to Continental Oil Co. Corrosion inhibitor for phosphoric acid. 3,414,376, 12–3–68, Cl. 23—165.
Bankston, Dale M., to Pan American Petroleum Corp. Film injector. 3,414,004, 12–3–68, Cl. 137—237.
Barden, Richard H. Coil with adjustable permeability. 3,414,857, 12–3–68, Cl. 336—233.
Barényi, Béla: *See*—
Wilfert, Karl, and Barényi. 3,414,290.
Barnes Engineering Co.: *See*—
Engel, Frederik, and Wiebe. 3,413,852.
Barnes, Wendell A., and N. W. Franke, to Gulf Research & Development Co. Polyvinyl chloride stabilized by oxamides. 3,414,535, 12–3–68, Cl. 260—31.8.
Barr, Harry S., Jr.: *See*—
Ford, David M., Morrow, and Barr. 3,413,677.
Barr, Thomas A., Jr., and R. F. Mayo, to United States of America, Army. Polynomial gas flow regulator system. 3,414,192, 12–3–68, Cl. 235—200.
Barrington, Jonathan, to IRC, Inc. Electrical resistor. 3,414,864, 12–3–68, Cl. 338—300.
Barron, Benjamin, to Lear Siegler, Inc. Magnetic transmission listen switch for sonar. 3,414,872, 12–3–68, Cl. 340—3.
Barron, John, and V. A. J. Maller, to International Computers and Tabulators Ltd. Electrical switching matrices. 3,414,882, 12–3–68, Cl. 340—166.
Bartl, Herbert: *See*—
Hardt, Dietrich, Bartl, Göbel, and Dinges. 3,414,638.
Bartl, Herbert, G. Muller, and R. Merten, to Farbenfabriken Bayer Aktiengesellschaft. Addition polymers of dicyclopentadiene isocyanates and vinylic compounds. 3,414,548, 12–3–68, Cl. 260—85.5.
Bartlett, Homer E., and L. Pietsch, to Radiation Inc. Antenna system with dielectric horn structure interposed between the source and lens. 3,414,903, 12–3–68, Cl. 343—753.
Bartlett, Richard F., C. F. W. Ekman, and J. F. Plan, to Itek Corp. Recording process. 3,414,410, 12–3–68, Cl. 96—27.
Bartlett, Woodrow W., to Gem Corp. Automotive air filter. 3,413,782, 12–3–68, Cl. 55—485.
Barton, David M., to Monsanto Co. Analog-to-digital converter. 3,414,898, 12–3–68, Cl. 340—347.
Barton, Oliver A., and W. W. Littell, to Allied Chemical Corp. Thermoplastic resin reaction product of 1,4-bis(p-hydroxycumyl)benzene with epichlorohydrin. 3,414,541, 12–3–68, Cl. 260—47.
Barton, Robert L.: *See*—
Robinson, Martin, and Barton. 3,414,214.
Basile, Norman K., D. R. Yearwood, and D. W. Brideweser, to J. J. McMullen. Leak detection system. 3,413,840, 12–3–68, Cl. 73—40.
Batou, Boris, to Anstalt fur die Entwicklung von Erfindurgen und gewerblichen Anwendungen ENERGA. Rifle gernade. 3,413,923, 12–3–68, Cl. 102—65.2.
Battarel, Claude P., to Laboratory for Electronics, Inc. Pulse rate multiplier. 3,414,720, 12–3–68, Cl. 235—164.
Baudé, Lucien L., to The Steelcraft Mfg. Co. Edge adjustment device for doors. 3,413,762, 12–3–68, Cl. 49—501.
Bauer, Robert F., H. Stratton, and A. D. Rhodes, to Shell Oil Co. Drilling. 3,414,067, 12–3–68, Cl. 175—7.
Baßerle, Kurt: *See*—
Moser, Kuno, and Baßerle. 3,413,719.
Baugher, John D.: *See*—
Glasgow, Paul W., La Falce, and Baugher. 3,414,803.
Baum, Peter, to Robinson, Lewis and Rubin. Method of manufacturing ornamental plastic products. 3,414,642, 12–3–68, Cl. 264—73.
Baumann, Kurt, to R. Krups. Dry electric razor with short and long hair cutters. 3,413,718, 12–3–68, Cl. 30—34.1.
Baumgartner, Ludwig, to Pfrimmer & Co. Process and composition for sterilizing surgical sutures. 3,414,370, 12–3–68, Cl. 21—58.

Bauwens, Robert, and J. Molliere, to Ugine Kuhlmann (Societe Anonyme). Production of chlorine. 3,414,377, 12–3–68, Cl. 23—167.

Bavers, Elliott, to Rotodyne Mfg. Corp. Rotational molding apparatus for thermoplastic articles. 3,413,687, 12–3–68, Cl. 18—26.

Beach, Barry O., to Dunlop Rubber Co., Ltd. Flexible diaphragms and methods and apparatus for the manufacture thereof. 3,414,449, 12–3–68, Cl. 156—173.

Beard, Colin C., and A. D. Cross, to Syntex Corp. 6,7-halomethylene androstanes and estranes and processes for their preparation. 3,414,592, 12–3–68, Cl. 260—397.4.

Beck, Ferdinand K., to Wiener Schwachstromwerke Gesellschaft m.b.H. Automatic control system. 3,414,657, 12–3–68, Cl. 13—13.

Beck, Nils. Reclining lawn chair. 3,414,321, 12–3–68, Cl. 297—29.

Becker, Daniel B. Artificial hand having a body constructed from separate molded plastic parts for easier replacement of damaged parts. 3,413,658, 12–3–68, Cl. 3—12.7.

Beckerleg, Bruce A.: *See*—
Chojnowski, Boguslaw, and Beckerleg. 3,414,052.

Beckius, Ivar, to Allmanna Svenska Elektriska Aktiebolaget. Means for protection against and/or indication of faults in coreless induction furnaces, heating furnaces and the like. 3,414,660, 12–3–68. Cl. 13—27.

Beckmann, Dieter: *See*—
Vogliano, German, and Beckmann. 3,413,656.

Bedford, Burnice D., and G. W. Kessler, to General Electric Co. High voltage transformer type heater for heating fluids. 3,414,698, 12–3–68, Cl. 219—10.51.

Behnke, Howard N., to Collins Machinery Corp. Universal supporting and driving apparatus for pipe subjected to threading. 3,413,667, 12–3–68, Cl. 10—89.

Behr, Heinrich: *See*—
Beulker, Franz, and Behr. 3,414,227.

Behrens, Jurgen: *See*—
Schongs, Bernhard M., Lau, and Behrens. 3,413,804.

Behrens, Knut F., and W. Stein. Methods of producing killed steel. 3,414,042, 12–3–68, Cl. 164—57.

Behrns, William E., ½ % to B. E. Adams. Container for igniting charcoal and the like. 3,413,935, 12–3–68, Cl. 110—1.

Belke, William H., J. W. Crayton, D. E. Evans, and W. E. Streight, to Caterpillar Tractor Co. Fuel system and electrical control therefor. 3,413,806, 12–3–68, Cl. 60—39.28.

Bell Aerospace Corp.: *See*—
Rogers, Narvel L. 3,414,489.

Bell, Charles C., and K. W. Niederer, to Leesona Corp. Pneumatic sensing system. 3,413,794, 12–3–68, Cl. 57—80.

Bell Telephone Laboratories, Inc.: *See*—
Bishop, John D., and Ianniello. 3,414,801.
Bridges, Thomas J., and Rigrod. 3,414,839.
Copeland, John A., III. 3,414,843.
Di Domenico, Mauro, Jr., and Seidel. 3,414,840.
Gershenzon, Murray, Thomas, and Trumbore. 3,414,441.
Gummel, Hermann K., and Rideout. 3,414,689.
Harrigan, Thomas G., and Jewett. 3,414,802.
Lucky, Robert W. 3,414,819.
Lucky, Robert W. 3,414,845.
Patel, Chandra K. N. 3,414,728.

Beloit Corp.: *See*—
Justus, Edgar J., Dahl, Bade, and Hamilton. 3,414,044.

Beltone Electronics Corp.: *See*—
Kratochvil, Robert A. 3,414,664.

Bencur, Arthur W.: *See*—
Shinn, Ernest R. 3,413,876.

Bendix Corp., The: *See*—
Eckermann, Alfred E. 3,414,213.
Spencer, Glenn S. 3,414,100.
Steinhauser, Hayes B. 3,414,900.

Benerito, Ruth R.: *See*—
Gonzales, Elwood J., and Benerito. 3,414,369.

Bennett, James R., to Evans Products Co. Bulkhead. 3,413,932, 12–3–68, Cl. 105—376.

Berger, Abe: *See*—
Wilkus, Edward V., and Berger. 3,414,597.

Bernard, George G., to Union Oil Co. of California. Secondary recovery of petroleum by surfactant-water flooding. 3,414,054, 12–3–68, Cl. 166—9.

Bernstein, Albert A. Door Knob, lock and slide bolt protector. 3,414,306, 12–3–68, Cl. 292—1.

Beroza, Morton, and H. Goldsmith. Carbon skeleton determinator. 3,414,385, 12–3–68, Cl. 23—288.

Bert, Andre. Gas lighter having a disposable fuel container. 3,414,364, 12–3–68, Cl. 431—143.

Bertelsmann, Dieter: *See*—
Von Wolff, Wolf, and Bertelsmann. 3,413,887.

Bertin & Cie: *See*—
Bertin, Jean H. 3,414,075.
Bertin, Jean H., and Jacquot. 3,414,076.

Bertin, Jean H., to Bertin & Cie. Flexible skirting system for surface effect machines. 3,414,075, 12–3–68, Cl. 180—121.

Bertin, Jean H., and M. J. Jacquot, to Bertin & Cie. Gas-cushion devices intended to support or guide a movable load. 3,414,076, 12–3–68, Cl. 180—124.

Bertoglio, Guido, to Real Patentauswertung Anstalt. Process for manufacturing points for ball-point pens. 3,413,945, 12–3–68, Cl. 113—32.

Berzups, Oswald, to North American Philips Co., Inc. Apparatus for regenerating a water softener in combination with a washing machine. 3,414,130, 12–3–68, Cl. 210—97.

Beucus, Abraham J., and P. J. Forde, to Amphenol Corp. Apparatus for production of patterned pile fabric. 3,413,823, 12–3–68, Cl. 66—9.

Beulker, Franz, and H. Behr, to Gewerkschaft Eisenhutte Westfalia. Foot plate for pit props. 3,414,227, 12–3–68, Cl. 248—357.

Beynon, Eric, to Union Carbide Corp. Corrosion inhibitor. 3,414,519, 12–3–68, Cl. 252—75.

Bickers, Arthur, and A. F. Evers, to Plessey-UK Ltd. Radio receiver having a plurality of I.F. stages with means to reject interfering signals. 3,414,821, 12–3–68, Cl. 325—433.

Bidard, Rene, to Cie Electro-Mecanique. Power plant for transforming energy by utilization of the magnetohydrodynamic effect. 3,414,745, 12–3–68, Cl. 310—11.

Bidule, Delberx W. Free rolling sinker and leader connecting link. 3,413,751, 12–3–68, Cl. 43—44.97.

Binder, Richard, and P. Geibel, to Fichtel & Sachs A.G. Driven clutch plate with flexible center. 3,414,101, 12–3–68, Cl. 192—106.2.

Binon, Fernand: *See*—
Descamps, Marcel, and Binon. 3,414,582.

Birenbaum, Leo, to Polytechnic Institute of Brooklyn. Voltage standing wave indicators for H-guides. 3,414,810, 12–3–68, Cl. 324—58.

Bishoff, Walter A., Sr., and L. B. Ulery, to Logan Co. Woven wire partition. 3,414,237, 12–3–68, Cl. 256—24.

Bishop, Edwin V. Power loading semi-trailer. 3,414,148, 12–3–68, Cl. 214—505.

Bishop, John D., and J. W. Ianniello, to Bell Telephone Laboratories, Inc. Inverter symmetry correction circuit. 3,414,801, 12–3–68, Cl. 321—16.

Biszko, Raymond. Electrical plug. 3,414,870, 12–3–68, Cl. 339—195.

Bixby, Leo A., to Rockwell-Standard Co. Multi-speed planetary drive axle assembly. 3,413,873, 12–3–68, Cl. 74—695.

Bixby, Peter H., to Resource Processors, Inc. Talc beneficiation method. 3,414,201, 12–3–68, Cl. 241—4.

Bloch, Herman S., to Universal Oil Products Co. Desalinization of aqueous solutions. 3,414,509, 12–3–68, Cl. 210—32.

Bloom, Carl, to Worthington Corp. Apparatus for measuring and indicating fluid pressure across a fluid restriction. 3,413,855, 12–3–68, Cl. 73—389.

Blowers, Ivan L., to Kal-Equip Co. Sensitive high current ammeter having plural magnetic armatures responsive to parallel conductors. 3,414,817, 12–3–68, Cl. 324—146.

Boatman, William D., to Dymo Industries, Inc. Duplicating machine printing drum mounting construction. 3,413,921, 12–3–68, Cl. 101—248.

Bobkowicz, Andrew J.: *See*—
Bobkowicz, Emilian and A. J. 3,414,444.

Bobkowicz, Emilian and A. J. Method of making a parallel fiberweb. 3,414,444, 12–3–68, Cl. 156—62.4.

Bodamer, George W.: *See*—
Nordbiom, George F., and Bodamer. 3,414,486.

Bodine, Albert G. Apparatus for crushing rock material and the like utilizing complex sonic wave action. 3,414,203, 12–3–68, Cl. 241—202.

Boehringer Ingelheim G.m.b.H.: *See*—
Keck, Johannes. 3,414,577.

Bohaker, Walter G.: *See*—
Rosenberg, Merton I., and Bohaker. 3,414,771.

Bohm, John, to Northern Electric Co. Ltd. Integrated parametric amplifier consisting of a material with both semiconductive and piezoelectric properties. 3,414,779, 12–3–68, Cl. 317—234.

Boige, Jean. Process for the manufacture of hydroxocobalamine from cyanocobalamine. 3,414,561, 12–3–68, Cl. 260—211.7.

Bojner, Gosta: *See*—
Bojner, Gustav and Gosta. 3,413,937.

Bojner, Gustav and Gosta, to AB Torkapparater. Method and an arrangement for treating sewage wastes and the like. 3,413,937, 12–3–68, Cl. 110—8.

Bolkow Gesellschaft mit beschrankter Haftung: *See*—
Kaufmann, Michael. 3,413,810.

Bomar, Horace L.: *See*—
White, Harold. 3,413,999.

Bonilla, Charles F., to National Lead Co. Shipping container for radioactive material including safety shield means. 3,414,727, 12–3–68, Cl. 250—108.

Borg-Warner Corp.: *See*—
Kelbel, Donald W. 3,414,098.
Kimball, Jack E. 3,413,734.
Kochanek, George E. 3,413 827.
Konrad, Philip S. 3,414,734.

Boser, Ronald J. Auxiliary feed mechanism for a sewing machine. 3,413,943, 12–3–68, Cl. 112—214.

Bossard, Paul A., to Ets. Carpano & Pons. Synchronous electrical motor. 3,414,751, 12–3–68, Cl. 310—164.

Boucher, Henry, Fils & Cie: *See*—
Hochart, Roger. 3,414,471.

Bouteleux, Rene. Device for balanced homogenization of air and liquid fuel mixtures in internal combustion engines. 3,414,242. 12–3–68, Cl. 261—18.

Bowers, John O., Jr., to Dynatronics, Inc. Field effect transistor gating circuit. 3,414,737, 12–3–68, Cl. 307—243.

Bowes, John G.: *See*—
Rosekrans, John N., Jr., and Bowes. 3,414,284.

Bowles Engineering Corp.: *See*—
Sowers, Edwin U. 3,413,994.

Bowles, Romald E. Visual readout device. 3,413,744, 12–3–68, Cl. 40—28.

Bowles, Romald E., and B. M. Horton. Fluid amplifier. 3,413,995, 12–3–68, Cl. 137—81.5.

Boryum, Asmund: *See*—
Stotler, Harold H., and Boyum. 3,414,480.

Braumann, Gundokar, to Siemens Aktiengesellschaft. Multiple contact relay structure and system. 3,414,851, 12–3–68, Cl. 335—106.

Braun Aktiengesellschaft: *See*—
Johannsen, Hans, and Keller. 3,414,352.

Bray, Lane A., and R. L. Moore, to United States of America, Atomic Energy Commission. Silver separation from an acid solution. 3,414,403, 12–3–68, Cl. 75—118.

Breazeale, Francis B., to American Enka Corp. Production of entangled novelty yarn. 3,413,701, 12–3–68, Cl. 28—72.

Bredtschneider, Walter, and E. Kefer, to Siemens Aktiengesellschaft. Steam power plants. 3,413,809, 12–3–68, Cl. 60—104.

Brehm, Richard K.: *See*—
Fasti, William G., and Brehm. 3,414,355.

Brennan, James J., Jr.: *See*—
Kraus, Gerard, and Brennan. 3,414,557.

Bresson, Clarence R., and R. L. Cobb, to Phillips Petroleum Co. N-alkylated derivatives of 2-amino-2-hydrocarbylthiomethyl or mercaptomethyl-1,3-propanediols. 3,414,617, 12–3–68, Cl. 260—570.5.

Bresson, Clarence R., and R. L. Cobb, to Phillips Petroleum Co. Multifunctional amine compounds and methods for their preparation. 3,414,620, 12–3–68, Cl. 260—584.

Bresson, Clarence R., and R. L. Cobb, to Phillips Petroleum Co. Method for the preparation of amines from oxazolines. 3,414,621, 12–3–68, Cl. 260—584.

Breuer, Hermann, H. Hoehn, and E. Roesch, to E. R. Squibb & Sons, Inc. Certain 3-alkylphenyl-quinazolones. 3,414,573, 12–3–68, Cl. 260—256.4.

Breuning, Ernst, to Eugen C. Maier Metallverarbeitung, G.m.b.H. Flyer for spinning machines. 3,413,795, 12–3–68, Cl. 57—115.

Brewer, Robert F., and B. Piechocki, to Western Electric Co. Method of making palladium copper contact for soldering. 3,413,711, 12–3–68, Cl. 29—473.1.

Brichard, Edgard, to Glaverbel S.A. Process for homogenizing glass by gas injection. 3,414,396, 12–3–68, Cl. 65—134.

Brichard, Edgard, to Glaverbel S.A. Apparatus for coating the surface of plates uniformly by cathode sputtering. 3,414,503, 12–3–68, Cl. 204—298.

Brideweser, Donald W.: *See*—
Basile, Norman K., Yearwood, and Brideweser. 3,413,840.

Bridges, Thomas J., and W. W. Rigrod, to Bell Telephone Laboratories, Inc. Unidirectional ring laser. 3,414,839, 12–3–68, Cl. 331—94.5.

Brill, Arvel A. Flavored cigarette. 3,413,978, 12–3–68, Cl. 131—4.

Brill, Frank D.: *See*—
Schwertfeger, Owen J., and Brill. 3,413,907.

Bristol Siddeley Engines Ltd.: *See*—
Haworth, Lionel. 3,413,872.

British Welding Research Assn.: *See*—
Roberts, Thomas M. 3,413,891.

Broad, Robert L., Jr. Thaw indicator. 3,414,415, 12–3–68, Cl. 99—192.

Broadhead, Samuel L., Jr., to Collins Radio Co. Frequency modulated reference controlled oscillator. 3,414,842, 12–3–68, Cl. 332—19.

Brogg, Armando: *See*—
Galli De Paratesi, Sergio, Genet, Ghiurghi, Agazzi, Morbello, and Brogg. 3,414,476.

Brosk, Doris A. Combined garment hanger and receptacle. 3,414,175, 12–3–68, Cl. 223—85.

Brosseau, Louis P. Boundary frame members for moulding panels. 3,414,230, 12–3–68, Cl. 249—193.

Brown, Cicero C., and J. D. Mott, said Mott assor. to Brown Oil Tools, Inc. Wellhead apparatus. 3,414,056, 12–3–68, Cl. 166—89.

Brown, Donald L.: *See*—
Gilbreath, Benjamin F., and Brown. 3,414,778.

Brown, Edgar A., to International Business Machines Corp. Record card feeding apparatus. 3,414,258, 12–3–68, Cl. 271—44.

Brown, Gilbert G., to American Sterilizer Co. Washer sterilizer and control. 3,413,987, 12–3–68, Cl. 134—46.

Brown, Gordon E., and R. R. Huff, to Monsanto Co. Novel wood structures and their manufacture. 3,414,461, 12–3–68, Cl. 161—151.

Brown, Herbert L., Jr.: *See*—
Helms, John D., and Brown. 3,414,487.

Brown, James R., J. Marton, and J. R. Rowley, to West Virginia Pulp and Paper Co. Treatment of flash dried pulp to reduce modules therein. 3,414,469, 12–3–68, Cl. 162—84.

Brown Oil Tools, Inc.: *See*—
Brown, Cicero C., and Mott. 3,414,056.

Brubaker, Joseph D.: *See*—
Stafford, Owen L., and Brubaker. 3,414,575.

Bruns, William H., L. H. Diamond, and H. Jacoby, to Otis Elevator Co. Photocell position detector for elevator cars including a perforated tape uniquely encoded for each position with responsive control means. 3,414,088, 12–3–68, Cl. 187—29.

Bruss, Howard G., Jr., W. J. Schlientz, and B. E. Wiens, to Owens-Illinois, Inc. Method of rendering glass surfaces abrasion-resistant and article produced. 3,414,429, 12–3–68, Cl. 117—69.

Buchanan, James B., to E. I. du Pont de Nemours and Co. Mixtures of EPN and hydroxamate carbamates. 3,414,652, 12–3–68, Cl. 424—218.

Buchsieb, Louis D. Table game simulating a football contest. 3,414,263. 12–3–68, Cl. 273—94.

Buckwalter, Milton T.: *See*—
Rock, James H., Anderson, and Buckwalter. 3,413,813.

Budd Co., The: *See*—
Cooper, William C. 3,414,703.
Graves, William L. 3,414,450.
Lair, Wilbert M., and Taylor. 3,414,516.
Payne, James A. 3,414,334.

Buell, Heinz, to General Precission Systems Inc. Apparatus for calibrating doppler-inertial navigational systems. 3,414,899. 12–3–68, Cl. 343—9.

Bues, Curt, H.-A. Grazin, G. Pfleiderer, and H. Anger, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process of lubricating and sealing roller bearings and articles made from the process. 3,414,084. 12–3–68, Cl. 184—1.

Buhl, Frank C., to Hercules Inc. Process of dewatering a concentrated sewage slurry. 3,414,514, 12–3–68, Cl. 210—64.

Buhl, Frank C., and R. D. Lees, to Hercules Inc. Process of treating a digested diluted sewage slurry. 3,414,513, 12–3–68, Cl. 210—54.

Bungo, William M., and C. R. Eckardt, to Allied Chemical Corp. Chlorinated polyethylene. 3,414,556, 12–3–68, Cl. 260—94.9.

Bunner, Gale J.: *See*—
Moran, Robert J., Shneider, Masterson, and Bunner. 3,414,106.

Burg, Fred G., to Houdaille Industries, Inc. Turret machine having tool store. 3,413,702, 12–3–68, Cl. 29—26.

Burroughs Corp.: *See*—
Coccagna, Edmund G. 3,414,893.
Hagee, John D. 3,414,736.
Lacher, William A. 3,414,799.
Wells, Frank W. 3,414,886.

Burt, William G., Jr., to Microwave Associates, Inc. Radio frequency coaxial switches. 3,414,849, 12–3–68, Cl. 333—97.

Buschmann, Karl, H. Meyer, H. Nonnenmacher, and A. Schweitzer, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Process and apparatus for cracking hydrocarbons. 3,414,632, 12–3–68, Cl. 260—683.

Butler, De Forest D., to Square D Co. Afterset insert assembly for an underfloor wiring duct. 3,414,298, 12–3–68, Cl. 285—209.

Butler National Corp.: *See*—
Perkins, Earl S., and Anthony. 3,414,901.

Butler, Richard A., Jr., E. P. Ziedells, and R. T. Martin, to R. A. Butler, Jr. Apparatus for controlling the unwinding of web. 3,414,208, 12–3–68, Cl. 242—58.1.

Butler, Stedman M. Oil filter cleaner. 3,413,988, 12–3–68, Cl. 134—102.

Buy-Al, R. P. Fleux, G. A. Giralt, and R. N. Lacoste, to Centre National de la Recherche Scientifique. Katharometer bridge. 3,413,837, 12–3–68, Cl. 73—27.

Byrne Doors, Inc.: *See*—
Davidson, Charles S. 3,413,757.

Bytrex, Inc.: *See*—
Pugnaire, Jean-Pierre A. 3,413,845.

CKD Praha, Oborovy Podnik: *See*—
Pospisil, Jaroslav, Pisek, Hubacek, and Kucerik. 3,413,783.

Cabe, Ray W., to Tamar Electronics Industries, Inc. Blankout sign. 3,413,745, 12–3–68, Cl. 40—132.

Cafferata, Gerald W., to BPB Industries Ltd. Gypsum articles resistant to erosion by water and a method for their production. 3,414,462, 12–3–68, Cl. 161—166.

Cahlik, Jim: *See*—
Taylor, Norris O., Uhler, Gardella, and Cahlik. 3,413,324.

Cairns, John P., and W. Hepworth, to Imperial Chemical. 7-N-dodecyloxy and 7-benzyloxy-4-hydroxy-3-carbalkoxy quinolines. 3,414,576, 12–3–68, Cl. 260—287.

Cakora, Henry J., to Tazewell Machine Works, Inc. Apparatus for separating foundry sand. 3,414,125, 12–3–68, Cl. 209—1.

Calabrese, Frank. Ship hold structure for loading of palletized cargo. 3,414,145, 12–3–68, Cl. 214—15.

California Institute Research Foundation: *See*—
Motta, Nathaniel. 3,414,774.

Callahan, James L.: *See*—
Grasselli, Robert K., and Callahan. 3,414,631.

Calmon, Calvin, to Ritter Pfaudler Corp. Method for treating high hardness water having major amounts of sodium therein. 3,414,507, 12–3–68, Cl. 210—32.

Calvert, William L., to Union Carbide Corp. Seal barriers for thermoplastic bags. 3,413,898, 12–3–68, Cl. 93—35.

Campbell, Clyde D.: *See*—
Cross, James M., Campbell, and Metzger. 3,414,619.

Campolong, Joseph F., to Laboratory for Electronics Inc. Centrifugal pump having thrust balancing means. 3,413,925, 12–3–68, Cl. 103—87.

Canadian Industries Ltd.: *See*—
Sikora, Josef. 3,414,527.

Canadian Patents and Development Ltd.: *See*—
Murphy, Beverley E. P. 3,414,383.
Stedman, Donald F. 3,414,378.

Canciani, Clemente: *See*—
Garetto, Ginseppe, and Canciani. 3,414,640.

Cane Machinery & Engineering Co., Inc.: *See*—
Willett, Harold A. 3,414,285.

Cantor, Harold: *See*—
Soble, Abraham, and Cantor. 3,413,977.

Carathanassis, Emmanuel: *See*—
Doundoulakis, George J., and Carathanassis. 3,414,437.

Carbaugh, Chester W. Method for edge joining wood veneers. 3,413,710, 12–3–68, Cl. 29—429.

Carey, William R.: *See*—
Oldberg, Sidney, and Carey. 3,414,292.

Carlberg, Lawrence G., and F. Shafizadeh, to Weyerhaeuser Co. Polyfunctional levoglucosan ethers. 3,414,560, 12–3–68, Cl. 260—209.

Carlson, Don B., and T. B. Haufe, to Universal Oil Products Co. Process for separating ethylbenzene from C_8 aromatic hydrocarbons by super-distillation with vapor compression-reboiler heat exchange. 3,414,484. 12–3–68, Cl. 203—26.

Caron, Oswald J. B. Automobile headlight system. 3,414,722, 12–3–68, Cl. 240—7.1.

Carr, William F., to McDonnell Douglas Corp. Connection indicator for connector having a resistive pin. 3,414,806, 12–3–68, Cl. 324—65.

Carrier Corp.: *See*—
Leonard, Louis H., Jr. 3,414,051.

Carroll, Keith J.: *See*—
Laquer, Henry L., Carroll, and Hammel. 3,414,777.

Carter, Glenn W., to Dale Electronics, Inc. Method and apparatus for testing the resistance characteristics of self-heated electrical resistors. 3,414,811, 12–3–68, Cl. 324—62.

Carter, J. Warne. Apparatus for making laminated webs of filamentary reinforcing material. 3,414,453, 12–3–68, Cl. 156—426.

Cary, Henry H., to Applied Physics Corp. Monochromator having linear readout of wavenumber. 3,414,356, 12–3–68, Cl. 356—100.

Casey, William E., and H. L. Seiden, to Vend-A-Key Corp. Automatic key duplicating machine. 3,413,892, 12–3–68, Cl. 90—13.05.

Cash, Vernon T.: *See*—
Wilson, John H., and Cash. 3,413,766.

Caswell, Dwight A. Microwave isolator. 3,414,848, 12–3–68, Cl. 333—24.2.

Catanzaro, Eugene W., to Technicon Corp. Continuous dilution apparatus. 3,414,238, 12–3–68, Cl. 259—4.

Caterpillar Tractor Co.: *See*—
Belke, William H., Crayton, Evans, and Streight. 3,413,806.
Kress, Ralph H., Medley, and Merritt. 3,413,894.
Medley, Jackson C. 3,414,289.

Catino, Sigmund C., and A. F. Strobel, to GAF Corp. Sunscreening methods. 3,414,650, 12–3–68, Cl. 424—60.

Caywood, James A., and W. J. Howard, to Ford Motor Co. Automatic backhoe unit for use with industrial trucks and tractors. 3,414,146, 12–3–68, Cl. 214—138.

Cee-Kay Industries, Inc.: *See*—
Sejda, Henry J. 3,414,451.

Celanese Corp.: *See*—
Myles, William J., and Kunkel. 3,414,644.
Winch, Allen R. 3,413,825.

Central Electricity Generating Board: *See*—
Chojnowski, Bogusław, and Beckerleg. 3,414,052.

Centre Electronique Horloger S.A.: *See*—
Schneider, Henry C. 3,414,089.

Centre National de la Recherche Scientifique: *See*—
Buy-Ai, Fleux, Girald, and Lacoste. 3,413,837.
Paulus, Max, and Guillaud. 3,414,372.

Chabardes, Pierre J. A., P. Gandilhon, C. C. D. Grard, and M. P. F. Thiers, to Rhone-Poulenc S.A. Organotricarbonyl ferrates and the preparation thereof. 3,414,600, 12–3–68, Cl. 260—439.

Chacon, Ralph L. Method for the selective control of yellow oxalis with thiocyanate. 3,414,398, 12–3–68, Cl. 71—65.

Chameroy, Jean, to Societe Anonyme dite: Groupement Atomique Alsacienne Atlantique. Ionization chamber for high-tension alternating current operation. 3,414,726, 12–3–68, Cl. 250—83.6.

Champion Spark Plug Co.: *See*—
Sankovich, Stanley. 3,413,726.

Chance, A. B., Co.: *See*—
Wacht, Raymond J., and Eckels. 3,414,079.

Chandler Evans Inc.: *See*—
Nash, Jack O. 3,414,216.

Chapman, Ronald H., to Motorola, Inc. Decoder for digital pulse code including transistorized counters. 3,414,881, 12–3–68, Cl. 340—164.

Chapman, Roy, to Imperial Chemical Industries Ltd. Treatment of oriented crystalline polyester filaments. 3,413,797, 12–3–68, Cl. 57—140.

Chase, Harry H. Golf tee with seat formed by coacting central part and radiating petals. 3,414,268, 12–3–68, Cl. 273—211.

Chave, Charles T., to Stone & Webster Engineering Corp. Nuclear reactor direct pressure suppression containment. 3,414,472, 12–3–68, Cl. 176—37.

Chemical Construction Corp.: *See*—
Sama, Saverio A. 3,414,247.

Chemische Fabrik von Heyden A.G.: *See*—
Höhn, Hans. 3,414,580.

Cherbuin, Fernand: *See*—
Dubois, Georges, and Cherbuin. 3,413,800.

Chervenak, Michael C.: *See*—
Keith, Percival C., and Chervenak. 3,414,505.

Chicago Pneumatic Tool Co.: *See*—
Wallace, William K. 3,414,066.

Chmura, Theodore S., and M. H. Voigt, to American Bosch Arma Corp. Fuel injection pump conversion arrangement and method. 3,413,924, 12–3–68, Cl. 103—2.

Chojnowski, Bogusław, and B. A. Beckerleg, to Central Electricity Generating Board. Tubular heat exchangers. 3,414,052, 12–3–68, Cl. 165—164.

Chostner, Chester R. Shoe rack and carrying case. 3,414,093, 12–3–68, Cl. 190—16.

Chris-Craft Industries, Inc.: *See*—
Coll, Harry H. 3,413,948.

Christensen Diamond Products Co.: *See*—
Austin, Benjamin L. 3,414,327.

Christine, William C., and J. E. Pierce, to A.E.I. Corp. Portion packed soluble food product package. 3,414,414, 12–3–68, Cl. 99—171.

Ciba Ltd.: *See*—
Goerg, Alfred. 3,414,384.

Cie Electro-Mecanique: *See*—
Bidard, Rene. 3,414,745.

Cities Service Research and Development Co.: *See*—
Mattix, Emory D. 3,414,386.

Ciurana. Jose V., and V. V. Ciurana. Device for grinding engine valves. 3,413,763, 12–3–68, Cl. 51—29.

Ciurana, Vicente V.: *See*—
Ciurana, Jose V., and V. V. 3,413,763.

Clark Equipment Co.: *See*—
Sisson, Ronald L. 3,413,928.
Sisson. Ronald L., and Shreve. 3,413,927.

Clark, George L., and R. F. Wuerker, to TRW Inc. Q-Switched laser. 3,414,836, 12–3–68, Cl. 331—94.5.

Clark, Kendall, and W. J. Schuelke, to International Business Machines Corp. Method of and apparatus for mechanically testing the quality of bonded joints. 3,413,839, 12–3–68, Cl. 73—37.

Clark, Myron A., to Westinghouse Electric Corp. Transportation devices having movable handrails. 3,414,109, 12–3–68, Cl. 198—18.

Clarke, Robert M.: *See*—
Pearson, Arthur S., Ford, and Clarke. 3,413,690.

Claybaugh, Billy E.: *See*—
Jones, Alva M., Planchard, Speed, and Claybaugh. 3,414,637.

Cobb, Raymond L.: *See*—
Bresson, Clarence R., and Cobb. 3,414,617.
Bresson, Clarence R., and Cobb. 3,414,620.
Bresson, Clarence R., and Cobb. 3,414,621.

Coburn, Michael D., to United States of America, Atomic Energy Commission. $N^2,N^4,^6N$-tripicrylmelamine. 3,414,570, 12–3–68, Cl. 260—249.6.

Coccagna, Edmund G., to Burroughs Corp. Multichannel transducing head with selectable flux paths. 3,414,893, 12–3–68, Cl. 340—174.1.

Coenning, Frank: *See*—
Hoffmann, Gunther, and Coenning. 3,414,809.

Cohen, D. & H., Ltd.: *See*—
Sherriff, Cecil S. 3,413,657.

Cohen, Milton J. Hypodermic syringes. 3,413,974, 12–3–68, Cl. 128—218.

Coll, Harry H., to Chris-Craft Industries, Inc. Fluid pressure controlled planing and trim means for water craft. 3,413,948, 12–3–68, Cl. 114—66.5.

Collet, Pierre, and M. Compere, to Eastman Kodak Co. Method of making meso-substituted merocyanine and carbo-cyanine dyes. 3,414,568, 12–3–68, Cl. 260—240.6.

Collie, William D., to Air Reduction Co., Inc. Lime fines briquetting. 3,414,643, 12–3–68, Cl. 264—109.

Collins, Donald S.: *See*—
Villaume, Henry F., and Collins. 3,413,821.

Collins Radio Co.: *See*—
Broadhead, Samuel L., Jr. 3,414,842.

Collins Machinery Corp.: *See*—
Behnke, Howard N. 3,413,667.

Colmer, Henry G., Jr. String suspended aerial toy. 3,413,753, 12–3–68, Cl. 46—61.

Coloney, Wayne H.: *See*—
Tracy, Charles W., and Coloney. 3,413,984.

Columbia Broadcasting System, Inc.: *See*—
Porrata, Louis R., and Young. 3,414,502.

Combustion Engineering Inc.: *See*—
Lavery, Charles A., Patterson, and Willis. 3,413,778.

Comer, Marvin B., and J. R. McCracken, to Alamance Industries, Inc. Thermoplastic stretch yarn and method of forming same. 3,413,796, 12–3–68, Cl. 57—140.

Commercial Shearing & Stamping Co.: *See*—
Hodgson, Robert F. 3,414,017.

Commissariat a l'Energie Atomique: *See*—
Fortin, Marcel. 3,414,137.
Niel, Robert L. 3,414,812.

Communications Patents Ltd.: *See*—
Rogers, Ernest W. 3,414,855.

Compagnie de Saint-Gobain: *See*—
Cornu, Roger. 3,414,132.

Compagnie Generale d'Electricite: *See*—
Klein, Georges, and Kloeckner. 3,414,662.

Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie: *See*—
Lejeune, Daniel. 3,413,799.
Travers, Georges L. 3,414,447.

Compagnie Industrielle Francaise des Tubes Electroniques, S.A.: *See*—
Nicolao, Michel. 3,414,730.

Compere, Marcel: *See*—
Collet, Pierre, and Compere. 3,414,568.

Conductron Corp.: *See*—
Harris, Robert P., Krasner, and Koenig. 3,414,735.

Connell, Thomas R., and R. E. Putt, to The Ohio Brass Co. Spark gap unit for lightning arresters. 3,414,759, 12–3–68, Cl. 315—36.

Conner, Robert W., to Monsanto Co. Gangway. 3,413,671, 12–3–68, Cl. 14—71.

Consolidated Electronics Industries Corp.: *See*—
Martin, Robert L. 3,414,852.

Container Corp. of America: *See*—
Copeland, George G. 3,313,468.
Finch, Eugene B., Jr. 3,414,119.

Continental Elektroindustrie A.G. Askania-Werke: *See*—
Graf, Anton. 3,413,854.

Continental/Moss-Jordin, Inc.: *See*—
Whitener, Rufus A. 3,414,329.

Continental Oil Co.: *See*—
Banks, William P. 3,414,376.
Sudbury, John D., and Banks. 3,414,496.

Cook, Ernest E., and R. Pareja, to Hypro, Inc. Radial piston pump. 3,413,929, 12–3–68, Cl. 103—174.

Cook, Wendell S., to The Firestone Tire & Rubber Co. Process for stabilizing cis-1,4-polybutadiene with tetra-alkyl bisphenol. 3,414,539, 12–3–68, Cl. 260—45.95.

Cooper, Lawrence E., to Texas Instruments Inc. Multi-phase circuit breaker ganging device using circular communication between phases. 3,414,850, 12–3–68, Cl. 335—8.

Cooper, William C., to The Budd Co. Welding fixture. 3,414,703, 12–3–68, Cl. 219—158.

Coover, Harry W., Jr.: *See*—
McCall, Marvin A., and Coover. 3,414,629.

Copeland, George G., to Copeland Process Corp. and Container Corp. of America. Process of regenerating pulping liquor from cellulose digestion waste liquor. 3,414,468, 12–3–68, Cl. 162—30.

Copeland, John A., III, to Bell Telephone Laboratories, Inc. Self-starting LSA mode oscillator circuit arrangement. 3,414,841, 12–3–68, Cl. 331—107.

Copeland Process Corp.: *See*—
See—
Copeland, George G. 3,414,468.

Corillium Corp.: *See*—
Olewon, George E., and Woods. 3,414,492.

Cornu, Roger, to Compagnie de Saint-Gobain. Mounts for objects such as glassware, particularly for transportation and display. 3,414,132, 12–3–68, Cl. 211—41.

Corsette, Douglas F., to Diamond International Corp. Liquid dispenser. 3,414,169, 12–3–68, Cl. 222—321.

Corsi, Russell J.: *See*—
Reese, Thomas J. and Corsi. 3,414,395.

Corvino, Ralph A., to J. J. McMullen. Walls for liquefied gas storage tanks. 3,414,155, 12–3–68, Cl. 220—5.

Cory, Stanley A., to International Telephone and Telegraph Corp. Rotor arrangement for a synchronous motor drive. 3,414,752, 12–3–68, Cl. 310—269.

Coutant, Andre, and J. Mathot, to Eclair International, Societe Anonyme. High-speed film feed mechanism for motion picture cameras. 3,414,178, 12–3–68, Cl. 226—2.

Cowans, Kenneth W., to Hughes Aircraft Co. Regenerator structure. 3,413,802, 12–3–68, Cl. 60—24.

Cramer, Howard A.: *See*—
Grisham, Charles R., and Cramer. 3,414,171.

Crane Co.: *See*—
Applebaum, Samuel B., and Crits. 3,414,508.

Cranston, Ivan R. Safety kit for sportsmen. 3,414,365, 12–3–68, Cl. 431—291.

Crayton, John W.: *See*—
Belke, William H., Crayton, Evans, and Streight. 3,413,806.

Crepinsek, Alois. Rotary cylinder lock. 3,413,831, 12–3–68, Cl. 70—358.

Cress, Vernor B., Jr., P. F. Apitz, P. G. Halamandaris, R. W. Wheeler, and E. P. Hoyt, to Tamar Electronics Industries, Inc. Self-adaptive timing system for traffic controller. 3,414,876, 12–3–68, Cl. 340—36.

Cress, Vernor B., Jr., and P. G. Halamandaris, to Tamar Electronics Industries, Inc. Self-adaptive timing system for a traffic controller. 3,414,877, 12–3–68, Cl. 340—37.

Crits, George J.: *See*—
Applebaum, Samuel B., and Crits. 3,414,508.

Crone, Alfred F., to Acme Highway Products Corp. Groove filler. 3,413,900, 12–3–68, Cl. 94—17.

Cross, Alexander D.: *See*—
Beard, Colin C., and Cross. 3,414,592.

Cross, Barrington: *See*—
Montagne, Johannes T. W., and Cross. 3,414,653.

Cross, James M., C. D. Campbell, and S. H. Metzger, to Mobay Chemical Co. Purification of aromatic diamines. 3,414,619, 12–3–68, Cl. 260—582.

Crowe, Robert W., to Dentin Mfg. Co. Shoe brace construction. 3,414,301, 12–3–68, Cl. 287—54.

Crylor: *See*—
Guyet, Louis, and Mensault. 3,414,711.

Cuenot, Charles, to Le Nickel, societe anonyme. Method of manufacturing pure nickel hydroxide. 3,414,494, 12–3–68, Cl. 204—96.

Culfeather, William R.: *See*—
Wigginton, Raymond J., Dear, and Culfeather. 3,414,379.

Cull, Neville L.: *See*—
Mertzweiller, Joseph K., Cull, and Hawley. 3,414,432.

Curtiss, Alan C., and L. G. Owens, to Hersey-Sparling Meter Co. Nutating disk meters. 3,413,851, 12–3–68, Cl. 73—258.

Cutton, John G., to United States Steel Corp. Method of making rimmed steel. 3,414,041, 12–3–68, Cl. 164—56.

Dahl, Carl B.: *See*—
Justus, Edgar J., Dahl, Bade, and Hamilton. 3,414,044.

Dahl, Stanley M.: *See*—
Fisher, William T., Patterson, and Dahl. 3,413,917.

Dahlberg Electronics, Inc.: *See*—
Geib, Robert L., and Martin. 3,414,685.

Dahlberg, Ernest H. Declining board. 3,413,664, 12–3–68, Cl. 5—327.

Dahlberg, Reinhard, to Siemens Aktiengesellschaft. Electrical structural element having closely neighboring terminal contacts and method of making it. 3,414,784, 12–3–68, Cl. 317—235.

Daikin Kogo Kabushiki Kaisha: *See*—
Watanabe, Shiro. 3,414,400.

Daikin Kogyo Co., Ltd.: *See*—
Fujita, Hiroshi. 3,414,085.

Dailey, Jack R., and N. M. Guydosh, to International Business Machines Corp. Integrated insulated gate field effect logic circuitry. 3,414,740, 12–3–68, Cl. 307—304.

Daimler-Benz Aktiengesellschaft: *See*—
Heim, Gerhard. 3,414,320.
Müller, Alfred H., and Höhn. 3,414,286.
Schmidt, Erhard. 3,414,277.
Wilfert, Karl, and Barényi. 3,414,290.

Dainippon Pharmaceutical Co., Ltd.: *See*—
Minami, Shinsaku, Fujita, and Matsumoto. 3,414,567.
Umemoto, Susumu, and Shimizu. 3,414,586.

Dale Electronics, Inc.: *See*—
Carter, Glenn W. 3,414,811.

D'Alelio, Gaetano F., 75% to said D'Alelio and 25% to W. J. Monacelli. Chelating resins from epoxyalkyl acrylate polymers. 3,414,550, 12–3–68, Cl. 260—86.7.

Dana Corp.: *See*—
Reed, George R. 3,414,096.

Danal Jewelry Co.: *See*—
Triangolo, Daniel A. 3,413,986.

Danfoss A/S: *See*—
Baatrup, Johannes V. 3,414,694.

Dangel, Stephen C., and G. B. Meacham. Picker drive mechanism. 3,414,023, 12–3–68, Cl. 139—145.

Dannettell, Alan C., to Eaton Yale & Towne Inc. Safety control circuit for an electric truck. 3,414,074, 12–3–68, Cl. 180—101.

Darda, Helmut. Hydraulically actuated tool for the mechanical breaking of rocks by means of a wedge slidable through insert pieces. 3,414,328, 12–3–68, Cl. 299—22.

Dardig, Ben V.: *See*—
Gidge, Lester, and Dardig. 3,413,670.

Dartex, Inc.: *See*—
Tobey, Richard, and Jennings. 3,414,816.

Davasso, John M., to Ford Motor Co. Mechanism for varying the operation of a reciprocating member. 3,413,965, 12–3–68, Cl. 123—90.

Davey, Charles T., R. G. Amicone, and V. W. Goldie, to United States of America, Army. Repetitive pulse signal generator with gated load switching control. 3,414,822, 12–3–68, Cl. 328—60.

Davidson, Charles S., to Byrne Doors, Inc. Canopy door. 3,413,757, 12–3–68, Cl. 49—200.

Davies, David J.: *See*—
Priese, Werner K., and Davies. 3,414,233.

Davis, Marion H., to V-Plex Clutch Corp. Tilt motion clutch structure. 3,414,099, 12–3–68, Cl. 192—65.

Davy and United Engineering Co. Ltd.: *See*—
Richmond, William J., and Hollingworth. 3,413,882.

Dear, William N.: *See*—
Wigginton, Raymond J., Dear, and Culfeather. 3,414,379.

Dearman, Dorthy H.: *See*—
McKnight, William T., Otto, Hawkins, and Dearman. 3,414,765.

Dearman, James R.: *See*—
McKnight, William T., Otto, Hawkins, and Dearman. 3,414,765.

De Buck, Jean-Jacques R. P.: *See*—
Regnier, Albert, and De Buck. 3,414,679.

De Coye de Castelet, Gaetan, to Regie Nationale Des Usines Renault. Variable-reluctance deceleration detectors. 3,414,335, 12–3–68, Cl. 303—21.

Delin, Lars F.: *See*—
Nordstedt, Hans J., and Delin. 3,413,659.

Delman Co., The: *See*—
Kibler, Willis L. 3,414,763.

Demag Elektrometallurgie G.m.b.H.: *See*—
Lunig, Hermann K. 3,414,656.

De Marco, Robert F., to Fluid Controls, Inc. Load lowering valve for hydraulic hoists. 3,414,007, 12–3–68, Cl. 137—493.

De Marco, Salvador S., to Philipps Petroleum Co. Liquefaction of natural gas. 3,413,816, 12–3–68, Cl. 62—21.

De Ment, Jack. Explodable light source and laser light generator. 3,414,838, 12–3–68, Cl. 331—94.5.

Denkowski, Walter J., to King of Prussia Research and Development Corp. Torque and/or thrust operator. 3,414,097, 12–3–68, Cl. 192—48.91.

Dentin Mfg. Co.: *See*—
Crowe, Robert W. 3,414,301.

De Paolo, Gary J.: *See*—
Miller, Lewis F., and De Paolo. 3,414,417.

Depping, Carl L. Airflow helmet. 3,413,972, 12–3–68, Cl. 128—142.7.

De Rochemont, John F., to Baker Oil Tools, Inc. Well bore packer. 3,414,055, 12–3–68, Cl. 166—120.

Descamps, Marcel, and F. Binon. 4-(dialkylaminoethoxyphenyl)pyrazoles. 3,414,582, 12–3–68, Cl. 260—310.

De Shano, Alphonse D. Tender for highway resurfacing equipment. 3,414,241, 12–3–68, Cl. 259—153.

Dettelbach, Alfred: *See*—
Friz, Helmut A., and Dettelbach. 3,413,916.

Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See*—
Klingler, Karl H. 3,414,572.
Wagner, Ewald, and Pralow. 3,413,723.

De Vilbiss Co., The: *See*—
Legeza, Thomas B., and Gauthier. 3,414,196.
Peeps, Donald J., and McNinch. 3,414,424.

Dexion Ltd.: *See*—
Robilliard, Leonard T., and Watford. 3,414,224.

Diamond International Corp.: *See*—
Corsette, Douglas F. 3,414,169.

Diamond, Lew H.: *See*—
Bruns, William H., Diamond, and Jacoby. 3,414,088.

Dick, A. B., Co.: *See*—
Adams, Roman A., and Maginot. 3,414,668.
Pleitt, Richard J., Relph, and Krater. 3,414,723.

Di Domenico, Mauro, Jr., and H. Seidel, to Bell Telephone Laboratories, Inc. Synchronization of power sources. 3,414,840, 12–3–68, Cl. 331—94.5.

Diebold, Edward J., to International Rectifier Corp. High voltage semiconductor device with electrical gradient-reducing groove. 3,414,780, 12–3–68, Cl. 317—234.

Di Giacobbe, August J., Jr. Security system for banks. 3,413,934, 12–3–68, Cl. 109—6.

Dikötter, Gerarduo P., A. A. W. Schaapveld, and P. J. Fransen, to Stamicarbon N.V. Stabilization of polyamides. 3,414,537, 12–3–68, Cl. 260—45.75.

Dill, Hans G., to Hughes Aircraft Co. Field effect transistor having interdigitated source and drain and overlying, insulated gate. 3,414,781, 12–3–68, Cl. 317—235.

Dill, Joseph J.: *See*—
Levin, Martin E., and Dill. 3,414,757.

Dinges, Karl: *See*—
Ott, Karl-Heinz, Rohr, Dinges, and Knapp. 3,414,636.
Hardt, Dietrich, Bartl, Göbel, and Dinges. 3,414,638.

Distillers Co. Ltd., The: *See*—
Huitson, John J., and Randall. 3,414,584.

Dittrich, Werner: *See*—
Latussek, Hans-Peter, and Dittrich. 3,413,715.

Dolby, Dale P., to Ampex Corp. Adjustable fluid rotary bearings for use in a synchronous transformer rotary head recorder. 3,414,683, 12–3–68, Cl. 179—100.2.

Dole Valve Co., The: *See*—
Franz, Rudolph J. 3,414,193.
Donohue, John A., to Standard Oil Co. Method of electrolytic production of oxygen dinuoride. 3,414,495, 12–3–68, Cl. 204—101.
Dore, John L., Co.: *See*—
Weeden, Frank G., and Graves. 3,414,246.
Dorfman, Edwin: *See*—
Weil, Edward D., and Dorfman. 3,414,399.
Doring, William H., to Union Carbide Corp. Hearing aid battery dispenser. 3,414,161, 12–3–68, Cl. 221—2.
Dossett, John S.: *See*—
Schluderberg, Donald C., Winders, and Dossett. 3,414,473.
Doucette, Edmund J. Collapsible sawhorse. 3,414,080, 12–3–68, Cl. 182—155.
Doundoulakis, George J., and E. Carathanassis, to Electromechanical Devices, Inc. Fluid circulating battery system. 3,414,437, 12–3–68, Cl. 136—6.
Doundoulakis, George J. and H., to Electromechanical Devices, Inc. Weaved electronic equipment. 3,414,666, 12–3–68, Cl. 174—68.5.
Doundoulakis, Hellas: *See*—
Doundoulakis, George J. and H. 3,414,666.
Douros, John D., L. A. Naslund, and C. J. McCoy, to Esso Research and Engineering Co. Biosynthesis of protein from hydrocarbons using an antibiotic. 3,414,477, 12–3–68, Cl. 195—28.
Douthit, Walter H.: *See*—
Rosenlund, Iver T., and Douthit. 3,413,803.
Dow Chemical Co., The: *See*—
Gardner, John B., Smith, and Harper. 3,414,499.
Mod, William A. 3,414,380.
Moore, William G. 3,414,440.
Olstowski, Franciszek, and Watson. 3,414,381.
Robertson, John C., and Osborn. 3,414,404.
Saunders, Frank L., and Richardson. 3,414,647.
Stafford, Owen L., and Brubaker. 3,414,575.
Teumac, Fred N. 3,414,521.
Tigner, Ruben A. 3,414,180.
Doyle, William M., and S. J. Ashton, to High Duty Alloys Ltd. Aluminium alloys and articles made therefrom. 3,414,406, 12–3–68, Cl. 75—142.
Draayer, Johannes, to Automatic Electric Laboratories, Inc. Relay release monitor. 3,414,776, 12–3–68, Cl. 317—123.
Dresser Industries, Inc.: *See*—
Stephens, Roger C. 3,413,768.
Driver, Edgar S., and M. E. Taylor, to Gulf Research & Development Co. Processing of seismic data. 3,414,875, 12–3–68, Cl. 340—15.5.
Drutchas, Gilbert H.: *See*—
Atkin, Rupert L., and Drutchas. 3,414,336.
Dubeck, Michael, and L. C. Mitchell, to Ethyl Corp. Preparation of carboxylic acid-ketone mixture from certain olefin mixtures. 3,414,518, 12–3–68, Cl. 252—55.
Dubeck, Michael, and L. C. Mitchell, to Ethyl Corp. Preparation of carboxylic acids from olefins. 3,414,594, 12–3–68, Cl. 260—413.
Dubois, Georges, and F. Cherbuin, to A. Schild S.A. Calendar correction mechanism for a watch movement. 3,413,800, 12–3–68, Cl. 58—58.
Du Brow, Paul L.: *See*—
Mosier, Benjamin, McCorkle, Du Brow, and Marsh. 3,414,517.
Duddy, Paul F., to Struthers Thermo-Flood Corp. Steam quality determination. 3,413,838, 12–3–68, Cl. 73—29.
Dudley, Hubert T., to Timber Engineering Co. Floor leveling device. 3,413,771, 12–3–68, Cl. 52—480.
Dunlop Rubber Co., Ltd.: *See*—
Beach, Barry O. 3,414,449.
Du Pont de Nemours, E. I., and Co.: *See*—
Buchanan, James B. 3,414,652.
Ehlig, William H., and Turnbull. 3,414,389.
Flowers, James A., Knodel, and Pretka. 3,413,696.
Goodwin, Leslie E., Rowe, and Wyeth. 3,413,915.
Gregory, Walter A., and Whitney. 3,414,615.
Higginbotham, Don H. 3,414,648.
Lacy, Richard I. 3,414,458.
Paufler, Robert M. 3,414,543.
Pitzl, Gilbert. 3,414,646.
Rogers, Donald B. 3,414,371.
Rosenlund, Iver T., and Douthit. 3,413,803.
Sartori, Mario F. 3,414,559.
Schaefgen, John R. 3,414,549.
Tan, Henry H., and Martin. 3,414,612.
Wehr, Rudolf. 3,414,466.
Werntz, James H. 3,414,546.
Zur, Eitan. 3,413,798.
Du Rose, Arthur H., and W. J. Pierce, to Kewanee Oil Co. Electrodeposition of nickel. 3,414,491, 12–3–68, Cl. 204—49.
Dutton, Roy F.: *See*—
Martin, Willis G., and Dutton. 3,414,215.
Dvirka, Miro, to Hagan Industries, Inc. Stoker construction. 3,413,938, 12–3–68, Cl. 110—38.
Dyer, Richard F.: *See*—
Fritz, Theodore C., and Dyer. 3,413,698.
Dymo Industries, Inc.: *See*—
Boatman, William D. 3,413,921.
Dynatronics, Inc.: *See*—
Bowers, John O., Jr. 3,414,737.
ESB Inc.: *See*—
Nordblom, George F., and Bodamer. 3,414,486.
Eads, Harold O., and J. W. Robison, to McDonough Co. Adjustable cultivating rake. 3,413,790, 12–3–68, Cl. 56—400.06.
Earl, Thomas D. Air cushion vehicle. 3,414,077, 12–3–68, Cl. 180—128.
Eastman Kodak Co.: *See*—
Agett, Albert H., and Aspy. 3,413,697.
Collet, Pierre, and Compere. 3,414,568.
Eastman Kodak Co.: *See*—Continued
Fierke, Scheuring S., and Goldman. 3,414,423.
Fritz, Theodore C., and Dyer. 3,413,698.
Hagemeyer, Hugh J., Jr., and Robinson. 3,414,609.
Hecker, John C. 3,413,842.
McCall, Marvin A., and Coover. 3,414,629.
Michel, Stephen, and Reitter. 3,414,411.
Runions, Adrian C. 3,414,122.
Schwardt, David N. 3,414,353.
Sublett, Bobby J., and Touey. 3,413,982.
Wilkinson, Giles A., Jr. 3,413,746.
Eaton Yale & Towne Inc.: *See*—
Dannettell, Alan C. 3,414,074.
Oldberg, Sidney, and Carey. 3,414,292.
Ulinski, Bronislaus I. 3,414,086.
Ulinski, Bronislaus I. 3,414,150.
Eckardt, Carl R.: *See*—
Bungo, William M., and Eckardt. 3,414,556.
Eckels, George H.: *See*—
Wacht, Raymond J., and Eckels. 3,414,079.
Eckermann, Alfred E., to The Bendix Corp. Internal reflection temperature controlled sun sensor. 3,414,213, 12–3–68, Cl. 244—1.
Eckhardt, Hans A. Apparatus for feeding particulate materials. 3,414,168, 12–3–68, Cl. 222—227.
Eckstein, Tibor: *See*—
Norville, Holmes S., and Eckstein. 3,413,708.
Eclair International, Societe Anonyme: *See*—
Coutant, Andre, and Mathot. 3,414,178.
Economy Forms Corp.: *See*—
Jennings, Ralph L. 3,414,228.
Eddy, Byron J.: *See*—
Jackson, Randolph H., Eddy, Mitchell, Johnson, Hall, and Hicks. 3,414,108.
Edroy Products Co., Inc.: *See*—
Stoltze, Morton. 3,414,347.
Edsall, Robert S.: *See*—
Van Antwerp, Frederick W., and Edsall. 3,413,787.
Edwards, Gayle D., and H. G. Waddill, to Jefferson Chemical Co., Inc. Hydroxyalkyl esters in surface coatings. 3,414,635, 12–3–68, Cl. 260—851.
Edwards, James M.: *See*—
McMullin, Edward V., and Edwards. 3,414,187.
Effern, Josef: *See*—
Baggen, Hubert, Effern, and Kahlert. 3,414,212.
Ehlig, William H., and T. P. Turnbull, to E. I. du Pont de Nemours and Co. Removal of calcium sulfate solids from sulfuric acid slurries. 3,414,389, 12–3–68, Cl. 23—304.
Ehrhart, Gustav, E. Lindner, G. Härtfelder, and H. Ott, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 1-(3',4'-di-lower-alkylphenyl)-2-[phenylpyridyl-(2')-propylamino]-propanol-(1) and derivatives thereof. 3,414,578, 12–3–68, Cl. 260—296.
Eichenberger, Walter W. Briquetting process. 3,414,408, 12–3–68, Cl. 75—214.
Elrich, Gustav: *See*—
Elrich, Wilhelm and G. 3,414,239.
Elrich, Wilhelm and G. Auxiliary mixing tool for mixing device having a main mixing tool. 3,414,239, 12–3–68, Cl. 259—104.
Eisemann, Kurt, to North American Philips Co., Inc. Device for lifting and lowering a pick-up head supported to be variable in height. 3,414,271, 12–3–68, Cl. 274—15.
Ekbergh, Evert O., and P. G. Jonsson, to International Standard Electric Corp. Speech contact network in a telephone system. 3,414,681, 12–3–68, Cl. 179—18.
Ekman, Carl F. W.: *See*—
Bartlett, Richard F., Ekman, and Plan. 3,414,410.
Elcalor A.G., Fabrik fur Elektrothermische Apparate: *See*—
Weber, Max. 3,413,841.
Electric Reduction Co. of Canada, Ltd.: *See*—
McKay, Stephen A. 3,414,164.
Electro Connective Systems, Inc.: *See*—
Travis, Lawrence R. 3,414,867.
Electromechanical Devices, Inc.: *See*—
Doundoulakis, George J., and Carathanassis. 3,414,437.
Doundoulakis, George J., and Helias. 3,414,666.
Electro-Optical Systems, Inc.: *See*—
Ziemer, Richard W. 3,413,993.
Elliott Brothers (London) Ltd.: *See*—
Ellis, Stafford M. 3,413,857.
Ellis, Robert G., and R. J. Singleton, to Atlas-Pacific Engineering Co. Feeding apples in single file from a bulk supply. 3,414,110, 12–3–68, Cl. 198—30.
Ellis, Stafford M., to Elliott Brothers (London) Ltd. Pressure sensor. 3,413,857, 12–3–68, Cl. 73—407.
El Paso Products Co.: *See*—
Hayes, William B. 3,414,622.
Hayes, William B. 3,414,623.
Elsas, Adolf, to Siemens Aktiengesellschaft. Anode plate for X-ray tubes. 3,414,754, 12–3–68, Cl. 313—60.
Elsner, Edwin C., to Aeroquip Corp. Buckle. 3,413,691, 12–3–68, Cl. 24—170.
Emerson Electric Co.: *See*—
Huffman, John W., and Wharton. 3,414,858.
Munson, Robert D., and Gundlach. 3,414,791.
Engel, Frederik, and A. F. Wiebe, to Barnes Engineering Co. Radiometer and oxygen lance combination. 3,413,852, 12–3–68, Cl. 73—355.
Engel, Otto A. Rear view mirror wiper assembly. 3,413,676, 12–3–68, Cl. 15—250.27.
Engel, Walter, to Siemens Aktiengesellschaft. Hall-voltage generator unit with amplifying action, and method of producing such unit. 3,413,712, 12–3–68, Cl. 29—571.
Engelhard Industries, Inc.: *See*—
Adlhart, Otto J. 3,414,439.
Engelhard Minerals & Chemicals Corp.: *See*—
Langley, Robert C., and Myers. 3,413,777.

Engle, Robert B., and S. E. Norton. Golf swing training device. 3,414,267, 12–3–68, Cl. 273—186.
English Electric Co. Ltd., The: *See*—
Magill, George M. M., Schofield, and Rhodes. 3,413,864.
Epsco, Inc.: *See*—
Knudsen, Ronald N., and Kerper. 3,414,103.
Erbert, Virgil, to Teaching Complements, Inc. Optical pattern recognition system. 3,413,735, 12–3–68, Cl. 35—48.
Ernest, Richard B., Penn Engineering and Mfg. Corp. Feed hopper having adjustable article orienting means. 3,414,111, 12–3–68, Cl. 198—33.
Escambia Chemical Corp.: *See*—
Speed, George B. H. 3,414,485.
Essex Wire Corp.: *See*—
Mertler, Charles S. 3,414,710.
Prouty, Robert E. 3,414,789.
Prouty, Robert E. 3,414,859.
Esso Research and Engineering Co.: *See*—
Douros, John D., Naslund, and McCoy. 3,414,477.
Jones, Alva M., Planchard, Speed, and Claybaugh. 3,414,637.
Lambert, Merlan M. 3,414,373.
Mertzweiler, Joseph K., Cull and Hawley. 3,414,432.
Oldweiler, Morey E. 3,414,504.
Ethyl Corp.: *See*—
Dubeck, Michael, and Mitchell. 3,414,518.
Dubeck, Michael, and Mitchell. 3,414,594.
Ets. Carpano & Sons: *See*—
Bossard, Paul A. 3,414,751.
Etten, Eileen: *See*—
Hughes, Robert O., Orser, and Etten. 3,414,426.
Etten, Nicholas L.: *See*—
Hughes, Robert O., Orser, and Etten. 3,414,426.
Eureka-Carlisle Co.: *See*—
Smith, Ruslon J. 3,414,452.
European Atomic Energy Community (Euratom): *See*—
Feliks, Wilhelmus A., and Weevers. 3,413,960.
Fiebelmann, Peter. 3,414,475.
Galli De Paratesi, Sergio, Genet, Ghiurghi, Agazzi, Morbello, and Brogg. 3,414,476.
Evans, Duane E.: *See*—
Belke, William H., Crayton, Evans, and Streight. 3,413,806.
Evans, Hilton B., to Marathon Oil Co. Apparatus for the determination of opacity to radiation per unit of thickness of objects. 3,414,725, 12–3–68, Cl. 250—83.3.
Evans, Hugh M., to International Standard Electric Corp. Digital voltmeter employing discharge of a large capacitor in steps by a small capacitor. 3,414,807, 12–3–68, Cl. 324—111.
Evans Products Co.: *See*—
Augustine, Paul C., Jr. 3,413,931.
Bennett, James R. 3,413,932.
Shook, Jackson A. 3,413,933.
Evans, Robert N. Body traction device. 3,413,971, 12–3–68, Cl. 128—75.
Evers, Alan F.: *See*—
Bickers, Arthur, and Evers. 3,414,821.
Eversman, Carl A. Mixing and diverter valve assembly. 3,414,018, 12–3–68, Cl. 137—597.
FMC Corp.: *See*—
Faccou, Armand L., and Perry. 3,414,276.
Merk, Andrew W. 3,413,788.
Pelmulder, John P. 3,413,818.
Fabrique Tana: *See*—
Tanner, Marcel. 3,413,747.
Faccou, Armand L., and L. H. Perry, to FMC Corp. Packing for fluid joint. 3,414,276, 12–3–68, Cl. 277—95.
Fachini, Robert M. Cotton picker. 3,413,785, 12–3–68, Cl. 56—43.
Fagan, John C.: *See*—
Schwartz, Walter M., Jr., Turner, and Fagan. 3,413,741.
Fairchild Hiller Corp.: *See*—
Wallerstein, Stanley. 3,414,338.
Falter, Ronald C., to Rockwell Mfg. Co. Rotary impact tool. 3,414,065, 12–3–68, Cl. 173—93.5.
Fantes, Karl H., to Glaxo Laboratories, Ltd. Purification of interferon-containing material. 3,414,651, 12–3–68, Cl. 424—86.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
Bartl, Herbert, Muller, and Merten. 3,414,548.
Hardt, Dietrich, Bartl, Göbel, and Dinges. 3,414,638.
Nickel, Horst, Suckfull, and Schundehutte. 3,414,558.
Ott, Karl-Heinz, Rohr, Dinges, and Knapp. 3,414,636.
Wagner, Kuno, and Holtschmidt. 3,414,610.
Wieden, Horst, Kleiner, Szita, and Nischk. 3,414,569.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Bues, Curt, Granzin, Pfleiderer, and Anger. 3,414,084.
Ehrhart, Gustav, Lindner, Härtfelder, and Ott. 3,414,578.
Prinz, Eberhard, and Maux. 3,414,538.
Remy, Hermann. 3,414,579.
Farney, George K., to S-F-D Laboratories, Inc. Impedance matched periodic microwave circuits and tubes using same. 3,414,756, 12–3–68, Cl. 315—3.5.
Farrington, Grant M., Jr., and F. C. Verduin, to General Refractories Co. Refractory ramming composition. 3,414,419, 12–3–68, Cl. 106—58.
Fastie, William G., and R. K. Brehm, to Fisher Scientific Co. Spectrometer with a grating mounted for motion about two axes. 3,414,355, 12–3–68, Cl. 356—100.
Fein, Marvin M., and N. Mayes, to Thiokol Chemical Corp. Biscyclopentadienyl-metal carborane polyesters. 3,414,596, 12–3–68, Cl. 260—429.
Feld, Nellie A. Devices for use in separating threads. 3,413,791, 12–3–68, Cl. 57—2.3.
Feldkamp, John G., to Interlake Steel Corp. Dunnage. 3,414,140, 12–3–68, Cl. 214—10.5.
Feliks, Wilhelmus A., and H. H. Weevers, to European Atomic Energy Community (Euratom). Equipment comprising a processing vessel or a steam generator having a supporting structure which allows for the thermal variation in length of connecting pipe lines. 3,413,960, 12–3–68, Cl. 122—510.
Felldin, Karl-Fredrik, to Interlund S.A. Collapsible container for fluid or powder. 3,414,156, 12–3–68, Cl. 220—6.
Fend, Heinrich, to Oerlikon-Buhrle Holdong AG. Warp-tension equalization mechanism for travelling-wave shedding looms. 3,414,020, 12–3–68, Cl. 139—12.
Fenrich, Emil: *See*—
Hergt, Martin, Klaar, and Fenrich. 3,414,714.
Feroy, Arne, to Amadyne, Inc. Automatic cushion relief valve. 3,414,006, 12–3–68, Cl. 137—494.
Ferrara, Peter J., to Keep Chemical Co. Gypsum wallboard and process of making the same. 3,414,467, 12–3–68, Cl. 161—266.
Ferris, Robert G., to Starline, Inc. Starter means for flail-type material spreader. 3,414,199, 12–3–68, Cl. 239—658.
Fichtel & Sachs A.G.: *See*—
Binder, Richard, and Geibel. 3,414,101.
Fiebelmann, Peter, to European Atomic Energy Community (Euratom). Heat pipes. 3,414,475, 12–3–68, Cl. 176—72.
Fierke, Scheuring S., and M. Goldman, to Eastman Kodak Co. Process for erasing and regenerating thermographic materials. 3,414,423, 12–3–68, Cl. 117—2.
Fieux, Raymond P.: *See*—
Buy-Ai, Fieux, Giralt, and Lacoste. 3,413,837.
Finch, Eugene B., Jr., to Container Corp. of America. Pill carrying and dispensing device. 3,414,119, 12–3–68, Cl. 206—42.
Fine, Jonathan E., to United States of America, Army. Acoustically or electrically controlled fluid amplifiers. 3,413,996, 12–3–68, Cl. 137—81.5.
Finfalt, Alfred, to Gebruder Einfalt, Blechspielwarenfabrik. Toy vehicle race track. 3,413,754, 12–3–68, Cl. 46—206.
Fink, Walter, to Monsanto Co. Silicon- and nitrogen-containing four-membered ring compounds and process for preparing. 3,414,584, 12–3–68, Cl. 260—326.
Fireboard Corp.: *See*—
Williams, David H., and Pellaton. 3,413,765.
Firestone Tire & Rubber Co., The: *See*—
Cook, Wendell S. 3,414,539.
Firma Alfred Teves Maschinen- und Armaturenfabrik KG: *See*—
Schmid, Leopold F. 3,414,278.
Firma Kochs Adlernahmaschinenwerke AG.: *See*—
Jünemann, Hubert, and Scholl. 3,414,138.
Firmenich et Cie: *See*—
Kovats, Erwin. 3,414,412.
Fisher Governor Co.: *See*—
Taylor, John L. 3,413,997.
Fisher, Joseph V., to Semi-Elements, Inc. Alloys for making thermoelectric devices. 3,414,405, 12–3–68, Cl. 75—134.
Fisher, Marvin J., W. R. Huelskoetter, and D. D. Lynch, Jr. Electrostatic energy converter. 3,414,742, 12–3–68, Cl. 310—5.
Fisher Scientific Co.: *See*—
Fastie, William G., and Brehm. 3,414,355.
Fisher, William T., C. B. Patterson, and S. M. Dahl, to Purex Corp., Ltd. Electrostatic printing with means to change polarity of counter electrode. 3,413,917, 12–3–68, Cl. 101—114.
Fitch, Steven J., and R. R. Irani, to Monsanto Co. Gasoline compositions containing diphosphonates. 3,414,393, 12–3–68, Cl. 44—76.
Fitzgerald, Gerald A. Saddle anchor. 3,413,773, 12–3–68, Cl. 52—713.
Flanagan, Charles D., to Texas Instruments Inc. Self-regulating heating device. 3,414,704, 12–3–68, Cl. 219—210.
Flanagan, Charles D., and L. Marcoux, to Texas Instruments Inc. Self-regulating heating device. 3,414,706, 12–3–68, Cl. 219—210.
Fleissner, Heinz, to VEPA A.G. Process and apparatus for the heat-treatment of air-permeable materials. 3,413,727, 12–3–68, Cl. 34—16.
Fleissner, Heinz, to VEPA AG. Apparatus for the heat-treatment of materials of all kinds. 3,413,731, 12–3–68, Cl. 34—115.
Flinner, Vaughn D.: *See*—
Fulton, Howard A., Flinner, and Sheaffer. 3,414,005.
Flinth, Rune, to Allmanna Svenska Elektriska Aktiebolaget. Device in strip mills for determining the distribution of strip tension over the width of the strip. 3,413,846, 12–3–68, Cl. 73—144.
Fontanelli, Renzo: *See*—
Slanesi, Dario, Fontanelli, and Nelli. 3,414,627.
Flotepak Corp.: *See*—
Lidgard, Edward J. 3,414,124.
Flowers, James A., D. C. Knodel, and J. E. Pretka, to E. I. du Pont de Nemours and Co. Apparatus for crimping yarn suitable for producing crepe fabrics. 3,413,696, 12–3–68, Cl. 28—1.
Fluid Controls, Inc.: *See*—
De Marco, Robert F. 3,414,007.
Fobiano, Frank E., to Premier Carton Co. Tray having integral divider straps. 3,414,182, 12–3–68, Cl. 229—28.
Fogg, Daniel A., to Rapistan Inc. Valve for air film conveyors. 3,414,331, 12–3–68, Cl. 302—29.
Foist, Joseph E., to Toledo Stamping & Mfg. Co. Method and apparatus for producing holes in sidewalls of members having channel-like cross sections. 3,413,880, 12–3–68, Cl. 83—54.
Folz, John M., to Phillips Petroleum Co. Preventing fractionator reboiler fouling. 3,414,492, 12–3–68, Cl. 203—2.
Foote, J. B., Foundry Co., The: *See*—
Hauser, Hans. 3,414,094.
Ford, Byron C. Belt tensioning device. 3,413,866, 12–3–68, Cl. 74—242.11.

Ford, David M., A. C. Morrow, and H. S. Barr, Jr., to Pneumafil Corp. Apron clearers. 3,413,677, 12–3–68, Cl. 15—256.51.
Ford, David J.: *See*—
Pearson, Arthur S., Ford, and Clarke. 3,413,690.
Ford Motor Co.: *See*—
Baczkowski, Harry A., Harrison, and Weslock. 3,414,243.
Caywood, James A., and Howard. 3,414,146.
Davasso, John M. 3,413,965.
Gore, Ronald D., and Sharpe. 3,413,871.
Gorys, John P., and Horvat. 3,413,760.
Lewicki, Reginal T. 3,413,991.
Mortimer, Robert M. 3,414,317.
Pask, William J. 3,413,964.
Patterson, Robert V., Jr. 3,414,244.
Pellman, Ronald C. 3,413,869.
Rugg, Ormund I. 3,414,457.
Spease, Arthur L., Jr. 3,413,870.
Forde, Patrick J.: *See*—
Beucus, Abraham J., and Forde. 3,413,823.
Forgo, Laszlo: *See*—
Heller, Laszlo, and Forgo. 3,413,805.
Formsprag Co.: *See*—
Kalns, Ilmars. 3,414,095.
Fortin, Marcel, to Commissariat a l'Energie Atomique. Remote handling device. 3,414,137, 12–3–68, Cl. 214—1.
Foster Wheeler Corp.: *See*—
Vaughan, Arthur S. 3,413,998.
Foster, William E. Adjustable rotary hoe. 3,414,064, 12–3–68, Cl. 172—311.
Fourt, Pierre M., to Societe Metallurgique d'Imphy. Process for obtaining solid zinc from zinc vapour containing gases. 3,414,401, 12–3–68, Cl. 75—25.
Fox, Gerald B., to The Hobart Mfg. Co. Dishwashing apparatus. 3,414,114, 12–3–68, Cl. 198—181.
Fox, Kirk H., to Gates & Co., Inc. Block device. 3,413,812, 12–3–68, Cl. 61—45.
Frager, Glenn E., and B. J. Pfenninger, to Krause Corp. Inc. Farm implement having elastomer mounting. 3,414,252, 12–3–68, Cl. 267—1.
Frank, Arlen W.: *See*—
Hodan, James J., Schall, and Frank. 3,414,639.
Frank, Milton A., Sr., to United States of America, Army. Arbor for circular cutters. 3,413,889, 12–3–68, Cl. 90—11.
Franke, Norman W.: *See*—
Barnes, Wendell A., and Franke. 3,414,535.
Frankle, Gerhard-Jurgen: *See*—
Stump, Eugen, and Frankle. 3,413,968.
Franssen, Pierre J.: *See*—
Dikotter, Gerarduo P., Schaapveld, and Franssen. 3,414,537.
Franz, Rudolph J., to The Dole Valve Co. Temperature control system. 3,414,193, 12–3–68, Cl. 237—2.
Franzen, Gustav: *See*—
Nimtz, Klaus, and Franzen. 3,413,865.
Fraser, James C., to General Electric Co. Corona power measurement device. 3,414,813, 12–3–68, Cl. 324—72.
Frazer, David. Froth flotation apparatus or pump device. 3,414,245, 12–3–68, Cl. 261—87.
Frazier, Larry C.: *See*—
Pearce, Thomas H., and Frazier. 3,414,446.
Fredriksen, Sverre: *See*—
Heede, Arne V., Fredriksen, and Nilsen. 3,414,649.
Frey, Albert J., G. E. Hardtmann, and H. Ott, to Sandoz Inc. Certain pyrimido(4,5-b)indoles and intermediates employed in their preparation. 3,414,574, 12–3–68, Cl. 260—256.4.
Frick, David F., to Friden, Inc. Repeat-character-delay code translator system. 3,414,104, 12–3–68, Cl. 197—20.
Friden, Inc.: *See*—
Frick, David F. 3,414,104.
Viola, Vito. 3,413,954.
Fried, John H., to Syntex Corp. 1'-cyclobuteno-(3',4';16α, 17α) derivatives of the pregnane series. 3,414,589, 12–3–68, Cl. 260—397.1.
Friedel, Murray, to Visual Graphics Corp. Film processor. 3,413,904, 12–3–68, Cl. 95—94.
Friedrich, Bruno R., to H. J. Gorski. Stator winding machine. 3,414,204, 12–3–68, Cl. 242—1.1.
Fritz, Theodore C., and R. F. Dyer, to Eastman Kodak Co. Filter tow treatment. 3,413,698, 12–3–68, Cl. 28—1.
Friz, Adolf, G.m.b.H.: *See*—
Friz, Helmut, and Dettelbach. 3,413,916.
Friz, Helmut A., and A. Dettelbach, to Adolf Friz Gesellschaft mit beschrankter Haftung. Feeding device for presser or the like. 3,413,916, 12–3–68, Cl. 100—221.
Frola, Frank V.: *See*—
Hoffmann, Arthur H., and Frola. 3,414,788.
Froning, H. R.: *See*—
Treiber, Lawrence E., Froning, and Jones. 3,414,053.
Frontier Electronics, Inc.: *See*—
O'Brien, Martin F., and Moore. 3,414,905.
Frye, Kenneth W. Bicycle gear. 3,414,293, 12–3–68, Cl. 280—254.
Fuji Neon Kabushiki Kaisha: *See*—
Hashimoto, Ken. 3,414,767.
Fujimoto, Keimei, Y. Okuno, K. Ueda, S. Horie, T. Mizutani, and K. Nodera, to Sumitomo Chemical Co., Ltd. Novel cyclopropanecarboxylic acid esters. 3,414,607, 12–3–68, Cl. 260—468.
Fujita, Akio: *See*—
Minami, Shinsaku, Fujita, and Matsumoto. 3,414,567.
Fujita, Hiroshi, to Daikin Kogyo Co., Ltd. Centralized lubricating system. 3,414,085, 12–3–68, Cl. 184—7.
Fujita, Yasuhiro, I. Nakamura, and J. Hijii, to Mitsui Petrochemical Industries, Ltd. Process for the manufacture of bis-(β-hydroxyethyl) terephthalate. 3,414,608, 12–3–68, Cl. 260—475.
Fulton, Howard A., V. D. Flinner, and M. G. Sheaffer, to Mansfield Sanitary, Inc. Unified plastic ballcock and silencer. 3,414,005, 12–3–68, Cl. 137—436.
GAF Corp.: *See*—
Catino, Sigmund C., and Strobel. 3,414,650.
Gachot, Jean, Valve having a plug fitted with a plastic bellows element and method of assembly thereof. 3,413,990, 12–3–68, Cl. 137—15.
Gaddis, Preston G. Apparatus and method for mixing and dispensing a dry, particulate solid with a liquid. 3,414,163, 12–3–68, Cl. 222—57.
Galli De Paratesi, Sergio, F. Genet, L. Ghiurghi, A. Agazzi, M. Morbello, and A. Brogg, to European Atomic Energy Community (Euratom). Liquid poison safety system for a nuclear reactor. 3,414,476, 12–3–68, Cl. 176—86.
Gallie, Daniel G., to American Radiator & Standard Sanitary Corp. Fan having hollow blades. 3,414,188, 12–3–68, Cl. 230—120.
Gallo, Charles F., Jr., to Xerox Corp. Particle transfer. 3,414,409, 12–3–68, Cl. 96—1.4.
Gallo, John F. Basket cap for glass washing machine. 3,413,672, 12–3–68, Cl. 15—76.
Gambs, Paul F. M. Hemispherical eye test perimeter with coupled test light spot and recording light projectors. 3,414,348, 12–3–68, Cl. 351—24.
Gandilhon, Pierre: *See*—
Chabardes, Pierre J. A., Gandilhon, Grard, and Thiers. 3,414,600.
Gardel, Robert, and E. Gorsky. Sound producing device for a toy figure. 3,413,756, 12–3–68, Cl. 46—117.
Gardella, John M.: *See*—
Taylor, Norris O., Uhler, Gardella, and Cahlik. 3,414,324.
Gardner, John B., C. F. Smith, and B. G. Harper, to The Dow Chemical Co. Simultaneous polymerization of a plurality of monomer streams in a single reactor using ionizing radiation. 3,414,499, 12–3–68, Cl. 204—159.22.
Garetto, Giuseppe, and C. Canciani, to Rhodiatoce S.p.A. Method of precipitating and forming granules from cellulose esters. 3,414,640, 12–3–68, Cl. 264—13.
Garlinghouse Brothers, Inc.: *See*—
Garlinghouse, Leslie H. 3,414,312.
Garlinghouse, Leslie H., to Garlinghouse Brothers, Inc. Module concrete handling buckets. 3,414,312, 12–3–68, Cl. 294—71.
Gates & Fox Co., Inc.: *See*—
Fox, Kirk H. 3,413,812.
Gates, Lauren W., and N. A. Holtz, to The Regents of the University of California. Automatic spring tensioning of conveyor belt. 3,414,115, 12–3–68, Cl. 198—208.
Gaudin, Jean, to Societe de Constructions Mecaniques de Creil. Expanding arbor for winding and unwinding of strips. 3,414,210, 12–3–68, Cl. 242—72.
Gauthier, William D.: *See*—
Legeza, Thomas B., and Gauthier. 3,414,196.
Gay, Michael J., to Plessey-UK Ltd. Push-pull amplifiers with signal dependent class A or B operation. 3,414,829, 12–3–68, Cl. 330—15.
Gebr. Bohler & Co.: *See*—
Pipitz, Egon, Strohmeier, and Tarmann. 3,414,046.
Gebruder Einfalt, Blechspielwarenfabrik: *See*—
Finalt, Alfred. 3,413,754.
Gehrmann, Horst, W. Graf, and K. Schneider, to Siemens Aktiengesellschaft. Method and apparatus for the recording and transmitting of messages on and from a storer. 3,414,888, 12–3–68, Cl. 340—172.5.
Gelb, Robert L., and R. T. Martin, to Dahlberg Electronics, Inc. In-the-ear hearing aid. 3,414,685, 12–3–68, Cl. 179—107.
Geibel, Peter: *See*—
Binder, Richard, and Geibel. 3,414,101.
Geigy Co. Ltd., The: *See*—
Randell, Donald R. 3,414,618.
Gem Corp.: *See*—
Bartlett, Woodrow W. 3,413,782.
General Binding Corp.: *See*—
Sellers, John C. 3,414,120.
General Dynamics Corp.: *See*—
Tolliver, Peter M. 3,414,833.
General Electric Co.: *See*—
Bedford, Burnice D., and Kessler. 3,414,698.
Fraser, James C. 3,414,813.
Guilbault, Lawrence J., and Schwenker. 3,414,856.
Holoch, Klaus E. 3,414,536.
Howe, John G. 3,414,868.
Morgan, Raymond E. 3,414,797.
Putz, John L. 3,414,844.
Rowell, Ralph M. 3,413,853.
Stauffer, Lynn H. 3,414,702.
Vandegraaf, Johannes J. 3,414,826.
Weiser, Earnest F. 3,414,795.
Wilkus, Edward V., and Berger. 3,414,597.
General Electric Co. Ltd., The: *See*—
Arnold, George H. 3,413,874.
Harrold, Arthur E. 3,414,682.
Warburton, Clive R. 3,414,827.
Westover, William A. J. 3,414,828.
General Instruments Corp.: *See*—
Moritz, Charles W., and A. Streddo. 3,413,861.
General Motors Corp.: *See*—
Adams, Edwin M. 3,413,770.
Amiott, Norman J., and Karn. 3,413,780.
Harvey, Douglas J. 3,414,045.
Sheldrake, Leonard J. and Mullen. 3,414,800.
General Precision Systems Inc.: *See*—
Buell, Heinz. 3,414,899.
Riordan, Hugh E. 3,413,859.
Samet, Frank. 3,413,858.
General Refractories Co.: *See*—
Farrington, Grant M., Jr., and Verduin. 3,414,419.
General Signal Corp.: *See*—
Ayson, Richard. 3,413,926.
Smith, Barry L. 3,414,878.
Genet, Francois: *See*—
Galli De Paratesi, Sergio, Genet, Ghiurghi, Agazzi, Morbello, and Brogg. 3,414,476.

Gerlovich, Albert F., to Rheem Mfg. Co. Method for applying a particulate material to a body. 3,414,425, 12–3–68, Cl. 117—18.
Gershenzon, Murray, D. G. Thomas, and F. A. Trumbore, to Bell Telephone Laboratories, Inc. Electroluminescent junction device including a bismuth doped group III(a)–V(a) composition. 3,414,441, 12–3–68, Cl. 148—33.
Gevaert Photo-Producten N.V.: *See*—
Maho, Charles. 3,414,430.
Gewerkschaft Eisenhutte Westfalia: *See*—
Beulker, Franz, and Behr. 3,414,227.
Gewirz, Carl S. Handle means for a detachable cleaning pad. 3,413,673, 12–3–68, Cl. 15—105.
Ghiurghi Luciano: *See*—
Galli De Paratesi, Sergio, Genet, Ghiurghi, Agazzi, Morbello, and Brogg. 3,414,476.
Giacobino, Pasquale G. Method and apparatus for tunneling. 3,413,811, 12–3–68, Cl. 61—42.
Gidge, Lester, and B. V. Dardig, to United Dynamics Corp. Shoe trimming and finishing machine. 3,413,670, 12–3–68, Cl. 12—87.
Gijsemans, Ludovic: *See*—
Leroy, Alphonse, Gijsemans, Peerts, Hulot, Martin, and Andrieu. 3,414,375.
Gilbertson, Oswald I., and O. Kaczmarsky, to Western Electric Co. Inc. Method of and apparatus for testing cross section and continuity of and the separation between a plurality of conductors. 3,414,814, 12–3–68, Cl. 324—73.
Gilbreath, Benjamin F., to Texas Instruments Inc. Serially connected SCR circuit for switching AC power to a load. 3 414,738, 12–3–68, Cl. 307—252.
Gilbreath, Benjamin F., and D. L. Brown, to Texas Instruments Inc. Solid state overload current controller. 3,414,778, 12–3–68, Cl. 317—148.5.
Gilland, Willard L. Ladder leg equalizers. 3,414,082, 12–3–68, Cl. 182—204.
Gingras, Omer O. Gravure proof press. 3,413,918, 12–3–68, Cl. 101—158.
Ginsberg, Leon, to Precision Electronic Components Ltd. Variable resiator. 3,414,862, 12–3–68, Cl. 338—180.
Giralt, Georges A.: *See*—
Buy-Al, Fleuz, Giralt, and Lacoste. 3,413,837.
Girling Ltd.: *See*—
Hambling, Stewart K. 3,414,090.
Glacier Metal Co. Ltd., The: *See*—
Heath, Leonard. 3,414,340.
Glacier Ware, Inc.: *See*—
Paquin, Roger L. 3,413,820.
Glader, James. Ground connection for outlet boxes. 3,414,663, 12–3–68, Cl. 174—51.
Glanzstoff AG.: *See*—
Baggen, Hubert, Effern, and Kahlert. 3,414,212.
Glasgow, Paul W., R. A. La Falce and J. D. Baugher, to The Rowan Controller Co. Constant current constant voltage regulator. 3,414,803, 12–3–68, Cl. 323—4.
Glaverbel, S.A.: *See*—
Brichard, Edgard. 3,414,503.
Brichard, Edgard. 3,414,396.
Glaxo Laboratories, Ltd.: *See*—
Fantes, Karl H. 3,414,651.
Glenfield, George E., to S-F-D Laboratories. Dither tuner for a coaxial magnetron. 3,414,761, 12–3–68, Cl. 315—39.61.
Glick, Roy V., J. D. McNeal, and A. P. Costanzo, to Monitor Instrument Co. Respiratory monitor. 3,414,896, 12–3–68, Cl. 340—309.1.
Glorioso, Paul A., to Gregory Industries, Inc. Welding studs to workpieces. 3,414,700, 12–3–68, Cl. 219—98.
Göbel, Wilhelm: *See*—
Hardt, Dietrich, Bartl, Göbel, and Dinges. 3,414,638.
Goerg, Alfred, to Ciba Ltd. Apparatus for purifying brine. 3,414,384, 12–3–68, Cl. 23—270.
Going, Louis H., R. E. Mersfelder, and R. O. Schmitt, to The Procter & Gamble Co. High temperature, oxygen-free edible oil filtration. 3,414,129, 12–3–68, Cl. 210—82.
Goldberg, Lewis B. Rubber blade for plow. 3,413,738, 12–3–68, Cl. 37—42.
Goldie, Victor W.: *See*—
Davey, Charles T., Amicone, and Goldie. 3,414,822.
Goldman, Martin: *See*—
Fierke, Scheuring S., and Goldman. 3,414,423.
Goldsmith, Herbert: *See*—
Beroza, Morton, and Goldsmith. 3,414,385.
Gonzales, Elwood J., and R. R. Benerito, to United States of America, Agriculture. Modification of cellulosic textiles with bis(demethyloldehydroxyethyleneurea) - ρ - dioxane. 3 414,369, 12–3–68, Cl. 8—116.3.
Gonzales, Henry V.: *See*—
Ballard, Wesley D. 3,413,914.
Goodenow, Earle. Protective container. 3,414,165, 12–3–68, Cl. 222—82.
Goodhue, Georgd L., to Armstrong Cork Co. Low profile embossed-debossed printing on a closure. 3,413,743, 12–3–68, Cl. 40—311.
Goodwin, Leslie E., J. M. Rowe, and N. C. Wyeth, to E. I. du Pont de Nemours and Co. Magnetically biased pressure application to running length materials. 3,413,915, 12–3–68, Cl. 226—1.
Goodyear Tire & Rubber Co., The: *See*—
Harpfer, Donald E. 3 414,448.
Gordon, Donald H., to Virginia Metalcrafters, Inc. Rotary power mower. 3,413,783, 12–3–68, Cl. 56—25.4.
Gore, Ronald D., and M. A. Sharpe, to Ford Motor Co. Brake operating device. 3,413,871, 12–3–68, Cl. 74—536.
Gorski, Alexander A., and C. Pappas, to United States of America, Army. Discharge device controlled by on circuit and off circuit with excessive current-limiting means in off circuit. 3,414,825, 12–3–68, Cl. 328—232.
Gorski, Henry J.: *See*—
Friedrich, Bruno R. 3,414,204.
Peter, Robert W. 3,413,717.
Gorsky, Egon: *See*—
Gardel, Robert, and Gorsky. 3,413,756.
Gorys, John P., and R. M. Horvat, to Ford Motor Co. Vehicle window control system. 3,413,760, 12–3–68, Cl. 49—375.
Gosudarstvenny Elektrotekhnichesky Zavod VEF: *See*—
Roze, Lelo V. 3,413,976.
Gower, Roger L. Platform type traction structure assembly. 3,414,037, 12–3–68, Cl. 152—229.
Graf, Anton, to Continental Elektroindustrie A.G. Askania-Werke. Gravimeter. 3,413,854, 12–3–68, Cl. 73—382.
Graf, Winfried: *See*—
Gebrmann, Horst, Graf, and Schneider. 3,414,888.
Grahl, Darwin R.: *See*—
Merchant, Leo F., and Grahl. 3,414,014.
Granryd, Eric G. U., to American Gas Association. Heat-actuated regenerative compressor for refrigerating systems. 3,413,815, 12–3–68, Cl. 62—6.
Granzin, Hans-Albert: *See*—
Bues, Curt, Granzin, Pfeiderer, and Anger. 3,414,084.
Graphe Maschinenfabrik Hans Muller A.G.: *See*—
Muller, Hans. 3,414,257.
Grard, Charles C. D.: *See*—
Chabardes, Pierre J. A., Gandilhon, Grard, and Thiers. 3,414,600.
Grasselli, Robert K., and J. L. Callahan, to The Standard Oil Co. Oxydehydrogenation process. 3,414,631, 12–3–68, Cl. 260—680.
Gravenstreter, Thomas E. Jet boat steering apparatus. 3,413,950, 12–3–68, Cl. 115—12.
Graves, Gail W.: *See*—
Weeden, Frank G., and Graves. 3,414,246.
Graves, William L., to The Budd Co. Method of making a molded toothed gear of resin-impregnated fibrous strips. 3,414,450, 12–3–68, Cl. 156—192.
Green, Harold A., and E. E. Huntsinger, to Air Products and Chemicals, Inc. Curable elastomeric epichlorohydrin polymer compositions and method for curing said compositions. 3,414,529, 12–3–68, Cl. 260—2.
Greenwall, Robert A., Jr., to B. J. Management Corp. Multiple-circuit electric switchboard. 3,414,696, 12–3–68, Cl. 200—168.
Greenwood, Marvin H., to Anderson, Greenwood & Co. Pressure operated valve. 3,414,008, 12–3–68, Cl. 137—492.
Greenwood, Roger K., and C. G. Westwood, to The International Nickel Co., Inc. Heat treatment of alloy cast iron. 3,414,442, 12–3–68, Cl. 148—141.
Gregory Industries, Inc.: *See*—
Glorioso, Paul A. 3,414,700.
Gregory, Walter A., and J. G. Whitney, to E. I. du Pont de Nemours and Co. 4-Trifluoromethylbicyclo[2.2.2]-octane-1-amines and oct-2-ene-1-amines. 3,414,615, 12–3–68, Cl. 260—563.
Gresch, Walter. Mixing apparatus. 3,414,202, 12–3–68, Cl. 241—42.
Griffin, Francis D., to United States of America, National Aeronautics and Space Administration. Optical monitor panel. 3,414,358, 12–3–68, Cl. 356—166.
Griot, Rudolf G., to Sandoz Inc. Certain 3H-1,4-benzodiazepin-2(1H)-ones. 3,414,563, 12–3–68, Cl. 260—239.3.
Grisham, Charles R., and H. A. Cramer. Aerosol dispenser for dispensing measured amounts. 3,414,171, 12–3–68, Cl. 222—402.14.
Griswold, Donald G.: *See*—
Wyckoff, Fred K. 3,414,003.
Grobe, Wolfgang, to International Standard Electric Corp. Electronically controlled crossbar switching network. 3,414,680, 12–3–68, Cl. 179—18.
Grue, Olav E. Apparatus for reproducing colored television signals. 3,414,758, 12–3–68, Cl. 315—13.
Guerri, Innocenti, and L. Abbiati. Small hanging basket for beach-umbrellas. 3,414,133, 12–3–68, Cl. 211—133.
Guettel, Marvin A., to Square D Co. Stud welder control circuit. 3,414,701, 12–3–68, Cl. 219—98.
Guilbault, Lawrence J., and D. G. Schwenger, to General Electric Co. Insulated electrical conductor. 3,414,856, 12–3–68, Cl. 336—205.
Guilland, Charles: *See*—
Paulus, Max, and Guilland. 3,414,372.
Guinot, Gabriel L., to Society Anonyme Pochain. Means for fixing a digging tooth to the leading edge of the tool of an earth working machine. 3,413,739, 12–3–68, Cl. 37—142.
Gulf Research & Development Co.: *See*—
Barnes, Wendell A., and Franke. 3,414,535.
Driver, Edgar S., and Taylor. 3,414,875.
Pekarek, Joseph L. 3,414,068.
Pekarek, Joseph L. 3,414,070.
Gummel, Hermann K., and V. L. Rideout, to Bell Telephone Laboratories, Inc. Shock-mounting for electromechanical transducer. 3,414,689, 12–3–68, Cl. 179—184.
Gundlach, Philip M.: *See*—
Munson, Robert D., and Gundlach. 3,414,791.
Gusching, Nagle V., to The Monarch Machine Tool Co. Electrofluid control system. 3,414,019, 12–3–68, Cl. 137—625.65.
Gust, Jimmy A. Adjustable weight exerciser for an athletic implement. 3,414,260, 12–3–68, Cl. 272—57.
Guthrie, John D.: *See*—
Welch, Clark M., and Guthrie. 3,414,367.
Guydosh, Nicholas M.: *See*—
Dailey, Jack R., and Guydosh. 3,414,740.
Guyet, Louis, and J. Menault, to Crylor. Heating roller assembly. 3,414,711, 12–3–68, Cl. 219—469.
HCA Food Corp.: *See*—
Levin, Harry M. 3,414,413.

Haberecht, Rolf E.: *See*—
Patterson, Robert J., and Haberecht. 3,414,435.
Hackenberg, Walter, to International Standard Electric Corp. Circuit for testing the completeness of connections between elements in a telephone system prior to signalling. 3,414,678, 12–3–68, Cl. 19—18.
Hagan Industries, Inc.: *See*—
Dvirka, Miro. 3,413,938.
Hagee, John D., to Burroughs Corp. Redundant current driver. 3,414,736, 12–3–68, Cl. 307—219.
Hagemeyer, Hugh J., Jr., and A. G. Robinson, to Eastman Kodak Co. Dicarboxylic acid esters of 2,2,4-trialkyl-3-hydroxypentyl alkanoates. 3,414,609, 12–3–68, Cl. 260—475.
Haggar Co.: *See*—
Off, Joseph W. A. 3,414,174.
Haines, Harry W., Jr., and S. P. Robinson, to Melamine Research Corp. Process for production of melamine from urea. 3,414 571, 12–3–68, Cl. 260—249.7.
Halamandaris, Phillip G.: *See*—
Cress, Vernor B., Jr., Apitz, Halamandaris, Wheeler, and Hoyt. 3,414,876.
Halamandaris, Phillip G.: *See*—
Cress, Vernor B., Jr., and Halamandaris. 3,414,877.
Halco, William. Stereoscopic viewer. 3,414,346, 12–3–68, Cl. 350—135.
Hall, Charles G.: *See*—
Jackson, Randolph H., Eddy, Mitchell, Johnson, Hall, and Hicks. 3,414,108.
Hall, Warren S., to Phillips Petroleum Co. Blown sponge rubber. 3,414,528, 12–3–68, Cl. 260—2.5.
Haller Inc.: *See*—
Haller, John. 3,414,303.
Haller, John, to Haller Inc. Composite sintered powdered material workpiece. 3,414,303, 12–3–68, Cl. 287—104.
Halliburton Co.: *See*—
Alberts, Jack B. 3,414,071.
Halstead, William M. Bobby pin spreader. 3,413,983, 12–3–68, Cl. 132—1.
Hambling, Stewart K., to Girling Ltd. Actuator guide means for disc brake. 3,414,090, 12–3–68, Cl. 188—73.
Hamilton, C. F.: *See*—
Justus, Edgar J., Dahl, Bade, and Hamilton. 3,414,044.
Hamlin, Richard B., to Veeder Industries Inc. Variator. 3,413,867, 12–3–68, Cl. 74—348.
Hammel, Edward F.: *See*—
Laquer, Henry L., Carroll, and Hammel. 3,414,777.
Hansen, Siegfried, to Hughes Aircraft Co. Flow rate control for a Joule-Thomson refrigerator. 3,413,819, 12–3–68, Cl. 62—222.
Harbison, Dixon T. Well pumping and formation treating apparatus. 3,414,057, 12–3–68, Cl. 166—105.
Harders, Hartwig: *See*—
Winderl, Seigfried, Hoffmann, Palm, Nohe, Baer, and Harders. 3,414,606.
Hardt, Dietrich, H. Bartl, W. Göbel, and K. Dinges, to Farbenfabriken Bayor Aktiengesellschaft. Graft copolymer of ethylene/vinyl acetate and polymerized vinyl chloride styrene and acrylonitrile. 3,414,638, 12–3–68, Cl. 260—878.
Hardtmann, Goetz E.: *See*—
Frey, Albert J., Hardtmann, and Ott. 3,414,574.
Harper, Billy G.: *See*—
Gardner, John B., Smith, and Harper. 3,414,499.
Harpfer, Donald E., to The Goodyear Tire & Rubber Co. Method of producing reinforced hose. 3,414,448, 12–3–68, Cl. 156—149.
Harrell, Bob G., to Jackes-Evans Mfg. Co. Combination lock. 3,413,828, 12–3–68, Cl. 70—25.
Harrigan, Thomas G., and W. E. Jewett, to Bell Telephone Laboratories, Inc. Stacked series regulator. 3,414,802, 12–3–68, Cl. 321—16.
Harris, Donald S., to New Castle Products, Inc. Folding partitions and operators therefor. 3,414,040, 12–3–68, Cl. 160—188.
Harris, Lewis P., and E. F. Rothemich, to The Sherwin-Williams Co. Process for recovery of arsanilic acid. 3,414,601, 12–3–68. Cl. 260—442.
Harris, Robert P., J. L. Krasner, and M. Koenig, to Conductron Corp. Variable time constant learning means. 3,414,735, 12–3–68, Cl. 307—201.
Harrison, Robert S.: *See*—
Baczkowski, Harry A., Harrison, and Weslock. 3,414,243.
Harrold, Arthur E., to The General Electric Co., Ltd. Digital data store for pulse code telephone signalling. 3,414,682, 12–3–68. Cl. 179—90.
Harrworth, Inc.: *See*—
Aronson, David. 3,414,274.
Harsco Corp.: *See*—
Oury, Robert F. 3,414,116.
Hartfelder, Gunter: *See*—
Ehrhart, Gustav, Lindner, Hartfelder, and Ott. 3,414,578.
Harvey, Douglas J., to General Motors Corp. Method for centrifugal casting. 3,414,045, 12–3–68, Cl. 164—116.
Hashimoto, Ken., to Fuji Neon Kabushiki Kaisha. Light flasher circuit. 3,414,767, 12–3–68, Cl. 315—200.
Hashimoto, Teruo: *See*—
Tenabe, Katsumi, Takasaki, Hayashi, Morisawa, and Hashimoto. 3,414,566.
Hassert, James E., and E. D. Hontz, to Haveg Industries, Inc. Reinforced structural product and method for making same. 3,414,460, 12–3–68, Cl. 161—143.
Haufe, Ted B.: *See*—
Carson, Don B., and Haufe. 3,414,484.
Hanni Werke Korber & Co. K.G.: *See*—
Korber, Kurt. 3,413,979.
Hauser, Hans, to The J. B. Foote Foundry Co. Fluid drive for rotary mowers. 3,414,094, 12–3–68, Cl. 192—3.21.
Haveg Industries, Inc.: *See*—
Hassert, James E., and Hontz. 3,414,460.
Hawkins, Ralph W.: *See*—
McKnight, William T., Otto, Hawkins, and Dearman. 3,414,765.
Hawkinson, Paul E., Co.: *See*—
Hawkinson, Raymond P. 3,413,685.
Hawkinson, Raymond P., to Paul E. Hawkinson Co. Clamping mechanism for a tire press. 3,413,685, 12–3–68, Cl. 18—18.
Hawkinson, Raymond P., to Paul E. Hawkinson Co. Tire retreading equipment. 3,413,686, 12–3–68, Cl. 18—18.
Hawley, Roger S.: *See*—
Mertzweiller, Joseph K., Cull, and Hawley. 3,414,432.
Haworth, Lionel, to Bristol Siddeley Engines Ltd. Damping means. 3,413,872, 12–3–68, Cl. 74—574.
Hay, Robert B. Oil-free bearing assembly. 3,414,339, 12–3–68, Cl. 308—26.
Hayashi, Ryozo: *See*—
Tanabe, Katsumi, Takasaki, Hayashi, Morisawa, and Hashimoto. 3,414,566.
Hayes, William B., to El Paso Products Co. Production of hexamethylenediamine. 3,414,622, 12–3–68, Cl. 260—585.
Hayes, William B., to El Paso Products Co. Polyamine production. 3,414,623, 12–3–68, Cl. 260—585.
Hays, Hugh R.: *See*—
Peterson, Donald J., and Hays. 3,414,624.
Heath, Leonard, to The Glacier Metal Co. Ltd. Journal bearing assemblies. 3,414,340, 12–3–68, Cl. 308—72.
Heath Northwest, Inc.: *See*—
Minogue, Robert W. 3,414,305.
Hecker, Arthur C., A. Rosenbaum, and N. L. Perry, to Argus Chemical Corp. Stabilization of polypropylene against degradative deterioration on long-term exposure to elevated temperatures above 525° F. 3,414,532, 12–3–68, Cl. 260—23.
Hecker, John C., to Eastman Kodak Co. Thin-layer chromatographic developing apparatus. 3,413,842, 12–3–68, Cl. 73—61.1.
Heckt, Heinz. Compressed air starter motor of rotary piston construction for internal combustion engines. 3,413,860, 12–3–68, Cl. 74—6.
Heede, Arne V., S. Fredriksen, and T. N. Nilsen. Device and method for manufacturing of spirals and/or rings. 3,414,649,12–3–68, Cl. 264—297.
Heier, William. Coffee making apparatus. 3,413,909, 12–3–68, Cl. 99—298.
Heim, Gerhard, to Daimler-Benz Aktiengesellschaft. Sliding roof, especially for motor vehicles. 3,414,320, 12–3–68, Cl. 296—137.
Hein, Gary L., to Lincoln Laboratories, Inc. Combination scarifier and loading dispenser for biologicals. 3,413,975, 12–3–68, Cl. 128—253.
Heibourne, Margaret. Stringed musical instrument. 3,413,883, 12–3–68, Cl. 84—267.
Heida, Robert W., and M. L. Lincoln to Motorola, Inc. Plastic encapsulated transistor and method of making same. 3,413,713, 12–3–68, Cl. 29—588.
Helgren, Richard H.: *See*—
Alley, Walter V., and Helgren. 3,414,222.
Heller, Laszlo, and L. Forgo, to Komplex Nagyberendezesek Export-Import Vallalatta. Method of and apparatus for controlling plural fluid medium thermal power plants. 3,413,805, 12–3–68, Cl. 60—38.
Hellingman, Gosen J., to Sulzer Brothers Ltd. Apparatus for liquid cooling of pistons in piston-type interanl combustion engines. 3,413,963, 12–3–68, Cl. 123—41.36.
Hellman, Robert R., to Westport Development & Mfg. Co. Inc. Gimbal valve. 3,414,232, 12–3–68, Cl. 251—86.
Hellwarth, George A. Electrical amplifier. 3,414,830, 12–3–68, Cl. 330—15.
Helms, John D., and H. L. Brown, Jr., to Texas Instruments Inc. Method of manufacturing printed circuits. 3,414,487, 12–3–68, Cl. 204—11.
Henderson, George L., 6% to F. V. Lockman and 94% to J. B. Ward, C. B. Lake, M. F. Riback, and G. Henderson. Selected film velocity distillation. 3,414,483, 12–3–68, Cl. 203—10.
Henley, Darwin R., to United States of America, Atomic Energy Commission. Coaxial loop shock sensor switch. 3,414,892, 12–3–68, Cl. 200—61.08.
Henquet, Andre J., to International Standard Electric Corp. Magnetically controlled battery charge and discharge circuit. 3,414,796, 12–3–68, Cl. 320—14.
Henrion, Marie C. E. Pressurized fluidtight system for throttle valves. 3,414,234, 12–3–68, Cl. 251—173.
Henry-Baudot, Jacques, to Societe d'Electronique et d'Automatisme. Sliding panel actuators. 3,413,759, 12–3–68, Cl. 49—360.
Henry, Dana R. Light diffraction fishing lure. 3,413,750, 12–3–68, Cl. 43—42.33.
Hepworth, Walter: *See*—
Cairns, John P., and Hepworth. 3,414,576.
Hercules Inc.: *See*—
Buhl, Frank C., and Lees. 3,414,513.
Buhl, Frank C. 3,414,514.
Reid, Donald E., and Spurlin. 3,414,551.
Hergert, Heinz, to Polrotor Inc. Method for electrifying and shearing of pile fabrics. 3,413,695, 12–3–68, Cl. 26—2.
Hergt, Martin, A. Klaar, and E. Fenrich, to Anker-Werke Aktiengesellschaft. Methods and means for automatically registering merchandise data. 3,414,714, 12–3–68, Cl. 235—61.6.
Hermes, Willem, and J. Verhagen, to North American Philips Co., Inc. Transmission system having a plurality of separate parallel transmission lines and common control of intermediate repeater stations in the transmission. 3,414,687, 12–3–68, Cl. 179—170.
Hersey-Sparling Meter Co.: *See*—
Curtiss, Alan C., and Owens. 3,413,851.

Hewlett-Packard Co.: *See*—
Wunderman, Irwin. 3,414,733.
Hexel Products, Inc.: *See*—
Norville, Holmes S., and Eckstein. 3,413,708.
Hicks, James E.: *See*—
Jackson, Randolph H., Eddy, Mitchell, Johnson, Hall, and Hicks. 3,414,108.
Higginbotham, Don H., to E. I. du Pont de Nemours and Co. Drawing and crimping tows of asymmetrically birefringent polyester filaments. 3,414,648, 12–3–68, Cl. 264—237.
Higgins, Edward R., and J. J. Patrick, to Westinghouse Electric Corp. Electronically multiplexed dynamic serial storage register. 3,414,889, 12–3–68, Cl. 340—173.
High Duty Alloys Ltd.: *See*—
Doyle, William M., and Ashton. 3,414,406.
Hijii, Junichi: *See*—
Fujitam, Yasuhiro, Nakamura, and Hijii. 3,414,608.
Hildebrand, Volker, and H. Neumeister, to Telefunken Patentverwertungsgesellschaft m.bH. Synchronous memory system. 3,414,883, 12–3–68, Cl. 340—172.5.
Hills-McCanna Co.: *See*—
Priese, Werner K., and Davies. 3,414,238.
Hi-Shear Corp.: *See*—
Miller, Joseph H. 3,414,304.
Hitachi, Ltd.: *See*—
Takahashi, Kimio, Koike and Sagawa. 3,413,779.
Hitzman, Donald O., to Phillips Petroleum Co. Method of removing oil from polluted water using expanded vermiculite. 3,414,511, 12–3–68, Cl. 210—40.
Hobart Mfg. Co., The: *See*—
Fox, Gerald B. 3,414,114.
Hochart, Roger, to Henry Boucher Fils & Cie. Pulp molding apparatus. 3,414,471, 12–3–68, Cl. 162—392.
Hocutt, Urey, to The Johnson Fast Print Machine Corp. Method and means for supporting the backing cylinder of printing apparatus to facilitate replacing an endless member extending partly around it. 3,413,919, 12–3–68, Cl. 101—216.
Hodan, James J., W. L. Schall, and A. W. Frank, to Hooker Chemical Corp. Diaryl alkylenediphenol phosphates. 3,414,639, 12–3–68, Cl. 260—953.
Hodges, Wetmore, Jr., and R. R. Roesky, to Lockheed Aircraft Corp. Vehicle capable of articulating about roll, pitch, and yaw axes. 3,414,072, 12–3–68, Cl. 180—51.
Hodgson, Robert F., to Commercial Shearing & Stamping Co. Fluid control valves. 3,414,017, 12–3–68, Cl. 137—596.2.
Hoehn, Hans: *See*—
Breuer, Hermann, Hoehn, and Roesch. 3,414,573.
Hoekstra, James, to Universal Oil Products Co. Throttling liquid streams containing particle-form solids. 3,414,522, 12–3–68, Cl. 252—317.
Hoffman, Robert R., to Wabash Magnetics, Inc. Power supply with simultaneously peaking positive and negative output voltages. 3,414,769, 12–3–68, Cl. 317—2.
Hoffmann, Arthur H., and F. V. Frola, to Westinghouse Electric Corp. Excitation control system for synchronous motors. 3,414,788, 12–3–68, Cl. 318—176.
Hoffmann, Gunther, and F. Coenning, to Wandel Goltermann. Method and apparatus for measuring group delay over four-pole networks by using a single identification frequency with no need for an additional reference connection between sender and receiver. 3,414,809, 12–3–68, Cl. 324—57.
Hoffmann, Herwig: *See*—
Winderl, Siegfried, Hoffmann, Palm, Nohe, Baer, and Harders. 3,414,606.
Hoffmann-La Roche Inc.: *See*—
Archer, Giles A., and Sternbach. 3,414,562.
Krubiner, Alan M., and Oliveto. 3,414,564.
Lehr, Hanns H., and Mitrovic. 3,414,587.
Höhn, Hans, to Chemische Fabrik von Heyden A.G. Method for the production of substituted 5-aminopyrazoles. 3,414,580, 12–3–68, Cl. 260—310.
Höhn, Helmut: *See*—
Müller, Alfred H., and Höhn. 3,414,286.
Holland, Joseph R., to Pharmaceutical Plastics Ltd. Advance brake warning devices for road vehicles. 3,414,879, 12–3–68, Cl. 340—71.
Holley Carburetor Co.: *See*—
Keil, Leonard W., and Schorn. 3,413,951.
Schorn, Carl F. 3,413,863.
Hollichem Corp.: *See*—
Shibe, William J., Jr., and Sittenfield. 3,414,431.
Hollingworth, Kenneth: *See*—
Richmond, William J., and Hollingworth. 3,413,882.
Holoch, Klaus E., to General Electric Co. Polyphenylene ethers stabilized with phosphoramides and tetra-alkylammonium-tetrafluoroborate. 3,414,536, 12–3–68, Cl. 260—45.4.
Holtschmidt, Hans: *See*—
Wagner, Kuno, and Holtschmidt. 3,414,610.
Holtz, Nickolas A.: *See*—
Gates, Lauren W., and Holtz. 3,414,115.
Homs, Douglas M. Scale with adjustable cover-dial combination. 3,413,952, 12–3–68, Cl. 116—114.
Honda, Makoto: *See*—
Noyori, Gentaro, Honda, and Watanabe. 3,414,611.
Honeywell Inc.: *See*—
Allen, Harry R., Jr. 3,414,895.
Knox, Richard L. 3,414,823.
Moran, Robert J., Shneider, Masterson, and Bunner. 3,414,106.
Sparrow, Hubert T. 3,414,010.
Hontz, Elias D.: *See*—
Hassert, James E., and Hontz. 3,414,460.
Hoock, William S., to Sinclair Research Inc. Fuel block heater. 3,413,967, 12–3–68, Cl. 126—59.5.
Hooker Chemical Corp.: *See*—
Hodan, James J., Schall, and Frank. 3,414,639.
Weil, Edward D., and Dorfman. 3,414,399.
Hope, William F.: *See*—
Lang, Ernest U., and Hope. 3,413,832.
Horie, Sadao: *See*—
Fujimoto, Keimei, Okuno, Ueda, Mizutani, Horie, and Nodera. 3,414,607.
Horton, Billy M.: *See*—
Bowles, Romald E., and Horton. 3,413,995.
Horvat, Rudolph M.: *See*—
Gorys, John P., and Horvat. 3,413,760.
Houdaille Industries, Inc.: *See*—
Burg, Fred G. 3,413,702.
Houlihan, William J., to Sandoz Inc. Intermediate for pyrrols[2,1-b][1,3]oxazin-6-ones. 3,414,585, 12–3–68, Cl. 260—326.5.
Hoverter, Bryce E., Jr.: *See*—
Spinrad, Malcom, and Hoverter. 3,413,944.
Howard, Howard S. Emergency gasoline-supply holding device. 3,414,015, 12–3–68, Cl. 137—572.
Howard, William J.: *See*—
Caywood, James A., and Howard. 3,414,146.
Howe, John G., to General Electric Co. Terminator for connecting a plurality of electrical cables to a secondary of an electrical apparatus. 3,414,868, 12–3–68, Cl. 339—116.
Hoyt, Eugene P.: *See*—
Cress, Vernor B., Jr., Apitz, Halamandaris, Wheeler, and Hoyt. 3,414,876.
Hoyt, Robert M. Basement drain. 3,413,769, 12–3–68, Cl. 52—198.
Hruda, Robert M., to Westinghouse Electric Corp. Removal of vaporized cooling liquid from heat exchange element by power jets. 3,414,753, 12–3–68, Cl. 313—35.
Hubacek, Vaclav *See*—
Pospisil, Jaroslav, Pisek, Hubacek, and Kucerik. 3,413,733.
Hubble, David H., and W. H. Powers, to United States Steel Corp. Refractory composition and method of making refractory shapes. 3,414,418, 12–3–68, Cl. 106—57.
Huber, J. M., Corp.: *See*—
Iannicelli, Joseph, Whitley, and Balentine. 3,414,422.
Huck, William F. Apparatus for viewing moving webs. 3,414,179, 12–3–68, Cl. 226—113.
Huebner, Paul E. Weight lifter's exercising device. 3,414,261, 12–3–68, Cl. 272—81.
Huelskoetter, Wayne R.: *See*—
Fisher, Marvin J., Huelskoetter, and Lynch. 3,414,742.
Huff, Richard R.: *See*—
Brown, Gordon E., and Huff. 3,414,461.
Huffman, John W., and G. R. Wharton, to Emerson Electric Co. Tilt responsive safety switch. 3,414,858, 12–3–68, Cl. 337—13.
Hughes Aircraft Co.: *See*—
Ajioka, James S. 3,414,904.
Cowans, Kenneth W. 3,413,802.
Dill, Hans G. 3,414,781.
Hansen, Siegfried. 3,418,819.
McElroy Melvin R. 3,414,718.
Hughes, Robert O., L. D. Orser, and N. L. Etten, deceased (by E. Etten, executrix), to Mfg. Corp. Means for and method of applying mosaic to curvate surfaces. 3,414,426, 12–3–68, Cl. 117—18.
Huitson, John J., and G. C. W. Randall, to The Distillers Co. Ltd. Adhesive compositions comprising vinyl chloride polymer, polymerizable material and lead containing stabilizer. 3,414,534, 12–3–68, Cl. 260—31.6.
Hulot, Georges: *See*—
Leroy, Alphonse, Gijsemans, Peerts, Hulot, Martin, and Andrieu. 3,414,375.
Humphrey, Robert B., to International Business Machines Corp. Source error correction for relatively moving signals. 3,414,880, 12–3–68, Cl. 340—146.1.
Hunckler, Paul J., and G. M. Keefe, to Hunckler Products, Inc. Expansion plug and installation means and method. 3,414,158, 12–3–68, Cl. 220—24.5.
Hunckler Products, Inc.: *See*—
Hunckler, Paul J., and Keefe. 3,414,158.
Huntzinger, Elwood E.: *See*—
Green, Harold A., and Huntzinger. 3,414,529.
Hurwitz, Alexander. Control device for vehicle power steering mechanism. 3,414,073, 12–3–68, Cl. 180—79.2.
Hycon Mfg. Co.: *See*—
Maldarelli, Lawrence V. 3,413,903.
Hydrocarbon Research, Inc.: *See*—
Keith, Percival C., and Chervenak. 3,414,505.
Stotler, Harold H., and Boyum. 3,414,480.
Volk, William, and Johnson. 3,414,402.
Hydro-Craft, Inc.: *See*—
Walker, William R. 3,414,220.
Hypro, Inc.: *See*—
Cook, Ernest E., and Pareja. 3,413,929.
Hy-Production, Inc.: *See*—
Kneebusch, Carl W. 3,413,737.
IRC, Inc.: *See*—
Barrington, Jonathan. 3,414,864.
I-T-E Circuit Breaker Co.: *See*—
McCloud, James R., and McConnell. 3,414,695.
Iannicelli, Joseph, J. B. Whitley, and J. W. Balentine, to J. M. Huber Corp. Chemically treated clays. 3,414,422, 12–3–68, Cl. 106—288.
Ianniello, Joseph W.: *See*—
Bishop, John D., and Ianniello. 3,414,801.
Idemitsu, Hiroshi: *See*—
Iwanaga, Mitsuji, and Idemitsu. 3,414,248.
Iizuka, Yoshitoku, to Kabushiki Kaisha Honda Gijutsu Kenkyusho. Apparatus and methods for controlling a multiple stage gear transmission mechanism. 3,413,868, 12–3–68, Cl. 74—371.
Imperial Chemical: *See*—
Cairns, John P., and Hepworth. 3,414,576.
Imperial Chemical Industries Ltd.: *See*—
Chapman, Roy. 3,413,797.

Imperial Smelting Corp. (N.S.C.) Ltd.: *See*—
Wotton, David E. M. 3,414,583.
Imse, Philip J., to Rex Chainbelt, Inc. Lock ring for threaded members. 3,414,034, 12–3–68, Cl. 151—7.
Indiana University Foundation: *See*—
Vencel, Steven A., and Gray. 3,414,349.
Inductotnerm Corp.: *See*—
Kennedy, Theodore R. 3,414,659.
Industrial Engineering Developments, Inc.: *See*—
Lusk, Arthur I. 3,413,901.
Inland Container Corp.: *See*—
Loheed, Richard W. 3,414,184.
Institut Francais du Petrole des Carburants et Lubrifiants: *See*—
Picard, Jacques. 3,413,947.
Instruments and Communications, Inc.: *See*—
Warren, Charles W. 3,414,729.
Interchemical Corp.: *See*—
Sears, Russell L., and Latham. 3,414,531.
Interlake Steel Corp.: *See*—
Feldkamp, John G. 3,414,140.
Interlund S.A.: *See*—
Feildin, Karl-Fredrik. 3,414,156.
International Business Machines Corp.: *See*—
Brown, Edgar A. 3,414,258.
Clark, Kendall, and Schuelke. 3,413,839.
Dailey, Jack R., and Guydosh. 3,414,740.
Humphrey, Robert B. 3,414,880.
Kasmer, Thomas E., and Ogden. 3,414,786.
Kohn, Gerhard. 3,414,891.
Melan, Eugene H., and Tepper. 3,414,775.
Miller, Lewis F. 3,414,641.
Miller, Lewis F., and De Paolo. 3,414,417.
Wilson, Melvin G. 3,414,831.
International Computers and Tabulators Ltd.: *See*—
Barron, John, and Maller. 3,414,882.
International Design Corp.: *See*—
Sangesand, Donald A., and Schubert. 3,413,688.
International Harvester Co.: *See*—
Bak, Alex M., and Wojcik. 3,413,668.
Roberson, Raymond F. 3,413,941.
International Minerals & Chemical Corp.: *See*—
Thomas, Walter J., Sr. 3,413,694.
International Nickel Co., Inc., The: *See*—
Greenwood, Roger K., and Westwood. 3,414,442.
International Rectifier Corp.: *See*—
Diebold, Edward J. 3,414,780.
International Standard Electric Corp.: *See*—
Ekbergh, Evert O., and Jonsson. 3,414,681.
Evans, Hugh M. 3,414,807.
Grobe, Wolfgang. 3,414,680.
Hackenberg, Walter. 3,414,678.
Henquet, Andre J. 3,414,796.
Meisingset, Kaare R., Thauland, Kvingedal, and Mo. 3,414,671.
Müller, Peter. 3,414,885.
Regnier, Albert, and De Buck. 3,414,679.
Reidel, Berthold. 3,414,818.
Wood, Alan F. B. 3,414,794.
International Synthetic Rubber Co. Ltd.: *See*—
Jenkins, Derek K., and Timms. 3,414,555.
International Telephone and Telegraph Corp.: *See*—
Adams, Paul R., and Whitesel. 3,414,105.
Cory, Stanley A. 3,414,752.
Lombardi, Anthony J. 3,413,856.
Orahood, Donald W., Slenys, and Warren. 3,414,785.
Quinlan, Robert V. 3,414,677.
Irani, Riyad R.: *See*—
Fitch, Steven J., and Irani. 3,414,393.
Itel Corp.: *See*—
Bartlett, Richard F., Ekman, and Pian. 3,414,410.
Iwanaga, Mitsuji, and H. Idemitsu. Apparatus for purifying contaminated gases. 3,414,248, 12–3–68, Cl. 261—122.
J. S. Plastics Inc.: *See*—
Morrison, John D. 3,414,151.
Jackes-Evans Mfg. Co.: *See*—
Harrell, Bob G. 3,413,828.
Jackson, Harry L.: *See*—
Jorgensen, Poul, Jackson, and Odom. 3,414,186.
Jackson, Randolph H., B. J. Eddy, K. D. Mitchell E. D. Johnson, C. G. Hall, and J. E. Hicks, to Stephens-Adamson Mfg. Co. Inclined moving walkway arrangement. 3,414,108, 12–3–68, Cl. 198—16.
Jackwig, Roy R.: *See*—
Rowe, Dale H., and Jackwig. 3,413,680.
Jacobson, Aaron S. Banding together of articles. 3,414,118, 12–3–68, Cl. 206—16.
Jacoby, George V., to Radio Corp. of America. Magnetic recording and reproducing of digital information. 3,414,894, 12–3–68, Cl. 340—174.1.
Jacoby, Herbert: *See*—
Bruns, William H., Diamond, and Jacoby. 3,414,088.
Jacquot, Michel J.: *See*—
Bertin, Jean H., and Jacquot. 3,414,076.
Jager, Albert, to Revere Copper and Brass Inc. Aluminum-zinc-magnesium alloy. 3,414,407, 12–3–68, Cl. 75—146.
Janapol, Melvin N., to Wortso Corp. Laboratory bedding test machine. 3,413,849, 12–3–68, Cl. 73—161.
Jansen, Joseph N., to Motorola, Inc. Four-part microwave ferrite circulator. 3,414,843, 12–3–68, Cl. 333—1.1.
Jantzen, George H., to M. Steinthal and Co. Inc. Rear seat belt retractor system. 3,414,291, 12–3–68, Cl. 280—150.
Jaquith, Howard R., to Taylor Instrument Companies. Differential pressure indicator. 3,414,013, 12–3–68, Cl. 137—557.
Jaroff, David B.: *See*—
Litt, Donald D., and Jaroff. 3,414,123.
Jasinski, Amy L., to Owens-Illinois, Inc. Organopolysiloxane modified with an organophosphorus compound and use thereof. 3,414,463, 12–3–68, Cl. 161—191.
Jasperson, Carl C. Hearing aid battery charger. 3,414,793, 12–3–68, Cl. 320—5.
Jeffers & Bailey, Inc.: *See*—
Jeffers, William D. 3,413,749.
Jeffers, William D., to Jeffers & Bailey, Inc. Compartmented fish lure. 3,413,749, 12–3–68, Cl. 43—42.06.
Jefferson Chemical Co., Inc.: *See*—
Edwards, Gayle D., and Waddill. 3,414,635.
Jenkins, Derek K., and D. G. Timms, to International Synthetic Rubber Co. Ltd. Novel nickel containing substances and their use as polymerisation catalysts in preparation of polyolefins. 3,414,555, 12–3–68, Cl. 260—94.3.
Jennings, Alan K.: *See*—
Tobey, Richard, and Jennings. 3,414,816.
Jennings, Ralph L., to Economy Forms Corp. Connecting member for metal form structures. 3,414,228, 12–3–68, Cl. 249—18.
Jensen, Hermann B. F. Electronic process control devices. 3,414,884, 12–3–68, Cl. 340—172.5.
Jewett, William E.: *See*—
Harrigan, Thomas G., and Jewett. 3,414,802.
Jezek, Henry J. Cotton stripping apparatus. 3,413,784, 12–3–68, Cl. 56—34.
Jockel, Joseph T., to Mobil Oil Corp. Disposal of waste oil emulsions. 3,414,523, 12–3–68, Cl. 252—324.
Johannsen, Hans, and W. Keller, to Braun Aktiengesellschaft. Mecnanism for focusing slide projectors. 3,414,352, 12–3–68, Cl. 353—101.
Johnson, Arthur G., Jr. Combat weapon. 3,413,666, 12–3–68, Cl. 7—14.1.
Johnson, Clarence A.: *See*—
Volk, William, and Johnson. 3,414,402.
Johnson, Edward H., to The American Warming & Ventilating, Inc. Air intake. 3,413,905, 12–3–68, Cl. 98—37.
Johnson, Ernest D.: *See*—
Jackson, Randolph H., Eddy, Mitchell, Johnson, Hall, and Hicks. 3,414,108.
Johnson Fast Print Machine Corp., The: *See*—
Hocutt, Urey. 3,413,919.
Johnson, Stanley L., to Varian Associates. High Q reference cavity resonator employing an internal bimetallic deflective temperature compensating member. 3,414,847, 12–3–68, Cl. 333—83.
Johnson, Tegner A., to United States Steel Corp. Method of flocculating solids. 3,414,512, 12–3–68, Cl. 210—51.
Jones, Alva M., J. A. Planchard, Jr., R. A. Speed, and B. E. Claybaugh, to Esso Research and Engineering Co. Process for preparing propylene/ethylene block copolymers. 3,414,-637, 12–3–68, Cl. 260—878.
Jones, Daniel G., to Mobil Oil Corp. Condensation of aldehyde with unsaturated compounds. 3,414,588, 12–3–68, Cl. 260—340.7.
Jones, Frank O., Jr.: *See*—
Treiber, Lawrence E., Froning, and Jones. 3,414,053.
Jones, John P., Jr., to Navigation Computer Corp. Punched tape reader. 3,414,716, 12–3–68, Cl. 235—61.11.
Jonsson, Per G.: *See*—
Ekbergh, Evert O., and Jonsson. 3,414,681.
Jordan, Edward P.: *See*—
Lumley, John L., and Jordan. 3,414,861.
Jorgensen, Poul, H. L. Jackson, and T. B. Odom. Transducer. 3,414,186, 12–3–68, Cl. 230—52.
Jortikka, Annikki. Shopping bags. 3,414,032, 12–3–68, Cl. 150—1.7.
Julia, Marc, to Rhone-Poulenc S.A. Acetamidine derivatives. 3,414,614, 12–3–68, Cl. 260—558.
Jünemann, Hubert, and H. Scholl, to Firma Kochs Adlernahmaschinenwerke AG. Device for the automatic removing and stacking of workpieces, in particular of sewn workpieces. 3,414,138, 12–3–68, Cl. 214—6.
Jung, Hans, and W. Zapf, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Baffles for agitated vessels. 3,414,240, 12–3–68, Cl. 259—107.
Jursich Myren J.: *See*—
Thompson, Ralph B., and Jursich. 3,414,547.
Justus, Edgar J., C. B. Dahl, W. H. Bade, and C. F. Hamilton, to Beloit Corp. and Sandusky Foundry & Machine Co. Method of making bimetallic tubular article. 3,414,044, 12–3–68, Cl. 164—95.
Jutila, Arthur. Rocking chair. 3,414,325, 12–3–68, Cl. 297—281.
Kabushiki Kaisha Honda Gijutsu Kenkyusho: *See*—
Iizuka, Yoshitoku. 3,413,868.
Kabushiki Kaisha Ricoh: *See*—
Kaneko, Tamaki, and Yamamoto. 3,413,920.
Umahashi, Minour. 3,414,255.
Kaczmarsky, Orest: *See*—
Glibertson, Oswald I., and Kaczmarsky. 3,414,814.
Kafka, Wilhelm, to Siemens Aktiengesellschaft. Commutating arrangements for electric machines with superconducting armature windings. 3,414 743, 12–3–68, Cl. 310—10.
Kahle, Gerald R., and C. W. Moberly, to Phillips Petroleum Co. Polymerization process and catalyst. 3,414,554, 12–3–68, Cl. 260—93.7.
Kahlert, Wolfgang: *See*—
Baggen, Hubert, Effern, and Kahlert. 3,414,212.
Kakihana, Hidetake and M. Seko, to Asahi Kasei Kogyo Kabushiki Kaisha. Method for separating isotopes. 3,414,-500, 12–3–68, Cl. 204—180.
Kal-Equip Co.: *See*—
Blowers, Ivan L. 3,414,817.
Kaley Victor B. Electrically-actuated cartridge. 3,413,888, 12–3–68, Cl. 89—28.
Kali-Chemie Aktiengesellschaft: *See*—
Massonne, Joachim. 3,414,628.
Kalns, Ilmars, to Formsprag Co. Balanced bi-directional no-back drive mechanism. 3,414,095, 12–3–68, Cl. 192—8.

Kammerer, Archer W., Jr., ½ to J. K. Lamphere, and ½ to A. W. Kammerer. Apparatus for recovering formation wall samples from a bore hole. 3,414,069, 12–3–68, Cl. 175—268.
Kanai, Masakuni. Method of clarifying a polluted aqueous liquid. 3,414,497, 12–3–68, Cl. 204—149.
Kaneko, Tamaki, and K. Yamamoto, to Kabushiki Kaisha Ricon. Printing position control device for an offset printing machine. 3,413,920, 12–3–68, Cl. 101—248.
Kango Electric Hammers Ltd.: *See*—
Badcock, David N. W. 3,414,747.
Badcock, David N. W. 3,414,748.
Kanner, Bernard: *See*—
Pepe, Enrico J., and Kanner. 3,414,604.
Kapff, Sixt F., and L. T. Wright, to The Standard Oil Co. Method and apparatus for determining the amount of carbon deposited on catalyst. 3,414,382, 12–3–68, Cl. 23—230.
Karcher, Edmund A.: *See*—
Lin, Hung C., and Karcher. 3,414,782.
Karn, James D.: *See*—
Amlott, Norman J., and Karn. 3,413,780.
Kasmer, Thomas E., and W. C. Ogden, to International Business Machines Corp. Stepping motor servo. 3,414,786, 12–3–68, Cl. 318—18.
Katz, Emanuel B., to Tubular Products, Inc. Building structure. 3,413,775, 12–3–68, Cl. 52—727.
Kaufmann, Michael, to Bolkow Gesellschaft mit beschrankter Haftung. Fuel injection device for liquid fuel rocket engines. 3,413,810, 12–3–68, Cl. 60—258.
Kawamoto, Sawako: *See*—
Kawamoto, Takuya and S. 3,414,764.
Kawamoto, Takuya and S., to Sony Corp. Circuit for controlling the displaying of selected indicia by indicator tubes in a display system for electronic computers and the like. 3 414,764, 12–3–68, Cl. 315—84.6.
Keck, Johannes, to Boehringer Ingelheim G.m.b.H. Quaternary ammonium salts of ajmaline. 3,414,577, 12–3–68, Cl. 260—294.7.
Keefe, George M.: *See*—
Hunckler, Paul J., and Keefe. 3,414,158.
Keeler, Jack D.: *See*—
Snellman, Donald L., and Keeler. 3,414,254.
Keep Chemical Co.: *See*—
Ferrara, Peter J. 3,414,467.
Kefer, Elmar: *See*—
Bredtschneider, Walter, and Kefer. 3,413,809.
Keil, Leonard W., and C. F. Schorn, to Holley Carburetor Co. Differential pressure indicator. 3,413,951, 12–3–68, Cl. 116—70.
Keith, Percival C., and M. C. Chervenak, to Hydrocarbon Research, Inc. Hydrocracking of distillates. 3,414,505, 12–3–68, Cl. 208—108.
Kelbel, Donald W., to Borg-Warner Corp. Positive clutch with multiple friction synchronizing disks. 3,414,098, 12–3–68, Cl. 192—53.
Keller, Walter: *See*—
Johannsen, Hans, and Keller. 3,414,352.
Keller, Wolfgang, to Siemens Aktiengesellschaft. Method and apparatus for increasing the cross section of a crystalline rod during crucible-free zone melting. 3,414,388, 12–3–68, Cl. 23—301.
Kelly, Herbert C., Jr. Education distillation system for treating salt water to produce fresh water. 3,414,481, 12–3–68, Cl. 202—234.
Kelly, Walter R., and W. T. Lauder, to Allied Chemical Corp. Chromizing compositions and methods and continuous production of chromium halides for chromizing. 3,414,428, 12–3–68, Cl. 117—66.
Kennedy, Theodore R., to Inductotherm Corp. Method and apparatus for induction heating and stirring. 3,414,659, 12–3–68, Cl. 13—26.
Kenron Aluminum & Glass Corp.: *See*—
Siegal, Burton L. 3,414,236.
Kern, Roland J., to Monsanto Co. Polymerization of styrene. 3,414,553, 12–3–68, Cl. 260—93.5.
Kerper, Bela: *See*—
Knudsen, Ronald N., and Kerper. 3,414,103.
Kessler, George W.: *See*—
Bedford, Burnice D., and Kessler. 3 414,698.
Kesting, Lawrence W., to United States of America, Army. Thrust augmentation and spin stabilization mechanism for rocket propelled missiles. 3,414,217, 12–3–68, Cl. 244—3.23.
Keuro Maschinenbau G.m.b.H. & Co. K.G.: *See*—
Stolzer, Paul. 3,413,881.
Kewanee Oil Co.: *See*—
Du Rose, Arthur H., and Pierce. 3,414,491.
Keylwert, Johann, to Klockner-Humboldt-Deutz Aktiengesellschaft. Rotary piston engine, especially circular piston internal combustion engine. 3,413,961, 12–3–68, Cl. 123—8.
Kibler, Willis L., to The Delman Co. Headlamp control system for turning off the lamps after a predetermined delay period. 3,414,763, 12–3–68, Cl. 315—80.
Kimball, Jack E., to Borg-Warner Corp. Screw feed stabilizer. 3,413,734, 12–3–68, Cl. 34—182.
Kimura, Shuji, to Nippon Kogaku K.K. Film winding mechanism for cameras. 3 414,209, 12–3–68, Cl. 242—71.5.
King, Donald L., to The Steelcraft Mfg. Co. Convertible storm and screen door. 3,414,039, 12–3–68, Cl. 160—90.
King of Prussia Research and Development Corp.: *See*—
Denkowski, Walter J. 3,414,097.
Kirkham, Edward E.: *See*—
Reuteler, Johann F., and Kirkham. 3,414,787.
Kirsten, Paul A. Knife for cutting lumber. 3,414,029, 12–3–68 Cl. 144—230.
Kitamura, Kazuo, and N. Minemura, to Teijin Ltd. Resist printing method for hydrophobic fibers. 3,414,368, 12–3–68, Cl. 8—64.
Klaar, Albert: *See*—
Hergt, Martin, Klaar, and Fenrich. 3,414,714.
Klein, Georges, and E. Kloeckner, to Compagnie Generale d'Electricite. Superconductive electric cable. 3,414,662, 12–3–68, Cl. 174—15.
Klein, Joseph L., and C. H. Zenuk, to Whittaker Corp. Method of preparation of fibers having high aspect ratios. 3,413,-707, 12–3–68, Cl. 29—419.
Kleiner, Helmut: *See*—
Wieden, Horst, Kleiner, Szita, and Nischk. 3,414,569.
Klingler, Karl H., to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Basic substituted alkylxanthine derivatives. 3,414,572, 12–3–68, Cl. 260—256.
Klockner-Humboldt-Deutz Aktiengesellschaft: *See*—
Keylwert, Johann. 3,413,961.
Koenig, Walter. 3,414,062.
Kloeckner, Edmond: *See*—
Klein, Georges, and Kloeckner. 3,414,662.
Knapp, Karl-Heinrich: *See*—
Ott, Karl-Heinz, Rohr, Dinges, and Knapp. 3,414,636.
Kneebusch, Carl W., to Hy-Production, Inc. Football cleat. 3,413,737, 12–3–68, Cl. 36—67.
Kniel, Ludwig, to The Lummus Co. Liquefaction of natural gas at supercritical pressure employing a single refrigeration cycle. 3,413,817, 12–3–68, Cl. 62—23.
Kniza, Klaus, to L. & C. Steinmuller G.m.b.H. Method of and arrangement for controlling the steam temperature in steam power operations with one or more intermediate superheating stages. 3,413,808, 12–3–68, Cl. 60—67.
Knodel, Donald C.: *See*—
Flowers, James A., Knodel, and Pretka. 3,413,696.
Knop, Louis H.: *See*—
Lieberman, Irving, Knop, and Zernow. 3,413,883.
Knox, Marion D., to Wayne Electronic Products Co. Automatic relay carrier circuitry for testing multiple terminal points employing timer sampling means. 3,414,773, 12–3–68, Cl. 317—28.
Knox, Richard L., to Honeywell Inc. Phase sensitive demodulator. 3,414,823, 12–3–68, Cl. 328—133.
Knudsen, Ronald N., and B. Kerper, to Epsco, Inc. Signal responsive and signal generating means for single element print head typewriter. 3,414,103, 12–3–68, Cl. 197—20.
Roch, Carl. Exposure meter for photographic purposes. 3,414,-191, 12–3–68, Cl. 235—64.7.
Koch, Werner, and F. Preuss, to Roland Offsetmaschinenfabrik Faber & Schleicher A.G. Drying device for freshly printed sheets. 3,413,732, 12–3–68, Cl. 34—162.
Koch, Werner, and F. Preuss, to Roland Offsetmaschinenfabrik Faber & Schleicher A.G. Gripper device for a sheet feeder of a printing press. 3,414,259, 12–3–68, Cl. 271—82.
Kochanek, George E., to Borg-Warner Corp. Jet action for liquid treatment of materials. 3,413,827, 12–3–68, Cl. 68—23.
Kochendorffer, Fred A. Sonic dishwasher. 3,413,989, 12–3–68, Cl. 134—128.
Kochs Adlenahmaschinen-Werke AG: *See*—
Scholl, Hans. 3,413,942.
Koenig, Michael: *See*—
Harris, Robert P., Krasner, and Koenig. 3,414,735.
Koenig, Walter, to Klochner-Humboldt-Deutz Aktiengesellschaft. Device for controlling the working depth of soil working implements. 3,414,062, 12–3–68, Cl. 172—7.
Kohn, Gerhard, to International Business Machines Corp. Nondestructive readout thin film memory. 3,414,891, 12–3–68, Cl. 340—174.
Koike, Ikuo: *See*—
Takahashi, Kimio, Koike, and Sagawa. 3,413,779.
Kolze, Melvin W. Sweep arm bin unloader. 3,414,142, 12–3–68, Cl. 214—17.
Komplex Nagyberendezesek Export-Import Vallalatta: *See*—
Heller, Laszlo, and Forgo. 3,413,805.
Konrad, Philip S., to Borg-Warner Corp. Automatic engine starting system. 3,414,734, 12–3–68, Cl. 290—38.
Konvisar, Leonid V.: *See*—
Sysoev, Leonid A., Konvisar, and Raiskin. 3,414,387.
Kopanda, Joseph E.: *See*—
Maravilla, Sam, and Kopanda. 3,414,420.
Korber, Kurt, to Hauni Werke Korber & Co. K.G. Continuous cigarette rod making machine. 3,413,979, 12–3–68, Cl. 131—84.
Kortenhoven, Peter, to United States Steel Corp. Transducer for ultrasonic testing of pipe. 3,413,843, 12–3–68, Cl. 73—71.5.
Kovaleski, Joseph J., to The Advanced Wyrepal Co., Inc. Strand working and spooling apparatus and method. 3,413,-834, 12–3–68, Cl. 72—289.
Kovats, Erwin, to Firmenich et Cie. Producing a mandarin-like flavoring composition by admixing thymol and methyl-N-methyl anthranilate. 3,414,412, 12–3–68, Cl. 99—140.
Kragh, Viggo. Automatic casting rod. 3,413,748, 12–3–68, Cl. 43—19.
Kransco Mfg. Inc.: *See*—
Rosekrans, John N., Jr., and Bowes. 3,414,284.
Krantz, Joris M. Carpet seam securing device. 3,413,678, 12–3–68, Cl. 16—16.
Krasner, Jerome L.: *See*—
Harris, Robert P., Krasner, and Koenig. 3,414,735.
Krater, Lawrence: *See*—
Pleitt, Richard J., Relph, and Krater. 3,414,723.
Kratochvil, Robert A., to Beltone Electronics Corp. Mounting for interchangeable circuit elements. 3,414,664, 12–3–68, Cl. 174—52.
Kraus, Gerard, and J. J. Brennan, Jr., to Phillips Petroleum Co. Masticating polybutadiene to reduce cold flow. 3,414,-557, 12–3–68. Cl. 260—94.7.
Krause Corp, Inc.: *See*—
Frager, Glenn E., and Pfenninger. 3,414,252.
Kraushaar, Robert J., to Simmonds Precision Products, Inc. Volume measuring system. 3,413,847, 12–3–68, Cl. 73—149.
Kress, Ralph H., J. C. Medley, and D. E. Merritt, to Caterpillar Tractor Co. Bottom dumn door actuating mechanism for vehicles. 3,413,894, 12–3–68, Cl. 91—28.

Krenter, Kenneth G., to Robertshaw Controls Co. Electric valve. 3,414,231, 12–3–68, Cl. 251—11.

Krubiner, Alan M., and E. P. Oliveto, to Hoffman-La Roche Inc. Process for the production of 17-ethylidene steroids. 3,414,564, 12–3–68, Cl. 260—239.5.

Kruger, James B., to Philip Morris, Inc. Method and apparatus for shaping, sharpening and polishing razor blades. 3,414,501, 12–3–68, Cl. 204—206.

Krups, Robert: *See*—
Baumann, Kurt. 3,413,718.

Kucerik, Oldrich: *See*—
Pospisil, Jaroslav, Plsek, Hubacek, and Kucerik. 3,413,733.

Kuhl, Bernhard R., and D. H. Larson, to Warwick Electronics, Inc. Self-locking knob structure. 3,413,953, 12–3–68, Cl. 116—124.1.

Kuhlman, Martin. Soil perforating machine or aerator. 3,414,063, 12–3–68, Cl. 172—21.

Kuney, Samuel B., to Swiss Knitting Co. Method for the spot shaping of knit fabrics and resultant fabrics produced thereby. 3,413,824, 12–3–68, Cl. 66—177.

Kunkel, Roland K.: *See*—
Myles, William J., and Kunkel. 3,414,644.

Kunkel, Robert D. Deburring machine. 3,413,764, 12–3–68, Cl. 51—163.

Kvarnegard, Sven B., to Aktiebolaget Carl Lamm. Method and apparatus for duplicating text, pictures and the like on unprepared copy receiving sheets. 3,414,724, 12–3–68, Cl. 250—65.

Kvingedal, Odd: *See*—
Meisingset, Kaare R., Thauland, Kvingedal, and Mo. 3,414,671.

Kyowa Hakko Kogyo Co., Ltd.: *See*—
Noguchi, Yuichi, Nakajima, Uno, and Nakanishi. 3,414,478.

Laakso, Oliver A., to Aktiebolaget Kamyr. Heat recovery method and apparatus. 3,414,038, 12–3–68, Cl. 159—17.

Laboratory for Electronics, Inc.: *See*—
Battarel, Claude P. 3,414,720.
Campolong, Joseph F. 3,413,925.
McCormack, Thomas L., Morin, and Staffiere. 3,414,892.

Lach, Alfred A.: *See*—
Natoli, Joseph G., and Lach. 3,414,625.

Lacher, William A., to Burroughs Corp. Low level polar signal converter for printer apparatus. 3,414,799, 12–3–68, Cl. 321—2.

Laclede Gas Co.: *See*—
McMullin, Edward V., and Edwards. 3,414,187.

Lacoste, Robert N.: *See*—
Buy-Al, Fieux, Giralt, and Lacoste. 3,413,837.

Lacy, Richard L., to E. I. du Pont de Nemours and Co. Noncracking tufted carpet with nonwoven secondary backing and method of making same. 3,414,458, 12–3–68, Cl. 161—67.

Ladabaum, Samuel, to Syntex Corp. 3,5-cyclo-6β, 19-oxido steroids and processes for their preparation. 3,414,565, 12–3–68, Cl. 260—239.55.

La Falce, Robert A.: *See*—
Glasgow, Paul W., La Falce, and Baugher. 3,414,803.

Lofgren, Erik A.: *See*—
Modig, Torsten, Modig, and Lofgren. 3,413,959.

Lagarelli, Carmen J., and J. G. Pecis, to Speakman Co. Eye wash fountain. 3,413,660, 12–3–68, Cl. 4—166.

Lair, Wilbert M., and J. S. Taylor, to The Budd Co. Nylon bearing material. 3,144,516, 12–3–68, Cl. 252—12.

Lake, Calvin B.: *See*—
Henderson, George L. 3,414,483.

Lambert, Merlan M., to Esso Research and Engineering Co. Preparation of active cuprous halide sorbents by two-stage decomplexation. 3,414,373, 12–3–68, Cl. 23—97.

Lamphere, Jean K.: *See*—
Kammerer, Archer W., Jr. 3,414,069.

Landau, Manfred: *See*—
Abson, James W., Landau, Langton, and Molyneux. 3,414,524.

Lang, Ernest U., and W. F. Hope, to National-Standard Co. Wire drawing method. 3,413,832, 12–3–68, Cl. 72—42.

Langesiepen, Max, Kommanditgesellschaft: *See*—
Von Wolff, Wolf, and Bertelsmann. 3,413,887.

Langley, Robert C., and H. Myers, to Engelhard Minerals & Chemicals Corp. Hydrogen diffusion and method for producing same. 3,413,777, 12–3–68, Cl. 55—158.

Langton, Maurice C.: *See*—
Abson, James W., Landau, Langton, and Molyneux. 3,414,524.

Laporte Titanium Ltd.: *See*—
Wigginton, Raymond J., Dear, and Culfeather. 3,414,379.

Laquer, Henry L., K. J. Carroll, and E. F. Hammel, to United States of America, Atomic Energy Commission. Automatic superconducting pump. 3,414,777, 12–3–68, Cl. 317—123.

Larson, Donald H.: *See*—
Kuhl, Bernhard R., and Larson. 3,413,953.

Larson, Willfred, to Lockheed Aircraft Corp. Coolant applicator for drill motors. 3,413,875, 12–3–68, Cl. 77—7.

Larva, Jerry R.: *See*—
Larva, Wilbert J., Sr., and J. R., and Nurmi. 3,414,027.

Larva, Wilbert J., Sr., and J. R., and W. F. Nurmi. Pulpwood cut-off apparatus. 3,414,027, 12–3–68, Cl. 143—46.

Lassing, Jan H. A. Apparatus for handling bulk cargo. 3,414,144, 12–3–68, Cl. 214—15.

Latham, Robert G.: *See*—
Sears, Russell L., and Latham. 3,414,531.

Latussek, Hans-Peter, and W. Dittrich, to Siemens Aktiengesellschaft. Apparatus and method for producing the stator of a DC miniature motor. 3,413,715, 12–3–68, Cl. 29—596.

Lau, Hans W.: *See*—
Schongs, Bernhard M., Lau, and Behrens. 3,413,804.

Lauder, William T.: *See*—
Kelly, Walter R., and Lauder. 3,414,428.

Lavery, Charles A., C. T. Patterson, and W. R. Willis, to Combustion Engineering Inc. Means for separating liquid and gas or gaseous fluid. 3,413,778, 12–3–68, Cl. 55—186.

Lear Jet Corp.: *See*—
Auld, Samuel H. 3,414,790.

Lear Siegler, Inc.: *See*—
Barron, Benjamin. 3,414,872.

Lecomte, Alexandre, and P. Ventre, to Regie Nationale des Usines Renault. Sun roof control devices. 3,414,319, 12–3–68, Cl. 296—137.

Leeds, Harry R. Contact lens case. 3,414,117, 12–3–68, Cl. 206—5.

Lees, Ronald D.: *See*—
Buhl, Frank C., and Lees. 3,414,513.

Leesona Corp.: *See*—
Bell, Charles C., and Niederer. 3,413,794.

Legeza, Thomas B., and W. D. Gauthier, to The De Vilbiss Co. Self cleaning tip for airless spray guns. 3,414,196, 12–3–68, Cl. 239—106.

Lehr, Hanns H., and M. Mitrovic, to Hoffmann-La Roche Inc. 4 - (1,2,3,4,5,6,7,8 - octahydro - 1,8 - dioxo-9-xanthenyl)-benzene-sulfonamide and derivatives. 3,414,587, 12–3–68, Cl. 260—335.

Lejeune, Daniel, to Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie. Metallic cable. 3,413,799, 12–3–68, Cl. 57—145.

Lemelson, Jerome H. Electrically conducting panel. 3,414,863, 12–3–68, Cl. 338—244.

Lemiesz, Richard J. Trigonometric computing instrument. 3,414,190, 12–3–68, Cl. 235—61.

Le Nickel, societe anonyme: *See*—
Cuenot, Charles. 3,414,494.

Leonard, Louis H., Jr., to Carrier Corp. Heating and cooling system. 3,414,051, 12–3–68, Cl. 165—62.

Leonforte, Michele. Dispenser with trap chamber and pivoted releaser. 3,414,162, 12–3–68, Cl. 221—266.

Leroux, Rene P. Multicellular containers or enclosures. 3,414,153, 12–3–68, Cl. 220—1.

Leroy, Alphonse, L. Gijsemans, F. Peerts, G. Hulot, J. Martin, and J. R. Andrieu, 50% to Produits Chimiques du Limbourg and 50% to Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture. Two-stage process for the preparation of potassium metaphosphate. 3,414,875, 12–3–68, Cl. 23—106.

Lester, Philip L., to Texas Instruments Inc. Mounting means for thermally responsive switches. 3,414,225, 12–3–68, Cl. 248—361.

Le Sueur, Robert C., and V. A. Martens, to Scovill Mfg. Co. Combination clothes-pressing iron and rest mount therefor with automatic homing means. 3,413,742, 12–3–68, Cl. 38—96.

Lever Brothers Co.: *See*—
McDonnell, Francis R. M. 3,414,520.

Levie, Max H. P. A., to F. H. Lloyd & Co. Ltd. Couplers. 3,414,135, 12–3–68, Cl. 213—45.

Levin, Harry M., to HCA Food Corp. Edible composition and method of making the same. 3,414,413, 12–3–68, Cl. 99—144.

Levin, Martin E., and J. J. Dill, to Varian Associates. High power beam tube having improved beam collector and method of fabricating same. 3,414,757, 12–3–68, Cl. 315—5.38.

Levy, Joseph P., to Sperry Rand Ltd. Palladium chloride solution coating catalyst. 3,414,427, 12–3–68, Cl. 117—47.

Lewicki, Reginal T., to Ford Motor Co. Two-stage fluid pressure governor. 3,413,991, 12–3–68, Cl. 137—54.

Lewis: *See*—
Baum, Peter. 3,414,642.

Libbey-Owens-Ford Glass Co.: *See*—
Zellers, James T., Jr. 3,414,397.

Licentia Patent-Verwaltungs-G.m.b.H.: *See*—
Petzold, Dieter. 3,414,719.

Lichowsky, Abraham, to Radio Corp. of America. Video recorder and/or reproducer with intermediate tape drive. 3,414,684, 12–3–68, Cl. 179—100.2.

Lidgard, Edward J., to Flotepak Corp. Container for sheet-like material. 3,414,124, 12–3–68, Cl. 206—62.

Lieberman, Irving, L. H. Knop, and L. Zernow, to Aerojet-General Corp. Method and apparatus for explosively forming article of relatively brittle metal. 3,413,833, 12–3–68, Cl. 72—56.

Lin, Hung C., and E. A. Karcher, to Westinghouse Electric Corp. Semiconductor structure particularly for performing unipolar transistor functions in integrated circuits. 3,414,782. 12–3–68, Cl. 317—235.

Lincoln Laboratories, Inc.: *See*—
Hein, Gary L. 3,413,975.

Lincoln, Milan L.: *See*—
Helda, Robert W., and Lincoln. 3,413,713.

Linderoth, Hans G., to AB Industrifjadrar. Safety seat belts. 3,414,322, 12–3–68, Cl. 297—389.

Lindholm, Ingemar, B. Mueller, and O. Mjorne, to Allmanna Svenska Elekstriska Aktiebolaget. Fuel cell having sintered porous electrode consisting of electrically conductive material and of boron. 3,414,438, 12–3–68, Cl. 136—86.

Lindner, Ernst: *See*—
Ehrhart, Gustav, Lindner, Härtfelder, and Ott. 3,414,678.

Lipton, Abraham A. Fluid exit port for boats. 3,413,949, 12–3–68, Cl. 114—184.

Litt, Donald D., and D. B. Jaroff, to Miner Industries, Inc. Belt from which articles are to be dispensed. 3,414,123. 12–3–68, Cl. 206—56.

Littell, Walter W.: *See*—
Barton, Oliver A., and Littell. 3,414,541.

Lloyd, F. H., and Co. Ltd.: *See*—
Levie, Max H. P. A. 3,414,135.

Lloyd, Norman E.: *See*—
Wynes, Robert A., and Lloyd. 3,414,479.

Lockheed Aircraft Corp.: *See*—
Hodges, Wetmore, Jr., and Roesky. 3,414,072.
Larson, Wilfred. 3,413,875.

Lockman, F. V.: *See*—
Henderson, George L. 3,414,483.

Logan Co.: *See*—
Bishoff, Walter A., Sr., and Ulery. 3,414,237.

Loheed, Richard W., to Inland Container Corp. Flush corrugated fiberboard box joint. 3,414,184, 12–3–68, Cl. 229—48.

Lollar, Robert M.: *See*—
Nordstrom, Lars E., Wagomer, and Lollar. 3,414,366.

Loma Linda University: *See*—
Newton, William E. 3,414,000.

Lombardi, Anthony J., to International Telephone and Telegraph Corp. Pressure operated driving means. 3,413,856, 12–3–68, Cl. 73—398.

Long, Bernard. Flat glass sheet and method and apparatus for making sheet. 3,414,454, 12–3–68, Cl. 161—1.

Long, Bernard. Flat glass and method and apparatus for making flat glass. 3,414,464, 12–3–68, Cl. 161—192.

Long, Veron E. Automatic interrogation system for utility meters and the like. 3,414,676, 12–3–68, Cl. 179—2.

Lounsbury, Lavergne I. Adjustable basketball backboard bracket structure. 3,414,262, 12–3–68, Cl. 273—1.5.

Lucas, Joseph (Industries), Ltd.: *See*—
Sheldon, Robert C. 3,413,714.

Lucas, Ned L.: *See*—
Price, Frank B., Morroni, and Lucas. 3,414,436.

Lucky, Robert W., to Bell Telephone Laboratories, Inc. Digital adaptive equalizer system. 3,414,819, 12–3–68, Cl. 325—42.

Lucky, Robert W., to Bell Telephone Laboratories, Inc. Automatic equalizer for digital transmission systems utilizing error control information. 3,414,845, 12–3–68, Cl. 333—18.

Lumley, John L., and E. P. Jordan, to Research Corp. Thermistor and method of manufacture. 3,414,861, 12–3–68, Cl. 338—22.

Lummus Co., The: *See*—
Kniel, Ludwig. 3,413,817.

Lumpp, Henry M. J. G. Diaphragm carrying systems. 3,414,235, 12–3–68, Cl. 251—331.

Lunig, Hermann K., to Demag Elektrometallurgie G.m.b.H. Electric arc furnace with iron core choke means on electrode supply conductors. 3,414,656, 12–3–68, Cl. 13—9.

Lusk, Arthur I., to Industrial Engineering Developments, Inc. Apparatus and method for inserting a continuous and solid joint strip into plastic concrete. 3,413,901, 12–3–68, Cl. 94—39.

Lynch, David D., Jr.: *See*—
Fisher, Marvin J., Huelskoetter, and Lynch. 3,414,742.

M-O Valve Co., Ltd., The: *See*—
Baker, Basil O., and Wheldon. 3,414,755.

MSL Industries, Inc.: *See*—
Melvin, Roy J. 3,414,746.

M & T Chemicals Inc.: *See*—
Natoli, Joseph G., and Lach. 3,414,625.

Maestro Corp.: *See*—
Van Antwerp, Robert L. 3,414,270.

Magill, George M. M., C. R. Schofield, and R. N. Rhodes, to The English Electric Co. Ltd. Variable-ratio frictional drives. 3,413,864. 12–3–68, Cl. 74—200.

Maginot, John J., Jr.: *See*—
Adams, Roman A., and Maginot. 3,414,668.

Maho, Charles, to Gevaert Photo-Producten N.V. Magnetic signal storing elements comprising a vacuum-evaporated magnetizable coating applied to a non-magnetic supporting member provided with an elastomeric adhesive layer. 3,414,430. 12–3–68. Cl. 117—71.

Maier, Eugen C., Metallverarbeitung G.m.b.H.: *See*—
Breuning, Ernst. 3,413,795.

Maier, Michael W., to Malleable Iron Range Co. Forced convection oven. 3,414,708. 12–3–68, Cl. 219—400.

Malan, George L. Soil compaction process and device therefor. 3,413,902. 12–3–68. Cl. 94—48.

Malchair, Armand, to Peltzer & Fils S.A., Societe Anonyme Verriers, Heddle frame motion for circular looms. 3,414,021, 12–3–68, Cl. 139—13.

Maldarelli, Lawrence V., to Hycon Mfg. Co. High speed platen. 3,413,903, 12–3–68, Cl. 95—11.

Malleable Iron Range Co.: *See*—
Maier, Michael W. 3,414,708.

Maller, Victor A. J.: *See*—
Barron, John, and Maller. 3,414,882.

Malm, Curtis L., to Paper Mate Mfg. Co. Writing element construction. 3,414,359. 12–3–68, Cl. 401—109.

Manasevit, Harold M., to North American Rockwell Corp. Single crystal silicon on spinel insulators. 3,414,434, 12–3–68. Cl. 117—201.

Manaster, Joseph. Apparatus for flattening poultry meat. 3,413,681. 12–3–68. Cl. 17—25.

Mansfield Sanitary, Inc.: *See*—
Fulton, Howard A., Flinner, and Sheaffer. 3,414,005.

Manufacturing Corp.: *See*—
Hughes, Robert O., Orser, and Etten. 3,414,426.

Marathon Oil Co.: *See*—
Evans, Hilton B. 3,414,725.

Maravilla, Sam, and J. E. Kopanda, to United States Steel Corp. Oil well cement and method of making the same. 3,414,420. 12–3–68. Cl. 106—92.

Marchant, Gerald L.: *See*—
Shade, Robert A., Nystrand, and Marchant. 3,413,706.

Marclioli, Giorgio, to Societe Anonyme Francaise Eternit. Process and machine for manufacturing elbows. 3,414,470, 12–3–68, Cl. 162—218.

Marcoux, Leo: *See*—
Flanagan, Charles D., and Marcoux. 3,414,706.

Marcoux, Leo, to Texas Instruments Inc. Component oven. 3,414,705, 12–3–68, Cl. 219—210.

Marcus, Erich, to Union Carbide Corp. Di(ω-hydroxyalkyl) methylcyclopentanes. 3,414,626, 12–3–68, Cl. 260—617.

Mariner, William H. Double open end wrench with flexible nut engaging means. 3,413,878, 12–3–68, Cl. 81—64.

Marks, Leonard. Interconnectable toy elements having hook members. 3,414,265, 12–3–68, Cl. 273—156.

Marley, Stanford. Apparatus for mending knitted fabrics. 3,413,822, 12–3–68, Cl. 66—1.

Marschall, Otto, to Akustische u. Kino-Gerate Gesellschaft m.b.H. Telephone handset with pressure gradient microphone substituted for carbon microphone. 3,414,675, 12–3–68, Cl. 179—1.

Marsh, Byron E.: *See*—
Mosier, Benjamin, McCorkle, Du Brow, and Marsh. 3,414,517.

Marshall, John D.: *See*—
White, Harold. 3,413,999.

Martens, Vincent A.: *See*—
Le Sueur, Robert C., and Martens. 3,413,742.

Martin, Elmore L.: *See*—
Tan, Henry H., and Martin. 3,414,612.

Martin, Jack L., Buffer member for tree shaking device. 3,414,314, 12–3–68, Cl. 294—103.

Martin, Jean: *See*—
Leroy, Alphonse, Gijsemans, Peerts, Hulot, Martin, and Andrieu. 3,414,375.

Martin-Marietta Corp.: *See*—
Martin, Willis G., and Dutton. 3,414,215.
Yahle, Daniel I. 3,413,992.

Martin, Paul G. Device for dispensing material from collapsible container means. 3,414,166, 12–3–68, Cl. 222—102.

Martin, Richard T.: *See*—
Butler, Richard A., Jr., Ziedelis, and Martin. 3,414,208.
Geib, Robert L., and Martin. 3,414,685.

Martin, Robert L., to Consolidated Electronics Industries Corp. Magnetic latching relay. 3,414,852, 12–3–68, Cl. 335—170.

Martin, Willis G., and R. F. Dutton, to Martin-Marietta Corp. Automatic seeker gain calibrator. 3,414,215, 12–3–68, Cl. 244—3.15.

Marton, Joseph: *See*—
Brown, James R., Marton, and Rowley. 3,414,469.

Marx, Louis, & Co., Inc.: *See*—
Seitzinger, David L., and Weidler. 3,414,194.

Maschinenfabrik Augsburg-Nurnberg, A.G.: *See*—
Scobel, Hugo, and Steidle. 3,413,709.

Maschinenfabrik Goedecker, Bernard J.: *See*—
Wagner Alfred. 3,413,729.

Maschinenfabrik Oerlikon: *See*—
Abegg, Karl. 3,414,749.

Mason, Paul J., to Allied Chemical Corp. Flame-retardant, nonshrinking urea-formaldehyde foams. 3,414,526, 12–3–68, Cl. 260—2.5.

Massachusetts Institute of Technology: *See*—
Reed, Thomas B. 3,414,661.

Massard, Andre, to Automobiles M. Berliet. Device for reducing the exhaust smoke of a combustion engine. 3,413,966, 12–3–68. Cl. 123—139.

Massonne, Joachim, to Kali-Chemie Aktiengesellschaft. Preparation of tetrafluoromethane. 3,414,628, 12–3–68, Cl. 260—653.8.

Master, Wesley R., to Applied Power Industries, Inc. Rapid can former. 3,413,835, 12–3–68, Cl. 72—361.

Matherly, Arthur G.: *See*—
Powell, Mark E., and Matherly. 3,413,689.

Mathot, Jacques: *See*—
Coutant, Andre, and Mathot. 3,414,178.

Masterson, Earl E.: *See*—
Moran, Robert J., Shneider, Masterson, and Bunner. 3,414,106.

Matsumoto, Jun-Ichi: *See*—
Minami, Shinsaku, Fujita, and Matsumoto. 3,414,567.

Matthews, Herbert L. Construction and operation of safety dumping system and recovery boilers. 3,413,936, 12–3–68, Cl. 110—7.

Matthews, Robert B., to The Plessey Co. Ltd. Automatic control of piston-type hydraulic actuators. 3,413,895, 12–3–68, Cl. 91—400.

Mattix, Emory D., to Cities Service Research and Development Co. Reaction vessel for improved temperature regulation in exothermic reactions. 3,414,386, 12–3–68, Cl. 23—288.

Mauz, Otto: *See*—
Prinz, Eberhard, and Mauz. 3,414,538.

Maxwell, Claude F., and P. M. Maxwell. Feed pellet making machine. 3,414,416 12–3–68, Cl. 99—235.

Maxwell, Frank R. Hydraulic valve lifter puller. 3,413,705, 12–3–68, Cl. 29—213.

Maynard, Howard A. Winding apparatus. 3,414,207, 12–3–68, Cl. 242—56.

Maxwell, Pairlee M.: *See*—
Maxwell, Claude F., and P. M. 3,414,416.

Mayes, Nathan: *See*—
Fein, Marvin M., and Mayes. 3,414,596.

Mayo, Robert F.: *See*—
Barr, Thomas A., Jr., and Mayo. 3,414,192.

McCall, Marvin A., and H. W. Coover, Jr., to Eastman Kodak Co. Cyclooligomerization. 3,414,629, 12–3–68, Cl. 260—666.

McCarthy, William P., to Ridgewood Instrument Co. Spring loaded sleeve lug. 3,413,772, 12–3–68, Cl. 52—677.

McCloud, James R., and L. D. McConnell, to I-T-E Circuit Breaker Co. Multi-break interrupter assembly. 3,414,695, 12–3–68, Cl. 200—150.

McConnell, Lorne D.: *See*—
McCloud, James R., and McConnell. 3,414,695.

McCorkle, Miles R.: *See*—
Mosier, Benjamin, McCorkle, Du Brow, and Marsh. 3,414,517.

McCormack, Thomas L., M. A. Morin, and D. T. Staffiere, to said Morin, and said Staffiere, assors. to Laboratory for Electronics, Inc. Means interconnecting printed circuit memory planes. 3,414,892, 12–3–68, Cl. 340—174.
McCoy, Carleton J.: *See*—
Douros, John D., Naslund, and McCoy. 3,414,477.
McCracken, James R.: *See*—
Comer, Marvin B., and McCracken. 3,413,796.
McCune, Robert B., and R. L. Wilson, to Abex Corp. Railroad retarder control systems. 3,413,930, 12–3–68, Cl. 104—26.
McDonnell Douglas Corp.: *See*—
Carr, William F. 3,414,806.
Merrifield, Samuel E. 3,413,850.
McDonnell, Francis R. M., to Lever Brothers Co. Detergent composition. 3,414,520, 12–3–68, Cl. 252—110.
McDonough Co.: *See*—
Eads, Harold O., and Robison. 3,413,790.
McElroy, Melvin R., to Hughes Aircraft Co. Counting circuit. 3,414,718, 12–3–68, Cl. 235—92.
McGough, Charles B.: *See*—
Addoms, John F., Jr., and McGough. 3,413,704.
McKay, Stephen A., to Electric Reduction Co. of Canada, Ltd. Blending apparatus for solids. 3,414,164, 12–3–68, Cl. 222—64.
McKinney, Charles D., Jr.: *See*—
Pheasant, James R. E., Tarpley, and McKinney. 3,414,443.
McKnight, William T., W. F. Otto, R. W. Hawkins, and J. R. Dearman (deceased) by D. H. Dearman (administratrix), to United States of America, Army. Flashlamp circuit with a high triggering condenser and a load condenser in parallel. 3,414,765, 12–3–68, Cl. 315—173.
McLoad, Kenneth W., to Schlumberger Technology Corp. Seismic survey systems. 3,414,874, 12–3–68, Cl. 340—7.
McManama, Charles E. Bandsaw guide. 3,414,028, 12–3–68, Cl. 143—165.
McMullen, John J.: *See*—
Corvino, Ralph A. 3,414,155.
McMullin, Edward V., and J. M. Edwards, to Laclede Gas Co. Compressor. 3,414,187, 12–3–68, Cl. 230—56.
McNeill, Albert G., to Bachmann Bros., Inc. Auxiliary clip-on spectacles. 3,414,350, 12–3–68, Cl. 351—58.
McNinch, Joseph H., Jr.: *See*—
Peeps, Donald J., and McNinch. 3,414,424.
McNutt, William C.: *See*—
Webb, James E. 3,414,012.
Meacham, George B. K.: *See*—
Dangel, Stephen C., and Meacham. 3,414,023.
Medley, Jackson C., to Caterpillar Tractor Co. Mounting structure for individually suspended vehicle wheels. 3,414,289, 12–3–68, Cl. 280—106.5.
Medley, Jackson C.: *See*—
Kress, Ralph H., Medley, and Merritt. 3,413,894.
Mehltretter Charles L., and W. B. Roth, to United States of America, Agriculture. Color imparting complexes of starch ethers for swimming pools. 3,414,515, 12–3–68, Cl. 210—62.
Meijer, Roelf J., and R. A. J. O. Van Witteveen, to North American Philips Co., Inc. Device for converting calorific energy into mechanical energy. 3,413,801, 12–3–68, Cl. 60—24.
Meilier, Francois, to Produits Chimiques Pechiney Saint-Gobain. Method of preparing copolymers of formaldehyde and furfural. 3,414,544, 12–3–68, Cl. 260—67.
Meisingset, Kaare R., T. Thauland, O. Kvingedal, and I. Mo, to International Standard Electric Corp. Apparatus for checking the advancement of the tape in a tape reader. 3,414,671, 12–3–68, Cl. 178—42.
Melamine Research Corp.: *See*—
Haines, Harry W., Jr., and Robinson. 3,414,571.
Melan, Eugene H., and H. F. Tepper, to International Business Machines Corp. Heat dissipating module assembly and method. 3,414,775, 12–3–68, Cl. 317—100.
Melvin, Roy J., to MSL Industries, Inc. Dynamoelectric machine field core winding and method of construction. 3,414,746, 12–3–68, Cl. 310—42.
Menault, Jacques: *See*—
Guyet, Louis, and Menault. 3,414,711.
Mentachel, Hellmuth, and J.-D. Welly, to Siemens Aktiengesellschaft. Regenerator system for MHD generators. 3,414,049, 12–3–68, Cl. 165—4.
Merchant, Leo F., to American Standard Inc. Inlet pressure regulator. 3,414,009, 12–3–68, Cl. 137—494.
Merchant, Leo F., and D. R. Grahl, to American & Standard Inc. Expansion valve. 3,414,014, 12–3–68, Cl. 137—559.
Merk, Andrew W., to FMC Corp. Fruit harvesting machine. 3,413,788, 12–3–68, Cl. 56—329.
Merle, Jean, to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, and Societe Francaise Aeronautique et Maritime. Vehicle braking systems. 3,414,333, 12–3–68, Cl. 303—21.
Merrifield, Samuel E., to McDonnell Douglas Corp. Means for determining the velocity of a luminescent gas stream. 3,413,850, 12–3–68, Cl. 73—194.
Merrill, John W., to Union Carbide Corp. Shipping vessel. 3,414,332, 12–3–68, Cl. 302—29.
Merritt, Donald E.: *See*—
Kress, Ralph H., Medley, and Merritt. 3,413,894.
Mersfelder, Robert E.: *See*—
Going, Louis H., Mersfelder, and Schmitt. 3,414,129.
Mertler, Charles S., to Essex Wire Corp. Thermostatic switch assembly and sensor. 3,414,710, 12–3–68, Cl. 219—450.
Mertzweiller, Joseph K., N. L. Cull, and R. S. Hawley, to Esso Research and Engineering Co. Sizing glass fibers with polybutadiene-dicarboxylic acid anhydride amino salt adducts. 3,414,432, 12–3–68, Cl. 117—126.
Merz, Max, to Nicholson Tile Co. Chain saw shroud structure. 3,414,026, 12–3–68, Cl. 143—32.
Mescher, Harold E., and R. L. Morton, to Pacific Scientific Co. Fluid treating transfer mechanism. 3,414,249, 12–3–68, Cl. 266—6.
Mestre, Luis. Sheet sorter having pocket indexing means. 3,414,256, 12–3–68, Cl. 270—58.
Metzger, Sidney H.: *See*—
Cross, James M., Campbell, and Metzger. 3,414,619.
Mewse, Charles, deceased, by M. Mewse, executrix, to Avdel Ltd. Fastening devices. 3,414,253, 12–3–68, Cl. 269—47.
Mewse, Mary: *See*—
Mewse, Charles. 3,414,253.
Meyer, Hermann: *See*—
Buachmann, Karl, Meyer, Nonnenmacher, and Schweitzer. 3,414,632.
Michalko, Edward, to Universal Oil Products Co. Catalyst manufacture. 3,414,525, 12–3–68, Cl. 252—453.
Michel, Stephen, and G. M. Reitter, to Eastman Kodak Co. Dye bleach process. 3,414,411, 12–3–68, Cl. 96—29.
Microwave Associates, Inc.: *See*—
Burt, William G., Jr. 3,414,849.
Midwestern Equipment Co., Inc.: *See*—
Thomas, Francis W. 3,414,808.
Milgo Electronic Corp.: *See*—
Stegenga, Jerry A. 3,414,732.
Millay, Norma S. Pompon winding form. 3,413,699, 12–3–68, Cl. 28—2.
Miller, James C., and C. M. Wine, to Radio Corp. of America. Display device. 3,414,897, 12–3–68, Cl. 340—324.
Miller, Joseph H., to Hi-Shear Corp. Apparatus for fastening a discontinuous body to another structure and the resulting joint. 3,414,304, 12–3–68, Cl. 287—189.36.
Miller, Kenneth H. Power control circuit. 3,414,766, 12–3–68, Cl. 315—194.
Miller, Lewis F., to International Business Machines Corp. Method of fabricating resistor compositions. 3,414,641, 12–3–68, Cl. 264—40.
Miller, Lewis F., and G. J. De Paolo, to International Business Machines Corp. Screening inks with sublimable solids. 3,414,417, 12–3–68, Cl. 106—26.
Miller, Wendell S. Closed path laser devices. 3,414,835, 12–3–68, Cl. 331—94.5.
Minami, Shinsaku, A. Fujita, and J.-I. Matsumoto, to Dainippon Pharmaceutical Co., Ltd. 2-[2-(5-nitro-2-furyl)-vinyl]-pyridine-N-oxides and processes for preparing thereof. 3,414,567, 12–3–68, Cl. 260—240.
Minemura, Norihiro: *See*—
Kitamura, Kazuo, and Minemura. 3,414,368.
Miner Industries, Inc.: *See*—
Litt, Donald D., and Jaroff. 3,414,123.
Minnesota Mining and Mfg. Co.: *See*—
Paidosh, Richard L. 3,414,739.
Minogue, Robert W., to Heath Northwest, Inc. Plastic-metal joint and method for producing the same. 3,414,305, 12–3–68, Cl. 287—189.365.
Mishler, Jerry D. Ball and stick game. 3,413,755, 12–3–68, Cl. 46—220.
Mitchell, Kenneth D.: *See*—
Jackson, Randolph H., Eddy, Mitchell, Johnson, Hall, and Hicks. 3,414,108.
Mitchell, Lawrence C.: *See*—
Dubeck, Michael, and Mitchell. 3,414,518.
Dubeck, Michael, and Mitchell. 3,414,594.
Mitchell, William. Golf practice putting rug. 3,414,266, 12–3–68, Cl. 273—176.
Mitchum, Bernett W. Foldable prop rest or seat. 3,414,323, 12–3–68, Cl. 297—461.
Mitrovic, Milan: *See*—
Lehr, Hanns H., and Mitrovic. 3,414,587.
Mitsui Petrochemical Industries, Ltd.: *See*—
Fujita, Yasuhiro, Nakamura, and Hijii. 3,414,608.
Mizutani, Toshio: *See*—
Fujimoto, Keimei, Okuno, Ueda, Mizutani, Horie, and Nodera. 3,414,607.
Mjorne, Olle: *See*—
Lindholm, Ingemar, Mueller, and Mjorne. 3,414,438.
Mlavsky, Abraham I., to Tyco Laboratories, Inc. Method of purifying organochlorosilanes. 3,414,603, 12–3–68, Cl. 260—448.2.
Mo, Ivar: *See*—
Meisingset, Kaare R., Thauland, Kvingedal, and Mo. 3,414,671.
Mobay Chemical Co.: *See*—
Cross, James M., Campbell, Metzger. 3,414,619.
Moberly, Charles W.: *See*—
Kahle, Gerald R., and Moberly. 3,414,554.
Mobil Oil Corp.: *See*—
Jockel, Joseph T. 3,414,523.
Jones, Danel G. 3,414,588.
Nygaard, Edwin M. 3,414,598.
Vogt, Thomas C., Jr. 3,414,055.
Von Schultz, Hans U. 3,413,946.
Mod, William A., to The Dow Chemical Co. Extraction of tellurium from tellurium-bearing ores. 3,414,380, 12–3–68, Cl. 23—209.
Modig, Eric: *See*—
Modig, Torsten and E., and Lofgren. 3,413,959.
Modig, Torsten and E., and E. A. Lofgren. Cattle stanchion. 3,413,959, 12–3–68, Cl. 119—148.
Molliere, Jean: *See*—
Bauwens, Robert, and Molliere. 3,414,377.
Mollring, Friedrich K., to Carl-Zeiss-Stiftung, d.b.a. Carl Zeiss. Illumination device for microscopes. 3,414,345, 12–3–68, Cl. 350—87.
Molyneux, Alan: *See*—
Abson, James W. Landau, Langton, and Molyneux. 3,414,524.
Monacelli, Walter J.: *See*—
D'Alello, Gaetano F. 3,414,550.

Monarch Machine Tool Co., The: *See*—
Gusching, Nagle V. 3,414,019.
Monitor Instrument Co.: *See*—
Glick, Roy V., McNeal, and Costanzo. 3,414,896.
Monsanto Co.: *See*—
Bach, Hartwig C. 3,414,545.
Barton, David M. 3,414,898.
Brown, Gordon E., and Huff. 3,414,461.
Conner, Robert W. 3,413,671.
Fink, Walter. 3,414,584.
Fitch, Steven J., and Irani. 3,414,393.
Kern, Roland J. 3,414,553.
Morgan, Herbert S., Jr. 3,414,645.
Riess, Jean G., and Van Wazer. 3,414,390.
Summers, Charles G. 3,414,616.
Montagne, Johannes Th. W., and B. Cross, to Shell Oil Co. Compositions and methods for controlling fungi using 3-imino-1,2-dithiole compounds. 3,414,653, 12–3–68, Cl. 424—277.
Montecatini Edison S.p.A.: *See*—
Sianesi, Dario, Fontanelli, and Nelli. 3,414,627.
Moord, John R., and J. S. Sweeney, to North American Rockwell Corp. Underwater manipulator system. 3,414,136, 12–3–68, Cl. 214—1.
Moore, Howard F.: *See*—
O'Brien, Martin F. and Moore. 3,414,905.
Moore, James O., to Westinghouse Electric Corp. Electronic apparatus for high speed transistor switching. 3,414,783, 12–3–68, Cl. 317—235.
Moore, Robert L.: *See*—
Bray, Lane A., and Moore. 3,414,403.
Moore, William G., to The Dow Chemical Co. Gamma manganese dioxide, method of preparing and dry cell type battery employing gamma type manganese dioxide. 3,414,440, 12–3–68, Cl. 136—107.
Moran, Robert J., H. M. Shneider, E. E. Masterson, and G. J. Bunner, to Honeywell Inc. High speed printer with improved paper engine arrangement. 3,414,106, 12–3–68, Cl. 197—133.
Morbello, Mario: *See*—
Galli De P., Sergio, Genet, Ghiurghi, Agazzi, Morbello, and Brogg. 3,414,476.
Morgan, Herbert S., Jr., to Monsanto Co. Process for spinning wholly aromatic polyamide fibers. 3,414,645, 12–3–68, Cl. 264—210.
Morgan, Raymond E., to General Electric Co. Power converter employing integrated magnetics. 3,414,797, 12–3–68, Cl. 321—2.
Morin, Maurice A.: *See*—
McCormack, Thomas L., Morin, and Staffiere. 3,414,892.
Morisawa, Yasuhiro: *See*—
Tanabe, Katsumi, Takasaki, Hayashi, Morisawa, and Hashimoto. 3,414,566.
Moritz, Charles W., and A. Streddo, to General Instruments Corp. Fine-coarse tuning drive. 3,413,861, 12–3–68, Cl. 74—10.5.
Morrison, John D., to J. S. Plastics Inc. Linerless plastic closures. 3,414,151, 12–3–68, Cl. 215—40.
Morroni Richard J.: *See*—
Price, Frank B., Morroni, and Lucas. 3,414,436.
Morrow, Alfred C.: *See*—
Ford, David M., Morrow, and Barr. 3,413,677.
Morrow William J., and C. T. Rucker, to United States of America, Army. Microwave strip transmission lines. 3,414,848, 12–3–68, Cl. 333—84.
Mortimer, Robert M., to Ford Motor Co. Combination weatherstrip and windshield washer hose. 3,414,317, 12–3–68, Cl. 296—28.
Morton Robert L.: *See*—
Mescher, Harold E., and Morton. 3,414,249.
Moser, Kuno, and K. Bäuerle. Electric razor with adjustable cutter. 3,413,719, 12–3–68, Cl. 30—43.2.
Mosier, Benjamin, M. R. McCorkle, P. L. du Brow, and B. E. Marsh, to Armour Industrial Chemical Co. Method of protecting metal surfaces against abrasive wear. 3,414,517, 12–3–68, Cl. 252—33.
Motis, Gilbert M. Magnetically coupled momentary switch. 3,414,853, 12–3–68, Cl. 335—207.
Motorola, Inc.: *See*—
Chapman, Ronald H. 3,414,881.
Helda, Robert W., and Lincoln. 3,413,713.
Jansen, Joseph N. 3,414,843.
Oliver, Donald S. 3,414,721.
Russnak, Clarence J. 3,414,218.
Tanner, De Loss J. 3,414,667.
Mott, James D.: *See*—
Brown, Cicero C., and Mott. 3,414,056.
Motta, Nathaniel, to California Institute Research Foundation. Voltage and current regulated power supply circuit including self-protective features. 3,414,774, 12–3–68, Cl. 317—33.
Moulton, Arthur K. Trailer hitch. 3,414,294, 12–3–68, Cl. 280—489.
Mueller, Bo: *See*—
Lindholm, Ingemar, Mueller, and Mjorne. 3,414,438.
Mui, David Y. H., and N. Szasz, to Northern Electric Co. Ltd. High potential pulse test circuit for capacitors. 3,414,792, 12–3–68, Cl. 320—1.
Mukojima, Michi. Flexible optical system for transmitting light or optical images. 3,414,344, 12–3–68, Cl. 350—35.
Mullen, Jerrold L.: *See*—
Sheldrake, Leonard J., and Mullen. 3,414,800.
Mullen, Roy E., to Rochester Razor, Inc. Disposable plastic safety razor. 3,413,720, 12–3–68, Cl. 30—62.
Müller, Alfred H., and H. Höhn, to Daimler-Benz Aktiengesellschaft. Multi-wheel steering system for motor vehicles. 3,414,286, 12–3–68, Cl. 280—91.
Muller, Hans, to Grapha Maschinenfabrik Hans Muller A.G. Sheet feeding and collating apparatus. 3,414,257, 12–3–68, Cl. 270—58.
Müller, Peter, to International Standard Electric Corp. Distinguishing matrix that is capable of learning, for analog signals. 3,414,885, 12–3–68, Cl. 340—172.5.
Munse, Robert A., to Vare Corp. Fastener. 3,414,035, 12–3–68, Cl. 151—41.75.
Munson, Robert D., and P. M. Gundlach, to Emerson Electric Co. Controlled rectifier DC motor speed control circuit. 3,414,791, 12–3–68, Cl. 318—331.
Murphy, Beverley E. P., to Canadian Patents and Development Ltd. Determination of thyroxine. 3,414,383, 12–3–68, Cl. 23—230.
Murphy, William W., to The Torrington Co. Retainer with seals for thrust bearings. 3,414,341, 12–3–68, Cl. 308—235.
Murr, Theodore C. Handled container with sliding cover. 3,414,159. 12–3–68, Cl. 220—41.
Myers, Herbert: *See*—
Langley, Robert C., and Myers. 3,413,777.
Myles, William J., and R. K. Kunkel, to Celanese Corp. Method of spinning bicomponent cellulose esters. 3,414,644, 12–3–68, Cl. 264—168.
Nadeau, Herbert G., and P. H. Waszeciak, to The Upjohn Co. Gel point indicator. 3,413,836, 12–3–68, Cl. 73—17.
Nadel, George H.: *See*—
Roberts, Clifford J. 3,414,211.
Nadelson, Philip. Apparatus for producing a coffee infusion. 3,413,908, 12–3–68, Cl. 99—297.
Nagai, Teruo: *See*—
Shinohara, Yasuo, Yamaguti, and Nagai. 3,414,498.
Nakajima, Junichi: *See*—
Noguchi, Yuichi, Nakajima, Uno, and Nakanishi. 3,414,478.
Nakamura, Isao: *See*—
Fujita, Yasuhiro, Nakamura, and Hijii. 3,414,608.
Nakanishi, Toru: *See*—
Noguchi, Yuichi, Nakajima, Uno, and Nakanishi. 3,414,478.
Nalco Chemical Co.: *See*—
Oberhofer, Alfred W. 3,414,510.
Thompson, Ralph B., and Jursich. 3,414,547.
Nash, Jack O., to Chandler Evans Inc. Force balance output control mechanism. 3,414,216, 12–3–68, Cl. 244—3.21.
Naslund, Lars A.: *See*—
Douros, John D., Naslund, and McCoy. 3,414,477.
National Aeronautics and Space Administration: *See*—
Webb, James E. 3,414,012.
National Cash Register Co., The: *See*—
Schwartz, Sidney J. 3,414,890.
Trimble, Cebern B. 3,414,717.
National Lead Co.: *See*—
Bonilla, Charles F. 3,414,727.
National Lock Co.: *See*—
Tresemer, Howard G. 3,414,309.
National Research Corp.: *See*—
Allen, Lloyd R. 3,414,655.
National-Standard Co.: *See*—
Lang, Ernest U., and Hope. 3,413,832.
Pearce, Thomas H., and Frazier. 3,414,446.
Natoli, Joseph G., and A. A. Lach, to M & T Chemicals Inc. Process for preparing tertiary phosphines. 3,414,625, 12–3–68, Cl. 260—606.5.
Navigation Computer Corp.: *See*—
Jones, John P., Jr. 3,414,716.
Nealis, Raymond N. Apparatus for slack control. 3,414,134, 12–3–68, Cl. 213—43.
Nell, Jamds A. Clipper with cylindrical anvil and method of replacing the anvil surface. 3,413,879, 12–3–68, Cl. 83—13.
Nelli, Giuseppe: *See*—
Sianesi, Dario, Fontanelli, and Nelli. 3,414,627.
Nelson, Carl E. Mount for telescope sight. 3,414,221, 12–3–68, Cl. 248—205.
Nelson, Howard B., and H. D. Schildt. Trailer and hoist. 3,414,149, 12–3–68. Cl. 214—506.
Neumeier, Albert, and J. L. Van Gulik, to Omark Industries, Inc. Gravity drop stud welding apparatus. 3,414,699, 12–3–68, Cl. 219—95.
Neumeister, Hansjorg: *See*—
Hildebrand, Volker, and Neumeister. 3,414,883.
New Castle Products, Inc.: *See*—
Harris, Donald S. 3,414,040.
Newell, William E., to Westinghouse Electric Corp. Acoustically resonant device. 3,414,832, 12–3–68, Cl. 330—31.
Newton, William E., to Loma Linda University. Flow control unit. 3,414,000, 12–3–68, Cl. 137—209.
Nicholson Tile Co.: *See*—
Merz, Max. 3,414,026.
Nickel, Horst, F. Suckfull, and K.-H. Schundehutte, to Farbenfabriken Bayer Aktiengesellschaft. Bis triazole azo dyestuffs. 3,414,558, 12–3–68, Cl. 260—157.
Nicolao, Michel, to Compagnie Industrille Francaise des Tubes Electroniques, Societe Anonyme. Photorheostat including discharge lamp and masking means and utilizing length of discharge. 3,414,730. 12–3–68, Cl. 250—217.
Niederer, Kurt W.: *See*—
Bell, Charles C., and Niederer. 3,413,794.
Niel, Robert L., to Commissariat a l'Energie Atomique. Device for measuring time intervals between instants marking the course of the phenomenon. 3,414,812, 12–3–68, Cl. 324—68.
Nielsen, Jorgen L., to Anchor Coupling Co., Inc. Constant voltage power supply utilizing independent reference and control circuits coupled to each other by an optical link 3,414,798. 12–3–68, Cl. 321—2.
Nilsen, Tor N.: *See*—
Heede, Arne V., Fredriksen, and Nilsen. 3,414,649.
Nimtz, Klaus, and G. Franzen, to Palitex Project-Co. G.m.b.H. Belt drive. 3,413,865, 12–3–68, Cl. 74—242.9.

Nippon Kogaku K.K.: *See*—
Kimura, Shuji. 3,414,209.
Nippon Seiko Kabushiki Kaisha: *See*—
Takahashi, Tadanobu. 3,414,275.
Nischk, Gunther: *See*—
Wieden, Horst, Kleiner, Nischk, and Szita. 3,414,569.
Nobel, Fred I., and B. D. Ostrow. Electrodeposition of copper. 3,414,493, 12–3–68, Cl. 204—52.
Nodera, Katsuji: *See*—
Fujimoto, Keimei, Okuno, Ueda, Mizutani, Horie, and Nodera. 3,414,607.
Noguchi, Yuichi, J. Nakajima, T. Uno, and T. Nakanishi, to Kyowa Hakko Kogyo Co., Ltd. Process for preparing L-glutamine by fermentation method. 3,414,478, 12–3–68, Cl. 195—29.
Nohe, Heinz: *See*—
Winderl, Siegfried, Hoffmann, Palm, Nohe, Baer, and Harders. 3,414,606.
Nonnenmacher, Helmut: *See*—
Buschmann, Karl, Meyer, Nonnenmacher, and Schweitzer. 3,414,632.
Norberg, Carl-Gustaf, to Aktiebolaget Electrolux. Ice tray having readily removable cover. 3,414,229, 12–3–68, Cl. 249—121.
Norco, Inc.: *See*—
Pressley, Clardnce G. 3,413,692.
Nordblom, George F., and G. W. Bodamer, to ESB Inc. Method for producing flakes of nickel. 3,414,486, 12–3–68, Cl. 204—10.
Norden, Alexander R. Electrical terminals. 3,414,866, 12–3–68, Cl. 339—59.
Nordstedt, Hans J., and L. F. Delin, to Aktiebolaget Hakanssons Industrier. Device in electrical closets. 3,413,659, 12–3–68, Cl. 4—131.
Nordstrom, Lars E., J. F. Wagomer, and R. M. Lollar, to Armour and Co. Coloring leather. 3,414,366, 12–3–68, Cl. 8—12.
Norfin, Inc.: *See*—
Snellman, Donald L., and Keeler. 3,414,254.
North American Philips Co., Inc.: *See*—
Appel, Arne. 3,414,269.
Berzups, Oswald. 3,414,130.
Eisemann, Kurt. 3,414,271.
Hermes, Willem, and Verhagen. 3,414,687.
Meijer, Roelf J., and Van Witteveen. 3,413,801.
Reerink, Engbert H., Westerhof, and Scholer. 3,414,590.
Van der Lely, Piet. 3,413,885.
Van Geuns, Johannes R. 3,413,814.
Van Kamp, Harmen. 3,414,591.
North American Rockwell Corp.. *See*—
Manasevit, Harold M. 3,414,434.
Moord, John R., and Sweeney. 3,414,136.
Northern Electric Co. Ltd.: *See*—
Bohm, John. 3,414,779.
Mui, David Y. H., and Szasz. 3,414,792.
Norton, Stanley E.: *See*—
Engle, Robert B., and Norton. 3,414,267.
Norvelle, Ralph E. Tape handling means for tape embossing tool. 3,414,102, 12–3–68, Cl. 197—6.7.
Norville, Holmes S., and T. Eckstein, to Hexcel Products, Inc. Process for machining expanded honeycomb. 3,413,708, 12–3–68, Cl. 29—423.
Noyori, Gentaro, M. Honda, and T. Watanabe, to The Asahi Kasei Kabushiki Kaisha and Noguchi Institute. Method for the resolution of racemic glutamic acid and its salts. 3,414,611, 12–3–68, Cl. 260—534.
Nugent, Duane C., and D. C. Woodward, to Owens-Illinois, Inc. Methods of making organopolysiloxane flakes. 3,414,540, 12–3–68, Cl. 260—46.5.
Nurmi, Wayne F.: *See*—
Larva, Wilbert J., Sr., J. R. Larva, and Nurmi. 3,414,027.
Nutter, Benjamin P., to Schlumberger Technology Corp. Actuating means for well tools. 3,414,059, 12–3–68, Cl. 166—150.
Nutter, Benjamin P., to Schlumberger Technology Corp. Full-opening well tool. 4,314,061, 12–3–68, Cl. 166—226.
Nydqvist & Holm Aktiebolag: *See*—
Wingquist, Sten G. 3,413,890.
Nygaard, Edwin M., to Mobil Oil Corp. Method of preparing zinc carboxylate coordinated complexes of aromatic zinc dithiophosphates. 3,414,598, 12–3–68, Cl. 260—429.9.
Nystrand, Ernst D.: *See*—
Shade, Robert A., Nystrand, and Marchant. 3,413,706.
OECO Corp.: *See*—
Studer, Henry E. 3,413,789.
Oakes, Vincent, to Pure Chemicals Ltd. Preparation of alkyl tin compounds. 3,414,595, 12–3–68, Cl. 260—429.7.
Oanvitale, Salvatore. Coffee-making device. 3,413,910, 12–3–68, Cl. 99—303.
Oberhofer, Alfred W., to Nalco Chemical Co. Method for selectively removing chromates. 3,414,510, 12–3–68, Cl. 210—37.
Oberreich, Rudolf. Construction element. 3,413,774, 12–3–68, Cl. 52—720.
O'Brien, Martin F., and H. F. Moore, to Frontier Electronics, Inc. System for monitoring the operation of a plurality of machines. 3,414,905, 12–3–68, Cl. 346—33.
Odell, Hugh G.: *See*—
Webb, James E. 3,414,012.
Odom, Thomas B.: *See*—
Jorgensen, Poul, Jackson, and Odom. 3,414,186.
Oerlikon-Buhrle Holdong AG: *See*—
Fend, Heinrich. 3,414,020.
Off, Joseph W. A., to Haggar Co. Garment processing hanger. 3,414,174, 12–3–68, Cl. 223—52.
Ogden, William C.: *See*—
Kasmer, Thomas E., and Ogden. 3,414,786.
Ohashi, Kazuo. Roller skate having laminated wheels. 3,414,280, 12–3–68, Cl. 280—11.19.
Ohio Brass Co., The: *See*—
Connell, Thomas R., and Putt. 3,414,759.
Okuno, Yositosi. *See*—
Fujimoto, Keimei, Okuno, Ueda, Horie, Mizutani, and Nodera. 3,414,607.
Oldberg, Sidney, and W. R. Carey, to Eaton Yale & Towne Inc. Inflatable safety device. 3,414,292, 12–3–68, Cl. 280—150.
Oldweiler, Morey E., to Esso Research and Engineering Co. Fluid coking process. 3,414,504, 12–3–68, Cl. 208—53.
Oleson, George E., and R. M. Woods, to Corillium Corp. Chromium plating process. 3,414,492, 12–3–68, Cl. 204—51.
Olin Mathieson Chemical Corp.: *See*—
Appel, Rolf. 3,414,613.
Oliver, Donald S., to Motorola, Inc. Multiplier-divider including a bridge circuit. 3,414,721, 12–3–68, Cl. 235—195.
Oliveto, Eugene P.: *See*—
Krubiner, Alan M., and Oliveto. 3,414,564.
Olson, Robert E., to Reoco, Inc. Mopping device. 3,414,361, 12–3–68, Cl. 401—191.
Olson, Wilfred H. Apparatus for drying film. 3,413,730, 12–3–68, Cl. 34—73.
Olsson, Billy E., to Wauconda Tool and Engineering Co. Electrical connectors. 3,414,865, 12–3–68, Cl. 339—47.
Olstowski, Franciszek, and J. D. Watson, Sr., to The Dow Chemical Co. Method for producing low density graphite structures. 3,414,381, 12–3–68, Cl. 23—209.1.
Omark Industries, Inc.: *See*—
Neumeier, Albert, and Van Gulik. 3,414,699.
Ono, Hiroshi. Chopstick holder. 3,414,310, 12–3–68, Cl. 294—16.
O'Quinn, Paul V., to J. C. Renfroe & Sons, Inc. Lifting clamp. 3,414,315, 12–3–68, Cl. 294—104.
Orahood, Donald W., R. A. Slenys, and C. S. Warren, to International Telephone and Telegraph Corp. Control circuit for numerically positioned table. 3,414,785, 12–3–68, Cl. 318—18.
Orcutt, Dee R., to PPG Industries, Inc. Method for producing window panels. 3,414,443, 12–3–68, Cl. 156—106.
Orser, Lawrence D.: *See*—
Hughes, Robert O., Orser, Etten, and Iowa. 3,414,426.
Osborn, Oliver: *See*—
Robertson, John C., and Osborn. 3,414,404.
Osrow, Leonard, to Osrow Products Co., Inc. Tamperproof overcap for a valved pressure-loaded container. 3,414,167, 12–3–68, Cl. 222—182.
Osrow Products Co., Inc.: *See*—
Osrow, Leonard. 3,414,167.
Ostrow, Barnet D.: *See*—
Nobel, Fred I., and Ostrow. 3,414,493.
Otis Elevator Co.: *See*—
Bruns, William H., Diamond, and Jacoby. 3,414,088.
Ott, Hans: *See*—
Frey, Albert J., Hardtmann, and Ott. 3,414,574.
Ott, Heinrich: *See*—
Ehrhart, Gustav, Lindner, Hartfelder, and Ott. 3,414,578.
Ott, Karl-Heinz, H. Rohr, K. Dinges, and K.-H. Knapp, to Farbenfabriken Bayer Aktiengesellschaft. Elastic-thermoplastic copolymers with good thermal- and light-stability. 3,414,636, 12–3–68, Cl. 260—876.
Otto, William F.: *See*—
McKnight, William T., Otto, Hawkins, and Dearman. 3,414,765.
Oury, Robert F., to Harsco Corp. Conveyor scraper means. 3,414,116, 12–3–68, Cl. 198—230.
Overton Container Corp.: *See*—
Overton, Dolphin D., III. 3,414,152.
Overton, Dolphin D., III, to Overton Container Corp. Knockdown container. 3,414,152, 12–3–68, Cl. 217—12.
Owens, Leo G.: *See*—
Curtiss, Alan C., and Owens. 3,413,851.
Owens-Illinois, Inc.: *See*—
Baak, Nils T. E. A., and Rapp. 3,414,465.
Bruss, Howard G., Jr., Schlientz, and Wiens. 3,414,429.
Jasinski, Amy L. 3,414,463.
Nugent, Duane C., and Woodward. 3,414,540.
Poad, William J. 3,414,394.
Sorbie, Thomas B. 3,414,127.
PPG Industries, Inc.: *See*—
Orcutt, Dee R. 3,414,443.
Reese, Thomas J., and Corsi. 3,414,395.
Shaw, Hugh E., Jr. 3,414,902.
Pacific Car and Foundry Co.: *See*—
Palsson, Kristjan H. 3,413,758.
Pacific Scientific Co.: *See*—
Mescher, Harold E., and Morton. 3,414,249.
Paldosh, Richard L., to Minnesota Mining and Mfg. Co. Digital pulse selection device for monitoring a variable condition. 3,414,739, 12–3–68, Cl. 307—271.
Palitex Project-Co. G.m.b.H.: *See*—
Nimtz, Klaus, and Franzen. 3,413,865.
Palm, Christof: *See*—
Winderl, Siegfried, Hoffmann, Palm, Nohe, Baer, and Harders. 3,414,606.
Palsson, Kristjan H., to Pacific Car and Foundry Co. Locking assembly for sliding plug-type door. 3,413,758, 12–3–68, Cl. 49—220.
Pan American Petroleum Corp.: *See*—
Bankston, Dale M. 3,414,004.
Trieber, Lawrence E., Froning, and Jones. 3,414,053.
Paper Converting Machine Co., Inc.: *See*—
Shade, Robert A., Nystrand, and Marchant. 3,413,706.
Paper Mate Mfg. Co.: *See*—
Malm, Curtis L. 3,414,359.
Pappas, Chris: *See*—
Gorski, Alexander A., and Pappas. 3,414,825.

Paquin, Roger L., to Glacier Ware, Inc. Supreme service assembly. 3,413,820, 12–3–68, Cl. 62—371.
Pareja, Ramon: *See*—
Cook, Ernest E., and Pareja. 3,413,929.
Parrish Instruments Ltd.: *See*—
Parrish, Joseph R. 3,414,665.
Parrish, Joseph R., to Parrish Instrument Ltd. Speed changing mechanism. 3,414,665, 12–3–68, Cl. 74—193.
Pascua, Don F. Socket and carrier for multilead components. 3,414,869, 12–3–68, Cl. 339—193.
Pask, William J., to Ford Motor Co. Lash adjusting mechanism for the operating train of a reciprocating member. 3,413,964, 12–3–68, Cl. 123—90.
Patel, Chandra K. N., to Bell Telephone Laboratories, Inc. Infrared modulators and detectors employing single crystal Te or Se. 3,414,728, 12–3–68, Cl. 250—199.
Patnaude, Henry A. Pool cover anchor. 3,414,226, 12–3–68, Cl. 248—361.
Patrick, John J.: *See*—
Higgins, Edward R., and Patrick. 3,414,889.
Patrick, Phillip E. Inspection apparatus and method. 3,414,357, 12–3–68, Cl. 356—165.
Patterson, Charles B.: *See*—
Fisher, William T., Patterson, and Dahl. 3,413,917.
Patterson, Charles T.: *See*—
Lavery, Charles A., Patterson, and Willis. 3,413,778.
Patterson, Robert J., and R. R. Haberecht, to Texas Instruments, Inc. Process for making boron nitride film capacitors. 3,414,435, 12–3–68, Cl. 117—212.
Patterson, Robert V., Jr., to Ford Motor Co. Idling fuel limiting device. 3,414,244, 12–3–68, Cl. 261—41.
Patti, Vincent J., to TRW Inc. Apparatus for coating the interior of a container with a resinous film. 3,413,955, 12–3–68, Cl. 118—55.
Paufler, Robert M., to E. I. du Pont de Nemours and Co. Heterocyclic polymers prepared from the reaction of tetracarboxylic acid dianhydrides and tetramines. 3,414,543, 12–3–68, Cl. 260—47.
Paulus, Max, and C. Guillaud, to Centre National de la Recherche Scientifique. Manufacture of ferrite monocrystals. 3,414,372, 12–3–68, Cl. 23—51.
Pawsat, Ruben L., to Wald Mfg. Co., Inc. Basket attachment for bicycles. 3,414,223, 12–3–68, Cl. 248—230.
Payne, James A., to The Budd Co. Delaying action equalizer valve. 3,414,834, 12–3–68, Cl. 303—6.
Pearce, Thomas H., and L. C. Frazier, to National-Standard Co. Methods for building pneumatic tires. 3,414,446, 12–3–68, Cl. 156—128.
Pearson, Arthur S., D. J. Ford, and R. M. Clarke, to United-Carr Inc. Fastener stud for assembly in an apertured support. 3,413,690, 12–3–68, Cl. 24—73.
Pecis, John G.: *See*—
Lagarelli, Carmen J., and Pecis. 3,413,660.
Peek, Sandford C., Jr., to Sylvania Electric Products Inc. Semiconductor ballast for discharge lamp. 3,414,768, 12–3–68, Cl 315—240.
Peeps, Donald J., and J. H. McNinch, Jr., to The DeVilbiss Co. Method for spraying fibers and resinous materials. 3,414,424, 12–3–68, Cl. 117—5.1.
Peerts, Fernand: *See*—
Leroy, Alphonse Gijsemans, Peerts, Hulot, Martin, and Andrieu. 3,414,375.
Pekarek, Joseph L., to Gulf Research & Development Co. Method of treating abrasive-laden drilling liquid. 3,414,068, 12–3–68, Sl. 175—67.
Pekarek, Josepr L., to Gulf Research & Development Co. Jet drilling bit. 3,414,070, 12–3–68, Cl. 175—393.
Pellaton, Ernest C.: *See*—
Williams, David H., and Pellaton. 3,413,765.
Pellman, Ronald C., to Ford Motor Co. Gearshift linkage. 3,413 869, 12–3–68, Cl. 74—473.
Pelmulder, John P, to FMC Corp. Immersion freezing. 3,413,818, 12–3–68. Cl. 62—63.
Peltzer & Fils S.A., Societe anonyme Verviers: *See*—
Malchair, Armand. 3,414,021.
Penn Engineering and Mfg. Corp.: *See*—
Ernest, Richard B. 3,414,111.
Pepe, Enrico J., and B. Kanner, to Union Carbide Corp. Organofunctional silanes and siloxanes. 3,414,604, 12–3–68, Cl. 260—448.8.
Perkin-Elmer Corp., The: *See*—
Siegler, Edouard H., Jr. 3,414 354.
Perkins, Earl S., and M. L. Anthony, to Butler National Corp. Aircraft navigation system. 3,414,901, 12–3–68, Cl. 343—107
Perry, Charles O. Body having a snap-type fastener. 3,413,752. 12–3–68, Cl. 46—25.
Perry Landis H.: *See*—
Faccou, Armand L., and Perry. 3,414,276.
Perry, Norman L.: *See*—
Hecker, Arthur C., Rosenbaum, and Perry. 3,414,532.
Persson, Jan Edvard, to Atlas Copco Aktiebolag. Screw rotor machines and profiles. 3,414,189. 12–3–68, Cl. 230—143.
Peter, Robert W., to H. J Gorski. Electric motor. 3,413,717, 12–3–68, Cl. 29—605.
Peterson, Anita E.: *See*—
Petersen, Gerald A. 3,413,740.
Petersen, Gerald A., ½ to A. E. Petersen. Frictional retainer for excavator tooth key. 3,413,740, 12–3–68, Cl. 37—142.
Petersen, Gerald A. Auger head with odd number of arms. 3,414,890, 12–3–68, Cl. 175—391.
Peterson, Donald J., and H. R. Hays, to The Procter & Gamble Co. Alkali metalated tertiary phosphines and the preparation thereof. 3,414 624, 12–3–68, Cl. 260—606.5.
Petrick, Michael, to United States of America, Atomic Energy Commission. Magnetohydrodynamic generator. 3,414,744, 12–3–68, Cl. 310—11.
Petzold, Dieter, to Licentia Patent-Verwaltungs-G.m.b.H. Multiple-stage static counter having main and auxiliary stores. 3,414,719, 12–3–68, Cl. 235—92.
Peuser, Wolfgang, and O. Vierling, said Peuser assignor to said Vierling. Arrangement for evaluating the data content of punched tape, especially for controlling typesetting machines. 3,414,715, 12–3–68, Cl. 235—61.7.
Pfenninger, Bill J.: *See*—
Frager, Glenn E., and Pfenninger. 3,414,252.
Pfleiderer, Gerhard: *See*—
Bues, Curt, Granzin, Pfleiderer, and Anger. 3,414,084.
Pfrimmer & Co.: *See*—
Baumgartner, Ludwig. 3,414,370.
Pharmaceutical Plastics Ltd.: *See*—
Holland, Joseph R. 3,414,879.
Pheasant, James R. E., W. B. Tarpley, Jr., and C. D. McKinney, Jr., to Aeroprojects Inc. Solidified paraffin wax or lithium metal matrix with metal hydride dispersed therein and preparation. 3,414,443, 12–3–68, Cl. 149—20.
Phelan, Louis A. M., J. W. Vos, C. G. Wedige, and W. A. Spates, said Vos and said Spates assors. to said L. A. M. Phelan. Food broiler. 3,413,911, 12–3–68, Cl. 99—355.
Phelan, Louis A. M., J. W. Vos, C. G. Wedige, and W. A. Spates, said Wedige, Vos, and Spates assors to said Phelan. Food broiler. 3,413,912, 12–3–68, Cl. 99—400.
Philip Morris, Inc.: *See*—
Kruger, James B. 3,414,501.
Phillips, James L. Baffle means for heat exchanger. 3,413,939, 12–3–68, Cl. 110—97.
Phillips Petroleum Co.: *See*—
Allen, James D. 3,414,399.
Bresson, Clarence R., and Cobb. 3,414,617.
Bresson, Clarence R., and Cobb. 3,414,620.
Bresson, Clarence R., and Cobb. 3,414,621.
De Marco, Salvador S. 3,413,816.
Folz, John M. 3,414 482.
Hall, Warren S. 3,414,528.
Hitzman, Donald O. 3,414,511.
Kahle, Gerald R., and Moberly. 3,414,554.
Kraus, Gerard, and Brennan. 3,414,557.
Stapp, Paul R. 3,414,633.
Walker, Darrell W. 3,414,605.
Wilcox, Isaac L. 3,414,183.
Pian, Juliette F.: *See*—
Bartlett, Richard F., Ekman, and Pian. 3,414,410.
Picard, Jacques, to Institut Francais du Petrole des Carburants et Lubrifiants. Submarine craft. 3,413,947, 12–3–68, Cl. 114—16.
Pickering, Stephen C. Denture improvement. 3,413,721, 12–3–68, Cl. 32—2.
Piechocki, Benjamin: *See*—
Brewer, Robert F., and Piechocki. 3,413,711.
Pierce, Joseph E.: *See*—
Christine, William C., and Pierce. 3,414,414.
Pierce, William J.: *See*—
Du Rose, Arthur H., and Pierce. 3,414,491.
Pietsch, Le Roy: *See*—
Bartlett, Homer E., and Pietsch. 3,414,903.
Pioneer Heddle & Reed Co., Inc.: *See*—
Suhr, Robert N. 3,414,022.
Pipitz, Egon, G. Strohmeier, and B. Tarmann, to Schwarzkopf Development Co. and Gebr. Bohler & Co. Mold structures for continuously casting an elongated metal body of desired cross-section. 3,414,046, 12–3–68, Cl. 164—273.
Pittsburgh-Des Moines Steel Co.: *See*—
Rock, James H., Anderson, and Buckwalter. 3,413,813.
Pitzl, Gilbert, to E. I. du Pont de Nemours and Co. Coupled process for the production of polycarbonamide filaments. 3,414,646, 12–3–68, Cl. 264—210.
Place, Harry, to Rixon Electronics, Inc. Coded data entry and transmission apparatus. 3,414,670, 12–3–68, Cl. 178—17.
Planchard, Jerome A., Jr.: *See*—
Jones, Alva M., Planchard, Speed, and Claybaugh. 3,414,637.
Platt, Stephen A. Combined and correlated filmstrip loop and sound loop apparatus. 3,414,351, 12–3–68, Cl. 353—15.
Pleitt, Richard J., E. B. Relph, and L. Krater, to A. B. Dick Co. Apparatus for electrostatic line printing. 3,414,723, 12–3–68, Cl. 250—49.5.
Plessey Co. Ltd., The: *See*—
Matthews, Robert B. 3,413,895.
Plessey-UK Ltd.: *See*—
Bickers, Arthur, and Evers. 3,414,821.
Gay, Michael J. 3,414,829.
Plsek, Josef: *See*—
Pospisil, Jaroslav, Plsek, Hubacek, and Kucerik. 3,413,733.
Pneumafil Corp.: *See*—
Ford, David M., Morrow, and Barr. 3,413.677.
Poad, William J., to Owens-Illinois, Inc. Sintered glass article and method of making same. 3,414,394, 12–3–68, Cl. 65—18.
Polizzi, Andre J.: *See*—
Polizzi, Frank J. and A. J. 3,413,981.
Polizzi, Frank J. and A. J. Pocket ash tray. 3,413,981, 12–3–68, Cl. 131—256.
Pollia, Andrew A., to Raphael T. Pollia. Pipe coupling containing a detachable flange. 3,414,297. 12–3–68, Cl. 285—98.
Pollia, Raphael T.: *See*—
Pollia, Andrew A. 3,414,297.
Pollock, Ivor I. Tobacco pipes. 3,413,980, 12–3–68, Cl. 131—214.
Polrotor Inc.: *See*—
Hergert, Heinz. 3,413,695.
Polytechnic Institute of Brooklyn: *See*—
Birenbaum, Leo. 3,414,810.
Popeil, Samuel J. Skin cutter and peeler. 3,414,030, 12–3–68, Cl. 146—48.

Porrata, Louis R., and C. R. Young, to Columbia Broadcasting System, Inc. Electroplating apparatus for use with a phonograph record matrix. 3,414,502, 12–3–68, Cl. 204—281.

Porsche, Dr. Ind. h.c.F., Firma: *See*—
Porsche, Ferdinand A. 3,414,318.

Porsche, Ferdinand A., to Porsche, Dr. Ind. h.c.F., Firma. Storage compartment in motor vehicles. 3,414,318, 12–3–68, Cl. 296—37.

Porter Precision Products, Inc.: *See*—
Trab, Joseph L. 3,414,391.

Pospisil, Jaroslav, J. Plsek, V. Hubacek, and O. Kucerik, to CKd Praha, Oborovy Podnik. Shaft exchanger. 3,413,733, 12–3–68, Cl. 34—171.

Powell, Kenneth D., to Westinghouse Electric Corp. Frequency diversity coaxial magnetron. 3,414,760, 12–3–68, Cl. 315—39.59.

Powell, Mark E., and A. G. Matherly. Banding sheet laminates and materials having similar characteristics. 3,413,689, 12–3–68, Cl. 24—17.

Powers, William H.: *See*—
Hubble, David H., and Powers. 3,414,418.

Pralow, Walter E. L.: *See*—
Wagner, Ewald, and Pralow. 3,413,723.

Prandi, Franco and G. Extrusion machine with variable discharge. 3,413,684, 12–3–68, Cl. 18—12.

Prandi, Gianpiero: *See*—
Prandi, Franco and G. 3,413,684.

Pratt & Whitney, Inc.: *See*—
Reuteler, Johann F., and Kirkham. 3,414,787.
Wilson, Henry M. 3,413,893.

Precision Electronic Components Ltd.: *See*—
Ginsberg, Leon. 3,414,862.

Premier Carton Co.: *See*—
Fobiano, Frank E. 3,414,182.

Pressley, Clarence G., to Norco, Inc. Fastener having predetermined load release. 3,413,692, 12–3–68, Cl. 24—230.

Pretka, John E.: *See*—
Flowers, James A., Knodel, and Pretka. 3,413,696.

Preuss, Friedrich: *See*—
Koch, Werner, and Preuss. 3,413,732.
Koch, Werner, and Preuss. 3,414,259.

Price, Frank B., R. J. Morroni, and N. L. Lucas, to American Factors Associates, Ltd. Resistance massecuite heater. 3,414,436, 12–3–68, Cl. 127—19.

Priese, Werner K., and D. J. Davies, to Hills-McCanna Co. Ball valve. 3,414,233, 12–3–68, Cl. 251—172.

Priest, Herbert A., to Universal Fluid Dynamics Co. Coupling for misaligned reciprocal shafts. 3,414,302, 12–3–68, Cl. 287—87.

Prinz, Eberhard, and O. Mauz, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polyolefins stabilized with a three-component system. 3,414,538, 12–3–68, Cl. 260—45.95.

Procter & Gamble Co., The: *See*—
Going, Louis H., Mersfelder, and Schmitt. 3,414,129.
Peterson, Donald J., and Hays. 3,414,624.
Robson, Peter. 3,414,593.
Wells, Edward R. 3,414,459.

Proctor, Ronald. Blind nuts with resilient split tapered cage. 3,413,886, 12–3–68, Cl. 85—73.

Proctor-Silex Inc.: *See*—
Schwartz, Walter M., Jr., Turner, and Fagan. 3,413,741.

Produits Chimiques du Limbourg: *See*—
Leroy, Alphonse, Gijsemans, Peerts, Hulot, Martin, and Andrieu. 3,414,375.

Produits Chimiques Pechiney Saint-Gobain: *See*—
Meiller, Francois. 3,414,544.

Pronl, Alberto. Anti-sagging block means for metal closures. 3,413,761, 12–3–68, Cl. 49—396.

Proust, Pierre. Wire pulling assembly permitting the selective formation of a welding gun or a metallisation gun. 3,414,197, 12–3–68, Cl. 239—289.

Prouty, Robert E., to Essex Wire Corp. Solid-state motor starting circuit. 3,414,789, 12–3–68, Cl. 318—221.

Prouty, Robert E., to Essex Wire Corp. Bimetallic driven time delay relay. 3,314,859, 12–3–68, Cl. 337—51.

Pruitt, Gail T., to The Western Co. of America. Gels and method of making same. 3,414,392, 12–3–68, Cl. 44—7.

Pudewill, Carl J., to Sun Electric Corp. Speed control apparatus. 3,414,770, 12–3–68, Cl. 317—5.

Pugnaire, Jean-Pierre A., to Bytrex, Inc. Low deflection force transducer. 3,413,845, 12–3–68, Cl. 73—141.

Pure Chemicals Ltd.: *See*—
Oakes, Vincent. 3,414,595.

Purex Corp., Ltd.: *See*—
Fisher, William T., Patterson, and Dahl. 3,413,917.

Putt, Robert E.: *See*—
Connell, Thomas R., and Putt. 3,414,759.

Putz, John L., to General Electric Co. Frequency dependent wave transmission device. 3,414,844, 12–3–68, Cl. 333—10.

Quinlan, Robert V., to International Telephone and Telegraph Corp. Time-bandwidth reduction by dividing binary type signal into groups and producing coded signal of predetermined characteristic in response to each group. 3,414,677, 12–3–68, Cl. 179—15.55.

Radiation Inc.: *See*—
Bartlett, Homer E., and Pletsch. 3,414,903.

Radio Corp. of America: *See*—
Jacoby, George V. 3,414,894.
Lichowsky, Abraham. 3,414,684.
Miller, James C., and Wine. 3,414,897.
Siwko, Karol, and Thomas. 3,414,820.
Willis, Donald H. 3,414,669.

Raffaelli, Giulio. Self-fastening seat belt. 3,414,326, 12–3–68, Cl. 297—385.

Rai, Charanjit: *See*—
Szawlowski, Theodore H., and Rai. 3,414,630.

Raiskin, Emmanuil K.: *See*—
Sysoev, Leonid A., Konvisar, and Raiskin. 3,414,387.

Rapistan Inc.: *See*—
Fogg, Daniel A. 3,414,331.

Rall, Waldo, to United States Steel Corp. Contact drum and method for heat exchange with traveling strip. 3,414,048, 12–3–68. Cl. 165—1.

Rall, Waldo, to United States Steel Corp. Metal vaporization crucible with upstanding walls for confining and condensing vapor. 3,414,251, 12–3–68, Cl 266—39.

Ramig, Robert J., Jr., to Teletype Corp. Self-threading tape reel. 3,414,206, 12–3–6, Cl. 242—55.11.

Ranco Inc.: *See*—
Tufts, William S. 3,414,860.

Randall, George C. W.: *See*—
Huitson, John J., and Randall. 3,414,534.

Randell, Donald R., to The Geigy Co. Ltd. Mono-p-tertiary alkyl diarylamines. 3,414,618, 12–3–68, Cl. 260—576.

Rapp, Charles F.: *See*—
Baak, Nils T. E. A., and Rapp. 3,413,465.

Ravn, Jacob, to The West Co. Cap feeding apparatus. 3,414,112, 12–3–68, Cl. 198—33.

Ray, Charles L.: *See*—
Baarson, Robert E., and Ray. 3,414,128.

Raypak Co., Inc.: *See*—
Whittell, Alfred, Jr. 3,413,969.

Real Patentauswertung Anstalt: *See*—
Bertoglio, Guido. 3,413,945.

Rednessy, William L. Two-way friction control hitch. 3,414,295, 12–3–68, Cl. 280—511.

Reed, George R., to Dana Corp. Automatic and manual means for hub clutch. 3,414,096, 12–3–68, Cl. 192—38.

Reed, Thomas B., to Massachusetts Institute of Technology. High temperature furnace. 3,414,661, 12–3–68, Cl. 13—31.

Reerink, Engbert H., P. Westerhof, and H. F. L. Scholer, to North American Philips Co., Inc. 9β,10α-$\Delta^{5,10}$-bisdihydro progesterones and intermediates in the preparation thereof. 3,414,590 12–3–68, Cl. 260—397.3.

Reese, Thomas J., and R. J. Corsi, to PPg Industries, Inc. Method and apparatus for shaping glass sheets. 3,414,395, 12–3–68, Cl. 65—107.

Regis Nationale des Usines Renault: *See*—
de Coye de Castelet, Gaetan. 3,414,335.
Lecomte, Alexandre, and Ventre. 3,414,319.

Regnier, Albert, and J. R. P. De Buck, to International Standard Electric Corp. Analog network telephone switching system. 3,414,679, 12–3–68, Cl. 179—18.

Reid, Donald E., and H. M. Spurlin, to Hercules Inc. Modification of crystalline propylene polymers. 3,414,551, 12–3–68, Cl. 260—88.2.

Reid, Thomas H. Reversible buffing pad. 3,413,674, 12–3–68, Cl. 15—230.12.

Reidel, Berthold, to International Standard Electric Corp. Companding pulse code modulation system. 3,414,818, 12–3–68, Cl. 325—38.

Reifeiss, Lester F., and J. A. Reynolds, to UMC Industries, Inc. Electrically heated glass closure. 3,414,713. 12–3–68, Cl. 219—522.

Reinert, Owen E., to Sperry Rand Corp. Control systems. 3,414,741, 12–3–68, Cl. 307—310.

Reinert, Owen E., to Sperry Rand Corp. Control systems. 3,414,804. 12–3–68. Cl. 323—22.

Reinthaler, Karl, to Akustische u. Kino-Gerate Gesellschaft m.b.H. Quick change adapter for microphones. 3,414,686, 12–3–68. Cl. 179—149.

Reitter, George M.: *See*—
Michel, Stephen, and Reitter. 3,414,411.

Relph, Earl B.: *See*—
Pleitt, Richard J., Relph, and Krater. 3,414,723.

Remy, Hermann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing acid sulfuric acid esters from aromatic compounds containing β-hydroxyethylsulfonyl groups. 3,414,579, 12–3–68, Cl. 260—310.

Renfroe, J. C., & Sons, Inc.: *See*—
O'Quinn, Paul V. 3,414,315.

Reoco, Inc.: *See*—
Olson, Robert E. 3,414,361.

Research Corp.: *See*—
Lumley, John L., and Jordan. 3,414,861.

Resource Processors, Inc.: *See*—
Bixby, Peter H. 3,414,201.

Reuteler, Johann F., and E. E. Kirkham, to Pratt & Whitney, Inc. Numeric control and servo system. 3,414,787, 12–3–68, Cl. 318—18.

Revere Copper and Brass Inc.: *See*—
Jager, Albert. 3,414,407.

Rex Chainbelt, Inc.: *See*—
Imse, Philip J. 3,414,034.

Reynolds, James A.: *See*—
Reifeiss, Lester F., and Reynolds. 3,414,713.

Rheem Mfg. Co.: *See*—
Gerlovich, Albert F. 3,414,425.

Rhodes, Aaron D.: *See*—
Bauer, Robert F. Stratton, and Rhodes. 3,414,067.

Rhodes, Richard N.: *See*—
Magill, George M. M., Schofield, and Rhodes. 3,413,864.

Rhodiatoce S.p.A.: *See*—
Caretto, Giuseppe, and Canciani. 3,414,640.

Rhone-Poulenc S.A.: *See*—
Chabardes, Pierre J. A., Gandilhon, Grard, and Thiers. 3,414,600.
Julia, Marc. 3,414,614.

Riback, M. F.: *See*—
Henderson, George L. 3,414,483.

Richard, Joseph D., and W. J. Wisby. Fish attracting apparatus. 3,414,873. 12–3–68, Cl. 340—5.

Richardson, Everett H.: *See*—
Saunders, Frank L., and Richardson. 3,414,647.

Richmond, William J., and K. Hollingworth, to Davy and United Engineering Co. Ltd. Means for adjusting position of shear bolster. 3,413,882, 12–3–68, Cl. 83—641.

Rideout, Vincent L.: *See*—
Gummel, Hermann K., and Rideout. 3,414,689.

Ridgewood Instrument Co.: *See*—
McCarthy, William P. 3,413,772.

Riess, Jean G., and J. R. Van Wazer, to Monsanto Co. Phosphorus trioxide metal compounds. 3,414,390, 12–3–68, Cl. 23—315.

Rifkin, Michael. Latch assemblies, particularly for windows. 3,413,830, 12–3–68 Cl. 70—312.

Rigrod, William W.: *See*—
Bridges, Thomas J., and Rigrod. 3,414,839.

Rininger, Arland. Climber or hiker assist devices. 3,414,083, 12–3–68, Cl. 182—221.

Riordan, Hugh E., to General Precision Systems Inc. Digital rate gyro. 3,413,859, 12–3–68, Cl. 74—5.4.

Ritter Pfaudler Corp.: *See*—
Calmon, Calvin. 3,414,507.

Rixon Electronics, Inc.: *See*—
Place, Harry. 3,414,670.

Robbins, Joseph W.: *See*—
Twomey, Edgar F., Jr., and Robbins. 3,414,455.

Roberson, Raymond F., to International Harvester Co. Planter metering device. 3,413,941, 12–3–68, Cl. 111—77.

Roberts, Arthur H. Molded hollow articles of manufacture. 3,414,456, 12–3–68, Cl. 161—7.

Roberts, Clifford J., ½ to G. H. Nadel. Reel for lawn mower control. 3,414,211, 12–3–68, Cl. 242—85.

Roberts, Thomas M., to British Welding Research Association. Profiling machines. 3,413,891, 12–3–68, Cl. 90—13.

Robertshaw Controls Co.: *See*—
Kreuter, Kenneth G. 3,414,281.

Robertson, John C., and O. Osborn, to The Dow Chemical Co. Method for treating ferrous metals. 3,414,404, 12–3–68, Cl. 75—130.

Robilliard, Leonard T., and D. C. Watford, to Dexion Ltd. Interlock structural members. 3,414,224, 12–3–68, Cl. 248—243.

Robinson, Lewis, and Rubin: *See*—
Baum, Peter. 3,414,642.

Robinson, Alfred G.: *See*—
Hagemeyer, Hugh J., Jr., and Robinson. 3,414,609.

Robinson, Martin, and R. L. Barton, to TRW Inc. Satellite positioning system. 3,414,214, 12–3–68, Cl. 244—1.

Robinson, Merritt A., to H. B. Sherfy. Sealing wax. 3,414,421, 12–3–68, Cl. 106—173.

Robinson, Sam P.: *See*—
Haines, Harry W., Jr., and Robinson. 3,414,571.

Robison, James W.: *See*—
Eads, Harold O., and Robison. 3,413,790.

Robson, Peter, to The Procter & Gamble Co. Alpha-sulfo peroxy fatty acid detergent compounds. 3,414,593, 12–3–68, Cl. 260—400.

Rochester Razor, Inc.: *See*—
Mullen, Roy E. 3,413,720.

Rock, James H., L. E. Anderson, Sr., and M. T. Buckwalter, to Pittsburgh-Des Moines Steel Co. Tunnel support including a yieldable connection. 3,413,813, 12–3–68, Cl. 61—45.

Rockwell Mfg. Co.: *See*—
Falter, Ronald C. 3,414,065.

Rockwell, Paul E. Accessory instrument for the measurement of central venous pressure. 3,413,970, 12–3–68, Cl. 128—2.05.

Rockwell-Standard Co.: *See*—
Bixby, Leo A. 3,413,873.

Roe, Homer D. Pipe couplings. 3,414,299, 12–3–68, Cl. 285—234.

Roesch, Egon: *See*—
Breuer, Hermann, Hoehn, and Roesch. 3,414,573.

Roesky, Ralph R.: *See*—
Hodges, Wetmore, Jr., and Roesky. 3,414,072.

Rogers, Donald B., to E. I. du Pont de Nemours and Co. Low pressure synthesis of electrically conductive platinum cobalt oxide from a platinum halide and an oxide containing cobalt. 3,414,371, 12–3–68, Cl. 23—50.

Rogers, Ernest W., to Communications Patents Ltd. Wide frequency band transformer for plate type transmission lines. 3,414,855, 12–3–68, Cl. 336—82.

Rogers, John B., Jr. Piston rings. 3,414,272, 12–3–68, Cl. 277—2.

Rogers, Narvel L., to Bell Aerospace Corp. Bondable coating on aluminum and method of applying it. 3,414,489, 12–3–68, Cl. 204—38.

Rohr, Harry: *See*—
Ott, Karl-Heinz, Rohr, Dinges, and Knapp. 3,414,636.

Roland Offsetmaschinenfabrik Faber & Schleicher A.G.: *See*—
Koch, Werner, and Preuss. 3,413,782.
Koch, Werner, and Preuss. 3,414,259.

Rollor, Edward A., Jr. Latch mechanism. 3,414,308, 12–3–68, Cl. 292—229.

Rollway Bearing Co., Inc.: *See*—
Root, Lawrence E. 3,414,342.

Root, Lawrence E., to Rollway Bearing Co., Inc. Self-lubricating thrust bearing. 3,414,342, 12–3–68, Cl. 308—235.

Rose, Manning I., and R. C. Zimmerman, to Square D Co. Cover ring and leveling screw assembly for underfloor wiring duct junction box. 3,414,164, 12–3–68, Cl. 220—3.7.

Rosekrans, John N., Jr., and J. G. Bowes, to Kransco Mfg. Inc. Sled. 3,414,284, 12–3–68, Cl. 280—21.

Rosenbaum, Aaron: *See*—
Hecker, Arthur C., Rosenbaum, and Perry. 3,414,532.

Rosenberg, Merton I., and W. G. Bohaker, to American Bosch Arma Corp. Electric governor system for sensing and controlling engine speed. 3,414,771, 12–3–68, Cl. 317—5.

Rosenlund, Iver T., and W. H. Douthit, to E. I. du Pont de Nemours and Co. Exhaust manifold reaction system and apparatus. 3,413,803, 12–3–68, Cl. 60—29.

Rosfelder, Andre M. Liquified gas cigarette lighters. 3,414,363, 12–3–68, Cl. 431—88.

Ross, Norman J. Swimming pool and cover construction. 3,413,661, 12–3–68, Cl. 4—172.

Roth, William B.: *See*—
Mehltretter, Charles L., and Roth. 3,414,515.

Rothemich, Earl F.: *See*—
Harris, Lewis P., and Rothemich. 3,414,601.

Rotodyne Mfg. Corp.: *See*—
Bavers, Elliott. 3,413,687.

Rougemont, Raoul A. Parking device with control means in each stall to control the movement of a vehicle carrier. 3,414,141, 12–3–68, Cl. 214—16.1.

Rowan Controller Co., The: *See*—
Glasgow, Paul W., La Falce, and Baugher. 3,414,803.

Rowe, Dale H., and R. R. Jackwig, to Rowe Mfg. Co. Spiral counterbalance unit. 3,413,680, 12–3–68, Cl. 16—198.

Rowe, Jean M.: *See*—
Goodwin, Leslie E., Rowe, and Wyeth. 3,413,915.

Rowe Mfg. Co.: *See*—
Rowe, Dale H., and Jackwig. 3,413,680.

Rowell, Ralph M., to General Electric Co. Zener diode temperature meter. 3,413,853, 12–3–68, Cl. 73—362.

Rowley, James R.: *See*—
Brown, James R., Marton, and Rowley. 3,414,469.

Roze, Leo V., to Gosudarstvenny Elektrotekhnicheeky Zavod VEF. Arrangement for removal of concretions from urinary tract. 3,413,976, 12–3–68, Cl. 128—328.

Rucker, Charles T.: *See*—
Morrow, William J., and Rucker. 3,414,848.

Rudd, Wallace C., to American Machine & Foundry Co. Tube welding by induction heating. 3,414,697, 12–3–68, Cl. 219—8.5.

Rugg, Ormund I., to Ford Motor Co. Laminated glass assembly. 3,414,457, 12–3–68, Cl. 161—38.

Runions, Adrian C., to Eastman Kodak Co. Mailing carton for photographic prints and/or their negatives. 3,414,122, 12–3–68, Cl. 206—47.

Russell, Fred J. Double cutout spindle cap. 3,413,829, 12–3–68, Cl. 70—224.

Russell, Fred J. Deadlocking latch construction. 3,414,307, 12–3–68, Cl. 292—2.

Russnak, Clarence J., to Motorola, Inc. Air droppable apparatus. 3,414,218, 12–3–68, Cl. 244—138.

S-F-D Laboratories, Inc.: *See*—
Farney, George K. 3,414,756.
Glenfield, George E. 3,414,761.

Sable, Donald E. Rod guide. 3,414,337, 12–3–68, Cl. 308—4.

Sachs, Carrol C. Fluid control apparatus. 3,414,016, 12–3–68, Cl. 137—596.2.

Sackett, Walter J., Sr. Materials conditioning, weight blender system. 3,414,173, 12–3–68, Cl. 222—506.

Sadewicz, Benjamin J.: *See*—
Anderson, Albin R., and Sadewicz. 3,414,024.

Sagawa, Kouichi: *See*—
Takahashi, Kimio, Koike, and Sagawa. 3,413,779.

Salomon, Georges P. J. Vertical holding rear safety device for skis. 3,414,281, 12–3–68, Cl. 280—11.35.

Salomon, Georges P. J. Ski boot harness having a rear safety thrust member. 3,414,282, 12–3–68, Cl. 280—11.35.

Salomon, Georges P. J. Device for adjusting the safety opening of magnetic attachments for skis. 3,414,283, 12–3–68, Cl. 280—11.35.

Sama, Saverio A., to Chemical Construction Corp. Synthesis gas quencher. 3,414,247, 12–3–68, Cl. 261—118.

Samet, Frank, to General Precision Systems Inc. Flexure pivot. 3,413,858, 12–3–68, Cl. 74—5.

Sandoz Inc.: *See*—
Frey, Albert J., Hardtmann, and Ott. 3,414,574.
Griot, Rudolf G. 3,414,563.
Houlihan, William J. 3,414,585.

Sanford, Arthur C., to C. Sanford. Method for fabricating trusses in horizontal position. 3,413,708, 12–3–68, Cl. 29—155.

Sanford, Carol: *See*—
Sanford, Arthur C. 3,413,703.

Sangesand, Donald A., and D. L. Schubert, to International Design Corp. Mat forming apparatus and method. 3,413,688, 12–3–68, Cl. 19—155.

Sankovich, Stanley, to Champion Spark Plug Co. Gauging device. 3,413,726, 12–3–68, Cl. 33—169.

Sankyo Co. Ltd.: *See*—
Tanabe, Katsumi, Takasaki, Hayashi, Morisawa, and Hashimoto. 3,414,566.

Sartori, Mario F., to E. I. du Pont de Nemours and Co. Benzothiazole azo dyes. 3,414,559, 12–3–68, Cl. 260—158.

Saunders, Charles W., to The United Steel Companies Ltd. Apparatus for cooling reciprocating, curved continuous casting molds. 3,414,047, 12–3–68, Cl. 164—283.

Saunders, Frank L., and E. H. Richardson, to The Dow Chemical Co. Shaped articles of crystalline poly(para-tert.-butylstyrene) polymer and method of making the same. 3,414,647, 12–3–68, Cl. 264—235.

Saunders, Walter S. Sweeping jet wing aircraft with actuator strip flap and emergency VTOL capability. 3,414,195, 12–3–68, Cl. 239—11.

Savory, Frederick R., to Steel Construction & Engineering Co. (Notts) Ltd. Vehicles for spreading discrete materials. 3,414,200, 12–3–68, Cl. 239—673.

Saylor, William H. Binary decoding positioning device. 3,414,854, 12–3–68, Cl. 335—268.

Scanley, Clyde S., to American Cyanamid Co. Simultaneous hydrolysis and polymerization of acrylamides. 3,414,552, 12–3–68, Cl. 260—89.7.

Scantlin Electronics, Inc.: *See*—
Scantlin, John R. 3,414,887.

Scantlin, John R., to Scantlin Electronics, Inc. Memory transfer between magnetic tape and delay line. 3,414,887, 12–3–68, Cl. 340—172.5.

Schaapveld, Arnoldus A. W.: *See*—
Dikötter, Gerarduo P., Schaapveld, and Franssen. 3,414,-537.

Schaefgen, John R., to E. I. du Pont de Nemours and Co. Vinyl-bis(trifluoromethyl)carbinol and copolymers. 3,414,-549, 12–3–68, Cl. 260—85.5.

Schafer, Curtiss R., to Sunbeam Corp. Jet engine thrust indicator. 3,413,844, 12–3–68, Cl. 73—117.4.

Schall, William L.: *See*—
Hodan, James J., Schall, and Frank. 3,414,639.

Schild, A. S.A.: *See*—
Dubois, Georges, and Cherbuin. 3,413,800.

Schildt, Herbert D.: *See*—
Nelson, Howard B., and Schildt. 3,414,149.

Schlientz, Walter J.: *See*—
Bruss, Howard G., Jr., Schlientz, and Wiens. 3,414,429.

Schluderberg, Donald C., G. R. Winders, and J. S. Dossett, to The Babcock & Wilcox Co. Vapor cooled reactor system. 3,414,473, 12–3–68, Cl. 176—56.

Schlumberger Technology Corp.: *See*—
Attali, Georges. 3,414,805.
McLoad, Kenneth W. 3,414,874.
Nutter, Benjamin P. 3,414,059.
Nutter, Benjamin P. 3,414,061.

Schmid, Leopold F., to Firma Alfred Teves Maschinen- und Armaturenfabrik KG. Body-positioning suspension system for automotive vehicles. 3,414,278, 12–3–68, Cl. 280—6.

Schmidt, Erhard, to Daimler-Benz Aktiengesellschaft. Torsion piston ring. 3,414,277, 12–3–68, Cl. 277—214.

Schmiesing, Gregory E. Auxiliary lift apparatus. 3,414,087, 12–3–68, Cl. 187—11.

Schmitt, Robert O.: *See*—
Going, Louis H., Mersfelder, and Schmitt. 3,414,129.

Schneider, Friedrich. Picture book and method of making the same. 3,414,296, 12–3–68, Cl. 281—39.

Schneider, Henry C., to Centre Electronique Horloger S.A. Device for protecting a mechanical resonator against shock. 3,414,089, 12–3–68, Cl. 188—1.

Schneider, Karl: *See*—
Gehrmann, Horst, Graf, and Schneider. 3,414,888.

Schofield, Clifford R.: *See*—
Magill, George M. M., Schofield, and Rhodes. 3,413,864.

Scholl, Hans: *See*—
Jünemann, Hubert, and Scholl. 3,414,138.

Scholl, Hans, to Kochs Adlenahmaschinen-Werke AG. Device for winding on of sewn workpieces. 3,413,942, 12–3–68, Cl. 112—2.

Schongs, Bernhard M., H. W. Lau, and J. Behrens. Device for treating exhaust gases. 3,413,804, 12–3–68, Cl. 60—30.

Schoppe, Fritz. Burner for firing a combustion chamber. 3,414,362, 12–3–68, Cl. 431—58.

Schorn, Carl F.: *See*—
Keil, Leonard W., and Schorn. 3,413,951.

Schorn, Carl F., to Holley Carburetor Co. Locking adjustment device. 3,413,863, 12–3–68, Cl. 74—89.15.

Schriber, Raymond L. Game apparatus with board having differently colored game piece paths. 3,414,264, 12–3–68, Cl. 273—134.

Schroering, John B., to Tri-City Industrial Services, Inc. Moist arm structure for refuse loaders. 3,414,147, 12–3–68, Cl. 214—314.

Schubert, Dale L.: *See*—
Sangesand, Donald A., and Schubert. 3,413,688.

Schuelke, Walter J.: *See*—
Clark, Kendall, and Schuelke. 3,413,839.

Schundehutte, Karl-Heinz: *See*—
Nickel, Horst, Suckfull, and Schundehutte. 3,414,558.

Schwardt, David N., to Eastman Kodak Co. Web driving mechanism. 3,414,353, 12–3–68, Cl. 355—71.

Schwartz, Sidney J., to The National Cash Register Co. Magnetic memory including delay lines in both access and sense windings. 3,414,890, 12–3–68, Cl. 340—174.

Schwartz, Walter M., Jr., C. R. Turner, and J. C. Fagan, to Proctor-Silex Inc. Electric iron. 3,413,741, 12–3–68, Cl. 38—78.

Schwartzman, Gilbert. Sealing means for applicator. 3,414,-360, 12–3–68, Cl. 401—134.

Schwarz, Brouno: *See*—
Schwarz, Hellmuth. 3,414,313.

Schwarz, Hellmuth, to Brouno Schwarz. Device fabricated from one cut for holding and carrying containers. 3,414,-313, 12–3–68, Cl. 294—87.2.

Schwarzkopf Development Co.: *See*—
Pipitz, Egon, Strohmeier, and Tarmann. 3,414,046.

Schweitzer, Armin: *See*—
Buschmann, Karl, Meyer, Nonnenmacher, and Schweitzer. 3,414,632.

Schwenger, David G.: *See*—
Guilbault, Lawrence J., and Schwenker. 3,414,856.

Schwertfeger, Owen J., and F. D. Brill, to The Seeburg Corp. Infusor apparatus. 3,413,907, 12–3–68, Cl. 99—287.

Schwertz, Frederick A., and F. H. Smith, Jr., to Xerox Corp. Thinfilm inductor elements. 3,413,716, 12–3–68, Cl. 29—602.

Sciacca, Giuseppe. Reed type musical instrument and improved mouthpiece therefor. 3,413,884, 12–3–68, Cl. 84—383.

Scobel, Hugo, and F. Steidle, to Maschinenfabrik Augsburg-Nurnberg, A.G. Method of removing crankshaft bushings from internal combustion engines. 3,413,709, 12–3–68, Cl. 29—427.

Scott, Gordon L. Marine terminal facility. 3,414,143, 12–3–68, Cl. 214—14.

Scovill Mfg. Co.: *See*—
Le Sueur, Robert C., and Martens. 3,413,742.

Scripto, Inc.: *See*—
Smith, John S. 3,414,025.

Sears, Russell L., and R. G. Latham, to Interchemical Corp. Decorative coating composition for acetal plastic surfaces. 3,414,531, 12–3–68, Cl. 260—15.

Seeburg Corp., The: *See*—
Schwertfeger, Owen J., and Brill. 3,413,907.

Seefelder, Matthias, and H. Armbrust, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of indazole-(3)-carboxylic acids. 3,414,581, 12–3–68, Cl. 260—310.

Segal, Errol H. Method for making dental crowns and bridges. 3,413,724, 12–3–68, Cl. 32—17.

Seidel, Harold: *See*—
Di Domenico, Mauro, Jr., and Seidel. 3,414,840.

Seiden, Herman L.: *See*—
Casey, William E., and Seiden. 3,413,892.

Seitzinger, David L., and R. L. Weidler, to Louis Marx & Co., Inc. Racing track. 3,414,194, 12–3–68, Cl. 238—10.

Sejda, Henry J., to Cee-Kay Industries, Inc. Apparatus for wrapping pressure sensitive tape around an elongated article. 3,414,451, 12–3–68, Cl. 156—358.

Seko, Maomi: *See*—
Kakihana, Hidetake, and Seko. 3,414,500.

Sellers, John C., to General Binding Corp. Packaging material. 3,414,120, 12–3–68, Cl. 206—46.

Semi-Elements, Inc.: *See*—
Fisher, Joseph V. 3,414,405.

Sfreddo, Alfred: *See*—
Moritz, Charles W., and Sfreddo. 3,413,861.

Shade, Robert A., E. D. Nystrand, and G. L. Marchant, to Paper Converting Machine Co., Inc. Printing plate preparation. 3,413,706, 12–3–68, Cl. 29—407.

Shafizadeh, Fraidoun: *See*—
Carlberg, Lawrence G., and Shafizadeh. 3,414,560.

Sharpe, Malcolm A.: *See*—
Gore, Ronald D., and Sharpe. 3,413,871.

Shaw, Hugh E., Jr., to PPG Industries, Inc. Laminated windshield with radio antenna. 3,414,902, 12–3–68, Cl. 343—713.

Sheaffer, Milo G.: *See*—
Fulton, Howard A., Flinner, and Sheaffer. 3,414,005.

Sheldon, Robert C., to Joseph Lucas (Industries) Ltd. Method for winding armatures of dynamo electric machines. 3,413,714, 12–3–68, Cl. 29—596.

Sheldrake, Leonard J., and J. L. Mullen, to General Motors Corp. Direct current commutation system for brushless electrical motors. 3,414,800, 12–3–68, Cl. 321—5.

Shell Oil Co.: *See*—
Bauer, Robert F., Stratton, and Rhodes. 3,414,067.
Montagne, Johannes Th. W., and Cross. 3,414,653.
Van Lookeren Campagne, Nicolaas. 3,414,506.

Sherfy, Harold B.: *See*—
Robinson, Merritt A. 3,414,421.

Sherriff, Cecil S., to D. & H. Cohen Ltd. Garment waistbands. 3,413,657, 12–3–68, Cl. 2—221.

Sherwin-Williams Co., The: *See*—
Harris, Lewis P., and Rothemich. 3,414,601.

Shibe, William J., Jr., and M. Sittenfield, to Hollichem Corp. Anti-static cyclic imide addition products. 3,414,431, 12–3–68, Cl. 117—121.

Shimizu, Toyoyuki: *See*—
Umemoto, Susumu, and Shimizu. 3,414,586.

Shinn, Ernest R., to A. W. Bencur. Power wrench for tightening studs in engine blocks and the like. 3,413,876, 12–3–68, Cl. 81—53.

Shinohara, Yasuo, K. Yamaguti, and T. Nagai, to Toyo Rayon Kabushiki Kaisha. Cross-linking of polymeric substances with acetylene and ionizing radiation. 3,414,498, 12–3–68, Cl. 204—159.13.

Shneider, Harold M.: *See*—
Moran, Robert J., Shneider, Masterson, and Bunner. 3,414,106.

Shook, Jackson A., to Evans Products Co. Locking mechanism. 3,413,933, 12–3–68, Cl. 105—376.

Shreve, Carmen H.: *See*—
Sisson, Ronald L., and Shreve. 3,413,927.

Sianesi, Dario, R. Fontanelli, and G. Nelli, to Montecatini Edison S.p.A. Process for the preparation of vinyl fluoride. 3,414,627, 12–3–68, Cl. 260—653.4.

Siegal, Burton L., to Kenron Aluminum & Glass Corp. Hand rail. 3,414,236, 12–3–68, Cl. 256—22.

Siegel, Norman H., to All-State Stamping Corp. Bracket. 3,414,219, 12–3–68, Cl. 248—65.

Siegler, Edouard H., Jr., to The Perkin-Elmer Corp. Raman spectrometers. 3,414,354, 12–3–68, Cl. 356—75.

Siemens Aktiengesellschaft: *See*—
Bredtschneider, Walter, and Kefer. 3,413,809.
Braumann, Gundokar. 3,414,851.
Dahlberg, Reinhard. 3,414,784.
Elsas, Adolf. 3,414,754.
Engel, Walter. 3,413,712.
Gehrmann, Horst, Graf, and Schneider. 3,414,888.
Kafka, Wilhelm. 3,414,743.
Keller, Wolfgang. 3,414,388.
Latussek, Hans-Peter, and Dittrich. 3,413,715.
Mentschel, Hellmuth, and Welly. 3,414,049.

Sievers, William E., to Victor Comptometer Corp. Form printing device. 3,414,107, 12–3–68, Cl. 197—133.

Sikora, Josef, to Canadian Industries Ltd. Dihydropyranyl ester blends. 3,414,527, 12–3–68, Cl. 260—2.5.

Simon-Carves Ltd.: *See*—
Abson, James W., Landau, Langton, and Molyneux. 3,414,524.

Simmonds Precision Products, Inc.: *See*—
Kraushaar, Robert J. 3,413,847.

Simonton, Theodore E. Method of analyzing complex waves representable by a continuous plane curve. 3,414,815, 12–3–68, Cl. 324—77.

Sinclair Research Inc.: *See*—
Hoock, William S. 3,413,967.

Singleton, Robert J.: *See*—
Ellis, Robert G., and Singleton. 3,414,110.

Sisson, Ronald L., to Clark Equipment Co. Gear pump thrust plate. 3,413,928, 12–3–68, Cl. 103—126.

Sisson, Ronald L., and C. H. Shreve, to Clark Equipment Co. Gear pump with balanced pressure loaded thrust plate. 3,413,927, 12–3–68, Cl. 103—126.

Sittenfield, Marcus: *See*—
Shibe, William J., Jr., and Sittenfield. 3,414,431.

Siwko, Karol, and L. P. Thomas, to Radio Corp. of America. Delayed AGC system utilizing the plateau region of an amplifier transistor. 3,414,820, 12–3–68, Cl. 325—410.

Skidmore, Frank O. Tire cooling. 3,414,036, 12–3–68, Cl. 152—153.

Skinner, Clawson N. Anchorage for partial denture and method of making same. 3,413,722, 12–3–68, Cl. 32—5.

Slenys, Raymond A.: *See*—
Orahood, Donald W., Slenys, and Warren. 3,414,785.

Sloan, Francis J., to Union Carbide Corp. Partial deorientation of segments of biorientedthermoplastic sheet. 3,414,-181, 12–3–68, Cl. 229—2.5.

Smedlund, Egon G. Compacting device for refuse containers. 3,413,913, 12–3–68, Cl. 100—53.

Smith, Barry L., to General Signal Corp. Traffic signal lamp control circuit. 3,414,878, 12–3–68, Cl. 340—41.

Smith, Charles F.: *See*—
Gardner, John B., Smith, and Harper. 3,414,499.

Smith, Frederick H., Jr.: *See*—
Schwertz, Frederick A., and Smith. 3,413,716.

Smith, John S., to Scripto, Inc. Fill nozzle. 3,414,025, 12–3–68, Cl. 141—98.

Smith, Julian V.: *See*—
Tracy, Charles W., and Coloney. 3,413,984.

Smith, Richard L. Switch for selectively connecting two electrical power sources in either parallel or series relationship. 3,414,691, 12–3–68, Cl. 200—16.

Smith, Ruslon J., to Eureka-Carlisle Co. Labeler. 3,414,452, 12–3–68, Cl. 156—357.

Snellman, Donald L., and J. D. Keeler, to Norfin, Inc. Sheet collating device. 3,414,254, 12–3–68, Cl. 270—58.

Snitzer, Elias, to American Optical Co. Plural fiber optic laser construction. 3,414,837, 12–3–68, Cl. 331—94.5.

Snow, William E., to American Cast Iron Pipe Co. Ladle for use in treatment of molten metal. 3,414,250, 12–3–68, Cl. 266—34.

Soble, Abraham, and H. Cantor. Corrective shoe. 3,413,977, 12–3–68, Cl. 128—583.

Societe Anonyme des Cableries et Trefileries de Cossonay: *See*—
Werdenberg, Wilhelm. 3,413,792.

Societe Anonyme dite; Groupement Atomique Alsacienne Atlantique: *See*—
Chameroy, Jean. 3,414,726.

Societe Anonyme Francaise Eternit: *See*—
Marcilloli, Giorgio. 3,414,470.

Societe de Constructions Mecaniques de Creil: *See*—
Gaudin, Jean. 3,414,210.

Societe d'Electronique et d'Automatisme: *See*—
Henry-Baudot, Jacques. 3,413,759.

Societe d'Etudes Chimiques Pour l'Industrie et l'Agriculture: *See*—
Leroy, Alphonse, Gijsemans, Peerts, Hulot, Martin, and Andrieu. 3,414,375.

Societe Grenobloise d'Etudes et d'Applications Hydrauliques, and Societe Francaise Aeronautique et Maritime: *See*—
Merle, Jean. 3,414,333.

Societe Metallurgique d'Imphy: *See*—
Fourt, Pierre M. 3,414,401.

Societe Anonyme Poclain: *See*—
Guinot, Gabriel L. 3,413,739.

Sonnemann, William K., to Westinghouse Electric Corp. Differential relay with restraining means responsive to transformer bank voltage. 3,414,772, 12–3–68, Cl. 317—14.

Sony Corp.: *See*—
Kawamoto, Takuya and S. 3,414,764.

Sorbie, Thomas B., to Owens-Illinois, Inc. Method and apparatus for inspecting glass containers. 3,414,127, 12–3–68, Cl. 209—88.

Sorkin, Howard, to Air Reduction Co., Inc. Copolymers of vinyl glycidyl ether. 3,414,634, 12–3–68, Cl. 260—837.

South Mfg. Co.: *See*—
Thorp, James H. 3,413,669.

Souza, Anthony A.: *See*—
Souza, Augustine A. 3,414,172.

Souza, Augustine A., of ¼ interest to Anthony A. Souza. Dispensing device. 3,414,172, 12–3–68, Cl. 222—443.

Sowers, Edwin U., III, to Bowles Engineering Corp. Variable gain proportional amplifier. 3,413,994, 12–3–68, Cl. 137—81.5.

Spadone Machine Co., Inc.: *See*—
Sutherland, Walter J. 3,414,113.

Spane, Victor L. Structural connection. 3,414,300, 12–3–68, Cl. 287—20.92.

Sparrow, Hubert T., to Honeywell Inc. Control apparatus. 3,414,010. 12–3–68, Cl. 137—495.

Spates, William A.: *See*—
Phelan, Louis A. M., Vos, Wedige, and Spates. 3,413,911.
Phelan, Louis A. M., Vos, Wedige, and Spates. 3,413,912.

Speakman Co.: *See*—
Lagarelli, Carmen J., and Pecis. 3,413,660.

Spease, Arthur L., Jr., to Ford Motor Co. Remote control linkage mechanism for multiple ratio vehicle transmissions. 3,413,870. 12–3–68 Cl. 74—475.

Speckhart, Frank H. Shock absorbing device. 3,414,092, 12–3–68, Cl. 188—100.

Speed, George B. H., to Escambia Chemical Corp. Process for drying methacrylic acid by extraction and azeotropic distillation. 3,414,485, 12–3–68, Cl. 203—43.

Speed, Raymond A.: *See*—
Jones, Alva M., Planchard, Speed, and Claybaugh. 3,414,-637.

Spencer, Glenn S., to The Bendix Corp. Electromagnetic clutch. 3,414,100, 12–3–68, Cl. 192—90.

Sperry, Arthur B., to Sylvania Electric Products Inc. Package classification by tracking the path of a circular label and simultaneously scanning the information on the label. 3,414,731, 12–3–68, Cl. 250—219.

Sperry Rand Corp.: *See*—
Reinert, Owen E. 3,414,741.
Reinert, Owen E. 3,414,804.

Sperry Rand Ltd.: *See*—
Levy, Joseph P. 3,414,427.

Spinner, Robert E., and D. F. Wolfe. Information handling and storing apparatus. 3,414,177, 12–3–68, Cl. 225—94.

Spinrad, Malcom, and B. E. Hoverter, Jr., to American Safety Table Co., Inc. Thread severing attachment for sewing machine. 3,413,944, 12–3–68, Cl. 112—252.

Spiteri, Joseph. Boot construction. 3,413,736, 12–3–68, Cl. 36—54.

Spurlin, Harold M.: *See*—
Reid, Donald E., and Spurlin. 3,414,551.

Square D Co.: *See*—
Butler, De Forest D. 3,414,298.
Guettel, Marvin A. 3,414,701.
Rose, Manning I., and Zimmerman. 3,414,154.

Squibb, E. R., & Sons, Inc.: *See*—
Breuer, Hermann, Hoehn, and Roesch. 3,414,573.

Staffiere, Donald T.: *See*—
McCormack, Thomas L., Morin, and Staffiere. 3,414,892.

Stafford, Owen L., and J. D. Brubaker, to The Dow Chemical Co. Anhydrous crystalline complexes of cobaltous salts and nitrogenous bases. 3,414,575, 12–3–68, Cl. 260—270.

Stamicarbon N.V.: *See*—
Dikötter, Gerarduo P., Schaapveld, and Franssen. 3,414,-537.

Standard Brands Inc.: *See*—
Wynes, Robert A., and Lloyd. 3,414,479.

Standard Oil Co. (Indiana): *See*—
Donohue, John A. 3,414,495.

Standard Oil Co. (Ohio), The: *See*—
Grasselli, Robert K., and Callahan. 3,414,631.

Standard Oil Co., The: *See*—
Kapff, Sixt F., and Wright. 3,414,382.

Stanfield, Stephen O. Dual propulsion tricycle. 3,414,288, 12–3–68, Cl. 280—231.

Stapp, Paul R., to Phillips Petroleum Co. Dimerization of internal monoolefins. 3,414,633, 12–3–68, Cl. 260—683.15.

Starline, Inc.: *See*—
Ferris, Robert G. 3,414,199.

Statham Instruments, Inc.: *See*—
Stubbs, Reagh A. 3,414,834.

Stauffer, Lynn H., to General Electric Co. Nonthermionic electron beam apparatus. 3,414,702, 12–3–68, Cl. 219—121.

Stayton, Robert W. Bath seats. 3,413,662, 12–3–68, Cl. 4—185.

Ste Linvosges: *See*—
Amet, Andre R. 3,413,665.

Stedman, Donald F., to Canadian Patents and Development Ltd. Production of amorphous ferric oxide. 3,414,378, 12–3–68. Cl. 23—200.

Steel Construction & Engineering Co. (Notts) Ltd.: *See*—
Savory, Frederick R. 3,414,200.

Steelcraft Mfg. Co., The: *See*—
Baudé, Lucien L. 3,413,762.
King, Donald L. 3,414,039.

Stegenga, Jerry A., to Milgo Electronic Corp. Counter for folded paper objects. 3,414,732, 12–3–68, Cl. 250—223.

Steidle, Franz: *See*—
Scobel, Hugo, and Steidle. 3,413,709.

Stein, Walter: *See*—
Behrens, Knut F., and Stein. 3,414,042.

Steiner, Gerolf. Apparatus for conditioning and gathering live fish food. 3,413,957, 12–3–68, Cl. 119—3.

Steinhauser, Hayes B., to The Bendix Corp. Method and means for synchronization of beacon transmitters for an all-weather approach system. 3,414,900, 12–3–68, Cl. 343—102.

Steinmuller, L. & C., G.m.b.H.: *See*—
Knizia, Klaus. 3,413,808.

Steinthal M., and Co. Inc.: *See*—
Jantzen, George H. 3,414,291.

Stephens, Roger C., to Dresser Industries, Inc. Elements for the support of refractory anchors. 3,413,768, 12–3–68, Cl. 52—484.

Stephens-Adamson Mfg. Co.: *See*—
Jackson, Randolph H., Eddy, Mitchell, Johnson, Hall, and Hicks. 3,414,108.

Stern, Alfred J., and H. L. Dowel assembly with removable positioning means. 3,413,725, 12–3–68, Cl. 32—40.

Stern, Harold L.: *See*—
Stern, Alfred J., and H. L. 3,413,725.

Sternbach, Leo H.: *See*—
Archer, Giles A., and Sternbach. 3,414,562.

Stine, Ralph M., and H. E. Weller, to Western Electric Co., Inc. Sheave capstan assemply for cable takeup apparatus. 3,413,793, 12–3–68, Cl. 57—68.

Stoltze, Morton, to Edroy Products Co., Inc. Binocular with pivoted lens plate. 3,414,347, 12–3–68, Cl. 350—145.

Stolzer, Paul, to Keuro Maschinenbau G.m.b.H. & Co. K.G. Machine for sawing workpieces of large dimension having two circular saw blades. 3,413,881, 12–3–68, Cl. 83—486.

Stone & Webster Engineering Corp.: *See*—
Chave, Charles T. 3,414,472.

Stossel, Ernest. Complexes of nitrogen, phosphorus, oxygen and aluminum and/or chromium and method of producing the same. 3,414,374, 12–3–68, Cl. 23—105.

Stotler, Harold H., and A. Boyum, to Hydrocarbon Research, Inc. Fractional vapor product absorption of fluidized lignite carbonization. 3,414,480, 12–3–68, Cl. 201—15.

Stratton, Hal: *See*—
Bauer, Robert F., Stratton, and Rhodes. 3,414,067.

Streight, William E.: *See*—
Belke, William H., Crayton, Evans, and Streight. 3,413,-806.
Strobel, Albert F.: *See*—
Catino, Sigmund C., and Strobel. 3,414,650.
Strohmeier, Gerolf: *See*—
Pipitz, Egon, Strohmeier, and Tarmann. 3,414,046.
Strommen, Andros D. Bale holder. 3,414,139, 12–3–68, Cl. 214—6.
Struthers Thermo-Flood Corp.: *See*—
Duddy, Paul F. 3,413,838.
Stubbs, Reagh A., to Statham Instruments, Inc. Signal amplifying circuits. 3,414,834, 12–3–68, Cl. 330—69.
Studer, Henry E., OECO Corp. Vibratory fruit harvester. 3,413,789, 12–3–68, Cl. 56—330.
Stump, Eugen, and G.-J. Frankle, to Suddeutsche Kuhlerfabrik Julius Fr. Behr. Liquid fuel heater for motor vehicle. 3,413,968, 12–3–68, Cl. 126—116.
Sublett, Bobby J., and G. P. Touey, to Eastman Kodak Co. Tobacco smoke filter employing ethylene copolymer bonding material. 3,413,982, 12–3–68, Cl. 131—266.
Suckfull, Fritz: *See*—
Nickel, Horst, Suckfull, and Schundehutte. 3,414,558.
Sudbury, John D., and W. P. Banks, to Continental Oil Co. Controlled potential protection of metallic vessel-latex solution systems. 3,414,496, 12–3–68, Cl. 204—147.
Suddeutsche Kuhlerfabrik Julius Fr. Behr: *See*—
Stump, Eugen, and Frankle. 3,413,968.
Suhr, Robert N., to Pioneer Heddle & Reed Co., Inc. Locking assemblies for confining heddle supporting rods in frames. 3,414,022, 12–3–68, Cl. 139—92.
Sulzer Brothers Ltd.: *See*—
Hellingman, Gosen J. 3,413,963.
Sumitomo Chemical Co., Ltd.: *See*—
Fujimoto, Keimei, Okuno, Ueda, Horie, Mizutani, and Nodera. 3,414,607.
Summers, Charles G., to Monsanto Co. Carbon catalysts of condensation of carbonyl compounds and amines. 3,414,616, 12–3–68, Cl. 260—566.
Sumner, Joe D. Seal forming means for pipe joints of the bell and spigot type. 3,414,273, 12–3–68, Cl. 277—11.
Sun Electric Corp.: *See*—
Pudewill, Carl J. 3,414,770.
Sunbeam Corp.: *See*—
Schafer, Curtiss R. 3,413,844.
Sundholm, Edwin P. Latch assembly for grease gun plunger rods. 3,414,170, 12–3–68, Cl. 222—340.
Sutherland, Walter J., to Spadone Machine Co., Inc. Conveyor for pneumatic tire tread pieces. 3,414,113, 12–3–68, Cl. 198—84.
Suzuki, Hiroshi, to Tokyo Shibaura Denki Kabushiki Kaisha. Packing devices for electric fans. 3,414,121, 12–3–68, Cl. 206—46.
Swann, David T. Combination stretcher, table, chair combination. 3,413,663, 12–3–68, Cl. 5—81.
Swanson, Kenneth M., to United Kingdom Atomic Energy Authority. Nuclear reactor fuel elements. 3,414,474, 12–3–68, Cl. 176—68.
Sweeney, James S.: *See*—
Moord, John R., and Sweeney. 3,414,136.
Swiss Knitting Co.: *See*—
Kuney, Samuel B. 3,413,824.
Sylvania Electric Products Inc.: *See*—
Peek, Sandford C., Jr. 3,414,768.
Sperry, Arthur B. 3,414,731.
Syntex Corp.: *See*—
Beard, Colin C., and Cross. 3,414,592.
Fried, Jonn H. 3,414,589.
Ladabaum, Samuel. 3,414,565.
Sysoev, Leonid A., L. V. Konvisar, and E. K. Raiskin. Process for growing single crystals of sulphides, selenides and tellurides of metals of groups II and III of periodic system. 3,414,387, 12–3–68, Cl. 23—301.
Szasz, Norbert: *See*—
Mui, David Y. H., and Szasz. 3,414,792.
Szawlowski, Theodore H., and C. Rai, to Union Oil Co. of California. Method for separating meta-para xylene mixtures. 3,414,630, 12–3–68, Cl. 260—674.
Szita, Jeno: *See*—
Wieden, Horst, Kleiner, Nischk, and Szita. 3,414,569.
TRW Inc.: *See*—
Atkin, Rupert L. 3,413,897.
Atkin, Rupert L., and Drutchas. 3,414,336.
Clark, George L., and Wuerker. 3,414,836.
Patti, Vincent J. 3,413,955.
Robinson, Martin, and Barton. 3,414,214.
Tahan, Menashe: *See*—
Zilkha, Albert, Tahan, and Ezra. 3,414,530.
Takahashi, Kimio, I. Koike, and K. Sagawa, to Hitachi, Ltd. Electric cleaner. 3,413,779, 12–3–68, Cl. 55—272.
Takahashi, Tadanobu, to Nippon Seiko Kabushiki Kaisha. Sealed bearing. 3,414,275, 12–3–68, Cl. 277—53.
Takasaki, Rinji: *See*—
Tanabe, Katsumi, Takasaki, Hayashi, Morisawa, and Hashimoto. 3,414,566.
Tamar Electronics Industries, Inc.: *See*—
Cabe, Ray W. 3,413,745.
Cress, Vernor B., Jr., Apitz, Halamandaris, Wheeler, and Hoyt. 3,414,876.
Cress, Vernor B., Jr., and Halamandaris. 3,414,877.
Tan, Henry H., and E. L. Martin, to E. I. du Pont de Nemours and Co. Method for preparing acyl fluorides. 3,414,612, 12–3–68, Cl. 260—544.
Tanabe, Katsumi, R. Takasaki, R. Hayashi, Y. Morisawa, and T. Hashimoto, to Sankyo Co. Ltd. 17-substituted 3α,5-cyclo-6β,19-oxido-5α-steroids and process for preparing the same. 3,414,566, 12–3–68, Cl. 260—239.55.
Tanner, De Loss J., to Motorola, Inc. Beam current stabilizing circuit. 3,414,667, 12–3–68, Cl. 178—7.2.
Tanner, Marcel, to Fabrique Tana. Writing instrument having a retractable writing member. 3,413,747, 12–3–68, Cl. 40—335.
Tarmann, Bruno: *See*—
Pipitz, Egon, Strohmeier, and Tarmann. 3,414,046.
Tarpley, William B., Jr.: *See*—
Pheasant, James R. E., Tarpley, and McKinney. 3,414,443.
Taylor Instrument Companies: *See*—
Jaquith, Howard R. 3,414,013.
Taylor, John L., to Fisher Governor Co. Pneumatic relay. 3,413,997, 12–3–68 Cl. 137—85.
Taylor, John S.: *See*—
Lair, Wilbert M., and Taylor. 3,414,516.
Taylor, Maurice E.: *See*—
Driver, Edgar S., and Taylor. 3,414,875.
Taylor, Norris O., W. P. Uhler, J. M. Gardella, and J. Cahlik, to S. S. White Co. Adjustable chair. 3,414,324, 12–3–68, Cl. 297—90.
Taxewell Machine Works, Inc.: *See*—
Cakora, Henry J. 3,414,125.
Teaching Complements, Inc.: *See*—
Erbert, Virgil. 3,413,735.
Technicon Corp.: *See*—
Catanzaro, Eugene W. 3,414,238.
Teichmeier, Franklin J. Ratchet wrench. 3,413,877, 12–3–68, Cl. 81—44.
Teijin Ltd.: *See*—
Kitamura, Kazuo, and Minemura. 3,414,368.
Telefunken Patetverwertungsgesellschaft m.b.H.: *See*—
Hildebrand, Volker, and Neumeister. 3,414,883.
Teletype Corp.: *See*—
Arko, Robert E. 3,414,673.
Arko, Robert E. 3,414,674.
Ramig, Robert J., Jr. 3,414,206.
Tepper, Howard F.: *See*—
Melan, Eugene H., and Tepper. 3,414,775.
Teranishi, Akihiko, Massaging vibrator with means for directing heated air onto a person. 3,413,973, 12–3–68, Cl. 128—24.2.
Teumac, Fred N., to The Dow Chemical Co. Acid corrosion inhibitors. 3,414,521, 12–3–68, Cl. 252—149.
Texas Instruments Inc.: *See*—
Cooper, Lawrence E. 3,414,850.
Flanagan, Charles D. 3,414,704.
Flanagan, Charles D., and Marcoux. 3,414,706.
Gilbreath, Benjamin F. 3,414,738.
Gilbreath, Benjamin F., and Brown. 3,414,778.
Helms, John D., and Brown. 3,414,487.
Lester, Philip L. 3,414,225.
Marcoux, Leo. 3,414,705.
Patterson, Robert J., and Haberecht. 3,414,435.
Thauland, Terje: *See*—
Melsingset, Kaare R., Thauland, Kvingedal, and Mo. 3,414,671.
Thiers, Michel P. F.: *See*—
Chabardes, Pierre J. A., Gandilhon, Grard, and Thiers. 3,414,600.
Thiokol Chemical Corp.: *See*—
Fein, Marvin M., and Mayes. 3,414,596.
Thomas, Brice L., to Armour and Co. Method and apparatus for reducing the amount of backstrap trimmed from hog bellies. 3,414,031, 12–3–68, Cl. 146—241.
Thomas Carroll E. Artist's painting kit. 3,414,343, 12–3–68, Cl. 312—231.
Thomas, David G.: *See*—
Gershenzon, Murray, Thomas, and Trumbore. 3,414,441.
Thomas, Francis W., to Widwestern Equipment Co., Inc. Electronic-electrolytic apparatus for glove. 3,414,808, 12–3–68, Cl. 324—54.
Thomas, Lucius P.: *See*—
Siwko, Karol, and Thomas. 3,414,820.
Thomas, Walter J., Sr., to International Minerals & Chemical Corp. Apparatus for making perforated bricks. 3,413,694, 12–3–68, Cl. 25—90.
Thompson, Earl A., to Earl A. Thompson Mfg. Co. Machine tool. 3,413,807, 12–3–68, Cl. 60—54.5.
Thompson, Earl A., Mfg. Co.: *See*—
Thompson, Earl A. 3,413,807.
Thompson, Ralph B., and M. J. Jursich, to Nalco Chemical Co. Polymerization process. 3,414,547, 12–3–68, Cl. 260—78.5.
Thornton, William A., Jr., to Westinghouse Electric Corp. Process for manufacturing an electroluminescent device. 3,414,490, 12–3–68, Cl. 204—38.
Thorp, James H., to South Mfg. Co. Mechanism for conveying unbound books intermittently through a rounding and backing machine. 3,413,669, 12–3–68, Cl. 11—5.
Tiegel, Ernest G. and R. G., to Tiegel Mfg. Co. Method and apparatus for drying charged battery plates. 3,413,728, 12–3–68, Cl. 34—22.
Tiegel Mfg. Co.: *See*—
Tiegel, Ernest G. and R. G. 3,413,728.
Tiegel, Ralph G.: *See*—
Tiegel, Ernest G. and R. G. 3,413,728.
Tigner, Ruben A., to The Dow Chemical Co. Plastic containers. 3,414,180, 12–3–68, Cl. 229—1.5.
Timber Engineering Co.: *See*—
Dudley, Hubert T. 3,413,771.
Timms, Donald G.: *See*—
Jenkins, Derek K., and Timms. 3,414,555.
Timms, Leon M. Method of forming packing unit. 3,413,899, 12–3–68, Cl. 93—61.
Tobey, Richard, and A. K. Jennings, to Dartex, Inc. Apparatus for measuring skew in a tape transport. 3,414,816, 12–3–68, Cl. 324—83.

Tokyo Shibaura Denki Kabushiki Kaisha: *See*—
Suzuki, Hiroshi. 3,414,121.
Toledo Stamping & Mfg. Co.: *See*—
Foist, Joseph E. 3,413,880.
Tolliver, Peter M., to General Dynamics Corp. Electronically tunable high frequency network using pin diodes. 3,414,-833, 12–3–68, Cl. 330—53.
Tomkins-Johnson Co., The: *See*—
Watson, Tindale P., and Vandenburgh. 3,414,693.
Tonnelline, Charles F. Clamping collar. 3,413,693, 12–3–68, Cl. 24—284.
Torrington Co., The: *See*—
Murphy, William W. 3,414,341.
Touey, George P.: *See*—
Sublett, Bobby J., and Touey. 3,413,982.
Townsend, Stephen E., and J. L. Wheeler, to Xerox Corp. Facsimile recording system with transmitter inhibit means. 3,414,672, 12–3–68, Cl. 178—69.5.
Toyo Rayon Kabushiki Kaisha: *See*—
Shinohara, Yasuo, Yamaguti, and Nagai. 3,414,498.
Trab, Joseph L., to Porter Precision Products, Inc. Ferrous die element formed of powdered metal impregnated with copper. 3,414,391, 12–3–68, Cl. 29—182.1.
Tracy, Charles W., and W. H. Coloney, 33⅓ to J. V. Smith. Hair curler rotating device. 3,413,984, 12–3–68, Cl. 132—34.
Travers, George L., to Compagnie Generale des Etabilssements Michelin raison sociale Michelin & Cie. Method of making pneumatic tire covers. 3,414,447, 12–3–68, Cl. 156—131.
Travis, Lawrence R., to Electro Connective Systems, Inc. Termination of cable. 3,414,867, 12–3–68, Cl. 339—99.
Treiber, Lawrence E., H. R. Foning, and F. O. Jones, Jr., to Pan American Petroleum Corp. Removal of interfering ions in waterflood. 3,414,053, 12–3–68, Cl. 166—9.
Tresemer, Howard G., to National Lock Co. Magnetic catch assembly. 3,414,309, 12–3–68, Cl. 292—251.5.
Triangolo, Daniel A., to Danal Jewelry Co. Ornamental hair fastener. 3,413,986, 12–3–68, Cl. 132—46.
Tricault, Yves. Apparatus for re-heating foods previously cooked. 3,414,709, 12–3–68, Cl. 219—411.
Tri-City Industrial Services, Inc.: *See*—
Schroering, John B. 3,414,147.
Trieschmann, Hans-Georg, and L. Unterstenhoefer, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Molding materials based on bitumen and ethylene copolymers. 3,414,-533, 12–3–68, Cl. 260—28.5.
Trimble, Cebern B., to National Cash Register Co., The. Information sensing station. 3,414,717, 12–3–68, Cl. 235—61.11.
Trimboli, Frank A. Holder for paint cans. 3,414,311, 12–3–68, Cl. 294—34.
Troy, Leonard. Single-shoe braking system. 3,414,091, 12–3–68, Cl. 188—78.
Trumbore, Forrest A.: *See*—
Gershenzon, Murray, Thomas, and Trumbore. 3,414,441.
Trutzschler & Co.: *See*—
Trutzschler, Hermann. 3,414,330.
Trutzschler, Hermann, to Trutzschler & Co. Pneumatic feeding arrangement for supplying fibrous materials. 3,414,330, 12–3–68, Cl. 302—28.
Tubular Products, Inc.: *See*—
Katz, Emanuel B. 3,413,775.
Tuchel, Ulrich. Electrical connector having a resilient tongue means carrying two detent flaps. 3,414,871, 12–3–68, Cl. 339—217.
Tucker, Billy J. Interchangeable purse insert. 3,414,033, 12–3–68, Cl. 150—34.
Tufts, William S., to Ranco Inc. Defroster control apparatus comprising a timer switch and temperature sensing element. 3,414,860, 12–3–68, Cl. 337—302.
Turnbull, Thomas P.: *See*—
Ehlig, William H., and Turnbull. 3,414,389.
Turner, Charles R.: *See*—
Schwartz, Walter M., Jr., Turner, and Fagan. 3,413,741.
Twomey, E. F., Co., Inc.: *See*—
Twomey, Edgar F., Jr., and Robbins. 3,414,455.
Twomey, Edgar F., Jr., and J. W. Robbins, to E. F. Twomey Co., Inc. Radiant energy reflective and transiucent structures of fiber-reinforced plastics. 3,414,455, 12–3–68, Cl. 161—5.
Tyco Laboratories, Inc.: *See*—
Mlavsky, Abraham I. 3,414,603.
UMC Industries, Inc.: *See*—
Reifeiss, Lester F., and Reynolds. 3,414,713.
Uddenberg, Goran O., to Aktiebolaget Vacuum-Extractor. Device to create and automatically maintain a predetermined gas excess pressure in cavities. 3,414,011, 12–3–68, Cl. 137—610.
Ueda, Kenzo: *See*—
Fujimoto, Keimei, Okuno, Ueda, Mizutani, Horie, and Nodera. 3,414,607.
Ugine Kuhlmann (societe anonyme): *See*—
Bauwens, Robert, and Molliere. 3,414,377.
Uhler, Wilmer P.: *See*—
Taylor, Norris O., Uhler, Gardella, and Cahlik. 3,414,-324.
Ultz, Mark O., to Varian Associates. High vacuum furnace having improved support structures for the door and heating elements. 3,414,658, 12–3–68, Cl. 13—20.
Ulery, Leonard B.: *See*—
Bishoff, Walter A., Sr., and Ulery. 3,414,237.
Ulinski, Bronislaus I., to Eaton Yale & Towne, Inc. Scissors extender. 3,414,150, 12–3–68, Cl. 214—730.
Ulinski, Bronislaus I., to Eaton Yale & Towne, Inc. Plural upright mechanism. 3,414,086, 12–3–68, Cl. 187—9.
Umahashi, Minour, to Kabushiki Kaisha Ricoh. Paper feeding device for copying machines. 3,414,255, 12–3–68, Cl. 270—58.
Umemoto, Susumu, and T. Shimizu, to Dainippon Pharmaceutical Co., Ltd. Acetoamido derivatives. 3,414,586, 12–3–68, Cl. 260—328.
Union Carbide Corp.: *See*—
Acara, Nancy A. 3,414,602.
Beynon, Eric. 3,414,519.
Calvert, William L. 3,413,898.
Doring, William H. 3,414,161.
Marcus, Erich. 3,414,626.
Merrill, John W. 3,414,332.
Pepe, Enrico J., and Kanner. 3,414,604.
Sloan, Francis J. 3,414,181.
Union Oil Co. of California: *See*—
Bernard, George G. 3,414,054.
Szawlowski, Theodore H., and Rai. 3,414,630.
United-Carr Inc.: *See*—
Pearson, Arthur S., Ford, and Clarke. 3,413,690.
United Dynamics Corp.: *See*—
Gidge, Lester, and Dardig. 3,413,670.
United Kingdom Atomic Energy Authority: *See*—
Swanson, Kenneth M. 3,414,474.
United States of America
Agriculture: *See*—
Gonzales, Elwood J., and Benerito. 3,414,369.
Mehltretter, Charles L., and Roth. 3,414,515.
Welch, Clark M., and Guthrie. 3,414,367.
Zilkha, Albert, Tahan, and Ezra. 3,414,530.
Army: *See*—
Barr, Thomas A., Jr., and Mayo. 3,414,192.
Davey, Charles T., Amicone, and Goldie. 3,414,822.
Fine, Jonathan E. 3,413,998.
Frank, Milton A., Sr. 3,413,889.
Corski, Alexander A., and Pappas. 3,414,825.
Kesting, Lawrence W. 3,414,217.
McKnight, William T., Otto, Hawkins and Dearman. 3,414,765.
Morrow, William J., and Rucker. 3,414,848.
Atomic Energy Commission: *See*—
Bray, Lane A., and Moore. 3,414,403.
Coburn, Michael D. 3,414,570.
Henley, Darwin R. 3,414,692.
Laquer, Henry L., Carroll, and Hammel. 3,414,777.
Petrick, Michael. 3,414,744.
National Aeronautics and Space Administration: *See*—
Griffin, Francis D. 3,414,358.
Navy: *See*—
Anand, Davinder K. 3,414,050.
United States Steel Corp.: *See*—
Cutton, John G. 3,414,041.
Hubble, David H., and Powers. 3,414,418.
Johnson, Tegner A. 3,414,512.
Kortenhoven, Peter. 3,413,843.
Maravilla, Sam, and Kopanda. 3,414,420.
Rall, Waldo. 3,414,048.
Rall, Waldo. 3,414,251.
United Steel Companies Ltd., The: *See*—
Saunders, Charles W. 3,414,047.
Universal Fluid Dynamics Co.: *See*—
Priest, Herbert A. 3,414,302.
Universal Oil Products Co.: *See*—
Bloch, Herman S. 3,414,509.
Carson, Don B., and Haufe. 3,414,484.
Hoekstra, James. 3,414,522.
Michalko, Edward. 3,414,525.
University of California, The Regents of the: *See*—
Gates, Lauren W., and Holtz. 3,414,115.
Uno, Tetsuo: *See*—
Noguchi, Yuichi, Nakajima, Uno, and Nakanishi. 3,414,-478.
Unterstenhoefer, Leo: *See*—
Trieschmann, Hans-Georg, and Unterstenhoefer. 3,414,-533.
Upchurch, Lewis E. Rotary engine. 3,413,962, 12–3–68, Cl. 123—18.
Upjohn Co., The: *See*—
Nadeau, Herbert G., and Wasseciak. 3,413,836.
Usdavin, Alexander R. Mold retardant bread box. 3,413,906, 12–3–68, Cl. 99—249.
VEPA A.G.: *See*—
Fleissner Heinz. 3,413,727.
Fleissner, Heins. 3,413,781.
V–Plex Clutch Corp.: *See*—
Davis, Marion H. 3,414,099.
Van Antwerp, Frederick W., and R. S. Edsall. Mechanical fruit picker. 3,413,787, 12–3–68, Cl. 56—328.
Van Antwerp, Robert L., to Maestro Corp. Record holder adapter for automatic record changers. 3,414,270, 12–3–68, Cl. 274—10.
Van Bramer, William, to Westinghouse Electric Corp. Encapsulation of semiconductor. 3,414,433, 12–3–68, Cl. 117—200.
Vandegraaf, Johannes J., to General Electric Co. Voltage-controlled oscillator. 3,414,826, 12–3–68, Cl. 329—124.
Vandenburgh, Robert D.: *See*—
Watson, Tindale P., and Vandenburgh. 3,414,693.
Van der Lely, Piet, to North American Philips Co., Inc. Pivotal connection for keys of a musical instrument. 3,413,-885, 12–3–68, Cl. 84—435.
Van Geuns, Johannes R., to North American Philips Co., Inc. Method and apparatus for producing cold. 3,413,814, 12–3–68, Cl. 62—3.
Van Gulik, Johan L.: *See*—
Neumeier, Albert, and Van Gulik. 3,414,699.
Van Kamp, Harmen, to North American Philips Co., Inc. Novel method for producing 9β,10α-6 methylene testosterone. 3,414,591, 12–3–68, Cl. 260—397.4.
Van Lookeren Campagne, Nicolaas, to Shell Oil Co. Lubricating oil by hydrotreating pentane-alcohol-deasphalted short residue. 3,414,506, 12–3–68, Cl. 208—309.

Van Wazer, John R.: *See*—
Riess, Jean G., and Van Wazer. 3,414,390.
Van Witteveen, Roland A. J. O.: *See*—
Meijer, Roelf J., and Van Witteveen. 3,413,801.
Vare Corp.: *See*—
Munse, Robert A. 3,414,035.
Varian Associates: *See*—
Johnson, Stanley L. 3,414,847.
Levin, Martin E., and Dill. 3,414,757.
Uitz, Mark O. 3,414,658.
Vaughan, Arthur S., to Foster Wheeler Corp. Air flow proportioning apparatus. 3,413,998, 12–3–68, Cl. 137—118.
Vee, F. F., Equipment Co., Inc.: *See*—
Vytlacil, Frank F. 3,413,776.
Veeder Industries Inc.: *See*—
Hamlin, Richard B. 3,413,837.
Vencel, Steven A., and K. L. Gray, to Indiana University Foundation. Eye dominance testing machine. 3,414,349, 12–3–68, Cl. 351—36.
Vend-A-Key Corp.: *See*—
Casey, William E., and Selden. 3,413,892.
Ventre, Pierre: *See*—
Lecomte, Alexandre, and Ventre. 3,414,319.
Verduin, Fredric C.: *See*—
Farrington, Grant M., Jr., and Verduin. 3,414,419.
Verhagen, Jan: *See*—
Hermes, Willem, and Verhagen. 3,414,687.
Victor Comptometer Corp.: *See*—
Sievers, William E. 3,414,107.
Vierling, Oskar: *See*—
Peuser, Wolfgang, and Vierling. 3,414,715.
Villaume, Henry F., and D. S. Collins, to Air Products and Chemicals, Inc. Cryogenic refrigeration for crystal X-ray diffraction studies. 3,413,821, 12–3–68, Cl. 62—514.
Viola, Vito, to Friden, Inc. Moistening device. 3,413,954, 12–3–68, Cl. 118—46.
Virginia Metalcrafters, Inc.: *See*—
Gordon, Donald H. 3,413,783.
Visi-Trol Engineering Corp.: *See*—
Waara, William A. 3,413,862.
Vissers, Herbert. Instrument for injecting a gas or liquid into the soil. 3,413,940, 12–3–68, Cl. 111—7.
Visual Graphics Corp.: *See*—
Friedel, Murray. 3,413,904.
Vita Zahnfabrik H. Rauter KG: *See*—
Wagner, Ewald, and Pralow. 3,413,723.
Vitrone, John, to Allied Chemical Corp. Polycarbonates. 3,414,542, 12–3–68, Cl. 260—47.
Vogliano, German, and D. Beckmann. Protective helmets. 3,413,656, 12–3–68, Cl. 2—3.
Vogt, Thomas C., Jr., to Mobil Oil Corp. Formation consolidation using a combustible liner. 3,414,055, 12–3–68, Cl. 166—12.
Voigt, Max H.: *See*—
Chmura, Theodore S., and Voigt. 3,413,924.
Volk, William, and C. A. Johnson, to Hydrocarbon Research, Inc. Beneficiation of low grade iron ores. 3,414,402, 12–3–68, Cl. 75—26.
Volpin, Alexander S. Automatic two-way lubricant-sealed plug valve. 3,414,002, 12–3–68, Cl. 137—246.12.
Von Schultz, Hans U., to Mobil Oil Corp. Spar buoy vessel. 3,413,946, 12–3–68, Cl. 114—5.
Von Wolff, Wolf, and D. Bertelsmann, to Max Langesiepen Kommanditgesellschaft. Expanding dowel of thermoplastic material. 3,413,887, 12–3–68, Cl. 85—83.
Vos, John W.: *See*—
Phelan, Louis A. M., Vos, Wedige, and Spates. 3,413,911.
Phelan, Louis A. M., Vos, Wedige, and Spates. 3,413,912.
Vulcano, Vincent N. Book-sorting machine. 3,414,126, 12–3–68, Cl. 209—73.
Vytlacil, Frank F., to F. F. Vee Equipment Co., Inc. Cyclone separator. 3,413,776, 12–3–68, Cl. 55—1.
Waara, William A., to Visi-Trol Engineering Corp. Cam controlled actuator including intermittent torque means. 3,413,862, 12–3–68, Cl. 74—53.
Wabash Magnetics, Inc.: *See*—
Hoffman, Robert R. 3,414,769.
Wacht, Raymond J., and G. H. Eckels, to A. B. Chance Co. Toe-room aerial bucket with removable liner. 3,414,079, 12–3–68, Cl. 182—46.
Waddill, Harold G.: *See*—
Edwards, Gayle D., and Waddill. 3,414,635.
Wagner, Alfred, to Maschinenfabrik Bernhard J. Goedecker. Centrifugal laundry drier. 3,413,729, 12–3–68, Cl. 34—58.
Wagner, Anton R. Method for the continuous transferring of liquid metals or alloys into solid state with desired cross section without using a mould. 3,414,043, 12–3–68, Cl. 164—86.
Wagner, Ewald, and W. E. L. Pralow, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, and Vita Zahnfabrik H. Rauter KG. Noble metal alloy adapted to receive porcelain cladding, artificial dental constructions and method of preparing the same. 3,413,723, 12–3–68, Cl. 32—8.
Wagner, Kuno, and H. Holtschmidt, to Farbenfabriken Bayer Aktiengesellschaft. Production of addition compounds containing formic acid. 3,414,610, 12–3–68, Cl. 260—501.1.
Wagomer, John F.: *See*—
Nordstrom, Lars E., Wagomer, and Lollar. 3,414,366.
Wald Mfg. Co., Inc.: *See*—
Pawsat, Ruben L. 3,414,223.
Waldo, Russell W. Door closer and mounting means therefor. 3,413,679, 12–3–68, Cl. 16—62.
Walker, Darrell W., to Phillips Petroleum Co. Synthesis of acrylonitrile using silicide catalyst. 3,414,605, 12–3–68, Cl. 260—465.3.
Walker, William C., to West Virginia Pulp and Paper Co. Pick testing doctor blade assembly. 3,413,848, 12–3–68, Cl. 73—150.
Walker, William R., to Hydro-Craft, Inc. Clamp means. 3,414,220, 12–3–68, Cl. 248—68.
Wallace, William K., to Chicago Pneumatic Tool Co. Impact wrench. 3,414,066, 12–3–68, Cl. 173—93.6.
Wallerstein, Stanley, to Fairchild Hiller Corp. Gas bearing adapter. 3,414,338, 12–3–68, Cl. 308—9.
Wandel u. Goltermann: *See*—
Hoffmann, Gunther, and Coenning. 3,414,809.
Warburton, Clive R., to The General Electric Co. Ltd. Frequency-shift data receiver. 3,414,827, 12–3–68, Cl. 329—134.
Ward, Joseph B.: *See*—
Henderson, George L. 3,414,483.
Warren, Charles W., to Instruments and Communications, Inc. Phase null spectrophotometer. 3,414,729, 12–3–68, Cl. 250—214.
Warren, Creighton S.: *See*—
Orahood, Donald W., Slenys, and Warren. 3,414,785.
Warwick Electronics Inc.: *See*—
Kuhl, Bernhard R., and Larson. 3,413,953.
Waszeciak, Paul H.: *See*—
Nadeau, Herbert G., and Waszeciak. 3,413,836.
Watanabe, Shiro, to Daikin Kogo Kabushiki Kaisha. Herbicidal compositions. 3,414,400, 12–3–68, Cl. 71—118.
Watanabe, Teiko: *See*—
Noyori, Gentaro, Honda, and Watanabe. 3,414,611.
Watford, David C.: *See*—
Robilliard, Leonard T., and Watford. 3,414,224.
Watson, John D., Sr.: *See*—
Olstowski, Franciszek, and Watson. 3,414,381.
Watson, Tindale P., and R. D. Vandenburgh, to The Tomkins-Johnson Co. Cylinder head limit switch assembly. 3,414,693, 12–3–68, Cl. 200—82.
Wauconda Tool and Engineering Co.: *See*—
Olson, Billy E. 3,414,865.
Wayne Electronic Products Co.: *See*—
Knox, Marion D. 3,414,773.
Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of W. C. McNutt and H. G. Odell. Dual latching solenoid valve. 3,414,012, 12–3–68, Cl. 137—554.
Weber, Michel. Reduced-pressure box. 3,414,160, 12–3–68, Cl. 220—44.
Weber, Max, to Elcalor A.G., Fabrik fur Elektrothermische Apparate. Leak testing method and apparatus for containers. 3,413,841, 12–3–68, Cl. 73—45.1.
Wedige, Cyril G.: *See*—
Phelan, Louis A. M., Vos, Wedige, and Spates. 3,413,911.
Phelan, Louis A. M., Vos, Wedige, and Spates. 3,413,912.
Wedvik, Albert F. Contractible ladder. 3,414,081, 12–3–68, Cl. 182—160.
Weeden, Frank G., and G. W. Graves, to John L. Dore Co. Tower tray. 3,414,246, 12–3–68, Cl. 261—113.
Weevers, Henri H.: *See*—
Feliks, Wilhelmus A., and Weevers. 3,413,960.
Wehr, Robert D. Fruit harvester. 3,413,786, 12–3–68, Cl. 56—328.
Wehr, Rudolf, to E. I. du Pont de Nemours and Co. Benzoin-type homopolymers and glass fabric laminates thereof. 3,414,466, 12–3–68, Cl. 161—198.
Weidler, Richard L.: *See*—
Seitzinger, David L., and Weidler. 3,414,194.
Weidmann, Hans E., and D. J. Wiest, to Allen-Bradley Co. Active low pass filter. 3,414,824, 12–3–68, Cl. 328—167.
Weiertz, Axel H. Steering and stabilizing front wheel suspension for motor cars. 3,414,287, 12–3–68, Cl. 280—96.2.
Weil, Edward D., and E. Dorfman, to Hooker Chemical Corp. Method for control of plant growth. 3,414,399, 12–3–68, Cl. 71—115.
Weiser, Earnest F., to General Electric Co. Circuit to control motor current or battery charging current. 3,414,795, 12–3–68, Cl. 320—9.
Welch, Clark M., and J. D. Guthrie, to United States of America, Agriculture. Process for making N-substituted aminoethylsulfonylethyl ethers of cellulose. 3,414,367, 12–3–68, Cl. 8—17.
Weller, Herbert E.: *See*—
Stine, Ralph M., and Weller. 3,413,793.
Wells, Edward R., to The Procter & Gamble Co. Compressible laminated paper structure. 3,414,459, 12–3–68, Cl. 161—131.
Wells, Frank W., to Burroughs Corp. Information transfer into a word-addressed memory. 3,414,886, 12–3–68, Cl. 340—172.5.
Welly, Jürgen-Dietrich: *See*—
Mentschel, Hellmuth, and Welly. 3,414,049.
Werdenberg, Wilhelm, to Societe Anonyme des Cableries et Trefileries de Cossonay. Process and apparatus for the manufacture of concentric conductors for electric cables. 3,413,792, 12–3–68, Cl. 57—9.
Werntz, James H., to E. I. du Pont de Nemours and Co. Aromatic polyamide-esters from amino aryl dicarboxylic acid diesters. 3,414,546, 12–3–68, Cl. 260—78.
Weslock, Charles K.: *See*—
Baczkowski, Harry A., Harrison, and Weslock. 3,414,243.
West Co., The: *See*—
Ravn, Jacob. 3,414,112.
West Virginia Pulp and Paper Co.: *See*—
Brown, James R., Marton, and Rowley. 3,414,469.
Walker, William C. 3,413,848.
Western Co. of America, The: *See*—
Pruitt, Gail T. 3,414,392.
Western Electric Co.: *See*—
Brewer, Robert F., and Piechocki. 3,413,711.
Western Electric Co., Inc.: *See*—
Anderson, Albin R., and Sadewicz. 3,414,024.
Gilbertson, Oswald J., and Kaczmarsky. 3,414,814.
Stine, Ralph M., and Weller. 3,413,793.
Woellner, Horst L. 3,413,956.
Westinghouse Electric Corp.: *See*—
Aldous, George C. 3,414,707.
Clark, Myron A. 3,414,109.

Westinghouse Electric Corp.: *See*—Continued
Higgins, Edward R., and Patrick. 3,414,889.
Hoffmann, Arthur H., and Frola. 3,414,788.
Hruda, Robert M. 3,414,753.
Lin, Hung C., and Karcher. 3,414,782.
Moore, James O. 3,414,788.
Newell, William E. 3,414,832.
Powell, Kenneth D. 3,414,760.
Sonnemann, William K. 3,414,772.
Thornton, William A., Jr. 3,414,490.
Van Bramer, William. 3,414,433.
Westover, William A. J., to The General Electric Co. Ltd. Frequency-shift data receiver. 3,414,828, 12–3–68, Cl. 329—134.
Westport Development & Mfg. Co. Inc.: *See*—
Hellman, Robert R. 3,414,232.
Westrum, Dick O. Hand wiper for auto bodies. 3,413,675, 12–3–68, Cl. 15—245.
Westwood, Cedric G.: *See*—
Greenwood, Roger K., and Westwood. 3,414,442.
Weyerhaeuser Co.: *See*—
Carlberg, Lawrence G., and Shafizadeh. 3,414,560.
Wharton, Gerald R.: *See*—
Huffman, John W., and Wharton. 3,414,858.
Wheeler, John L.: *See*—
Townsend, Stephen E., and Wheeler. 3,414,672.
Wheeler, Ross W.: *See*—
Cress, Vernor B., Jr., Apitz, Halamandaris, Wheeler, and Hoyt. 3,414,876.
Wheldon, Robert J.: *See*—
Baker, Basil O., and Wheldon. 3,414,755.
White, Harold, to J. D. Marshall, and H. L. Bomar. Selvage looping device for loom. 3,413,999, 12–3–68, Cl. 139—195.
White, S. S., Co.: *See*—
Taylor, Norris O., Uhler, Gardella, and Cahlik. 3,414,324.
Whitener, Rufus A., to Continental/Moss-Jordin, Inc. Pneumatic cotton feeder with bypass. 3,414,329, 12–3–68, Cl. 302—23.
Whitesel, James W.: *See*—
Adams, Paul R., and Whitesel. 3,414,105.
Whitley, James B.: *See*—
Iannicelli, Joseph, Whitley, and Balentine. 3,414,422.
Whitney, Joel G.: *See*—
Gregory, Walter A., and Whitney. 3,414,615.
Whittaker Corp.: *See*—
Klein, Joseph L., and Zenuk. 3,413,707.
Whittell, Alfred, Jr., to Raypak Co., Inc. Hot water supply system having means to prevent override of temperature. 3,413,969, 12–3–68, Cl. 126—362.
Wiebe, Alwyn F.: *See*—
Engel, Frederik, and Wiebe. 3,413,852.
Wieden, Horst, H. Kleiner, J. Szita, and G. Nischk, to Farbenfabriken Bayer Aktiengesellschaft. Ethylenically unsaturated quaternary ammonium hydraxides and their preparation. 3,414,569, 12–3–68, Cl. 260—247.1.
Wiener Schwachstromwerke Gesellschaft m.b.H.: *See*—
Beck, Ferdinand K. 3,414,657.
Wiens, Bradley E.: *See*—
Bruss, Howard G., Jr., Schlientz, and Wiens. 3,414,429.
Wiest, Douglas J.: *See*—
Weidmann, Hans E., and Wiest. 3,414,824.
Wigginton, Raymond J., W. N. Dear, and W. R. Culfeather, to Laporte Titanium Ltd. Manufacture of titanium dioxide. 3,414,379, 12–3–68, Cl. 23—202.
Wike, Albert F., to Addressograph-Multigraph Corp. Printing plate supporting means in bed and cylinder printing machines. 3,413,922, 12–3–68, Cl. 101—269.
Wilcox, Isaac L., to Phillips Petroleum Co. Ring-a-rim closures. 3,414,183, 12–3–68, Cl. 229—43.
Wildhaber, Ernest. Planetary motion mechanism. 3,413,896, 12–3–68, Cl. 92—57.
Wilfert, Karl, and B. Barényi, to Daimler-Benz Aktiengesellschaft. Vehicle suspension system. 3,414,290, 12–3–68, Cl. 280—112.
Wilkinson, Giles A., Jr., to Eastman Kodak Co. Ordered record file. 3,413,746, 12–3–68, Cl. 40—158.
Wilkus, Edward V., and A. Berger, to General Electric Co. Metallocenylaryl-substituted organosilicon materials. 3,414,597, 12–3–68, Cl. 260—429.
Willett, Harold A., to Cane Machinery & Engineering Co., Inc. Cane harvester and method of harvesting cane. 3,414,285, 12–3–68, Cl. 280—43.23.
Williams, David H., and E. C. Pellaton, to Fireboard Corp. Expandable wall panel and method for making same. 3,413,765, 12–3–68, Cl. 52—99.
Williams, Oscar S. and R. S. Closure for tractor cabs. 3,414,316. 12–3–68, Cl. 296—28.
Williams, Robert S.: *See*—
Williams, Oscar S. and R. S. 3,414,316.
Willingham, Harold E. Permanent mold for use in the manufacture of pipe and method of producing such mold. 3,414,488, 12–3–68, Cl. 204—37.
Willis, Donald H., to Radio Corp. of America. Blanking circuits for television receivers. 3,414,669, 12–3–68, Cl. 178—7.5.
Willis, William R.: *See*—
Levery, Charles A., Patterson, and Willis. 3,413,778.
Wilson, Henry M., to Pratt and Whitney Inc. Machine tool. 3,413,893, 12–3–68, Cl. 90—17.
Wilson, John H., and V. T. Cash. Stabilizers for fluid cylinder plungers. 3,413,766, 12–3–68, Cl. 52—115.
Wilson, John H. Stabilizers for fluid cylinder plungers. 3,413,767, 12–3–68, Cl. 52—115.
Wilson, Melvin G., to International Business Machine Corp. Cascaded connected transistorized operational amplifier. 3,414,831, 12–3–68, Cl. 330—20.
Wilson, Rosser L.: *See*—
McCune, Robert B., and Wilson. 3,413,930.
Winch, Allen R., to Celanese Corp. Metering warp knit fabrics. 3,413,825, 12–3–68, Cl. 66—192.
Winderl, Siegfried, H. Hoffmann, C. Palm, H. Nohe, K. Baer, and H. Harders, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of acrylonitrile and methacrylonitrile. 3,414,606, 12–3–68, Cl. 260—465.3.
Winders, Gordon R.: *See*—
Schluderberg, Donald C., Winders, and Dossett. 3,414,473.
Wine, Charles M.: *See*—
Miller, James C., and Wine. 3,414,897.
Wingquist, Sten G., to Nydqvist & Holm Aktiebolag. Method of and a device for machining blanks. 3,413,890, 12–3–68, Cl. 90—13.
Wisby, Warren J.: *See*—
Richard, Joseph D., and Wisby. 3,414,873.
Woellner, Horst L., to Western Electric Co. Inc. Drive system for apparatus for applying code markings of different colors onto elongated articles. 3,413,956, 12–3–68, Cl. 118—314.
Wojcik, Richard P.: *See*—
Bak, Alex M., and Wojcik. 3,413,668.
Wolfe, David F.: *See*—
Spinner, Robert E., and Wolfe. 3,414,177.
Wolfe, William C., to The Babcock & Wilcox Co. Two fuel burner arrangement. 3,414,198, 12–3–68, Cl. 239—416.1.
Wood, Alan F. B., to International Standard Electric Corp. Temperature compensating unit for piezoelectric crystals. 3,414,794, 12–3–68, Cl. 310—8.9.
Woodford, Joseph C. Anti-siphon outlets. 3,414,001, 12–3–68, Cl. 137—216.
Woods, Roger M.: *See*—
Oleson, George E., and Woods. 3,414,492.
Woodward, Dale C.: *See*—
Nugent, Duane C., and Woodward. 3,414,540.
Woodward, Gary F., to American Standard, Inc. Condition control mechanism. 3,414,712, 12–3–68, Cl. 219—491.
Woolf, Cyril, to Allied Chemical Corp. Method for combating bacteria in vapor phase with 1,1,3-trichlorotrifluoroacetone. 3,414,654, 12–3–68, Cl. 424—331.
Worthington Corp.: *See*—
Bloom, Carl. 3,413,855.
Wortso Corp.: *See*—
Janapol, Melvin N. 3,413,849.
Wotton, David E. M., to Imperial Smelting Corp. (N.S.C.) Ltd. Copper hexadecafluorophthalocyanine. 3,414,583, 12–3–68, Cl. 260—314.5.
Wright, Lawrence T.: *See*—
Kapff, Sixt F., and Wright. 3,414,382.
Wright, Thomas E. Combined litter container and tissue dispenser. 3,414,157, 12–3–68, Cl. 220—23.
Wucher, Roland. Injection moulding apparatuses with rotating platform. 3,413,682, 12–3–68, Cl. 18—4.
Wuerker, Ralph F.: *See*—
Clark, George L., and Wuerker. 3,414,836.
Wunderman, Irwin, to Hewlett-Packard Co. Annularly shaped light emitter and photocell connected by plug-in-light conducting pad. 3,414,733. 12–3–68, Cl. 250—227.
Wyckoff, Fred K., to D. G. Griswold. Vacuum breaker valve. 3,414,003, 12–3–68, Cl. 137—217.
Wyeth, Nathaniel C.: *See*—
Goodwin, Leslie E., Rowe, and Wyeth. 3,413,915.
Wynes, Robert A., and N. E. Lloyd, to Standard Brands Inc. Process for the preparation of bacterial alpha-amylase. 3,414,479, 12–3–68, Cl. 195—66.
Wyzykoski, Leo. Filament lamp with base stem adaptable for connection to different sockets. 3,414,762, 12–3–68, Cl. 315—64.
Xerox Corp.: *See*—
Gallo, Charles F., Jr. 3,414,409.
Schwertz, Frederick A., and Smith. 3,413,716.
Townsend, Stephen E., and Wheeler. 3,414,672.
Yahle, Daniel I., to Martin-Marietta Corp. Explosively actuated valve assembly. 3,413,992, 12–3–68, Cl. 137—68.
Yamaguti, Kenji: *See*—
Shinohara, Yasuo, Yamaguti, and Nagai. 3,414,498.
Yamamoto, Kazunobu: *See*—
Kaneko, Tamaki, and Yamamoto. 3,413,920.
Yearwood, Donald R.: *See*—
Basile, Norman K., Yearwood, and Brideweser. 3,413,840.
Yelverton, Roy Lee, Jr., to American Cyanamid Co. Annular bi-component spinnerette assembly. 3,413,683, 12–3–68, Cl. 18—8.
Young, Clive R.: *See*—
Porrata, Louis R., and Young. 3,414,502.
Young, Frank L. Expansible center seam envelope. 3,414,185, 12–3–68, Cl. 229—75.
Zak, Joseph T. Selective shifting tool. 3,414,060, 12–3–68, Cl. 166—214.
Zapf, Walter: *See*—
Jung, Hans and Zapf. 3,414,240.
Zeiss-Stiftung, Carl: *See*—
Mollring, Friedrich K. 3,414,845.
Zellers, James T., to Libby-Owens-Ford Glass Co. Sheet glass manufacture. 3,414,397, 12–3–68, Cl. 65—196.
Zenuk, Charles H.: *See*—
Klein, Joseph L., and Zenuk. 3,413,707.
Zernow, Louis: *See*—
Lieberman, Irving, Knop, and Zernow. 3,413,883.
Ziedelis, Edward P.: *See*—
Butler, Richard A., Jr., Ziedelis, and Martin. 3,414,208.
Ziemer, Richard W., to Electro-Optical Systems, Inc. Fluid device. 3,413,993, 12–3–68, Cl. 137—81.5.
Zilkha, Albert, M. Tahan, and G. Ezra, to United States of America, Agriculture. Graft polymers of polyalkylene oxides on starch and dextrin. 3,414,530, 12–3–68, Cl. 260—9.
Zimmerman, Robert C.: *See*—
Rose, Manning I., and Zimmerman. 3,414,154.
Zur, Eitan, to E. I. du Pont de Nemours and Co. Yarns and fabrics thereof. 3,413,798, 12–3–68, Cl. 57—140.

CLASSIFICATION OF PATENTS

ISSUED DECEMBER 3, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2— 3	:	3,413,656
221	:	3,413,657
3— 12.7	:	3,413,658
4—131	:	3,413,659
166	:	3,413,660
172	:	3,413,661
185	:	3,413,662
5— 81	:	3,413,663
327	:	3,413,664
334	:	3,413,665
7— 14.1	:	3,413,666
8— 12	:	3,414,366
17	:	3,414,367
64	:	3,414,368
116.3	:	3,414,369
10— 89	:	3,413,667
11— 1	:	3,413,668
5	:	3,413,669
12— 87	:	3,413,670
13— 1	:	3,414,655
9	:	3,414,656
13	:	3,414,657
20	:	3,414,658
26	:	3,414,659
27	:	3,414,660
31	:	3,414,661
14— 71	:	3,413,671
15— 76	:	3,413,672
105	:	3,413,673
230.12:		3,413,674
245	:	3,413,675
250.27:		3,413,676
256.51:		3,413,677
16— 16	:	3,413,678
52	:	3,413,679
198	:	3,413,680
17— 25	:	3,413,681
18— 4	:	3,413,682
8	:	3,413,683
12	:	3,413,684
18	:	3,413,685
		3,413,686
26	:	3,413,687
19—155	:	3,413,688
21— 58	:	3,414,370
23— 50	:	3,414,371
51	:	3,414,372
97	:	3,414,373
105	:	3,414,374
106	:	3,414,375
165	:	3,414,376
167	:	3,414,377
200	:	3,414,378
202	:	3,414,379
209	:	3,414,380
.1	:	3,414,381
230	:	3,414,382
		3,414,383
270	:	3,414,384
288	:	3,414,385
		3,414,386
301	:	3,414,387
		3,414,388
304	:	3,414,389
315	:	3,414,390
24— 17	:	3,413,689
73	:	3,413,690
170	:	3,413,691
230	:	3,413,692
284	:	3,413,693
25— 90	:	3,413,694
26— 2	:	3,413,695
28— 1	:	3,413,696
		3,413,697
		3,413,698
2	:	3,413,699
17	:	3,413,700
72	:	3,413,701
29— 26	:	3,413,702
155	:	3,413,703
157	:	3,413,704
182.1	:	3,414,391
213	:	3,413,705
407	:	3,413,706
419	:	3,413,707
423	:	3,413,708
427	:	3,413,709
429	:	3,413,710
473.1	:	3,413,711
571	:	3,413,712
29—588	:	3,413,713
596	:	3,413,714
		3,413,715
602	:	3,413,716
605	:	3,413,717
30— 34.1	:	3,413,718
43.2	:	3,413,719
62	:	3,413,720
32— 2	:	3,413,721
5	:	3,413,722
8	:	3,413,723
17	:	3,413,724
40	:	3,413,725
33—169	:	3,413,726
34— 16	:	3,413,727
22	:	3,413,728
58	:	3,413,729
73	:	3,413,730
115	:	3,413,731
162	:	3,413,732
171	:	3,413,733
182	:	3,413,734
35— 48	:	3,413,735
36— 54	:	3,413,736
67	:	3,413,737
37— 42	:	3,413,738
142	:	3,413,739
		3,413,740
38— 78	:	3,413,741
96	:	3,413,742
40— 28	:	3,413,744
132	:	3,413,745
158	:	3,413,746
311	:	3,413,743
335	:	3,413,747
43— 19	:	3,413,748
42.06:		3,413,749
.33:		3,413,750
44.97:		3,413,751
44— 7	:	3,414,392
76	:	3,414,393
46— 25	:	3,413,752
61	:	3,413,753
117	:	3,413,756
206	:	3,413,754
220	:	3,413,755
49—200	:	3,413,757
220	:	3,413,758
360	:	3,413,759
375	:	3,413,760
396	:	3,413,761
501	:	3,413,762
51— 29	:	3,413,763
163	:	3,413,764
52— 99	:	3,413,765
115	:	3,413,766
		3,413,767
198	:	3,413,769
208	:	3,413,770
480	:	3,413,771
484	:	3,413,768
677	:	3,413,772
713	:	3,413,773
720	:	3,413,774
727	:	3,413,775
55— 1	:	3,413,776
158	:	3,413,777
186	:	3,413,778
272	:	3,413,779
276	:	3,413,780
292	:	3,413,781
485	:	3,413,782
56— 25.4	:	3,413,783
34	:	3,413,784
43	:	3,413,785
328	:	3,413,786
		3,413,787
329	:	3,413,788
330	:	3,413,789
400.06:		3,413,790
57— 2.3	:	3,413,791
9	:	3,413,792
68	:	3,413,793
80	:	3,413,794
115	:	3,413,795
140	:	3,413,796
		3,413,797
		3,413,798
145	:	3,413,799
58— 58	:	3,413,800
60— 24	:	3,413,801
		3,413,802
29	:	3,413,803
30	:	3,413,804
38	:	3,413,805
39.28:		3,413,806
54.5	:	3,413,807
67	:	3,413,808
104	:	3,4 3,809
258	:	3,413,810
61— 42	:	3,413,811
45	:	3,413,812
		3,413,813
62— 3	:	3,413,814
6	:	3,413,815
21	:	3,413,816
23	:	3,413,817
63	:	3,413,818
222	:	3,413,819
371	:	3,413,820
514	:	3,413,821
65— 18	:	3,414,394
107	:	3,414,395
134	:	3,414,396
196	:	3,414,397
66— 1	:	3,413,822
8	:	3,413,826
9	:	3,413,823
177	:	3,413,824
192	:	3,413,825
193	:	RE.26,496
68— 23	:	3,413,827
70— 25	:	3,413,828
224	:	3,413,829
312	:	3,413,830
358	:	3,413,831
71— 65	:	3,414,398
115	:	3,414,399
118	:	3,414,400
72— 42	:	3,413,832
.56	:	3,413,833
289	:	3,413,834
361	:	3,413,835
73— 17	:	3,413,836
27	:	3,413,837
29	:	3,413,838
37	:	3,413,839
40	:	3,413,840
45.1	:	3,413,841
61.1	:	3,413,842
71.5	:	3,413,843
117.4	:	3,413,844
141	:	3,413,845
144	:	3,413,846
149	:	3,413,847
150	:	3,413,848
161	:	3,413,849
194	:	3,413,850
258	:	3,413,851
355	:	3,413,852
362	:	3,413,853
382	:	3,413,854
389	:	3,413,855
398	:	3,413,856
407	:	3,413,857
74— 5	:	3,413,858
.4	:	3,413,859
6	:	3,413,860
10.5	:	3,413,861
53	:	3,413,862
89.15:		3,413,863
193	:	3,414,665
200	:	3,413,864
242.11:		3,413,866
.9	:	3,413,865
348	:	3,413,867
371	:	3,413,868
473	:	3,413,869
475	:	3,413,870
536	:	3,413,871
574	:	3,413,872
695	:	3,413,873
822	:	3,413,874
75— 25	:	3,414,401
26	:	3,414,402
118	:	3,414,403
130	:	3,414,404
134	:	3,414,405
142	:	3,414,406
146	:	3,414,407
75—214	:	3,414,408
77— 7	:	3,413,875
81— 53	:	3,413,876
54	:	3,413,877
64	:	3,413,878
83— 13	:	3,413,879
54	:	3,413,880
486	:	3,413,881
641	:	3,413,882
84—267	:	3,413,883
383	:	3,413,884
435	:	3,413,885
85— 73	:	3,413,886
83	:	3,413,887
89— 28	:	3,413,888
90— 11	:	3,413,889
13	:	3,413,890
		3,413,891
.05:		3,413,892
17	:	3,413,893
91— 28	:	3,413,894
400	:	3,413,895
92— 57	:	3,413,896
186	:	3,413,897
93— 35	:	3,413,898
61	:	3,413,899
94— 17	:	3,413,900
39	:	3,413,901
48	:	3,413,902
95— 11	:	3,413,903
94	:	3,413,904
96— 1.4	:	3,414,409
27	:	3,414,410
29	:	3,414,411
98— 37	:	3,413,905
99—140	:	3,414,412
144	:	3,414,413
171	:	3,414,414
192	:	3,414,415
235	:	3,414,416
249	:	3,413,906
287	:	3,413,907
297	:	3,413,908
298	:	3,413,909
303	:	3,413,910
355	:	3,413,911
400	:	3,413,912
100— 53	:	3,413,913
100	:	3,413,914
169	:	3,413,915
221	:	3,413,916
101—114	:	3,413,917
158	:	3,413,918
216	:	3,413,919
248	:	3,413,920
		3,413,921
269	:	3,413,922
102— 65.2	:	3,413,923
103— 2	:	3,413,924
87	:	3,413,925
111	:	3,413,926
126	:	3,413,927
		3,413,928
174	:	3,413,929
104— 26	:	3,413,930
105—369	:	3,413,931
376	:	3,413,932
		3,413,933
106— 26	:	3,414,417
57	:	3,414,418
58	:	3,414,419
92	:	3,414,420
173	:	3,414,421
288	:	3,414,422
109— 6	:	3,413,934
110— 1	:	3,413,935
7	:	3,413,936
14	:	3,413,937
38	:	3,413,938
97	:	3,413,939
111— 7	:	3,413,940
77	:	3,413,941
112— 2	:	3,413,942
214	:	3,413,943
252	:	3,413,944
113— 32	:	3,413,945
114— .5	:	3,413,946
16	:	3,413,947
66.5	:	3,413,948
184	:	3,413,949
115— 12	:	3,413,950
116— 70	:	3,413,951
114	:	3,413,952
124.1	:	3,413,953
117— 2	:	3,414,423
5.1	:	3,414,424
18	:	3,414,425
		3,414,426
47	:	3,414,427
66	:	3,414,428
69	:	3,414,429
71	:	3,414,430
121	:	3,414,431
126	:	3,414,432
200	:	3,414,433
201	:	3,414,434
212	:	3,414,435
118— 46	:	3,413,954
55	:	3,413,955
314	:	3,413,956
119— 3	:	3,413,957
15	:	3,413,958
148	:	3,413,959
122—510	:	3,413,960
123— 8	:	3,413,961
13	:	3,413,962
41.36:		3,413,963
90	:	3,413,964
		3,413,965
139	:	3,413,966
126— 59.5	:	3,413,967
116	:	3,413,968
362	:	3,413,969
127— 19	:	3,414,436
128— 2.05:		3,413,970
24.2	:	3,413,973
75	:	3,413,971
142.7	:	3,413,972
218	:	3,413,974
253	:	3,413,975
328	:	3,413,976
583	:	3,413,977
131— 4	:	3,413,978
84	:	3,413,979
214	:	3,413,980
256	:	3,413,981
266	:	3,413,982
132— 1	:	3,413,983
34	:	3,413,984
45	:	3,413,985
46	:	3,413,986
134— 46	:	3,413,987
102	:	3,413,988
128	:	3,413,989
136— 6	:	3,414,437
86	:	3,414,438
		3,414,439
107	:	3,414,440
137— 15	:	3,413,990
54	:	3,413,991
68	:	3,413,992
81.5	:	3,413,993
		3,413,994
		3,413,995
		3,413,996
85	:	3,413,997
118	:	3,413,998
209	:	3,414,000
216	:	3,414,001
217	:	3,414,003
237	:	3,414,004
246.12:		3,414,002
436	:	3,414,005
492	:	3,414,008
493	:	3,414,007
494	:	3,414,006
		3,414,009
495	:	3,414,010
510	:	3,414,011
554	:	3,414,012
557	:	3,414,013
559	:	3,414,014
572	:	3,414,015
596.2	:	3,414,016
		3,414,017
597	:	3,414,018
625.65:		3,414,019
139— 12	:	3,414,020
13	:	3,414,021
92	:	3,414,022
139—145	:	3,414,023
195	:	3,413,999
140— 1	:	3,414,024
141— 98	:	3,414,025
143— 32	:	3,414,026
46	:	3,414,027
165	:	3,414,028
144—230	:	3,414,029
146— 43	:	3,414,030
241	:	3,414,031
148— 33	:	3,414,441
141	:	3,414,442
149— 20	:	3,414,443
150— 1.7	:	3,414,032
34	:	3,414,033
151— 7	:	3,414,034
41.75:		3,414,035
152—153	:	3,414,036
229	:	3,414,037
156— 62.4	:	3,414,444
106	:	3,414,445
128	:	3,414,446
131	:	3,414,447
149	:	3,414,448
173	:	3,414,449
192	:	3,414,450
353	:	3,414,451
357	:	3,414,452
426	:	3,414,453
159— 17	:	3,414,038
160— 90	:	3,414,039
188	:	3,414,040
161— 1	:	3,414,454
5	:	3,414,455
7	:	3,414,456
38	:	3,414,457
67	:	3,414,458
131	:	3,414,459
143	:	3,414,460
151	:	3,414,461
166	:	3,414,462
191	:	3,414,463
192	:	3,414,464
193	:	3,414,465
198	:	3,414,466
266	:	3,414,467
162— 30	:	3,414,468
84	:	3,414,469
218	:	3,414,470
392	:	3,414,471
164— 26	:	RE.26,495
56	:	3,414,041
57	:	3,414,042
86	:	3,414,043
95	:	3,414,044
116	:	3,414,045
273	:	3,414,046
283	:	3,414,047
165— 1	:	3,414,048
4	:	3,414,049
32	:	3,414,050
62	:	3,414,051
164	:	3,414,052
166— 9	:	3,414,053
		3,414,054
12	:	3,414,055
89	:	3,414,056
105	:	3,414,057
120	:	3,414,058
150	:	3,414,059
214	:	3,414,060
226	:	3,414,061
172— 7	:	3,414,062
21	:	3,414,063
311	:	3,414,064
173— 93.5	:	3,414,065
.6	:	3,414,066
174— 15	:	3,414,662
51	:	3,414,663
52	:	3,414,664
68.5	:	3,414,666
175— 4.51:		3,414,071
7	:	3,414,067
67	:	3,414,068
268	:	3,414,069
391	:	3,414,690
393	:	3,414,070
176— 37	:	3,414,472
56	:	3,414,473
68	:	3,414,474

176– 72	3,414,475	206– 42	3,414,119	235– 61.7	3,414,715	260– 93.5	3,414,553	266– 39	3,414,251	310– 50	3,414,747
86	3,414,476	46	3,414,120	64.7	3,414,191	.7	3,414,554	267– 1	3,414,252		3,414,748
178– 7.2	3,414,667		3,414,121	92	3,414,718	94.3	3,414,555	269– 47	3,414,253	52	3,414,749
.5	3,414,669	47	3,414,122		3,414,719	.7	3,414,557	270– 58	3,414,254	105	3,414,750
.7	3,414,668	56	RE.26,493	164	3,414,720	.9	3,414,556		3,414,255	164	3,414,751
17	3,414,670		3,414,123	195	3,414,721	157	3,414,558		3,414,256	269	3,414,752
42	3,414,671	62	3,414,124	200	3,414,192	158	3,414,559		3,414,257	312– 231	3,414,343
69.5	3,414,672	65	RE.26,494	237– 2	3,414,193	209	3,414,560	271– 44	3,414,258	313– 35	3,414,753
92	3,414,673	208– 53	3,414,504	238– 10	3,414,194	211.7	3,414,561	82	3,414,259	60	3,414,754
	3,414,674	108	3,414,505	239– 11	3,414,195	239.3	3,414,562	272– 57	3,414,260	193	3,414,755
179– 1	3,414,675	309	3,414,506	106	3,414,196		3,414,563	81	3,414,261	315– 3.5	3,414,756
2	3,414,676	209– 1	3,414,125	289	3,414,197	.5	3,414,564	273– 1.5	3,414,262	5.38	3,414,757
15.55	3,414,677	73	3,414,126	416.1	3,414,198	.55	3,414,565	94	3,414,263	13	3,414,758
18	RE.26,498	88	3,414,127	658	3,414,199		3,414,566	134	3,414,264	36	3,414,759
	3,414,678	167	3,414,128	673	3,414,200	240	3,414,567	156	3,414,265	39.59	3,414,760
	3,414,679	210– 32	3,414,507	240– 7.1	3,414,722	.6	3,414,568	176	3,414,266	.61	3,414,761
	3,414,680		3,414,508	241– 4	3,414,201	247.1	3,414,569	186	3,414,267	64	3,414,762
	3,414,681		3,414,509	42	3,414,202	249.6	3,414,570	211	3,414,268	80	3,414,763
90	3,414,682	37	3,414,510	202	3,414,203	.7	3,414,571	274– 4	3,414,269	84.6	3,414,764
100.2	3,414,683	40	3,414,511	242– 1.1	3,414,204	256	3,414,572	10	3,414,270	173	3,414,765
	3,414,684	51	3,414,512	43	3,414,205	.4	3,414,573	15	3,414,271	194	3,414,766
107	3,414,685	54	3,414,513	55.11	3,414,206		3,414,574	277– 2	3,414,272	200	3,414,767
149	3,414,686		3,414,514	56	3,414,207	270	3,414,575	11	3,414,273	240	3,414,768
170	3,414,687	62	3,414,515	58.1	3,414,208	287	3,414,576	15	3,414,274	317– 2	3,414,769
	3,414,688	82	3,414,129	71.5	3,414,209	294.7	3,414,577	53	3,414,275	5	3,414,770
184	3,414,689	97	3,414,130	72	3,414,210	296	3,414,578	95	3,414,276		3,414,771
180– 51	3,414,072	321	3,414,131	85	3,414,211	310	3,414,579	214	3,414,277	14	3,414,772
79.2	3,414,073	211– 41	3,414,132	118.7	3,414,212		3,414,580	280– 6	3,414,278	28	3,414,773
101	3,414,074	133	3,414,133	244– 1	3,414,213		3,414,581	11.13	3,414,279	33	3,414,774
121	3,414,075	213– 43	3,414,134		3,414,214		3,414,582	.19	3,414,280	100	3,414,775
124	3,414,076	45	3,414,135	3.15	3,414,215	314.5	3,414,583	.35	3,414,281	123	3,414,776
128	3,414,077	214– 1	3,414,136	.21	3,414,216	326	3,414,584		3,414,282		3,414,777
181– 48	3,414,078		3,414,137	.23	3,414,217	.5	3,414,585		3,414,283	148.5	3,414,778
182– 46	3,414,079	6	3,414,138	138	3,414,218	328	3,414,586	21	3,414,284	234	3,414,779
155	3,414,080		3,414,139	248– 65	3,414,219	335	3,414,587	43.23	3,414,285		3,414,780
160	3,414,081	10.5	3,414,140	68	3,414,220	340.7	3,414,588	91	3,414,286	235	3,414,781
204	3,414,082	14	3,414,143	205	3,414,221	397.1	3,414,589	96.2	3,414,287		3,414,782
221	3,414,083	15	3,414,144	226	3,414,222	.3	3,414,590	106.5	3,414,289		3,414,783
184– 1	3,414,084		3,414,145	230	3,414,223	.4	3,414,591	112	3,414,290		3,414,784
7	3,414,085	16.1	3,414,141	243	3,414,224		3,414,592	150	3,414,291	318– 18	3,414,785
187– 9	3,414,086	17	3,414,142	357	3,414,227	400	3,414,593		3,414,292		3,414,786
11	3,414,087	138	3,414,146	361	3,414,225	413	3,414,594	231	3,414,288		3,414,787
29	3,414,088	314	3,414,147		3,414,226	429	3,414,596	254	3,414,293	176	3,414,788
188– 1	3,414,089	505	3,414,148	249– 18	3,414,228		3,414,597	489	3,414,294	221	3,414,789
73	3,414,090	506	3,414,149	121	3,414,229	.7	3,414,595	511	3,414,295	313	3,414,790
78	3,414,091	730	3,414,150	193	3,414,230	.9	3,414,598	281– 39	3,414,296	331	3,414,791
100	3,414,092	215– 40	3,414,151	250– 49.5	3,414,723	431	3,414,599	285– 98	3,414,297	320– 1	3,414,792
190– 16	3,414,093	217– 12	3,414,152	65	3,414,724	439	3,414,600	209	3,414,298	5	3,414,793
192– 3.21	3,414,094	219– 8.5	3,414,697	83.3	3,414,725	442	3,414,601	234	3,414,299	9	3,414,795
8	3,414,095	10.51	3,414,698	.6	3,414,726	448	3,414,602	287– 20.92	3,414,300	14	3,414,796
38	3,414,096	95	3,414,699	95	RE.26,497	.2	3,414,603	54	3,414,301	321– 2	3,414,797
48.91	3,414,097	98	3,414,700	108	3,414,727	.8	3,414,604	87	3,414,302		3,414,798
53	3,414,098		3,414,701	199	3,414,728	465.3	3,414,605	104	3,414,303		3,414,799
65	3,414,099	121	3,414,702	214	3,414,729		3,414,606	189.36	3,414,304	5	3,414,800
90	3,414,100	158	3,414,703	217	3,414,730	468	3,414,607	.365	3,414,305	16	3,414,801
106.2	3,414,101	210	3,414,704	219	3,414,731	475	3,414,608	290– 38	3,414,734		3,414,802
195– 28	3,414,477		3,414,705	223	3,414,732		3,414,609	292– 1	3,414,306	323– 4	3,414,803
29	3,414,478		3,414,706	227	3,414,733	501.11	3,414,610	2	3,414,307	22	3,414,804
66	3,414,479	322	3,414,707	251– 11	3,414,231	534	3,414,611	229	3,414,308	324– 6	3,414,805
197– 6.7	3,414,102	400	3,414,708	86	3,414,232	544	3,414,612	251.5	3,414,309	54	3,414,806
20	3,414,103	411	3,414,709	172	3,414,233	551	3,414,613	294– 16	3,414,310	57	3,414,809
	3,414,104	450	3,414,710	173	3,414,234	558	3,414,614	34	3,414,311	58	3,414,810
	3,414,105	469	3,414,711	331	3,414,235	563	3,414,615	71	3,414,312	62	3,414,811
133	3,414,106	491	3,414,712	252– 12	3,414,516	566	3,414,616	87.2	3,414,313	65	3,414,806
	3,414,107	522	3,414,713	33	3,414,517	570.5	3,414,617	103	3,414,314	68	3,414,812
198– 16	3,414,108	220– 1	3,414,153	55	3,414,518	576	3,414,618	104	3,414,315	72	3,414,813
18	3,414,109	3.7	3,414,154	75	3,414,519	582	3,414,619	296– 28	3,414,316	73	3,414,814
30	3,414,110	5	3,414,155	110	3,414,520	584	3,414,620		3,414,317	77	3,414,815
33	3,414,111	6	3,414,156	149	3,414,521		3,414,621	37	3,414,318	83	3,414,816
	3,414,112	23	3,414,157	317	3,414,522	585	3,414,622	137	3,414,319	111	3,414,807
84	3,414,113	24.5	3,414,158	324	3,414,523		3,414,623		3,414,320	146	3,414,817
181	3,414,114	41	3,414,159	410	3,414,524	606.5	3,414,624	297– 29	3,414,321	325– 38	3,414,818
208	3,414,115	44	3,414,160	453	3,414,525		3,414,625	90	3,414,324	42	3,414,819
230	3,414,116	221– 2	3,414,161	256– 22	3,414,236	617	3,414,626	281	3,414,325	410	3,414,820
200– 16	3,414,691	266	3,414,162	24	3,414,237	653.4	3,414,627	385	3,414,326	433	3,414,821
61.08	3,414,692	222– 57	3,414,163	259– 4	3,414,238	.8	3,414,628	389	3,414,322	328– 60	3,414,822
82	3,414,693	64	3,414,164	104	3,414,239	666	3,414,629	461	3,414,323	133	3,414,823
150	3,414,695	82	3,414,165	107	3,414,240	674	3,414,630	299– 1	3,414,327	167	3,414,824
168	3,414,696	102	3,414,166	153	3,414,241	680	3,414,631	22	3,414,328	232	3,414,825
201– 15	3,414,480	182	3,414,167	260– 2	3,414,529	683	3,414,632	302– 23	3,414,329	329– 124	3,414,826
202– 234	3,414,481	227	3,414,168	.5	3,414,526	.15	3,414,633	28	3,414,330	134	3,414,827
203– 2	3,414,482	321	3,414,169		3,414,527	837	3,414,634	29	3,414,331		3,414,828
10	3,414,483	340	3,414,170		3,414,528	851	3,414,635		3,414,332	330– 15	3,414,829
26	3,414,484	402.14	3,414,171	9	3,414,530	876	3,414,636	303– 6	3,414,334		3,414,830
43	3,414,485	443	3,414,172	15	3,414,531	878	3,414,637	21	3,414,333	20	3,414,831
204– 10	3,414,486	506	3,414,173	23	3,414,532		3,414,638		3,414,335	31	3,414,832
11	3,414,487	223– 52	3,414,174	28.5	3,414,533	953	3,414,639		3,414,336	53	3,414,833
37	3,414,488	85	3,414,175	31.6	3,414,534	261– 18	3,414,242	307– 201	3,414,735	69	3,414,834
38	3,414,489	88	3,414,176	.8	3,414,535	39	3,414,243	219	3,414,736	331– 94.5	3,414,835
	3,414,490	225– 94	3,414,177	45.75	3,414,537	41	3,414,244	243	3,414,737		3,414,836
49	3,414,491	226– 62	3,414,178	.85	3,414,538	87	3,414,245	252	3,414,738		3,414,837
51	3,414,492	113	3,414,179	.9	3,414,536	113	3,414,246	271	3,414,739		3,414,838
52	3,414,493	229– 1.5	3,414,180	.95	3,414,539	118	3,414,247	304	3,414,740		3,414,839
96	3,414,494	2.5	3,414,181	46.5	3,414,540	122	3,414,248	310	3,414,741		3,414,840
101	3,414,495	28	3,414,182	47	3,414,541	264– 13	3,414,640	308– 4	3,414,337	107	3,414,841
147	3,414,496	43	3,414,183		3,414,542	40	3,414,641	9	3,414,338	332– 19	3,414,842
149	3,414,497	48	3,414,184		3,414,543	73	3,414,642	26	3,414,339	333– 1.1	3,414,843
159.13	3,414,498	75	3,414,185	67	3,414,544	109	3,414,643	72	3,414,340	10	3,414,844
.22	3,414,499	230– 52	3,414,186	78	3,414,545	168	3,414,644	235	3,414,341	18	3,414,845
180	3,414,500	56	3,414,187		3,414,546	210	3,414,645		3,414,342	24.2	3,414,846
206	3,414,501	120	3,414,188	.5	3,414,547		3,414,646	310– 5	3,414,742	83	3,414,847
217	RE.26,499	143	3,414,189	85.5	3,414,548	235	3,414,647	8.9	3,414,794	84	3,414,848
281	3,414,502	235– 61	3,414,190		3,414,549	237	3,414,648	10	3,414,743	97	3,414,849
298	3,414,503	.11	3,414,716	86.7	3,414,550	297	3,414,649	11	3,414,744	335– 8	3,414,850
206– 5	3,414,117		3,414,717	88.2	3,414,551	266– 6	3,414,249		3,414,745	106	3,414,851
16	3,414,118	.6	3,414,714	89.7	3,414,552	34	3,414,250	42	3,414,746	170	3,414,852

335– 207	3,414,853	339– 59	3,414,866	340– 146.1	3,414,880	340– 174.1	3,414,894	350– 87	3,414,345	356– 166	3,414,358
268	3,414,854	99	3,414,867	164	3,414,881		3,414,895	135	3,414,346	401– 109	3,414,359
336– 82	3,414,855	116	3,414,868	166	3,414,882	309.1	3,414,896	145	3,414,347	134	3,414,360
205	3,414,856	193	3,414,869	172.5	3,414,883	324	3,414,897	351– 24	3,414,348	191	3,414,361
233	3,414,857	195	3,414,870		3,414,884	347	3,414,898	36	3,414,349	424– 60	3,414,650
337– 1	3,414,694	217	3,414,871		3,414,885	343– 9	3,414,899	58	3,414,350	86	3,414,651
13	3,414,858	340– 3	3,414,872		3,414,886	102	3,414,900	353– 15	3,414,351	218	3,414,652
51	3,414,859	5	3,414,873		3,414,887	107	3,414,901	101	3,414,352	277	3,414,653
302	3,414,860	7	3,414,874		3,414,888	713	3,414,902	355– 71	3,414,353	331	3,414,654
338– 22	3,414,861	15.5	3,414,875	173	3,414,889	753	3,414,903	356– 75	3,414,354	431– 58	3,414,362
180	3,414,862	36	3,414,876	174	3,414,890	781	3,414,904	100	3,414,355	88	3,414,363
244	3,414,863	37	3,414,877		3,414,891	346– 33	3,414,905		3,414,356	143	3,414,364
300	3,414,864	41	3,414,878		3,414,892	350– 35	3,414,344	165	3,414,357	291	3,414,365
339– 47	3,414,865	71	3,414,879	.1	3,414,893						

CLASSIFICATION OF DESIGNS

D 9– 44	212,842	D23– 78	212,847	D29– 1	212,852	D34– 14	212,856	D55– 1	212,862	D81– 10	212,867
267	212,843	D24– 1	212,848	D33– 3	212,853	15	212,858	D56– 4	212,863	D83– 12	212,868
D13– 1	212,844	D26– 14	212,849	8	212,854	D37– 3	212,859	D57– 1	212,864	D85– 2	212,869
D14– 3	212,845		212,850	D34– 3	212,855	D48– 27	212,860	D64– 11	212,865	D86– 10	212,870
D18– 2	212,846		212,851	13	212,857	D50– 5	212,861	D74– 17	212,866		

CLASSIFICATION OF PLANTS

P. – 20	2,847	P. – 24	2,849	P. – 70	2,848

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,413,753
3,414,192
3,414,217
3,414,250
3,414,415
3,414,488
3,414,765
4 : 3,413,661
3,413,914
3,414,218
3,414,295
3,414,361
3,414,721
3,414,843
5 : 3,414,713
6 : 3,413,667
3,413,691
3,413,700
3,413,702
3,413,704
3,413,708
3,413,722
3,413,724
3,413,728
3,413,736
3,413,740
3,413,745
3,413,749
3,413,750
3,413,751
3,413,752
3,413,764
3,413,765
3,413,788
3,413,789
3,413,802
3,413,812
3,413,818
3,413,819
3,413,826
3,413,829
3,413,831
3,413,833
3,413,838
3,413,849
3,413,875
3,413,893
3,413,899
3,413,901
3,413,902
6 : 3,413,903
3,413,917
3,413,935
3,413,941
3,413,952
3,413,954
3,413,969
3,413,981
3,413,993
3,414,000
3,414,003
3,414,016
3,414,026
3,414,054
3,414,058
3,414,063
3,414,067
3,414,069
3,414,072
3,414,102
3,414,104
3,414,110
3,414,115
3,414,136
3,414,154
3,414,169
3,414,172
3,414,186
3,414,203
3,414,214
3,414,226
3,414,249
3,414,258
3,414,260
3,414,261
3,414,263
3,414,267
3,414,276
3,414,284
3,414,288
3,414,293
3,414,297
3,414,301
3,414,304
3,414,307
3,414,312
3,414,314
3,414,343
3,414,346
3,414,356
6 : 3,414,398
3,414,421
3,414,434
3,414,455
3,414,481
3,414,589
3,414,658
3,414,676
3,414,683
3,414,684
3,414,690
3,414,692
3,414,695
3,414,718
3,414,733
3,414,752
3,414,757
3,414,774
3,414,780
3,414,781
3,414,806
3,414,816
3,414,823
3,414,834
3,414,835
3,414,836
3,414,844
3,414,846
3,414,852
3,414,853
3,414,854
3,414,857
3,414,869
3,414,876
3,414,877
3,414,886
3,414,887
3,414,904
8 : 3,414,436
3,414,592
3,414,691
3,414,725
3,414,895
9 : 3,413,669
3,413,692
3,413,820
3,413,834
3,413,836
3,413,844
3,413,852
9 : 3,413,925
3,414,113
3,414,161
3,414,216
3,414,232
3,414,341
3,414,354
3,414,359
3,414,465
3,414,552
3,414,729
3,414,787
3,414,805
10 : 3,413,660
3,413,696
3,413,798
3,413,915
3,414,371
3,414,450
3,414,458
3,414,460
3,414,466
3,414,516
3,414,546
3,414,549
3,414,551
3,414,559
3,414,612
3,414,615
3,414,652
11 : 3,413,673
3,413,906
3,413,975
3,413,996
3,414,012
12 : 3,413,683
3,413,703
3,413,786
3,413,787
3,413,904
3,413,948
3,413,984
3,413,992
3,414,002
3,414,215
3,414,262
3,414,315
3,414,358
3,414,485
3,414,630
12 : 3,414,732
3,414,737
3,414,848
3,414,873
3,414,903
13 : 3,414,022
3,414,025
3,414,308
3,414,422
16 : 3,414,028
17 : RE.26,498
3,413,666
3,413,668
3,413,680
3,413,681
3,413,742
3,413,776
3,413,806
3,413,815
3,413,827
3,413,843
3,413,866
3,413,876
3,413,892
3,413,894
3,413,907
3,413,911
3,413,912
3,413,926
3,413,939
3,413,953
3,413,955
3,413,967
3,413,971
3,413,985
3,413,988
3,414,030
3,414,093
3,414,107
3,414,108
3,414,116
3,414,118
3,414,119
3,414,120
3,414,125
3,414,128
3,414,140
3,414,142
3,414,151
3,414,157
17 : 3,414,193
3,414,199
3,414,206
3,414,222
3,414,233
3,414,236
3,414,289
3,414,309
3,414,310
3,414,382
3,414,420
3,414,484
3,414,495
3,414,509
3,414,510
3,414,515
3,414,522
3,414,525
3,414,543
3,414,547
3,414,664
3,414,667
3,414,668
3,414,673
3,414,674
3,414,723
3,414,734
3,414,744
3,414,770
3,414,776
3,414,785
3,414,865
3,414,881
3,414,901
18 : 3,413,950
3,414,040
3,414,064
3,414,098
3,414,099
3,414,158
3,414,184
3,414,231
3,414,316
3,414,321
3,414,349
3,414,357
3,414,451
3,414,468
3,414,550
3,414,669

18 : 3,414,677
3,414,769
3,414,789
3,414,800
3,414,820
3,414,859
19 : 3,413,675
3,413,755
3,413,997
3,414,170
3,414,228
3,414,426
3,414,479
3,414,842
20 : 3,414,079
3,414,252
3,414,790
21 : 3,414,147
3,414,223
3,414,225
3,414,237
3,414,298
3,414,643
22 : 3,413,781
3,414,285
3,414,367
3,414,369
3,414,386
3,414,432
23 : 3,414,037
24 : 3,413,744
3,413,878
3,413,889
3,413,919
3,413,974
3,413,983
3,413,994
3,413,995
3,414,050
3,414,131
3,414,148
3,414,173
3,414,355
3,414,385
3,414,670
3,414,782
3,414,783
3,414,868
3,414,889
25 : 3,413,699
3,413,705
3,413,707
3,413,713
3,413,845
3,413,851
3,413,853
3,413,855
3,413,861
3,413,918
3,413,924
3,413,962
3,414,023
3,414,024
3,414,106
3,414,208
3,414,339
3,414,410
3,414,472
3,414,536
3,414,603
3,414,655
3,414,661
3,414,704
3,414,706
3,414,720
3,414,731
3,414,768
3,414,771
3,414,837
3,414,847
3,414,849
3,414,850
3,414,867
3,414,892
26 : RE.26,499
3,413,674
3,413,676
3,413,757
3,413,760
3,413,770
3,413,780
3,413,807
3,413,832
3,413,862
3,413,863
3,413,869
3,413,870
3,413,873
3,413,883
3,413,897
3,413,927
3,413,928
3,413,931
3,413,932
26 : 3,413,933
3,413,951
3,413,965
3,413,978
3,413,991
3,414,001
3,414,009
3,414,014
3,414,045
3,414,095
3,414,096
3,414,124
3,414,146
3,414,180
3,414,188
3,414,190
3,414,243
3,414,244
3,414,270
3,414,292
3,414,302
3,414,303
3,414,317
3,414,331
3,414,334
3,414,336
3,414,351
3,414,404
3,414,440
3,414,446
3,414,457
3,414,513
3,414,514
3,414,518
3,414,531
3,414,575
3,414,594
3,414,647
3,414,693
3,414,703
3,414,712
3,414,762
3,414,763
3,414,817
27 : 3,413,658
3,413,678
3,413,679
3,413,685
3,413,686
3,413,773
3,413,921
3,413,929
3,413,958
3,414,010
3,414,027
3,414,149
3,414,159
3,414,264
3,414,512
3,414,685
3,414,739
3,414,831
29 : 3,413,748
3,413,772
3,413,828
3,413,850
3,414,187
3,414,390
3,414,393
3,414,416
3,414,735
3,414,741
3,414,742
3,414,791
3,414,804
3,414,898
30 : 3,414,139
3,414,365
31 : 3,413,769
3,413,877
3,414,031
3,414,811
33 : 3,413,670
3,414,722
34 : 3,413,777
3,413,824
3,413,825
3,413,830
3,413,847
3,413,856
3,413,859
3,413,888
3,413,898
3,413,930
3,413,998
3,414,041
3,414,080
3,414,105
3,414,109
3,414,168
3,414,177
3,414,181
3,414,201
3,414,213
34 : 3,414,238
3,414,268
3,414,274
3,414,311
3,414,332
3,414,373
3,414,402
3,414,419
3,414,425
3,414,431
3,414,439
3,414,441
3,414,477
3,414,480
3,414,490
3,414,502
3,414,504
3,414,505
3,414,507
3,414,523
3,414,541
3,414,542
3,414,556
3,414,562
3,414,563
3,414,564
3,414,574
3,414,585
3,414,587
3,414,588
3,414,596
3,414,598
3,414,601
3,414,625
3,414,634
3,414,654
3,414,659
3,414,689
3,414,727
3,414,728
3,414,756
3,414,761
3,414,772
3,414,801
3,414,802
3,414,803
3,414,814
3,414,819
3,414,825
3,414,839
3,414,840
3,414,841
3,414,845
3,414,863
3,414,897
3,414,900
35 : 3,413,735
3,414,570
3,414,777
36 : RE.26,496
3,413,687
3,413,716
3,413,720
3,413,738
3,413,746
3,413,756
3,413,768
3,413,791
3,413,793
3,413,817
3,413,822
3,413,839
3,413,840
3,413,842
3,413,848
3,413,858
3,413,884
3,413,896
3,413,900
3,413,908
3,413,938
3,413,943
3,413,949
3,413,956
3,413,970
3,414,013
3,414,015
3,414,038
3,414,051
3,414,066
3,414,088
3,414,092
3,414,100
3,414,117
3,414,122
3,414,123
3,414,126
3,414,145
3,414,155
3,414,162
3,414,165
3,414,167
3,414,175
3,414,179
36 : 3,414,183
3,414,219
3,414,220
3,414,247
3,414,256
3,414,265
3,414,266
3,414,291
3,414,299
3,414,306
3,414,338
3,414,342
3,414,347
3,414,353
3,414,360
3,414,374
3,414,399
3,414,407
3,414,409
3,414,411
3,414,417
3,414,423
3,414,428
3,414,437
3,414,456
3,414,467
3,414,493
3,414,519
3,414,532
3,414,597
3,414,602
3,414,604
3,414,639
3,414,641
3,414,642
3,414,650
3,414,666
3,414,672
3,414,697
3,414,698
3,414,702
3,414,740
3,414,753
3,414,775
3,414,786
3,414,797
3,414,798
3,414,810
3,414,813
3,414,815
3,414,830
3,414,833
3,414,866
3,414,872
3,414,878
3,414,880
3,414,899
37 : 3,413,677
3,413,701
3,413,796
3,414,545
3,414,644
3,414,645
3,414,648
39 : RE.26,493
RE.26,494
RE.26,495
RE.26,497
3,413,662
3,413,663
3,413,726
3,413,734
3,413,737
3,413,880
3,413,905
3,413,922
3,414,005
3,414,007
3,414,017
3,414,018
3,414,019
3,414,035
3,414,036
3,414,039
3,414,065
3,414,083
3,414,087
3,414,094
3,414,114
3,414,127
3,414,129
3,414,166
3,414,182
3,414,196
3,414,198
3,414,241
3,414,391
3,414,394
3,414,424
3,414,429
3,414,448
3,414,459
3,414,491
3,414,539
39 : 3,414,540
3,414,553
3,414,624
3,414,631
3,414,700
3,414,707
3,414,710
3,414,717
3,414,759
3,414,808
3,414,856
3,414,858
3,414,860
3,414,890
40 : 3,413,778
3,413,816
3,414,004
3,414,053
3,414,071
3,414,163
3,414,171
3,414,272
3,414,376
3,414,482
3,414,496
3,414,511
3,414,528
3,414,554
3,414,557
3,414,599
3,414,605
3,414,617
3,414,620
3,414,631
3,414,633
3,414,773
41 : 3,413,689
3,413,710
3,413,879
3,414,143
3,414,699
3,414,838
42 : 3,413,664
3,413,694
3,413,711
3,413,741
3,413,743
3,413,775
3,413,803
3,413,813
3,413,821
3,413,867
3,413,909
3,413,934
3,413,944
3,413,977
3,413,987
3,413,989
3,414,048
3,414,068
3,414,070
3,414,074
3,414,082
3,414,086
3,414,091
3,414,097
3,414,111
3,414,112
3,414,134
3,414,150
3,414,185
3,414,194
3,414,195
3,414,221
3,414,251
3,414,324
3,414,350
3,414,366
3,414,395
3,414,405
3,414,408
3,414,413
3,414,414
3,414,418
3,414,433
3,414,445
3,414,452
3,414,486
3,414,508
3,414,529
3,414,535
3,414,716
3,414,736
3,414,760
3,414,788
3,414,795
3,414,799
3,414,822
3,414,832
3,414,861
3,414,864
3,414,875
3,414,893
3,414,894
42 : 3,414,902
44 : 3,413,794
3,413,986
3,413,999
3,414,579
3,414,705
3,414,870
45 : 3,414,152
3,414,469
3,414,905
46 : 3,414,663
47 : 3,413,697
3,413,698
3,413,785
3,413,982
3,414,629
3,414,646
48 : 3,413,671
3,413,725
3,413,766
3,413,767
3,413,784
3,413,946
3,414,008
3,414,055
3,414,056
3,414,057
3,414,059
3,414,060
3,414,061
3,414,174
3,414,246
3,414,273
3,414,294
3,414,329
3,414,337
3,414,380
3,414,381
3,414,389
3,414,392
3,414,435
3,414,443
3,414,453
3,414,487
3,414,489
3,414,499
3,414,517
3,414,521
3,414,571
3,414,609
3,414,622
3,414,623
3,414,635
3,414,637
3,414,738
3,414,766
3,414,778
3,414,874
49 : 3,413,721
3,413,782
3,414,327
3,414,696
50 : 3,414,896
51 : 3,413,771
3,413,783
3,414,033
3,414,103
3,414,323
3,414,463
3,414,473
3,414,492
3,414,501
3,414,526
3,414,826
53 : 3,413,688
3,413,758
3,413,972
3,414,006
3,414,081
3,414,254
3,414,300
3,414,305
3,414,403
3,414,461
3,414,483
3,414,560
3,414,793
54 : 3,413,790
3,414,397
3,414,616
3,414,619
3,414,626
55 : 3,413,672
3,413,706
3,413,717
3,413,823
3,413,835
3,414,034
3,414,044
3,414,204
3,414,701
3,414,708
3,414,746
3,414,824

Design Patents

6 : 212,850	6 : 212,863	21 : 212,842	34 : 212,870	39 : 212,853	42 : 212,858
212,851	212,864	25 : 212,849	36 : 212,862	40 : 212,865	48 : 212,857
212,854	212,868	27 : 212,848	39 : 212,843	42 : 212,847	49 : 212,856
212,861	17 : 212,869	212,855	212,845	212,852	55 : 212,844

Plant Patents

6 : 2,849	25 : 2,848	48 : 2,847			

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 3, 1968 Volume 857 Number 1

TRADEMARKS

NOTICES

Study of the Need for Revision of the Trademark Act of 1946, as Amended

Request for Comments

A number of changes to the Trademark Act have been suggested in recent years. As a result of these suggestions and as part of the Patent Office policy of periodically reviewing legislation affecting the patent and trademark systems, the Patent Office is undertaking a study of the effectiveness of the Act and any need for its amendment. The study will review the basic precepts of the Act as well as the need for independent changes of both a major and a minor nature.

The comments of interested parties are invited and should be submitted in writing to the Patent Office by February 14, 1969.

EDWARD J. BRENNER,
Commissioner of Patents.

Nov. 14, 1968.

Approved:

JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 33 F.R. 17115, Nov. 16, 1968

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 707,656 (AMWAY), Amway Sales Corp., Waxes and polishes, particularly furniture polishes and floor waxes; **Reg. No. 716,128**, same, Water purifying and softening apparatus; **Reg. No. 716,672**, same, Cleaners and cleaning compounds, specifically abrasive and polishing cleaners; **Reg. No. 724,606**, same, All purpose cleaning concentrates, detergents and soaps in liquid, powder and solid form; **Reg. No. 727,367**, same, Bleaches and germicides; **Reg. No. 731,269** (AMWAY FORMULA 1886 AND DESIGN), same, Hair color restorative; **Reg. No. 736,656** (AMWAY), same, Prefabricated survival shelters, particularly steel shelters designed for subsurface installation; **Reg. No. 753,602**, same, Protective and decorative coatings—namely, an anti-soil coating material for rugs, upholstery, painted surfaces and draperies; **Reg. No. 753,694**, same, Fire extinguishers; **Reg. No. 754,702**, same, Clothing—namely, hosiery; **Reg. No. 757,767**, same, Cleaning and maintenance equipment—namely, rug and upholstery shampoo applicators; **Reg. No. 766,220**, same, Oils and greases—namely, a multi-use spray for lubricating, waterproofing, corrosion retardation and prevent of surface condensation; **Reg. No. 773,910** (AMWAY AND DESIGN), same, Waxes and polishes, particularly for furniture, floors, automobiles and shoes, and cleaners and cleaning compounds, specifically those of the abrasive and polishing type; **Reg. No. 773,943** (AMWAY), same, Bathroom freshener attachment for use in conjunction with bathroom fixtures; **Reg. No. 773,944** (AMWAY AND DESIGN), same; **Reg. No. 774,060**, same, Fire

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] ---------- 16,348
Date of oldest new application ---------- September 11, 1967
Date of oldest amended application (filing date) ---------- January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	3-12-68	10- 6-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	2- 1-68	7-26-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	2-28-68	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-11-67	1-5 -65
Renewals (All Classes)	9-23-68	----------
Sec. 12(c) Publications (All Classes)	10- 4-68	----------

Applications filed during the month of October 1968—2,732

Registrations Issued ---------- 311—No. 861,205 to No. 861,515
Renewals Issued ---------- 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

extinguishers; **Reg. No. 774,194**, same, Clothing—namely, hosiery; **Reg. No. 774,272**, same, All-purpose cleaning concentrates, cleaners, detergents and soaps in liquids, powder and solid form; **Reg. No. 777,646**, same, Chemicals and chemical compositions, particularly bleaches, germicides, air deodorants, mothproofing compounds, and insect repellents; **Reg. No. 777,704**, same, Multi-use spray for lubricating, waterproofing, corrosion retardation and prevention of surface condensation; **Reg. No. 779,397** (AMWAY), same, Coin-operated bleach and detergent vending machines; **Reg. No. 804,184**, same, Plastic toys; **Reg. No. 804,185** (AMWAY AND DESIGN), same; **Reg. No. 804,212** (AMWAY), same, Laundry appliances—namely, ironing board covers; **Reg. No. 804,213** (AMWAY AND DESIGN), same; **Reg. No. 810,729**, same, Protective and decorative coatings—namely, an antisoil coating material for rugs, upholstery, painted surfaces, and draperies; **Reg. No. 812,413** (AMWAY), same, Medicated baby oils and ointments and antiseptics in an arosol container; **Reg. No. 812,414** (AMWAY AND DESIGN), same; **Reg. No. 815,528** (AMWAY), same, Iron-on patches; **Reg. No. 815,529** (AMWAY AND DESIGN), same; **Reg. No. 826,886** (AMWAY), same, Recordings; **Reg. No. 828,803**, same, Chinaware—namely, plates, cups, saucers, platters and bowls; **Reg. No. 836,809**, same, Electric vibrating massagers; **Reg. No. 837,364**, same, Sample cases and briefcases; **Reg. No. 838,365** (AMWAY AND DESIGN), same, Cleaning and maintenance equipment—namely, Rug and upholstery shampoo applicators, filed Feb. 14, 1968, D.C., E.D. Mich. (Detroit), Doc. 30874, *Amway Corporation* v. *Amway Catering, Inc.* Judgment and order, defendant will adopt the name "Industrial Catering Company" as its corporate name, if such name is acceptable to the State of Michigan and shall not use the word "Amway" or American Way, Aug. 12, 1968.

Reg. No. 716,128. (See Reg. No. 707,656.)
Reg. No. 716,672. (See Reg. No. 707,656.)
Reg. No. 724,606. (See Reg. No. 707,656.)
Reg. No. 727,367. (See Reg. No. 707,656.)
Reg. No. 731,269. (See Reg. No. 707,656.)
Reg. No. 736,656. (See Reg. No. 707,656.)
Reg. No. 753,602. (See Reg. No. 707,656.)
Reg. No. 753,694. (See Reg. No. 707,656.)
Reg. No. 754,702. (See Reg. No. 707,656.)
Reg. No. 757,767. (See Reg. No. 707,656.)
Reg. No. 766,220. (See Reg. No. 707,656.)
Reg. No. 773,910. (See Reg. No. 707,656.)
Reg. No. 773,943. (See Reg. No. 707,656.)
Reg. No. 773,944. (See Reg. No. 707,656.)
Reg. No. 774,060. (See Reg. No. 707,656.)
Reg. No. 774,194. (See Reg. No. 707,656.)
Reg. No. 774,272. (See Reg. No. 707,656.)
Reg. No. 774,646. (See Reg. No. 707,656.)
Reg. No. 774,704. (See Reg. No. 707,656.)
Reg. No. 779,397. (See Reg. No. 707,656.)
Reg. No. 804,184. (See Reg. No. 707,656.)
Reg. No. 804,185. (See Reg. No. 707,656.)
Reg. No. 804,212. (See Reg. No. 707,656.)
Reg. No. 804,213. (See Reg. No. 707,656.)
Reg. No. 810,729. (See Reg. No. 707,656.)
Reg. No. 812,413. (See Reg. No. 707,656.)
Reg. No. 812,414. (See Reg. No. 707,656.)
Reg. No. 815,528. (See Reg. No. 707,656.)
Reg. No. 815,529. (See Reg. No. 707,656.)
Reg. No. 826,886. (See Reg. No. 707,656.)
Reg. No. 828,803. (See Reg. No. 707,656.)
Reg. No. 836,809. (See Reg. No. 707,656.)
Reg. No. 837,369. (See Reg. No. 707,656.)
Reg. No. 838,365. (See Reg. No. 707,656.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 258,398. Patal Engraving & Engineering Co., Newark, N.J. Filed Nov. 10, 1966.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Steel Stamps (Marking Dies), (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Name Plates (Int. Cl. 20).

First use October 1966.

SN 259,875. B. Wise Mfg. Corp., Los Angeles, Calif. Filed Dec. 2, 1966.

CRESCENT

Class 4—Abrasives and Polishing Materials

For Aerosol Household Products—Namely, Furniture Polish (Int. Cl. 3).

Class 6—Chemicals and Chemical Compositions

For Aerosol Household Products—Namely, Room Freshener (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Personal Products—Namely, Shaving Cream, Personal Deodorant, and Hair Spray (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Aerosol Household Products—Namely, Glass Cleaner (Int. Cl. 3).

First use Nov. 8, 1966.

SN 262,928. Dillard Paper Company, Greensboro, N.C. Filed Jan. 20, 1967.

"If It's Paper"

Applicant disclaims the word "Paper" apart from the mark as shown.

Class 2—Receptacles

For Bags, Boxes, Buckets, Cartons, Cups, Pails, Plates, and Tubes Made of Paper (Int. Cl. 16).
First use at least in January 1930.

Class 5—Adhesives

For Adhesive Tapes (Int. Cl. 17).
First use at least in January 1930.

Class 37—Paper and Stationery

For Paperboard, Envelopes, Roll and Sheet Papers—Namely, Kraft and Printing, and Stationery—Namely, Letter, Note, and Pad Paper; and Non-Adhesive Tapes (Int. Cl. 16).
First use Jan. 19, 1926.

SN 262,943. King Castle Systems, Inc., d.b.a. King Kastle Systems, Chicago, Ill. Filed Jan. 20, 1967.

KING KASTLE

Owner of Reg. No. 835,643.

Class 45—Soft Drinks and Carbonated Waters

For Fruit Juices Containing Water and Carbonated Soft Drinks (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Comestible Products of the Type Prepared, Served, and Sold by Drive-In Restaurants—Namely, Pastry, Sandwiches, Cooked Meats, and Vegetables, Pure Fruit Juices, and Milk (Int. Cls. 29, 30, and 32).

First use at least as early as 1960.

SN 264,878. Atlantic Richfield Company, Los Angeles, Calif. Filed Feb. 17, 1967.

RICHFIELD

Owner of Reg. Nos. 201,308 and 327,724.

Class 1—Raw or Partly Prepared Materials

For Petroleum Coke (Int. Cl. 4).
First use Apr. 14, 1964.

Class 6—Chemicals and Chemical Compositions

For Benzene, Toluene, Xylene, n-Hexane, Cyclohexane, Ethylene, Propylene, Propylene Tetramer and Naphthenic Acids, Hydrogen, Nonene, Solvents, and Liquefied Petroleum Gas (Int. Cls. 1 and 4).
First use 1943.

Class 12—Construction Materials

For Asphalts (Int. Cl. 19).
First use 1928.

Class 15—Oils and Greases

For Gasoline, Natural Gas, Motor and Turbine Fuels, Heating Oils, Distillate Fuel Oils, Residual Fuel Oils, Lubricating Oils, Transmission Oils, Crude Oil, and Greases (Int. Cl. 4).
First use 1915.

SN 269,489. Agpro, Inc., Santa Rosa, Calif. Filed Apr. 19, 1967.

AGPRO

Class 2—Receptacles

For Storage and Collection Tanks (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Piping and Sprinkler Fittings Therefor (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automatic Milking Parlors and Component Parts Thereof, Including Gates, Pens, Curbing and Fencing To Control Animal Movements; Automatic Animal Wash, Feed and Stimulation Units; Mechanized Milking Stalls and Controls Therefor; Installations for the Collection, Processing and Disposal of Animal Wastes, Including Rotary Chopping and Agitating Devices, Centrifugal and Positive Displacement Pumps and Controls Therefor (Int. Cl. 7).

First use Nov. 1, 1963.

SN 271,886. Schalk Chemicals, Inc., Union, N.J. Filed May 19, 1967.

Schalk

Owner of Reg. Nos. 788,274, 816,292, and others.

Class 12—Construction Materials

For Patch Paste, Spackling Paste, Multi-Caulk, Tile Grout, Water Putty, and Wood Putty (Int. Cls. 2 and 17).

Class 52—Detergents and Soaps

For Paint Brush Cleaner, Wax Remover and Heavy Duty Cleaner, Paint and Varnish Removers, Grease and Oil Cleaner, and Tile and Grout Cleaner (Int. Cl. 3).

First use May 1, 1966.

SN 275,379. Kaufmann Tool & Engineering Corp., Chicago, Ill. Filed July 5, 1967.

K-PRENE

Class 1—Raw or Partly Prepared Materials

For Urethane Rubber as a Semi-Finished Material for Further Processing (Int. Cl. 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Springs, Strippers, Shedders, Pressure Pads, Die Pads, Wear Pads, Forming Blocks, Tooling, Press Brake Dies, Wipe Down Dies, and Rolling Machines That Include at Least Portions Made of Urethane Rubber (Int. Cls. 7 and 17).

First use Apr. 18, 1967.

SN 279,132. Silmica Corporation of America, Chicago, Ill. Filed Aug. 28, 1967.

TERRASTAN

Class 12—Construction Materials

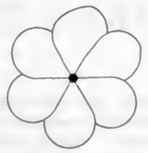
For Color Chips for Surfaces; Kits Comprising Acrylic Base Undercoat, Color Chips and a Finish of Clear Plastic for Use in Surfaces, Sold as a Unit (Int. Cl. 19).

Class 16—Protective and Decorative Coatings

For Plastic Laminant Primer and Finish Overcoating for Surfaces (Int. Cl. 2).

First use June 25, 1967.

SN 279,720. Corl International Corporation, Bremen, Ind. Filed Sept. 6, 1967.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Bath Tubs and Vanities Designed for Use in Conjunction With Plumbing Fixtures (Int. Cl. 11).

Class 19—Vehicles

For Rigid Fiber Glass Tops and Ends for Trailers of the Camper and Mobile Home Type, and Lifting Arms for Such Tops and for Tents of Such Trailers (Int. Cl. 12).

First use Oct. 27, 1966.

SN 281,868. Consolidated Engineering Company Incorporated, Baltimore, Md. Filed Oct. 5, 1967.

CONSOLIDATED ENGINEERING

No claim is made for the word "Engineering" apart from the mark.

Class 100—Miscellaneous

For Advice, Consultation and Planning in the Field of Construction Engineering—Namely, Structural, Electrical, Heating, Air Conditioning, Hydraulic, Sanitation, and Topographical (Int. Cl. 42).

Class 103—Construction and Repair

For Construction, Repair and Modernization of Installations for Utility, Industrial, Commercial, Apartments, Institutional, and Governmental Projects (Int. Cl. 37).

First use Nov. 4, 1966.

SN 281,881. Jack Gasnick, d.b.a. Cross at the Green Enterprises, New York, N.Y. Filed Oct. 5, 1967.

HIPPIE

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Money Belts, Pocketbooks, Wallets, Baby Harnesses, and Tethers (Int. Cl. 18).

Class 22—Games, Toys, and Sporting Goods

For Life Preservers and Swimming Tubes (Int. Cl. 9).

Class 39—Clothing

For Dress Belts (Int. Cl. 25).

First use Jan. 17, 1965.

SN 282,028. Uniroyal, Inc., New York, N.Y. Filed Oct. 9, 1967.

FISK

Owner of Reg. Nos. 128,063, 226,188, and 780,997.

Class 4—Abrasives and Polishing Materials

For Car Wax and Cleaner (Int. Cl. 3).
First use Aug. 18, 1967.

Class 6—Chemicals and Chemical Compositions

For Radiator and Cooling System Rust and Corrosion Inhibitor; Radiator and Cooling System Sealer; and Windshield Washer Anti-Freeze (Int. Cls. 1 and 17).
First use Sept. 15, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

For Battery Charger and Voltage Regulator (Int. Cl. 9).
First use Sept. 5, 1967, or earlier.

Class 52—Detergents and Soaps

For Cleaner for Rubber and Plastic Articles; Radiator and Cooling System Cleaner (Int. Cl. 3).
First use Aug. 18, 1967.

SN 283,922. Papst-Motoren K.G., St. Georgen, Black Forest, Germany. Filed Nov. 1, 1967.



Owner of German Reg. No. 764,891, dated Aug. 29, 1962.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors With External Rotors (Int. Cl. 7).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Radial Fans, Axial Fans, Built-In Ventilators, and Ceiling Fans (Int. Cl. 11).

SN 288,753. Philco-Ford Corporation, Philadelphia, Pa. Filed Jan. 15, 1968.



Class 21—Electrical Apparatus, Machines, and Supplies

For Television Sets (Int. Cl. 9).
First use June 8, 1965.

Class 36—Musical Instruments and Supplies

For Phonograph Sets (Int. Cl. 9).
First use at least as early as June 1967.

SN 290,488. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. Filed Feb. 7, 1968.



The drawing is lined for the color red.

Class 51—Cosmetics and Toilet Preparations

For Hair Spray and Personal Deodorant (Int. Cls. 3 and 5).
First use Aug. 3, 1967.

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).
First use Dec. 8, 1967.

SN 290,682. Aero Systems, Inc., Miami Springs, Fla. Filed Feb. 9, 1968.

AERO SYSTEMS

Class 21—Electrical Apparatus, Machines, and Supplies

For Aircraft Radio Communication Equipment, and Parts Thereof (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Aircraft Radar Navigation and Guidance Equipment, and Parts Thereof (Int. Cl. 9).

First use on or about July 1, 1967.

SN 297,000. Sugar Beet Products Company, Saginaw, Mich. Filed May 1, 1968.



Owner of Reg. Nos. 340,491, 827,017, and others.

Class 51—Cosmetics and Toilet Preparations

For Medicated Skin Cream (Int. Cl. 3).
First use on or about Mar. 12, 1962.

Class 52—Detergents and Soaps

For Cream Deodorant Soap, Waterless Skin Cleansers and Soap Powders for Cleansing the Hands and Skin (Int. Cls. 3 and 5).
First use on or about Dec. 26, 1962.

SN 297,001. Sugar Beet Products Company, Saginaw, Mich. Filed May 1, 1968.



Owner of Reg. Nos. 340,491, 827,017, and others.

Class 51—Cosmetics and Toilet Preparations

For Medicated Skin Cream (Int. Cl. 3).
First use on or about Mar. 12, 1962.

Class 52—Detergents and Soaps

For Cream Deodorant Soap, Waterless Skin Cleansers and Soap Powders for Cleansing the Hands and Skin (Int. Cls. 3 and 5).
First use on or about Dec. 26, 1962.

SN 297,152. Sarah Coventry Inc., Newark, N.Y. Filed May 2, 1968.

VALAIR

Class 2—Receptacles

For Plastic Dishes and Thermal Containers—Namely, Pitchers, Cups, Serving Dishes and Serving Pieces Which Are Large Bucket-Type Containers With Handles, and Are of Double Wall Construction (Int. Cl. 21).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Plastic Flatware (Int. Cl. 8).

First use Feb. 8, 1968.

SN 298,668. FMC Corporation, Philadelphia, Pa. Filed May 21, 1968.

AVIBELT

Class 7—Cordage

For Cord (Int. Cl. 22).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Cord Fabric (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarn (Int. Cl. 23).

First use Apr. 8, 1968.

SN 298,669. FMC Corporation, Philadelphia, Pa. Filed May 21, 1968.

DYNABELT

Class 7—Cordage

For Cord (Int. Cl. 22).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Cord Fabric (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarn (Int. Cl. 23).

First use Apr. 8, 1968.

SN 300,153. American Metal Climax, Inc., New York, N.Y. Filed June 11, 1968.

AMAX

Owner of Reg. Nos. 680,663, 800,385, and others.

Class 12—Construction Materials

For Aluminum Products for Building Purposes—Namely, Siding, Roofing, Railings, Interior Paneling, Mobile Home Panels, Rain Carrying Equipment Consisting of Gutters and Downspouts, Store Fronts, Skylight and Window Frames, Curtain Walls, and Sliding Doors (Int. Cl. 6).
First use in or about September 1967.

Class 14—Metals and Metal Castings and Forgings

For Aluminum and Aluminum Alloys in Cast, Wrought and Extruded Forms—Namely, Ingots, Bars, Billets, Plates, Piglets, Rods, Unpainted and Painted Sheet, Tubing, Shot and Foil; Zirconium and Hafnium and Alloys Thereof in Cast and Wrought Forms; and Ferrous and Nonferrous Metal Powders (Int. Cl. 6).
First use in or about March 1966.

Class 38—Prints and Publications

For Printed Publications—Namely, Technical Handbooks, Brochures, Pamphlets, Catalogues, House Organ, and Newsletter (Int. Cl. 16).
First use as early as December 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 283,261. Magnolia Plastics, Inc., Chamblee, Ga. Filed Oct. 24, 1967.

MAGNAFLOW

Owner of Reg. No. 797,920.
For Mix-In-Place Plastic, Specifically a Compound and/or Curing Agent, Sold as a One- or Two-Part Package (Int. Cl. 1).
First use Oct. 2, 1967.

SN 283,902. Kawaguchi Rubber Industrial Co., Ltd., Katsushika-ku, Tokyo, Japan. Filed Nov. 1, 1967.



Owner of Japanese Reg. No. 494,206, dated Jan. 11, 1957.
For Vinyl Sheets, Vinyl Films, and Vinyl Leather (Int. Cls. 17 and 18).
First use Jan. 1, 1951; in commerce Jan. 1, 1966.

SN 284,060. Wood & Hyde Glove Leather Corporation, Gloversville, N.Y. Filed Nov. 2, 1967.

GLEATHER

For Glove Leather (Int. Cl. 18).
First use Oct. 24, 1967.

SN 286,166. Monsanto Company, St. Louis, Mo. Filed Dec. 4, 1967.

ASTROTURF

Owner of Reg. No. 830,657.
For Plastic Materials in the Form of Fibers, Filaments, and Ribbon-Like Extrusions (Int. Cl. 22).
First use Nov. 17, 1967.

SN 297,927. Nasco Industries, Inc., Fort Atkinson, Wis. Filed May 13, 1968.

NASCO-GUARD

For Preserved Biological Animal, Insect and Plant Specimens for Dissection and Study (Int. Cl. 1).
First use Feb. 1, 1968.

SN 299,626. Dow Badische Company, Williamsburg, Va. Filed June 4, 1968.

ZEFEX

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Fibers (Int. Cl. 22).
First use May 23, 1968.

SN 299,627. Dow Badische Company, Williamsburg, Va. Filed June 4, 1968.

ZEFLITE

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Fibers (Int. Cl. 22).
First use May 23, 1968.

SN 299,628. Dow Badische Company, Williamsburg, Va. Filed June 4, 1968.

ZEFTEX

Owner of Reg. Nos. 647,642, 756,148, and others.
For Synthetic Fibers (Int. Cl. 22).
First use May 23, 1968.

SN 303,104. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFGUARD

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

Class 2—Receptades

SN 289,655. Baker Manufacturing Company, Inc., Hartselle, Ala. Filed Jan. 26, 1968.



The drawing is lined for the colors blue and gold, and said colors are claimed as parts of the mark.
For Large Spools and Reels Specifically Designed for Electrical Cables (Int. Cl. 9).
First use Nov. 9, 1967.

SN 293,926. Hoerner Waldorf Corporation, St. Paul, Minn. Filed Mar. 22, 1968.



For Containers of Corrugated Board (Int. Cl. 16).
First use Dec. 22, 1967.

SN 301,295. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

AMERACE

For Acid Containers Made of an Elastomer or a Mixture of Such Elastomer and a Resinous Copolymer (Int. Cl. 20).
First use at least as early as December 1966.

SN 303,070. Republic Molding Corporation, Chicago, Ill. Filed July 18, 1968.

FREEZETTES

Owner of Reg. No. 546,318.
For Plastic Food Storage Dishes Used Particularly in Refrigerators and Freezers (Int. Cl. 21).
First use 1958.

SN 303,542. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed July 24, 1968.

CONDI-MATE

For Plastic Household Containers and Covers Therefor (Int. Cl. 21).
First use July 10, 1968.

SN 303,994. The Huffman Manufacturing Company, Dayton, Ohio. Filed July 31, 1968.

Porta UTILITY Can

For the purpose of this application only and without waiver of common law rights, applicant makes no claim to the words "Utility" or "Can" used apart from the mark as shown.
For Plastic Container for Liquids (Int. Cl. 21).
First use Mar. 16, 1967.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 292,966. Safespeed Shoe Corp., Westbury, N.Y. Filed Mar. 11, 1968.

SAFESPEED

For Horseshoes (Int. Cl. 6).
First use Jan. 18, 1968.

Class 4—Abrasives and Polishing Materials

SN 295,420. The Clover Manufacturing Company, Norwalk, Conn. Filed Apr. 11, 1968.

THERMABLATE

For Coated Abrasives, Including Sandpaper and Emery Cloth (Int. Cl. 3).
First use Mar. 5, 1968.

SN 296,394. William A. Boettcher, d.b.a. W. A. Boettcher & Co., Chicago, Ill. Filed Apr. 24, 1968.

MET-LOK

For Floor Polish (Int. Cl. 3).
First use Oct. 31, 1967.

SN 300,038. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. Filed June 10, 1968.



Owner of Reg. Nos. 840,639, 841,746, and 850,859.
For Metal Sponges for Cleaning, Scouring, and Polishing; Scouring Pads; Non-Metallic Scouring Pads; Cleaning and Polishing Composition for Floors (Int. Cls. 4 and 21).
First use Feb. 6, 1968.

SN 305,374. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Aug. 19, 1968.

CUBICUT

For Coated Abrasives (Int. Cl. 3).
First use Apr. 1, 1968.

Class 5 — Adhesives

SN 275,475. Societe Rhodiaceta, Paris, France. Filed July 6, 1967.

DYNYL

Owner of French Reg. No. 470,832, dated Mar. 7, 1958 (Paris); Natl. Inst. No. 104,146.
For Adhesives Used in Industry for Laminating Wood, Plastic, Paper, etc. (Int. Cl. 1).

SN 286,492. Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha (Arakawa Forest Chemical Industries, Ltd.), Higashi-ku, Osaka City, Japan. Filed Dec. 7, 1967.

TAMANORI

The word "Tamanori" in Japanese means "a globe-runner" in a circus show. Owner of Japanese Reg. No. 494,957, dated Jan. 28, 1957.
For Synthetic Adhesives for Corrugated Paper Board and for Gum Tapes (Int. Cl. 1).

SN 291,642. Seatex Corporation, Houston, Tex. Filed Feb. 21, 1968.

PETRO-WELD

For Two-Component Chemical Bonding Composition, Consisting of a Thermo-Setting Epoxy Resin; and a Hardener Therefor, Packaged in Separate Containers, for Bonding Metallic and Non-Metallic Materials (Int. Cl. 1).
First use about June 15, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 276,717. United States Automotive, Inc., Colorado Springs, Colo. Filed July 24, 1967.



For Battery Reconditioning Additives (Int. Cl. 1).
First use June 15, 1967.

SN 280,437. Madison Chemical Corporation, Maywood, Ill. Filed Sept. 15, 1967.

GAR-BUDS

For Granular Deodorant for General Industrial Use (Int. Cl. 5).
First use Mar. 18, 1965.

SN 282,998. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Oct. 20, 1967.

CLA-PERM

For Water Flood Chemicals Used in Secondary Oil Recovery (Int. Cl. 1).
First use Oct. 2, 1967.

SN 286,493. Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha (Arakawa Forest Chemical Industries, Ltd.), Higashi-ku, Osaka City, Japan. Filed Dec. 7, 1967.

TAMANORI

The word "Tamanori" in Japanese means "a globe-runner" in a circus show. Owner of Japanese Reg. No. 494,957, dated Jan. 28, 1957.
For Synthetic Sizing Agents for Textiles (Int. Cl. 1).

SN 287,519. Calgon Corporation (Delaware corporation), Pittsburgh, Pa., assignee of Calgon Corporation (Pennsylvania corporation), Pittsburgh, Pa. Filed Dec. 26, 1967.



The word "Laundry" is disclaimed apart from the mark as a whole.
For Chemical Laundry Compositions for Washing Clothes Without Detergent—Namely, Water and Fabric Softeners, Whiteners and Brighteners, Anti-Static Agents, and Ironing Aids (Int. Cl. 3).
First use Nov. 13, 1967.

SN 287,593. Standard Brands Incorporated, New York, N.Y. Filed Dec. 26, 1967.

CLIN-LINK

For Corn Starch for Industrial Use (Int. Cl. 1).
First use Nov. 6, 1967.

SN 288,199. Eastman Kodak Company, Rochester, N.Y. Filed Jan. 5, 1968.

SUPERMATIC

Owner of Reg. Nos. 597,607 and 745,415.
For Photographic Processing Chemicals (Int. Cl. 1).
First use Nov. 3, 1967.

SN 289,249. Adkins-Phelps Company, North Little Rock, Ark. Filed Jan. 22, 1968.

STIMUSOY

For Seed Fungicides (Int. Cl. 5).
First use on or about Mar. 26, 1966.

SN 296,423. Germain's, Inc., Los Angeles, Calif. Filed Apr. 24, 1968.

FRESH START

For Grass and Weed Killer (Int. Cl. 5).
First use Jan. 24, 1968.

SN 296,706. Mooney Chemicals, Inc., Cleveland, Ohio. Filed Apr. 26, 1968.

SKINO

For Anti-Skinning Agents (Int. Cl. 1).
First use Jan. 24, 1966.

SN 297,270. Ciba Corporation, d.b.a. The Gland-O-Lac Company, Summit, N.J. Filed May 3, 1968.

PITCH PACK

For Transparent Plastic Packets With Rodenticide (Int. Cl. 5).
First use Feb. 13, 1968.

SN 302,178. Alberto-Culver Company, Melrose Park, Ill. Filed July 8, 1968.

FINISH

For Dust-Absorbing Composition for Application to Dust Mops and Dust Cloths (Int. Cl. 4).
First use Apr. 16, 1968.

SN 302,185. Alberto-Culver Company, Melrose Park, Ill. Filed July 8, 1968.

BARRIER

For Dust-Absorbing Composition for Application to Dust Mops and Dust Cloths (Int. Cl. 4).
First use Apr. 16, 1968.

SN 302,693. Stauffer Chemical Company, New York, N.Y. Filed July 15, 1968.

FYRGUARD

For Hydraulic Fluid (Int. Cl. 1).
First use at least as early as June 29, 1968.

SN 303,111. Sucrest Corporation, New York, N.Y. Filed July 19, 1968.

NU-TAB

For Dry Fre-Flowing Granular Product Containing Sugar and Starch, for Use as a Binding Agent in the Manufacture of Pharmaceutical Preparations (Int. Cl. 1).
First use on or about Jan. 1, 1967.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 300,197. JJJ Merchandise Corp., New York, N.Y. Filed June 11, 1968.



For Cigarette Lighters (Int. Cl. 34).
First use Apr. 2, 1967.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 281,272. Delta-Visier G.m.b.H., Ottobrunn, near Munich, Germany. Filed Sept. 27, 1967.



Applicant disclaims exclusive rights in the word "Visier" apart from the mark as shown. Owner of German Reg. No. 771,814, dated Sept. 28, 1962.
For Sights for Firearms, Firearm Firing Controls, and Parts of Such Sights and Controls (Int. Cl. 13).

SN 288,166. American Cyanamid Company, Wayne, N.J. Filed Jan. 5, 1968.

DESIGN BLAST

For Dynamite (Int. Cl. 13).
First use Oct. 21, 1967.

SN 294,838. Hercules Incorporated, Wilmington, Del. Filed Apr. 3, 1968.

SUPERSEIS

For Nitro Carbo Nitrate Blasting Agent (Int. Cl. 13).
First use Mar. 12, 1968.

SN 302,067. G-G31, Inc., North Hollywood, Calif. Filed July 5, 1968.



For Tear Gas Gun (Int. Cl. 13).
First use Mar. 1, 1968.

SN 302,397. Federal Laboratories, Inc., Saltsburg, Pa. Filed July 10, 1968.

TRIPLE-CHASER

For Tear Gas Grenades (Int. Cl. 13).
First use July 1, 1948.

SN 302,398. Federal Laboratories, Inc., Saltsburg, Pa. Filed July 10, 1968.

SPEDEHEAT

For Tear Gas Grenades (Int. Cl. 13).
First use July 1, 1948.

SN 305,650. Firearms Import & Export Corp., Miami, Fla. Filed Aug. 21, 1968.

ARMINIUS

For Hand Gun (Int. Cl. 13).
First use May 2, 1968.

SN 305,631. Firearms Import & Export Corp., Miami, Fla. Filed Aug. 21, 1968.



For Hand Gun (Int. Cl. 13).
First use May 2, 1968.

Class 10 — Fertilizers

SN 282,438. Chevron Chemical Company, San Francisco, Calif. Filed Oct. 13, 1967.

POLYPEL

For Chemical Fertilizer (Int. Cl. 1).
First use Sept. 25, 1967.

SN 288,165. Advance Fertilizer and Chemical Ltd., Columbia, Canada. Filed Jan. 5, 1968.



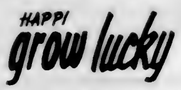
For Plant Food, Lawn Food, and Rose Food (Int. Cl. 1).
First use May 12, 1966; in commerce May 1, 1967.

SN 299,094. Bering Industries Ltd., North Vancouver, British Columbia, Canada. Filed May 27, 1968.

MISTY ISLES

For Sphagnum Peat Moss (Int. Cl. 31).
First use Feb. 26, 1968; in commerce Feb. 26, 1968.

SN 300,081. Hancock Agriculture Products & Processors, Garner, Iowa. Filed June 10, 1968.



For Organic Humus (Int. Cl. 1).
First use on or about Apr. 30, 1968.

SN 300,150. Woodville Lime & Chemical Company, Woodville, Ohio. Filed June 10, 1968.



For Fertilizer and Lime for Soil Conditioning (Int. Cl. 1).
First use May 1965.

Class 11 — Inks and Inking Materials

SN 275,619. Braznell Company, St. Louis, Mo. Filed July 10, 1967.



For Graphic Arts Products—Namely, Printing Inks, Printing Varnishes, Printing Driers, Printing Solvents, and Printing Wax Compounds (Int. Cl. 2).
First use May 16, 1967.

SN 293,422. Van Son Holland Ink Corporation of America, Mineola, N.Y. Filed Mar. 15, 1968.

SECRET-SET

For Printing Inks (Int. Cl. 2).
First use Oct. 15, 1967.

Class 12 — Construction Materials

SN 262,858. Fabbrica Piastrelle Ubaldo Franceschinis, Udine, Italy. Filed Jan. 19, 1967.

MARMO-RETINATO

Owner of Italian Reg. No. 196,235, dated June 20, 1966.
For Floor Tiles, Wall Tiles, Ceiling Tiles, and Mosaic Tiles (Int. Cl. 19).

SN 263,929. Majestic Tile Company, Chicago, Ill. Filed Feb. 3, 1967.

COLONIAL

For Thin Decorative Facing Which Simulates the Appearance of Brick (Int. Cl. 19).
First use Nov. 8, 1965.

SN 265,549. National Gypsum Company, Buffalo, N.Y. Filed Feb. 27, 1967.



The drawing is lined for green, but color is not claimed as a feature of the mark.
For Waterproofed Masonry Cement (Int. Cl. 19).
First use Oct. 10, 1966.

SN 270,671. Georgia-Pacific Corporation, Portland, Oreg. Filed May 4, 1967.

FIRESTOP

Owner of Reg. No. 691,496.
For Plasterboard (Int. Cl. 19).
First use Apr. 4, 1950.

SN 271,324. Allied Compositions Co., Inc., Maspeth, N.Y. Filed May 12, 1967.

EPOXALL

For Epoxy Compound for Surfacing Concrete (Int. Cl. 19).
First use Apr. 1, 1958.

SN 277,283. Haveg Industries, Inc., Wilmington, Del. Filed Aug. 1, 1967.

MINICEL

For Backer Rods—Namely, Polyethylene Foam Used as a Backing for Elastomeric and Other Cold-Applied Sealants for Construction Purposes (Int. Cl. 19).
First use Mar. 1, 1967.

SN 283,661. Hendon Construction Company, Little Ferry, N.J. Filed Oct. 30, 1967.

TELE-POOL

For Prefabricated Swimming Pools (Int. Cl. 19).
First use Aug. 30, 1967.

SN 283,662. Hendon Construction Company, Little Ferry, N.J. Filed Oct. 30, 1967.

Tele-Swim

For Prefabricated Swimming Pools (Int. Cl. 19).
First use Aug. 30, 1967.

SN 285,992. Capitol Aggregates, Inc., San Antonio, Tex. Filed Dec. 1, 1967.



For Bulk and Packaged Building Materials—Namely, Concrete in Its Plastic State, Concrete Mix, Mortar Mix, Grout Mix, Cement, Sand, Gravel, and Aggregates (Int. Cl. 19).
First use at least as early as July 1964.

SN 289,734. The Vette Shop, Inc., Detroit, Mich. Filed Jan. 26, 1968.

VETTE

For Fiberglass Repair Panels for Automobile Vehicles and the Like (Int. Cl. 19).
First use Dec. 23, 1967.

SN 290,055. PPG Industries, Inc., Pittsburgh, Pa., by change of name from Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Feb. 1, 1968.



For Construction Materials—Namely, Caulking, Filling, and Sealing Coatings; Compounds and Tapes for Filling and Sealing Construction Work; Structural and Decorative Panels and Partitions of Glass, Metal, Wood and Other Materials; Panel Constructions, Curtain Walls, Store Fronts, and the Like, Including Frames, Moldings and Supporting Elements Therefor; and Single and Multiple Glazed Windows and Doors, Frames and Other Components Thereof; Air Transfer Ducts and Duct Liners; Fiber Glass Insulation, and the Like (Int. Cls. 6, 17, and 19).
First use at least as early as Mar. 3, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 251,305. Hyer Hardware Mfg. Co., Anaheim, Calif. Filed July 29, 1966.

HYER MEDITERRANEAN

Owner of Reg. No. 698,836.
For Hardware—Namely, Pulls, Knobs, Back Plates Therefor, and Hinges (Int. Cl. 6).
First use Apr. 5, 1966.

SN 267,270. Sphinxworks Muller & Co., Ltd., Soleure, Switzerland. Filed Mar. 21, 1967.



For Precision Screw Machine Products (Int. Cl. 6).
First use January 1931; in commerce January 1931.

SN 269,458. Royal Industries, Inc., Pasadena, Calif. Filed Apr. 18, 1967.

ROYAL

For Cryogenic Valves (Int. Cl. 6).
First use on or about Mar. 24, 1967.

SN 282,344. Automation Industries, Inc., El Segundo, Calif. Filed Oct. 12, 1967.

SUPER VAC-U-FLEX

Owner of Reg. No. 617,076.
For Flexible Tubing (Int. Cl. 6).
First use February 1964.

SN 283,047. Waldes Kohinoor, Inc., Long Island City, N.Y. Filed Oct. 20, 1967.

PERMA-TONE

For Slide Fasteners and Parts Thereof (Int. Cl. 26).
First use Oct. 13, 1967.

SN 284,570. Armco Steel Corporation, Middletown, Ohio. Filed Nov. 13, 1967.



The mark consists in coloring the entire post, except for a short portion (about three inches) of the upper end, bright orange, said short portion being colored slate gray. No claim is made to the representation of the goods apart from the mark shown in the drawing.
For Metallic Fence Posts (Int. Cl. 6).
First use Feb. 20, 1963.

SN 289,635. Water Works Supply Co., Inc., Union City, Calif. Filed Jan. 25, 1968.

FERROCK

For Glass Lined Pipe, Fittings, and Valves (Int. Cl. 6).
First use December 1965.

SN 293,222. Breeze Corporation, Inc., Union, N.J. Filed Mar. 14, 1968.

POWER-SEAL

For Hose Clamps (Int. Cl. 6).
First use Dec. 18, 1967.

SN 295,389. Tube Forgings of America, Inc., Portland, Oreg. Filed Apr. 10, 1968.

For Pipe Fittings and Flanges (Int. Cl. 6).
First use Nov. 29, 1967.

SN 300,660. Smith-Blair, Inc., South San Francisco, Calif. Filed June 18, 1968.

SUPER RANGE

For Pipe Repair Clamps and Pipe Couplings (Int. Cl. 6).
First use Feb. 9, 1967.

SN 305,287. Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Aug. 16, 1968.

SUMITOMO

For Steel Pipes and Tubes (Int. Cl. 6).
First use June 30, 1901; in commerce Dec. 31, 1949.

Class 14 — Metals and Metal Castings and Forgings

SN 275,373. H. Berthold Messinglinienfabrik und Schriftgiesserei A.G., Berlin, Germany. Filed July 5, 1967.

BERTHOLD STANDARD

Applicant disclaims the word "Standard" apart from the mark as shown. Owner of German Reg. No. 825,559, dated July 7, 1966.
For Type, Type Faces, Matrices, Type Fonts, and the Like, for Printing Purposes (Int. Cls. 7 and 16).

SN 278,785. Chemetron Corporation, Chicago, Ill. Filed Aug. 22, 1967.

BESPLATE

For Electroplating Anodes (Int. Cl. 9).
First use Dec. 14, 1929.

SN 280,189. Vulcan Steel Corporation, Birmingham, Ala. Filed Sept. 12, 1967.

ASTRALLOY

For Plates and Bars of Steel (Int. Cl. 6).
First use June 15, 1964.

SN 280,924. Armco Steel Corporation, Middletown, Ohio. Filed Sept. 22, 1967.

21-6-9

For Stainless Steels (Int. Cl. 6).
First use December 1960.

SN 292,502. Secon Metals Corporation, White Plains, N.Y. Filed Mar. 5, 1968.

UBG

For Metal Wires (Int. Cl. 6).
First use Nov. 1, 1967.

SN 305,286. Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Aug. 16, 1968.

SUMITOMO

For Steel—Namely, Steel Bars, Wire Rods, Sheets, Coils and Castings; and Metal Forgings—Namely, Rolls, Frames, and Housings (Int. Cl. 6).
First use June 30, 1953; in commerce Feb. 28, 1958.

Class 15 — Oils and Greases

SN 289,525. Pacific Gun Sight Co., Lincoln, Nebr. Filed Jan. 24, 1968.

RE-NU

For All-Purpose Lubricating and Cleaning Oil for Firearms and the Like (Int. Cl. 4).
First use Jan. 3, 1967.

SN 294,216. Sun Oil Company, Philadelphia, Pa. Filed Mar. 26, 1968.

SUN

Owner of Reg. Nos. 548,922, 717,417, and others.
For Petroleum Oils Used in Agricultural Spraying Compositions (Int. Cl. 4).
First use 1958.

SN 294,217. Sun Oil Company, Philadelphia, Pa. Filed Mar. 26, 1968.

SUNOCO

Owner of Reg. Nos. 83,525, 300,654, and others.
For Petroleum Oils Used in Agricultural Spraying Compositions (Int. Cl. 4).
First use 1929.

Class 16 — Protective and Decorative Coatings

SN 228,212. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 20, 1965.

T GLO

Owner of Reg. No. 720,839.
For Gloss Oil for General Industrial Use (Int. Cl. 4).
First use on or about Feb. 8, 1946.

SN 287,578. Polycell Products Limited, Welwyn Garden City, England. Filed Dec. 26, 1967.

POLYCELL CEMENT PAINT

No claim is made to the words "Cement Paint" apart from the mark as a whole, without waiving any common law rights.
Owner of British Reg. No. 896,770, dated July 5, 1966.
For Paints for Exterior Surfaces Having a Cement Base (Int. Cl. 2).

SN 290,698. PPG Industries, Inc., Pittsburgh, Pa., by change of name from Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Feb. 9, 1968.

DITZLER

Owner of Reg. Nos. 176,392, 200,457, and 442,737.
For General Line of Decorative and Protective Coatings and Similar Preparations for Fabric, Glass, Metal, Rubber, Synthetic and Wood Surfaces; Dressings, Primers, Sealers, Surfacers, Undercoaters and Similar Conditioners Therefor; Paint, Enamel, Lacquer and Similar Equalizers, Reducers and Thinners; and Coating Colors (Int. Cl. 2).
First use at least as early as 1935; at least as early as 1916 as to "Ditzler."

SN 302,678. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed July 15, 1968.

CAVALON

Owner of Reg. Nos. 657,501 and 832,835.
For Protective Coatings in the Nature of Primers and Enamels (Int. Cl. 2).
First use June 10, 1968.

Class 17 — Tobacco Products

SN 276,271. Turmac Tobacco Company N.V., Amsterdam, Netherlands. Filed July 7, 1967.

SOMERSET

Owner of Dutch Reg. No. 151,056, dated Jan. 2, 1964.
For Cigarettes (Int. Cl. 34).

SN 276,357. Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V., Wageningen, Netherlands. Filed July 19, 1967.

MEDIA

For Cigars (Int. Cl. 34).
First use July 6, 1954; in commerce July 6, 1954.

SN 280,824. Turmac Tobacco Company N.V., Amsterdam, Netherlands. Filed Sept. 20, 1967.

FRONTENAC

Owner of Dutch Reg. No. 155,206, dated Mar. 4, 1965.
For Cigarettes (Int. Cl. 34).

SN 280,969. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Filed Sept. 22, 1967.

REMBRANDT R 1

Owner of Swiss Reg. No. 224,517, dated Apr. 21, 1967.
For Cigarettes (Int. Cl. 34).

SN 289,809. M. Landaw Limited, Piccadilly, London, England. Filed Jan. 29, 1968.

LITTLE DUTCHMAN

For Cigars (Int. Cl. 34).
First use 1963; in commerce December 1967.

SN 289,904. Lane Limited, New York, N.Y. Filed Jan. 30, 1968.

ROYAL MOUNTED

For Smoking Tobacco (Int. Cl. 34).
First use October 1967.

SN 297,422. Lane Limited, New York, N.Y. Filed May 6, 1968.

GOLDEN HOURS

For Smoking Tobacco (Int. Cl. 34).
First use March 1968.

SN 297,977. Corral, Wodiska y Ca., Tampa, Fla. Filed May 13, 1968.

RED LABEL

For Cigars (Int. Cl. 34).
First use Aug. 23, 1957.

SN 298,328. A. Garfinkel, Inc., Washington, D.C. Filed May 16, 1968.

ORIENT EXPRESS

For Pipe Tobacco, Cigarette Tobacco, and Cigars (Int. Cl. 34).
First use Aug. 12, 1961.

SN 304,624. Gabino Roche, d.b.a. Roche From Habana, Cuba, New York, N.Y. Filed Aug. 7, 1968.

Smart Set

For Cigars (Int. Cl. 34).
First use Dec. 1, 1967.

SN 304,645. The American Tobacco Company, New York, N.Y. Filed Aug. 8, 1968.

LUV

For Cigarettes (Int. Cl. 34).
First use Aug. 5, 1968.

SN 304,646. The American Tobacco Company, New York, N.Y. Filed Aug. 8, 1968.

LOVE

For Cigarettes (Int. Cl. 34).
First use Aug. 5, 1968.

SN 304,996. United Cigarettes Company Ltd., Carouge, Switzerland. Filed Aug. 12, 1968.

LONG FELLOW

Owner of Swiss Reg. No. 211,761, dated June 14, 1965.
For Cigarettes (Int. Cl. 34).

SN 305,109. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed Aug. 14, 1968.

GIGI

For Cigars (Int. Cl. 34).
First use June 24, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 268,633. International Chemical and Nuclear Corporation, Burbank, Calif., assignee of United Laboratories, Inc., Pasadena, Calif. Filed Apr. 7, 1967.

MALTOLATUM

For Emulsion of Petrolatum With Malt, used as an Intestinal Lubricant for Cats (Int. Cl. 5).
First use Jan. 13, 1926.

SN 273,670. Organic Sea Products Corporation, San Francisco, Calif. Filed June 12, 1967.

The wording "Organic Sea Products," "Vegetation From the Sea," and "Since 1932" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 639,566 and 723,504.
For Natural Dietary Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use Jan. 2, 1966.

SN 273,744. Ciba Corporation, New York, N.Y. Filed June 13, 1967.

KALGARD

For Pharmaceutical Preparation Used To Replace Loss of a Salt Due to Excretion (Int. Cl. 5).
First use May 31, 1967.

SN 274,086. Optometics, Inc., Los Angeles, Calif. Filed June 16, 1967.

VELVA-TEARS

For Ophthalmic Preparations (Int. Cl. 5).
First use Apr. 21, 1967.

SN 275,911. Bristol-Myers Company, New York, N.Y. Filed July 13, 1967.

PREVAIL

For Cold Tablet (Int. Cl. 5).
First use May 16, 1967.

SN 277,513. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

ATROMYOVIN

For Pharmaceutical Preparation To Reduce Fever and Control Pain and Muscle Spasm, for Veterinary Use (Int. Cl. 5).
First use Apr. 26, 1967.

SN 277,514. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

LIQUILUBE

For Veterinary Preparation for Use as an Obstetrical Lubricant (Int. Cl. 5).
First use Mar. 16, 1967.

SN 277,519. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

SOLUMYCIN

For Veterinary Preparation for the Control of Bacterial Infections (Int. Cl. 5).
First use May 24, 1967.

SN 277,520. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

DE BRISOL

For Veterinary Preparation To Dissolve and Debride Organic Debris and Bacterial Decay (Int. Cl. 5).
First use Feb. 6, 1967.

SN 277,523. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

PANIDOTE

For Pharmaceutical Preparation for Human and Animal Use as a Universal Antidote (Int. Cl. 5).
First use June 9, 1967.

SN 277,524. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

THEROPHYLLIN

For Veterinary Preparation for the Temporary Control and Elimination of Mating and Body Odors (Int. Cl. 5).
First use Apr. 3, 1967.

SN 277,526. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

SCOUR-PAX

For Veterinary Preparation for the Treatment of Diarrhea (Int. Cl. 5).
First use May 24, 1967.

SN 277,527. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

DEMSARDEX

For Veterinary Preparation To Treat Dermatoses (Int. Cl. 5).
First use Mar. 24, 1967.

SN 277,528. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

HISTASOL

For Veterinary Preparation for Antihistamine and Decongestant Action (Int. Cl. 5).
First use May 31, 1967.

SN 277,530. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

COAGSOL

For Veterinary Preparation To Control Hemorrhage (Int. Cl. 5).
First use May 16, 1967.

SN 284,590. Bristol-Myers Company, New York, N.Y. Filed Nov. 13, 1967.

SINUDYNE

Owner of Reg. No. 685,448.
For Nasal Decongestant (Int. Cl. 5).
First use June 14, 1967.

SN 285,526. Ciba Corporation, Summit, N.J. Filed Nov. 24, 1967.

EQUIPOISE

For Veterinary Preparation (Int. Cl. 5).
First use Nov. 9, 1967.

SN 285,527. Ciba Corporation, Summit, N.J. Filed Nov. 24, 1967.

VORANIL

For Anorexic Preparation (Int. Cl. 5).
First use Nov. 9, 1967.

SN 285,752. Pan American Laboratories, Inc., New Orleans, La. Filed Nov. 28, 1967.

PANREXIN

For Preparation for Use as an Appetite Depressant (Int. Cl. 5).
First use Aug. 14, 1958.

SN 285,753. Pan American Laboratories, Inc., New Orleans, La. Filed Nov. 28, 1967.

PANTEMIC

For Tonic for Use as a Dietary Supplement Particularly for the Treatment of Anemia (Int. Cl. 5).
First use Aug. 14, 1958.

SN 288,338. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 8, 1968.

CITCON

For Feed Supplement Containing Citric Acid Fermentation Solubles for Animal Use (Int. Cl. 5).
First use at least as early as Dec. 14, 1967.

SN 288,862. Rowell Laboratories Inc., Baudette, Minn. Filed Jan. 15, 1968.

NORLAC

For Prenatal Nutritional Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use Nov. 29, 1967.

SN 292,874. Aktiebolaget Distra, Sodertalje, Sweden. Filed Mar. 11, 1968.

DISTRA

Owner of Swedish Reg. No. 72,302, dated July 11, 1952.
For Laxative (Int. Cl. 5).

SN 292,961. Richardson-Merrell Inc., New York, N.Y. Filed Mar. 11, 1968.

VITAPYRENA

For Preparation Containing an Analgesic for Making a Medicated Drink (Int. Cl. 5).
First use on or before Feb. 2, 1968.

SN 300,878. Miles Laboratories, Inc., Elkhart, Ind. Filed June 20, 1968.

ALKA-SELTZER PLUS

Owner of Reg. Nos. 283,831 and 667,053.
For Cold Preparation (Int. Cl. 5).
First use on or before Apr. 25, 1968.

SN 303,876. E. R. Squibb & Sons, Inc., New York, N.Y. Filed July 30, 1968.

ASPINASE

For Enzyme for Management of Leukemia (Int. Cl. 5).
First use Jan. 17, 1968.

SN 304,559. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 7, 1968.

QUANTRIL

Owner of Reg. No. 738,937.
For Medicinal Preparation Having Antiemetic Properties (Int. Cl. 5).
First use on or before Apr. 5, 1968.

Class 19—Vehicles

SN 273,017. Arctic Enterprises, Inc., Thief River Falls, Minn. Filed June 5, 1967.

PANTHER

For Snowmobiles, Towing Sleds, and Parts Therefor (Int. Cl. 12).
First use Feb. 15, 1966.

SN 273,018. Arctic Enterprises, Inc., Thief River Falls, Minn. Filed June 5, 1967.

COUGAR

For Snowmobiles, Towing Sleds, and Parts Therefor (Int. Cl. 12).
First use Feb. 5, 1967.

SN 280,473. Sno Jet Inc., Thetford Mines, Quebec, Canada. Filed Sept. 15, 1967.

SNO-JET

For Self-Propelled Track-Laying Snow Vehicles, and Parts Thereof, for Passenger Use (Int. Cl. 12).
First use December 1964; in commerce December 1964.

SN 282,924. Piaggio & C. Societa per Azioni, Genoa, Italy. Filed Oct. 19, 1967.



Priority claimed under Sec. 44(d) on Italian application filed Apr. 29, 1967; Reg. No. 209,023, dated May 30, 1967.

For Motor Cars, Motorcycles, Three-Wheeled Motor Cars and Trucks, Bicycles for Adults; and Structural Parts Thereof—Namely, Motor Car Bodies, Truck Bodies, Frames and Chassis for Motor Cars, Trucks, Motorcycles and Bicycles, Wheel Suspension Structures, Shock Absorbers, Brakes, Steering Mechanisms, Seats for Motor Cars and Trucks, and Saddles for Bicycles and Motorcycles (Int. Cl. 12).

SN 287,931. Midas, Inc., Chicago, Ill. Filed Jan. 2, 1968.



The drawing is lined for the color yellow, and color is claimed as an integral part of the mark. Applicant claims the exclusive right to the use of the words "Muffler Shops" as a part of the mark, but not otherwise. Owner of Reg. Nos. 620,322, 803,614, and others.

For Shock Absorbers and Parts Therefor; Brake Parts, Shoes, Cables, Drums, Housings, Clevis Pins and Rods; Wheel Cylinders, Master Cylinders and Cylinder Kits; Fender Skirts; Headlamp Rims; Leaf and Coil Springs; Convertible Automobile Tops; White Wall Tire Discs; Automobile Floor Mats; Automobile Air Conditioners; Automobile Glass Panes—Namely, Windshields, Side Windows, Rear Windows; Automobile Safety Belts; Seat Covers; and Rear View Mirrors (Int. Cls. 12, 27 and 11).

First use on or about July 17, 1961.

SN 295,169. Premium Corporation of America, Inc., Minneapolis, Minn. Filed Apr. 8, 1968.

LADY MARIAN

For Laundry Carts (Int. Cl. 12).
First use Oct. 9, 1967.

SN 295,823. Golden West Trailers, Inc., Fullerton, Calif. Filed Apr. 17, 1968.



For Mobile Homes (Int. Cl. 12).
First use Mar. 18, 1968.

SN 296,310. Corrugated Metal Container Corporation, Archbald, Pa. Filed Apr. 23, 1968.

SKI-JET

For Snowmobile (Int. Cl. 12).
First use on or about Dec. 18, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 254,035. Culver-Stearns Manufacturing Company, Worcester, Mass. Filed Sept. 8, 1966.



The word "Line" is disclaimed, apart from the mark as a whole.

For Electric Switches, Connectors, Lamps, Harnesses, and Panels (Int. Cls. 9 and 11).

First use on or about Mar. 31, 1965.

SN 260,485. Ranco Incorporated, Columbus, Ohio, by merger from The Wilcolator Company, Elizabeth, N.J. Filed Dec. 9, 1966.

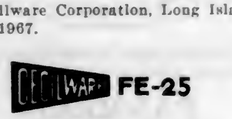
ELECTRONIC MATCH

The word "Electronic" is disclaimed apart from the mark as a whole.

For Electric Spark Generators for Igniting Fuel Gas Burning Equipment and the Like (Int. Cl. 9).

First use Aug. 3, 1965.

SN 266,504. Cecilware Corporation, Long Island City, N.Y. Filed Mar. 13, 1967.



For Electric Coffee Bottle Brewer (Int. Cl. 11).
First use Jan. 15, 1967.

SN 269,201. Mona Shops Inc., New York, N.Y. Filed Apr. 14, 1967.

MONA LISA

For Battery-Powered Electric Candles (Int. Cl. 9).
First use Aug. 1, 1960.

SN 271,005. Zenith Radio Corporation, Chicago, Ill. Filed May 8, 1967.

ZENITH

Owner of Reg. Nos. 164,341, 828,809, and others.

For Grille Cloths for Radio and Television Receivers and the Like (Int. Cl. 9).

First use at least as early as 1946.

SN 276,164. The Okonite Company, Passaic, N.J. Filed July 17, 1967.

SEMICON

For Electrical Insulating Materials, Specifically Semiconducting Tape and Semiconducting Compounds Used in Cable Over the Conductor To Exclude Air Space To Improve Dielectric Strength and Corona Resistance (Int. Cl. 17).

First use 1938.

SN 277,396. Voltronics Corporation, Hanover, N.J. Filed Aug. 2, 1967.

PICOTRIM

For Capacitors (Int. Cl. 9).
First use July 10, 1967.

SN 280,353. The Thomas & Betts Co., Elizabeth, N.J. Filed Sept. 14, 1967.

BULLET

For Electrical Conduit, Box, and Cabinet Fittings—Namely, Electrical Connectors, Couplings, and Terminations (Int. Cl. 9).

First use in or about May 1966.

SN 282,121. National Wire and Cable Corporation, Los Angeles, Calif. Filed Oct. 9, 1967.

NABOND

For Insulated Wire Having a Tinned and Thermally Bonded Stranded Conductor (Int. Cl. 9).
First use on or about Sept. 1, 1962.

SN 282,122. National Wire and Cable Corporation, Los Angeles, Calif. Filed Oct. 9, 1967.

NAFOAM

For Foam Polyethylene Compound Used as Electrical Insulation for Low Dielectric Constant Wire and Cable (Int. Cl. 17).

First use on or about Sept. 15, 1961.

SN 283,998. Equipto Electronics Corporation, Aurora, Ill. Filed Nov. 2, 1967.



For Electronic and Electrical Equipment and Instrument Enclosures—Namely, Racks, Panels, Chassis, Cabinets, and Consoles for Electronic Instrumentation, Electrical and Electro-Mechanical Purposes (Int. Cl. 9).

First use Oct. 17, 1963.

SN 285,198. Avnet, Inc., New York, N.Y., assignee of Carol Wire & Cable Corp., Pawtucket, R.I. Filed Nov. 20, 1967.

1050

For Electrical Wire and Cable (Int. Cl. 9).
First use on or about Nov. 10, 1967.

SN 287,190. Tungsten Contact Manufacturing Company, Inc., d.b.a. Union Electrical Parts Co., North Bergen, N.J. Filed Dec. 18, 1967.



For Automotive Engine Replacement Parts—Namely, Contact Points, Condensers, Distributor Caps, Rotors, Coils, Switches, Tune-Up Kits, and Voltage Regulators (Int. Cl. 9).

First use Sept. 1, 1937.

SN 288,374. Standard Packaging Corporation, Stamford, Conn. Filed Jan. 8, 1968.



Owner of Reg. Nos. 595,308, 604,047, and others.

For Electrically Operated Warming Trays, Hot Trays, Bun Warmers, Coffee Makers, Grills, Lamps, Burglar Alarms, Charcoal Starters, Portable Automobile Safety Lights, and Electric Lamps (Int. Cls. 9 and 11).

First use at least as early as Apr. 12, 1967; Sept. 17, 1953, as to "Stanpak."

SN 289,606. Plastic Extrusion and Engineering Company, Westboro, Mass. Filed Jan. 25, 1968.

PEXCO

For Electrical Insulation (Int. Cl. 17).
First use Nov. 29, 1961.

SN 289,700. LKB-Produkter Aktiebolag, Stockholm-Bromma, Sweden. Filed Jan. 26, 1968.

UNIPHOR

Owner of Swedish Reg. No. 121,277, dated Oct. 6, 1967.

For Apparatus for Electrophoresis, and Parts of as Well as Appliances for Said Apparatus—Namely, Electrophoresis Columns, Couplings Therefor, Buffering Vessels, and Voltage Aggregates (Int. Cl. 9).

SN 290,200. Torwico Electronics, Inc., Lakewood, N.J. Filed Feb. 2, 1968.

TORWICO

For Electronic Devices, Components and Assemblies—Namely, Amplifiers, Magnetic Amplifiers, Rectifiers, Inverters, Transformers, Relays, Coils, Toroidal Coils, Terminals, Switches, Reactors, Chokes, Dummy Loads, Encapsulated Components and Assemblies and Power Supply Units (Int. Cl. 9).

First use June 1951.

SN 293,831. Jefferson Electric Company, Bellwood, Ill. Filed Mar. 21, 1968.

CHECKMATE

For Ballasts for Fluorescent Lamps (Int. Cl. 11).
First use Feb. 20, 1968.

SN 293,843. Molex Products Company, Downers Grove, Ill. Filed Mar. 21, 1968.

CRIMPCON

For Electrical Connectors (Int. Cl. 9).
First use Mar. 1, 1968.

SN 293,872. Tymshare, Inc., Los Altos, Calif. Filed Mar. 21, 1968.



For Audio Magnetic Data Transceivers (Int. Cl. 9).
First use Sept. 12, 1966.

SN 302,672. Communication Mfg. Co., Long Beach, Calif. Filed July 15, 1968.

POLAR PROBE

The word "Probe" is disclaimed apart from the mark as shown.
For Polarity Testing Instruments (Int. Cl. 9).
First use June 21, 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 271,441. Pietro Casadio, Bologna, Italy. Filed May 15, 1967.

CASADIO

Owner of Italian Reg. No. 189,906, dated Dec. 10, 1966.
For Rolling Stock for Miniature Trains, i.e., Toy Trains and Electric Trains (Int. Cl. 28).

SN 279,369. The Coleman Company, Inc., Wichita, Kans. Filed Aug. 30, 1967.

FLEX-AIRE SKY-VU

Owner of Reg. No. 848,150.
For Tents for Outdoor Camping (Int. Cl. 22).
First use during or before November 1966.

SN 280,895. Stearns Manufacturing Company, St. Cloud, Minn. Filed Sept. 21, 1967.

"SANS-SOUCI"

The mark "Sans-Souci" literally translated means "carefree" or "without worry."
For Floatable or Life Saving Sportsman's Vest (Int. Cl. 9).
First use Jan. 17, 1966.

SN 286,834. Martin Industries, Clayton, Ala. Filed Dec. 13, 1967.

AQUAGARD

The drawing is lined for the colors red and blue.
For Personal Water Safety Flotation Equipment (Int. Cl. 9).
First use Aug. 7, 1967.

SN 290,170. High Line Corporation, Cohasset, Mass. Filed Feb. 2, 1968.

HIGH LINE

For Lobster Bait (Int. Cl. 28).
First use June 30, 1967.

SN 290,330. Republic Tool & Manufacturing Corp., Century, City, Calif. Filed Feb. 5, 1968.

CHRISTEE

For Holster for Golf Ball Tees and Markers (Int. Cl. 28).
First use Jan. 3, 1968.

SN 290,751. Professional Golf Company, Chattanooga, Tenn. Filed Feb. 9, 1968.

MAXIMA

For Golf Clubs, Golf Balls, and Golf Bags (Int. Cl. 28).
First use August 1966.

SN 291,024. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.

AR-15

Owner of Reg. Nos. 825,581 and 827,453.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 291,025. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.

COLT AR-15

Owner of Reg. Nos. 727,440, 825,581, 827,453, and others.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 291,029. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.

COBRA

Owner of Reg. No. 651,917.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 244,388. Audion Elektro N.V., Amsterdam, Netherlands. Filed Apr. 27, 1966.

AUDION

For Sealing Machines for Sealing Synthetic Packing Materials (Int. Cl. 7).
First use Sept. 5, 1947; in commerce February 1948.

SN 267,655. Pacific Roller Die Company, Hayward, Calif. Filed Mar. 27, 1967.

PRD

For Metal Processing and Metal Working Equipment—Namely, Machines for Cutting, Forming, or Bending Metal Products, or for Supporting or Conveying Such Products During Processing; and Parts Thereof (Int. Cl. 7).
First use Feb. 15, 1967.

SN 268,312. Houdaille Industries, Inc., Buffalo, N.Y. Filed Apr. 4, 1967.

POWERMATIC

Owner of Reg. Nos. 644,702 and 674,142.
For Machine Tools—Namely, Band Saws, Drill Presses, Lathes, Sanders, and Grinders; Woodworking Machines—Namely, Tenoners, Mortisers, Spindle Shapers, Jointers, Tilting Arbor Saws, Scroll Saws, and Planers; and Parts and Accessories for the Foregoing Machine Tools and Woodworking Machines—Namely, Feeders, Cutters, Cutter Blanks, Machine Bits, Countersinks, Counterbores, Combined Shaped Cutters and Collars, Drills, Coolant Tanks for Said Machine Tools, Combined Heads and Collars, Saw Blades, Controls, Wheel Dressers, and Chucks (Int. Cl. 7).
First use at least as early as November 1964; 1929 as to the word "Powermatic"; January 1964 as to the latter "P" portion with the oval.

SN 270,681. Becton, Dickinson and Company, Newark, N.J., assignee of Ivers-Lee Company, Newark, N.J. Filed May 4, 1967.

METCO

For Machinery for Making Envelope-Like Sealed Packages Made of Two Layers of Sheet Material Sealed Together in Zones Forming Commodity Compartments (Int. Cl. 7).
First use July 1, 1966.

SN 270,685. Irvin Industries Inc., Lexington, Ky., by change of name from Irving Air Chute Co., Inc., Lexington, Ky. Filed May 4, 1967.

IRVEND

For Hot Drink Vending Machines (Int. Cl. 9).
First use Nov. 15, 1966.

SN 273,226. Geartronics Corporation, North Billerica, Mass. Filed June 7, 1967.

APCOR

For Gear Motors, Gear Drives, Gear Speed Reducers, Gear Shifts, and Gear Transmissions, Clutches, and Anti-Backlash Drives (Int. Cl. 7).
First use Nov. 15, 1960.

SN 273,504. John Oster Manufacturing Co., Milwaukee, Wis. Filed June 9, 1967.

PROFESSIONAL

Owner of Reg. No. 357,060.
For Electric Shavers and Parts Thereof (Int. Cl. 8).
First use Dec. 7, 1965.

SN 273,583. Allpac, Inc., Dallas, Tex. Filed June 12, 1967.

ALLPAC

For Automatic Labeling Machines (Int. Cl. 7).
First use July 1961.

SN 273,768. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. Filed June 13, 1967.

JET SPEED

Owner of Reg. No. 799,400.
For Portable and Mobile Tank-Type Pressure Spraying Apparatus for Use in Detergent and Chemical Cleaning of Machinery, Vehicle Bodies, Sidings, Machine Tools, Boats, Agricultural Implements, and Painted Surfaces, and for Use in Spray Application of Liquid Fertilizers, Weed Killers, Insecticides, Pesticides, and Disinfectants (Int. Cl. 7).
First use Aug. 19, 1966.

SN 274,550. UMC Industries, Inc., St. Louis, Mo. Filed June 22, 1967.

Crown Line

Applicant makes no claim to the word "Line" apart from the mark as shown.
For Vending Machines, and Installations of Groups of Such Machines, and Parts Thereof (Int. Cl. 9).
First use about January 1964.

SN 274,766. The Pandjiris Weldment Co., St. Louis, Mo. Filed June 26, 1967.

HEAD DIRECTOR

For Manipulator for Welding and Machining Operations (Int. Cl. 7).
First use May 26, 1967.

SN 276,595. Williams Cutlery, Inc., Seaman, Ohio. Filed July 21, 1967.

MILLSTONE

For Barbecue Tools and Kitchen Tools—Namely, Forks, Spoons, Carving Knives, Skewers, Food Tongs, Food Turners, and Spatulas (Int. Cls. 8 and 21).
First use on or about May 29, 1967.

SN 276,740. Dishmaster Appliances Limited, Petone, New Zealand. Filed July 25, 1967.

BARMASTER

Owner of New Zealand Reg. No. B68,688, dated May 11, 1961.
For Machines for Washing Glasses, Dishes, Jars, and Similar Articles; and Parts of Such Machines (Int. Cl. 7).

SN 276,883. UMC Industries, Inc., St. Louis, Mo. Filed July 26, 1967.

Crown seventy two

For Vending Machines, and Installations of Groups of Such Machines, and Parts Thereof (Int. Cl. 9).
First use June 24, 1967.

SN 277,607. Barry-Wehmiller Company, St. Louis, Mo. Filed Aug. 7, 1967.

Owner of Reg. No. 843,709.
For Separator Units, for Use With Bottle Washing Machines, Components and Parts Thereof, Which Separate and Extract Trash and Other Insoluble Material From Bottle Washing Fluids (Int. Cl. 7).
First use on or about June 9, 1967.

SN 279,845. Nippon Thompson Co., Ltd., Minatoku, Tokyo, Japan. Filed Sept. 7, 1967.

IKO

Owner of Japanese Reg. No. 620,051, dated July 2, 1963.
For Machinery Bearings (Int. Cl. 7).

SN 280,899. True Temper Corporation, Cleveland, Ohio. Filed Sept. 21, 1967.

KELLY

Owner of Reg. Nos. 210,847, 235,939, and others.
For Trowels, Rakes, Edgers, Hoes, Cultivating Tools, Shovels, Spades, Forks, Hooks, Drags, Scrapers, Chisels, Mattocks, Diggers, Shears, Loopers, Cutters, Scythes, Scoops, Bulb Planters, Seeders, Picks, Trimmers, Hammers, Hatchets, Axes, Adzes, Matchetes, Ditch-Bank Blades, and Handles Therefor, Pruners, Broadaxes, Weeders, Eye Hoes, Harvesters, Hay Knives, Sod Lifters, Picks, and the Like (Int. Cl. 8).
First use as early as January 1890.

SN 282,805. Benno Kaltenegger, d.b.a. Benno Kaltenegger Ingenieurburo und Maschinenbau (IMAS), Siegburg, Germany. Filed Oct. 18, 1967.

DUOMAT

Owner of German Reg. No. 834,609, dated July 3, 1967.
For Road Rollers—Namely, Hand Rollers and Mechanically Operated Rollers, Roadbed Rollers, Rollers for Ground Working, Snowplows, Snow Cutters, and Rotary Snowplows (Int. Cl. 7).
First use Aug. 16, 1965; in commerce July 6, 1967.

SN 284,158. Bolton-Emerson, Inc., Lawrence, Mass. Filed Nov. 6, 1967.

BOLTON EMERSON

Owner of Reg. Nos. 131,710 and 700,915.
For Paper and Pulp Machinery—Namely, Pulpers and Deflakers (Int. Cl. 7).
First use Sept. 30, 1959.

SN 285,056. Petroleum Supply Company, Houston, Tex. Filed Nov. 16, 1967.

HOLE-HOG

Owner of Reg. No. 738,989.
For Parts for Reciprocating Pumps—Namely, Pump Liners, Piston Rods, Pistons, Valves, and Stuffing Boxes (Int. Cl. 7).
First use at least as early as Oct. 22, 1948.

SN 286,406. American Allsafe Company, Inc., Buffalo, N.Y. Filed Dec. 7, 1967.

AIRGARD

For Punch Press Guards (Int. Cl. 7).
First use Jan. 1, 1939.

SN 287,582. Precision Specialties, Inc., Pitman, N.J. Filed Dec. 26, 1967.

PSI
PSI

For Clutches and Clutch Parts—Namely, Miniature Slip-Clutches, Solenoid Actuated Wrap-Spring Clutches, Replacement Spring Clutches, and Solenoid Actuated Clutch-Brakes (Int. Cl. 7).
First use Apr. 1, 1965.

SN 287,956. Geo. D. Roper Corporation, Newark, Ohio. Filed Jan. 2, 1968.

FOLDAMATIC

For Collapsible Handle Employed on a Push-Type Lawnmower (Int. Cl. 7).
First use on or about Aug. 17, 1967.

SN 287,957. Geo. D. Roper Corporation, Newark, Ohio. Filed Jan. 2, 1968.

QUADRATORQUE

For Mechanical Transmission Embodied in a Motor Driven, Riding-Type Tractor (Int. Cl. 12).
First use on or about Aug. 31, 1967.

SN 288,215. Hoff Products Company, Chicago, Ill. Filed Jan. 5, 1968.

Hoof

For Velocity Governors and Mechanical Governors for Internal Combustion Engines, Timing Gears and Timing Chains for Internal Combustion Engines, and Hydraulic Valves for Aircraft and Industrial Use (Int. Cl. 7).
First use 1937.

SN 288,684. R. & J. Dick Co., Inc., King of Prussia, Pa. Filed Jan. 12, 1968.

For Flat Belt Conveyer Pulleys and Transmission Pulleys (Int. Cl. 7).
First use during 1964.

SN 289,320. Mono Pumps Limited, London, England. Filed Jan. 22, 1968.

MONO MUTRATOR

Owner of British Reg. No. 850,258, dated June 12, 1963; and U.S. Reg. No. 850,547.
For Pumps Incorporating Elutriating and Solids Comminuting Devices for Handling Raw Sewage and Trade Wastes (Int. Cl. 7).

SN 293,618. Avco Corporation, Coldwater, Ohio. Filed Mar. 19, 1968.

NEW IDEA

Owner of Reg. Nos. 280,765, 833,101, and others.
For Field Harvesting Equipment (Int. Cl. 7).
First use Feb. 12, 1968.

294,398. Kinetics Corporation of California, Solana Beach, Calif. Filed Mar. 28, 1968.

STRIPVAR

For Motor Driven Wire Stripper (Int. Cl. 7).
First use May 15, 1967.

SN 295,719. Coats & Clark Inc., New York, N.Y. Filed Apr. 16, 1968.

"NYNAMIC"

For Textile Travellers (Int. Cl. 7).
First use on or about Feb. 22, 1968.

SN 303,751. Mac M. Rothkopf & Co., Inc., Garden City, N.Y. Filed July 29, 1968.

MMR

For Knitting Machines and Machines for Steaming, Shrinking, Heat Setting, and Decatizing Knit Piece Goods and Clothing Articles Made Therefrom (Int. Cl. 7).
First use Mar. 1, 1968.

SN 304,555. Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. Filed Aug. 7, 1968.

NOVITA

For Electric Hand Scissors (Int. Cl. 7).
First use Apr. 14, 1967.

Class 24—Laundry Appliances and Machines

SN 293,233. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 14, 1968.

WASH 'N GO

Applicant disclaims the word "Wash" apart from the mark as shown.
For Hand-Operated Washing Machine (Int. Cl. 7).
First use Feb. 8, 1968.

Class 26—Measuring and Scientific Appliances

SN 256,746. Labconco Corporation, Kansas City, Mo. Filed Oct. 19, 1966.

BALATRON

For Electrical Balances (Int. Cl. 9).
First use Sept. 14, 1966.

SN 264,982. Spindler & Sauppe, Glendale, Calif. Filed Feb. 17, 1967.

SLIDE COMMANDER

The word "Slide" is disclaimed apart from the mark as shown.
For Wireless Remote Controls for Slide Projectors (Int. Cl. 9).
First use May 23, 1962.

SN 273,280. Howe Richardson Scale Company, Clifton, N.J. Filed June 7, 1967.

CONVEY-O-WEIGH

Owner of Reg. Nos. 322,769, 592,570, and 776,153.
For Combination Weighing and Conveying Apparatus (Int. Cl. 9).
First use March 1940.

SN 274,538. National Rejectors, Inc., St. Louis, Mo. Filed June 22, 1967.

SIMPLEX

For Electrically Operated Change Dispensing Devices for Use in Vending Machines, Change Making Machines, and the Like (Int. Cl. 9).
First use Apr. 11, 1950.

SN 280,709. Jacuzzi Bros., Incorporated, Little Rock, Ark. Filed Sept. 19, 1967.

FilterGuard

For purposes of registration, no claim is made to the exclusive right to use the word "Filter" apart from the mark, but applicant waives none of its common law rights therein.
For Automatic, Electrically Operated Pressure Sensitive Controls for Regulating Backwashing of Filters in Swimming Pool and Like Systems (Int. Cl. 9).
First use July 19, 1967.

SN 281,506. Wayne Electronic Products Company, Oklahoma City, Okla. Filed Sept. 29, 1967.

WEPCO

For Automatic Relay Carrier Tester (Int. Cl. 9).
First use Oct. 29, 1966.

SN 284,443. Hans C. Bjornker, d.b.a. "Sophistipats," Walnut Creek, Calif. Filed Nov. 9, 1967.

Sophistipats

For Printed Woodworking Patterns (Int. Cl. 16).
First use Oct. 27, 1967.

SN 287,695. James G. Biddle Co., Plymouth Meeting, Pa. Filed Dec. 28, 1967.

MENTOR

For Logic-Assisted Manually Operated Electronic Instrument Whereby Lights Are Sequentially Actuated To Indicate What Mechanical Movement Should Be Made for Use in Making Potentiometric Measurements and the Like (Int. Cl. 9).
First use Nov. 17, 1967.

SN 288,482. Wabash Magnetics, Inc., Wabash, Ind. Filed Jan. 10, 1968.



The mark is lined for the color brown, which color is claimed. Owner of Reg. No. 841,229.
For Computer Tape Coated With a Formulation of Ingredients Which Make Up an Outside Coating on the Substrate Material of Digital Computer Tape (Int. Cl. 9).
First use Dec. 14, 1967.

SN 289,423. Ringler-Dorin, Inc., New York, N.Y. Filed Jan. 23, 1968.



For Standards for Setting Apparatus To Test Roughness of Surfaces (Int. Cl. 9).
First use Jan. 22, 1952.

SN 292,128. RdF Corporation, Hudson, N.H. Filed Feb. 28, 1968.

MICRO-FOIL

For Thermal Measuring and Sensing Equipment—Namely, Heat Flow Sensors, Thermocouples, Thermopiles, Calorimeters, Radiometers, Pyrheliometers, and Thermal Conductivity Meters (Int. Cl. 9).
First use Feb. 21, 1967.

Class 27 — Horological Instruments

SN 288,379. Standard Packaging Corporation, Stamford, Conn. Filed Jan. 8, 1968.



Owner of Reg. Nos. 595,308, 604,047, and others.
For Clocks (Int. Cl. 14).
First use at least as early as Apr. 12, 1967; Sept. 17, 1953, as to "Stanpak."

SN 292,166. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers, Philadelphia, Pa. Filed Feb. 29, 1968.

BARR'S

For Wrist Watches (Int. Cl. 14).
First use sometime during 1853.

Class 28 — Jewelry and Precious-Metal Ware

SN 305,885. Emmons Jewelers, Inc., Newark, N.Y. Filed Aug. 26, 1968.

FASHION MAGIC

For Men's and Women's Costume Jewelry (Int. Cl. 14).
First use on or about Jan. 30, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 275,702. Sunstar Dentifrice Company Limited, Takatsuki, Osaka Prefecture, Japan. Filed July 10, 1967.

SUNSTAR

Owner of U.S. Reg. Nos. 772,489 and 772,491.
For Tooth Brushes and Electric Tooth Brushes (Int. Cl. 21).
First use May 1, 1945; in commerce June 10, 1964.

SN 284,143. A/S W. Jordan Borste & Penselfabrik, Oslo, Norway. Filed Nov. 6, 1967.

Ⓙ Jordan

Owner of Norwegian Reg. No. 66,175, dated May 6, 1965.
For Toothbrushes; Tools for Painters—Namely, Paint Rollers, Paint Brushes; Domestic Brushes—Namely, Brooms, Dusters, Cleaning Brushes, Kettle Brushes, Dish-Washing Brushes, Floor Cleaning Brushes; and Cleaning Cloths (Int. Cls. 16 and 21).

Class 30 — Crockery, Earthenware, and Porcelain

SN 288,370. Standard Packaging Corporation, Stamford, Conn. Filed Jan. 8, 1968.



Owner of Reg. Nos. 595,308, 607,047, and others.
For China or Porcelain Coffee Mugs (Int. Cl. 21).
First use at least as early as Apr. 12, 1967; Sept. 17, 1953, as to "Stanpak."

Class 31 — Filters and Refrigerators

SN 257,245. Aqua Guard, Inc., Geneva, Ill. Filed Oct. 26, 1966.

AQUA-GUARD

For Faucet Water Filter (Int. Cl. 11).
First use Aug. 15, 1966.

SN 276,711. Sternco Industries, Inc., Harrison, N.J. Filed July 24, 1967.

JET-O-FLO

For Filters for Home Aquarium Tanks (Int. Cl. 11).
First use Dec. 6, 1966.

SN 280,251. Ranco Incorporated, Columbus, Ohio. Filed Sept. 13, 1967.



The mark comprises the letter "R" in stylized form. Owner of Reg. Nos. 381,350, 622,557, and 634,164.
For Electrical Control Devices—Namely, Automatic Defrost Controls for Refrigerating Systems (Int. Cl. 9).
First use July 5, 1967.

SN 291,487. S. Blickman, Inc., Weehawken, N.J. Filed Feb. 20, 1968.

BLICKMAN

Owner of Reg. Nos. 607,541, 790,973, and others.
For Ice Chests, Refrigerated Subzero Environmental Rooms, Fat Filtering Apparatus, Coffee Making Filters and Parts Thereof, Refrigerated Food and Drink Wheeled Conveyors (Int. Cl. 11).
First use Apr. 9, 1964.

Class 32 — Furniture and Upholstery

SN 281,835. Tootsie Roll Industries, Inc., Hoboken, N.J. Filed Oct. 4, 1967.

TOOTSIE ROLL

Owner of Reg. No. 623,182.
For Pillows (Int. Cl. 20).
First use July 29, 1967.

SN 290,669. Vladimir Kagan Designs Inc., New York, N.Y. Filed Feb. 8, 1968.



For Sofas, Rocking Chairs, Chairs, Chaise Lounge, Foot Stools, Cocktail Tables, Ottoman, Sofa Beds, Stools, Dining Tables, Cabinets, Card Tables, Tea Wagons, Buffet, Bed Headboards, Chest of Drawers, Desks, Bookcases, Pedestals, End Tables, Nest of Tables, and Magazine End Tables (Int. Cl. 20).
First use June 10, 1967.

SN 294,720. Business Efficiency Aids, Inc., Skokie, Ill. Filed Apr. 2, 1968.



For Filing Cabinets, Trays and Stands (Int. Cl. 20).
First use November 1963.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 266,528. Food Facilities Development Corp., Deer Park, N.Y. Filed Mar. 13, 1967.



For Cooking Utensils—Namely, Deep Fat Fryers, for Commercial Use, Including Electric, Gas or Other Heating Means (Int. Cl. 11).
First use Oct. 13, 1966.

SN 284,338. B. R. Acker, d.b.a. Southern Research, Largo, Fla. Filed Nov. 8, 1967.

CAMP-KING

For Outdoor Cooking Grills, Having a Fire Retaining Barrier (Int. Cl. 11).
First use Aug. 1, 1967.

SN 288,368. Standard Packaging Corporation, Stamford, Conn. Filed Jan. 8, 1968.



Owner of Reg. Nos. 595,308, 604,047, and others.
For Candle Holders and Candle Snuffers (Int. Cl. 21).
First use at least as early as Apr. 12, 1967; Sept. 17, 1953, as to "Stanpak."

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 282,119. N.V. Rubberfabriek Vredestein, Loosduinen, The Hague, Netherlands. Filed Oct. 9, 1967.

VREDESTEIN

For Tires and Innertubes for Automobiles and Bicycles (Int. Cl. 12).
First use 1914; in commerce 1956.

SN 282,305. United Products Co., Inc. Fort Wayne, Ind. Filed Oct. 11, 1967.

UNILON

For Slipper Seals, Back-Up Rings, O-Rings, Piston Rings, Scraper Rings, and Gaskets (Int. Cls. 7 and 17).
First use Sept. 1, 1964.

SN 295,696. Yokohama Gomu Kabushiki Kaisha (The Yokohama Rubber Company Ltd.), Minato-ku, Tokyo, Japan. Filed Apr. 15, 1968.



For Pneumatic Tires and Tubes (Int. Cl. 12).
First use December 1917; in commerce in or about November 1967.

SN 297,983. Dayco Corporation, Dayton, Ohio. Filed May 13, 1968.

JACK

For Fluid Conveying Hose, Particularly for Conducting Air and Water (Int. Cl. 17).
First use on or about Apr. 23, 1968.

SN 302,017. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

W-RIB

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Apr. 1, 1961; in commerce Apr. 1, 1961.

SN 302,018. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

W-LUG

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Apr. 1, 1961; in commerce Apr. 1, 1961.

Class 36 — Musical Instruments and Supplies

SN 270,409. Pearl Musical Instrument Manufacturing Company Limited, Sumida-ku, Tokyo, Japan. Filed May 1, 1967.

PRESIDENT

For Drums (Int. Cl. 15).
First use Oct. 24, 1966; in commerce Jan. 20, 1967.

SN 277,450. Matthew De Fiorio, Toronto, Ontario, Canada. Filed Aug. 3, 1967.

LIDOVOX

Priority claimed under Sec. 44(d) on Canadian application filed July 17, 1967; Reg. No. 157,071, dated May 31, 1968.
For Electronic Musical Instruments—Namely, Accordions, and Amplifiers Therefor (Int. Cls. 9 and 15).

SN 291,211. United Artists Records, Inc., New York, N.Y. Filed Feb. 15, 1968.



The word "Latino" means a male person who is a Latin.
For Phonograph Records (Int. Cl. 9).
First use Jan. 15, 1968.

SN 291,784. Stax Record Company, Memphis, Tenn. Filed Feb. 23, 1968.

stax

For Grooved Phonograph Records (Int. Cl. 9).
First use November 1967; August 1961 in a different form.

SN 292,434. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Mar. 4, 1968.



The words "Rock Records" are disclaimed, apart from the mark as shown, without disclaiming any common law rights therein.
For Phonograph Records (Int. Cl. 9).
First use Jan. 10, 1968.

SN 296,475. Venture Records, Inc., Beverly Hills, Calif. Filed Apr. 24, 1968.

VENTURE

For Phonograph Records and Prerecorded Magnetic Tape (Int. Cl. 9).
First use Oct. 1, 1967.

Class 37 — Paper and Stationery

SN 276,179. E. Errett Smith, Inc., New York, N.Y. Filed July 17, 1967.

Personal Stationery Styled by du Barry

Applicant disclaims the words "Personal Stationery Styled by," apart from the mark as shown.
For Note Paper and Envelopes (Int. Cl. 16).
First use Apr. 18, 1967.

SN 279,088. Nekoosa-Edwards Paper Company, Port Edwards, Wis. Filed Aug. 25, 1967.

LAUREATE

For Paper of All Types and Categories—Namely, Bond, Duplicator, Ledger, Offset, Manifold, Copying, Mimeograph, Printing, Index, Opaque, Converting, Specialty, Wrapping, Writing, Book, and Publishing (Int. Cl. 16).
First use Mar. 1, 1967.

SN 288,867. Standard Packaging Corporation, Stamford, Conn. Filed Jan. 8, 1968.



Owner of Reg. Nos. 595,308, 604,047, and others.
For Letter Trays, Pens and Pen Holders, Pencils and Pencil Holders, Pencil Pointers, Clip Boards, Paper Clips, Telephone Indices, Note and Memoranda Pad Holders, Plastic Laminations and Extrusions in Sheet and Roll Form for Use in Packaging, Paper Placemats, Telephone Dials and Dialers, Paper Coasters, Desk Calendars, Bond, Mimeo and Duplicator Papers for Office and Business Use, Paperboard, Facial and Toilet Tissues, and Paperboard and Match Box Cover Stock (Int. Cl. 16).
First use at least as early as 1958; Sept. 17, 1953, as to "Stanpak."

SN 293,479. Consolidated Packaging Corporation, Chicago, Ill. Filed Mar. 18, 1968.



Owner of Reg. No. 800,543.
For Corrugating Medium, Paperboard, Boxboard, and Corrugated Sheets (Int. Cl. 16).
First use Jan. 24, 1968, on corrugating medium.

SN 294,670. Scripto, Inc., Atlanta, Ga. Filed Apr. 1, 1968.

SST

For Ball Pens and Refills (Int. Cl. 16).
First use Feb. 22, 1968.

SN 294,732. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Apr. 2, 1968.

CONSET

For Business Forms, Particularly Data Processing Forms (Int. Cl. 16).
First use Jan. 20, 1968.

SN 294,815. Consolidated Packaging Corporation, Chicago, Ill. Filed Apr. 3, 1968.

CONSO-CHEM

For Corrugating Medium (Int. Cl. 16).
First use Dec. 29, 1967.

SN 295,180. Sanford Ink Company, Bellwood, Ill. Filed Apr. 8, 1968.

LOGO

For Porous Tip Pens (Int. Cl. 16).
First use Apr. 1, 1968.

SN 295,181. Sanford Ink Company, Bellwood, Ill. Filed Apr. 8, 1968.

QUIP

For Porous Tip Pens (Int. Cl. 16).
First use Apr. 1, 1968.

SN 295,182. Sanford Ink Company, Bellwood, Ill. Filed Apr. 8, 1968.

EXPO

For Porous Tip Pens (Int. Cl. 16).
First use Apr. 1, 1968.

SN 297,470. Wakefern Food Corporation, Elizabeth, N.J. Filed May 6, 1968.

SHOP-RITE

Owner of Reg. Nos. 738,144, 812,306, and others.
For Paper Towels (Int. Cl. 16).
First use at least as early as 1964.

Class 38 — Prints and Publications

SN 256,643. Canadian Imperial Bank of Commerce, Toronto, Ontario, Canada. Filed Oct. 18, 1966.



For Folders, Pamphlets, Booklets, and Newsletters (Int. Cl. 16).
First use May 6, 1966; in commerce May 6, 1966.

SN 268,491. Heetrans, Inc., d.b.a. Decalomaniac Co., Pasadena, Calif. Filed Apr. 6, 1967.

CRAZY

For Heat Transfer Decals (Int. Cl. 16).
First use February 1967.

SN 280,411. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Sept. 15, 1967.

gaf

Owner of Reg. Nos. 509,124, 744,454, and others.
For Photographic Prints, Enlargements, Pictures, Transparencies, and Slides; Mounted Photographs; Picture and Film Cards; Trade Publications, Especially, Trade Magazines, Periodical Publications, Published Catalogues, Booklets, and Pamphlets; Developed Photographic and Cinematographic Film and Color Film; Developed Copying and Photographic Paper and Color Paper; and Processed Diazotype Print and Copies (Int. Cls. 9 and 16).

SN 286,426. Grosset & Dunlap, Inc., New York, N.Y. Filed Dec. 7, 1967.

CONSTELLATION INTERNATIONAL

For Books Published from Time to Time in Series (Int. Cl. 16).
First use July 27, 1967.

SN 287,323. Shea Rustin, Inc., Atlanta, Ga. Filed Dec. 20, 1967.

7 DIAS

"7 Dias" is Spanish and means "7 days" in English.
For Magazine (Int. Cl. 16).
First use Nov. 1, 1967.

SN 287,935. Morkap Publishing Company, Rockville, Md. Filed Jan. 2, 1968.

PRINCE GEORGES SENTINEL

For Newspaper (Int. Cl. 16).
First use at least as early as Sept. 21, 1967.

SN 297,312. Norcross, Inc., New York, N.Y. Filed May 3, 1968.

BRIGHT EYES

For Greeting Cards (Int. Cl. 16).
First use Mar. 22, 1968.

SN 297,313. Norcross, Inc., New York, N.Y. Filed May 3, 1968.

POP-INS

For Greeting Cards (Int. Cl. 16).
First use Mar. 22, 1968.

SN 297,314. Norcross, Inc., New York, N.Y. Filed May 3, 1968.

NORCROSS NYMPHS

For Greeting Cards (Int. Cl. 16).
First use Mar. 22, 1968.

Class 39 — Clothing

SN 258,735. Tyrrell Industries, Inc., Venice, Fla. Filed Nov. 15, 1966.

CAST'AWAYS

Owner of Reg. Nos. 764,763 and 831,856.
For Dresses (Int. Cl. 25).
First use on or about June 15, 1966.

SN 266,784. John Plain & Company, Chicago, Ill. Filed Mar. 15, 1967.

VAN CORT

"Van Cart" is a fanciful name.
For Men's Shoes (Int. Cl. 25).
First use July 1961.

SN 275,654. Gottschalk & Co., G.m.b.H., Kassel, Germany. Filed July 10, 1967.

contrAcid

Priority claimed under Sec. 44(d) on German application filed Jan. 28, 1967; Reg. No. 832,664, dated May 8, 1967.
For Shirts, Socks, Pants, Jackets, Vests, Coats, Caps, and Gloves for Men and Women (Int. Cl. 25).

SN 275,802. Waynesboro Knitting Company, Waynesboro, Pa. Filed July 11, 1967.

NAUTI-TOGS

For Men's and Women's Sportswear and Casual Clothing, viz, Knitted Sportshirts (Int. Cl. 25).
First use June 19, 1967.

SN 275,849. Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills, Bristol, Va. Filed July 12, 1967.

panklets

Mary Grey

"Mary Grey" identifies Mrs. Mary Grey Sabine, whose consent is of record. Owner of Reg. No. 565,274.
For Ankle Size Hose for Women To Be Worn With Pants and Slacks (Int. Cl. 25).
First use January 1965.

SN 276,227. Court 'n' Sport, Ltd., New York, N.Y. Filed July 18, 1967.

American Tennis

The word "Tennis" is disclaimed separate and apart from the mark as used.
For Tennis Dresses, Shorts, Shirts, Jackets, Panties, and Sweaters (Int. Cl. 25).
First use May 5, 1967.

SN 276,823. Cunard-Werk GmbH, Goslar/Harz, Germany. Filed July 26, 1967.

Cunard

The drawing is lined for the colors red, blue, and gold.
For Suspenders, Rubber and Leather Belts; Men's Shirts, Sport Shirts, Pajamas; Ladies' Blouses; Neckties, Socks, Garters, and Gloves (Int. Cl. 25).
First use June 1967; in commerce June 1967; Nov. 1, 1907, as to "Cunard."

SN 283,034. Raleigh Manufacturers, Inc., New York, N.Y. Filed Oct. 20, 1967.

DOMINO

For Men's Full Dress Suits (Int. Cl. 25).
First use Apr. 28, 1967.

SN 283,416. Arlan's Dept. Stores, Inc., New York, N.Y. Filed Oct. 26, 1967.

Baby Jordan

For Infants' Layette—Namely, Sleepwear and Play Suits (Int. Cl. 25).
First use July 1966.

SN 288,106. Mid-Atlantic Footwear Corp., New York, N.Y. Filed Jan. 4, 1968.

ENTRY

For Ladies' Shoes (Int. Cl. 25).
First use Aug. 1, 1967.

SN 290,406. Pellon Corporation, New York, N.Y. Filed Feb. 6, 1968.

PELLON

Owner of Reg. Nos. 592,888, 594,573, and 599,211.
For Women's, Men's, and Children's Lingerie, Pajamas, Headwear, Blouses, Shirts, Slacks, Shorts, Jackets, Dresses, Coats, Suits, Rainwear, Sweaters, Neckwear, and Robes (Int. Cl. 25).
First use Jan. 26, 1968.

SN 291,075. Johnson Hosiery Mills, Inc., Hickory, N.C. Filed Feb. 14, 1968.

"KING FOOTS"

For Men's Hosiery (Int. Cl. 25).
First use Dec. 30, 1967.

SN 291,093. Parklane Hosiery Company, Inc., Great Neck, N.Y. Filed Feb. 14, 1968.

P

For Ladies' Hosiery (Int. Cl. 25).
First use June 1, 1967.

SN 291,572. Allied Stores Corporation, New York, N.Y. Filed Feb. 21, 1968.

DINO PISANI

The name "Dino Pisani" is fanciful.
For Men's and Boys' Knit Shirts, Sweaters, Coats, Jackets, Slacks, and Ties (Int. Cl. 25).
First use Oct. 9, 1967.

SN 291,823. Arpeja Petite Juniors, Inc., Los Angeles, Calif. Filed Feb. 26, 1968.

Young Victorian by Arpeja

Owner of Reg. No. 796,446.
For Women's Dresses (Int. Cl. 25).
First use Oct. 18, 1967.

SN 292,372. Gepner Knitwear Co., Inc., Atlanta, Ga. Filed Mar. 4, 1968.

PRO'S PRIDE

For Men's Knitted Outerwear—Namely, Sweaters and Shirts (Int. Cl. 25).
First use on or about Feb. 2, 1968.

SN 293,007. Acme Boot Company, Inc., Clarksville, Tenn. Filed Mar. 12, 1968.

acme

Applicant disclaims any exclusive rights to the representation of the boot apart from the mark as shown. Owner of Reg. Nos. 555,056, 767,619, and others.
For Leather Boots (Int. Cl. 25).
First use Feb. 15, 1968.

SN 293,064. Florence Walsh, Inc., New York, N.Y. Filed Mar. 12, 1968.

AGILE

For Women's Sportswear—Namely, Skirts, Culottes, Shorts, Slacks, Jackets, Coats, Shirts, Suits, Sweaters, and Bathing Suits (Int. Cl. 25).
First use Oct. 16, 1967.

SN 296,150. Glen Mfg. Inc., Milwaukee, Wis. Filed Apr. 22, 1968.

KNOW CLOTHES

The word "Clothes" is disclaimed apart from the mark.
For Juniors' and Misses' Clothing—Namely, Coats, Suits, Dresses, Jackets, Skirts, Slacks, Blouses, and Swimsuits (Int. Cl. 25).
First use Oct. 19, 1967.

SN 296,455. Russell Hosiery Mills, Inc., Star, N.C. Filed Apr. 24, 1968.

CLANSMAN

For Men's, Boys', Misses', and Children's Hosiery (Int. Cl. 25).
First use Apr. 16, 1968.

SN 296,723. Sig Smith & Co., Inc., New York, N.Y. Filed Apr. 26, 1968.

THE THREE BEARS

For Children's Wearing Apparel—Namely, Boys' and Girls' Snow Suits, Ski Pants, and Jackets (Int. Cl. 25).
First use Feb. 1, 1966.

SN 297,301. Majesty of the East, Inc., New York, N.Y. Filed May 3, 1968.

Majesty
OF THE EAST

For Men's and Ladies' Suits, Uniforms, Topcoats, Sport Coats, Slacks, Dresses, Pajamas, Kimonos, Dressing Gowns, Shirts, Blouses, Cummerbunds, Necktles, Beaded and Embroidered Sweaters, Scarfs, and Belts (Int. Cl. 25).
First use Apr. 1, 1968.

SN 297,623. Wrenn Manufacturing Co., Inc., Thomasville, N.C. Filed May 7, 1968.

The Birds

For Misses' Sportswear—Namely, Shifts, Knit Blouses, Knit and Woven Pants, Knit and Woven Bermudas (Int. Cl. 25).
First use Apr. 16, 1968.

SN 297,800. Piedmont Shirt Company, Greenville, S.C. Filed May 9, 1968.

SHURTLE-NECK

For Men's and Boys' Shirts (Int. Cl. 25).
First use Mar. 13, 1968.

SN 298,148. Philtex Manufacturing Company, Philadelphia, Pa. Filed May 14, 1968.

BOCKERS

For Men's and Boys' Swim Trunks (Int. Cl. 25).
First use Mar. 26, 1968.

SN 301,498. Sydney Wragge, New York, N.Y. Filed June 27, 1968.

bh wragge

"B. H. Wragge" stands for the name of Bernard H. Wragge, deceased, the founder of the business to which applicant is the successor in interest. Owner of Reg. No. 652,434.
For Women's Dresses, Coats, Suits, Pants, Blouses, Skirts, Hats, Scarfs, and Shorts (Int. Cl. 25).
First use May 24, 1968; December 1920 in a different form.

SN 302,574. Sportswear Promotions, Inc., Miami, Fla. Filed July 12, 1968.

SPORTSWEAR PROMOTIONS

Applicant disclaims any right to the word "Sportswear" apart from the mark as shown.
For Girls' and Women's Dresses, Slacks, Shorts, Skirts, Blouses, and Coats (Int. Cl. 25).
First use Aug. 24, 1961.

SN 302,576. Terry Sue Casuals, Inc., Miami, Fla. Filed July 12, 1968.

BUNNY SUE

For Girls' and Women's Dresses, Slacks, Shorts, Skirts, Blouses, and Coats (Int. Cl. 25).
First use Aug. 17, 1962.

SN 304,285. Ragan Knitting Company Inc., Thomasville, N.C. Filed Aug. 5, 1968.

MONCLARE

For Men's Hosiery (Int. Cl. 25).
First use Jan. 1, 1935.

SN 304,286. Ragan Knitting Company Inc., Thomasville, N.C. Filed Aug. 5, 1968.

DARN PROOF

For Men's Hosiery (Int. Cl. 25).
First use Oct. 6, 1911.

SN 305,189. L. Wohl & Company, Inc., New York, N.Y. Filed Aug. 15, 1968.



For Children's Apparel—Namely, Dresses, Skirts, Blouses, Suits, Slacks, Shorts, and Culottes (Int. Cl. 25).
First use July 15, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 290,815. American Velcro, Inc., Manchester, N.H. Filed Feb. 12, 1968.

HI-AIR

For Nylon Tape Fasteners of the Hook and Loop Type (Int. Cl. 26).
First use Nov. 28, 1967.

SN 293,860. Solo Products Corporation, Englewood, N.J. Filed Mar. 21, 1968.

GRIPETTE

For Non-Electrical Hair Curlers and Rollers (Int. Cl. 26).
First use Feb. 2, 1968.

SN 301,529. Hisashi Hamano, Soka-shi, Saitama-ken, Japan. Filed June 27, 1968.

KNITLOK

For Self-Adhering Material in Piece, Sheet or Ribbon Form, Adapted for Use as Fasteners and Closures (Int. Cl. 26).
First use at least as early as Mar. 15, 1968; in commerce at least as early as Mar. 15, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 273,653. Liberty Fabrics of New York, Inc., New York, N.Y. Filed June 12, 1967.



The drawing is lined for blue.
For Lace, Textile Fabrics for Molding, and Stretch Fabrics for Use in Lingerie, Foundations, Swimwear, and Outerwear (Int. Cl. 24).
First use January 1967.

SN 293,873. The Woodlin Shirt Corp., New York, N.Y. Filed Mar. 21, 1968.

Perma Fashion

Applicant disclaims the word "Fashion" apart from the mark as shown.
For Cotton and Polyester Fabric for Use in Making Men's Shirts and Suits (Int. Cl. 24).
First use Oct. 31, 1967.

SN 295,711. John F. Amico & Co., Chicago, Ill. Filed Apr. 16, 1968.

COIF CARE

For Pillowcases (Int. Cl. 24).
First use Feb. 20, 1968.

SN 295,819. Fiber Glass Industries, Inc., Amsterdam, N.Y. Filed Apr. 17, 1968.

MACROSTRAND

For Glass Fiber Fabrics Used Essentially as Reinforcing for Reinforced Plastics (Int. Cl. 24).
First use Mar. 13, 1968.

SN 295,985. Westwood Textile Manufacturing, Inc., Southbridge, Mass. Filed Apr. 18, 1968.

TUNED-IN

For Textile Fabric Used in Women's Wear, Dresses, Coats, Suits, and Sportswear (Int. Cl. 24).
First use July 1, 1967.

SN 296,116. Chatham Manufacturing Company, Elkin, N.C. Filed Apr. 22, 1968.

PURREY POLYESTER

The word "Polyester" is disclaimed apart from the mark as shown. Owner of Reg. No. 372,008.
For Blankets (Int. Cl. 24).
First use Apr. 4, 1968; June 1939 as to the mark "Purrey."

SN 296,785. Armstrong Cork Company, Lancaster, Pa. Filed Apr. 29, 1968.

WEARATHON

For Carpets and Rugs (Int. Cl. 27).
First use Mar. 14, 1968.

SN 297,582. Miyuki Keori Kabushiki Kaisha (Miyuki Woolen Textile Co., Ltd.), Nishi-ku, Nagoya, Aichi Prefecture, Japan. Filed May 7, 1968.

MIYUKITEX

Owner of Japanese Reg. No. 426,004, dated May 27, 1953.
For Woolen Textile Piece Goods (Int. Cl. 24).

SN 298,133. Lanneau Tapijt-en Fluweelweverij N.V. Harelbeke, Belgium. Filed May 14, 1968.

USCHEX

For Carpets (Int. Cl. 27).
First use 1964; in commerce May 29, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 281,539. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Oct. 2, 1967.

CLIP-STIK

For Specially Designed Centimeter Scale To Be Used With Venous Pressure Monitoring Set (Int. Cl. 10).
First use Sept. 22, 1967.

SN 292,975. Ben Steinman, Huntington Station, N.Y. Filed Mar. 11, 1968.

Sauna/Master

The word "Sauna" is disclaimed apart from the mark as shown.
For Sauna Heaters (Int. Cl. 11).
First use about February 1965.

Class 45—Soft Drinks and Carbonated Waters

SN 291,508. Great Lakes Beverages Corp., Brooklyn, N.Y. Filed Feb. 20, 1968.



For Soft Drinks (Int. Cl. 32).
First use Oct. 16, 1967.

SN 297,003. Canada Dry Corporation, New York, N.Y. Filed May 1, 1968.

ADANAC

For Non-Alcoholic Beverage—Namely, Club Soda (Int. Cl. 32).
First use at least as early as 1963; Feb. 4, 1927, in a different form.

Class 46 — Foods and Ingredients of Foods

SN 236,096. Kanto Canned Food Products Co., Ltd., Shinjuku-ku, Tokyo, Japan. Filed Jan. 10, 1966.

Santa

For Canned Vegetable Sukiyaki; Lunches Consisting of Rice and Vegetables; Roast Shrimp, Prawn, Lobster and Fish; Fried Bean Curd and Fish Cakes; Boiled Seaweed, Tangle, Bracken and Yam Noodle; Yam and Bean Pastes; Prepared Vegetables; Rice Cakes; Roasted Apples; and Pickled Radish (Int. Cls. 29 and 30).
First use February 1952; in commerce Feb. 25, 1958.

SN 275,548. National Frosted Foods, Inc., Oneida, N.Y. Filed July 7, 1967.



For Cooked Frozen Foods—Namely, Veal Parmesiana, Beef Stew, Salisbury Steak, Short Ribs of Beef, Rib Roast of Beef Dinner Consisting of Sliced Beef With Gravy, Potatoes and Carrots (Int. Cl. 29).
First use Apr. 3, 1967.

SN 292,259. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. Filed Filed Mar. 1, 1968.

X-NOG

For High Fat Beverage—Namely, a Milk-Based Dietary Food (Int. Cl. 5).
First use Jan. 19, 1968.

SN 292,643. Vega Trading Co., Inc., New York, N.Y. Filed Mar. 6, 1968.

CONSUL

For Canned Fish; Canned Seafood; Canned Pate De Foie; Canned Fruits; Canned Vegetables; Dried Fish; and Dried Fruits (Int. Cl. 29).
First use at least as early as 1950.

SN 298,429. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed May 17, 1968.

Brea

Owner of Reg. No. 784,246.
For Urea Sold for Use as a Food Supplement for Animals (Int. Cl. 31).
First use May 25, 1967.

SN 299,404. Edlo Enterprises, Inc., San Francisco, Calif. Filed May 31, 1968.

UP 'N GLO

Owner of Reg. No. 841,745.
For Liquid Low Fat Milk (Int. Cl. 29).
First use May 20, 1968.

SN 299,624. Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Company, Brawley, Calif. Filed June 4, 1968.

JOBB

For Fresh Melons (Int. Cl. 31).
First use June 20, 1967.

SN 302,284. Jose A. Ortega, Rio Piedras, Puerto Rico. Filed July 9, 1968.

BAKALAITOS

For Fish Flavored Fritter Mix (Int. Cl. 30).
First use July 2, 1968.

SN 302,947. London Dry Ltd., Spartanburg, S.C. Filed July 17, 1968.

LONDON FRYS

Applicant disclaims the term "Frys" separate and apart from the mark as shown, reserving all common law rights which it may have now or hereafter in said term. Owner of Reg. No. 691,779.
For Partially Prepared French Fried Potatoes (Int. Cl. 29).
First use June 19, 1968; Feb. 9, 1968, in a different form.

SN 303,234. Romper Room, Inc., Baltimore, Md. Filed July 22, 1968.

MR. DO BEE

For Cookies (Int. Cl. 30).
First use July 15, 1968.

Class 47 — Wines

SN 275,609. Aujoux & Cie Societe Vinicole Beaujolaise, d.b.a. Aujoux & Cie S.A., Saint-Georges-en-Beaujolais (Rhone), France. Filed July 10, 1967.

AUJOUX

For Wines (Int. Cl. 33).
First use 1955; in commerce May 1964.

SN 291,018. Benegas Hermanos y Cia. Ltda. S.A.I.C., Buenos Aires, Argentina. Filed Feb. 14, 1968.

BROQUEL

The English Translation of the Spanish word "Broquel" is "shield." Owner of Argentine Reg. No. 552,636, dated May 21, 1965.
For Wines (Int. Cl. 33).

SN 295,745. L and H Associates, d.b.a. Laurel Highlands Vineyards, Greensburg, Pa. Filed Apr. 16, 1968.

LAUREL HIGHLANDS

For Wines (Int. Cl. 33).
First use Nov. 24, 1967.

Class 48 — Malt Beverages and Liquors

SN 290,239. Arthur Guinness Son & Company Limited, London, England. Filed Feb. 5, 1968.



Owner of Reg. Nos. 63,040, 63,041, and 729,538.
For Stout and Lager Beer (Int. Cl. 32).
First use May 1963; in commerce May 1963; Mar. 29, 1862, in a slightly different form.

Class 49 — Distilled Alcoholic Liquors

SN 280,779. Hepburn & Ross Limited, Glasgow, Scotland. Filed Sept. 20, 1967.

RED HACKLE

Owner of Reg. No. 589,414.
For Scotch Whisky (Int. Cl. 33).
First use Dec. 2, 1925; in commerce October 1934.

SN 286,041. South African Wine Farmers Association (London) Limited, London, England. Filed Dec. 1, 1967.

ESSAY'S

Owner of British Reg. No. 904,693, dated Jan. 26, 1967.
For Brandy (Int. Cl. 33).

Class 50 — Merchandise Not Otherwise Classified

SN 298,312. John Thomas Batts, Inc., Zeeland, Mich. Filed May 16, 1968.

SQUIRE

For Garment Hangers (Int. Cl. 26).
First use on or about Feb. 1, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 224,704. Rexall Drug and Chemical Company, Los Angels, Calif., assignee of Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Aug. 2, 1965.

ARTIST BROW

Applicant disclaims the word "Brow" apart from the mark as shown.
For Eyebrow Make-Up Including Powder Cake, Brush, and Compact (Int. Cl. 3).
First use Apr. 16, 1965.

SN 268,392. FGM Zasmin S.r.l., Milan, Italy. Filed Apr. 5, 1967.

ZASMIN

Owner of Italian Reg. No. 127070/66, dated Dec. 12, 1966.
For Face Cream, Skin Lotion, Body Cream, Lipstick, Make-up, Facial Masque, Cleansing Milk, Eye Shadow, Eye Liner, Face Powder, Eye Pencil, Cosmetic Paint, Sun Oil, Hand and Foot Creams (Int. Cl. 3).

SN 270,171. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.

VIKING

For Cologne (Int. Cl. 3).
First use Feb. 1, 1967.

SN 278,740. Richard A. Spike, d.b.a. M. Leopold, Chevy Chase, Md. Filed Aug. 21, 1967.

M Leopold
WITH CARE

The wording "M. Leopold" is fictitious.
For Facial and Body Moisturizing, Toning and Cleansing Creams and Lotions, and Face Powder (Int. Cl. 3).
First use July 17, 1967.

SN 278,741. Richard A. Spike, d.b.a. M. Leopold, Chevy Chase, Md. Filed Aug. 21, 1967.

M Leopold
MORNING LITE

The wording "M. Leopold" is fictitious.
For Facial and Body Moisturizing, Toning and Cleansing Creams and Lotions, and Face Powder (Int. Cl. 3).
First use July 17, 1967.

SN 281,583. Emile Kettin, Hauts-de-Seine, France. Filed Oct. 2, 1967.

UPPERCUT

Owner of French Reg. 709,706, dated Feb. 2, 1966.
For Perfumes, Cologne Water, After-Shave Lotion, Lipstick, and Face Powder (Int. Cl. 3).
First use at least as early as Feb. 2, 1966; in commerce Aug. 17, 1967.

SN 286,998. The Borden Company, New York, N.Y. Filed Dec. 15, 1967.

MANICOTE

For Cuticle Softener (Int. Cl. 3).
First use July 19, 1962.

SN 287,345. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 21, 1967.

WHEN BEING CLOSE COUNTS

For Talc Powder (Int. Cl. 3).
First use Oct. 26, 1967.

SN 287,518. Calgon Corporation, Pittsburgh, Pa., assignee of Calgon Corporation, Pittsburgh, Pa. Filed Dec. 26, 1967.

bouquet

Owner of Reg. No. 358,518.
For Perfumed Water Softening Chemical for Use in the Bath (Int. Cl. 3).
First use July 8, 1937.

SN 287,841. Summit Laboratories, Inc., Indianapolis, Ind. Filed Dec. 29, 1967.

IT HAPPENS RIGHT NOW

For Hair Conditioner (Int. Cl. 3).
First use Apr. 15, 1967.

SN 289,612. Richard Hudnut, Morris Plains, N.J. Filed Jan. 25, 1968.

REPAIR KIT

Applicant disclaims the word "Kit" apart from the mark as shown.
For Face Powder (Int. Cl. 3).
First use Jan. 19, 1968.

SN 293,423. Winners Circle, Inc., Martinsville, N.J. Filed Mar. 15, 1968.

WINNER'S CIRCLE

For Grooming and Cleaning Aids for Horses and Other Animals (Int. Cl. 3).
First use on or about Mar. 6, 1968.

SN 294,119. Alberto-Culver Company, Melrose Park, Ill. Filed Mar. 26, 1968.

SHIMMY SHINS

Applicant disclaims the word "Shins" apart from the mark as shown.
For Shaving Preparation for Women (Int. Cl. 3).
First use Nov. 22, 1967.

Class 52 — Detergents and Soaps

SN 273,656. Lowe's, Inc., Cassopolis, Mich. Filed June 12, 1967.

KWIK DRI

For Ground Clay as a Sweeping Compound (Int. Cl. 3).
First use Jan. 28, 1958.

SN 275,886. Foresight Corporation, d.b.a. Water Soluble Products, Chicago, Ill. Filed July 12, 1967.

DETERGENT "1·2·4"

No claim is made to the word "Detergent" apart from the mark as shown.
For Detergent Concentrates for Cleaning Glassware, Dishes, and Cutlery (Int. Cl. 3).
First use June 1, 1967.

SN 275,888. Foresight Corporation, d.b.a. Water Soluble Products, Chicago, Ill. Filed July 12, 1967.

DETERGENT "1·2·2"

No claim is made to the word "Detergent" apart from the mark as shown.
For Detergent Concentrates for Use on Laboratory, Hospital, and Medical Equipment and Supplies (Int. Cl. 3).
First use June 1, 1967.

SN 283,975. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 2, 1967.



For Jewelry Cleaner (Int. Cl. 3).
First use Sept. 8, 1967.

SN 291,532. Standard International Corporation, Andover, Mass. Filed Feb. 20, 1968.

POT LUCK

For Utensil Cleaner for Household Use (Int. Cl. 3).
First use Feb. 9, 1968.

SN 306,201. Lever Brothers Company, New York, N.Y. Filed Aug. 29, 1968.

AMAZE

For Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Sept. 26, 1967.
Subj. to intf. with SN 286,549.

SERVICE MARKS

Class 100 — Miscellaneous

SN 257,030. J. C. Barnard and Associates, St. Louis, Mo. Filed Oct. 24, 1966.



For Engineering Consulting Services in the Field of Telephone Communications (Int. Cl. 42).
First use Aug. 29, 1966.

SN 270,573. The Horn & Hardart Company, New York, N.Y. Filed May 3, 1967.

HORN & HARDART

For Restaurant Services, Automated Cafeteria Services, and Food Take-Out Services (Int. Cl. 42).
First use Nov. 9, 1966.

SN 271,955. National Personnel Consultants, Detroit, Mich. Filed May 19, 1967.

NATIONAL PERSONNEL CONSULTANTS

The words "Personnel Consultants" are disclaimed apart from the mark as shown. Owner of Reg. No. 854,373.
For Association Services—Namely, Consultation Services to and Exchange of Business Information and Ideas Between Member Employment Agencies (Int. Cl. 42).
First use January 1953.

SN 273,302. Pacific Employers Insurance Company, Los Angeles, Calif. Filed June 7, 1967.

MEND

For Providing Rehabilitation for Persons Receiving Compensation Derived From Insurance Contracts (Int. Cl. 42).
First use September 1965.

SN 284,449. Chemclean Corporation, College Point, N.Y. Filed Nov. 9, 1967.

CHEMCLEAN

For Chemical and Industrial Consultation Services for Providing New Techniques of Manufacturing, Production Line Assembly, Equipment Selection and Placement, Devising and Fabricating Specialized Chemical Compositions and Methods (Int. Cl. 42).
First use October 1944.

SN 286,032. Quality Tool & Die Co., Inc., Hoboken, N.J. Filed Dec. 1, 1967.



The word "Quality" is disclaimed apart from the mark as shown.
For Engineering Design Services (Int. Cl. 42).
First use Nov. 1, 1967.

SN 286,961. Salvation Discotheque Ltd., New York, N.Y. Filed Dec. 14, 1967.

SALVATION

For Restaurant, Cabaret, and Discotheque Services (Int. Cl. 42).
First use July 6, 1967.

SN 291,884. Meridian Engineering, Inc., Philadelphia, Pa. Filed Feb. 26, 1968.



For Engineering Design Services—Namely, Preliminary Construction Studies and Economic Evaluations, Drawings, Specifications, Estimates, and Field Inspections; Critical Path Planning and PERT Applications; Engineering Studies; and Engineering Support Services—Namely, Systems Studies, Drafting, Model Building, Technical Writing, and Surveying (Int. Cl. 42).
First use Jan. 23, 1968.

SN 290,306. John Mandis, Inc., Washington, D.C. Filed Feb. 5, 1968.

JOHN MANDIS MARKET INN

For Restaurant Services (Int. Cl. 42).
First use April 1959.

SN 301,008. Computation Planning, Inc., Washington, D.C. Filed June 21, 1968.

COMPLAN

For Services in Connection With the Analysis and Design of Computation Systems (Int. Cl. 42).
First use Apr. 30, 1968.

SN 305,886. Grenadier Restaurant Ltd., New York, N.Y. Filed Aug. 26, 1968.

GRENADIER

For Restaurant Services (Int. Cl. 42).
First use Apr. 6, 1967.

Class 101 — Advertising and Business

SN 263,634. Wholesale Druggists Merchandising Association, Inc., New York, N.Y. Filed Jan. 30, 1967. COLLECTIVE MARK.



Applicant disclaims the prescription symbol, mortar, pestle, the wording "Retail Pharmacy League," and the representation of a map of the United States.
For Retail Drug Store Services (Int. Cl. 35).
First use November 1963.

SN 278,267. International Minerals & Chemical Corporation, Skokie, Ill. Filed Aug. 15, 1967.



Applicant disclaims the word "Plan" apart from the mark as shown.
For Business Services in Marketing Agricultural Products, Including Providing Assistance to Fertilizer Manufacturers in Advertising, Promotion and Fertilizer Manufacturing, and Advising on Crop Production (Int. Cl. 35).
First use October 1966.

SN 289,640. Mademoiselle Furs, Inc., New York, N.Y. Filed Jan. 26, 1968.

MINK MONEY

Without waiving any of its common law rights therein, applicant disclaims the word "Mink" apart from the mark as shown.

For Promotion of Sales of Customers' Products Through Incentive Program for Sales Personnel, With Furs as Prizes (Int. Cl. 35).

First use Oct. 1, 1967.

Class 102 — Insurance and Financial

SN 273,834. Meridian Mutual Insurance Company, Indianapolis, Ind. Filed June 14, 1967.

a world of protection

The drawing is lined for the color blue.

For Underwriting of Life and Homeowners Insurance (Int. Cl. 36).

First use October 1962.

SN 277,328. Central National Bank in Chicago, Chicago, Ill. Filed Aug. 2, 1967.



The group portrait appearing on the drawing, are living individuals, whose consents are of record.

For Banking Services (Int. Cl. 36).

First use Apr. 17, 1967.

SN 278,463. Central Bank and Trust Company, Birmingham, Ala. Filed Aug. 17, 1967.

For General Bank and Trust Services (Int. Cl. 36).

First use Mar. 2, 1964.

SN 283,365. Stuyvesant Life Insurance Company, Allentown, Pa. Filed Oct. 25, 1967.

The mark consists of a fanciful representation of the letter "S."

For Underwriting of life, Accident and Health Insurance and the Granting and Disposing of Annuities (Int. Cl. 36).

First use Aug. 21, 1967.

SN 297,249. The Equitable Trust Company, Baltimore, Md. Filed May 3, 1968.

CHECK COMMAND

For Bank Credit Services in Which a Depositer May Overdraw His Account on a Consumer Loan Basis (Int. Cl. 36).

First use Feb. 5, 1968.

Class 103 — Construction and Repair

SN 267,740. Ervin Industries Inc., Charlotte, N.C., by change of name from Ervin Construction Company, Incorporated, Charlotte, N.C. Filed Mar. 28, 1967.

For Custom Construction of Residential and Commercial Buildings (Int. Cl. 37).

First use at least as early as Aug. 31, 1962.

SN 267,741. Ervin Industries Inc., Charlotte, N.C., by change of name from Ervin Construction Company, Incorporated, Charlotte, N.C. Filed Mar. 28, 1967.

ERVIN

For Custom Construction of Residential and Commercial Buildings (Int. Cl. 37).

First use at least as early as Nov. 4, 1956.

SN 294,711. Offshore Navigation, Inc., New Orleans, La. Filed Apr. 2, 1968.

HIREX

For Furnishing Personnel To Properly Set Up, Maintain, and Operate Fixed Radio Transmitters and Mobile Receivers for Use in Determining the Location of the Mobile Receiver Relative to the Fixed Transmitter (Int. Cl. 37).

First use July 10, 1967.

Class 105 — Transportation and Storage

SN 284,033. The Price Company Limited, Quebec, Quebec, Canada. Filed Nov. 2, 1967.

PRICE

Owner of Reg. No. 812,183.

For Transportation Services Comprising the Transporting by Ship of Various Cargos Including Newsprint, Kraft Paper, Pulp, Paperboard, and Lumber (Int. Cl. 39).

First use Mar. 24, 1964; in commerce Dec. 19, 1965.

SN 288,318. Donley F. Hunt, Jack A. Stockfish, Nash M. Love, and Daniel B. Rathbun (joint owners), d.b.a. Skyway-To-Highway, Washington, D.C. Filed Jan. 8, 1968.

SKYWAY-TO-HIGHWAY

For Air Cargo Assembly and Transshipment Services (Int. Cl. 39).

First use Sept. 26, 1967.

Class 107 — Education and Entertainment

SN 242,429. Children's Caravan, Inc., Weston, Conn. Filed Apr. 1, 1966.

The drawing is lined for the colors red and orange.

For Entertainment Services in the Form of Programs for Young or Family Audiences, Utilizing Various Modes of Expression—Namely, Motion Pictures, Film Strips, Recorded Material, and/or Orally Delivered Material (Int. Cl. 41).

First use Dec. 23, 1963.

SN 261,859. S. H. Lynch & Company, Inc., Dallas, Tex. Filed Jan. 3, 1967.

SWEET SOUND OF SUCCESS

For Supplying Recorded Background Music to Commercial, Industrial, Mercantile, and Other Private and Public Establishments (Int. Cl. 41).

First use on or about Apr. 1, 1960.

SN 270,941. New Orleans Saints, New Orleans, La., assignee of New Orleans Saints, New Orleans, La. Filed May 8, 1967.



The portrait is that of Al Hirt, Jr., whose consent is of record. Without relinquishing any common law rights, the representation of two football players, a referee, and a cheerleader are disclaimed apart from the mark as shown. The two football players, the cheerleader, and the referee depicted in the drawing are not intended to portray any living individual.

For Furnishing Entertainment Services in the Nature of Professional Football Games (Int. Cl. 41).

First use Mar. 8, 1967.

SN 273,609. The Cryan Shames, Chicago, Ill. Filed June 12, 1967.

"THE CRYAN SHAMES"

For Entertainment Services Rendered by a Rock and Roll Band (Int. Cl. 41).

First use Mar. 23, 1966.

SN 277,120. John Alexander and Sandford I. Hansell (joint owners), Detroit, Mich. Filed July 31, 1967.

SAGA OF AMERICA

For Entertainment Services—Namely, a Radio Program of a Historical Nature (Int. Cl. 41).

First use Mar. 16, 1967.

SN 278,468. Collegiate Basketball Officials Association, Inc., Tenafly, N.J. Filed Aug. 17, 1967.

CBOA

The representation of the basketball is disclaimed apart from the mark as shown.

For Collegiate Basketball Officiating (Int. Cl. 41).

First use Dec. 1, 1950.

SN 296,077. Missouri National Soccer Club, Inc., St. Louis, Mo. Filed Apr. 22, 1968.

ST. LOUIS STARS

The name "St. Louis" is disclaimed apart from the mark as shown.

For Entertainment Services in the Nature of Soccer Games and Exhibitions (Int. Cl. 41).

First use on or about Jan. 12, 1967.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 279,421. Society of Black Belts International Corp., Summit, N.J. Filed Aug. 30, 1967.



The drawing is lined for the colors red and brown, but no claim is made to such colors.
For Indicating Membership in Applicant.
First use June 16, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

861,205. BLACK EMERALD. Emerald Furs Limited. SN 240,871. Pub. 9–20–66. Filed 3–14–66.

861,206. FORMOS. Ford Motor Company. SN 270,668. Pub. 9–17–68. Filed 5–4–67.

861,207. COBOTHANE. Cobon Plastics Corp. SN 273,745. Pub. 9–17–68. Filed 6–13–67.

861,208. NATIONAL BEAUTIFICATION. Seaboard Seed Company. SN 275,556. Pub. 9–17–68. Filed 7–7–67.

861,209. WELLENE. Nichols & Company, Inc. SN 277,369. Pub. 9–17–68. Filed 8–2–67.

861,210. MC. The Polymer Corporation. SN 283,375. Pub. 9–17–68. Filed 10–26–67.

861,211. CURLY-Q. Nichols & Company, Inc. SN 283,546. Pub. 9–17–68. Filed 10–27–67.

861,212. SC AND DESIGN. Shieldalloy Corporation. MULTIPLE CLASS (Classes 1 and 14). SN 289,147. Pub. 9–17–68. Filed 1–19–68.

Class 2 — Receptades

861,213. WP. Ipco Hospital Supply Corporation. SN 270,684. Pub. 9–17–68. Filed 5–4–67.

861,214. WINCHELL'S AND DESIGN. Winchell Donut House, Inc. SN 272,972. Pub. 9–17–68. Filed 6–2–67.

861,215. WINCHELL'S (SCRIPT) ETC. AND DESIGN. Winchell Donut House, Inc. SN 272,980. Pub. 9–17–68. Filed 6–5–67.

861,216. MICROPROOF. Plastics, Inc. (Delaware corporation), assignee of Plastics, Inc. (Minnesota corporation). SN 281,391. Pub. 9–3–68. Filed 9–28–67.

861,217. PRODUCE-PAK. Container Corporation of America. SN 285,910. Pub. 6–11–68. Filed 11–30–67.

861,218. EASY-O. Continental Can Company, Inc. SN 292,353. Pub. 9–17–68. Filed 3–4–68.

861,219. STORYLAND. American Can Company. SN 293,456. Pub. 9–17–68. Filed 3–18–68.

Class 4 — Abrasives and Polishing Materials

861,220. MISCELLANEOUS DESIGN. Uniroyal, Inc. MULTIPLE CLASS (Classes 4, 6, 21, and 52). SN 282,029. Pub. 9–17–68. Filed 10–9–67.

861,221. PAPPAGALLO. Pappagallo, Inc. SN 300,229. Pub. 9–17–68. Filed 6–12–68.

Class 5 — Adhesives

861,222. TUFFAK. Rohm and Haas Company. SN 284,282. Pub. 9–17–68. Filed 11–7–67.

861,223. B AND DESIGN. Brooks Manufacturing Company. MULTIPLE CLASS (Classes 5 and 26). SN 284,798. Pub. 9–17–68. Filed 11–14–67.

Class 6 — Chemicals and Chemical Compositions

861,220. (See Class 4 for this trademark.)

861,224. WRAP-ON AND DESIGN. Wrap-On Company, Inc. MULTIPLE CLASS (Classes 6, 12, 13, 21, 26, and 52). SN 271,397. Pub. 9–17–68. Filed 5–15–67.

861,225. WRAP-ON. Wrap-On Company, Inc. MULTIPLE CLASS (Classes 6, 12, 13, 21, 26, and 52). SN 271,398. Pub. 9–17–68. Filed 5–15–67.

861,226. SILCOLAPSE. Imperial Chemical Industries Limited. SN 273,282. Pub. 9–17–68. Filed 6–7–67.

861,227. SILCOLOID. Imperial Chemical Industries Limited. SN 273,283. Pub. 9–17–68. Filed 6–7–67.

861,228. RYNO-TOX. Leffingwell Chemical Company. SN 278,223. Pub. 9–17–68. Filed 8–14–67.

861,229. DEOXY-SOL. Fairmount Chemical Co., Inc. SN 281,694. Pub. 9–17–68. Filed 10–3–67.

861,230. DIAGNOSTEST. The Dow Chemical Company. MULTIPLE CLASS (Classes 6 and 26). SN 286,110. Pub. 9–17–68. Filed 12–4–67.

861,231. FOROCEL. Sandoz, Inc. SN 287,103. Pub. 9–17–68. Filed 12–18–67.

861,232. OXAF. Uniroyal, Inc. SN 287,239. Pub. 9–17–68. Filed 12–19–67.

861,233. P.M. Diamond Crystal Salt Company. SN 287,901. Pub. 9–17–68. Filed 1–2–68.

861,234. SPAK. Stellad Products, Inc. SN 294,563. Pub. 9–17–68. Filed 4–1–68.

861,235. MICRO-SPERSE. Standard Spray and Chemical Company. SN 295,084. Pub. 9–17–68. Filed 4–8–68.

Class 8 — Smokers' Artides, Not Including Tobacco Products

861,236. RATOS. Ake Svensson, executor of the estate of Erik Nässils. SN 294,606. Pub. 9–17–68. Filed 4–1–68.

861,237. DISTINCTION. Lane Limited. SN 300,713. Pub. 9–17–68. Filed 6–18–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

861,238. POWER-GEL. Hercules Incorporated. SN 286,670. Pub. 9–17–68. Filed 12–11–67.

861,239. FLO-RITE. Hercules Incorporated. SN 289,304. Pub. 9–17–68. Filed 1–22–68.

861,240. GELAPRIME. Hercules Incorporated. SN 289,305. Pub. 9–17–68. Filed 1–22–68.

Class 10 — Fertilizers

861,241. YANKEE. Continental Oil Company. SN 279,458. Pub. 9–17–68. Filed 8–31–67.

861,242. SSK AND DESIGN. S. S. Kresge Company. SN 284,090. Pub. 9–17–68. Filed 11–3–67.

861,243. CAPRI. Lite-Weight Products, Inc. SN 295,345. Pub. 9–17–68. Filed 4–10–68.

861,244. TOWN AND COUNTRY. Lite-Weight Products, Inc. SN 295,346. Pub. 9–17–68. Filed 4–10–68.

Class 11 — Inks and Inking Materials

861,245. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 284,468. Pub. 9–17–68. Filed 11–9–67.

Class 12 — Construction Materials

861,224. (See Class 6 for this trademark.)

861,225. (See Class 6 for this trademark.)

861,246. MISCELLANEOUS DESIGN. Birdair Structures, Inc. SN 238,698. Pub. 12–20–66. Filed 2–14–66.

861,247. COR-LAM. Kalflex Inc. SN 264,153. Pub. 10–24–67. Filed 2–7–67.

861,248. ZELLSAND. Synfibrit GmbH. SN 271,392. Pub. 9–17–68. Filed 5–12–67.

861,249. ACMA. Acme Highway Products Corporation. SN 290,457. Pub. 9–17–68. Filed 2–7–68.

861,250. BORSUMY PLY. Borneo Sumatra Trading Company, Inc. SN 290,463. Pub. 9–17–68. Filed 2–7–68.

861,251. MAGNA-RIB. H. H. Robertson Company. SN 296,718. Pub. 9–17–68. Filed 4–26–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

861,224. (See Class 6 for this trademark.)

861,225. (See Class 6 for this trademark.)

861,252. KSB. Klein, Schanzlin & Becker Aktiengesellschaft. MULTIPLE CLASS (Classes 13 and 23). SN 266,553. Pub. 9–17–68. Filed 3–13–67.

861,253. METROPOLITAN. Metropolitan Wire Goods Corporation. MULTIPLE CLASS (Classes 13 and 32). SN 276,337. Pub. 9–17–68. Filed 7–19–67.

861,254. DRAVE. Vistron Corporation. SN 282,644. Pub. 9–17–68. Filed 10–16–67.

861,255. DESIGN OF THREE MEN IN CIRCLE. Hamilton C. De Jong, d.b.a. Safety Brothers. SN 287,007. Pub. 9–17–68. Filed 12–15–67.

861,256. WEDGON AND DESIGN. Screw Machine Products Company. SN 289,618. Pub. 9–17–68. Filed 1–25–68.

861,257. NATURAL SATINA. Sands Point Manufacturing Co. Inc. SN 294,558. Pub. 9–17–68. Filed 4–1–68.

Class 14 — Metals and Metal Castings and Forgings

861,212. (See Class 1 for this trademark.)

861,258. MARZ. Materials Research Corporation. SN 271,162. Pub. 9–17–68. Filed 5–10–67.

861,259. STATO. Universal Marion Corporation. SN 294,330. Pub. 9–17–68. Filed 3–27–68.

Class 15 — Oils and Greases

861,260. SILVER-CHIP. Machinery Lubricants, Incorporated. SN 275,278. Pub. 9–17–68. Filed 7–3–67.

861,261. SEXAUER. J. A. Sexauer Mfg. Co., Inc. SN 282,009. Pub. 9–17–68. Filed 10–6–67.

861,262. SLICKSLIDE. Jon Harrison, d.b.a. Slickslide Company. SN 289,303. Pub. 9–17–68. Filed 1–22–68.

861,263. LUBREX. Harwick Standard Chemical Company. SN 289,506. Pub. 9–17–68. Filed 1–24–68.

Class 16 — Protective and Decorative Coatings

861,264. WHITE/GARD. The Valspar Corporation. SN 253,373. Pub. 8–29–67. Filed 8–29–66.

861,265. PERMALIZE. Pratt & Lambert-Inc. SN 286,175. Pub. 9–17–68. Filed 12–4–67.

861,266. XTRA-GLO. Artex Hobby Products, Inc. SN 286,624. Pub. 9–17–68. Filed 12–11–67.

861,267. TUFFAK. Rohm and Haas Company. SN 293,050. Pub. 9–17–68. Filed 3–12–68.

Class 17 — Tobacco Products

861,268. SAMSON. Theodorus Niemeijer N.V., d.b.a. Theodorus Niemeyer N.V. SN 258,317. Pub. 9–17–68. Filed 11–9–66.

Class 18 — Medicines and Pharmaceutical Preparations

861,269. DURAC 8. Menley & James Laboratories, Ltd. SN 208,949. Pub. 5–11–65. Filed 12–28–64.

861,270. BIDSULES. Bristol-Myers Company. SN 264,192. Pub. 1–2–68. Filed 2–8–67.

861,271. WITCH PILLS. Bristol-Myers Company. SN 272,470. Pub. 9–17–68. Filed 5–26–67.

861,272. HYONATOL. Bowman, Inc. SN 274,405. Pub. 9–17–68. Filed 6–21–67.

861,273. MERUVAX. Merck & Co., Inc. SN 274,639. Pub. 9–17–68. Filed 6–23–67.

861,274. EQUIZOLATE. Merck & Co., Inc. SN 275,449. Pub. 9–17–68. Filed 7–6–67.

861,275. M285. American Cyanamid Company. SN 275,820. Pub. 9–17–68. Filed 7–12–67.

861,276. M99. American Cyanamid Company. SN 275,821. Pub. 9–17–68. Filed 7–12–67.

861,277. ACHIEVE-MINT. Bristol-Myers Company. SN 277,623. Pub. 9–17–68. Filed 8–7–67.

861,278. ORIMETRENE. Ciba Limited. SN 278,091. Pub. 9–17–68. Filed 8–11–67.

861,279. THIPRAZOLE. Merck & Co., Inc. SN 278,120. Pub. 9–17–68. Filed 8–11–67.

861,280. PANAPEN. Bristol-Myers Company. SN 278,272. Pub. 9–17–68. Filed 8–15–67.

861,281. PRO-POLYCILLIN. Bristol-Myers Company. SN 278,276. Pub. 9–17–68. Filed 8–15–67.

861,282. BRISGELS. Bristol-Myers Company. SN 278,277. Pub. 9–17–68. Filed 8–15–67.

861,283. FS AND DESIGN. FS Services, Inc. MULTIPLE CLASS (Classes 18 and 46). SN 278,790. Pub. 9–17–68. Filed 8–22–67.

861,284. PERFOLIN. American Cyanamid Company. SN 284,567. Pub. 9–17–68. Filed 11–13–67.

861,285. UNWIND. Bristol-Myers Company. SN 284,593. Pub. 9–17–68. Filed 11–13–67.

861,286. ASCORBICAP. Bentex Pharmaceutical Company. SN 284,796. Pub. 9–17–68. Filed 11–14–67.

861,287. UROQID-ACID. Beach Products, Inc. SN 284,887. Pub. 9–17–68. Filed 11–15–67.

861,288. K-PHOS. Beach Products, Inc. SN 284,888. Pub. 9–17–68. Filed 11–15–67.

861,289. KEFGLYCIN. Eli Lilly and Company. SN 285,214. Pub. 9–17–68. Filed 11–20–67.

861,290. DONNASEP-MP. A. H. Robins Company, Incorporated. SN 285,461. Pub. 9–17–68. Filed 11–22–67.

861,291. DINOCYCLINE. Bristol-Myers Company. SN 286,631. Pub. 9–17–68. Filed 12–11–67.

861,292. TRI-SINUS. Bristol-Myers Company. SN 286,632. Pub. 9–17–68. Filed 12–11–67.

861,293. PAN-SINUS. Bristol-Myers Company. SN 286,633. Pub. 9–17–68. Filed 12–11–67.

861,294. LINCOCIN FORTE. The Upjohn Company. SN 287,052. Pub. 9–17–68. Filed 12–15–67.

861,295. ACHIEVE. Bristol-Myers Company. SN 293,620. Pub. 9–17–68. Filed 3–19–68.

861,296. BONUS. American Home Products Corporation. SN 299,529. Pub. 9–17–68. Filed 6–3–68.

Class 19 — Vehicles

861,297. RAVEN. Clinton Metal Fabricators, Inc., d.b.a. Raven Homes. SN 239,969. Pub. 9–26–67. Filed 3–2–66.

861,298. RAVENS. Ravens-Metal Products, Inc. SN 264,963. Pub. 9–26–67. Filed 2–17–67.

861,299. OTTER AND DESIGN. Rofra Products. SN 265,655. Pub. 9–17–68. Filed 2–28–67.

861,300. TRI-FORM. Space Research and Development Corporation, d.b.a. P & G Manufacturing Company. MULTIPLE CLASS (Classes 19 and 39). SN 273,149. Pub. 9–17–68. Filed 5–15–67.

861,301. ROLL-A-LONG. Roll-A-Long Inc. SN 289,835. Pub. 9–17–68. Filed 1–29–68.

861,302. US TRUCK BODY. U.S. Truck Body Co., Inc. SN 289,934. Pub. 9–17–68. Filed 1–30–68.

861,303. RETRACTA-WALL. Larson Industries, Inc. SN 291,614. Pub. 9–17–68. Filed 2–21–68.

861,304. HUNTSMAN. The Huntsman, Inc. SN 292,380. Pub. 9–17–68. Filed 3–4–68.

861,305. VISTA. National Independent Distributor Associates, Inc. SN 292,405. Pub. 9–17–68. Filed 3–4–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

861,220. (See Class 4 for this trademark.)

861,224. (See Class 6 for this trademark.)

861,225. (See Class 6 for this trademark.)

861,306. FISHER. Fisher Radio Corporation. SN 210,115. Pub. 12–27–66. Filed 1–18–65.

861,307. SCAM. The Scam Instrument Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 256,897. Pub. 9–17–68. Filed 10–21–66.

861,308. OKOVOX. The Okonite Company. SN 269,780. Pub. 9–17–68. Filed 4–21–67.

861,309. CHARGEMASTER. The Simco Company, Inc. SN 270,512. Pub. 9–17–68. Filed 5–2–67.

861,310. ESCAPE-ALARM. Standard Fire Alarm & Signal, Inc. SN 271,079. Pub. 9–17–68. Filed 5–9–67.

861,311. MILROS. The Ross Manufacturing Company. SN 272,215. Pub. 9–17–68. Filed 5–23–67.

861,312. TRANSTECTOR. Transcient Protection Systems, Inc., d.b.a. Transtector Systems. SN 277,809. Pub. 9–17–68. Filed 8–8–67.

861,313. CURTIS MATHES CM AND DESIGN. Curtis Mathes Sales Company. MULTIPLE CLASS (Classes 21 and 36). SN 282,274. Pub. 9–17–68. Filed 10–11–67.

861,314. FARGO-FIST. Fargo Mfg. Company, Inc. SN 284,003. Pub. 9–17–68. Filed 11–2–67.

861,315. ALUMINEX. Reynolds Metals Company. SN 284,104. Pub. 9–17–68. Filed 11–3–67.

861,316. SSK AND DESIGN. S. S. Kresge Company. SN 284,207. Pub. 9–17–68. Filed 11–6–67.

861,317. K MART AND DESIGN. S. S. Kresge Company. SN 284,208. Pub. 9–17–68. Filed 11–6–67.

861,318. SOL-U-LINE. Solar Light Manufacturing Co. SN 288,720. Pub. 9–17–68. Filed 1–12–68.

861,319. STENTOFON. Tandberg of America, Inc. SN 289,046. Pub. 9–17–68. Filed 1–17–68.

861,320. AUTO-GAIN. Ithaco, Inc. SN 289,405. Pub. 9–17–68. Filed 1–23–68.

861,321. TARGET. Target Stores, Inc. SN 289,728. Pub. 9–17–68. Filed 1–26–68.

Class 22 — Games, Toys, and Sporting Goods

861,322. THE SWINGER AND DESIGN. De Luxe Topper Corporation, assignee of De Luxe Reading Corporation. SN 238,847. Pub. 6–13–67. Filed 2–15–66.

861,323. E-Z GRIP. DBA Products Co., Inc. SN 252,703. Pub. 9–17–68. Filed 8–12–66.

861,324. WEEL-N-DEEL. Burich & Capalia. SN 267,915. Pub. 9–17–68. Filed 3–30–67.

861,325. ARROW AND DESIGN. Cluett, Peabody & Co., Inc., assignee of Jimmy Roche. SN 282,517. Pub. 2–6–68. Filed 10–16–67.

861,326. U–23. Raybestos-Manhattan, Inc. SN 282,721. Pub. 9–17–68. Filed 10–17–67.

861,327. K66. Raybestos-Manhattan, Inc. SN 282,722. Pub. 9–17–68. Filed 10–17–67.

861,328. S–38. Raybestos-Manhattan, Inc. SN 282,723. Pub. 9–17–68. Filed 10–17–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

861,252. (See Class 13 for this trademark.)

861,329. BEACON. Lowell Bearing Company. SN 222,174. Pub. 10–11–66. Filed 6–28–65.

861,330. CRYSTOLITE. Crysto-Products Co., Inc. SN 230,794. Pub. 9–17–68. Filed 10–21–65.

861,331. ELBO. J. Brooksbank, by change of name from J. Brooksbank Limited. SN 258,894. Pub. 9–17–68. Filed 11–17–66.

861,332. UNI-LOADER. Universal Manufacturing Company. SN 262,982. Pub. 9–17–68. Filed 1–20–67.

861,333. SRL AND DESIGN. Submarine Research Laboratories, Incorporated. SN 263,963. Pub. 9–17–68. Filed 2–3–67.

861,334. LEAF-MASTER. Andrew L. Pansini, d.b.a. Jandy Products. SN 266,082. Pub. 9–17–68. Filed 3–6–67.

861,335. QUICK-CHANGE. Landers Machine Company. SN 266,668. Pub. 9–17–68. Filed 3–14–67.

861,336. BULLDOG. Gray Company, Inc. SN 267,243. Pub. 9–17–68. Filed 3–21–67.

861,337. AUTO-LOK. Union Associates, Incorporated. SN 268,538. Pub. 9–17–68. Filed 4–6–67.

861,338. TIGER. Hardee Manufacturing Company, Inc. SN 269,073. Pub. 9–17–68. Filed 4–13–67.

861,339. CAMEO. Dazey Products Company. SN 270,049. Pub. 9–17–68. Filed 4–26–67.

861,340. BEETLE. Gill Rock Drill Co., Inc., assignee of Gill Drilling Equipment Co., Inc. SN 274,967. Pub. 5–7–68. Filed 6–28–67.

861,341. TILLAGESAVER. Kewanee Machinery & Conveyor Company. SN 277,559. Pub. 9–17–68. Filed 8–4–67.

861,342. FLOWER SONG. Textron, Inc., assignee of Gorham Corporation. SN 277,911. Pub. 9–17–68. Filed 8–9–67.

861,343. RAM-JET. Writon Manufacturing Co., Inc. SN 280,126. Pub. 9–17–68. Filed 9–11–67.

861,344. BOOM-A-ROUND CAR WASH AND DESIGN. H & F Manufacturing Co., Inc. SN 283,655. Pub. 9–17–68. Filed 10–30–67.

861,345. SACEM. Morey Machinery Co., Inc. SN 285,172. Pub. 9–17–68. Filed 11–20–67.

861,346. SG SPLATTER-GARD AND DESIGN. Brobst Company. SN 286,808. Pub. 9–17–68. Filed 12–13–67.

861,347. STAR (DESIGN). Sperry Rand Corporation. SN 289,218. Pub. 9–17–68. Filed 1–19–68.

861,348. SPERRY RAND. Sperry Rand Corporation. SN 289,219. Pub. 9–17–68. Filed 1–19–68.

861,349. SPERRY RAND AND STAR DESIGN. Sperry Rand Corporation. SN 289,220. Pub. 9–17–68. Filed 1–19–68.

861,350. SPERRY RAND. Sperry Rand Corporation. SN 289,221. Pub. 9–17–68. Filed 1–19–68.

Class 26 — Measuring and Scientific Appliances

861,223. (See Class 5 for this trademark.)

861,224. (See Class 6 for this trademark.)

861,225. (See Class 6 for this trademark.)

861,230. (See Class 6 for this trademark.)

861,307. (See Class 21 for this trademark.)

861,351. MSE AND DESIGN. Measuring and Scientific Equipment Limited. SN 219,897. Pub. 10–19–65. Filed 5–27–65.

861,352. COMPET. Hayakawa Denki Kogyo Kabushiki Kaisha, d.b.a. Hayakawa Electric Co., Ltd. SN 278,263. Pub. 9–17–68. Filed 7–17–67.

861,353. CAMSAFE. Cambridge Instrument Company, Inc. SN 283,426. Pub. 9–17–68. Filed 10–26–67.

861,354. MAGNACAL. The Hays Corporation. SN 289,893. Pub. 9–17–68. Filed 1–30–68.

Class 27 — Horological Instruments

861,355. BELL-MATIC. Kabushiki Kaisha Hattori Tokeiten. SN 280,598. Pub. 9–17–68. Filed 9–18–67.

Class 28 — Jewelry and Precious-Metal Ware

861,356. ENGAGE-O-TACK AND DESIGN. Bonell Creations, Inc. SN 283,858. Pub. 9–17–68. Filed 11–1–67.

Class 29 — Brooms, Brushes, and Dusters

861,357. J CLOTH. Johnson & Johnson. SN 266,633. Pub. 3–26–68. Filed 3–14–67.

861,358. CORONET. Hessische Hoelzerwerke Heinrich Schlerf G.m.b.H. MULTIPLE CLASS (Classes 29 and 50). SN 274,280. Pub. 9–17–68. Filed 5–22–67.

Class 30 — Crockery, Earthenware, and Porcelain

861,359. BRINN'S. Brinn's China and Glassware Co. SN 257,457. Pub. 9–17–68. Filed 10–28–66.

861,360. GALLANTE. Shenango Ceramics, Inc. SN 292,504. Pub. 9–17–68. Filed 3–5–68.

Class 31 — Filters and Refrigerators

861,361. ENVIRALOK. Becton, Dickinson and Company. SN 299,621. Pub. 9–17–68. Filed 6–4–68.

Class 32 — Furniture and Upholstery

861,253. (See Class 13 for this trademark.)

Class 33 — Glassware

861,362. CORELLE. Corning Glass Works. SN 285,398. Pub. 9–17–68. Filed 11–22–67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

861,363. AIRXPELER. Ammerman Company, Inc. SN 279,912. Pub. 9–17–68. Filed 9–8–67.

Class 36 — Musical Instruments and Supplies

861,313. (See Class 21 for this trademark.)

861,364. CORAL. Coral Records, Inc. SN 281,556. Pub. 9–17–68. Filed 10–2–67.

861,365. FERUS. Thomas J. Alifano, d.b.a. Tommy Wilde. SN 289,868. Pub. 9–17–68. Filed 1–30–68.

Class 37 — Paper and Stationery

861,366. TANDEM. Zellerbach Paper Company. SN 282,857. Pub. 9–17–68. Filed 10–18–67.

861,367. PRESENTATION MAT MOUNTS. Miller Cardboard Corp. SN 286,438. Pub. 9–17–68. Filed 12–7–67.

861,368. WORDPICKER. Scripto, Inc. SN 287,105. Pub. 9–17–68. Filed 12–18–67.

861,369. SAFEGUARD AND DESIGN. Safeguard Business Systems Corporation. SN 288,475. Pub. 9–17–68. Filed 1–10–68.

861,370. LANCER AND DESIGN. Vornado, Inc. SN 291,794. Pub. 9–17–68. Filed 2–23–68.

861,371. PERMA-FLEX. Barkley Corporation. SN 292,252. Pub. 9–17–68. Filed 3–1–68.

861,372. CANDY-STRIPE. A. W. Faber-Castell Pencil Co., Inc. SN 292,265. Pub. 9–17–68. Filed 3–1–68.

861,373. PERMATEX. Barkley Corporation. SN 292,671. Pub. 9–17–68. Filed 3–7–68.

861,374. ARD AND DESIGN. Edpco, Inc. SN 292,900. Pub. 9–17–68. Filed 3–11–68.

861,375. LONDON LIME. Fox River Paper Corporation. SN 293,083. Pub. 9–17–68. Filed 3–13–68.

861,376. SALEMASTER. Sperry Rand Corporation. SN 293,413. Pub. 9–17–68. Filed 3–15–68.

861,377. CHIFFON. Star Office Supply Co., Inc. SN 294,215. Pub. 9–17–68. Filed 3–26–68.

861,378. "CURT ERASE." Curtis 1000 Inc. SN 294,264. Pub. 9–17–68. Filed 3–27–68.

861,379. INSUR-A-BILL. Med-Dent Publishing Co. SN 294,296. Pub. 9–17–68. Filed 3–27–68.

861,380. PAPERMANIA. Brown Company. SN 294,370. Pub. 9–17–68. Filed 3–28–68.

861,381. FALPACO AND DESIGN. Falulah Paper Company. SN 294,484. Pub. 9–17–68. Filed 3–29–68.

861,382. DOESKIN. Concel Inc. SN 299,625. Pub. 9–17–68. Filed 6–4–68.

Class 38 — Prints and Publications

861,383. TIMELY II. MBM Company, assignee of The Vernon Company. SN 265,230. Pub. 9–17–68. Filed 2–21–67.

861,384. PROBLEMATICAL RECREATIONS. Litton Industries, Inc. SN 275,057. Pub. 9–17–68. Filed 6–29–67.

861,385. HERITAGE MUSIC PRESS. Lorenz Publishing Company. SN 276,324. Pub. 9–17–68. Filed 7–19–67.

861,386. DONNETEL INTERNATIONAL AND DESIGN. The Reuben H. Donnelley Corporation. SN 277,269. Pub. 9–17–68. Filed 8–1–67.

861,387. FROM POTOMAC'S MUDDY BANKS. McClellan Smith. SN 279,868. Pub. 9–17–68. Filed 9–7–67.

861,388. COOKCOO AND DESIGN. Michael B. Cook and Gail Cook (joint owners). SN 281,361. Pub. 9–17–68. Filed 9–28–67.

861,389. RACING GRAPHIS. Robert S. Kachler. SN 281,473. Pub. 9–17–68. Filed 9–29–67.

861,390. MISCELLANEOUS DESIGN. Taylor Publishing Company. SN 282,837. Pub. 9–17–68. Filed 10–18–67.

861,391. OUR COUNTRY, R. W. and May Orrell (firm). SN 283,354. Pub. 9–17–68. Filed 10–25–67.

861,392. CHANNEL CHAT. Unistrut Corporation. SN 285,596. Pub. 9–17–68. Filed 11–24–67.

861,393. HARVEST. Harcourt, Brace & World, Inc. SN 285,737. Pub. 9–17–68. Filed 11–28–67.

861,394. KENNY KEGLER AND DESIGN. Harold E. Hofmeister and Frank Hofmeister (joint owners). SN 294,706. Pub. 9–17–68. Filed 4–2–68.

861,395. LEADER'S MAGAZINE. Insurance Publications, Inc. SN 295,889. Pub. 9–17–68. Filed 4–18–68.

861,396. THE HOLLY TREE. Looart Press, Inc. SN 299,917. Pub. 9–17–68. Filed 6–7–68.

Class 39 — Clothing

861,300. (See Class 19 for this trademark.)

861,397. SUPERIOR. Superior Safety Shoe Company. SN 269,583. Pub. 9–17–68. Filed 4–19–67.

861,398. TREE LODGE AND DESIGN. Raymond L. Dayan. SN 269,642. Pub. 9–17–68. Filed 4–20–67.

861,399. FASHION DESIGNERS GROUP. Plymouth Wholesale Corporation. SN 270,410. Pub. 9–17–68. Filed 5–1–67.

861,400. PUPPET POCKET. Fun Frills, Inc. SN 271,143. Pub. 9–17–68. Filed 5–10–67.

861,401. MARTHA PEALE. Volk Bros. Company. SN 272,120. Pub. 9–17–68. Filed 5–22–67.

861,402. MALCOLM TAY. Volk Bros. Company. SN 272,121. Pub. 9–17–68. Filed 5–22–67.

861,403. POLLY FLINDERS. The Baylis Brothers Co. SN 273,363. Pub. 9–17–68. Filed 6–8–67.

861,404. HARVEST. Ervin H. Fishman. SN 276,658. Pub. 9–17–68. Filed 7–24–67.

861,405. ENDURANCE FURS. The Tailored Woman, Inc. SN 277,229. Pub. 9–17–68. Filed 7–31–67.

861,406. JOHN SMITH. Cambria-Clover Mercantile Co., Inc. SN 277,258. Pub. 9–17–68. Filed 8–1–67.

861,407. DOVE-DOWN. Spalding Knitting Mills, Inc. SN 281,128. Pub. 9–17–68. Filed 9–25–67.

861,408. EMPRESS CHINCHILLA. Empress Chinchilla Breeders Cooperative, Incorporated. SN 281,785. Pub. 9–17–68. Filed 10–4–67.

861,409. REPRESENTATION OF TWO FIGURES. Dominique France, Inc. SN 284,633. Pub. 9–17–68. Filed 11–13–67.

861,410. CONTURA ETC. AND DESIGN. Frank Noone Shoe Co., Inc. SN 286,360. Pub. 9–17–68. Filed 12–6–67.

861,411. ROSE TEEN. Sprouse-Reitz Co., Inc. SN 286,963. Pub. 9–17–68. Filed 12–14–67.

861,412. THE TETON AND DESIGN. Woolrich Woolen Mills. SN 288,147. Pub. 9–17–68. Filed 1–5–68.

861,413. FLEET STREET. Fleet Street Ltd. SN 288,206. Pub. 9–17–68. Filed 1–5–68.

861,414. REG-IS-TRED. Strawbridge & Clothier. SN 288,240. Pub. 9–17–68. Filed 1–5–68.

861,415. MAR-SAI MAGIC. Mar-Sai Manufacturing Co., Inc. SN 288,441. Pub. 9–17–68. Filed 1–9–68.

861,416. PROMENADE FASHIONS FOR MEN DESIGNED BY HENRY MANCINI. Hy-Grade Sportswear Co., Inc. SN 288,470. Pub. 9–17–68. Filed 1–10–68.

861,417. POLYFLEECE. The Eastern Isles, Inc. SN 288,499. Pub. 9–17–68. Filed 1–10–68.

861,418. JUDY GIBBS. Puritan Fashions Corporation. SN 291,183. Pub. 9–17–68. Filed 2–15–68.

861,419. ANGEL FAIR. Zayre Corp. SN 291,217. Pub. 9–17–68. Filed 2–15–68.

861,420. CUSTOM LIMITED. The Manhattan Shirt Company. SN 292,213. Pub. 9–17–68. Filed 2–29–68.

861,421. FLIRT SHIRT. Weldon, Inc. SN 294,443. Pub. 9–17–68. Filed 3–29–68.

861,422. PAUL BUNYAN. Variety Supply Company. SN 295,995. Pub. 9–17–68. Filed 4–19–68.

861,423. QMB. Quality Furs-Manos & Block, Inc. SN 298,512. Pub. 9–17–68. Filed 5–20–68.

861,424. QMB AND DESIGN. Quality Furs-Manos & Block, Inc. SN 298,513. Pub. 9–17–68. Filed 5–20–68.

861,425. GOLD ALLIGATOR. The Alligator Company, Inc. SN 300,508. Pub. 9–17–68. Filed 6–17–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

861,426. SILCOTIQUE. Yoshichu Co., Ltd. SN 274,026. Pub. 9–17–68. Filed 6–5–67.

861,427. BUTTERFLY BESS. Bess Forman. SN 285,537. Pub. 9–17–68. Filed 11–24–67.

861,428. LUTESONG. Indian Head Inc. SN 286,679. Pub. 9–17–68. Filed 12–11–67.

861,429. W.N.K. Westwood Textile Manufacturing, Inc. SN 287,974. Pub. 9–17–68. Filed 1–2–68.

861,430. FONDA CHINCHILLATTA. Fonda Manufacturing Corporation. SN 296,233. Pub. 9–17–68. Filed 4–23–68.

861,431. STABILON. Deering Milliken, Inc. SN 299,531. Pub. 9–17–68. Filed 6–3–68.

Class 44 — Dental, Medical, and Surgical Appliances

861,432. TELAMEDIC. United Aircraft Corporation. SN 272,118. Pub. 9–17–68. Filed 5–22–67.

Class 45 — Soft Drinks and Carbonated Waters

861,433. SERENDIPITY. Sunline, Inc. SN 286,731. Pub. 9–17–68. Filed 12–11–67.

Class 46 — Foods and Ingredients of Foods

861,283. (See Class 18 for this trademark.)

861,434. CAPEA. Benito Villamarin Prieto. SN 254,318. Pub. 9–17–68. Filed 9–12–66.

861,435. CLAUDEL AND DESIGN. Claudel. SN 254,672. Pub. 9–17–68. Filed 7–9–68.

861,436. TIJUANA. Schluderberg-Kurdle Company, Inc. SN 261,759. Pub. 5–28–68. Filed 12–30–66.

861,437. MINIFRUIT. Glacier Packing Co., Inc. SN 269,419. Pub. 9–17–68. Filed 4–18–67.

861,438. YUMBO. Burger King Restaurants, Inc. SN 272,574. Pub. 9–17–68. Filed 5–29–67.

861,439. WINCHELL'S (SCRIPT) ETC. AND DESIGN. Winchell Donut House, Inc. SN 272,981. Pub. 9–17–68. Filed 6–5–67.

861,440. MILLER'S. Miller's Pre-Pared Potato Company, Inc. SN 275,772. Pub. 9–17–68. Filed 7–11–67.

861,441. EVANGELINE AND DESIGN. International Minerals & Chemical Corporation, assignee of Evangeline Pepper & Food Products, Inc. SN 278,291. Pub. 9–17–68. Filed 8–15–67.

861,442. FUZZY'S HOBO. Edward S. Corey, d.b.a. Fuzzy's Hobo Cafe and Drive-In. SN 279,537. Pub. 9–3–68. Filed 9–1–67.

861,443. STONE-BUHR. Aubrey D. Copeland, d.b.a. The Stone-Buhr Milling Co. SN 279,589. Pub. 9–17–68. Filed 8–22–67.

861,444. CAT AND FIDDLE (DESIGN). Castle & Cooke, Inc. SN 280,148. Pub. 9–17–68. Filed 9–12–67.

861,445. WOMETCO BLUE CIRCLE AND DESIGN. Wometco Blue Circle, Inc. SN 282,334. Pub. 9–17–68. Filed 10–12–67.

861,446. THE ORIGINAL FRENCH CUT FILET AND DESIGN. Dolphin Seafoods, Inc. SN 284,631. Pub. 9–17–68. Filed 11–13–67.

861,447. LA CRIOLLA SAZON. Avelino Maldonado, d.b.a. La Criolla Food Products Co. SN 285,840. Pub. 9–17–68. Filed 11–29–67.

861,448. AQ. A. Q. Poultry Farms, Inc., d.b.a. A.Q. Chicken House, SN 289,248. Pub. 9–17–68. Filed 1–22–68.

861,449. DEW'S AND DESIGN. Ernest H. Dew, d.b.a. Dew's Enterprises. SN 290,952. Pub. 7–16–68. Filed 2–13–68.

861,450. PEP-O-ROONS. Rialto Food Supply, Inc. SN 291,190. Pub. 9–17–68. Filed 2–15–68.

861,451. UNCLE ROY'S. Hi-Life Packing Company. SN 291,802. Pub. 9–17–68. Filed 2–21–68.

861,452. UNCLE DON'S. Hi-Life Packing Company. SN 291,803. Pub. 9–17–68. Filed 2–21–68.

861,453. UNCLE ED'S. Hi-Life Packing Company. SN 291,804. Pub. 9–17–68. Filed 2–21–68.

861,454. UNCLE JIM'S. Hi-Life Packing Company. SN 291,805. Pub. 9–17–68. Filed 2–21–68.

861,455. PRIDE OF DIXIE. Griffin Craft and Hollis Craft, (joint owners), d.b.a. Dixie Syrup Company. SN 292,097. Pub. 9–17–68. Filed 2–28–68.

861,456. SHARLYN. Morrison Melon Company, Inc. SN 292,602. Pub. 9–17–68. Filed 3–6–68.

861,457. FULFLO. Agway, Inc. SN 294,000. Pub. 9–17–68. Filed 3–25–68.

861,458. ONION MONEY. American Home Products Corporation. SN 296,063. Pub. 9–17–68. Filed 4–22–68.

861,459. POPCRUNCH. The Quaker Oats Company. SN 297,342. Pub. 9–17–68. Filed 5–6–68.

861,460. CAYORA. Van den Bergh en Jurgens, N.V. SN 299,739. Pub. 9–17–68. Filed 6–5–68.

861,461. DOS EQUIS XX. Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Company. SN 299,904. Pub. 9–17–68. Filed 6–7–68.

861,642. TOP-JOBB. Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Company. SN 299,905. Pub. 9–17–68. Filed 6–7–68.

861,463. SUITS US. Phoenix Vegetable Distributors. SN 299,919. Pub. 9–17–68. Filed 6–7–68.

861,464. OLE LECHUGA! AND DESIGN. Sakata Ranches, Inc., d.b.a. L & W Land Co. SN 299,920. Pub. 9–17–68. Filed 6–7–68.

861,465. TRU-PAL. Yataro Minami, d.b.a. H. Y. Minami and Sons and YM Produce Co. SN 300,037. Pub. 9–17–68. Filed 6–10–68.

861,466. RED WAGON. Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n. SN 300,041. Pub. 9–17–68. Filed 6–10–68.

861,467. LAC JAC. Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n. SN 300,042. Pub. 9–17–68. Filed 6–10–68.

Class 47 — Wines

861,468. BEAU CHALET. United Vintners, Inc., d.b.a. Italian Swiss Colony. SN 300,791. Pub. 9–17–68. Filed 6–19–68.

Class 49 — Distilled Alcoholic Liquors

861,469. BEACON HILL. Canadian Schenley Distilleries, Ltd. SN 290,467. Pub. 9–17–68. Filed 2–7–68.

861,470. ZAVASKA. Old Boone Distillery Co. SN 290,965. Pub. 9–17–68. Filed 2–13–68.

861,471. CLAMDIGGER. Joseph E. Seagram & Sons, Inc. SN 300,411. Pub. 9–17–68. Filed 6–14–68.

Class 50 — Merchandise Not Otherwise Classified

861,358. (See Class 29 for this trademark.)

861,472. PETMAID AND DESIGN. T.F.H. Publications, Inc. SN 264,694. Pub. 9–17–68. Filed 2–14–67.

861,473. THERMALUM. Park Electrochemical Corporation. SN 273,673. Pub. 9–17–68. Filed 6–12–67.

861,474. PERM-A-STAND. John R. Schoen, d.b.a. Perma-A-Stand Company. SN 274,464. Pub. 9–17–68. Filed 6–21–67.

861,475. MERCER FRICTION GRIP. Mercer Plastics Company, Inc. SN 284,383. Pub. 9–17–68. Filed 11–8–67.

Class 51 — Cosmetics and Toilet Preparations

861,476. BODY-RICH. Manuel Leaf. SN 253,324. Pub. 9–17–68. Filed 8–29–66.

861,477. ZAMBRA. Antonio Puig S.A. SN 269,449. Pub. 9–17–68. Filed 4–18–67.

861,478. JULIABETH'S PALM SPRINGS DESERT DEW AND DESIGN. Juliabeth Calhoun, d.b.a. Juliabeth's Palm Springs Desert Dew. SN 277,534. Pub. 9–17–68. Filed 8–4–67.

861,479. TRICOSEB. Owen Laboratories Incorporated. SN 284,028. Pub. 9–17–68. Filed 11–2–67.

861,480. FEMME MARCEL ROCHAS. Parfums Marcel Rochas, Inc. SN 285,253. Pub. 9–17–68. Filed 11–20–67.

861,481. POSEIDON. John Oster Manufacturing Co. SN 288,632. Pub. 9–17–68. Filed 1–11–68.

861,482. THE BEAUTY GAME. Richard Hudnut. SN 288,955. Pub. 9–17–68. Filed 1–16–68.

861,483. THE INDIVIDUALS. Richard Hudnut. SN 288,956. Pub. 9–17–68. Filed 1–16–68.

861,484. FINDERS/KEEPERS. Richard Hudnut. SN 288,957. Pub. 9–17–68. Filed 1–16–68.

Class 52 — Detergents and Soaps

861,220. (See Class 4 for this trademark.)

861,224. (See Class 6 for this trademark.)

861,225. (See Class 6 for this trademark.)

861,485. TRIPLE-D. Evans Products Corporation. SN 273,880. Pub. 9–17–68. Filed 6–14–67.

861,486. QUEBRADA FOR MEN AND DESIGN. Tropical Soap Company. SN 278,751. Pub. 9–17–68. Filed 8–21–67.

861,487. CURTISOL. Curtis Noll Corporation. SN 279,813. Pub. 9–17–68. Filed 9–7–67.

Service Marks

Class 100 — Miscellaneous

861,488. SYSTEMSMANSHIP. American Chain & Cable Company, Inc. SN 266,399. Pub. 9–17–68. Filed 3–10–67.

861,489. MISCELLANEOUS DESIGN. Planned Tectonics, Inc. SN 269,345. Pub. 9–17–68. Filed 4–17–67.

861,490. ARCO AND DESIGN. Associated Reporting Companies. SN 275,605. Pub. 9–17–68. Filed 7–10–67.

861,491. AMERICAN ARBITRATION ASSOCIATION. American Arbitration Association. SN 280,681. Pub. 9–17–68. Filed 9–19–67.

861,492. DIVCON. Divcon, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 281,179. Pub. 9–17–68. Filed 9–26–67.

861,493. SN AND DESIGN. Sons of Norway. MULTIPLE CLASS (Classes 100 and 102). SN 284,523. Pub. 9–17–68. Filed 11–13–67.

861,494. GREEK LETTER PSI AND DESIGN. The Psychological Corporation. SN 285,295. Pub. 9–17–68. Filed 11–21–67.

Class 102 — Insurance and Financial

861,493. (See Class 100 for this trademark.)

861,495. DAILY CASH DURING HOSPITAL CONFINEMENT ETC. AND DESIGN. The Fund American Companies. SN 262,159. Pub. 9–17–68. Filed 1–9–67.

861,496. ARROW AND DESIGN. Arrow Insurance Co. SN 281,668. Pub. 9–17–68. Filed 10–3–67.

861,497. ACC AND DESIGN. American Credit Corporation. SN 285,708. Pub. 9–17–68. Filed 11–28–67.

Class 103 — Construction and Repair

861,492. (See Class 100 for this trademark.)

861,498. WW WORK WEAR AND DESIGN. Work Wear Corporation. SN 264,626. Pub. 9–17–68. Filed 2–13–67.

861,499. ISA AND DESIGN. Industrial Services of America, Inc. SN 284,373. Pub. 9–17–68. Filed 11–8–67.

Class 104 — Communication

861,500. A CBS AFFILIATE AND DESIGN. Columbia Broadcasting System, Inc. SN 286,599. Pub. 9–17–68. Filed 12–11–67.

Class 107 — Education and Entertainment

861,501. NICKELODEON NIGHTS. Barnard L. Sackett. SN 261,554. Pub. 9–17–68. Filed 12–13–66.

861,502. AFS AND DESIGN. American Film Studios, Inc. SN 265,683. Pub. 9–17–68. Filed 3–1–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 19 — Vehicles

861,503. Parasystems, Inc., Van Nuys, Calif. SN 270,945. Filed P.R. 5–8–67; Am. S.R. 9–4–68.

FASPAC

For Parachutes (Int. Cl. 12).
First use on or about Dec. 3, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

861,504. The Pandjiris Weldment Co., St. Louis, Mo. SN 274,765. Filed P.R. 6–26–67; Am. S.R. 8–16–68.

GOES WHERE THE WELDING IS

For Manipulator for Welding and Machining Operations (Int. Cl. 7).
First use May 26, 1967.

861,505. Eagle Food Corporation, Cincinnati, Ohio. SN 276,010. Filed P.R. 7–14–67; Am. S.R. 9–23–68.

FRY MAK'R

For Machine To Extrude Potato Mix for French Fried Potatoes (Int. Cl. 7).
First use on or about Mar. 1, 1967.

861,506. Inventors Products Company, Edina, Minn. SN 277,670. Filed P.R. 8-7-67; Am. S.R. 9-9-68.

CLEAN-A-FISH

For Filleting and Cleaning Boards (Int. Cl. 21).
First use Apr. 25, 1967.

861,507. Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. SN 304,556. Filed 8-7-68.

MAUSER

For Sewing Machines (Int. Cl. 7).
First use Dec. 18, 1961.

Class 32 — Furniture and Upholstery

861,508. The General Fireproofing Company, Youngstown, Ohio. SN 269,656. Filed P.R. 4-20-67; Am. S.R. 9-16-68.

DIVIDE-A-FILE

For Filing Cabinets (Int. Cl. 20).
First use Feb. 27, 1967.

861,509. Hurley & Company, Inc., d.b.a. Hurley & Co., Inc., Seattle, Wash. SN 278,004. Filed P.R. 8-10-67; Am. S.R. 7-11-68.

KWIK SHELVES

For Prefabricated Shelving Components—Namely, Spacers, Legs and Shelving (Int. Cl. 20).
First use Mar. 12, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

861,510. Hamlin Products, Inc., Little Rock, Ark. SN 281,887. Filed P.R. 10-5-67; Am. S.R. 9-19-68.

ELECTRIC PORTABLE KITCHEN

For Grills of the Outdoor Barbecue Type (Int. Cl. 11).
First use Feb. 1, 1967.

Class 37 — Paper and Stationery

861,511. Marcal Paper Mills, Inc., East Paterson, N.J. SN 280,805. Filed P.R. 9-20-67; Am. S.R. 8-21-68.

BELLA

For Facial Tissues (Int. Cl. 16).
First use Aug. 15, 1967.

Class 38 — Prints and Publications

861,512. Bremson Research, Inc., Kansas City, Mo. SN 280,927. Filed P.R. 9-22-67; Am. S.R. 9-20-68.

"MAIL-O-PRINT HOME"

For Photographic Prints (Int. Cl. 16).
First use Aug. 14, 1967.

861,513. The Bramlee Agency, Fairless Hills, Pa. SN 282,354. Filed P.R. 10-12-67; Am. S.R. 9-4-68.

IDEA SOURCE GUIDE

For Business Newsletter (Int. Cl. 16).
First use Feb. 1, 1967.

861,514. McGraw-Hill, Inc., New York, N.Y. SN 287,078. Filed P.R. 12-18-67; Am. S.R. 10-2-68.

MODERN NURSING HOME

For Bimonthly Magazine (Int. Cl. 16).
First use Sept. 21, 1967.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

861,515. Concord Mills, Inc., Cartersville, Ga. SN 260,728. Filed P.R. 12-14-66; Am. S.R. 9-17-68.

NAP SET

For Blankets (Int. Cl. 24).
First use November 1966.

TRADEMARK REGISTRATIONS RENEWED

70,366. JEWEL. Cl. 34 (Int. Cl. 11). 8-25-08.
71,837. "REIS UNDERWEAR" AND DESIGN. Cl. 39 (Int. Cl. 25). 12-15-08.
247,935. HONEYMOON. Cl. 28 (Int. Cl. 8). 10-9-28.
249,050. RESISTALL. Cl. 37 (Int. Cl. 16). 11-6-28.
249,621. "RED SEAL" AND LABEL DESIGN. Cl. 32 (Int. Cl. 20). 11-20-28.
250,838. "FLASHLIKE" AND DESIGN. Cl. 15 (Int. Cl. 4). 12-18-28.
250,839. FLASHLITE. Cl. 15 (Int. Cl. 4). 12-18-28.
251,571. CAMEO. Cl. 8 (Int. Cl. 34). 1-8-29.
251,824. CONCENCO. Cl. 23 (Int. Cl. 7). 1-15-29.
252,079. BREEZ-TEX. Cl. 39 (Int. Cl. 25). 1-22-29.
252,137. ECONOMET. Cl. 14 (Int. Cl. 6). 1-22-29.
252,138. QALLOY. Cl. 14 (Int. Cl. 6). 1-22-29.
252,139. GENALLOY. Cl. 14 (Int. Cl. 6). 1-22-29.
252,514. COMPAGNIE PARENTO C.P. AND DESIGN. Cl. 6 (Int. Cls. 1, 2, and 3). 2-12-29.
252,686. SUPER DUTY. Cl. 23 (Int. Cl. 8). 2-12-29.
252,888. VALLA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,021. FORSTONA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,026. LORA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,031. RAFFA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,032. RAMSA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,073. BREVA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,346. MANDA. Cl. 42 (Int. Cl. 24). 2-26-29.
253,524. XITE. Cl. 14 (Int. Cl. 6). 2-26-29.
253,920. TRONA. Cl. 42 (Int. Cl. 24). 3-12-29.

439,356. MISCELLANEOUS DESIGN. Cl. 8 (Int. Cl. 34). 6-22-48.
439,436. PRAIRIE. Cl. 39 (Int. Cl. 25). 6-29-48.
440,080. ROBE D'UN SOIR. Cl. 51 (Int. Cl. 3). 8-10-48.
440,617. TWYLEX. Cl. 42 (Int. Cl. 24). 9-14-48.
440,735. TWIN BELL AND DESIGN. Cl. 46 (Int. Cl. 29). 9-21-48.
440,826. ROCTONE. Cl. 12 (Int. Cl. 19). 9-28-48.
440,940. PARAPLEX. Cl. 16 (Int. Cl. 2). 10-12-48.
440,990. HYDRHOLAC. Cl. 16 (Int. Cl. 2). 10-12-48.
441,032. HIGHLIGHTS FOR CILDREN. Cl. 38 (Int. Cl. 16). 10-19-48.
441,116. RANGER ETC. Cl. 39 (Int. Cl. 25). 10-19-48.
441,131. KARBATE. Cl. 34 (Int. Cl. 11). 10-19-48.
441,292. MIDO MULTIFORT SUPERAUTOMATIC. Cl. 27 (Int. Cl. 14). 11-16-48.
441,311. FEDERAL DIMENSIONAL QUALITY CONTROL PRIMER. Cl. 38 (Int. Cl. 16). 11-16-48.
441,461. CHUCK-MATIC AND DESIGN. Cl. 23 (Int. Cl. 7). 11-30-48.
441,666. TILO. Cl. 12 (Int. Cl. 19). 12-21-48.
441,845. CRESTWOOD. Cl. 27 (Int. Cl. 14). 1-18-49.
441,957. FRY-D-LITE. Cl. 46 (Int. Cl. 30). 2-1-49.
441,974. HEATHCOAT AND DESIGN. Cl. 42 (Int. Cls. 25 and 26). 2-1-49.
442,227. COAT OF ARMS. Cl. 23 (Int. Cl. 8). 3-15-49.
500,514. LONBROOKE. Cl. 39 (Int. Cl. 25). 6-1-48.
501,346. DUCHESS. Cl. 28 (Int. Cl. 8). 8-3-48.
501,444. JODA. Cl. 1 (Int. Cls. 1 and 17). 8-10-48.
502,335. TUG OF WAR DESIGN ON A PAIR OF OVERALLS. Cl. 39 (Int. Cl. 25). 9-21-48.
502,457. COW (DESIGN). Cl. 6 (Int. Cls. 1 and 5). 9-28-48.
502,458. ANNULAR BAND. Cl. 52 (Int. Cl. 1). 9-28-48.
502,479. FROGS CROSSINGS SWITCHING STANDS ETC. AND DESIGN. Cl. 14 (Int. Cl. 6). 9-28-48.
502,745. ILES D'OR. Cl. 51 (Int. Cl. 3). 10-5-48.
502,817. SUPERIOR. Cl. 23 (Int. Cl. 7). 10-12-48.
503,031. GOODYEAR AND DESIGN. Cl. 6 (Int. Cls. 1 and 17). 10-19-48.
503,129. SELECTRIC-FROG. Cl. 21 (Int. Cl. 9). 10-19-48.
503,146. WEISSCO. Cl. 28 (Int. Cl. 14). 10-19-48.
503,219. CHESEBROUGH. Cl. 51 (Int. Cls. 3, 4, and 5). 10-19-48.
503,454. ORTHO. Cl. 10 (Int. Cl. 1). 10-26-48.
503,763. ALPA JONES. Cl. 39 (Int. Cl. 25). 11-9-48.
504,340. ALPENOPAKE. Cl. 37 (Int. Cl. 16). 11-30-48.
504,434. PLANTATION. Cl. 28 (Int. Cls. 8 and 14). 11-30-48.
504,525. LE PARFUM DES PARFUMS. Cl. 51 (Int. Cl. 3). 11-30-48.
504,531. "FRESH UP." Cl. 45 (Int. Cl. 32). 12-7-48.
504,567. SCHMIDT COAT OF ARMS (DESIGN). Cl. 48 (Int. Cl. 32). 12-7-48.
504,793. LLOYD. Cl. 21 (Int. Cl. 7). 12-14-48.
505,059. SEP-KO WETTING COMPOUND AND DESIGN. Cl. 6 (Int. Cl. 1). 12-21-48.
505,088. ENZYPAN. Cl. 18 (Int. Cl. 5). 12-21-48.
505,236. CORNELL C CLIPPER AND DESIGN. Cl. 35 (Int. Cl. 12). 12-28-48.
505,289. ACCUMET. Cl. 14 (Int. Cl. 6). 12-28-48.
505,404. CLARK'S. Cl. 43 (Int. Cl. 23). 1-4-49.
505,438. ENOZ. Cl. 6 (Int. Cl. 5). 1-4-49.
505,562. CENTAUR AND DESIGN. Cl. 37 (Int. Cl. 16). 1-11-49.
505,592. SECURITY CAP. Cl. 25 (Int. Cl. 6). 1-11-49.
505,655. SPECIAL NUTRIENT. Cl. 6 (Int. Cl. 1). 1-11-49.
505,744. WACONIA. Cl. 1 (Int. Cl. 31). 1-18-49.
505,806. ZEST. Cl. 52 (Int. Cl. 3). 1-18-49.
505,838. CHAP-ANS. Cl. 51 (Int. Cl. 3). 1-18-49.
506,013. FAIRCOSEAL. Cl. 13 (Int. Cl. 6). 1-25-49.
506,081. TAGATHEN. Cl. 18 (Int. Cl. 5). 1-25-49.
506,172. SPECIAL EXCAVATOR. Cl. 7 (Int. Cl. 6). 2-1-49.
506,389. DRI-GLOSS. Cl. 16 (Int. Cl. 3). 2-8-49.
506,468. WACONIA. Cl. 46 (Int. Cl. 30). 2-8-49.
506,483. CHECK SHOCK. Cl. 6 (Int. Cl. 1). 2-8-49.
506,574. EVERGREEN. Cl. 52 (Int. Cl. 3). 2-8-49.
506,643. BURTON SALTS. Cl. 6 (Int. Cl. 1). 2-15-49.
506,653. WALCO. Cl. 26 (Int. Cl. 9). 2-15-49.
506,664. F AND DESIGN. Cl. 28 (Int. Cls. 8 and 14). 2-15-49.
506,941. AIRLOX. Cl. 35 (Int. Cl. 12). 2-22-49.
507,069. INRAY. Cl. 18 (Int. Cl. 5). 2-22-49.
507,195. FILSON CLUB. Cl. 39 (Int. Cl. 25). 3-1-49.
507,361. MEEHANITE. Cl. 14 (Int. Cl. 6). 3-8-49.
507,374. PLAS TEX. Cl. 35 (Int. Cl. 7). 3-8-49.
507,513. GOLD STAR AND DESIGN. Cl. 46 (Int. Cl. 31). 3-15-49.
507,564. PRES-TO. Cl. 2 (Int. Cl. 21). 3-15-49.
507,566. BLUE BRUTE. Cl. 23 (Int. Cl. 7). 3-15-49.
507,672. DERBAC. Cl. 52 (Int. Cl. 3). 3-15-49.
507,715. HAMILUBRIC. Cl. 6 (Int. Cl. 1). 3-15-49.
507,846. BUCO. Cl. 19 (Int. Cl. 12). 3-22-49.
507,856. TROJAN. Cl. 23 (Int. Cl. 7). 3-22-49.
507,907. MARSH. Cl. 11 (Int. Cl. 16). 3-22-49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

716,093. VETCOA AND DESIGN. Cl. 23. 5-30-61.
719,083. PERMANENT. Cl. 2. 8-1-61.
721,118. DOORGRAM. Cl. 50. 9-5-61.
721,364. THE BOOT HILL ROLL-UR-OWN AND DESIGN. Cl. 39. 9-12-61.
722,234. HEAT-X-IT. Cl. 34. 10-3-61.
722,578. LO-X-IT TRI-VENT. Cl. 34. 10-10-61.
722,629. THE RUSTLER ROLL-UR-OWN AND DESIGN. Cl. 39. 10-10-61.
726,257. AEROMATIC. Cl. 34. 1-9-62.
733,704. EPSI-LINE AND DESIGN. Cl. 21. 7-3-62.

The following registrations issued Oct. 16, 1962

739,220. OAKLEAF COAL AND DESIGN. Cl. 1.
739,222. CUSH-N-SOLE. Cl. 1.
739,224. SANTA CLAUS AND DESIGN. Cl. 1.
739,227. GRIP 300. Cl. 6.
739,230. HUBBARD HALL AND TRIANGLE DESIGN. Cl. 6.
739,232. COOPERCOTE. Cl. 6.
739,237. AIR-FLOW. Cl. 6.
739,241. CERAMICA SAO CAETANO AND DESIGN. Cl. 12.
739,249. ASI WITHIN A CIRCLE. Cl. 12.
739,250. MONOTILE. Cl. 12.
739,256. COLOR GUARD. Cl. 13.
739,261. GOURMET AND DESIGN. Cl. 15.
739,267. FLAV-O-LAX. Cl. 18.
739,270. CAL-MIST. Cl. 18.
739,274. SILVER-BULLET. Cl. 18.
739,275. GOLD-BULLET. Cl. 18.
739,276. SEDAPH AND DESIGN. Cl. 18.
739,278. LUCODE. Cl. 18.
739,279. PRO-OTASYL. Cl. 18.
739,285. BLUE CREST. Cl. 19.
739,288. ASTROMAT AND DESIGN. Cl. 19.
739,289. SS. Cl. 19.
739,291. BURNS ENCLOSURES UNLIMITED AND DESIGN. Cl. 21.
739,292. EPOXYBOND. Cl. 21.
739,298. GRAMWELD. Cl. 21.
739,302. STERLING. Cl. 21.
739,304. ILLUSTRAMATIC. Cl. 21.
739,305. EMERG-O-MATIC. Cl. 21.
739,309. GROTESQUE REPRESENTATION OF A HUMAN PLAYING GOLF. Cl. 22.
739,310. TOODLE-LOO. Cl. 22.
739,316. BUBBLE BEANIE. Cl. 22.
739,317. JET-SET. Cl. 22.
739,318. X STRIKE KLEEN. Cl. 22.
739,319. TOP COP. Cl. 22.
739,326. BLISS ROCKWOOD AND DESIGN. Cl. 23.
739,333. TEAOJOY. Cl. 23.
739,334. LEMOJOY. Cl. 23.
739,335. PORT-A-POINT AND DESIGN. Cl. 23.
739,336. TEARDROP (DESIGN). Cl. 23.
739,337. STYLIZED K. Cl. 23.
739,348. DY AND DESIGN. Cl. 26.
739,353. POSISTAT. Cl. 26.
739,354. POSIFLEX. Cl. 26.
739,355. MICRO-INCH. Cl. 26.

739,359. INTERCONTINENTAL. Cl. 26.
739,360. GALLERY COLLECTION. Cl. 30.
739,363. HOLIDAY. Cl. 31.
739,364. ICE TAP AND DESIGN. Cl. 31.
739,365. DOMETIC AND DESIGN. Cl. 31.
739,367. ROLL-A-DOOR. Cl. 32.
739,368. THE JOLLY-GO-CRIB. Cl. 32.
739,371. TEENY WEENY. Cl. 34.
739,372. BALBOA. Cl. 34.
739,373. FLOATER V. Cl. 34.
739,381. DIAZOTHERM. Cl. 37.
739,388. SLENDORAMA TALL CARDS AND DESIGN. Cl. 38.
739,389. PARCHMENT ELEGANCE AND DESIGN. Cl. 38.
739,390. LIVING GEOGRAPHY. Cl. 38.
739,392. KOOKIE. Cl. 38.
739,397. LATE DATE. Cl. 38.
739,399. TERRI-DYPES. Cl. 39.
739,400. REPRESENTATION OF A JUVENILE CLOWN. Cl. 39.
739,402. 1-HOUR FASHIONS. Cl. 39.
739,411. MINDY MODES. Cl. 39.
739,420. STEEPLE TOWN. Cl. 39.
739,423. LAMINIZED. Cl. 42.
739,426. VULCO-SPONGE. Cl. 42.
739,429. DOBCO. Cl. 42.
739,430. SUPER G. Cl. 42.
739,432. PRIVILEGE. Cl. 42.
739,435. ARMSTRONG. Cl. 43.
739,436. BUTHANE. Cl. 43.
739,437. TONATRONE. Cl. 44.
739,439. STIMU-SONIC. Cl. 44.
739,444. TAPER WEIGHT. Cl. 46.
739,449. GROTESQUE REPRESENTATION OF A DINOSAUR. Cl. 46.
739,459. TASTE TAP. Cl. 46.
739,460. SPANISH GARDENS AND DESIGN. Cl. 46.
739,462. FLUORILAC. Cl. 46.
739,463. SAMARA. Cl. 46.
739,464. BORICUA. Cl. 46.
739,466. KOESTER'S TRIPLETS AND DESIGN. Cl. 46.
739,468. INDIAN GEM CHEROKEE PUNCH. Cl. 46.
739,472. EL TORERO. Cl. 46.
739,480. VF AND DESIGN. Cl. 46.
739,482. FD AND DESIGN. Cl. 46.
739,487. FAYGILS FEAST. Cl. 46.
739,490. NORTHERN PRIDE. Cl. 46.
739,492. TEASOL. Cl. 46.
739,494. CHARM. Cl. 46.
739,497. MOLLY. Cl. 48.
739,498. PIBROCH. Cl. 49.
739,499. TROPHY. Cl. 49.
739,500. SLIM JIM. Cl. 49.
739,501. SLIM FELLOW. Cl. 49.
739,511. FOAMINE. Cl. 51.
739,512. LAVENDOMEAL. Cl. 51.
739,514. COSGENIC. Cl. 51.
739,515. CHALOM. Cl. 51.
739,523. DEEP SOUTH. Cl. 51.
739,527. ELF CARTOON. Cl. 52.
739,530. JUPITER. Cl. 52.
739,532. KARAMINE. Cl. 52.
739,534. CLEAF AND DESIGN. Cl. 52.
739,537. HORIZON HOUSE. Cl. 100.
739,539. STARLITE DRIVE-IN. Cl. 100.
739,540. CARICATURE OF CHEF'S HEAD ABOVE CARICATURES OF WAITRESS AND WAITER. Cl. 101.
739,546. SIR STA-NU AND DESIGN. Cl. 103.
739,555. MOUNTED KNIGHT IN ARMOR WITHIN A GLOBE (DESIGN). Cl. 105.
739,557. SCOTT'S HI-Q. Cl. 107.
739,562. GUTTER GARD. Cl. 16.
739,563. BOAT BREATHA AND DESIGN. Cl. 19.
739,564. HI-LO. Cl. 21.
739,568. BRA-BAC. Cl. 40.
739,569. GOLDEN AGE PACKAGE (DESIGN). Cl. 45.
739,570. "PASS THE HAM" AND DESIGN. Cl. 46.
739,582. DENTISTS ABROAD. Cl. 105.
739,583. SILICONIZED. Cl. 106.

Section 18

441,755. PIPEMASTER. Cl. 8. 1–4–49.
442,342. LADY CATHERINE. Cl. 39. 3–29–49.
529,430. BIG MIKE. Cl. 46. 8–22–50.
543,434. NATIONAL REVERSEW. Cl. 23. 6–5–51.
543,435. NATIONAL ROTARY. Cl. 23. 6–5–51.
546,662. NATIONAL E. Cl. 23. 8–14–51.
744,992. INK SPOTS. Cl. 107. 2–5–63.
773,200. AMERICAN EDUCATION SERIES. Cl. 38. 7–14–64.
807,204. COMSTAT 23. Cl. 21. 4–19–66.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

31,505. AH AND DESIGN. Cl. 18. 5–3–1898. Allen & Hanburys, Limited. Glaxo-Allenburys (Canada) Limited, Weston, Ontario, Canada. Amended: In the statement, column 1, lines 18 and 19, "and below the letters and figures 'A.D. 1715;'" is deleted, and the drawing is amended to appear:



248,721. I. MILLER. Cl. 3. 10–30–28. I. Miller & Sons, Inc. Genesco Inc., Nashville, Tenn. Amended to appear:

I. MILLER

502,508. ANCHOR. Cl. 6. 9–28–48. Stauffer Chemical Company, New York, N.Y. Amended: In the statement, column 1, lines 7 and 8 "sulphate of alumina, iron sulphate, and carbon bisulphide" is deleted, and the drawing is amended to appear:

ANCHOR

627,102. FLEXOPLAST. Cl. 44. 5–15–56. Edward Taylor Ltd. Edward Taylor Limited, Monton, Manchester, England. Amended to appear:

FLEXOPLAST

712,258. SHIP AND SHORE. Cl. 51. 3–7–61. Countess Maritza Cosmetic Co., Inc., New York, N.Y. Amended: In the statement, column 2, line 1 before "cologne" *men's* is inserted, and the drawing is amended to appear:

SHIP AND SHORE

759,140. SOLATRON. Cl. 21. 10–29–63. Basic Products Corporation, Milwaukee, Wis. Corrected: In the statement, column 2, line 3, "Apr." both occurrences should be deleted and *Mar.* should be inserted.

793,291. NF AND DESIGN. Cl. 23. 7–27–65. National Forge Company, Irvine, Pa. Amended: In the statement, column 2, line 6 is deleted, and the drawing is amended to appear:



847,766. SECURITY PACIFIC NATIONAL BANK AND DESIGN. Cl. 102. 4–16–68. Security First National Bank. Security Pacific National Bank, Los Angeles, Calif. Amended: In the statement, column 2, line 5, "First" is deleted and *Pacific* is inserted, and the drawing is amended:

Make your financial partner
SECURITY PACIFIC NATIONAL BANK

849,592. ECI AND DESIGN. Cl. 100. 5–21–68. Electronic Communications, Inc., St. Petersburg, Fla. Corrected:



856,026. ASTROGLAZE. Cl. 38. 9–3–68. Commercial Decal, Inc., Mount Vernon, N.Y. Corrected: In the statement, column 2, line 2, "ceramic ware" should be deleted and *plastic wares* should be inserted.

856,353. PLASTI-KOTE. Cls. 15, 16 and 52. 9–10–68. Plasti-Kote Corp., assignee of The New England Industries Incorporated, Medina, Ohio. Corrected: In the statement, column 1, line 1, "Plastic" should be deleted and *Plasti* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 6—Chemicals and Chemical Compositions

444,220. Sept. 12, 1950. Service Industries, Philadelphia, Pa. Pub. by registrant.

STIK-GUM

For Wetting Agent Consisting of a Non-Adhesive, Dry Powdered Material Which May Me Dissolved in Water and Used for Wetting Water-Soluble Adhesive Surfaces.

Class 9—Explosives, Firearms, Equipments, and Projectiles

245,305. Aug. 7, 1928. Hercules Powder Company, Wilmington, Del. Pub. by Hercules Incorporated, Wilmington, Del.

HERCOMITE

For Dynamite (Int. Cl. 13).

Class 14—Metals and Metal Castings and Forgings

243,378. June 19, 1928. Union Miniere du Haut Katanga. Pub. by Union Miniere, Brussels, Belgium.

U.M.K.

For Electrolytic Copper of Various Forms (Int. Cl. 6).

399,685. Jan. 26, 1943. Aktiebolaget Kanthal, Hallstahammer, Sweden. Pub. by registrant.

KANTHAL

For Heat Resistant Iron and Steel Alloys.

Class 18—Medicines and Pharmaceutical Preparations

248,261. Oct. 16, 1928. The Norwich Pharmacal Company, Norwich, N.Y. Pub. by registrant.

Norwich

For Alteratives, Analgesics, Anaphrodisiacs, Anaesthetics, Anodynes, Antacids, etc. (Int. Cl. 5).

Class 22—Games, Toys, and Sporting Goods

441,445. Nov. 30, 1948. Scientific Anglers, assignor to Scientific Anglers, Inc., Midland, Mich. Pub. by Scientific Anglers, Inc., Midland, Mich.

LO-LEADER

For Composition Comprising a Silicone Resin, etc. (Int. Cl. 1).

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

244,922. July 31, 1928. Treet Safety Razor Corporation, Newark, N.J. Pub. by Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York, N.Y.

JEWEL

For Safety Razors and Safety Razor Blades (Int. Cl. 8).

440,337. Aug. 24, 1948. American Safety Razor Corporation, Brooklyn, N.Y. Pub. by Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York, N.Y.

SPORT

For Kits Containing a Safety Razor and Safety Razor Blades (Int. Cl. 8).

Class 26 — Measuring and Scientific Appliances

439,107. June 1, 1948. Graflex, Inc., Rochester, N.Y. Pub. by registrant.

Pacemaker

For Photographic Apparatus Comprising Cameras (Int. Cl. 9).

Class 38 — Prints and Publications

396,854. Aug. 4, 1942. New York Zoological Society, New York, N.Y. Pub. by registrant.

ANIMAL KINGDOM

For Periodical.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

441,591. Dec. 14, 1948. Pepperell Manufacturing Company, Boston, Mass. Pub. by West Point-Pepperell, Inc., West Point, Ga.

PEPPRON

For Fabrics in the Piece Made of Rayon (Int. Cl. 24).

Class 44 — Dental, Medical, and Surgical Appliances

71,700. Dec. 8, 1908. United Drug Company, Boston, Mass. Pub. by Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif.

Rexall

For Hot-Water Bags or Bottles and Fountain-Syringes (Int. Cls. 10 and 21).

Class 50 — Merchandise Not Otherwise Classified

248,227. Oct. 16, 1928. Animal Trap Company of America, Lititz, Pa. Pub. by Woodstream Corporation, Lititz, Pa.

ONEIDA VICTOR

For Animal Traps (Int. Cl. 6).

INDEX OF REGISTRANTS

DECEMBER 3, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A.C. Development Co., Inc., New York, N.Y. 739,368, canc. Cl. 32.
A.Q. Chicken House : *See*—
A.Q. Poultry Farms, Inc.
A.Q. Poultry Farms, Inc., d.b.a. A.Q. Chicken House, Springdale, Ark. 861,448, pub. 9–17–68. Cl. 46.
Acme Highway Products Corp, Buffalo, N.Y. 861,249, pub. 9–17–68. Cl. 12.
Adco, Inc., Sedalia, Mo. 505,806, ren. 12–3–68. Cl. 52.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 739,353–4, canc. Cl. 26.
Agway, Inc., Dewitt, N.Y. 861,457, pub. 9–17–68. Cl. 46.
Aktiebolaget Electrolux, Stockholm Sweden. 739,365, canc. Cl. 31.
Aktiebolaget Kanthal, Hallstahammer, Sweden. 399,685, 12(c) pub. 12–3–68. Cl. 14.
Alifano, Thomas J., d.b.a. Tommy Wilde, Brooklyn, N.Y. 861,365, pub. 9–17–68. Cl. 36.
Allen & Hanburys, Ltd., to Glaxo-Allenburys (Canada) Ltd., Weston, Ontario, Canada. 31,505. Am. 7(d). Cl. 18.
Alligator Co., Inc., The, St. Louis, Mo. 861,425, pub. 9–17–68. Cl. 39.
American Arbitration Association, New York, N.Y. 861,491, pub. 9–17–68. Cl. 100.
American Beverage Corp., from Golden Age Beverage Corp., Youngstown, Ohio. 739,569, canc. Cl. 45.
American Can Co., New York, N.Y. 861,219, pub. 9–17–68. Cl. 2.
American Chain & Cable Co., Inc., New York, N.Y. 861,488, pub. 9–17–68. Cl. 100.
American Credit Corp., Charlotte, N.C. 861,497, pub. 9–17–68. Cl. 102.
American Cyanamid Co., Wayne, N.J. 506,081, ren. 12–3–68. Cl. 18.
American Cyanamid Co., Wayne, N.J. 861,275–6, pub. 9–17–68. Cl. 18.
American Cyanamid Co., Wayne, N.J. 861,284, pub. 9–17–68. Cl. 18.
American Doll & Toy Corp., Brooklyn, N.Y. 739,310, canc. Cl. 22.
American Education Series : *See*—
American Education Series, Inc.
American Education Series, Inc., Independence, from F. F. Dinsmore II, d.b.a. American Education Series, Monmouth, Oreg. 773,200, canc. Cl. 38.
American Film Studios, Inc., Hamden, Conn. 861,502, pub. 9–17–68. Cl. 107.
American Home Products Corp., New York, N.Y. 861,296, pub. 9–17–68. Cl. 18.
American Home Products Corp., New York, N.Y. 861,458, pub. 9–17–68. Cl. 46.
American Optical Corp. : *See*—
Emons, Ernest E.
American Safety Equipment Corp. of Michigan : *See*—
Buegeleisen, Joseph, Co.
American Safety Razor Co. : *See*—
Treet Safety Razor Corp.
American Safety Razor Corp., Brooklyn, by Philip Morris Inc., d.b.a. American Safety Razor Co., New York, N.Y. 440,337, 12(c) pub. 12–3–68. Cl. 23.
American Sports & Hygiene Accessories, Inc., Jersey City, N.J. 739,227, canc. Cl. 6.
Ammerman Co., Inc., Stillwater, Minn. 861,363, pub. 9–17–68. Cl. 34.
Andomia Products Ltd., Bradford, England. 739,492, canc. Cl. 46.
Animal Trap Co. of America, by Woodstream Corp., Lititz, Pa. 248,227, 12(c) pub. 12–3–68. Cl. 50.
Architectural Systems, Inc., Grand Rapids, Mich. 739,249, canc. Cl. 12.
Armstrong Knitting Mills : *See*—
Bernat, Emile, & Sons Co.
Arrow Insurance Co., Bloomington, Minn. 861,496, pub. 9–17–68. Cl. 102.
Artex Hobby Products, Inc., Lima, Ohio. 861,266, pub. 9–17–68. Cl. 16.
Associated Reporting Companies, Detroit, Mich. 861,490, pub. 9–17–68. Cl. 100.
Atlantic Asphalt & Asbestos, Inc. : *See*—
Tilo Roofing Co., Inc.
Atlas Chemical Industries, Inc., from Atlas Powder Co., Wilmington, Del. 739,449, canc. Cl. 46.
Atlas Powder Co. : *See*—
Atlas Chemical Industries, Inc.
Automated Products, Inc., Englewood, Colo. 739,333–4, canc. Cl. 23.
Auvil, Roy M., d.b.a. Roy M. Auvil Co., Belmont, Wash. 440,735, ren. 12–3–68. Cl. 46.
Auvil, Roy M., Co. : *See*—
Auvil, Roy M.
Avoset Co., Oakland, Calif. 739,444, canc. Cl. 46.
B.E.D., Inc., Rayne, La. 739,472, canc. Cl. 46.
Barkley Corp., Chicago, Ill. 861,371, pub. 9–17–68. Cl. 37.
Barkley Corp., Chicago, Ill. 861,373, pub. 9–17–68. Cl. 37.
Basic Products Corp., Milwaukee, Wis. 759,140, cor. Cl. 21.
Baxter Laboratories, Inc. : *See*—
Wallerstein Co., Inc.
Baylis Bros. Co., The, Cincinnati, Ohio. 861,403, pub. 9–17–68. Cl. 39.
Beach Products, Inc., Tampa, Fla. 861,287–8, pub. 9–17–68. Cl. 18.
Beauty Counselors, Inc., Grosse Pointe, Mich. 739,530, canc. Cl. 52.
Becton, Dickinson & Co., East Rutherford, N.J. 861,361, pub. 9–17–68. Cl. 31.
Benard & Honnorat, d.b.a. Molinard, to Societe Anonyme Benard & Honnorat, Grasse, France. 502,745, ren. 12–3–68. Cl. 51.
Benard & Honnorat, d.b.a. Molinard, to Societe Anonyme Benard & Honnorat, Grasse, France. 504,525, ren. 12–3–68. Cl. 51.
Bentex Pharmaceutical Co., Houston, Tex. 861,286, pub. 9–17–68. Cl. 18.
Bernat, Emile, & Sons Co., Jamaica Plain, from Armstrong Knitting Mills, West Roxbury, Mass. 739,435, canc. Cl. 43.
Birdair Structures, Inc., Buffalo, N.Y. 861,246, pub. 12–20–66. Cl. 12.
Bly, Clarence E., d.b.a. United Products Co., Portland, Oreg. 739,274–5, canc. Cl. 18.
Bollar, August C., d.b.a. Tailored Baby of California, Van Nuys, Calif. 739,399, canc. Cl. 39.
Bon Voyage International Travel Service, Inc., d.b.a. Dentists Abroad, San Francisco, Calif. 739,582, canc. Cl. 105.
Bonell Creations, Inc., Valley Stream, N.Y. 861,356, pub. 9–17–68. Cl. 28.
Borneo Sumatra Trading Co., Inc., Rutherford, N.J. 861,250, pub. 9–17–68. Cl. 12.
Bowman, Inc., Canton, Ohio. 861,272, pub. 9–17–68. Cl. 18.
Bramlee Agency, The, Fairless Hills, Pa. 861,513. Cl. 38.
Brawley-Mendota Packers Inc., d.b.a. Jobb Packing Co., Brawley, Calif. 861,461–2, pub. 9–17–68. Cl. 46.
Bremson Research, Inc., Kansas City, Mo. 861,512. Cl. 38.
Brindley, R. P., & Co. Ltd., Leeds, England. 739,498, canc. Cl. 49.
Brinn's China & Glassware Co., Pittsburgh, Pa. 861,359, pub. 9–17–68. Cl. 30.
Bristol-Myers Co., New York, N.Y. 861,270–1, pub. 1–2–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 861,277, pub. 9–17–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 861,280–2, pub. 9–17–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 861,285, pub. 9–17–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 861,291–3, pub. 9–17–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 861,295, pub. 9–17–68. Cl. 18.
Brobst Co., Lincoln, Nebr. 861,346, pub. 9–17–68. Cl. 23.
Brook Hill Farms : *See*—
Brook Hill Farms, Inc.
Brook Hill Farms, Inc., d.b.a. Brook Hill Farms, Chicago, Ill. 739,462, canc. Cl. 46.
Brooks, E. J., Co., Newark, N.J. 505,592, ren. 12–3–68. Cl. 25.
Brooks Mfg. Co., Cincinnati, Ohio. 861,223, pub. 9–17–68. Multiple Class (Classes 5 and 26).
Brooksbank, J., from J. Brooksbank Ltd., Skipton, Yorkshire, England. 861,331, pub. 9–17–68. Cl. 23.
Brooksbank, J., Ltd. : *See*—
Brooksbank, J.
Brown Co., New York, N.Y. 861,380, pub. 9–17–68. Cl. 37.
Brown, L. L., Paper Co., Adams, Mass. 249,050, ren. 12–3–68. Cl. 37.
Brunswick-MacGregor Inc., from MacGregor Sport Products Inc., Cincinnati, Ohio. 739,309, canc. Cl. 22.
Buegeleisen, Joseph, Co., to American Safety Equipment Corp. of Michigan, Detroit, Mich. 507,846, ren. 12–3–68. Cl. 19.
Buffalo Weaving & Belting Co., Buffalo, N.Y. 507,374, ren. 12–3–68. Cl. 35.
Burger King Restaurants, Inc., Miami, Fla. 861,438, pub. 9–17–68. Cl. 46.
Burich & Capalia, San Pedro, Calif. 861,324, pub. 9–17–68. Cl. 22.
Burns, James F., Co. : *See*—
Fisher, Robert G.
Cadaco-Ellis, Inc., Chicago, Ill. 739,319, canc. Cl. 22.
Calhoun, Juliabeth, d.b.a. Juliabeth's Palm Springs, Desert Dew, Palm Springs, Calif. 861,478, pub. 9–17–68. Cl. 51.
California Spray-Chemical Corp., Wilmington, Del., and Richmond, Calif., to Chevron Chemical Co., San Francisco, Calif. 503,454, ren. 12–3–68. Cl. 10.
Cambria-Clover Mercantile Co., Inc., Philadelphia, Pa. 861,406, pub. 9–17–68. Cl. 39.
Cambridge Instrument Co., Inc., Ossining, N.Y. 861,353, pub. 9–17–68. Cl. 26.
Canadian Schenley Distilleries, Ltd., Montreal, Quebec, Canada. 861,469, pub. 9–17–68. Cl. 49.
Castle & Cooke, Inc., Honolulu, Hawaii. 861,444, pub. 9–17–68. Cl. 46.

Ceramica Sao Caetano S.A., Sao Paulo, Brazil. 739,241, canc. Cl. 12.
Cereal Soaps Co., Inc., East Northport, N.Y. 507,672, ren. 12–3–68. Cl. 52.
Chap Stick Co.: *See*—
Morton Mfg. Corp.
Chapel Art Studios, St. Louis, Mo. 739,388–9, canc. Cl. 38.
Chesebrough Mfg. Co. Consolidated, to Chesebrough-Pond's Inc., New York, N.Y. 503,219, ren. 12–3–68. Cl. 51.
Chesebrough-Pond's Inc.: *See*—
Chesebrough Mfg. Co. Consolidated.
Chevron Chemical Co.: *See*—
California Spray-Chemical Corp.
Chicopee Mfg. Corp., New Brunswick, N.J. 739,430, canc. Cl. 42.
Chicopee Mfg. Corp., d.b.a. Refined Products Co., New Brunswick, N.J. 739,532, canc. Cl. 52.
Church & Dwight Co., Inc., New York, N.Y. 502,457–8, ren. 12–3–68. Cl. 6.
Ciba Ltd., Basel, Switzerland. 861,278, pub. 9–17–68. Cl. 18.
Clark Thread Co., The, Wilmington, Del., and Clarkdale, Ga., to Coats & Clark Inc., New York, N.Y. 504,404, ren. 12–3–68. Cl. 43.
Claudel, Paris, France. 861,435, 9–17–68. Cl. 46.
Clements Mfg. Co., Chicago, Ill. 739,302, canc. Cl. 21.
Cleveland File Co., The, Cleveland, Ohio, to Wallace-Murray Corp., New York, N.Y. 252,686, ren. 12–3–68. Cl. 23.
Cleveland Frog & Crossing Co., to Cleveland Frog & Crossing Co., Cleveland, Ohio. 502,479, ren. 12–3–68. Cl. 14.
Clinton Metal Fabricators, Inc., d.b.a. Raven Homes, Clinton, S.C. 861,297, pub. 9–26–67. Cl. 19.
Cluett, Peabody & Co., Inc., New York, N.Y., from Jimmy Roche, Los Angeles, Calif. 861,325, pub. 2–6–68. Cl. 22.
Coat Craft Co., Inc., Philadelphia, Pa. 739,411, canc. Cl. 39.
Coats & Clark Inc.: *See*—
Clark Thread Co., The.
Cobon Plastics Corp., Newark, N.J. 861,207, pub. 9–17–68. Cl. 1.
Colgate-Palmolive Co., New York, N.Y. 739,527, canc. Cl. 52.
Columbia Broadcasting System, Inc., New York, N.Y. 861,500, pub. 9–17–68. Cl. 104.
Commercial Decal, Inc., Mount Vernon, N.Y. 856,026, cor. Cl. 38.
Compagnie Parento, Inc., Croton-On-Hudson, N.Y. 252,514, ren. 12–3–68. Cl. 6.
Concel Inc., New York, N.Y. 861,382, pub. 9–17–68. Cl. 37.
Concord Mills, Inc., Cartersville, Ga. 861,515. Cl. 42.
Container Corp. of America, Chicago, Ill. 861,217, pub. 6–11–68. Cl. 2.
Continental Can Co., Inc., New York, N.Y. 861,218, pub. 9–17–68. Cl. 2.
Continental Oil Co., Ponca City, Okla. 861,241, pub. 9–17–68. Cl. 10.
Contractors Machinery Co., Inc., Batavia, N.Y., to Eaton Yale & Towne Inc., Cleveland, Ohio. 507,856, ren. 12–3–68. Cl. 23.
Conway, Richard W., Washington, D.C. 739,540, canc. Cl. 101.
Cook, Michael B., and Gail Cook, Bow, N.H. 861,388, pub. 9–17–68. Cl. 38.
Cooper, McDougall & Robertson, Ltd., Berkhamsted, England. 739,232, canc. Cl. 6.
Copeland, Aubrey D., d.b.a. The Stone-Buhr Milling Co., Seattle, Wash. 861,443, pub. 9–17–68. Cl. 46.
Coral Records, Inc., New York, N.Y. 861,364, pub. 9–17–68. Cl. 36.
Corey, Edward S., d.b.a. Fuzzy's Hobo Cafe and Drive-In, Alexandria, La. 861,442, pub. 9–3–68. Cl. 46.
Corning Glass Works, Corning, N.Y. 861,362, pub. 9–17–68. Cl. 33.
Cosgenic Laboratories: *See*—
Nethercutt Laboratories.
Countess Maritza Cosmetic Co., Inc., New York, N.Y. 712,258. Am. 7(d). Cl. 51.
Craft, Griffin, and Hollis Craft, d.b.a. Dixie Syrup Co., Sheffield, Ala. 861,455, pub. 9–17–68. Cl. 46.
Crown Rubber Co., Fremont, Ohio. 739,426, canc. Cl. 42.
Crucible Steel Co. of America, New York, N.Y., to Crucible Steel Corp., Pittsburgh, Pa. 505,289, ren. 12–3–68. Cl. 14.
Crucible Steel Corp.: *See*—
Crucible Steel Co. of America.
Crump, F. M., & Co., Memphis, Tenn. 739,316, canc. Cl. 22.
Crysto-Products Co., Inc., Auburn, N.Y. 861,330, pub. 9–17–68. Cl. 23.
Curtis 1000 Inc., St. Paul, Minn. 861,378, pub. 9–17–68. Cl. 37.
DBA Products Co., Inc., Deerfield, Ill. 861,323, pub. 9–17–68. Cl. 22.
Davis, Joseph, Plastics Co., Arlington, to Joseph Davis Plastics Co., Kearny, N.J. 501,444, ren. 12–3–68. Cl. 1.
Dayan, Raymond L., New York, N.Y. 861,398, pub. 9–17–68. Cl. 39.
Dazey Products Co., Kansas City, Mo. 861,339, pub. 9–17–68. Cl. 23.
Deering Milliken, Inc., New York, N.Y. 861,431, pub. 9–17–68. Cl. 42.
Deister Concentrator Co., Inc., The: *See*—
Deister Concentrator Co., The.
Deister Concentrator Co., The, to The Deister Concentrator Co., Inc., Fort Wayne, Ind. 251,824, ren. 12–3–68. Cl. 23.
De Jong, Hamilton C., d.b.a. Safety Bros., South Pasadena, Calif. 861,255, pub. 9–17–68. Cl. 13.
Dell Publishing Co., Inc., New York, N.Y. 739,392, canc. Cl. 38.
De Luxe Reading Corp.: *See*—
De Luxe Topper Corp.
De Luxe Topper Corp., from De Luxe Reading Corp., Elizabeth, N.J. 861,322, pub. 6–13–67. Cl. 22.
Dentists Abroad: *See*—
Bon Voyage International Travel Service, Inc.
Detroit Stove Works, Detroit, Mich., to Welbilt Corp., Maspeth, N.Y. 70,366, ren. 12–3–68. Cl. 34.
Dew, Ernest H., d.b.a. Dew's Enterprises, Fayetteville, N.C. 861,449, pub. 7–16–68. Cl. 46.
Dew's Enterprises: *See*—
Dew, Ernest H.
Diamond Crystal Salt Co., St. Clair, Mich. 861,233, pub. 9–17–68. Cl. 6.
Dill Mfg. Co., The, to Eaton Yale & Towne Inc., Cleveland, Ohio. 507,564, ren. 12–3–68. Cl. 2.
Dinsmore, Frank F., II: *See*—
American Education Series, Inc.
Divcon, Inc., Houston, Tex. 861,492, pub. 9–17–68. Multiple Class (Classes 100 and 103).
Diversey Corp., The, Chicago, Ill., to Irwin-Willert Co., St. Louis, Mo. 505,438, ren. 12–3–68. Cl. 6.
Dixie Controller, Inc., Birmingham, Ala. 739,305, canc. Cl. 21.
Dixie Syrup Co.: *See*—
Griffin Craft and Hollis Craft.
Dobco Ltee, Dobco Ltd., from J. P. Quenneville, St. Jerome, Quebec, Canada. 739,429, canc. Cl. 42.
Dolphin Seafoods, Inc., Cleveland, Ohio. 861,446, pub. 9–17–68. Cl. 46.
Dominique France, Inc., New York, N.Y. 861,409, pub. 9–17–68. Cl. 39.
Donnelley, Reuben H., Corp., The, New York, N.Y. 861,386, pub. 9–17–68. Cl. 38.
Doorgram Mfg. Co.: *See*—
Sri Deva Ram Sukul.
Dow Chemical Co., The, Midland, Mich. 861,230, pub. 9–17–68. Multiple Class (Classes 6 and 26).
Eagle Food Corp., Cincinnati, Ohio. 861,505. Cl. 23.
Eastern Isles, Inc., The, New York, N.Y. 861,417, pub. 9–17–68. Cl. 39.
Eaton Yale & Towne Inc.: *See*—
Contractors Machinery Co., Inc.
Dill Mfg. Co., The.
Edpco, Inc., New York, N.Y. 861,374, pub. 9–17–68. Cl. 37.
Electronic Communications, Inc., St. Petersburg, Fla. 849,592, cor. Cl. 100.
Elisabeth Ungar-Skin Care, Inc., New York, N.Y. 739,437, canc. Cl. 44.
Emerald Furs Ltd., Newark, N.J. 861,205, pub. 9–20–66. Cl. 1.
Emons, Ernest E., Akron, Ohio, to American Optical Corp., Southbridge, Mass. 248,381, ren. 12–3–68. Cl. 26.
Empress Chinchilla Breeders Cooperative, Inc., New York, N.Y. 861,408, pub. 9–17–68. Cl. 39.
Endicott Johnson Corp., Endicott, N.Y. 441,116, ren. 12–3–68. Cl. 39.
Essex Wire Corp., Fort Wayne, Ind. 739,292, canc. Cl. 21.
Evangeline Pepper & Food Products, Inc.: *See*—
International Minerals & Chemical Corp.
Evans Products Corp., Little Rock, Ark. 861,485, pub. 9–17–68. Cl. 52.
FS Services, Inc., Bloomington, Ill. 861,283, pub. 9–17–68. Multiple Class (Classes 18 and 46).
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 861,372, pub. 9–17–68. Cl. 37.
Fairbanks Co., The, Binghamton, N.Y. 506,013, ren. 12–3–68. Cl. 13.
Fairmount Chemical Co., Inc., Newark, N.J. 861,229, pub. 9–17–68. Cl. 6.
Falulah Paper Co., Fitchburg, Mass. 861,381, pub. 9–17–68. Cl. 37.
Fargo Mfg. Co., Inc., Poughkeepsie, N.Y. 861,314, pub. 9–17–68. Cl. 21.
Federal Products Corp., Providence, R.I. 441,311, ren. 12–3–68. Cl. 38.
Fieldcrest Mills, Inc., Spray, N.C. 739,432, canc. Cl. 42.
Finley, Herbert, d.b.a. Jenea, Rosemead, Calif. 739,523, canc. Cl. 51.
Fisher Radio Corp., Long Island City, N.Y. 861,306, pub. 12–27–66. Cl. 21.
Fisher, Robert G., d.b.a. James F. Burns Co., Philadelphia, Pa. 739,291, canc. Cl. 21.
Fisher Silversmith, Inc., The, Newark, N.J. 506,664, ren. 12–3–68. Cl. 28.
Fishman, Ervin H., Yeadon, Pa. 861,404, pub. 9–17–68. Cl. 39.
Fleet Street Ltd., New York, N.Y. 861,413, pub. 9–17–68. Cl. 39.
Fletcher Paper Co., Alpena, Mich. 504,340, ren. 12–3–68. Cl. 37.
Floro Inc., Vineland, N.J. 739,487, canc. Cl. 46.
Fonda Mfg. Corp., Fonda, N.Y. 861,430, pub. 9–17–68. Cl. 42.
Ford Motor Co., Dearborn, Mich. 739,285, canc. Cl. 19.
Ford Motor Co., Dearborn, Mich. 861,206, pub. 9–17–68. Cl. 1.
Forman, Bess, New York, N.Y. 861,427, pub. 9–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 252,888, ren. 12–3–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,021, ren. 12–3–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,026, ren. 12–3–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,031–2, ren. 12–3–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,073, ren. 12–3–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,346, ren. 12–3–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,920, ren. 12–3–68. Cl. 42.
Fox River Paper Corp., Appleton, Wis. 861,375, pub. 9–17–68. Cl. 37.

Frame, Robert H., d.b.a. Gallery Arts, Dayton, Ohio. 739,397, canc. Cl. 38.
Frank, S. M., & Co., Inc.: *See*—
Kaywoodie Co.
Fun Frills, Inc., New York, N.Y. 861,400, pub. 9–17–68. Cl. 39.
Fund American Companies, The, San Franscisco, Calif. 861,495, pub. 9–17–68. Cl. 102.
Fuqua, Charles G., Buffalo, N.Y. 744,992, canc. Cl. 107.
Fuzzy's Hobo Cafe and Drive-In: *See*—
Corey, Edward S.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 861,245, pub. 9–17–68. Cl. 11.
Gallery Arts: *See*—
Frame, Robert H.
Gamewell Co., The, Newton, Mass. 739,326, canc. Cl. 23.
Garcia, V & G Co., Bridgeport, Conn. 739,464, canc. Cl. 46.
Gard Pressure Foods Corp., Northfield, Ill. 739,459, canc. Cl. 46.
Gem Canning Co., Emmett, Idaho. 739 468, canc. Cl. 46.
General Alloys Co., Boston, Mass. 252,137–9, ren. 12–3–68. Cl. 14.
General Alloys Co., Boston, Mass. 253,524, ren. 12–3–68. Cl. 14.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Fireproofing Co., The, Youngstown, Ohio. 861,508. Cl. 32.
Gill Drilling Equipment Co., Inc.: *See*—
Gill Rock Drill Co., Inc.
Gill Rock Drill Co., Inc., Lebanon, Pa., from Gill Drilling Equipment Co., Inc., North Branford, Conn. 861,340, pub. 5–7–68. Cl. 23.
Gillette Co., The: *See*—
Gillette Safety Razor Co.
Gillette Safety Razor Co., to The Gillette Co., Boston, Mass. 442,227, ren. 12–3–68. Cl. 23.
Glacier Packing Co., Inc., Sanger, Calif. 861,437, pub. 9–17–68. Cl. 46.
Globe Rubber Products Corp., Philadelphia, Pa. 739,288. canc. Cl. 19.
Golden Age Beverage Corp.: *See*—
American Beverage Corp.
Goldsmith, Louis, Inc., Philadelphia, Pa. 503,763, ren. 12–3–68. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 739,436, canc. Cl. 43.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 503,031, ren. 12–3–68. Cl. 6.
Gorham Corp.: *See*—
Textron, Inc.
Graflex, Inc., Rochester, N.Y. 439,107, 12(c) pub. 12–3–68. Cl. 26.
Graniteville Co., Graniteville, S.C., from McCampbell & Co., Inc., New York, N.Y. 739,423, canc. Cl. 42.
Gray Co., Inc., Minneapolis, Minn. 861,336, pub. 9–17–68. Cl. 23.
H & F Mfg. Co., Inc., Little Rock, Ark. 861,344, pub. 9–17–68. Cl. 23.
Haas-Miller Corp., to Harry Miller Corp., Philadelphia, Pa. 507,715, ren. 12–3–68. Cl. 6.
Ham Inc., Smithfield, Va. 739,570, canc. Cl. 46.
Hamlin Products, Inc., Little Rock, Ark. 861,510. Cl. 34.
Harcourt, Brace & World, Inc., New York, N.Y. 861,393, pub. 9–17–68. Cl. 38.
Hardee Mfg. Co., Inc., Loris, S.C. 861,338, pub. 9–17–68. Cl. 23.
Harrison, Jon, d.b.a. Slickslide Co., Dearborn Heights, Mich. 861,262, pub. 9–17–68. Cl. 15.
Harwick Standard Chemical Co., Akron, Ohio. 861,263, pub. 9–17–68. Cl. 15.
Hayakawa Denki Kogyo Kabushiki Kaisha, d.b.a. Hayakawa Electric Co., Ltd., Aben-ku, Osaka, Japan. 861,352, pub. 9–17–68. Cl. 26.
Hayakawa Electric Co., Ltd.: *See*—
Hayakawa Denki Kogyo Kabushiki Kaisha.
Hays Corp., The Michigan City, Ind. 861,354, pub. 9–17–68. Cl. 26.
Heathcoat, John, & Co., to John Heathcoat & Co., Inc., New York, N.Y., and Tiverton, Devon, England, to John Heathcoat & Co., Inc., New York, N.Y. 440,617, ren. 12–3–68. Cl. 42.
Heathcoat, John, & Co., to John Heathcoat & Co., Inc., New York, N.Y., and Tiverton, Devon, England, to John Heathcoat & Co., Inc., New York, N.Y. 441,974, ren. 12–3–68. Cl. 42.
Heathcoat, John, & Co., Inc.: *See*—
Heathcoat, John, & Co.
Helper, Morton J., d.b.a. Slalom Sailboats, Cleveland, Ohio. 739,289, canc. Cl. 19.
Hercules Inc.: *See*—
Hercules Powder Co.
Hercules Inc., Wilmington, Del. 861,238–40, pub. 9–17–68. Cl. 9.
Hercules Powder Co., by Hercules Inc., Wilmington, Del. 245,305, 12(c) pub. 12–3–68. Cl. 9.
Hessische Hoelzerwerke Heinrich Schlerf, G.m.b.H., Odenwald, Germany. 861,358, pub. 9–17–68. Multiple Class (Classes 29 and 50).
Hewlett-Packard Co., Palo Alto, Calif. 739,348, canc. Cl. 26.
Hibbs, Harry R., d.b.a. Harry R. Hibbs Co., Louisville, Ky. 507,195, ren. 12–3–68. Cl. 39.
Hibbs, Harry R., Co.: *See*—
Hibbs, Harry R.
Highlights for Children, Inc., Columbus, Ohio. 441,032, ren. 12–3–68. Cl. 38.
Hi-Life Packing Co., Chicago, Ill. 861,451–4, pub. 9–17–68. Cl. 46.
Hofmeister, Harold E., and Frank Hofmeister, Chinchilla, Pa. 861,394, pub. 9–17–68. Cl. 38.
Holland Industries, Inc., Buffalo, N.Y. 739,371, canc. Cl. 34.
Honorbilt Products, Inc.: *See*—
McMahen, Wm. H., Co.
Horizon House, Inc., Philadelphia, Pa. 739,537, canc. Cl. 100.
Hoyt Heater Co., Orange, Calif. 739,372, canc. Cl. 34.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 739,230, canc. Cl. 6.
Hudnut, Richard, Morris Plains, N.J. 861,482–4, pub. 9–17–68. Cl. 51.
Humble Oil & Refining Co., to Humble Oil & Refining Co., Houston, Tex. 250,838–9, ren. 12–3–68. Cl. 15.
Huntsman, Inc., The, Chetopa, Kans. 861,304, pub. 9–17–68. Cl. 19.
Hurley & Co., Inc., d.b.a. Hurley & Co., Inc., Seattle, Wash. 861,509. Cl. 32.
Hy-Grade Sportswear Co., Inc., New York, N.Y. 861,416, pub. 9–17–68. Cl. 39.
Imperial Chemical Industries Ltd., Millbank, London, England. 861,226–7, pub. 9–17–68. Cl. 6.
Indian Head Inc., New York, N.Y. 861,428, pub. 9–17–68. Cl. 42.
Industrial Services of America, Inc., Louisville, Ky. 861,499, pub. 9–17–68. Cl. 103.
Insurance Publications, Inc., West Des Moines, Iowa. 861,395, pub. 9–17–68. Cl. 38.
Intercontinental Marketing Corp., Long Island City, N.Y. 739,359, canc. Cl. 26.
International Minerals & Chemical Corp., Skokie, Ill., from Evangeline Pepper & Food Products, Inc., St. Martinville, La. 861,441, pub. 9–17–68. Cl. 46.
International Shoe Co., St. Louis, Mo. 739,222, canc. Cl. 1.
Inventors Products Co., Edina, Minn. 861,506. Cl. 23.
Ipco Hospital Supply Corp., New York, N.Y. 861,213, pub. 9–17–68. Cl. 2.
Irwin-Willert Co.: *See*—
Diversey Corp., The.
Italian Swiss Colony: *See*—
United Vintners, Inc.
Ithaco, Inc., Ithaca, N.Y. 861,320, pub. 9–17–68. Cl. 21.
Jandy Products: *See*—
Pansini, Andrew L.
Jenea: *See*—
Finley, Herbert.
Jobb Packing Co.: *See*—
Brawley-Mendota Packers Inc.
JoDon, Robert E., Scottsdale, Ariz. 739,364, canc. Cl. 31.
Johnson & Johnson, New Brunswick, N.J. 861,357, pub. 3–26–68. Cl. 29.
Juliabeth's Palm Springs: *See*—
Calhoun, Juliabeth.
Kabushiki Kaisha Hattori Tokeiten, Ginza, Chuo-ku, Tokyo, Japan. 861,355, pub. 9–17–68. Cl. 27.
Kachler, Robert S., Buena Park, Calif. 861,389, pub. 9–17–68. Cl. 38.
Kalflex Inc., Woodside, N.Y. 861,247, pub. 10–24–67. Cl. 12.
Katz, Franz J., New York, N.Y. 739,390, canc. Cl. 38.
Kaywoodie Co., West New York, N.J., to S. M. Frank & Co., Inc., New York, N.Y. 439,356, ren. 12–3–68. Cl. 8.
Kewanee Machinery & Conveyor Co., Kewanee, Ill. 861,341, pub. 9–17–68. Cl. 23.
Key Pharmaceuticals, Inc., Miami, Fla. 739,278, canc. Cl. 18.
Kimberly-Clark Corp., Neenah, Wis. 739,336–7, canc. Cl. 23.
Klein, Schanzlin & Becker Aktiengesellschaft, Frankenthal/Pfalz, Germany. 861,252, pub. 9–17–68. Multiple Class (Classes 13 and 23).
Koester, E. H., Bakery Co., The, Baltimore, Md. 739,466, canc. Cl. 46.
Kops Bros., Inc., New York, N.Y. 252,079, ren. 12–3–68. Cl. 39.
Kresge, S. S., Co., Detroit, Mich. 861,242, pub. 9–17–68. Cl. 10.
Kresge, S. S., Co., Detroit, Mich. 861,316–17, pub. 9–17–68. Cl. 21.
L & W Land Co.: *See*—
Sakata Ranches, Inc.
Laboratory for Electronics, Inc., Boston, Mass. 733,704, canc. Cl. 21.
Lacriolla Food Products Co.: *See*—
Maldonado, Avelino.
Lafayette Radio Electronics Corp., Syosset, N.Y. 807,204, canc. Cl. 21.
Lamb-Weston, Inc., Weston, Oreg. 739,480, canc. Cl. 46.
Lamb-Weston, Inc., Weston, Oreg. 739,482, canc. Cl. 46.
Landers Machine Co., Fort Worth, Tex. 861,335, pub. 9–17–68. Cl. 23.
Lane Ltd., New York, N.Y. 861,237, pub. 9–17–68. Cl. 8.
Larson Industries, Inc., St. Paul, Minn. 861,303, pub. 9–17–68. Cl. 19.
Leaf, Manuel, New York, N.Y. 861,476, pub. 9–17–68. Cl. 51.
Leffingwell Chemical Co., Brea, Calif. 861,228, pub. 9–17–68. Cl. 6.
Lewis-Rosemarie, d.b.a. Vogarell Products Co., to Vogarell Products, Inc., Los Angeles, Calif. 507,069, ren. 12–3–68. Cl. 18.
Lilly, Eli, & Co., Indianapolis, Ind. 861,289, pub. 9–17–68. Cl. 18.
Lite-Weight Products, Inc., Kansas City, Kans. 861,243–4, pub. 9–17–68. Cl. 10.
Litton Industries, Inc., Beverly Hills, Calif. 861,384, pub. 9–17–68. Cl. 38.
Lohofer, Richard, Westphalia, Germany. 739,497, canc. Cl. 48.
Looart Press, Inc., Colorado Springs, Colo. 861,396, pub. 9–17–68. Cl. 38.

Lorenz Publishing Co., Dayton, Ohio. 861,385, pub. 9–17–68. Cl. 38.
Lowell Bearing Co., Chicago, Ill. 861,329, pub. 10–11–66. Cl. 23.
MBM Co., Mason City, from The Vernon Co., Newton, Iowa. 861,383, pub. 9–17–68. Cl. 38.
MacGregor Sport Products Inc.: *See*— Brunswick-MacGregor Inc.
Machinery Lubricants, Inc., Boston, Mass. 861,260, pub. 9–17–68. Cl. 15.
Maldonado, Avelino, d.b.a. Lacriolla Food Products Co., Chicago, Ill. 861,447, pub. 9–17–68. Cl. 46.
Manhattan Shirt Co., The, New York, N.Y. 861,420, pub. 9–17–68. Cl. 39.
Marcal Paper Mills, Inc., East Paterson, N.J. 861,511. Cl. 37.
March Corp., assor. to Imperial Litemaster Distributors, Inc., Chicago, Ill. 441,755, canc. Cl. 8.
Mariday Casuals, Inc., New York, N.Y. 739,420, canc. Cl. 39.
Mar-Sal Mfg. Co., Inc., Brooklyn, N.Y. 861,415, pub. 9–17–68. Cl. 39.
Marsh Stencil Machine Co., Belleville, Ill. 507,907, ren. 12–3–68. Cl. 11.
Martinoni, E., Co., San Francisco, Calif. 739,499, canc. Cl. 49.
Materials Research Corp., Orangeburg, N.Y. 861,258, pub. 9–17–68. Cl. 14.
Mathes, Curtis, Sales Co., Dallas, Tex. 861,313, pub. 9–17–68. Multiple Class (Classes 21 and 36).
May Department Stores Co., The: *See*— Meier & Frank Co., Inc.
McCampbell & Co., Inc.: *See*— Graniteville Co.
McGraw-Hill, Inc., New York, N.Y. 861,514. Cl. 38.
McMahen, Wm. H., Co., to Honorbilt Products, Inc., Philadelphia, Pa. 249,621, ren. 12–3–68. Cl. 32.
Measuring & Scientific Equipment Ltd., London, England. 861,351, pub. 10–19–65. Cl. 26.
Medco Electronics Co., Inc., Tulsa, Okla. 739,439, canc. Cl. 44.
Med-Dent Publishing Co., San Francisco, Calif. 861,379, pub. 9–17–68. Cl. 37.
Meehanite Metal Corp., Chattanooga, Tenn., and New Rochelle, N.Y., to Meehanite Metal Corp., White Plains, N.Y. 507,361, ren. 12–3–68. Cl. 14.
Meier & Frank Co., Inc., Portland, Oreg., to The May Department Stores Co., St. Louis, Mo. 500,514, ren. 12–3–68. Cl. 39.
Menley & James Laboratories, Ltd., Philadelphia, Pa. 861,269, pub. 5–11–65. Cl. 18.
Mercer Plastics Co., Inc., Eustis, Fla. 861,475, pub. 9–17–68. Cl. 50.
Merck & Co., Inc., Rahway, N.J. 861,273–4, pub. 9–17–68. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 861,279, pub. 9–17–68. Cl. 18.
Metropolitan Wire Goods Corp., Wilkes-Barre, Pa. 861,253, pub. 9–17–68. Multiple Class (Classes 13 and 32).
Millar, E. B., & Co., Chicago, Ill. 739,494, canc. Cl. 46.
Miller Cardboard Corp., New York, N.Y. 861,367, pub. 9–17–68. Cl. 37.
Miller Harry, Corp.: *See*— Haas-Miller Corp.
Miller, I., & Sons, Inc., to Genesco Inc., Nashville, Tenn. 248,721, Am. 7(d). Cl. 3.
Miller's Pre-Pared Potato Co., Inc., Blue Island, Ill. 861,440, pub. 9–17–68. Cl. 46.
Minami, H. Y., and Sons: *See*— Minami, Yataro.
Minwax Co., Inc., Delawanna, N.J. 506,389, ren. 12–3–68. Cl. 16.
Mr. Boston Distiller Inc., Boston, Mass. 739,500–1, canc. Cl. 49.
Modern Metal Products Co., Greensboro, N.C. 739,367, canc. Cl. 32.
Modern Water Equipment Co., Freeport, Ill. 739,363, canc. Cl. 31.
Molinard: *See*— Benard & Honnorat.
Monarch Soap & Chemical Co., to Sep-Ko Chemicals, Inc., Minneapolis, Minn. 505,059, ren. 12–3–68. Cl. 6.
Monarch Tile Mfg. Co., Inc.: *See*— Monarch Tile Mfg., Inc.
Monarch Tile Mfg., Inc., d.b.a. Monarch Tile Mfg. Co., Inc., and Monarch Tile Mfg., Inc., San Angelo, Tex. 739,250, canc. Cl. 12.
Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. 861,507. Cl. 23.
Montrose Supply & Equipment Co.: *See*— Montrose Oil & Belting Co. Inc.
Morey Machinery Co., Inc., Astoria, N.Y. 861,345, pub. 9–17–68. Cl. 23.
Morris, Philip, Inc.: *See*— Treet Safety Razor Corp.
Morrison Melon Co., Inc., Vero Beach, Fla. 861,456, pub. 9–17–68. Cl. 46.
Morton Mfg. Corp., d.b.a. Chap Stick Co., Lynchburg, to Chap Stick Co., Richmond, Va. 505,838, ren. 12–3–68. Cl. 51.
Mount Vernon Watch Co., Inc., New York, N.Y. 441,845, ren. 12–3–68. Cl. 27.
Murphy Laboratories, Inc., Drexel Hill, Pa. 506,574, ren. 12–3–68. Cl. 52.
Mutual Suspender & Belt Co., Yonkers, N.Y. 439,436, ren. 12–3–68. Cl. 39.
Nashua Corp., Nashua, N.H. 739,381, canc. Cl. 37.
National Acme Co., The, Cleveland, Ohio. 441,461, ren. 12–3–68. Cl. 23.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 441,131, ren. 12–3–68. Cl. 34.
National Forge Co., Irvine, Pa. 793,291. Am. 7(d). Cl. 23.
National Independent Distributor Associates, Inc., Minneapolis, Minn. 861,305, pub. 9–17–68. Cl. 19.
National Paper Corp. of Pennsylvania, Ransom, Pa., and New York, N.Y., to Swanee Paper Corp., New York, N.Y. 505,562, ren. 12–3–68. Cl. 37.
National Sewing Machine Co., Belvidere, Ill. 543,434–5, canc. Cl. 23.
National Sewing Machine Co., Belvidere, Ill. 546,662, canc. Cl. 23.
Nethercutt Laboratories, d.b.a. Cosgenic Laboratories, Hollywood, Calif. 739,514, canc. Cl. 51.
New York Zoological Society, New York, N.Y. 396,854, 12(c) pub. 12–3–68. Cl. 38.
Nibco Inc., Elkhart, Ind. 739,250, canc. Cl. 13.
Nichols & Co., Inc., Boston, Mass. 861,209, pub. 9–17–68. Cl. 1.
Nichols & Co., Inc., Boston, Mass. 861,211, pub. 9–17–68. Cl. 1.
Niemeijer, Theodorus, N.V., d.b.a. Theodorus Niemeyer N.V., Groningen, Netherlands. 861,268, pub. 9–17–68. Cl. 17.
Noll, Curtis Corp., Cleveland, Ohio. 861,487, pub. 9–17–68. Cl. 52.
Noone, Frank, Shoe Co., Inc., Rockland, Mass. 861,410, pub. 9–17–68. Cl. 39.
Norgine Laboratories, Inc., New York, N.Y. 505,088, ren. 12–3–68. Cl. 18.
Norval, Jacques, Paris, France. 739,515, canc. Cl. 51.
Norwich Pharmacal Co., The, Norwich, N.Y. 248,261, 12(c) pub. 12–3–68. Cl. 18.
Octagon Ventilator Co., Chicago, Ill. 722,234, canc. Cl. 34.
Octagon Ventilator Co., Chicago, Ill. 722,578, canc. Cl. 34.
Octagon Ventilator Co., Chicago, Ill. 726,257, canc. Cl. 34.
Ohio Brass Co., The, Mansfield, Ohio. 503,129, ren. 12–3–68. Cl. 21.
Okonite Co., The, Passaic, N.J. 861,308, pub. 9–17–68. Cl. 21.
Old Boone Distillery Co., Louisville, Ky. 861,470, pub. 9–17–68. Cl. 49.
Omark Industries, Inc., Portland, Oreg. 739,298, canc. Cl. 21.
Oneida Community, Ltd., to Oneida Ltd., Oneida, N.Y. 247,935, ren. 12–3–68. Cl. 28.
Oneida Ltd.: *See*— Oneida Community, Ltd.
Oneida Ltd., Oneida, N.Y. 501,346, ren. 12–3–68. Cl. 28.
Oneida Ltd., Oneida, N.Y. 504,434, ren. 12–3–68 Cl. 28.
Onondaga Pottery Co., Syracuse, N.Y. 739,360, canc. Cl. 30.
Orrell, R. W. and May, Cardinal, Va. 861,391, pub. 9–17–68. Cl. 38.
Orth, Ph., Co., Milwaukee, Wis. 441,957, ren. 12–3–68. Cl. 46.
Oster, John, Mfg. Co., Milwaukee, Wis. 861,481, pub. 9–17–68. Cl. 51.
Owen Laboratories Inc., Dallas, Tex. 861,479, pub. 9–17–68. Cl. 51.
P & G Mfg. Co.: *See*— Space Research & Development Corp.
Pandjiris Weldment Co., The, St. Louis, Mo. 861,504. Cl. 23.
Pansini, Andrew L., d.b.a. Jandy Products, San Rafael, Calif. 861,334, pub. 9–17–68. Cl. 23.
Pappagallo, Inc., New York, N.Y. 861,221, pub. 9–17–68. Cl. 4.
Parachem Corp., Newark, N.J. 739,534, canc. Cl. 52.
Parasystems, Inc., Van Nuys, Calif. 861 503. Cl. 19.
Parfums Marcel Rochas, Inc., New York, N.Y. 861,480, pub. 9–17–68. Cl. 51.
Park Electrochemical Corp., Flushing, N.Y. 861,473, pub. 9–17–68. Cl. 50.
Pep Boys, Manny, Moe & Jack, The, Philadelphia, Pa. 505,236, ren. 12–3–68. Cl. 35.
Pepperell Mfg. Co., Boston, Mass., by West Point-Pepperell, Inc., West Point, Ga. 441,591, 12(c) pub. 12–3–68. Cl. 42.
Percos, Inc.: *See*— Societe Commerciale d'Application et de Representation de la Parfumerie.
Permanent Tank Bottom Co.: *See*— Smith, Talbot A.
Perma-A-Stand Co.: *See*— Schoen John R.
Personal Home Products, Inc., Hicksville, N.Y. 739,267. canc. Cl. 18.
Phoenix Vegetable Distributors, Phoenix, Ariz. 861,463, pub. 9–17–68. Cl. 46.
Planned Tectonics, Inc., New York, N.Y. 861,489, pub. 9–17–68. Cl. 100.
Plastics, Inc., from Plastics, Inc., St. Paul, Minn. 861,216, pub. 9–3–68. Cl. 2.
Plasti-Kote Corp., assignee of The New England Industries Inc., Medina, Ohio. 856,353, cor. Multiple Class (Classes 15, 16, and 52).
Plymouth Wholesale Corp., New York, N.Y. 861,399, pub. 9–17–68. Cl. 39.
Polson Rubber Co., The, Garrettsville, Ohio. 506,941, ren. 12–3–68. Cl. 35.
Polymer Corp., The, Reading, Pa. 861,210, pub. 9–17–68. Cl. 1.
Pratt & Lambert Inc., Buffalo, N.Y. 861,265, pub. 9–17–68. Cl. 16.
Prieto, Benito Villamarin, Seville, Spain. 861,434, pub. 9–17–68. Cl. 46.
Progonasyl Co., Inc., The, Tulsa, Okla. 739,279, canc. Cl. 18.
Psychological Corp., The, New York, N.Y. 861,494, pub. 9–17–68. Cl. 100.

Puig, Antonio, S.A., Barcelona, Spain. 861,477, pub. 9–17–68. Cl. 51.
Puritan Fashions Corp., New York, N.Y. 861,418, pub. 9–17–68. Cl. 39.
Quaker Oats Co., The, Chicago, Ill. 739,490, canc. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 861,459, pub. 9–17–68. Cl. 46.
Quality Furs-Manos & Block, Inc., New York, N.Y. 861,423–4, pub. 9–17–68. Cl. 39.
Quenneville, J. P.: *See*— Dobco Ltee, Dobco Ltd.
Raven Homes: *See*— Clinton Metal Fabricators, Inc.
Ravens-Metal Products, Inc., Parkersburg, W. Va. 861,298, pub. 9–26–67. Cl. 19.
Raybestos-Manhattan, Inc., Passaic, N.J. 861,326–8, pub. 9–17–68. Cl. 22.
Refined Products Co.: *See*— Chicopee Mfg. Corp.
Reis, Robert, & Co., New York, N.Y. 71,837, ren. 12–3–68. Cl. 39.
Resinous Products & Chemical Co., The, assor. to Rohm & Haas, to Rohm and Haas Co., Philadelphia, Pa. 440,940, ren. 12–3–68. Cl. 16.
Rexall Drug & Chemical Co.: *See*— United Drug Co.
Reynolds Metals Co., Richmond, Va. 861,315, pub. 9–17–68. Cl. 21.
Rialto Food Supply, Inc., Baltimore, Md. 861,450, pub. 9–17–68. Cl. 46.
Robertson, H. H., Co., Pittsburgh, Pa. 861,251, pub. 9–17–68. Cl. 12.
Robins, A. H., Co., Inc., Richmond, Va. 861,290, pub. 9–17–68. Cl. 18.
Roche, Jimmy: *See*— Cluett, Peabody & Co., Inc.
Rofra Products, Morton Grove, Ill. 861,299, pub. 9–17–68. Cl. 19.
Rohm and Haas Co.: *See*— Resinous Products & Chemical Co., The.
Rohm and Haas Co., Philadelphia, Pa. 440,990, ren. 12–3–68. Cl. 16.
Rohm & Haas Co., Philadelphia, Pa. 861,222, pub. 9–17–68. Cl. 5.
Rohm & Haas Co., Philadelphia, Pa. 861,267, pub. 9–17–68. Cl. 16.
Roll-A-Long Inc., South El Monte, Calif. 861,301, pub. 9–17–68. Cl. 19.
Ross Mfg. Co., The, Montgomery, Pa. 861,311, pub. 9–17–68. Cl. 21.
Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n, Reedley Calif. 861,466–7, pub. 9–17–68. Cl. 46.
Ruth, Kay, Dress Co., Inc., Jackson, and McComb, Miss. 442,342, canc. Cl. 39.
Ruud Mfg. Co., Kalamazoo, Mich. 739,373, canc. Cl. 34.
Sackett, Barnard L., Philadelphia, Pa. 861,501, pub. 9–17–68. Cl. 107.
Safeguard Business Systems Corp., Lansdale, Pa. 861,369, pub. 9–17–68. Cl. 37.
Safety Brothers: *See*— DeJong, Hamilton C.
Sakata Ranches, Inc., d.b.a. L & W Land Co., Watsonville, Calif. 861,464, pub. 9–17–68. Cl. 46.
Salinas Valley Vegetable Exchange, Salinas, Calif. 507,513, ren. 12–3–68. Cl. 46.
Sanders, Stephen J., Inc., Jackson, Miss. 739,555, canc. Cl. 105.
Sandoz, Inc., Hanover, N.J. 861,231, pub. 9–17–68. Cl. 6.
Sands Point Mfg. Co. Inc., Great Neck, N.Y. 861,257, pub. 9–17–68. Cl. 13.
Santa Claus Christmas Tree Farms, Peoria, Ill. 739,224, canc. Cl. 1.
Sanerman Bros., Inc., Bellwood, Ill. 506,172, ren. 12–3–68. Cl. 7.
Scam Instrument Corp., The, Skokie, Ill. 861,307, pub. 9–17–68. Multiple Class (Classes 21 and 26).
Schaeren, Mido G., & Co. S.A.: *See*— Societe Anonyme Mido.
Schluderberg-Kurdle Co., Inc., Baltimore, Md. 861,436, pub. 5–28–68. Cl. 46.
Schmidt, C., & Sons, Inc., Philadelphia, Pa. 504,567, ren. 12–3–68. Cl. 48.
Schoen, John R., d.b.a. Perma-A-Stand Co., Oakford, Pa. 861,474, pub. 9–17–68. Cl. 50.
Schultz, Louis W., River Forest, Ill. 739,335, canc. Cl. 23.
Scientific Anglers, to Scientific Anglers, Inc., by Scientific Anglers, Inc., Midland, Mich. 441,445, 12(c) pub. 12–3–68. Cl. 22.
Scientific Anglers, Inc.: *See*— Scientific Anglers.
Scott Paper Co., Philadelphia, Pa. 739,557, canc. Cl. 107.
Screw Machine Products Co., Denver, Colo. 861,256, pub. 9–17–68. Cl. 13.
Scripto, Inc., Atlanta, Ga. 861,368, pub. 9–17–68. Cl. 37.
Seaboard Seed Co., Bristol, Ill. 861,208, pub. 9–17–68. Cl. 1.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 861,471, pub. 9–17–68. Cl. 49.
Security First National Bank, to Security Pacific National Bank, Los Angeles, Calif. 847,766. Am. 7(d). Cl. 102.
Sedaph Societe d'Applications Pharmaceutiques, Paris, France. 739,276, canc. Cl. 18.
Sep-Ko Chemicals, Inc.: *See*— Monarch Soap & Chemical Co.
Service Industries, Philadelphia, Pa. 444,220, 12(c) pub. 12–3–68. Cl. 6.
Seven-Up Co., The, St. Louis, Mo. 504,531, ren. 12–3–68. Cl. 45.
Sexauer, J. A., Mfg. Co., Inc., White Plains, N.Y. 861,261, pub. 9–17–68. Cl. 15.
Shamrock Coal Co, Knoxville, Tenn. 739,220, canc. Cl. 1.
Shenango Ceramics, Inc., New Castle, Pa. 861,360, pub. 9–17–68. Cl. 30.
Shieldalloy Corp., Newfield, N.J. 861,212, pub. 9–17–68. Multiple Class (Classes 1 and 14).
Siliconized Fur Processing Co., New York, N.Y. 739,583, canc. Cl. 106.
Simco Co., Inc., The, Lansdale, Pa. 861,309, pub. 9–17–68. Cl. 21.
Simon-Day Ltd.: *See*— Superior Separator Co.
Slalom Sailboats: *See*— Helper, Morton J.
Slater Electric Inc., from Slater Electric & Mfg. Co., Inc., Glen Cove, N.Y. 739,564, canc. Cl. 21.
Slater Electric & Mfg. Co., Inc.: *See*— Slater Electric Inc.
Slickslide Co.: *See*— Harrison, Jon.
Smith, McLellan, Washington, D.C. 861,387, pub. 9–17–68. Cl. 38.
Smith, Talbot A., d.b.a. Permanent Tank Bottom Co., Baltimore, Md. 719,083, canc. Cl. 2.
Societe Anonyme Benard & Honnorat: *See*— Benard & Honnorat.
Societe Anonyme Mido, to Mido Watch Co. of America, Inc., to Mido G. Schaeren & Co. S.A., Bienne, Switzerland. 441,292, ren. 12–3–68, Cl. 27.
Societe Commerciale d'Application et de Representation de la Parfumerie, Paris, France, to Percos, Inc., New York, N.Y. 440,080, ren. 12–3–68, Cl. 51.
Solar Light Mfg. Co., Melrose Park, Ill. 861,318, pub. 9–17–68. Cl. 21.
Sons of Norway, Minneapolis, Minn. 861,493, pub. 9–17–68. Multiple Class (Classes 100 and 102).
Southern Wire Mesh Co., Memphis, Tenn. 739,237, canc. Cl. 6.
Space Research & Development Corp., d.b.a. P & G Mfg. Co., Portland, Oreg. 861,300, pub. 9–17–68. Multiple Class (Classes 19 and 39).
Spalding Knitting Mills, Inc., Griffin, Ga. 861,407, pub. 9–17–68. Cl. 39.
Spanish Gardens: *See*— Spanish Gardens, Inc.
Spanish Gardens, Inc., d.b.a. Spanish Gardens, Kansas City, Kans. 739,460, canc. Cl. 46.
Specialized Coatings, Inc., Passaic, N.J. 739,562, canc. Cl. 16.
Sperry Rand Corp., New York, N.Y. 861,347–50, pub. 9–17–68. Cl. 23.
Sperry Rand Corp., New York, N.Y. 861,376, pub. 9–17–68. Cl. 37.
Springfield Leather Products Co., The, Springfield, Ohio. 251,571, ren. 12–3–68, Cl. 8.
Sprouse-Reitz Co., Inc., Portland, Oreg. 861,411, pub. 9–17–68. Cl. 39.
Sri Deva Ram Sukul, d.b.a. Doorgram Mfg. Co., New York, N.Y. 721,118, canc. Cl. 50.
Staley, A. E., Mfg. Co., Decatur, Ill. 505,655, ren. 12–3–68. Cl. 6.
Standard Elektrik Lorenz Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany. 739,304, canc. Cl. 21.
Standard Fire Alarm & Signal Inc., Jenkintown, Pa. 861,310, pub. 9–17–68. Cl. 21.
Standard Spray & Chemical Co., Lakeland, Fla. 861,235, pub. 9–17–68. Cl. 6.
Sta-Nu Corp., Chicago, Ill. 739,546, canc. Cl. 103.
Star Office Supply Co., Inc., New York, N.Y. 861,377, pub. 9–17–68. Cl. 37.
Starlite Root Beer Co., Coldwater, Mich. 739,539, canc. Cl. 100.
Stauffer Chemical Co., New York, N.Y. 502,508. Am. 7(d). Cl. 6.
Steiner, Emri H., New York, N.Y. 739,563, canc. Cl. 19.
Stellad Products, Inc., Indianapolis, Ind. 861,234, pub. 9–17–68. Cl. 6.
Stevens, J. P., & Co., Inc.: *See*— Forstmann & Huffmann Co.
Stimac, Michael J., South Haven, Mich. 529,430, canc. Cl. 46.
Stone-Buhr Milling Co., The: *See*— Copeland, Aubrey D.
Strawbridge & Clothier, Philadelphia, Pa. 861,414, pub. 9–17–68. Cl. 39.
Strike-King Corp., El Segundo, Calif. 739,317–18, canc. Cl. 22.
Submarine Research Laboratories, Inc., Everett, Mass. 861,333, pub. 9–17–68. Cl. 23.
Sunline, Inc., St. Louis, Mo. 861,433, pub. 9–17–68. Cl. 45.
Superior Safety Shoe Co., Bedford, Ohio. 861,397, pub. 9–17–68. Cl. 39.
Superior Separator Co., Hopkins, Minn., to Simon-Day Ltd., Winnipeg, Canada. 502,817, ren. 12–3–68. Cl. 23.
Svensson, Ake, executor of the estate of Erik Nassils, Stockholm, Sweden. 861,236, pub. 9–17–68. Cl. 8.
Swanee Paper Corp.: *See*— National Paper Corp. of Pennsylvania.
Sweet-Orr & Co., Inc., New York, N.Y. 502,335, ren. 12–3–68. Cl. 39.
Synfibrit G.m.b.H., Glarus, Switzerland. 861,248, pub. 9–17–68. Cl. 12.
T.F.H. Publications, Inc., Jersey City, N.J. 861,472, pub. 9–17–68. Cl. 50.
Tailored Baby of California: *See*— Bollar, August C.

Tailored Woman, Inc., The, New York, N.Y. 861,405, pub. 9–17–68. Cl. 39.
Tandberg of America, Inc., Pelham, N.Y. 861,319, pub. 9–17–68. Cl. 21.
Target Stores, Inc., Minneapolis, Minn. 861,321, pub. 9–17–68. Cl. 21.
Taylor, Edward, Ltd., to Edward Taylor Ltd., Monton, Manchester, England. 627,102. Am. 7(d). Cl. 44.
Taylor Publishing Co., Dallas, Tex. 861,390, pub. 9–17–68. Cl. 38.
Texas Harvest Hat Co., Laredo, Tex. 721,364, canc. Cl. 39.
Texas Harvest Hat Co., Laredo, Tex. 722,629, canc. Cl. 39.
Textron, Inc., from Gorham Corp., Providence, R.I. 861,342, pub. 9–17–68. Cl. 23.
Tilo Co., Inc.: *See*—
Tilo Roofing Co., Inc.
Tilo Roofing Co., Inc., to Atlantic Asphalt & Asbestos, Inc., Stratford, Conn. 440,826, ren. 12–3–68. Cl. 12.
Tilo Roofing Co., Inc., to Tilo Co., Inc., Stratford, Conn. 441,666, ren. 12–3–68. Cl. 12.
Toby, Inc., Thiensville, Wis. 739,400, canc. Cl. 39.
Transcient Protection Systems, Inc., d.b.a. Transtector Systems, Alhambra, Calif. 861,312, pub. 9–17–68. Cl. 21.
Transtector Systems: *See*—
Transcient Protection Systems, Inc.
Treet Safety Razor Corp., Newark, N.J., by Philip Morris Inc., d.b.a. American Safety Razor Co., New York, N.Y. 244,922. 12(c) pub. 12–3–68. Cl. 23.
Tropical Soap Co., Monroe, Mich. 861,486, pub. 9–17–68. Cl. 52.
Union Associates, Inc., Fitchburg, Mass. 861,337, pub. 9–17–68. Cl. 23.
Union Carbide Corp.: *See*—
National Carbon Co., Inc.
Union Miniere: *See*—
Union Miniere Du Haut Katanga.
Union Miniere Du Haut Katanga, by Union Miniere, Brussels, Belgium. 243,378. 12(c) pub. 12–3–68. Cl. 14.
Uniroyal, Inc., New York, N.Y. 861,220, pub. 9–17–68. Multiple Class (Classes 4 and 52).
Uniroyal, Inc., New York, N.Y. 861,232, pub. 9–17–68. Cl. 6.
Unistrut Corp., Wayne, Mich. 861,392, pub. 9–17–68. Cl. 38.
United Aircraft Corp., East Hartford, Conn. 861,432, pub. 9–17–68. Cl. 44.
United Drug Co., Boston, Mass., by Rexall Drug & Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 71,700, 12(c) pub. 12–3–68. Cl. 44.
United Products Co.: *See*—
Bly, Clarence D.
United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. 861,468, pub. 9–17–68. Cl. 47.
U.S. Truck Body Co., Inc., Long Island City, N.Y. 861,302, pub. 9–17–68. Cl. 19.
Universal Candles, Inc., Los Angeles, Calif. 739,261, canc. Cl. 15.
Universal Mfg. Co., Hudson, Iowa. 861,332, pub. 9–17–68. Cl. 23.
Universal Marion Corp., Chester, Pa. 861,259, pub. 9–17–68. Cl. 14.
Upjohn Co., The, Kalamazoo, Mich. 861,294, pub. 9–17–68. Cl. 18.
Valspar Corp., The, Rockford, Ill. 861,264, pub. 8–29–67. Cl. 16.
Van Den Bergh en Jurgens, N.V., Rotterdam, Netherlands. 861,460, pub. 9–17–68. Cl. 46.
Variety Supply Co., Clara City, Minn. 861,422, pub. 9–17–68. Cl. 39.
Veneziano, Sarah E., Kensington, Conn. 739,463, canc. Cl. 46.
Venue, Ben, Laboratories, Inc., Bedford, Ohio. 739,270, canc. Cl. 18.
Vernon Co., The: *See*—
MBM Co.
Vernon Tool Co. of Arizona, Phoenix, Ariz. 716,093, canc. Cl. 23.
Vistron Corp., Cleveland, Ohio. 861,254, pub. 9–17–68. Cl. 13.
Vogarell Products Co.: *See*—
Lewis, Rosemarie.
Vogarell Products, Inc.: *See*—
Lewis, Rosemarie.
Volk Bros. Co., Dallas, Tex. 861 401–2, pub. 9–17–68. Cl. 39.
Vornado, Inc., Garfield, N.J. 861,370, pub. 9–17–68. Cl. 37.
Waconia Sorghum Co., to Waconia Sorghum Co., Cedar Rapids, Iowa. 505,744, ren. 12–3–68. Cl. 1.
Waconia Sorghum Co., to Waconia Sorghum Co., Cedar Rapids, Iowa. 506,468, ren. 12–3–68. Cl. 46.
Waldes Kohinoor, Inc., Long Island City, N.Y. 739,568, canc. Cl. 40.
Wallace-Murray Corp.: *See*—
Cleveland File Co., The.
Wallerstein Co., Inc., New York, N.Y., to Baxter Laboratories, Inc., Morton Grove, Ill. 506,643, ren. 12–3–68. Cl. 6.
Walman Optical Co., The, Minneapolis, Minn. 506,653, ren. 12–3–68. Cl. 26.
Ware Engineering Inc., Redwood City, Calif. 739,355, canc. Cl. 26.
Weber, Arnold J., New York, N.Y. 739,402, canc. Cl. 39.
Weiss, Albert, & Co., to Albert Weiss & Co., Inc., New York, N.Y. 503,146, ren. 12–3–68. Cl. 28.
Weiss, Albert, & Co., Inc.: *See*—
Weiss, Albert, & Co.
Welbilt Corp.: *See*—
Detroit Stove Works.
Weldon, Inc., New York, N.Y. 861,421, pub. 9–17–68. Cl. 39.
West Point-Pepperell, Inc.: *See*—
Pepperell Mfg. Co.
Westwood Textile Mfg., Inc., Southbridge, Mass. 861,429, pub. 9–17–68. Cl. 42.
Wilde, Tommy: *See*—
Alifano, Thomas J.
Winchell Donut House, Inc., South El Monte, Calif. 861,214–15, pub. 9–17–68. Cl. 2.
Winchell Donut House, Inc., South El Monte, Calif. 861,439, pub. 9–17–68. Cl. 46.
Windsor-Lloyd Products, Inc., Philadelphia, Pa. 504,793, ren. 12–3–68. Cl. 21.
Windsor-Lloyd Products, Inc., Philadelphia, Pa. 506,483, ren. 12–3–68. Cl. 6.
Wometco Blue Circle, Inc., Knoxville, Tenn. 861,445, pub. 9–17–68. Cl. 46.
Woodstream Corp.: *See*—
Animal Trap Co. of America.
Woolrich Woolen Mills, Woolrich, Pa. 861,412, pub. 9–17–68. Cl. 39.
Work Wear Corp., Cleveland, Ohio. 861,498, pub. 9–17–68. Cl. 103.
Worthington Corp.: *See*—
Worthington Pump & Machinery Corp.
Worthington Pump & Machinery Corp., to Worthington Corp., Harrison, N.J. 507,566, ren. 12–3–68. Cl. 23.
Wrap-On Co., Inc., Chicago, Ill. 861,224–5, pub. 9–17–68. Cl. 6.
Writon Mfg. Co., Inc., Leeds, Ala. 861,343, pub. 9–17–68. Cl. 23.
YM Produce Co.: *See*—
Minami, Yataro.
Yardley & Co. Ltd., London, England. 739,511–12, canc. Cl. 51.
Minami, Yataro, d.b.a. H. Y. Minami and Sons, and YM Produce Co., Santa Maria, Calif. 861,465, pub. 9–17–68. Cl. 46.
Yoshichu Co., Ltd., Kyoto, Japan. 861,426, pub. 9–17–68. Cl. 42.
Zayre Corp., Natick, Mass. 861,419, pub. 9–17–68. Cl. 39.
Zellerbach Paper Co., San Francisco, Calif. 861,366, pub. 9–17–68. Cl. 37.

U.S. GOVERNMENT PRINTING OFFICE: 0—1968

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 10, 1968 Volume 857 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1968

Examiner affirmed	142
Examiner affirmed in part	18
Examiner reversed	50
Total	210

Disclosure Document Program

Request for Comments

The Patent Office proposes to accept and preserve for a limited period "Disclosure Documents" as evidence of conception of an invention as to the features disclosed therein. A Disclosure Document may be any paper which discloses an invention and is signed by the inventor and is forwarded to the Patent Office by either the inventor or the assignee. It is not a patent application, nor will its receipt date in the Patent Office become the effective filing date of any later-filed application. However, like patent applications, these documents will be kept in confidence by the Patent Office.

Although there are no restrictions as to its content and claims are unnecessary, the benefits afforded by the Disclosure Document will depend directly upon the adequacy of its disclosure. Therefore the description should include the manner and process of making and using the invention in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same. Inclusion of the best mode contemplated by the inventor of carrying out the invention is also recommended. When the nature of the invention admits, a drawing or sketch should be furnished. The matter of utility should be considered, particularly in chemical inventions.

A Disclosure Document will be destroyed two years after its receipt date unless it is referred to in a paper of record in a related patent application within said two-year period. In a new patent application, the Disclosure Document may be referred to in the letter of transmittal. Disclosure Documents, if accepted, will not be returned for any reason. Unless it is desired to obtain the benefit of its receipt date, a Disclosure Document need not be referred to in the file of the patent application.

The Disclosure Document must be limited to written matter or drawings on paper or other thin flexible material having dimensions of 8 to 8½ by 10 to 13 inches. Each page should be numbered and have permanent indicia sufficiently dark to allow copying by ordinary reproducing equipment.

In addition, each Disclosure Document, when submitted, must include a fee of ten dollars, a stamped, self-addressed envelope and a separate paper, in duplicate, signed by the inventor stating that he is the inventor and requesting that the enclosed material be received for processing under the Disclosure Document Program. The papers will be stamped by the Office with an identifying number and receipt date, and the duplicate request returned in the self-addressed envelope.

The request may take the following form:

> The undersigned, being the inventor of the disclosed invention, requests that the enclosed papers be accepted under the Disclosure Document Program, and that they be preserved for a period of two years.

All persons who desire to present their views, objections, recommendations or suggestions in connection with the proposed program are invited to do so by forwarding the same to the Commissioner of Patents, Washington, D.C., 20231, on or before December 31st, 1968. No hearing will be scheduled.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 33 F.R. 17370, Nov. 23, 1968

New Applications Received During September 1968

Patents	7274
Designs	443
Plant Patents	11
Reissues	23
Total	7751

Issue—December 10, 1968

Patents	1250	No. 3,414,906 to No.	3,416,155, incl.
Designs	61	No. 212,871 to No.	212,931, incl.
Reissues	5	No. 26,500 to No.	26,504, incl.
Total	1316		

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 11, 1968

PATENT EXAMINING OPERATIONS AND GROUPS • Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-05-66	1-27-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-17-66	•6-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-02-66	2-24-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	•3-01-66	7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-13-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-19-66	4-06-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-13-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	•12-07-65	•11-01-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	1-26-66	9-26-63
PHYSICS, GROUP 260—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-16-66	4-21-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	2-14-68	4-18-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-07-67	10-08-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	1-03-67	2-18-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	12-12-66	11-02-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-01-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-09-67	4-16-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	•7-21-66	•5-31-63

Total number of pending applications (excluding Designs)	186,678
Total number of Design applications pending	2,727

Expiration of patents: The patents within the range of numbers indicated below expire during December 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,576,909 to 2,580,378, inclusive
Plant Patents	Numbers 1,049 to 1,058, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ADOLF SICKBERT

No. 7975. Decided May 23, 1968

[55 CCPA—; 395 F.2d 798; 157 USPQ 632]

1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS—PROCESS FOR PRODUCTION OF STEEL.

"We do not think that the interpretation of the teachings of those references or their application to the appealed claims by the Board and Examiner was erroneous. In view of the specific teachings of the Yensen patent and its general disclosure that carbon and oxygen may be removed from steel by vacuum treatment, this reference appears to meet every condition imposed by claims 1 through 3, as stated by the Examiner, except for the specific amount of carbon present in the initial melt of steel. This claimed limitation adds nothing which would support a conclusion of unobviousness, since the teachings of Ziegler in the same field would make it obvious to one of ordinary skill in this art to adjust the carbon content to appellant's claimed range."

2. SAME—SAME—SAME—35 U.S.C. 103.

"Appellant does not specifically argue the rejection of claims 4, 6 and 10 in his brief. Thus, appellant's arguments center upon what each individual reference teaches and suggest that no one specific reference teaches the overall invention claimed. The argument may not be sustained in light of our decision in *In re Reynaud*, 51 CCPA 1310, 331 F.2d 625, 141 USPQ 515 (1964). Moreover, each of the references bears evidence of the scope and content of the prior art, *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) which must first be determined before the legal conclusion of obviousness may be derived. Thus, the differences between the claimed subject matter and those teachings of the prior art are such as to convince us that the statutory strictures of 35 U.S.C. 103 have been met and support the conclusion that the claimed subject matter, as a whole, would have been obvious when made."

3. SAME—PARTICULAR SUBJECT MATTER—"PRODUCTION OF LOW CARBON STEEL."

The refusal of certain claims in an application entitled "Production of Low Carbon Steel," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 219,100.

AFFIRMED.

Eugene F. Buell, Buell, Blenko & Ziesenheim, for appellant.
Joseph Schimmel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

A review of the present record has led us to the legal conclusion that the subject matter claimed in appellant's application [2] would have been obvious when tested by the standards set forth in 35 U.S.C. 103 and, hence, is unpatentable. Accordingly, the decision of the Patent Office Board of Appeals is affirmed.[3]

The invention relates to a process for the production of low carbon steels. The steps of the process may be understood from representative claim 1 which provides:

1. In the process for the production of steel in which the steel charge is melted in a furnace without the influence of vacuum, the improvement for the production of a low carbon steel which comprises adjusting the carbon content of the

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Claims 1–4, 6–12, and 18 in application Serial No. 219,100, filed August 22, 1962, entitled "Production of Low Carbon Steels."
[3] The board consisted of Messrs. Asp and Magil, Examiners-in-Chief, and Stone, Acting Examiner-in-Chief. Mr. Magil wrote the decision of the board.

steel melt in the furnace to a value between about 0.03 to 0.12%, tapping the molten steel in an unkilled condition from the furnace and subjecting the unkilled steel to the influence of a vacuum below 50 Torr to cause the oxygen present in the steel to react with the carbon reducing the carbon content of the steel to below 0.25% and at least partially killing the steel.

Claims 2 and 3 further limit the scope of claim 1. Claim 4, dependent upon claim 1, decites the further step of adding oxygen in a specified amount to the steel prior to the vacuum treatment. Claims 7–12 and 18 additionally require that the tapped stream of molten metal from the furnace be divided into a spray of droplets as the stream is subjected to the vacuum treatment.

The references relied upon in the Examiner's answer as supporting his rejection and upon which the Board of Appeals affirmed the rejection of obviousness under 35 U.S.C. 103 are:

Yensen, 1,277,523, Sept. 3, 1918.
Rackoff et al., 1,554,368, Sept. 22, 1925.
De Mare, 2,253,421, Aug. 19, 1941.
Yensen et al. (British), 338,409, Nov. 20, 1930.
Ziegler, N.A., "Gases Extracted From Iron-Carbon Alloys by Vacuum Melting," Transactions AIMME (Iron and Steel Division), 1929, pages 428–440.

The Yensen reference discloses a process for the production of "magnetic iron" having a low carbon content. Yensen explains that his invention contemplates the use of molten metal "rendered so by other means than the action of the vacuum furnace." The process uses low carbon iron in which impurities such as phosphorus, sulfur and manganese have been reduced by well known methods to a low figure, preferably to 0.05 percent or less, taken in the aggregate. After cleaning, the metal is introduced into a vacuum furnace where it is further refined by the action of the vacuum to reduce the carbon content to "not more than a few hundredths of one percent" and preferably to not more than 0.01 percent. Yensen also discloses that, after elimination of the carbon and the gases, further deoxidation may be achieved by the addition of silicon or aluminum to the molten bath while *in vacuo*. Yensen contemplates a pressure of about 2 cm. of mercury (200 torr) or less.

Ziegler discloses that in vacuum deoxidation-decarburization processes, a stoichiometric balance of carbon and oxygen exists at a "critical" carbon content of about 0.07 percent. At the "critical" carbon content, the amounts of oxygen and carbon are just sufficient to combine without leaving an excess of either. Ziegler discloses that vacuum treatment is effective to eliminate carbon from steels containing 0.03 to 0.10 percent carbon.

Claims 1–3 were rejected under 35 U.S.C. 103 as "unpatentable over" the Yensen patent "in view of the Ziegler publication." After comparing the teachings of the Yensen and Ziegler references to independent claim 1, the Examiner stated in his answer that:

It appears then that the only subject matter that is claimed but not apparent from analysis of Dr. Yensen's U.S. Patent is the particular carbon content of the material subjected to vacuum. This, however, cannot lend patentability to the claim because the work of Dr. Ziegler long since has been a tool placed in the hands and minds of workers in the vacuum degassing arts. * * *

The Examiner is forced to the conclusion that the adjustment of the carbon content of the starting material of Yensen to a value of about 0.07% as taught by Ziegler is an obvious expedient that is unpatentable by virtue of 35 U.S.C. 103. * * *

The Board affirmed, noting that Ziegler discloses that vacuum treatment eliminates the carbon from steels containing 0.03 to 0.10 percent carbon, concluding that:

* * * Accordingly, it would be quite obvious to conduct Yensen's process with steels of the carbon content specified in the appealed claims.

Appellant does not seem to controvert this position, but rather argues that Yensen requires treatments which the present invention eliminates. Appellant also argues that the teachings of Ziegler are not "comparable" to the claimed invention and, furthermore, do not teach the steps called for in the present claims.

[1] We do not think that the interpretation of the teachings of those references or their application to the appealed claims by the Board and Examiner was erroneous. In view of the specific teachings of the Yensen patent and its general disclosure that carbon and oxygen may be removed from steel by vacuum treatment, this reference appears to meet every condition imposed by claims 1 through 3, as stated by the Examiner, except for the specific amount of carbon present in the initial melt of steel. This claimed limitation adds nothing which would support a conclusion of unobviousness, since the teachings of Ziegler in the same field would make it obvious to one of ordinary skill in this art to adjust the carbon content to appellant's claimed range.

Claims 7 through 9, 11, 12 and 18 were rejected as being unpatentable over Yensen and Ziegler in view of Rackoff. These claims, of which claim 7 is representative, require, in addition to the conditions set forth in claim 1, that the metal be tapped from the melting furnace in an unkilled condition:

* * * by directly passing a stream of molten steel from the furnace through an inlet opening into a vacuum chamber whereby the stream is divided into a spray of droplets as it passes into the vacuum chamber * * *.

Rackoff teaches the process of refining steel in an open-hearth furnace and passing it directly from the furnace through a taphole into a vacuum chamber by channels. While Rackoff does not expressly state that the vacuum results in the "shattering" of the stream of metal to produce a spray of small individual droplets of metal, the Examiner relied on the De Mare patent to show that this result is inherent in that operation.

With respect to claims 4, 6 and 10, the Examiner pointed out that these claims add to their respective parent claims only the expedient of adding oxygen to the steel to assure that a stoichiometric quantity of oxygen relative to the carbon content be present in the melt. As pointed out by the Examiner, this expedient is implicit in the disclosure of the Yensen patent. The Yensen British patent was cited as "of value" in that it unequivocally and explicitedly describes this procedure, its need, and the methods for obtaining a proper stoichiometric balance between carbon and oxygen.

As to claims 7 through 9, 11, 12 and 18, appellant here argues that both De Mare and Rackoff are concerned with drawing off gases from the steel by placing the metal under vacuum.

[2] Appellant does not specifically argue the rejection of claims 4, 6 and 10 in his brief. Thus, appellant's arguments center upon what each individual reference teaches and suggest that no one specific reference teaches the overall invention claimed. The argument may not be sustained in light of our decision in *In re Reynaud*, 51 CCPA 1310, 331 F.2d 625, 141 USPQ 515 (1964). Moreover, each of the references

bears evidence of the scope and content of the prior art, *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) which must first be determined before the legal conclusion of obviousness may be derived. Thus, the differences between the claimed subject matter and those teachings of the prior art are such as to convince us that the statutory strictures of 35 U.S.C. 103 have been met and support the conclusion that the claimed subject matter, as a whole, would have been obvious when made.

In reaching this conclusion we have borne in mind appellant's suggestion that the Patent Office position is founded on a "hindsight analysis" and his reliance on *In re Linnert*, 50 CCPA 753, 309 F.2d 498, 135 USPQ 307 (1962). We have not found it necessary to resort to a hindsight reconstruction of the prior art to support the rejection.

[3] Therefore, the decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE LYNN A. WILLIAMS

No. 7893. Decided May 23, 1968

[55 CCPA—; 394 F.2d 863; 157 USPQ 623]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"ELECTROLYTIC SHAPING."

The refusal of certain claims in an application entitled "Electrolytic Shaping," on the ground that the claimed subject matter is inadequately supported by appellant's disclosure, is reversed.

APPEAL from the Patent Office. Serial No. 361,637.

REVERSED.

John T. Love, *W. Melville Van Sciver* (*Richard G. Kinney*, of counsel) for appellant.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and Judges SMITH, ALMOND, and KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection of claims 1 to 7 of appellant's application Serial No. 361,637, filed April 22, 1964, entitled "Electrolytic Shaping."

The application was denominated by appellant as a division of certain copending applications which in turn are said to be divisions of application Serial No. 772,960, filed November 10, 1958, and issued into Patent No. 3,058,895, dated October 16, 1962. The present application as filed included the appealed claims which were copied for purpose of interference from Patent No. 3,095,364 to Faust et al. (Faust), issued June 25, 1963, on an application filed November 27, 1959.

The issue raised by the rejection is whether the specification and drawings of the present application disclose subject matter supporting the claims.[2]

The subject matter on appeal relates to the art of electrolytically shaping an electrically conductive and electrochemically erodible material by bringing into close contiguity the surface of a workpiece and an electrically conductive cathode tool and passing an electric current between the tool and workpiece while pumping an electrically conductive electrolyte through the gap between the tool and workpiece.

Claim 1 is representative:

1. Apparatus for electrolytically removing material from an electrically conductive mass to provide the mass with a surface having a predetermined three dimensional contour and shape, comprising in combination: an electrically conductive tool, said tool having an imperforate working face portion having substantially the contour, shape [and] area of the surface with which the mass is to be provided; positive drive means for advancing said tool relative to said mass and for maintaining a gap of about 0.002 to 0.03 inch between the closest portions of said tool and said mass without contact between said tool and said mass; means providing an enclosed passage for electrolyte between said tool and said mass; means for supplying an electrically conductive electrolyte throughout said gap and between said closest portions and for flowing said electrolyte under pressure through said enclosed passage from an inlet disposed outside of the peripheries of the working face portion of said tool and of said surface to be provided in said mass on one side thereof across said working face portion between said working face portion and said surface of said mass to an outlet disposed beyond the peripheries of said working face portion and said surface only in directions generally parallel to the surface of said working face of the tool throughout said gap at a speed relative to the adjacent surfaces of said tool and said mass of from about 20 to 250 feet per second, and circuit means for supplying a positive voltage to said mass and a negative voltage to said tool, said circuit means furnishing a voltage sufficient to provide a current density of at least about 5 amperes per square inch through said electrolyte in said gap between said closest portions of said tool and said mass.

Claims 2, 5 and 7 are apparatus claims similar in general to claim 1 while claims 3, 4 and 6 define a corresponding method. Such differences in language of the claims as are material to review of the Board's decision will be noted hereinafter.

The Examiner ruled that two expressions in the appealed claims are not supported by appellant's specification and drawings. He used claim 1 as an example, citing (with corrections) the expressions as:

(*a*) "said tool having an imperforate working face portion," * * * and
(*b*) "means for supplying * * * electrolyte * * * from an inlet disposed outside of the peripheries of the working face portion of said tool and of said surface * * * on one side thereof across said working face portion between said working face portion and said surface of said mass to an outlet disposed beyond the peripheries of said working face portion and said surface * * *.

In supporting his position, the Examiner construed the language of the claim in the light of the file history of the Faust patent, which shows the entire working face of the tool as imperforate with the electrolyte passed from an inlet at one edge of the face portion across it to an outlet on the opposite edge. Appellant, on the other hand, discloses constructions where the electrolyte passes outwardly from a central passage in an otherwise imperforate working face [3] and outwardly thereacross. In both the patent and application structures, the working face portion of the tool is maintained in closely spaced relationship to the work piece so that the electrolyte passes through a gap therebetween.

The Board held that, "[i]n the absence of ambiguity" in the claim language, the Examiner erred in resorting to the Faust patent for interpretation. It stated that its own evaluation was made on the basis that no ambiguity exists and that the claims were considered as being as broad as their terminology would reasonably permit.

---

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The rejection is stated to be on the grounds that the claims are fully met by Faust as well as for lack of disclosure. Since there apparently is no question that the application on which applicant's patent issued, which antedates Faust's filing date, includes substantially all the disclosure in the instant application aside from the copied claims themselves, the single issue stated is determinative of the controversy.

[3] Certain forms of appellant's tool employ either an apertured or porous member over the end of the passage but those forms are not shown to be pertinent to the present issue.

The Board then cited the following expression from claim 1:

> * * * to provide the mass with a surface having a predetermined three dimensional contour and shape, * * * an electrically conductive tool, said tool having an imperforate working face portion having substantially the contour, shape and area of the surface with which the mass is to be provided * * *

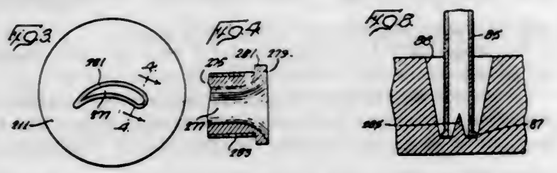
It held that limitation, and similar limitations in claims 2 to 7, were not supported by appellant's disclosure, stating:

> While it is our opinion that appellant has disclosed a tool having an imperforate working face portion, such as the imperforate face portion 279 in FIG. 4, however, the working face portion of the tool does not have substantially the contour, shape and area of the surface with which the mass is to be provided. In the first part of the claim as set forth above, it is stated, "to provide the mass with a surface having a predetermined three dimensional contour and shape." It is evident that the imperforate face portion of appellant's tool, such as the imperforate face portion 279, does not have the three dimensional contour, shape and area with which the mass is to be provided.

With respect to the portion of the claims corresponding to the expression designated by the Examiner as (*b*), the Board distinguished between the claims, holding that the language of claims 1, 2, 6 and 7 is supported while that of claims 3, 4 and 5 is not.

As a preliminary matter, we note that not only did the Board overrule the Examiner insofar as he may have regarded the claims as ambiguous, but also that the file history of the Faust patent has been omitted from the record without objection by the Patent Office. Our consideration of the appeal is therefore confined to the Board's conclusion that the claims are unsupported when treated as unambiguous and as entitled to the broadest reasonable construction.

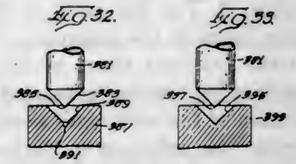
First consideration will be given to that terminology which the Board held to be unsupported in all of the claims. The FIGURE 4 form of appellant's device, which the Board referred to specifically as insufficient for support, can be understood from FIGURES 3, 4 and 8, reproduced below:



The tool of FIGURE 4 includes a hollow metallic body 275 having a working tip 279 with a flange or laterally extending lip 281. The exterior surface is coated with a ceramic layer 283. In use, the tool is positioned with its working surface 279 close to the work piece; positive and negative terminals of a direct current power supply are connected to the work piece and tool, respectively; and the tool is advanced into the work as electrolyte is passed under pressure from the central passage in the tool through the gap between its working face and the work piece.

A tool similar to that of FIGURES 3 and 4 is shown in FIGURE 8 after having progressed a distance into the work at 88. A projection of the work material 285 extends into the tool in the latter figure. The application also discloses that the interior surface of the tool may be insulated in certain cases, as "where it is desired by a trepanning operation to form an accurate untapered shape on the work within the electrode, this portion thereby becoming the finished workpiece, or an integral portion thereof."

We think that the tool of FIGURE 4, especially at the early stages of its penetration into the work mass, does provide said work mass with a surface having a three dimensional contour and shape which corresponds to "substantially the contour, shape and area" of the working face portion of the tool. Also, it appears that condition will be met in the case where the tool is used to perform the so-called "trepanning operation" disclosed in the quotation immediately above. What is equally important, we think that the recitation now under consideration is met by other forms of appellant's tool, in particular those of FIGURES 32 and 33 [4] reproduced below:



In FIGURE 32, a tool 381 having a conical nose 383 is employed to form a substantially conical cavity 389 in a work piece 387. It being found that the cavity so formed departs slightly from a true cone at 391, the arrangement of FIGURE 33 is used to provide a tool which will provide a cone lacking that imperfection. There a block 393 having a conical recess is connected to the negative terminal of the power supply to serve as the tool in shaping the substantially conical tip of 381, which is ultimately to be used as a tool.

The only other ground of rejection before us is limited to claims 3, 4 and 5. The Board used claim 3 as illustrative, stating:

> Claim 3 sets forth:
>
> * * * and flowing said electrolyte in a closed passage under pressure through said gap from an inlet disposed beyond the periphery of said face portion on one side thereof to an outlet disposed beyond the periphery of said face portion on another side thereof *only in directions generally parallel to the surface of the face portion of said tool* * * * [Emphasis supplied by the Board.]
>
> It is our opinion that this portion of claim 3 is not supported by appellant's disclosure. This portion of the claim sets forth the direction of the general flow of the electrolyte in a closed passage through the gap from an inlet disposed beyond the periphery of the face portion of one side thereof to an outlet disposed beyond the periphery of the face portion on another side thereof. Since in appellant's device the direction of the general flow of the electrolyte through the closed passage from the inlet 27[5] to the outlet is *not* "only in directions generally parallel to the surface of the face portion of said tool" but also in other directions, it is our opinion that this portion of the claim does not find response in appellant's disclosure.

The expression in claim 3 which the Board held was not supported by appellant's application bears a close resemblance to an expression in claim 1, which, along with corresponding expressions in claims 2, 6 and 7, the Board held was supported. In fact, the resemblance is so great that a comparison of the language of claims 1 and 3 is necessary to a clear understanding of the rejection of claims 3, 4 and 5.

---

[4] Although neither the Examiner nor the Board appear to have mentioned FIGURES 32 and 33, appellant relied on FIGURE 33 in his response to the Examiner's first rejection of the claims and on both FIGURES 32 and 33 in his brief before the Board.

[5] The "inlet 27" is at the remote end of a passage communicating with the fluid passage in the tool at the end opposite its working face portion. The passage from that inlet is shown in the drawings as perpendicular to the passage in the tool.

The pertinent expression in claim 1, with corrections in the Board's quotation, reads:

> * * * means for supplying an electrically conductive electrolyte throughout said gap and between said closest portions and for flowing said electrolyte under pressure through said enclosed passage from an inlet disposed outside of the peripheries of the working face portion of said tool and of said surface to be provided in said mass on one side thereof across said working face portion between said working face portion and said surface of said mass to an outlet disposed beyond the peripheries of said working face portion and said surface only in directions generally parallell to the surface of said working face of the tool throughout said gap * * *

The Board found that language supported by the showing in the drawings which includes the same "inlet 27" referred to in its above-quoted discussion of claim 3. The last part of the above quotation from claim 1, beginning "only in the directions * * *," is the same as the corresponding term italicized above in claim 3 except for referring to the "working face" of the tool instead of the "face portion" of the tool and the inclusion of the additional words "throughout said gap." Since the difference with reference to the tool is obviously not material here, it is apparent that the Board regarded the latter words in claim 1 significant. Thus, it apparently considered the absence of the words "throughout said gap" at the end of the term "only in directions generally parallel to the surface of the face portion of said tool" in claim 3 to result in that claim requiring that the direction of "generally parallel" flow extend throughout a passage between the "inlet" and "outlet" rather than merely "throughout the gap." Since the Board further considered the passage between the "inlet" and "outlet" in applicant's device to include a portion outside of the gap in which the flow is not generally parallel to the surface of the face portion of the tool, it held that claim 3 was not supported.

However, the above quoted expression from claim 3 includes the term "through said gap"[6] immediately following the words "and flowing said electrolyte in a closed passage under pressure." We think that the language is reasonably construed as meaning simply that the flow of electrolyte "through said gap" is "only in directions generally parallel to the surface of the face portion of said tool." The intervening expression referring to the inlet and outlet then is merely additional description that does not change the meaning of "through said gap." The expression in claim 3 thus is no less supported by the application than that in claim 1.

Moreover, the expression in claim 3 set out by the Board in its analysis and quoted above is preceded by the term:

> supplying an electrically conductive electrolyte *throughout said gap* between said closest portions [emphasis supplied].

We think that language, which corresponds to language in claim 1 which the Board did consider in setting out the critical expression therein for analysis, further indicates that the term "directions generally parallel * * *" limits only flow "through" or "throughout" the gap.

Since claims 4 and 5 were rejected for the same reasons as claim 3, they also must be held to be supported by applicant's application.

The foregoing analysis requires reversal of the Board's decision. It is to be recognized in connection with any further proceedings, however, that such reversal arises solely from our disagreement with the specific reasons the Board set forth for finding the claims not to be supported by appellant's application and carries no broader implications.

[1] The decision of the Board is reversed.

REVERSED.

[6] The antecedent for "gap" in claim 3 reads "a gap of about 0.002 to 0.03 inch between the closest portions of said tool and said mass."

U.S. Court of Customs and Patent Appeals

IN RE MARTIN N. ORNITZ

No. 7808. Decided January 11, 1968

[55 CCPA —; 388 F.2d 1012; 156 USPQ 211]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"FORMING OF METALS."

The decision of the Board of Appeals, refusing certain claims on an application entitled "Forming of Metals" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 183,371.

AFFIRMED.

Eugene F. Buell, Hoopes, Leonard & Buell for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK *

KIRKPATRICK, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection on the prior art of claims 1 through 5 of appellant's application Serial No. 183,371, filed March 29, 1962, entitled "Forming of Metals." No claim has been allowed.

The application relates to a process for producing hollow metal shapes by the explosive forming of centrifugal and static metal castings to control wall thickness and physical properties. Appellant discloses casting a tubular steel article to its approximate desired shape, allowing it to cool sufficiently to hold its shape, and then placing it in a correspondingly shaped die which has an inside diameter somewhat greater than the outside diameter of the casting. With the casting closed at both ends and filled with water or other pressure transmitting liquid, a shock pulse is generated in the liquid. That is done either by detonating an explosive material which has been placed at substantially the center of the casting or by causing a high intensity electric spark discharge between electrodes placed within the casting. The shock is propagated through the liquid to the inner surface of the casting, causing it to be expanded substantially instantly to fill the die. An example is described in which the casting is deformed from an original thickness of ¼ inch to about 3/16 inch and the grain structure is changed from "as cast" to "cold worked" form having a smooth surface.

Claims 1 and 5 are representative:

> 1. The method of making high-strength hollow metal articles which comprises the steps of casting the desired hollow article, solidifying the casting to a degree sufficient to hold the form of the article and subjecting the article to an internal expanding shock pulse of high energy transmitted through a confined incompressible fluid filling the interior of the article.
>
> 5. The method of cold working the structure of metal castings comprising subjecting one surface thereof to a high intensity shock pulse imparted by an incompressible fluid medium and retaining the opposite surface of the casting by a rigid wall having the contour of the external surface of the metal casting.

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

Claim 2 adds to claim 1 the recitation that the casting "is contained in a die recess larger than the as-cast external dimensions of the casting and the cross section of the metal wall is reduced by expansion filling the die recess." It is stated in claim 3 that the method of claim 1 is carried out with the hollow article filled with a liquid and that the shock pulse is generated by detonating an explosive charge. Claim 4 differs from claim 3 in that the pulse is described as generated "by discharge of one high intensity electrical spark submerged in * * * [the] liquid."

The references are:

Samuels, "Hydroforging—a New Fabricating Technique for Tubing," Metal Progress, vol. 77, No. 2, February 1960, pages 69–74.

Roth, "The Forming of Metals by Explosives," The Explosives Engineer, March-April, 1959, pages 52–55.

Cox et al., "Explosive Forming," S.A.E. Reprint T39, April 1960, pages 1–3 and Figs. 1–6.

The Tool and Manufacturing Engineer, January 1962, pages 61–68.

Samuels discloses a process in which a cast hollow cylinder is expanded inside a die by hydraulic pressure. The cast cylinder, which has been allowed to cool, is capped at the ends and the hydraulic pressure applied internally. It is a purpose of the process to refine the grain of the casting to produce a material equivalent to a wrought product in grain size and strength.

The Roth article reviews the work done in forming metals by explosives, stating that much of that work has been carried out in a water medium and referring specifically to the use of explosive forming for expanding and swaging tubing.

Cox states that cylindrical parts seem to be most adaptable to explosive forming and refers to a technique "whereby media other than water is used for transmitting the explosive energy to the material to be formed."

The article in The Tool and Manufacturing Engineer points out that only a female die is required in explosive forming and states that the explosive energy is transmitted through a water medium, acting as a punch. It further discloses that the energy may be derived from explosives or from an electrical discharge.

The Examiner and the Board considered the claims unpatentable over Samuels in view of Cox, Roth or Tool and Manufacturing Engineer, "each of the auxiliary references taken individually." Thus the issue is whether the claimed invention would have been obvious to a person of ordinary skill in the art from Samuels taken in view of any of the three auxiliary references. See 35 U.S.C. 103.

Appellant points out that Samuels, who caps the ends of his cast cylinder and applies hydraulic pressure to it internally, does not use a rapidly expanding shock wave as the working force. However, the secondary references, which relate to similar metal working techniques do use explosive force and teach working cylindrical or hollow articles. They also each disclose that water may be the force-transmitting medium. We are satisfied that those references make it obvious to use explosive means in the Samuels process. The Tool and Manufacturing Engineer additionally makes obvious the use of an electrical spark for producing a shock pulse.

Appellant's argument is directed largely to pointing out that each reference lacks a disclosure of some limitation of the appealed claims. However, the Examiner and Board recognized that when they grounded the rejection on the combination with Samuels of the secondary references taken individually. Although appellant also appears to question the propriety of the combination, we are convinced that it is proper for the reasons already set forth. Since we find no feature of the claimed invention lacking when the references are considered in combination, it is apparent that there is no reversible error in the Board's decision.

[1] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE ROLF G. GIDLOW

No. 7950. Decided May 9, 1968

[55 CCPA—; 394 F.2d 562; 157 USPQ 509]

1. PATENTABILITY—PRODUCT—AGGLOMERATED SUGAR.

Appellant contends that inasmuch as Griffin is concerned solely with improving solubility and dispersibility of food products, particularly milk, there is no teaching or suggestion that caking problems that are encountered with powdered sugar can be eliminated by agglomeration. In this connection Griffin teaches that sugar and milk are equivalent in the formation of agglomerated food products. The same characteristics of behavior are to be reasonably inferred. It is stated that the Griffin powdered materials, which include sugar, become "self-adherent at their surfaces when the surfaces are moistened." It is manifest that agglomeration would reduce the number of self-adherent particle surfaces which are exposed and therefore subject to caking. It would seem therefore to follow, as pointed out by the Solicitor, that the reference "would seem indeed to suggest that agglomeration would reduce the caking tendency of powdered sugar and eliminate the need for using starch to prevent caking."

2. SAME—PARTICULAR SUBJECT MATTER—"METHOD AND APPARATUS FOR AGGLOMERATING SUGARS."

The refusal of certain claims in an application entitled "Method and Apparatus for Agglomerating Sugars" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 43,914.

AFFIRMED.

C. Willard Hayes (*Ronald E. Lund*, of counsel) for appellant.

Joseph Schimmel (*Joseph Nakamura*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and Judges SMITH, ALMOND, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the final rejection of claims 39 and 40 in appellant's application [2] entitled "Method and Apparatus for Agglomerating Sugars." The rejection was predicated on anticipation by the prior art (35 U.S.C. 102) or obviousness in view of the prior art (35 U.S.C. 103). No claims were allowed.

---

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 43,914, filed July 19, 1960.

The application discloses an agglomerated sugar product and a method and apparatus for making such a product by controlled moistening and agitation of powdered sugar particles.

The agglomerates resulting from appellant's method are described in the application as:

> * * * porous and consist of randomly clustered sugar particles loosely held together at their interfaces by the syrup formed on the surfaces thereof and have a bulk density lower than the starting material, with the bulk density capable of being controlled over a relatively wide range down to as low as one third that of granular sugar. The agglomerates are * * * characterized by the large number and small size of the voids or air spaces in the agglomerates with the number of voids being proportional to the number of individual particles comprising the agglomerate and provide the porous structure desired. The network of voids * * * provides passageways leading into and through the agglomerates to enable a liquid to readily penetrate substantially all parts of the agglomerate to quickly wet all of the particles and disperse and dissolve the same in a liquid * * * at a much faster rate than conventional refined sugars, and without lumping or massing of the sugar in the liquid.

Independent claim 39 reads as follows:

> 39. A free flowing sugar product comprising porous agglomerates, said agglomerates consisting substantially entirely of a multiplicity of powdered sugar particles clustered together and bonded to each other at their interfaces by an adhesive formed from said sugar particles by the dissolution of a portion of said particles in moisture deposited on said particles, said particles defining a multiplicity of voids there-between providing a liquid ready access thereto, the number of voids being proportional to the number of particles comprising said agglomerates, said agglomerates being further characterized by their ability to quickly disperse in a liquid.

Dependent claim 40 recites that the sugar particles include sucrose.

The references relied on below are:

Griffin, 2,893,871, July 7, 1959.
French Patent, 1,136,468, Dec. 29, 1956.[3]

Griffin relates to "a process and apparatus for converting certain powdered materials into agglomerated products * * * of lower bulk density * * * capable of more rapid solution or dispersion than in the powdered form." The powdered materials are generally described as "those which become self-adherent at their surfaces when the surfaces are moistened." As examples of the materials, the patent recites that they:

> * * * are found chiefly in the field of organic materials including food products, such as milk powders produced by drying skim milk, whole milk or malted milk, powdered cocoa, powdered food mixes such as for cakes and pancakes, and various other foods in powder form, such as baby foods, having a content of milk, sugar or other agglutinant making them susceptible to the new treatment.

The agglomerated products are "free-flowing and free of fines for purposes of handling and packaging." The structure of the product is described as of "irregular size and shape" resembling "irregular clusters of grapes." The "particles are not compacted into a solid pellet but are in surface contact, with large inter-spaces." It is noted that claim 4 of the patent points out that the powdered material to be agglomerated "is a food product containing milk or sugar."

The Examiner rejected claims 39 and 40 as being unpatentable over either Griffin or the French patent on the ground of anticipation under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103. The Examiner noted that appellant's arguments were based largely on the

[3] The Examiner stated that this patent has the same disclosure as Griffin and that no description is necessary. The Board stated that Griffin was cited "* * * as an English translation corresponding to the French patent." Appellant agrees, stating "there is only one reference" here involved.

contention that Griffin does not disclose "a product consisting essentially or solely of sugar," stating that:

> This is not agreed with since the most obvious "food product containing * * * sugar" (patent claim 4) is sugar itself. No invention would exist in discovering that sugar agglomerates produced as taught by Griffin have the beneficial and desirable features referred to in applicant's brief.
>
> However, even if it is considered that a product containing solely sugar is not taught by Griffin it would be obvious under 35 U.S.C. 103 in view of the teachings of Griffin to produce such a product.

In affirming the Examiner's rejection of the claims, the Board made no finding with respect to the rejection predicated on 35 U.S.C. 102, holding only that the claims "are not patentable over Griffin, under 35 U.S.C. 103," reasoning that:

> The only real distinction between the claims and the reference is that the claims recite a free flowing sugar product comprising powdered sugar particles whereas the reference mentions a wide variety of powdered products which have a content of sugar or other agglutinant. We note that the claims as drawn do not exclude the use of other materials than sugar being present. The products encompassed by Griffin may contain a considerable amount of sugar. To make the principal ingredient to be powdered sugar using the process of Griffin to yield a powdered sugar product as claimed is believed to be obvious in view of the clearly wide applicability of the Griffin process. * * *

We deem it sufficient for the purposes of this appeal to address our attention to the rejection based on obviousness under 35 U.S.C. 103. We affirm that rejection because we find nothing in the claims before us which does not appear to be obvious from the Griffin disclosure.

The claims under consideration call for a free-flowing sugar product comprising porous agglomerates characterized by their ability to disperse quickly in a liquid, the agglomerates consisting "substantially entirely" of powdered sugar particles. The claims therefore relate to a powdered food product. Griffin teaches that a free-flowing, porous agglomerated food product is not a new form of food product and that it is not novel to convert such products into agglomerates for the purpose of making the powdered products more readily soluble or dispersible in liquids.

With reference to the limitation "substantially entirely * * * powdered sugar particles," we note that the specification as well as claim 4 discloses the production of an agglomerated food product containing sugar as the agglutinate. It would seem reasonable to conclude, as did the Examiner and the Board, that it would be obvious under 35 U.S.C. 103 to produce a product containing solely sugar or at least, in the language of the appealed claim, "substantially entirely of powdered sugar particles."

The claims also recite the presence of a multiplicity of voids in the sugar agglomerates and the ability of the agglomerates to disperse quickly in a liquid. Griffin teaches that his agglomerates have "large interspaces" and go "into solution more rapidly than the comparison products, and so rapidly as to qualify as an 'instant' product * * *."

The claims recite the agglomerated sugar product of this invention to be "free-flowing." We note, however, that Griffin describes his sugar-containing agglomerates to be "sufficiently free-flowing * * * for the purposes of handling and packaging."

The claims call for powdered sugar particles "bonded at their interfaces by an adhesive formed" by dissolving a portion of the particles in moisture deposited thereon. Griffin characterizes sugar as an agglutinant in powdered foods "which become self-adherent at their surfaces when the surfaces are moistened."

In the light of the teachings of Griffin, herein noted, we perceive no reversible error in the conclusion of the Board that there is "nothing unobvious in using Griffin's method to make a product consisting substantially entirely of sugar." As pointed out by the Solicitor, appellant gives some indication of agreement, where in his brief it is stated:

It is, perhaps, not surprising to find that by means of such a process agglomerates can be formed from sugar particles. * * *

The thrust of appellant's argument, relative to the rejection under 35 U.S.C. 103, is that the Board erroneously failed to observe the distinction between product and process claims. Appellant asserts that the claims relate to a product and not to a process as treated by the Board. This contention is not, in our view, supported by the record. The conclusion reached by the Examiner, affirmed by the Board, was that it would be obvious to produce an agglomerated *product* containing solely sugar. The Board in its decision expressly recognized that "the claims recite a free flowing sugar product" and clearly applied the reference on a product basis. The situation here is entirely different from that in *In re Chapman*, 53 CCPA 978, 357 F.2d 418, 148 USPQ 711, cited and relied on by appellant, where the holding of the Board implied that products of an obvious process were unpatentable merely because they were the inherent result of the process.

[1] Appellant contends that inasmuch as Griffin is concerned solely with improving solubility and dispersibility of food products, particularly milk, there is no teaching or suggestion that caking problems that are encountered with powdered sugar can be eliminated by agglomeration. In this connection Griffin teaches that sugar and milk are equivalent in the formation of agglomerated food products. The same characteristics of behavior are to be reasonably inferred. It is stated that the Griffin powdered materials, which include sugar, become "self-adherent at their surfaces when the surfaces are moistened." It is manifest that agglomeration would reduce the number of self-adherent particle surfaces which are exposed and therefore subject to caking. It would seem therefore to follow, as pointed out by the Solicitor, that the reference "would seem indeed to suggest that agglomeration would reduce the caking tendency of powdered sugar and eliminate the need for using starch to prevent caking."

Our consideration of the arguments advanced and the cases cited does not persuade us of error in the decision of the Board holding that the appealed claims are not patentable over Griffin, under 35 U.S.C. 103. We do not, therefore, reach the issue raised under 35 U.S.C. 102.

[2] The decision of the Board is, accordingly, affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE COLONIAL STORES INCORPORATED

No. 7925. Decided April 25, 1968

[55 CCPA—; 394 F.2d 549; 157 USPQ 382]

1. TRADEMARK—DESCRIPTIVENESS—*Andrew J. McPartland, Inc.* v. *Montgomery Ward & Co., Inc.* CONSTRUED—TRADEMARK ACT, SECTION 2(e).

"In *Andrew J. McPartland, Inc.* v. *Montgomery Ward & Co., Inc.*, 35 CCPA 802, 164 F.2d 603, 76 USPQ 97 (1947), cert. denied, 333 U.S. 875 (1948), this court noted that it was not the purpose of Congress, by the language of section 2(e) of the Trademark Act of 1946, to provide for the registration of trademarks which are merely descriptive of the character or quality of the goods upon which they are used, placing reliance on the statement of the Supreme Court in *Beckwith* v. *Commissioner*, 252 U.S. 538, 543 (1920) * * *."

2. SAME—SAME—SUGGESTIVENESS.

" * * * a mark which merely denotes the ingredients, quality or composition of an article is not capable of being exclusively adopted and used as a trademark since, for policy reasons, *descriptive words* must be left free for public use. On the other hand, a legal distinction, albeit often obscure, has been drawn between terms that are not merely descriptive, but rather are only suggestive of the goods."

3. SAME—SAME—SAME—"SUGAR & SPICE" FOR BAKERY PRODUCTS.

"We are cognizant of the usual practice of selling baked goods in stores which also sell sugar and spices as individual commodities. As appellant concedes, the terms 'sugar' and 'spice' used *individually* are well known and well understood by the purchasing public. However, when combined and used on bakery goods, we think they may function as an indication of more than a mere description of the ingredients of the goods on which the mark is used and, on the record made below, are not 'merely descriptive' of such goods within the meaning of section 2. On the record below, the mark clearly does not tell the potential purchaser *only* what the goods are, their function, their characteristics or their use, or, of prime concern here, their ingredients."

4. SAME—SAME—SAME—SAME.

"The immediate impression evoked of the mark ['SUGAR & SPICE' bakery products] may well be to stimulate an association of 'sugar and spice' with 'everything nice.' As such, on the record below, the mark, along with the favorable suggestion which it may evoke, seems to us clearly to function in the trademark sense and not as a term *merely* descriptive of goods. To the extent that the nursery rhyme is familiar to one seeing or hearing the mark, his recall is undoubtedly stimulated to make the association with 'everything nice' but this in no way defeats the distinctive nature of the composite word mark as applied to the listed products."

APPEAL from the Patent Office. Serial No. 143,935.

REVERSED.

Matthew H. Patton, Kilpatrick, Cody, Robergs, McClatchey & Regenstein for appellant.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH and ALMOND, *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

The issue here presented is whether one who combines admittedly descriptive words, i.e., "sugar" and "spice," and uses the combined terms as a trademark, may properly be refused registration of the combined terms when applied to goods other than those which are directly described by such words and when an association of a concept foreign to the goods is said to attach to the combined mark. On this record, it is clear that both sugar and spice may be present as ingredients in at least some of the bakery products to which the mark is applied. Resolution of this issue turns on whether such a mark is "merely descriptive" of those goods within the meaning of section 2(e)(1) of the Trademark Act of 1946, 15 U.S.C. 1052(e)(1).[1]

Appellant's application,[2] as subsequently amended, asserts use of the mark "SUGAR & SPICE" for "Bakery products, in Class 46,

[1] The pertinent portion of that statute provides that:

No trademark by which the goods of the applicant may be distinguished from the goods of others shall be refused registration on the principal register on account of its nature unless it—

* * * * * * *

(e) consists of a mark which (1) when applied to the goods of the applicant is merely descriptive or deceptively misdescriptive of them * * *

[2] Serial No. 143,935, filed May 7, 1962.

namely, cakes, cookies, breads, rolls, donuts, pastries, crackers." The Examiner considered the mark sought to be registered to be "merely descriptive" of the goods. He stated, in his final refusal to register, that:

> * * * When used on sweet bakery products, the wording "Sugar & Spice" is considered to clearly describe goods containing sugar and spice, notwithstanding the nursery rhyme "Sugar and Spice and Everything Nice, etc."
>
> The decision in *The Fleetwood Co.* v. *The Mitchum Co.*, [51 CCPA 831, 323 F.2d 1015], 139 USPQ 281 [1963], cited by applicant, is not considered in point here for the reason such decision does not involve wording which constitutes the name of the *ingredients* of the skin cream involved. [Brackets added.]

The Board affirmed that rejection,[3] the result being reported at 148 USPQ 768 (TTAB 1965), stating:

> It is a matter of common knowledge that sugar and spices are used singly and in combination in making a wide variety of bakery products, including breakfast breads and rolls, donuts, cakes, cookies and the like. The use of the terms "sugar" and "spice" in combination is but a normal use of the English language to describe bakery products, containing sugar and spice as ingredients, and, on the record presented in this case, we are not persuaded that "SUGAR & SPICE" would have anything other than a descriptive significance to the purchasers of applicant's goods. * * *

We do not believe the rejection can stand on the basis stated. The often-cited principle embodied in section 2(e)(1) was stated some 67 years ago by the Supreme Court in *Elgin National Watch Co.* v. *Illinois Watch Case Co.*, 179 U.S. 665, 673 (1901) that a trademark:

> * * * may consist in any symbol or in any form of words, but as its office is to point out distinctively the origin or ownership of the articles to which it is affixed, it follows that no sign or form of words can be appropriated as a valid trademark which from the nature of the fact conveyed by its primary meaning, others may employ with equal truth, and with equal right, for the same purpose.

[1] In *Andrew J. McPartland, Inc.* v. *Montgomery Ward & Co., Inc.*, 35 CCPA 802, 164 F.2d 603, 76 USPQ 97 (1947), cert. denied, 333 U.S. 875 (1948), this court noted that it was not the purpose of Congress, by the language of section 2(e) of the Trademark Act of 1946, to provide for the registration of trademarks which are merely descriptive of the character or quality of the goods upon which they are used,[4] placing reliance on the statement of the Supreme Court in *Beckwith* v. *Commissioner*, 352 U.S. 538, 543 (1920):

> It was settled long prior to the Trade Mark Registration Act [of 1905] that the law would not secure to any person the exclusive use of a trade mark consisting merely of words descriptive of the qualities, *ingredients* or characteristics of an article of trade. This for the reason that the function of a trade mark is to point distinctively, either by its own meaning or by association, to the origin or ownersihp of the wares to which it is applied, and words *merely descriptive* of qualities, *ingredients* or characteristics, when used alone, do not do this. Other like goods, equal to them in all respects, may be manufactured or dealt in by others, who, with equal truth, may use, and must be left free to use, the same language of description in placing their goods before the public. [Citations omitted.] [Brackets and emphasis added.]

[3] During the course of prosecution, it was the position of the Examiner that when used on applicant's goods, the mark for which registration is sought was considered "* * * to clearly describe goods containing sugar and spice * * *." In his statement of the rejection to the Board, he asserted:

> The specific ground of rejection is that the mark is merely descriptive (or deceptively misdescriptive) of applicant's goods, being indicative, in the Examiner's opinion, that the bakery products contain sugar and spices.

His argument, however, was directed only to the issue of whether the mark is "merely descriptive" of applicant's goods. The Board confined its discussion to that issue.

Moreover, the Patent Office did not cast its refusal to register on the basis that appellant's trademark could not serve to distinguish its goods from the goods of others under section 45 and the preamble to section 2 of the Trademark Act of 1946. We thus consider the issue raised as one solely arising under 2(e)(1) of that Act. See *In re G. D. Searle & Co.*, 53 CCPA 1192, 360 F.2d 650, 149 USPQ 619 (1966).

[4] See also *In re Hercules Fasteners*, 40 CCPA 944, 203 F.2d 753, 97 USPQ 355 (1953). Section 5 of the Trademark Act of 1905 denied registration to marks which are "* * * merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods * * *." See Act of February 20, 1905, c. 592, § 5, 33 Stat. 725.

[2] Thus, a mark which merely denotes the ingredients, quality or composition of an article is not capable of being exclusively adopted and used as a trademark since, for policy reasons, *descriptive words* must be left free for public use.[5] On the other hand, a legal distinction, albeit often obscure, has been drawn between terms that are not merely descriptive, but rather are only suggestive of the goods.[6]

One of the tests to determine whether a given mark is "merely descriptive" under the Act is based upon what it would mean to the potential consumer when applied to applicant's goods. To make this test meaningful, it is necessary, therefore, to consider the established usages and associations which inhere in the words "sugar" and "spice" independently and then to compare them with the associations of the composite mark "SUGAR & SPICE" for which registration is sought.

It is appellant's position that:

> The mark "SUGAR & SPICE" immediately and automatically recalls to mind "sugar and spice and everything nice" from the well known nursery rhyme. The second portion of that phrase follows the first as the night follows the day. The association is inescapable. The pleasant connotation of those words, familiar to most of us since early childhood, is the first and paramount impression evoked by this mark. Appellant employs this favorable suggestion in a distinctive trademark usage.

As above noted, the Board decided that "The use of the terms 'sugar' and 'spice' in combination is but a normal use of the English language to describe bakery products * * *."

While appellant admits that the individual words "sugar" and "spice" are generic terms which have ordinary meanings which describe the commodities "sugar" and "spice," when used alone, appellant argues that the combination of two descriptive terms into an arbitrary or fanciful word or phrase may convert those words into a distinctive mark. See *In re Ada Milling Co.*, 40 CCPA 1076, 205 F.2d 315, 98 USPQ 267 (1953); *Henry Muhs Co.* v. *Farm Craft Foods Inc.*, 37 F. Supp. 1013, 49 USPQ 162 (E.D. N.Y. 1941). He adds that this may be true even in those cases where the words thus combined are, prior to combination, descriptive of an ingredient, component or function of the goods to which the mark is applied, citing *Ex parte Barker*, 92 USPQ 218 (Com. Pat. 1952), discussed later.

Whether a trademark is "reminiscent or suggestive" of something more than the character, quality or ingredients of the goods may also depend on factors considered in *Blisscraft of Hollywood* v. *United Plastics Co.*, supra note 5, where the mark "POLY PITCHER" was held not to be "merely descriptive" of polyethylene pitchers. One of the reasons stated was:

> Moreover, "Poly Pitcher" is reminiscent or suggestive of Molly Pitcher of Revolutionary time. As used, it is an incongruous expression, and has the characteristics of a coined or fanciful mark.

[5] See, e.g., *Armstrong Co.* v. *Nu-Enamel Corp.*, 305 U.S. 315, 335–36, 39 USPQ 402, 409 (1938); *Blisscraft of Hollywood* v. *United Plastics Co.*, 294 F.2d 694, 698, 131 USPQ 55, 59–60 (2d Cir. 1961); 3 Callmann, Unfair Competition and Trademarks, § 71 (2d ed. 1950); Derenberg, Trade-Mark Protection and Unfair Trading, § 20 (1936); Vandenburgh, Trademark Law and Procedure, § 4.30 (1959).

[6] As Judge Learned Hand stated in *Franklin Knitting Mills, Inc.* v. *Fashionit Sweater Mills, Inc.*, 297 F. 247 (S.D. N.Y. 1923), aff'd per curiam, 4 F.2d 1018 (2d Cir. 1923), deciding whether "Fashionknit" on neckties or knitted cloths of fabrics was *merely* descriptive of those goods: "It is quite impossible to get any rule out of the cases beyond this: That the validity of the mark ends where suggestion ends and description begins."

In a similar vein is *Ex parte Barker*, supra, wherein the Assistant Commissioner considered a refusal to register on the Principal Register the mark "CHERRY-BERRY-BING" applied to "fruit and berry preserves." While the issue there considered was whether "CHERRY-BERRY-BING" was "capable of functioning as a trademark to distinguish applicant's goods in commerce," the words were considered by the Examiner to be "generic and merely indicative of the principal ingredients of applicant's goods." There, it was held, 92 USPQ at 219, that:

> While it may be true that each of the individual words in the present applicant's mark are generic and thus independently unregistrable, it seems to me that their unusual association or arrangement in the applicant's mark results in a unique and catchy expression which does not, *without some analysis* and rearrangement of its components suggest the contents of applicant's goods. I am contrained to disagree with the Examiner's holding in the present case that the applicant's mark is incapable of functioning as a trade mark to distinguish the applicant's goods in commerce. [Emphasis added.]

The Board in *In re De-Raef Corp.*, 120 USPQ 318 (TTAB 1959), in considering the mark "CULTURED" for pancake mix made from a list of ingredients including "defatted cultured milk powder," reversed the Examiner, and made the observation pertinent here that:

> Applicant, however, does not sell milk, cultured milk, or powdered cultured milk. It sells pancake mix, and the pancake mix has been neither exposed to nor treated by any bacillus culture of any kind. "CULTURED" is not merely descriptive of applicant's pancake mix. It is a term which may suggest to some purchasers that cultured milk is used as an ingredient of the product, but it may not have any such suggestive significance to a substantial segment of the average purchasers of the product.

[3] We are cognizant of the usual practice of selling baked goods in stores which also sell sugar and spices as individual commodities. As appellant concedes, the terms "sugar" and "spice" used *individually* are well known and well understood by the purchasing public. However, when combined and used on bakery goods, we think they may function as an indication of more than a mere description of the ingredients of the goods on which the mark is used and, on the record made below, are not "merely descriptive" of such goods within the meaning of section 2. On the record below, the mark clearly does not tell the potential purchaser *only* what the goods are, their function, their characteristics or their use, or, of prime concern here, their ingredients.

[4] The immediate impression evoked by the mark may well be to stimulate an association of "sugar and spice" with "everything nice." [7] As such, on the record below, the mark, along with the favorable suggestion which it may evoke, seems to us clearly to function in the trademark sense and not as a term *merely* descriptive of goods. To the extent that the nursery rhyme is familiar to one seeing or hearing the mark, his recall is undoubtedly stimulated to make the association with "everything nice" but this in no way defeats the distinctive nature of the composite word mark as applied to the listed products.

Nor do we find that the decisions cited by the Solicitor as pertinent here require a different result. In each of the cited cases, *General Baking Co.* v. *Grocers' Baking Co.*, 3 F. Supp. 146 (W.D. Ky. 1933) ("SUNSHINE VITAMIN D" applied to bread containing Vitamin D); *Quaker Oats Co.* v. *General Mills, Inc.*, 45 F. Supp. 462 (N.D. Ill. 1942), aff'd, 134 F.2d 429 (7th Cir. 1943) ("OATIES" applied to oat cereal); *Skinner Mfg. Co.* v. *General Foods Sales Co.*, 52 F. Supp. 432 (D. Nebr. 1943), aff'd, *Skinner Mfg. Co.* v. *Kellogg Sales Co.*, 143 F.2d 895 (8th Cir. 1944), cert. denied, *Id.* v. *General Food & Sales Co., Inc.*, 323 U.S. 766 (1944) ("RAISIN BRAN" applied to cereal); *William Wrigley, Jr., Co.* v. *Grove Co.*, 161 F. 885 (S.D. N.Y. 1908), aff'd, 183 F.2d 99 (2d Cir. 1910) ("SPEARMINT" applied to chewing gum); we think that the marks there in issue were devoid of the reminiscent, suggestive or associative connotation which we here find to be persuasive as presented on the record below.

Thus, *on the present record*, the decision of the Trademark Trial and Appeal Board must be reversed.[8]

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

[7] See *Dollcraft Co.* v. *Nancy Ann Storybook Dolls, Inc.*, 94 F. Supp. 1, 88 USPQ 18 (S.D. Calif. 1950) aff'd, *Nancy Ann Storybook Dolls. Inc.* v. *Dollcraft Co.*, 197 F.2d 293, 94 USPQ 290 (9th Cir. 1952) where the mark "Sugar and Spice" on dolls was considered to be capable of distinguishing appellant's goods from the goods of another and to function to identify origin of the goods. There the district court stated:

> "Sugar and Spice" is a phrase abstracted from an old, familiar nursery rhyme, possessing a meaning in its context, but none when used as the meaning of a doll. • • •

[8] The Board refers in its opinion to "A matter of common knowledge" (without indicating a basis therefor). It has been noted in the widely used and well known "Good Housekeeping Cook Book," edited by Dorothy B. Marsh, copyright 1942, 1944, 1949 by Hearst Magazines, Inc., second printing May 1955, copyright by The Hearst Corp., published by Good Housekeeping Book Division, 250 West 55th Street, New York, N.Y., Library of Congress Card Catalog No. 54-10951, the index contains three references to "Sugar and Spice" used in combination as the generic name of a particular type of bun, and on page 347, the following recipe is given for what is there called "Sugar-and-Spice Buns."

> "Bake Williamsburg Buns, above: dip tops and sides *at once* into 6 tablesp. melted butter or margarine; then roll in combined ½ cup granulated sugar and 1 teasp. cinnamon."

However, no rejection on this basis is of record; thus, this issue is not before us. 15 U.S.C. 1071(a)(4).

U.S. Court of Customs and Patent Appeals

IN RE WALTER KLOSSIKA AND ALFRED BLAHA

No. 7968. Decided May 2, 1968

[55 CCPA—; 393 F.2d 858; 157 USPQ 429]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"SEMICONDUCTOR CONSTRUCTION."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Semiconductor Construction" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 245,640.

AFFIRMED.

George H. Spencer, *Harvey Kaye*, *Spencer & Kaye* for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges, RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The determinative issue here is whether appellants' claimed invention would have been obvious in view of the prior art of record within the meaning of 35 U.S.C. 103.

The issue is presented in this appeal from the decision of the Patent Office Board of Appeals,[2] adhered to on reconsideration, affirming the Examiner's rejection of claims 8 through 12 of appellants' ap-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The board consisted of Messrs. Friedman and Kreek, Examiners-in-Chief and Burns, Acting Examiner-in-Chief. Mr. Burns wrote the opinion of the board.

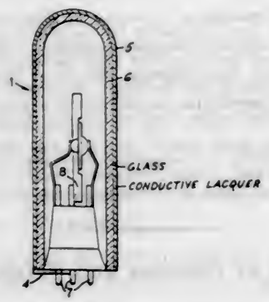
plication [3] under 35 U.S.C. 103 in view of the following prior art references:

Maynard et al., 2,947,925, Aug. 2, 1960.
Downing et al., 2,959,705, Nov. 8, 1960.
Philips (French), 1,179,195, Dec. 15, 1958.

Appellants' specification explains that a problem in the manufacture of semiconductor current translating devices, such as diodes and transistors, is to maintain uniformity with respect to reverse current and current amplification characteristics. It had been determined that surface ionization caused by static charges adversely affects the performance of the semiconductors. Appellants' invention is directed to a semiconductor construction which is intended to prevent the accumulation of surface charges on an enclosure containing the semiconductor.

Appellants' invention is apparent from claim 8 when read on the construction shown in FIG. 3:

Fig. 3



Claim 8, with reference numerals in brackets referred to the above FIG. 3, is as follows:

8. A semiconductor construction [1] comprising, in combination:
(*a*) a semiconductor device having a plurality of electrodes;
(*b*) an envelope [6] made of insulating material and surrounding said semiconductor device and its electrodes;
(*c*) electrically conductive means [5] arranged over the outer surface of said envelope;
(*d*) means [4] electrically connecting one of said electrodes with said electrically conductive means; and
(*e*) current lead-in means [7] separate from said envelope [6] and said electrically conductive means [5] for electrically connecting said electrodes to external circuitry said current lead-in means forming current conductive paths for the currents to and from said electrodes which paths are exclusive of said electrically conductive means [5] on said envelope.

Claims 9 through 12 further limit claim 8 to a "conductive layer" as the electrically conductive means (claim 9), designate "said one electrode" as the base electrode (claim 10), specify that the envelope is of glass (claim 11), and add that the "electrically conductive means" is a conductive layer applied to the outer surface of a glass envelope (claim 12).

The Examiner rejected appellants' claims "as being unpatentable over the French patent when considered with Maynard et al., pursuant to 35 U.S.C. 103."

[3] Serial No. 245,640, filed December 17, 1962, entitled "Semiconductor Construction." The application is described as a "division" of copending application Serial No. 9,055, filed February 15, 1960, now abandoned.

French relates to a semiconductor electrode arrangement in which conductors emerge from either side of the envelope. FIGS. 1 and 2 of the French patent are reproduced below:

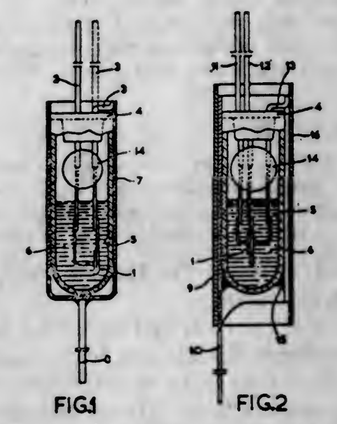

FIG.1

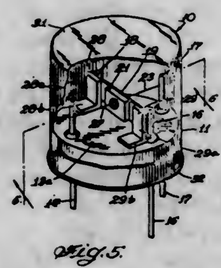
FIG.2

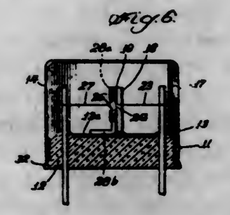
The reference explains that a diode, as shown in FIG. 1, with a conductor 2 and a conductor 3, of the type represented by the phantom line, is known as a single-ended diode. To form a double-ended device, i.e., one having a conductor at each end of the envelope, a metal tube 7, closed at the bottom, is slipped on the diode. The open end is joined to conductor 3. A connection lead 8 is fixed to the other end of the tube. Thus, a device is provided which may possess certain advantageous connecting characteristics.

The Examiner applied the French patent to the claim 8 as follows:

*** * * The French patent shows, in FIG. 2, a semi-conductor 1 having a plurality of electrodes sealed within a glass envelope. A metallic tube 9 is disposed over the envelope and meets the limitation recited in claim 8, subparagraph (*c*). Lead-in conductor 13 is bent over and contacts the metallic tube, as recited in claim 8, subparagraph (*d*). The French patent fails to disclose that the lead-in conductors 11, 12 and 13 form current conductive paths for the currents to and from said electrodes which paths are exclusive of said electrically conductive means on the envelope, as recited in the last four lines of subparagraph (*e*) of claim 8.**

The Examiner considered that last-mentioned feature to be an "old expedient in the semiconductor art as evidenced by the Maynard et al. patent." FIGS. 5 and 6 of Maynard are pertinent:


Fig. 5.


Fig. 6.

The Examiner applied the disclosure of these figures to appellants' claimed invention, stating:

*** * * Note that in FIGS. 5 and 6, the patentee shows a transistor mounted within a metal housing. Lead-in conductors 14, 16 and 17 are embedded in and extend through the insulating base portion 12 of the housing. As best seen in FIG.**

5, a metal strip 19 supports the base region of the transistor, which in turn is connected to L-shaped tabs and lead-in conductors 16 and 18. The emitter and collector regions are connected to lead-in conductors 14 and 17 by means of wires 27 and 23, respectively. The base region of the transistor is electrically connected to the cover 31 by means of metal coating 13, tabs 28 and 29 and metal strip 19. Thus, the lead-in conductors 14, 16 and 17 provide current conductive paths for the currents to and from the electrodes which paths are exclusive of the electrically conductive means (cover 31 of the metallic envelope). * * *

The Examiner concluded:

* * * To modify the French patent by allowing lead-in conductor 13 to extend out from the glass base, like lead-in conductors 11 and 12 and have some means for electrically connecting the lead-in conductor 13 to the metal tube would be an obvious modification in view of the teaching of the Maynard et al. patent. * * *

The Board affirmed, adopting the Examiner's application of the references set forth in his answer.

The appellants here argue that, in French, the metallic tube surrounding the semiconductor device must form a part of the current conducting path to one of the electrodes of the device. From this, they conclude that there is no basis "to modify the primary reference * * * in accordance with Maynard et al." since it would be "directly contrary to the teachings of the primary reference." In support of that conclusion, appellants further argue that the metal envelope of French cannot function to prevent the occurrence of static charges in the semiconductor element.

On this point, the Examiner had urged that "the metallic tubular member [of French] will inherently serve the same function as appellants' lacquer coating." We agree with the Solicitor that a fair interpretation of this comment is that the Examiner believed that the metal tubes will drain off any surface ionization or static charges that may form on the glass envelopes of the French device in the same manner as appellants' invention. Thus, on the record, we are unpersuaded by appellants' arguments since, in our view, they have failed to controvert the position of the Examiner.

Appellants' second argument is directed to the efficacy of Maynard. Appellants first submit that there is no basis in the reference for concluding that cover member 31 is of a conductive material. We think it a sufficient response to such argument to observe that Maynard discloses a body portion 12 held within the *conductive* metal cover 13 which is made of a suitable alloy such as "Kovar" and carries a thin gold layer on its upper surface 13*a*. The cover unit 31 is described as suitably connected as by *welding* to the mounting base 11 along the shoulder 32. Moreover, the cross-hatching of the member 31, shown in FIG. 6, shows that it would be made of metal if the drawings are in accordance with Rule 84(g) of the Rules of Practice.[4] These two factors seem to us to indicate that one of ordinary skill in the art would consider it an obvious expedient to make the cover 31 from metal. Thus, in the absence of evidence to overcome this prima facie showing by the Examiner, the metal cover 31 of the Maynard reference would satisfy that limitation in appellants' claims.

The second phase of appellants' argument attacking the sufficiency of the Maynard teachings is directed at whether the L-shaped heat-dissipating members 28 and 29 satisfy the claim requirement that

[4] 37 C.F.R. § 1.84(g) (1960), pertinent here, provided: Graphical drawing symbols for conventional elements may be used when appropriate, subject to approval by the Office. The approved symbol for sectioned metal shown on page 134 of the Rules of Practice is the same as the cross-hatching for member 31 in FIGURES 5 and 6 of the Maynard et al. patent.

there be an "electrical connection between one semiconductor element electrode and the conductive layer, i.e., cover member 31. It is a sufficient response to observe that strip members 28 and 29 are disclosed as "made of nickel" and are thus capable of conducting electrical current, even though its degree of conductivity may be less than copper.

The Downing patent was cited by the Examiner for the purpose of showing a protective shield in the form of a conductive lacquer material applied to an outer surface of a glass envelope of an electron discharge tube. His position was that Downing demonstrated the equivalency of a metallic coating sprayed upon a glass envelope with the tubular member of French. The Board did not further elaborate.

Appellants here argue that the coating layers of Downing are not electrically connected to any of the lead-in means of that device. However, we think that the Downing patent was a proper reference here to the extent of the limited purpose for which it was used.

Thus, we agree with the statement in the Solicitor's brief that the analogous character of the semiconductors in the reference patents and their electrical characteristics warrant a combination of their teachings in support of the Examiner's rejection of the claims under 35 U.S.C. 103.

[1] Accordingly, the decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,580,666, W. Dzus, QUICK-ACTING, SELF-LOCKING FASTENER, **filed** Apr. 1, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-519-JWC, *Dzus Fastener Co., Inc.* v. *Deutsch Fastener Co., Inc.*

2,592,969, H. Stachowiak, ROLLER FOR REMOVING LINT, **filed** July 23, 1965, D.C., E.D. Mich. (Detroit), Doc. 27146-C, *Maywood Industries Corp.* v. *Perma Products, Inc.* Stipulation and judgment in favor plaintiff for infringement prior to Dec. 1, 1967; defendant's counterclaim dismissed with prejudice, July 12, 1968.

2,604,313, F. W. Grantham, DRYERS; **2,643,463**, same, LAUNDRY APPARATUS, **filed** May 16, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c897, *Paulette Grantham et al.* v. *Challenge-Cook Bros., Inc. et al.*

2,643,463. (See 2,604,313.)

2,753,604, Trow and Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCING MACHINE; **3,283,529**, M. L. Nelson, AUGER ICE MAKING APPARATUS, **filed** June 10, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1057, *King-Seeley Thermos Co.* v. *Borg-Warner Corporation.*

2,756,630, E. W. Goldberg, AUTOMATIC SLIDE CHANGER; **3,249,001**, N. L. Stauffer, AUTOMATIC FOCUSING PHOTOGRAPHIC PROJECTOR, **filed** June 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1159, *Honeywell Inc.* v. *GAF Corp. et al.*

2,778,418, L. J. Laviana, PRESET TIMER, **3,385,115**, J. A. Draghi, CENTER PUSHBUTTON TIMER, **filed** June 10, 1968, D.C. Conn. (New Haven), Doc. 12599-C, *M. H. Rhodes, Inc.* v. *Robertshaw Controls Company.*

2,806,436, C. R. Johnston, FREIGHT POSITIONING AND RETAINING APPARATUSES; **2,896,554**, same; **2,976,824**, same, FREIGHT LOADING APPARATUSES; **3,102,613**, same, NAILABLE METAL FLOORING; **3,130,690**, same, FREIGHT LOADING APPARATUS; **3,152,669**, same, NAILABLE METAL FLOORING; **3,185,112**, same, FREIGHT CAR CONSTRUCTION; **3,195,699**, same, INSULATED WALL CONSTRUCTION; **3,313,071**, same, FLOOR RACKS; **3,336,880**, same, LOAD DIVIDER, **filed** June 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1163, *Transco Inc.* v. *Charles R. Johnston.*

2,826,828, S. Hamilton, VARIABLE DIFFICULTY DEVICES; **3,103,073**, Nickl and Kilbury, Jr., INSTRUCTOR SYSTEM; **3,123,920**, Crowder and Nickl, INSTRUCTION SYSTEM, **filed** July 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1267, *The Welch Scientific Company* v. *The Numan Engineering Institute, Inc.* Dismissed for want of venue and jurisdiction and for want of proper service, June 5, 1968.

2,848,334, E. Jones, STABILIZED EGG AND MILK PRODUCT AND METHOD OF PREPARING SAME; **3,093,487**, Jones, Tracy and Deffenbaugh, EGG PRODUCTS AND PROCESSES FOR PREPARING SAME; **3,113,872**, Jones and Johnson, METHOD OF TREATING SHELLED EGGS, **filed** Nov. 8, 1967, D.C. Minn. (Minneapolis), Doc. 4-67C-341, *Roberts Dairy Corporation et al.* v. *Marshall Produce Company.* Stipulation of dismissal with prejudice, June 20, 1968.

2,883,255, R. A. Anderson, AUTOMATIC PROCESS LOGGING SYSTEM; **2,922,990**, same, DATA REDUCTION SYSTEM; **2,987,704**, Gimpel and Daniels, VARIABLE MONITORING AND RECORDING APPARATUS, **filed** May 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c930, *Scam Instrument Corp.* v. *Honeywell Inc. and Sara Lee, Inc.*

2,896,554. (See 2,806,436.)

2,905,465, Armstrong and Wiener, CARD PROCESSING APPARATUS; **2,985,299**, Weiner and Wilson, same; **2,997,173**, Nelson, Stern and Wiener, same; **3,005,632**, A. Orner, same; **3,032,750**, Nelson and Redondo, same; **3,173,129**, Hayes and Stalder, same, **filed** May 31, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1001, *The Magnavox Company* v. *The National Cash Register Company and C. P. Clare & Company.*

2,922,900. (See 2,883,255.)

2,976,824. (See 2,806,436.)

2,985,299. (See 2,905,465.)

2,987,704. (See 2,883,255.)

2,997,173. (See 2,905,465.)

3,005,632. (See 2,905,465.)

3,032,750. (See 2,905,465.)

3,093,487. (See 2,848,334.)

3,102,613. (See 2,806,436.)

3,103,073. (See 2,826,828.)

3,110,996, K. D. Dahlman, GRASS CUTTING MACHINES, **filed** June 29, 1967, D.C., District of Columbia (Washington), Doc. 1654–67, *John F. Cody et al.* v. *Aktiebolaget Flymo et al.*

3,113,872. (See 2,848,334.)

3,123,920. (See 2,826,828.)

3,130,690. (See 2,806,436.)

3,152,669. (See 2,806,436.)

3,173,129. (See 2,905,465.)

3,185,112. (See 2,806,436.)

3,195,899. (See 2,806,436.)

3,219,276. (See 3,251,551.)

3,249,001. (See 2,756,630.)

3,251,551, A. C. Walberg, ELECTROSTATIC COATING SYSTEM; **3,219,276,** E. O. Norris, PLURAL NOZZLES HAVING INTERSECTING SPRAY AND CONTROL THEREFOR, **filed** June 6, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1041, *H. G. Fischer & Company* v. *Gyromat Corporation and Indesco Corporation.* **Same;** **3,268,171,** A. C. Walberg, ELECTROSTATIC COATING SYSTEM, **filed** June 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1162, *The Gyromat Corporation* v. *H. G. Fischer & Company.*

3,268,171. (See 3,251,551.)

3,283,529. (See 2,753,694.)

3,304,371, A. J. Rosenberg, INFORMATION PROCESSING SYSTEM, **filed** May 28, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–530, *Alex Jacob Rosenberg* v. *Standard Food Products Corp.*

3,313,071. (See 2,806,436.)

3,336,880. (See 2,806,436.)

3,380,455, S. Glogover, UNDERGARMENT, **filed** May 17, 1968, D.C., S.D.N.Y., Doc. 68–C–2039, *Milady Brassiere & Corset Co., Inc.* v. *De Luxe Girdlecraft Co., Inc.*

3,385,115. (See 2,778,418.)

D. 209,045, W. B. Parker, CHAIR, **filed** May 6, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–397, *Schlumberger Limited* v. *Shelby Dinettes, Inc.*

D. 209,159, Kesilman, Penn and Kravitz, SILVER WASHING BASKET, **filed** Apr. 3, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68C–329, *Green Valley Products Inc.* v. *Sterwood Corp.*

DEFENSIVE PUBLICATIONS

PUBLISHED DECEMBER 10, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

753,838

ORIENTED POLYARYLSULPHONE FILM

Brian Edmund Jennings, Digswell, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

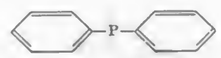
Continuation of application Ser. No. 451,336, Apr. 27, 1965. This application Aug. 8, 1968. Published Dec. 10, 1968

Claims priority, application Great Britain, May 1, 1964, 18,228/64

Class 260—49

No Drawing. 9 Pages Specification

An oriented film of a polyarylsulphone which is formed of repeating units of the formula —Ar—SO_2— where Ar is a divalent aromatic residue derived from benzene, a polynuclear hydrocarbon, diphenyl or a compound of Formula I



(I)

where P is —O—, —S—, —SO—, a divalent hydrocarbon radical, a substituted divalent hydrocarbon, a residue of a diol containing only carbon atoms or groups of the structure —C—O—C— and —C—S—C— in the chain between the hydroxyl groups, or Ar is a substituted derivative of any such aromatic residue wherein one or more of the hydrogen atoms bound to aromatic rings are substituted by other monovalent atoms or groups, and Ar may vary from unit to unit in the polymer chain, and a minor proportion of the —SO_2— links may be replaced by —CO— links. The Ar residues may be derived from diphenyl ether or diphenyl sulphide and optionally in minor proportion from diphenyl. Orientation is accomplished by stretching the film at elevated temperature. Stretching may be effected in one direction or either sequentially or simultaneously in two directions. Temperatures between 240° C. and 275° C. may be used.

564,010

MONOAZO COMPOUNDS CONTAINING A THIOMORPHOLINE-1-OXIDE GROUP

George F. Converse and Gerald L. Mayberry, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed July 11, 1966. Published Dec. 10, 1968

Class 260—152

No Drawing. 13 Pages Specification

Water-insoluble phenyl-azo-aniline compounds in which the nitrogen atom of the aniline coupling component is a ring member of a thiomorpholine-1-oxide group. The disclosed compounds are useful as dyes for hydrophobic textile materials such as cellulose acetate, polyester and nylon fibers.

594,994

1-AMINO-2-UNSUBSTITUTED OR SUBSTITUTED-4-OXOHETEROCYCLICIMINO ANILINO ANTHRAQUINONES

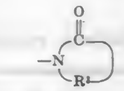
James M. Straley and David J. Wallace, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Nov. 17, 1966. Published Dec. 10, 1968

Class 260—326.5

No Drawing. 20 Pages Specification

1-amino-4-anilinoanthraquinone compounds, in which the anilino group is substituted with a group having the formula



wherein R^3 is a chain of three to four atoms which chain atoms consist of carbon or carbon and at least one oxygen, sulfur, or nitrogen atom, are useful as dyes of hydrophobic textile materials.

632,180

1-AMINO-2-SULFAMOYL-4-HYDROCARBON SULFONAMIDO ANTHRAQUINONES

James M. Straley and Ralph R. Giles, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Apr. 20, 1967. Published Dec. 10, 1968

Class 260—247.1

No Drawing. 21 Pages Specification

Water-insoluble 1-amino-4-alkyl-, cycloalkyl-, or arylsulfonamidoanthraquinone compounds containing an unsubstituted or substituted sulfamoyl group at the 2-position are useful as dyes for hydrophobic textile materials such as polyester fibers on which the compounds exhibit excellent fastness to light and resistance to sublimation.

651,682

ESTERS OF ALKANEDIOIC ACIDS AND AROXYPHENOLS AND LUBRICANT COMPOSITIONS

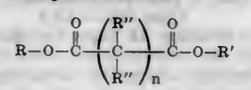
John W. Thompson and Glenn C. Jones, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed July 7, 1967. Published Dec. 10, 1968

Class 252—57

No Drawing. 16 Pages Specification

An ester-type lubricant of improved elevated temperature stability having the formula

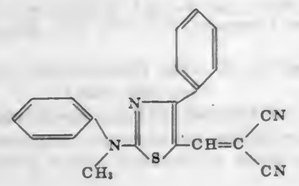


with R phenoxyphenyl or other aroxyaryl, R′ phenoxyphenyl, phenyl, or other aroxyaryl or aryl, R″ lower alkyl

and *n*, 1 or 2. Antioxidants, antiwear additives, antifoam additives, metal deactivators and viscosity index improvers may be used in the lubricant in minor amounts.

658,325
2-AMINO-5-CYANOVINYLENE THIAZOLES
James M. Straley and Clarence A. Coates, Jr., both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662
Filed Aug. 4, 1967. Published Dec. 10, 1968
Class 260—247.1
No Drawing. 13 Pages Specification

2-aminothiazole compounds containing a cyanomethylidyne group, prepared by condensing a 2-amino-5-formylthiazole with an active methylene compound, are useful as dyes for hydrophobic textile materials. For example, the compound having the formula



imparts fast yellow shades to polyester fibers.

663,483
1-AMINO-2-HETERO-N-SULFONYL-4-AMINO ANTHRAQUINONES
Ralph R. Giles, James M. Straley and David J. Wallace, all % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662
Filed Aug. 28, 1967. Published Dec. 10, 1968
Class 260—247.1
No Drawing. 22 Pages Specification

Water-insoluble, 1,4-diaminoanthraquinone compounds, containing a cyclic sulfamoyl group at the 2-position and in which the 4-amino group can be substituted, are useful as dyes for hydrophobic textile materials such as polyester fibers.

686,834
DISAZO COMPOUNDS CONTAINING A PYRROLIDINONO, PIPERIDONO OR PHTHALIMIDINO RADICAL
Max A. Weaver and James M. Straley, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662
Filed Nov. 30, 1967. Published Dec. 10, 1968
Class 260—152
No Drawing. 14 Pages Specification

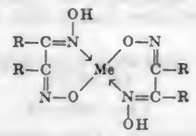
Disazo compounds containing a pyrrolidinono, piperidono, or phthalimidino radical attached to a nuclear carbon atom of a benzene diazo component and having a phenolic coupling component are useful as dyes for hydrophobic textile materials.

688,343
CATALYTIC SYNTHESIS OF ALPHA,BETA-UNSATURATED NITRILES
Howard S. Young, % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662
Filed Dec. 6, 1967. Published Dec. 10, 1968
Class 260—465.3
No Drawing. 18 Pages Specification

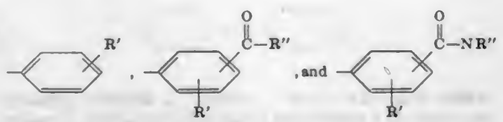
Process for the ammoxidative conversion of propylene to acrylonitrile comprising contacting a mixture of vaporized propylene, ammonia, and oxygen at a temperature of from about 300° C. to about 550° C. with a novel catalyst composition comprising oxidized molybdenum, oxidized bismuth, and at least one of oxidized niobium and oxidized tantalum. Acrylonitrile may be subsequently used in synthetic fibers, high impact resins, and as a major chemical intermediate.

690,071
CELLULOSE ESTERS AND POLYESTERS STABILIZED WITH METAL CHELATES OF GLYOXIMES
John W. Tamblyn, Box 92, Jonas Ridge, N.C. 28641, and Gerald R. Lappin and Gordon C. Newland, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662
Filed Dec. 13, 1967. Published Dec. 10, 1968
Class 106—176
No Drawing. 14 Pages Specification

Stabilized compositions comprising cellulose esters or polyesters and a stabilizing amount of a metal chelate of the following formula:



wherein Me is a metal selected from the group consisting of Co, Ni, Mn, and Cu; and R contains from 1 to about 20 carbon atoms and is selected from the group consisting of alkyl, aryl, alkaryl,

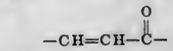


wherein R′ is alkyl or aryl as defined above, alkoxy containing from 1 to 20 carbon atoms, hydroxy, cyano, carboxy, acetyl, or halogen; and R″ is alkoxy, alkyl, or aryl as hereinbefore defined are protected against weathering, sunlight, and ultraviolent light by the chelate.

708,476
METHOD FOR MAKING THERMOGRAPHIC COPIES FROM NON-INFRARED ABSORBING ORIGINALS
Frank D. Allen, deceased, late of Rochester, N.Y., by Mona Armstrong Allen, executrix, 455 Thomar Drive, Rochester, N.Y.
Filed Feb. 21, 1968. Published Dec. 10, 1968
Class 96—27
No Drawing. 20 Pages Specification

A process is described for preparing thermographic copies from substantially non-infrared-absorptive original images. The process comprises exposing a photosensitive element to actinic radiation through the original, forming with the element an infra-red absorptive image and then employing this infrared absorptive image as a second generation original in a thermographic copying process. In one embodiment an infrared absorptive image is prepared by employing as the photosensitive element a photothermographic element which undergoes a change in tackifying point upon photoexposure. After heating, composition from areas having a lower tackifying point is transferred to a receiving sheet, if an infrared absorptive colorant is incorporated in the composition, or is toned with an infrared absorptive material. An example of a suitable photothermographic element is one containing a

layer of a photosensitive copolyester composition containing as an integral portion the light-sensitive grouping



In a second embodiment an infrared absorptive image is prepared by the image-wise photodestruction of a photobleachable dye, such as a polymethine pyrylium dye or a polymethine cyanine dye, contained in the photosensitive element.

745,090
PIGMENT FLUSHING MEDIUM
Charles H. Coney, Kingsport, Tenn., and Willie E. Draper, Gate City, Va. (both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662)
Filed July 16, 1968. Published Dec. 10, 1968
Class 106—25
No Drawing. 3 Pages Specification

Sucrose acetate isobutyrate is used to flush liquids from a wet pigment cake thus producing a fine particle size pigment dispersion.

REISSUES

DECEMBER 10, 1968

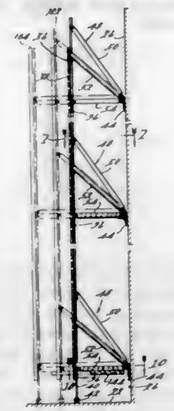
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,500
FREIGHT BRACING APPARATUS

John P. Moorhead and Jackson A. Shock, Northville, Mich, assignors to Evans Products Company, Plymouth, Mich., a corporation of Delaware

Original No. 3,151,572, dated Oct. 6, 1964, Ser. No. 267,155, Mar. 22, 1963. Application for reissue Aug. 8, 1966, Ser. No. 574,266

12 Claims. (Cl. 105—369)



A cargo bracing system for a railway car including a plurality of sidefiller assemblies supported by one of the car walls for bracing cargo positioned between the opposing wall and the sidefiller assembly. Each of the sidefiller assemblies is supported adjacent the wall by a latch mechanism in a retracted position and is movable to a plurality of operative positions spaced different distances from the walls by a plurality of leaves which coact to lock the panel in its respective bracing positions. A roller support is additionally provided to maintain the panel in a substantially fixed vertical position relative to the floor in each of its bracing positions.

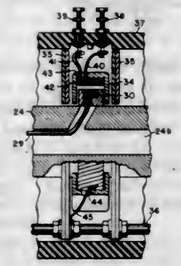
26,501
MULTI-CHANNEL ROTARY TRANSFORMER

Sydney Himmelstein, Park Ridge, Howard S. Knaack, Lake Bluff, and Richard S. Tveter, Glenview, Ill., assignors, by direct and mesne assignments, to S. Himmelstein and Company, Elk Grove Village, Ill., a corporation of Illinois

Original No. 3,317,873, dated May 2, 1967, Ser. No. 364,129, May 1, 1964. Application for reissue Jan. 5, 1968, Ser. No. 698,981

9 Claims. (Cl. 336—120)

A rotary transformer having a frame with spaced bearings therein, a shaft journalled in the bearings, a plurality of U-shaped rotor cores affixed to the shaft in axially-spaced relation, each rotor core having radially extending side walls confining a rotor coil, and a U-shaped stator core on the frame for each rotor, the stator core also having radially extending side walls confining a stator coil, each stator coil further including two substantially identical unitary gapless hemicylinders having a cylindrical portion integral with the stator core side walls to define a U-shape in radial section, the distance between the inner faces of the side walls of each stator core being greater than the distance between the outer faces of the side walls of the rotor core associated therewith, the



stator cores each being mounted on the frame to dispose the side walls thereof in radially overlapping relation to the side walls of the associated rotor core.

26,502
PROCESS FOR PRODUCING A HIGH PROTEIN COMPOSITION BY CULTIVATING MICRO-ORGANISMS ON AN N-ALIPHATIC HYDROCARBON FEED

John D. Douros, Jr., Littleton, Colo., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original No. 3,308,035, dated Mar. 7, 1967, Ser. No. 410,299, Nov. 10, 1964. Application for reissue Apr. 4, 1967, Ser. No. 637,018

11 Claims. (Cl. 195—28)

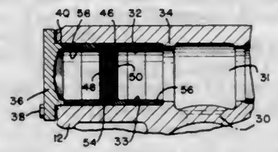
Fermentation process for producing a high protein composition on an aliphatic hydrocarbon feed in a media comprising aqueous growth medium containing oxygen and other essential cell nutrients.

26,503
VOLUME ADJUSTING APPARATUS FOR COMPRESSOR CYLINDER CLEARANCE POCKETS

Hugh A. Race, Big Flats, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Original No. 3,354,790, dated Nov. 28, 1967, Ser. No. 508,944, Nov. 22, 1965. Application for reissue Feb. 20, 1968, Ser. No. 709,152

10 Claims. (Cl. 92—59)



An apparatus for adjusting the effective volume of a compressor cylinder clearance pocket, including a closure member and spacer members for retaining the closure member in a plurality of alternative positions in the clearance pocket.

26,504
AUTOMATIC HITCH COUPLERS
Philip L. Quandt, 724 Reynolds St. 61103, and C. O. Folke Fyrk, R.R. 4 61111, both of Rockford, Ill.
Original No. 3,319,977, dated May 16, 1967, Ser. No. 462,363, June 8, 1965. Application for reissue Apr. 25, 1968, Ser. No. 728,094
33 Claims. (Cl. 280—475)



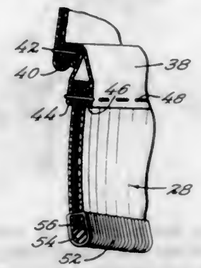
An elongated ramp coupling member swivelled near its one end on one of two things to be coupled together is adapted when uncoupled to gravitate to a rearwardly and downwardly inclined position and cooperates with a coupling tongue member extending from the other thing, the tongue member having guide means on its forward end to engage and run up on the inclined ramp to center the two members relative to one another preparatory to the engagement of a latch on one of the members with a keeper on the other of said members for coupling the two things together. The tongue is supported by a prop with its front end above the level of the lower end of the ramp preparatory to the coupling operation, and the ramp is swingable upwardly toward parallelism with the tongue when the guide means running up the ramp runs forwardly over the swivel support onto the front end portion of the ramp, and finally the rear end of the ramp is detachably connected with the tongue in the final endwise movement of the tongue and ramp members at the end of the coupling operation, holding the tongue and ramp members in aligned and substantially parallel relationship when coupled and holding the prop in a raised out of the way position.

PATENTS

GRANTED DECEMBER 10, 1968

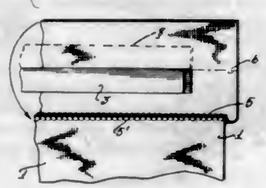
GENERAL AND MECHANICAL

3,414,906
CAP
Chaim Bonk, 1916 Morgan Ave., and Samuel Rafowitz, 1922 Morgan Ave., both of St. Paul, Minn. 55116
Filed Feb. 24, 1965, Ser. No. 434,888
2 Claims. (Cl. 2—172)



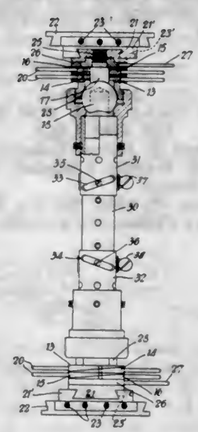
A cap having a body portion terminating in a common plane along its lower edge. An annular flap adapted to encircle the head of a wearer is connected to the lower edge of the cap by flexible tape wide enough to support the flap beneath the plane of the cap lower edge when in lowered position. The cap being foldable into the cap body when not in use. The flap is formed of two layers of resilient woven material. Plastic foam material is laminated to the inner surface of at least one of these layers.

3,414,907
METHOD OF MAKING A GARMENT WAISTBAND
Lowell Flame, Riverdale, N.Y., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Nov. 15, 1967, Ser. No. 683,408
1 Claim. (Cl. 2—221)



The invention consists of a garment body fabric carrying at the upper area thereof a separate and applied waistband. In order to provide an interior relatively smooth surface running from the top of the garment fabric to the top of the inner fold of the waistband, the latter is so positioned that its inner edge abuts the edge of the garment and connection is made by zig-zag stitches across the joining line. Interiorly of the waistband is an elastic fabric strip. In the method of assembly prior to the final zig-zag stitches, the lower edge of the waistband fabric first is connected to the garment fabric by a line of stitching and the elastic strip is placed flat thereon, with the center approximately at the subsequent line of fold of the waistband fabric. Then the waistband is centrally folded. In this action the elastic strip also is folded centrally thereof, so as to lie out of the way of the blind zig-zag connecting stitches then applied. Finally by pulling the connected waist band into somewhat arcuate formation, the elasticity of the strip will automatically bring it back into original flat form and the assembly will be completed. By "blind stitches," all that is meant is that the said stitches preferably do not extend to the outer face of the waistband.

3,414,908
ALIGNMENT DEVICES FOR USE WITH PROSTHESES
John Berry Waggott, Alton, and Albert J. S. Dadson, London, England, assignors to Vissa Limited, Alton, Hampshire, England
Filed Aug. 6, 1965, Ser. No. 477,811
2 Claims. (Cl. 3—1)

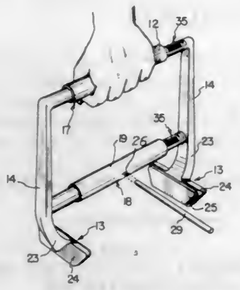


An alignment device for prostheses in which the angular adjustment of end plates of the device is achieved by the use of ball and socket joints and is maintained by solid spacers made up from a plurality of rotatable and lockable wedge shaped discs embracing a locking rod extending from the ball of the joint.

3,414,909
CLAMP-ON GRAB BAR OR RAIL FOR BATHTUBS OR THE LIKE
Mike A. Provi and S. Robert Guinter, Rockford, Ill., assignors to The Brearley Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 15, 1966, Ser. No. 579,621
17 Claims. (Cl. 4—185)

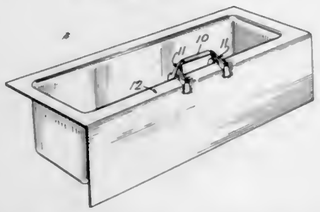
1. A clamping device adapted to be secured to a support having spaced surfaces facing in opposite directions away from each other, said device having, in combination, a pair of C-shaped body members each having spaced first and second parallel legs aligned with the first and second legs of the other member in a common plane, an upper adjustable coupling joining said first legs and including a first adjusting member having at least one threaded connection with the first legs for adjusting the legs toward and away from each other in response to turning of the adjusting member in opposite directions, a second ad-

justable coupling joining said second legs and including a second adjusting member having at least one threaded connection with the second legs for adjusting the second legs toward and away from each other in response to turning of the adjusting member in opposite directions, and two



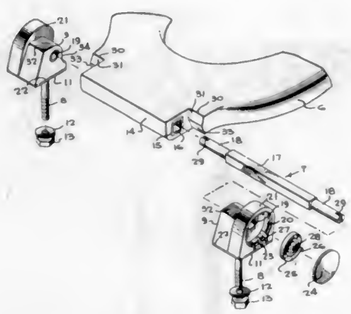
clamping jaws one rigid with and depending from the outer end of the second leg of each of said body members, said jaws having opposed clamping surfaces facing toward each other and engageable with said spaced surfaces of said support in rigid clamping relation upon turning of said adjusting member.

3,414,910
CLAMP-ON GRAB RAIL FOR BATHTUBS OR THE LIKE
Mike A. Provi and S. Robert Guinter, Rockford, Ill., assignors to The Brearley Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 15, 1966, Ser. No. 579,622
11 Claims. (Cl. 4—185)



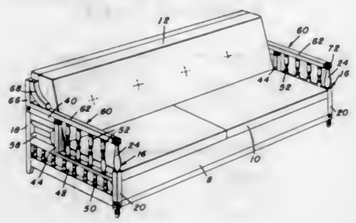
1. A safety device adapted to be secured to the upper edge portion of a vertical wall of a bathtub, said device having, in combination, a pair of generally A-shaped brackets each having lower foot portions adapted to straddle said wall and having opposed clamping surfaces engageable with opposite sides of the wall, upwardly extending side members converging toward each other from the foot portions and into abutting engagement of their upper ends at the apex of the A, a separately formed tension bar forming the cross-bar of the A and extending transversely of said side members at intermediate portions thereof between said foot portions and said apex, and tension members acting between said side members and said tension bar and cooperating with the bar to pull said foot portions toward each other when said upper end portions are in abutting engagement, said upper end portions of said side members extending laterally from the side members and toward the other of said brackets and having exterior bearing surfaces, and a hand rail extending between said brackets and having hollow end portions receiving said end portions of said brackets and telescoping closely over said bearing surfaces to retain the bracket end portions assembled in abutting relation at said apex while permitting relative turning of the side members about the end portions.

3,414,911
SELF-RAISING WATER CLOSET SEAT
Dillard T. Enlow, Columbus, Miss., assignor to Beneke Corporation, Columbus, Miss., a corporation of Mississippi
Filed Aug. 26, 1966, Ser. No. 575,356
6 Claims. (Cl. 4—241)



1. A self-raising seat assembly for water closets comprising, a seat, a hinge pin non-rotatably mounted within the seat and having cylindrical trunnions projecting beyond the seat at either side, hinge blocks having bearing openings journalling the hinge pin trunnions, coil springs each having one end attached to a hinge pin trunnion and to the hinge block journalling the respective trunnion, means for attaching the hinge blocks to a water closet, and cup-like receptacles in the hinge blocks in which the springs are housed.

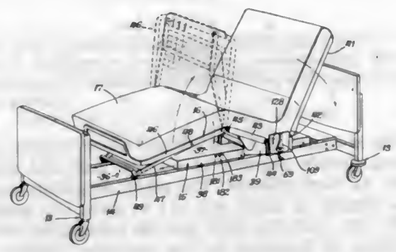
3,414,912
FURNITURE WITH INTERCHANGEABLE COMPONENTS
Albert P. Dusey, Sr., and Albert P. Dusey, Jr., both of R.D. 2, Lebanon, N.J. 08833
Filed Sept. 12, 1967, Ser. No. 667,103
8 Claims. (Cl. 5—52)



The above-entitled concept has to do, broadly speaking, with manufamturing and merchandising sofas, armchairs, bedsteads and the like. To the ends desired, a customer will purchase a living room sofa, for example, with a provision that within an acceptable span of time the seller, the furniture store, will, upon request, send an experienced man to the purchaser's home to change the style of her furniture on the spot, so to speak. In carrying out the idea, a basic skeleton one-piece frame is equipped with applicable and removable interchangeable auxiliary component parts or sections which when in place provide a self-contained but changeable furniture support unit preferably, but not necessarily, made up of prefabricated plastic members. The basic frame is a sturdy leg-equipped

support and the auxiliary replaceable components are of predetermined standardized construction and appearance to achieve the stylized change-over effect desired.

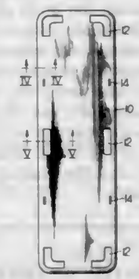
3,414,913
ELECTRICALLY OPERABLE HOSPITAL BED
John F. Stanley, Whiting, Wis., and Ronald D. Dewey, Tacoma, Wash., assignors to Joerns Furniture Company, Stevens Point, Wis., a corporation of Wisconsin
Filed Apr. 24, 1967, Ser. No. 632,960
19 Claims. (Cl. 5—68)



Electrically operable hospital bed with bottom frame, high-low means to raise and lower same, upper frame mounted for longitudinal translation relative to bottom frame, articulated spring with seat section secured to upper frame and pivotal head and knee sections, head screw on upper frame for swinging head section, translating screw on upper frame operable with head screw, knee screw on upper frame for independently swinging knee section, electric motor on upper frame, drive means selectively controllable by function selector for interconnecting high-low means, head screw, or knee screw, respectively, with motor, half nut on bottom frame shiftably engageable with and disengageable from translating screw to effect coordinated translation of upper frame with swinging of head section but so shiftable only when head section is horizontal or at a limit of travel therebelow, normally inoperative switches protectively mounted below spring and manually operable by switch bars and remote control means to effect forward or reverse rotation of motor, limit controls automatically returning remote control means and switches to inoperative position, a lever adjacent each remote motor control means manually movable to any one of three positions to control the drive means and to align the switch bars with limit control associated with selected one of three functions, interlock preventing movement of levers while motor is energized, and lockout means below spring selectively operable to prevent energizing of motor to effect operation of any one or more of selectable functions.

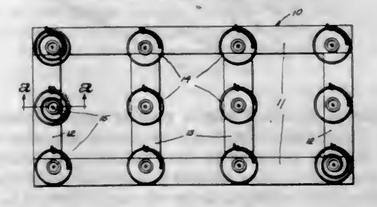
3,414,914
LITTER AND METHOD FOR MAKING THE SAME
Robert Gramins, 3346 S. 92nd St., Apt. 4, Milwaukee, Wis. 53227
Filed Mar. 13, 1967, Ser. No. 622,676
9 Claims. (Cl. 5—82)

A litter is made by coating a mold with liquid plastic which dries to a smooth finish; laying in a first layer of nonwoven glass fiber material such as a Fiberglas (trademark) mat and coating the first layer with liquid resin; laying in a second layer of woven glass fiber material such as a Fiberglas mat and coating the second layer with liquid resin; laying a rigid supporting framework of wood, metal, or stiff foam type plastic; and laying in a third layer and fourth layer of glass fiber material similar to the aforementioned first layer. The layers of material are provided with appropriate holes near their outer edges to provide handhold and strap fastening means. In another



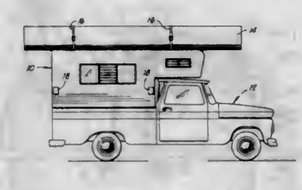
embodiment of the invention, the litter comprises two separable portions which can be locked together to provide a full-length litter or, if desired, the portions can be separated to provide a smaller litter.

3,414,915
BOTTOM CONSTRUCTION FOR BOX SPRINGS
Frederick A. Ciampa and Angelo Serafini, East Boston, and Louis Mazzarella, Boston, Mass., assignors to Standard Box Spring Co., East Boston, Mass., a corporation of Massachusetts
Filed Apr. 24, 1967, Ser. No. 632,965
4 Claims. (Cl. 5—351)



A fastener for securing individual coils to the bottom frame of a box spring. The fastener is a cup-like disk which fits inside the bottom turn of a coil and has a flange overlying the bottom turn. The disk is nailed to the frame, or has prongs struck out of the middle and driven into the frame.

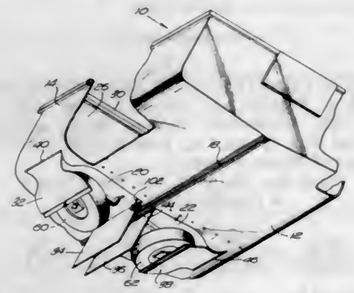
3,414,916
AMPHIBIOUS CAMPER APPARATUS
James A. Martin, P.O. Box 21, Wellston, Okla. 74881, and Albert D. De Lozier, P.O. Box 235, Nicoma Park, Okla. 73066
Filed Nov. 29, 1967, Ser. No. 686,511
9 Claims. (Cl. 9—1)



A camper apparatus which can be mounted on, and transported by, a truck, or which can alternatively be manually demounted from the truck and rigged with pontoons for aquatic travel. The dual pontoons employed for adapting the camper to aquatic use each include a pair of mating pontoon housing segments which each define an angle of about 90°, which segments are detachably intercon-

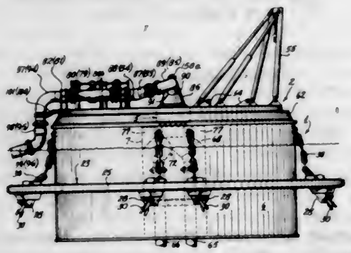
nected to form an elongated, hollow, open ended pontoon housing of rectangular cross section. The two pontoon housings are secured on opposite sides of the camper body by straps passed beneath the body of the camper, and an elongated, flexible, inflatable flotation element is located in each pontoon housing in an inflated condition when the camper is afloat. The pontoon housing segments and flotation elements, when disassembled, can be stored compactly in a nested condition so that they require little space, and can be easily transported in or on the camper when it is mounted on the truck. Manually operable outrigger jacks are provided for loading and off-loading the camper from the truck.

3,414,917
BOAT TRAILER WITH RETRACTABLE WHEELS
Edgar W. Harrington, 130 Ipswich Road, Topsfield, Mass. 01983
Filed Feb. 20, 1967, Ser. No. 617,222
4 Claims. (Cl. 9—1)



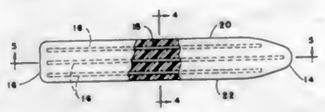
A boat is provided with a pair of vehicle wheels carried in a horizontal plane and swingable down to vertical planes for use on a road, and operating mechanism to swing the wheels from stowed position to active position, or reverse, by rocking a lever through 180°. Also operated by the lever are two doors in the bottom of the boat which open to let the wheels move from one position to the other and close after the wheels have moved to the other position.

3,414,918
APPARATUS FOR TRANSFERRING FLUENT MATERIALS
Warren A. Petrie, New Orleans, and George R. Smith, Covington, La., assignors to J. Ray McDermott & Co., Inc., New Orleans, La., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,595
7 Claims. (Cl. 9—8)



A fluent material loading buoy of the type in which a plurality of conduits extend through a central upright opening of a base structure. A support table is rotatably mounted on the base and support pipes above the base which are connected to the conduit by swivel connectors located adjacent the top of the base. The particular swivel provides a relatively low profile which is easy to assemble, to maintain, and is quite reliable.

3,414,919
WATERCRAFT
George A. Gust, 909 Crestway Drive, Fort Wayne, Ind. 46809
Continuation-in-part of application Ser. No. 522,095, Jan. 21, 1966. This application Sept. 8, 1966, Ser. No. 585,284
3 Claims. (Cl. 9—310)



The invention is a paddleboard which includes an integrated, flexible assembly of a plastic body and aluminum tubes as reinforcement. The plastic is polystyrene foam of a density of about one (1) to three (3) pounds per cubic foot. Both the body and the reinforcing tubes have a degree of flexibility for the particular lengths thereof such that molding the tubes into the plastic body results in an integrated unit which itself is flexible. By reason of the tubes and body being conjointly flexible, relative movement therebetween is either minimized or eliminated whereby the reinforcing tubes are in effect "locked" to the body and under ordinary circumstances do not separate therefrom.

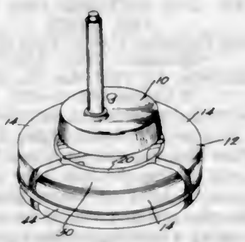
There results a paddleboard which is the ultimate in simplicity, is lightweight in construction, withstands rough handling and is of minimum expense.

3,414,920
WATER SAFETY COLLAR
Joseph R. Beaton, Hillside Terrace, Marcy, N.Y. 13403
Filed Nov. 25, 1966, Ser. No. 597,124
1 Claim. (Cl. 9—316)



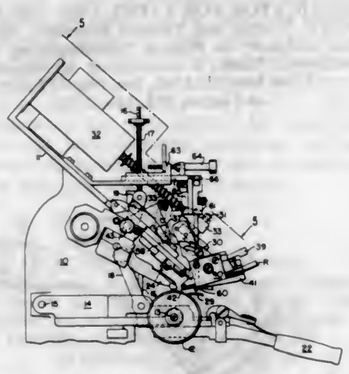
A life saving device comprising an inflatable neckband adapted to be worn inconspicuously around the neck.

3,414,921
SEGMENTED FLOAT FOR AIR COMPRESSOR
Lucius D. Watkins, Hartland, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,406
11 Claims. (Cl. 9—400)



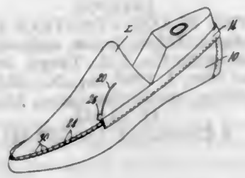
Disclosed herein is a segmented float for floating a diving apparatus comprising a combined engine and air compressor unit. The segmented float comprises the assembly of a plurality of spaced buoyant segments which can be formed from an expanded plastic, such as polystyrene or other buoyant material, and which, together, are intended to surround the engine-compressor unit and to provide the necessary buoyancy to float the entire unit. The float segments are secured to the engine-compressor unit by a rubber band or belt seated in a circumferential groove in the segments. The cross section of the segments is larger below the water line than above. The upper contour of the segments is sloping to facilitate draping of the air hoses used in such an apparatus.

3,414,922
RIB APPLYING AND CUTTING MACHINE
Charles G. Melanson, Lynn, Mass., assignors to Prime Manufacturing Company, Lynn, Mass., a corporation of Massachusetts
Filed Mar. 15, 1967, Ser. No. 623,442
9 Claims. (Cl. 12—20)



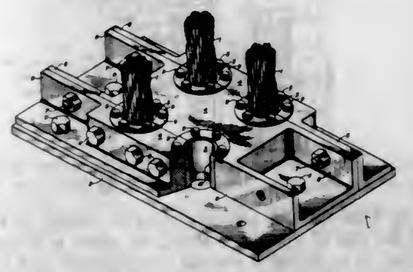
A machine for applying rib stripping to a flat insole blank, in which the invention comprises automatic mechanism for separating the insole and stripping preparatory to cutting off the stripping at a point in the contour of the insole determined by feeler means.

3,414,923
MOCCASIN MANUFACTURE
Henri E. Rosen, 67 Long Wharf, Boston, Mass. 02110
Filed Feb. 26, 1964, Ser. No. 347,472
6 Claims. (Cl. 12—142)



A method of forming a moccasin forepart including a toe from an outer upper vamp element with an upper outer edge of one length turned inwardly and shortend for joining with a shorter outer edge of an outer upper plug element, including the steps of: sewing to vamp said element two control thread elements including a drawstring element applied to one side of the vamp element generally parallel thereto adjacent to its edge and an attaching thread element applied to the vamp element adjacent to its edge around said drawstring element maintaining said drawstring element in its position; molding said vamp element around the outside of a last by holding said outer edge of the vamp element on the last and pulling the ends of the drawstring element to shorten said outer edge of the vamp element to substantially the shorter length of the said plug element edge to be joined thereto, said control thread elements restraining said vamp element edge against excessive puckering and outward movement while it is being shortened by the drawstring element; and joining the shortened vamp element edge to the outer edge of said outer upper plug element by machine stitching.

3,414,924
BRIDGE SUSPENDER COLLAR
Preston R. Perkey, Sr., Harrisburg, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,849
4 Claims. (Cl. 14—22)



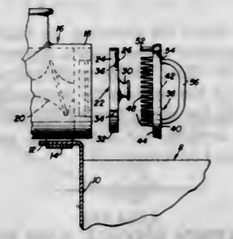
1. In a suspension bridge, a collar for enclosing the cables forming a suspender where said cables pass through the top chord of the suspended structure of said suspension bridge, said collar comprising:

(a) a plate member secured to said top chord, said plate member having a plurality of apertures aligned with the cables of said suspender and comprised of a plurality of sections separable along vertical planes passing through said apertures,

(b) a plurality of lining members, each disposed within an aperture in said plate member and having an aperture, each said lining member being split along a vertical plane passing through the center of the aperture in said lining member,

(c) retaining means securing said lining members in the apertures in said plate member.

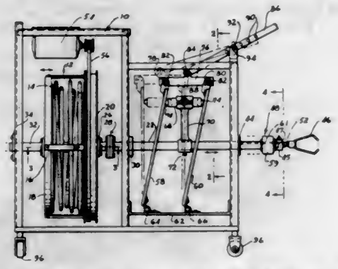
3,414,925
CLEANER FOR MEAT GRINDER HEADS
Andrew H. Stavros, 1342 10th St., Idaho Falls, Idaho 83401
Filed June 24, 1966, Ser. No. 560,301
7 Claims. (Cl. 15—104)



A self-contained device for dislodging and clearing out contaminable residual meat deposits which often cling to and foul up meat extruding orifices in a meat grinder head plate and characterized by a cleaner plate. This cleaner plate is made from moldable plastic material and has a flat side equipped with integral laterally projecting meat plunging and clearing prongs which are properly tapered.

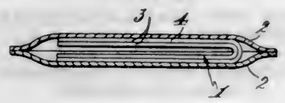
The outer peripheral edge of the plate is provided with piloting and positioning guide pins seatable in keeper notches provided therefor. The hub portion of the plate has an axial hole.

3,414,926
PIPE CLEANER
Meyer Bloom, 955 Rutland Road, Brooklyn, N.Y. 11212
Filed Aug. 19, 1966, Ser. No. 573,593
5 Claims. (Cl. 15—104.3)



In apparatus for cleaning pipes by means of a cutter on the end of a snake (cable), the snake is drawn from a coil in a rotatable storage compartment and emerges from a hollow shaft connected to the storage compartment. The shaft and the snake are rotated by rotating the storage compartment, and the snake, which has a helical jacket, is advanced from the end of shaft by relatively stationary jaws engaging the jacket so that rotation of the snake screws the snake through the jaws. The snake is adapted to be oscillated longitudinally by a cam follower mounted on, and extending outwardly from, the shaft and straddled by a pair of parallel cam plates that extend across the axis of the shaft and are adapted to be inclined relative to the axis of the shaft.

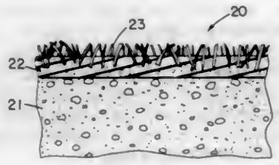
3,414,927
COMPOSITE WEB FOR TREATING HUMAN TISSUE
Gurdon S. Worcester, High St., Gloucester, Mass. 01930
Filed Oct. 10, 1966, Ser. No. 585,421
13 Claims. (Cl. 15—104.93)



A disposable towel for cleaning the face or hands consists of two absorbent paper sheets separated by a moisture barrier, one sheet being impregnated with a skin toning agent, and the other with a cleaning agent which prepares the skin for the action of the toning agent. The towel is folded keeping the two sheets apart and sealed in a moisture-proof envelope.

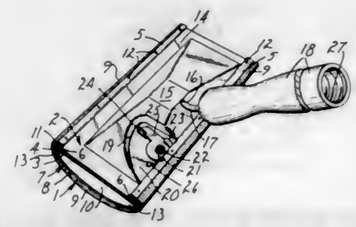
3,414,928
COMBINATION SPONGE AND SCOURER
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of applications Ser. No. 249,921, Jan. 7, 1963, and Ser. No. 257,319, Feb. 8, 1963, This application Oct. 22, 1965, Ser. No. 501,394
4 Claims. (Cl. 15—118)

A cleaning and scouring device is provided which is made of a plurality of materials including a cellular expanded plastic base capable of retaining cleaning liquid, an unexpanded plastic material secured to a portion of



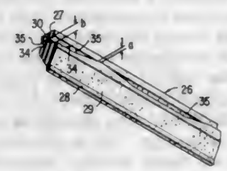
the surface of said base and a plurality of scouring elements secured to and supported by said unexpanded plastic material.

3,414,929
APPLICATOR FOR PAINT AND THE LIKE
Frederick P. Warner and Yoshimi Matsuura, Minneapolis, Minn., assignors to Warner Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed July 31, 1967, Ser. No. 657,350
4 Claims. (Cl. 15—231)



An applicator head having channel defining portions for slidable reception of a holder, and means on the holder for releasably locking the head on the holder against sliding movements therebetween. The applicator head includes a mounting plate and a filament pile equipped applicator sheet anchored at opposite side edge portions to adjacent portions of the mounting plate, a cushioning pad being interposed between the applicator sheet and mounting plate.

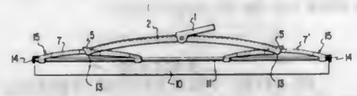
3,414,930
WIPER BLADE CONSTRUCTION
Mitsuru Kodama, Tokyo, Japan, assignor to Ichikawa Seisakusho Co., Ltd., Tokyo, Japan
Filed Mar. 3, 1967, Ser. No. 620,426
Claims priority, application Japan, Mar. 3, 1966, 41/13,042
6 Claims. (Cl. 15—250.36)



A wiper blade having elongated grooves therein for securing the blade to a windshield wiping apparatus. The

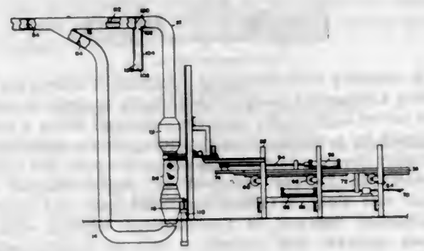
width of the elongated grooves varies inversely with the load applied to the blade along the length thereof.

3,414,931
WIPER BLADE
Mitsuru Kodama, Tokyo, Japan, assignor to Ichikawa Seisakusho Co., Ltd., Tokyo, Japan
Filed Jan. 13, 1967, Ser. No. 609,053
Claims priority, application Japan, Jan. 14, 1966, 41/2,104
3 Claims. (Cl. 15—250.42)



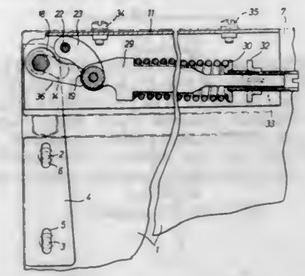
A wiper blade assembly construction having a plurality of load distributing means and the means for joining said load distributing means to each other and the wiper blade. The primary load distributor is provided with tabs underneath the connection part at the ends thereof and the secondary load distributors are provided with wide central portions having step portions for engaging only one side of said tabs. Abutment means are further provided between the secondary means and the blade means to hold the tabs against the stepped portion.

3,414,932
MAIL RETRIEVING DEVICE
Leon Korngold and Walter H. Bachman, Philadelphia, Pa., assignors to General Bag & Burlap Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1966, Ser. No. 587,187
12 Claims. (Cl. 15—304)



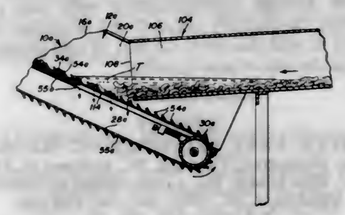
1. In a bag cleaning and mail retrieving apparatus, the combination of:
- a supporting structure;
- a ring affixed to the said structure, said ring being supported to receive the open end of a flexible bag;
- top nozzle means disposed above the said ring, said top nozzle means evacuating air from immediately above the said ring;
- bottom nozzle means disposed below the said ring, said bottom nozzle means evacuating air from immediately below the said ring;
- bag clamping means affixed to the said structure, said bag clamping means including a pair of cooperating clamps for releasably securing the mouth of a flexible bag to the said ring; and
- bag removing means supported by the said structure, said bag removing means having reciprocating motion with respect to the said ring; and
- exhaust fan means operatively connected to the said top nozzle means and to the said bottom nozzle means.

3,414,933
HINGE WITH SPRING FOR COUNTER-BALANCE OF FLAPS
Wilhelm Gronbach, Alpenstrasse 9, Ebersberg, Germany
Filed July 26, 1965, Ser. No. 474,844
Claims priority, application Germany, Feb. 11, 1965, G 42,829
18 Claims. (Cl. 16—180)



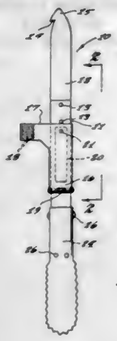
A hinge structure for freezer cabinets of the kind having lids pivotable about a horizontal axis comprising an elongated joint member fixed to the freezer cabinet, a lid fixedly mounted on the joint member so that the pivot protrudes along its axis laterally into the lid. A counterbalancing and closing mechanism is mounted within and attached to said lid and said pivot. The hinge is arranged so that only that portion of the pivot which engages said joint member protrudes from said lid so that the insulating integrity of the lid is maintained. The counterbalancing and closing mechanism includes a curved line pivotally mounted on the pivot with its free end forming a closing curved portion and adjacent thereto in the direction of the pivot an arch-shaped compensating curved portion, said portions being separated from each other by a reversing edge. A guide arm is pivotally attached to said lid and carries rollers at the free end thereof which ride on the curved portions and over the reversing edge. A spring guide rod is pivotally mounted on the free end of the guide arm and the other end of the spring guide rod is mounted in a springlike means fixedly mounted in said lid. A compression spring is mounted on said spring guide so that the rollers in the closed position rest against the closing curved portion under pressure.

3,414,934
SHRIMP VEIN REMOVING APPARATUS
Raphael Q. Skrmetta and Cecil B. Skrmetta, both of P.O. Box 13145, New Orleans, La. 70125
Filed June 29, 1966, Ser. No. 561,534
7 Claims. (Cl. 17—2)



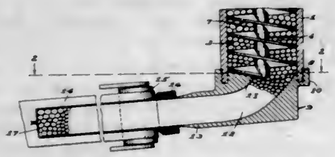
A shrimp vein removing apparatus and conveyor incorporating a conveyor belt provided with forwardly inclined fingers thereon for engaging and removing shrimp veins which may be left attached to the shrimp after passing through a shrimp slitting apparatus to provide shrimp in a final condition substantially free of any attached vein.

3,414,935
FISH DRESSING TOOL
Peter F. Senna, R.F.D. 1, Williston, Vt. 05495
Filed Oct. 18, 1965, Ser. No. 496,916
1 Claim. (Cl. 17—7)



A tool for dressing fish, including a longitudinal wooden handle having a blade secured at one end thereof, a toothed scaler secured to the opposite end of the handle, and a pair of toothed jaws located alongside the handle for the purpose of gripping a fish.

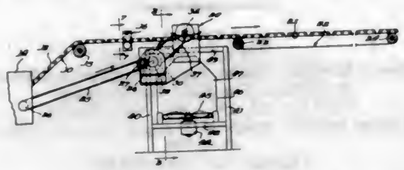
3,414,936
METHODS AND APPARATUS FOR PROCESSING MEAT OR THE LIKE
Robert C. Lugiewicz, Saginaw, Mich., assignor to Cubb-Pac Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,412
11 Claims. (Cl. 17—40)



1. Apparatus for packing discrete pieces of material comprising and elongated housing having a cylindrical chamber terminating in a discharge end; means for introducing pieces of material to said chamber; feeding means for moving material axially through said chamber toward said discharge end; and receiver means mounted on said housing at the discharge end of said chamber and having an elongated passage therein in communication with said chamber for receiving material discharged therefrom, said passage communicating with said chamber substantially tangentially thereof and extending laterally of the axis of said chamber, the axis of said passage being offset from the axis of said chamber.

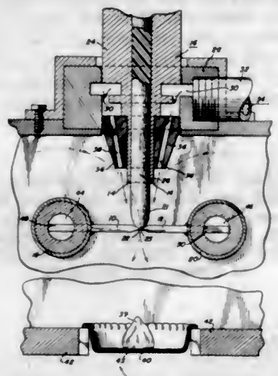
3,414,937
PRODUCE TRAY PERFORATING MACHINE
George V. Malmgren, Chicago, Ill., assignor to Malanco, Inc., Blue Island, Ill., a corporation of Illinois
Filed Sept. 20, 1965, Ser. No. 488,690
7 Claims. (Cl. 18—1)

The perforating machine of the invention is designed to produce holes or perforations in the cavity walls of produce trays such as fruit trays. A perforating drum is journalled for rotation and the drum provides a plurality of heated pins. The heated pins project through openings in a perforated guide plate and which is adjustable in order that the pins may be caused to project the minimum distance in order to reduce the tendency of the pins to burn an elongated hole in the cavity walls. However,



if elongated openings are desired, then the perforated guide plate can be set accordingly.

3,414,938
PLASTIC PROCESSING SYSTEM
Enzo Caviglia, Crawfordville, Ind., assignor to The Hoosier Crown Corporation, a corporation of Indiana
Continuation of application Ser. No. 423,031, Jan. 4, 1965. This application Feb. 15, 1968, Ser. No. 705,857
6 Claims. (Cl. 18—5)

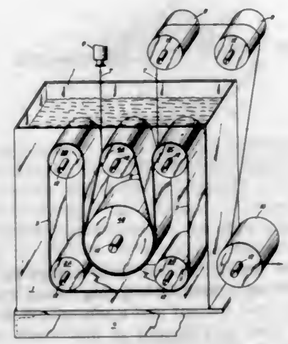


A metering type depositing apparatus is shown for providing a measured charge of hot plastic material in successive crown caps as the caps are conveyed along a receiving path by a synchronously running crown sprocket. An extruder has an outlet spaced above the path and pointed downwardly to feed a rod of hot plastic material at a timed rate along a vertical extrudate path and metering mechanism operates in synchronized relation with the crown sprocket and includes a pair of counter-rotating cutting blades spaced above the crown sprocket, each blade having a horizontal axis of rotation positioned on an opposite side of the extrudate path, the blades being arranged to effect mutual downwardly swinging travel through corresponding sides of the rod for cooperatively severing and propelling the rod material into each successive crown cap. The extruder has air conduits providing vertical air streams around the extrudate path to assist in propelling the severed rod material into each cap and the blades are carried in internally cooled drive shafts to cool the blades and prevent sticking of the rod material.

3,414,939
APPARATUS FOR QUENCHING MELT-SPUN FIBERS
Lester Daniel Chirgwin, Jr., Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Nov. 4, 1966, Ser. No. 592,110
2 Claims. (Cl. 18—8)

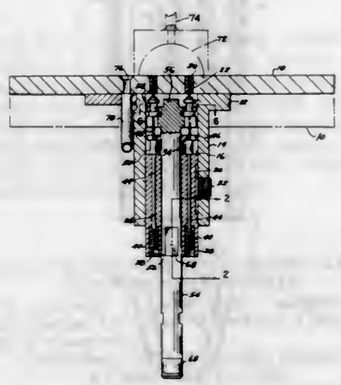
1. An apparatus for quenching and pulling away melt-spun fibers comprising

(1) an open-top, water-tight container capable of holding a quantity of a quenching fluid,
(2) a first set of four rollers positioned in parallel relationship, one of each of said four rollers being positioned at each of the corners of an imaginary rectangle,
(3) a continuous belt engaging each of said four rollers,
(4) a second set of two rollers, intermediate of said first set of four rollers and in parallel relationship with said first set of four rollers,



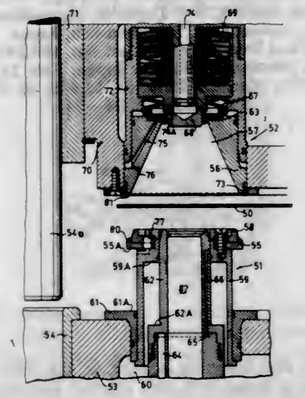
(5) a continuous belt engaging each of said two rollers in the second set and also engaging the continuous belt engaged around the first set of rollers around a part of the lower roller of the second set of rollers, and
(6) means to power both sets of rollers so that the two continuous belts are traveling at the same speed and in the same direction at the points of contact around part of the lower roller of the second set of rollers.

3,414,940
TOOL CAPSULE FOR POWDER COMPACTING PRESS
Paul Vinson, Costa Mesa, Calif., assignor to Pentronix, Inc., Lansing, Mich.
Filed Apr. 21, 1966, Ser. No. 544,285
2 Claims. (Cl. 18—16)



A unitary tool capsule for mounting on a powder compacting press and having a die plate provided with a plurality of die cavities, a housing disposed below the die plate and holding a plurality of hollow punches each disposed in one of the die cavities. The punches are collectively actuated by a common actuating member permitting free radial individual displacement of the punches, and a core rod is disposed within the longitudinal bore of each punch. The core rods are fixedly but adjustably mounted on the end of a sleeve which is in turn adjustably but fixedly mounted in the housing.

3,414,941
APPARATUS FOR PRESS FORMING A CONTAINER STRUCTURE FROM PLASTIC SHEET MATERIAL AND CONTAINER STRUCTURE MADE THEREBY
Rolf Lennart Ignell, Lund, Sweden, assignor to Sobrefina SA, Fribourg, Switzerland, a Swiss company
Filed Nov. 10, 1966, Ser. No. 593,341
Claims priority, application Sweden, Feb. 4, 1966, 1,439/66
4 Claims. (Cl. 18—19)

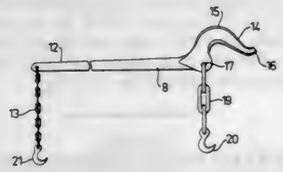


A press for forming plastic sheet material into a container structure comprises a hollow forming die in the form of a conical frustum into which is pressed plastic sheet material to be formed into a container structure having a corresponding frusto-conical configuration. A pair of concentric die members effect the necessary pressing-in of the plastic material, one die member being used to form a flange at the lower, larger diametered part of the container frustum, and another, smaller die member being used to form the upper, smaller end of the container frustum and simultaneously establish a pouring mouth at this end which is provided with an inturned lip having a highly polished surface to receive a closure plug. Compressed air discharged through an opening in a side wall of the smaller die member serves to press the sheet plastic into contact with the wall of the hollow frusto-conical die member.

3,414,942
TENSIONING DEVICE FOR CHAINS OR THE LIKE
Sven Andreas Jansson, Orsa, Sweden, assignor to Seasafe Transport AB, Stockholm, Sweden
Filed Feb. 23, 1967, Ser. No. 618,198
Claims priority, application Sweden, Mar. 4, 1966, 2,892/66
3 Claims. (Cl. 24—69)

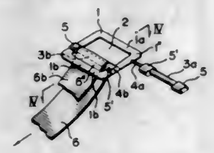
A lever with a double bent end forming an angle with the lever axis pivoted at the root of said end in order to enable the tensioning of two chains. The lever end comprises a larger curved part, curved in one direction intended to engage one link of one of said chains, and a

nose-shaped part curved in the other direction adapted to engage one link after the other of the other of said chains.



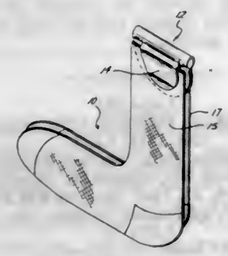
The pivoting center and the centers of curvature of both curved parts are located on a straight line.

3,414,943
BUCKLE FOR STRAPPING PARCEL WITH TAPE
Kenji Hattori, 5–5 Tairacho, Sanmaibashi, Numazu-shi, Shizuoka-ken, Japan
Filed Dec. 12, 1966, Ser. No. 600,854
Claims priority, application Japan, Feb. 24, 1966, 41/6,489; Mar. 23, 1966, 41/25,645, 41/25,646
9 Claims. (Cl. 24—74)



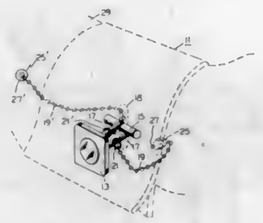
A buckle for fastening a tape or the like around a package has a frame with two straight portions and two snubbers in the form of straight rod portions connected to the frame by bendable connecting portions so as to be independently bent to a position in which each bar lies arcoss the frame so that the tape can be passed through the frame and around the bar. The frame is rectangular when used to secure a single loop of the strap and is isosceles right triangular when used to secure crossed loops.

3,414,944
APPARATUS FOR MATCHING PAIRED SOCKS AND STOCKINGS
Mildred P. Rabinowitz, Box 1224, Houston, Tex. 77001
Filed Apr. 20, 1967, Ser. No. 632,423
4 Claims. (Cl. 24—81)



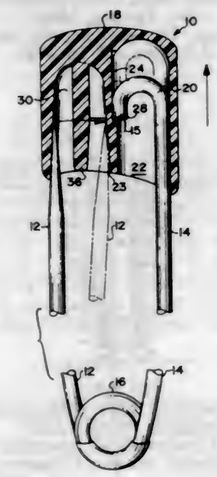
In matching apparatus for use with paired socks and stockings, the preferred embodiment comprising a disc-like member folded across the center portion and including a pair of opposed, facing clip tabs for clamping the socks to be matched to one another.

3,414,945
GUARD FOR PERSONAL ITEMS
Henry A. Spalding, 662 Broadway St., Hazard, Ky. 41701
Filed May 9, 1967, Ser. No. 637,256
2 Claims. (Cl. 24—90.5)



A protective guard for cuff links comprising an elongated chain having a removable spring biased snap fastener secured to one end thereof and a pin receiving means secured to the other end thereof so that a pin may be inserted through the sleeve of a shirt to engage the pin receiving means and the snap fastener may encircle a bar of the cuff link to provide protection against accidental loss or theft. The pin receiving means may be replaced with a safety pin having a loop in the lever arm thereof for securing to the chain.

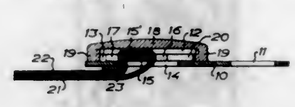
3,414,946
LOCKING TYPE SAFETY PIN
Edward A. Little, Wolcott, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Mar. 2, 1967, Ser. No. 620,166
2 Claims. (Cl. 24—158)



A safety pin of the guard-locking type in which the point guard is slidable axially of the legs of the pin from an inner locking position to an outer unlocked position,

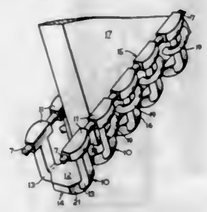
and wherein provision is made for frictional resistance to sliding movement of the guard to insure against inadvertent movement of it to the unlocked position.

3,414,947
STRAP FASTENERS
Göte Eskil Yngve Holmberg, Tokarp, Anderstorp, Sweden, and Josef H. Frei, Muhlestrasse 22, Ruschlikon, Switzerland
Filed July 3, 1967, Ser. No. 650,969
6 Claims. (Cl. 24—196)



In a strap fastener for adjustable connection of a strap to a plate element such as a locking tongue or other fitting of a safety belt there is provided a linearily guided slide plate forming a bar adapted to be encircled by the strap. Between projections on the slide plate and a support fixed in relation to the plate element there is provided a bar type spring biasing the bar against an edge of an opening in said plate element to clamp the strap between the bar and the edge.

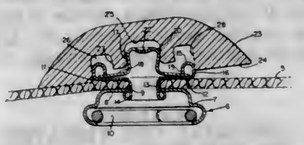
3,414,948
THERMOPLASTIC STRIPS FOR SLIDING CLASP FASTENERS
Eric Engel Cuckson and Arthur Llewelyn Jones, Penrith, New South Wales, Australia, assignors, by mesne assignments, to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 29, 1966, 582,918
8 Claims. (Cl. 24—205.13)



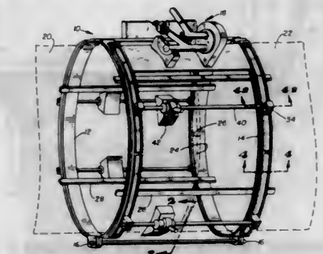
A strip for a stringer of a sliding fastener which is constituted by a row of successive discrete transverse strip elements which are interconnected at their opposite ends by two longitudinally extending cords, each element having an enlarged central portion and opposed leg portions with enlargements at their ends through which the cords pass and are embedded. The strip is bent to a U-shape and stitched to a mounting tape.

3,414,949
SNAP FASTENER WITH REMOVABLE ORNAMENTAL BUTTON
Hugh H. Andrews, Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 23, 1967, Ser. No. 618,184
6 Claims. (Cl. 24—208)

An ornamental plastic button is removably secured to a snap fastener assembly in such a way that it will not come off when the fastener is unsnapped, but may still be manually removed for cleaning, laundering or for replacement with a button of different color or design. A stud part of a common metal snap fastener may be employed as the connector member for the button. An outwardly projecting metal rim around the connector member engages in an annular recess of the button in such a way as to create a predetermined binding action when the button is tilted away from the supporting garment flap.

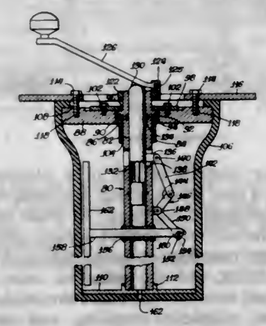


3,414,950
ECCENTRIC PIPE WELDING CLAMP
Leon F. Phariss, 2001 N. Mingo Road, Tulsa, Okla. 74116
Filed Apr. 3, 1967, Ser. No. 627,784
17 Claims. (Cl. 24—280)



This invention relates to a clamp for holding adjacent pipeline sections in stable coaxial arrangement with the ends of the adjacent pipeline sections substantially abutting during welding operations. A body component of the clamp encircles each of the pipeline sections. An eccentric component is positionable slidably between each of the two body components so that the eccentric component may be positioned against a chosen portion of one of the pipe sections as needed to bring the pipe sections into suitable arrangement.

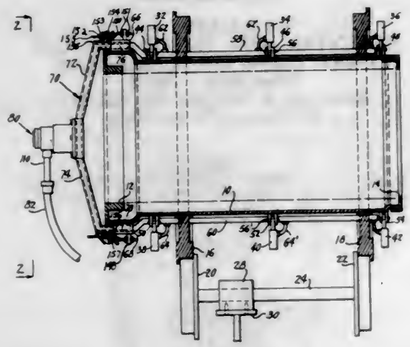
3,414,951
METHOD AND APPARATUS FOR FORMING BRANCHED PIPE
Herbert C. Schulze, Carlsbad, Calif., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Mar. 18, 1966, Ser. No. 535,493
6 Claims. (Cl. 25—30)



Apparatus for molding hollow articles comprising a mold having a plurality of sections which define a rigid walled cavity. The mold sections are separable and con-

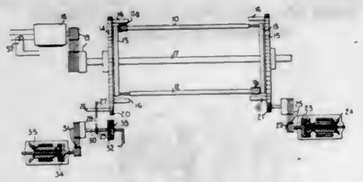
tain fluid, impervious, tubular diaphragms supported in respective openings in the mold and in spaced relationship to the walls of the mold. The diaphragm in the second opening is provided with an innermost wall conforming to the shape of and adjoining a portion of the diaphragm in the first opening. Separate means for applying fluid pressure to the interiors of the diaphragms are provided.

3,414,952
CONCRETE PIPE VIBRATOR
Howard N. Douglas, Chico, Calif.
(550 Vandenberg Circle, Roseville, Calif. 95678)
Filed July 27, 1966, Ser. No. 568,342
9 Claims. (Cl. 25—30)



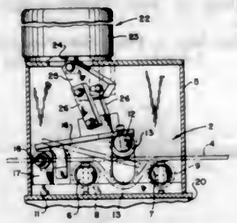
A horizontally rotating concrete pipe mold is disclosed in which a plurality of air actuated vibratory motors are mounted on the rotating portion of the mold and a quick detachable manifold is secured to one end of the mold providing an air connection from a source of air under pressure to the air actuated vibratory motors.

3,414,953
DRIVE MEANS FOR PLANETARY NAPPING DEVICE
John M. D. Tomlinson, Bamford, Rochdale, England, assignor to Tomlinsons (Rochdale) Limited, a corporation of Great Britain, Northern Ireland and the Isle of Man
Filed Apr. 6, 1965, Ser. No. 445,947
Claims priority, application Great Britain, Apr. 9, 1964, 14,623/64
8 Claims. (Cl. 26—35)



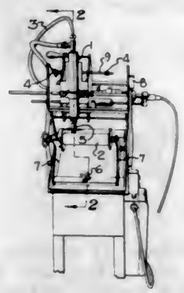
Card clothing covered rollers of a planetary napper are engaged by a gear wheel which is rotated by a driving element via a magnetic coupling. At least two variable transformers alternatively control torque characteristics of coupling, one transformer being adjusted to yield a zero raise condition, and the other to cause raising or felting. If pile and counterpile rollers are used, a separate driving element, magnetic coupling, and variable are transformers employed for each roller set. Means are also provided for measuring torque variation to indicate the amount of the raising or felting force.

3,414,954
ADJUSTABLE WEB SPREADING AND GUIDING APPARATUS
Alexander V. Alexeff, Cleveland, Ohio, assignor to Alexeff-Snyder Enterprises, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 1, 1966, Ser. No. 576,573
6 Claims. (Cl. 26—67)



Web spreading and guiding apparatus including plural guide rolls adjacent each edge of the web material, one of said guide rolls adjacent each edge being supported by a shaft whose outer end is fixed to a pivotally mounted support plate at such an angle with respect to the pivotal axis of the support plate that an extension of the pivotal axis intersects the inner end of such one guide roll so that pivotal movement of the support plate will cause the one guide roll to pivot about its inner end in a perpendicular direction toward and away from the web.

3,414,955
PROCESS AND APPARATUS FOR STRIPPING BOBBINS
Maurice H. Courtney, Narrows, and George F. Besnyo, Pearisburg, Va., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,606
3 Claims. (Cl. 28—19)

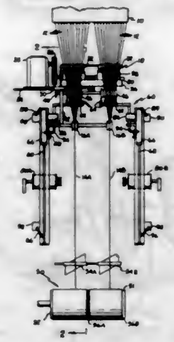


A device for removing yarn residues from a spool by means of hot air is provided with a pair of diverging hot air orifices so as to perform the job more effectively particularly in the corners of the spool.

3,414,956
METHOD AND APPARATUS FOR WINDING PLURAL STRANDS
Samuel Richard Genson, Bowling Green, Ohio, assignor to Johns-Manville Corporation, New York, N.Y. a corporation of New York
Continuation-in-part of abandoned application Ser. No. 420,584, Dec. 23, 1964. This application Feb. 25, 1966, Ser. No. 536,522
15 Claims. (Cl. 28—59)

Method for winding a plurality of spaced-apart strands, each composed of a multiplicity of continuous filaments, in a package of a series of superimposed bights in spaced-

apart relation, comprising initially maintaining division of the plural strands in spaced-apart relation at a location adjacent the continuous filaments source and advancing the dividing means to a position adjacent the



location of the traversing and winding to limit the axial movement of the separated strands during traversing and winding, and apparatus therefor comprising a moveable dividing comb.

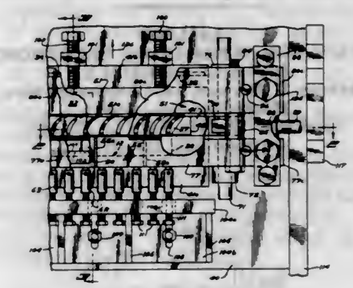
3,414,957
PROCESS FOR DYEING TEXTILE FIBERS AND PREPARING HIGH-BULK FABRICS
Witt I. Langstaff and Thomas L. Shealy, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 26, 1964, Ser. No. 378,266
16 Claims. (Cl. 28—74)



1. The process of preparing an article having high-bulk characteristics comprising blending heat-stable fibers and heat-shrinkable modacrylic fibers, forming the blend of fibers into a yarn, dyeing said yarn at a temperature below 160° F., drying the yarn at a temperature below 190° F. imparting any significant shrinkage thereto, forming the article from said yarn, and subsequently heating said article at a temperature above 200° F. to thereby shrink said heat-shrinkable fibers and bulk the formed article.

3,414,958
TURBINE VANE ASSEMBLY REPAIRING APPARATUS
Cecil L. Anderson, 8720 Griggs Ave., New Brighton, Minn. 55112
Filed Aug. 19, 1966, Ser. No. 573,605
23 Claims. (Cl. 29—200)

1. Apparatus for repairing or reconditioning a vane assembly having an arcuately elongated outer band, an arcuately elongated inner band, each band having a radially inner surface; a radially outer surface and a corresponding number of arcuately curved vane receiving slots primarily extending in a direction transverse to the direction of elongation of the bands and opening through the inner band outer surface, and the outer band inner surface through to the outer band outer surface, each band having axially opposed edges transversely spaced from said slots, and a plurality of vanes each having an ear extendable in an inner band slot and an outer band slot and attachable to the adjacent band, said vanes in their attached condition to the bands having a trailing edge and a leading edge transversely opposite the trailing edge and offset from the trailing edge in a direction of elongation of the bands, said apparatus comprising a longitudinally elongated base member, a longitudinally elongated inner band support member having surface portions of a curvature for abuttingly engaging a substantial portion of the inner band inner surface, first jig means cooperating with the bands for at least in part retaining the outer band in a given radial spaced relationship to the support member

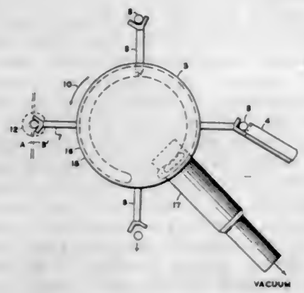


and receiving the vane trailing edge portions while in part retaining the vanes in a preselected longitudinal spaced relationship with the vane trailing edges in substantially the same plane, second jig means for in part retaining the bands in a preselected radial spaced relationship and receivingly retaining the vane leading edge portions in the same longitudinal spaced relationship that the first jig means retains the trailing edge portions and longitudinally offset therefrom, means mounting the jig means to retain the first and second jig means in a given longitudinal relationship, while permitting a change of the transverse spacing between the jig means, adjustment means for selectively retaining the first jig means against transverse movement in a transverse direction away from the second jig means, second adjustment means cooperating with second jig means for selectively retaining the vanes against transverse movement in a transverse direction away from the first jig means, and means mounted on the base member for selectively clampingly holding the outer band against the jig means, the clamping means having an opening permitting access ot the outer band slots.

3,414,959
CAPPING MEANS USING VACUUM
Clement R. Konazewski, Glen Cove, and Floyd A. Lyon, Brookville, N.Y., assignors to Halm Instrument Co., Inc., Glen Head, N.Y.
Filed June 6, 1966, Ser. No. 555,625
2 Claims. (Cl. 29—203)

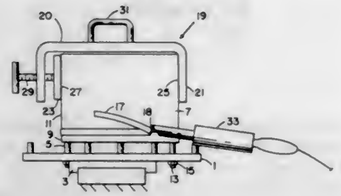
In a machine for placing caps on a body member, vacuum means to transport said body member, whereby material not added to or removed from said body member by frictional movement on body holders, comprising, a rotatably mounted holding member,

a plurality of vacuum arms mounted in said rotatably mounted member, said vacuum arms being adapted to hold said body member,



said vacuum arms being adapted to be connected to a source of vacuum.

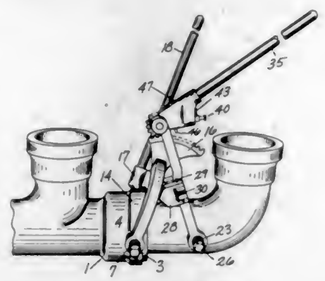
3,414,960
DEVICE FOR SEPARATING ELECTRONIC MODULE ASSEMBLY
Raybourn D. Michael, 1404 Elmwood Drive, Huntsville, Ala. 35801
Filed Sept. 13, 1966, Ser. No. 579,802
4 Claims. (Cl. 29—203)



1. A device comprising:
(a) a plate with means on one side thereof for securing said plate to a fixed structure and spacer means on the other side thereof adapted to receive bolts in a base of a module assembly to allow the module assembly to be secured to said plate; and
(b) an adjustable type clamp including a U-shaped member wherein one leg of said U-shaped member is a fixed jaw, the other leg of said U-shaped member has a movable jaw attached thereto by means of an adjusting screw for movement toward and away from said fixed jaw to adapt said clamp for clamping a cover of the module assembly, and a handle on the base of said U-shaped member to allow pressure to be applied in a direction for separating the cover from the base of the assembly.

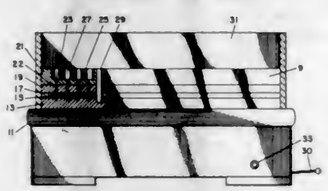
3,414,961
TELESCOPING PIPE JOINT TOOL
Bengt G. Bjalme, Erie, Pa., assignor to Reed Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed May 12, 1966, Ser. No. 549,583
10 Claims. (Cl. 29—237)

Coaxial telescoping joints sections are assembled or disassembled by lever members having each diametral jaws gripping one of the joint sections and hinged together on an axis radially spaced from and transverse to the longitudinal axis of the joint sections. One of the levers has a handle to steady and guide the assembly and disassembly. The other of the levers has a pinion turned by a handle through a ratchet connection meshing with a segmental gear on said one lever. The application of forces to the



joint sections is inherently balanced and although each member undergoes a pivotal movement, the resultant movement of the joint sections is in a straight line. The ratchet connection facilitates turning of the pinion in cramped spaces.

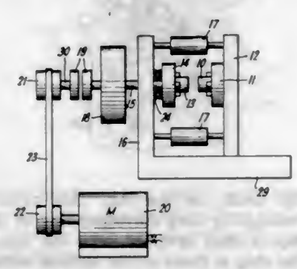
3,414,962
ELECTRODE ASSEMBLY JIG AND METHOD THEREOF
Joseph A. Altamura, Levittown, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,746
8 Claims. (Cl. 29—428)



1. An assembly means for inserting metal pins into apertured work pieces comprising a base means adapted to support a plurality of apertured work pieces, a guiding means adapted to be positioned adjacent to said work pieces and base means to form a sandwiched structure, provided with a plurality of holes each having a wide portion and a narrow portion wherein the wide portions of said holes have a substantially flat-shaped bottom and the narrow portions of said holes are adapted to receive one pin and be positioned contiguous to and in alignment with the apertures in said work pieces and, a vibrating means for vibrating said sandwiched structure.

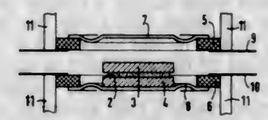
7. The process of loading pins in a plurality of apertured headers comprising placing the headers on a base means, attaching a guiding means, provided with a plurality of holes each having a wide portion and a narrow portion wherein the wide portion of said holes have a substantially flat-shaped bottom and the narrow portions of said holes are adapted to receive one pin, on top of said headers and base means to form a sandwiched unit so that the narrow portions, of said holes are contiguous to and in alignment with the apertures in said work pieces, sprinkling an excess of pins on said guiding means, vibrating said sandwiched unit so that one pin falls into each of the apertures in said headers.

3,414,963
FRICTION WELDING CERAMIC TO METAL
Chin Jung Cheng, Norwalk, Conn., assignor, by mesne assignments, to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 10, 1963, Ser. No. 293,934
2 Claims. (Cl. 29—470.3)



1. The method of friction welding a ceramic workpiece to a metal workpiece comprising the steps of rotating one of the workpieces relative to the other, forcing the workpieces together with a pressure of from about 100 to 1,500 pounds per square inch of weld area for from about five to sixty seconds, and then allowing the rotating workpiece to coast to a stop through at least ten revolutions and in less than one second while continuing to force the workpieces together.

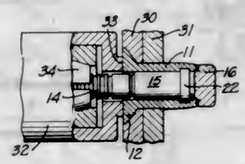
3,414,964
METHOD FOR THE PRODUCTION OF A SOLDERED JOINT
Reimer Emeis, Ebermannstadt, Upper Franconia, Joachim Haus and Adolf Herlet, Pretzfeld, Upper Franconia, Hans Nagorsen, Streitberg, Upper Franconia, and Heinz Martin, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Jan. 22, 1965, Ser. No. 428,287
Claims priority, application Germany, Jan. 24, 1964, S 89,205
2 Claims. (Cl. 29—473.1)



The invention describes a process for producing a hard soldered joint between metals of Group *Ib* of the Periodic System of Elements and a ceramic ring. According to the invention, a metal sheet is less than 0.5 mm. thick and the ceramic ring is at least ten times thicker in the area parallel to the sheet to be soldered. Illustratory of the solders is a silver-copper eutectic.

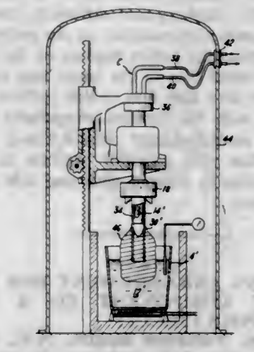
3,414,965
BLIND RIVET ASSEMBLY AND METHOD OF MAKING AND USING SAME
Elvert H. Stau, Alhambra, and George Siebol, Garden Grove, Calif., assignors to Olympic Screw & Rivet Corporation, Downey, Calif., a corporation of California
Filed Apr. 20, 1964, Ser. No. 361,084
7 Claims. (Cl. 29—509)

1. In a blind rivet assembly for joining plates having aligned holes, the combination of:
a tubular rivet having a sleeve and an enlarged head for positioning within the aligned holes with said head engaging one side of the plates and with the sleeve projecting from the opposite side of the plates, with said sleeve having an internal shoulder facing and spaced from the sleeve end opposite said head and with said shoulder disposed outside the plates being joined; and
a pin positioned within said rivet and having a body joining a pulling stem projecting from the head end of said rivet and a blind head projecting from the other end of said rivet;
with said pin body fitted within said sleeve and having an annular shoulder projecting outward into engagement with said shoulder within said sleeve and with sad blind head of said pin spaced from said other end of said rivet sleeve.



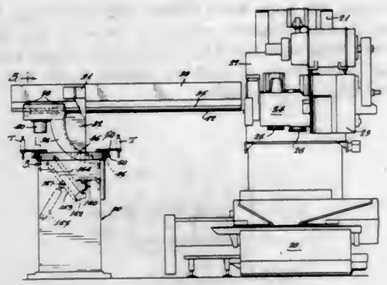
6. A method of making a blind rivet assembly comprising a tubular rivet having a sleeve and head and a pin having a head, body and pulling stem, with the rivet sleeve having an internal shoulder facing and spaced from the sleeve end opposite the rivet head, and with the pin body having an outwardly projecting shoulder, including the steps of:
positioning the pin within the rivet with the stem projecting beyond the rivet head;
advancing the pin body into the rivet sleeve and moving the pin shoulder into the sleeve and toward the sleeve shoulder to expand a portion of the sleeve leaving the pin head spaced from the rivet sleeve; and
radially compressing the expanded sleeve about said shoulder on the pin body.

3,414,966
PROCESS FOR JOINING DISSIMILAR METALS
Bernard Devin, Reuil-Malmaison, Jean-Paul Durand, Paris, and Robert Schley, Orly, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed May 18, 1965, Ser. No. 456,719
Claims priority, application France, May 27, 1964, 975,955
5 Claims. (Cl. 29—528)



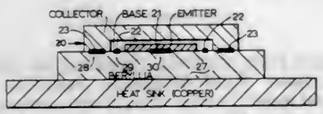
A composite unit consisting in a cylindrical steel member whose end is leak-tightly connected to an aluminum member is obtained by inserting the end of the cylindrical member in a molten aluminum mass, rotating the member about its axis for a time sufficient for the aluminum to wet the steel, and cooling and permitting at least part of the molten mass to solidify on the cylindrical member.

3,414,967
TOOL CHANGER
Carl F. Erikson, Belvidere, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,398
20 Claims. (Cl. 29—568)



A tool changing system having a tool storage magazine with variable capacity and with a section of the magazine being movable from the normal path of tools in the magazine to position a tool adjacent the spindle whereby the tool can be transferred directly from the magazine storage element to the spindle.

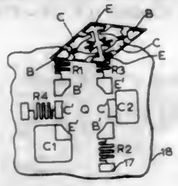
3,414,968
METHOD OF ASSEMBLY OF POWER TRANSISTORS
Milton Genser, Livingston, and Perry C. Smith, Englewood, N.J., assignors, by mesne assignments, to Solitron Devices, Inc., a corporation of New York
Filed Feb. 23, 1965, Ser. No. 434,245
5 Claims. (Cl. 29—577)



There is described a method of making a semiconductor, e.g. micro-size, silicon type planar power transistor for incorporation into a micro-circuit. The steps comprise: creating the desired component e.g. transistor out of semiconductor material in the center of a chip of such material by oxide masking and diffusion, creating lands of electrically conductive material on the periphery of the chip and connecting the active regions of the component by depositing a metal film to the lands, and forming corresponding lands on a thin film circuit surface. The semiconductor chip with the formed component is then inverted and the semiconductor chip is fused to the thin film circuit surface with a fusible preform to render the semiconductor chip in contact with one side of the thin film circuit surface.

3,414,969
CONNECTION ARRANGEMENT FOR THREE-ELEMENT COMPONENT TO A MICRO-ELECTRONICS CIRCUIT
Joseph M. Blum, Yorktown Heights, N.Y., and Milton Genser, Livingston, N.J., assignors, by mesne assignments, to Solitron Devices Inc., a corporation of New York
Filed Feb. 25, 1965, Ser. No. 435,169
4 Claims. (Cl. 29—577)

There is described a method of attaching a three-element component, e.g., a transistor to a micro-electronic circuit. The steps comprise: forming the component out of semi-conductor material in a rectangular chip by oxide masking and diffusion; creating wide lands of electrically conductive material on the periphery of the chip and connecting the active region of the component so formed by depositing a metal film on the lands, and forming corresponding wide lands on the thin film circuit surface around the rectangular area corresponding to that of the chip. The chip is then inverted with the formed component and the chip is fused to the surface with a fusible preform.



3,414,970
METHOD OF PRODUCING FLAT OR SURFACE COMMUTATOR
Terumoto Yamaguchi, Anjo-shi, Kisuo Kawamoto, Nagoya-shi, and Hideo Amemiya, Hekikai-gun, Aichi-ken, Japan, assignors to Nippon Denso Kabushiki Kaisha, Kariya-shi, Aichi-ken, Japan
Filed July 11, 1966, Ser. No. 564,377
1 Claim. (Cl. 29—597)

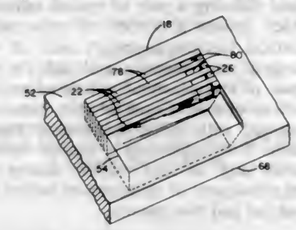


1. A method for manufacturing a flat or surface commutator characterized by forming a portion of a cylindrical or tubular blank having a suitable or appropriate wall thickness and length into a disk like flange leaving the remaining portion of said blank as it is; extending the remaining portion of the cylindrical or tubular blank in the axial direction thereof by passing a steel ball through the inner portion thereof; then providing a plurality of slots around both said cylindrical or tubular portion and the outer periphery of said disk link flange, each of said slots in the tubular portion being aligned with and having a corresponding slot in the flange portion; bending thus formed projections so as to form pawls; molding an insulating material around the remaining portion so as to embed said pawls; and separating each segment by providing a groove or recess along each of the center lines of said corresponding slots in the flange and tubular portions.

3,414,971
METHOD OF FABRICATING READ-AFTER-WRITE HEADS
Robert M. Boehme, Cambridge, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed June 9, 1964, Ser. No. 373,738
13 Claims. (Cl. 29—603)

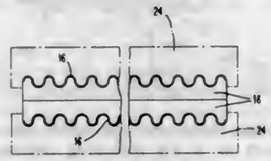
A method of fabricating a dual magnetic head wherein at least the return core head sections include metal blocks which are stamped to provide cavities having side wall and bottom surfaces which accurately conform to the configuration of the corresponding core portions. The blocks are machined to size and the return core portions are stacked in each cavity, interleaved with cross-talk shields, to form respective return core head sections. By the use

of indicia, pre-formed on each block and positionally referenced to the stamped cavity, the aforesaid head sections are mutually aligned in back-to-back relationship, with a shield placed between them. They are thus joined



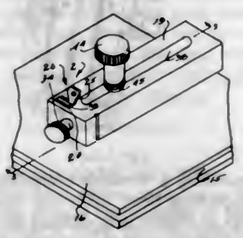
into a double head section, which is further assembled with a pair of wound core head sections and a gap spacer positioned between each set of confronting pole faces to form the dual magnetic head.

3,414,972
METHOD FOR MAKING A MEMORY DEVICE
Gilbert R. Reid, Norristown, and Frank W. Ammann, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 25, 1964, Ser. No. 377,905
3 Claims. (Cl. 29—604)



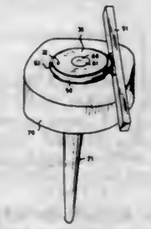
A technique is disclosed for forming a grooved ground plane for use with plated wire memory devices. The technique forms a plurality of accurately spaced grooves which are the size of a human hair in a plastic form by use of a master template. The grooves thereby formed are covered with a thin conductive layer by electroforming techniques. After an epoxy resin backing is applied to the thin conductive layer, the plastic form is peeled off leaving a half memory plane section. Two half sections are bonded together to form a complete memory plane. The plated wires are positioned within the grooves of the ground plane.

3,414,973
CUTTING TOOL
Ralph Charles Zimmerman, Cincinnati, Ohio, assignor to The Zimmerman Packing Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 6, 1966, Ser. No. 560,955
4 Claims. (Cl. 30—293)



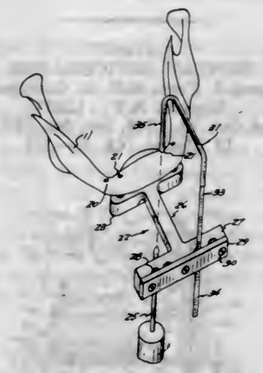
This cutting tool is adapted to be used in cutting circles and strips from flat materials such as paper, gasket material, fiber glass, and in fact any material when in a flat or sheet condition and capable of cutting by a steel blade keen edge. The cutter blade of this hand tool is provided with, in effect, angularly related cutting keen edges so that the cutting of the flat material may be effected when the cutter body member is actuated in either direction.

3,414,974
MOUNT FOR DENTAL PROSTHESIS
Fritz Rothermann, Glarnischstrasse 28, Opfikon, Glattbrugg, Switzerland
Filed Sept. 26, 1966, Ser. No. 581,850
Claims priority, application Switzerland, Nov. 10, 1965, 15,396/65
8 Claims. (Cl. 32—2)



1. A separable mount for anchoring a denture on roots of natural teeth, comprising a generally circular disk adapted to be mounted on a cap of a root-canal pin, said disk having a peripheral groove of varying depth, a split resilient ring removably received in said groove with a gap at the point of greatest depth of said groove, and a denture support rigidly attached to said ring at the point of least depth of said groove diametrically opposite said point of greatest depth.

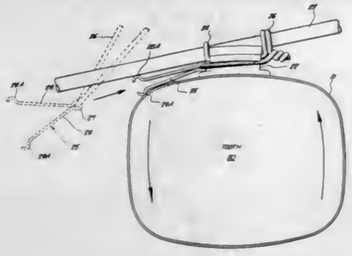
3,414,975
DRILL GUIDE FOR MANDIBULAR STAPLES AND STAPLE CONSTRUCTION
Irwin A. Small, 6861 Orinoco Circle, Birmingham, Mich. 48010
Filed Nov. 22, 1966, Ser. No. 596,198
6 Claims. (Cl. 32—2)



The present invention is particularly directed to a drill jig to be used for guiding a drill for making apertures through a mandibular jaw at symmetrically arranged points, said bores through the jaw adapted to receive the U-shaped mandibular staple over the free ends of which

are threaded nuts which project above the said jaw adapted to be interlockingly nested and received within under-cut apertures within a removable denture for anchoring the denture against lodgement.

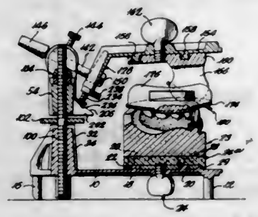
3,414,976
ORTHODONTIC SPRING WEDGE
Cecil C. Steiner, 1434 Lindacrest, Beverly Hills, Calif. 90210
Filed Oct. 16, 1961, Ser. No. 145,214
12 Claims. (Cl. 32—14)



1. The orthodontic method for applying a rotational force to a tooth which comprises fastening an arch wire to the tooth and to at least one other tooth in the patient's mouth and removably interposing between the arch wire and the tooth a resilient wedge having a pair of arms extending outwardly from one side of the bracket so that the arms are in a compressed attitude whereby the energy stored therein can be dissipated only by gradual relative displacement of the tooth and arch wire in the region of the wedge and the wedge can be removed without disturbing the arch wire.

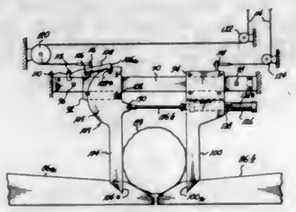
11. An orthodontic system for effecting rotation of a tooth comprising in combination, a tooth band and bracket unit adapted to be mounted on a tooth, an arch wire secured to the bracket, spring means disposed between the band and bracket unit and the arch wire on one side of the bracket, said spring means having an outwardly biased arm extending laterally on the same side of the bracket and engaging the arch wire, means on the same side of the bracket engaging the band and bracket unit to apply stress in the spring means as a force tending to rotate the tooth, and fastening means removably connecting the spring means to the bracket.

3,414,977
DENTAL ARTICULATOR
Edmund J. Cayo, R.D. 2, Castleton-on-Hudson, N.Y. 12033
Filed Oct. 19, 1966, Ser. No. 587,794
12 Claims. (Cl. 32—32)



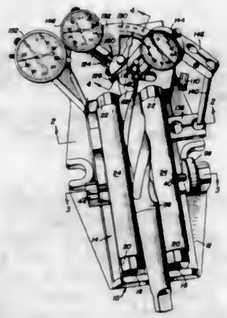
1. A dental articulator comprising base means, anchor means on said base means for supporting a model means thereon, guide means on said base means, a crosshead including guide means slidably engaging said first guide means for guiding movement of said crosshead with respect to said base means, adjusting means for manually adjusting the position of said crosshead with respect to said base means, first socket means mounted on said crosshead and defining a pair of spaced opposed recesses each of which defines a portion of spherical surface, a pair of spherical fulcrum members each of which is received in one of said recesses and held in place therewithin, a pair of rods each of which adjustably extends through the axis of one of said fulcrum members, support means connected with said rods, anchor means on said support means for supporting a model means thereon, and adjustable stop on said support means for limiting the swinging movement of said support means with respect to said crosshead and base means.

3,414,978
SCALING APPARATUS
Robert M. Prow, 1150 Rogue River Highway, Grants Pass, Oreg. 97526
Filed Oct. 7, 1966, Ser. No. 585,189
2 Claims. (Cl. 33—143)



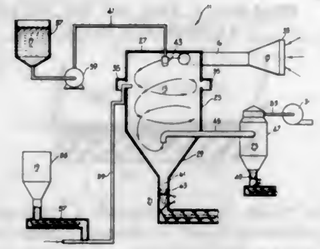
Apparatus for measuring the width of an elongated workpiece such as a log including opposed, relatively movable caliper arms that are adapted to come against opposite sides of the log with such at rest in the apparatus, a cable interconnecting the caliper arms extending between the caliper arms, and a measurement indicator acted upon by the cable adapted to indicate the distance between the arms.

3,414,979
TWIST DRILL POINT GAUGE
George E. Hall, 3039 Alcott Ave., Flint, Mich. 48506
Filed Feb. 2, 1966, Ser. No. 524,572
10 Claims. (Cl. 33—201)



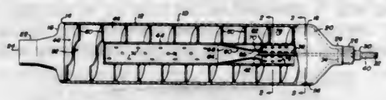
A gauge including a workpiece cradling assembly for adjustably supporting twist drills for various diameters concentric with a center axis defined by the gauge and for longitudinal shifting of the supported drill along the center axis to advance the conical tip of the drill into engagement with gauging indicators, for gauging concentricity of the conical tip of the drill, the inclination of the cutting edges of the tip and the approximate oversized bore which will be cut by the drill.

3,414,980
METHOD OF SPRAY DRYING
Robert L. Nezbed, Highland Park, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,533
5 Claims. (Cl. 34—9)



A method for preparing a dry composition wherein a portion of the desired ingredients of the dry composition is added to the chamber of a spray dryer in a substantially dry state while the remaining portion of the desired ingredients are dispersed in a liquid and are sprayed into the chamber. The sprayed liquid dispersion and substantially dry ingredients form an admixture which is dried to provide a homogeneous dry composition.

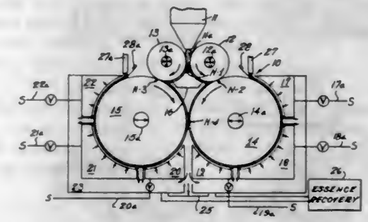
3,414,981
METHOD AND APPARATUS FOR TREATING OBJECTS WITH GAS
William R. Keough, Birmingham, Mich., assignor of forty-five percent to Multifastener Company, Detroit, Mich., a partnership
Filed May 24, 1967, Ser. No. 640,909
13 Claims. (Cl. 34—22)



A method and device for heat treating articles which are moved between inlet and outlet openings along a helical path while being subjected to heated gases. The heated gases are introduced between the inlet and outlet openings and are flowed radially outwardly into the helical path and along the helical path toward the outlet opening. Means are provided for recirculating the heated gases intermediate the inlet and outlet openings by providing a reduced throat to suck gases from the helical path adjacent the outlet opening.

3,414,982
FOOD DEHYDRATOR
David C. Oas, Pittsfield, Mass., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 2, 1966, Ser. No. 546,936
10 Claims. (Cl. 34—31)

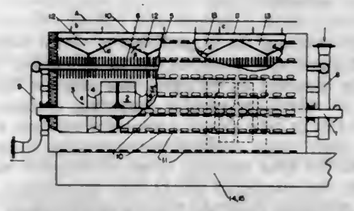
A method and apparatus for dehydrating food products utilizing single or double drying drums with metering means to precisely control the thickness of the food product applied to the surface of the drying drums. A plurality of air-type dryers having independently controlled heating zones cooperating with the drying drums for more efficient removal of moisture.



3,414,983
PROCESS FOR DRYING CELLULAR COMPOSITIONS
Douglas Bulgin, Birmingham, England, assignor to The Dunlop Company Limited, a British company
No Drawing. Filed Aug. 29, 1966, Ser. No. 575,530
Claims priority, application Great Britain, Aug. 21, 1965, 35,971/65
20 Claims. (Cl. 34—36)

A process for drying a natural or synthetic rubber cellular composition which comprises heating the cellular composition at a temperature of greater than 120° C. in a non-oxidative atmosphere consisting substantially of a non-oxidative gas.

3,414,984
NOZZLE-TYPE DRYING MACHINE FOR WEB-LIKE MATERIAL
Mauri Soininen, Turku, Finland, assignor to Valmet Oy, Helsinki, Finland, a corporation of Finland
Filed Nov. 29, 1966, Ser. No. 597,644
3 Claims. (Cl. 34—156)

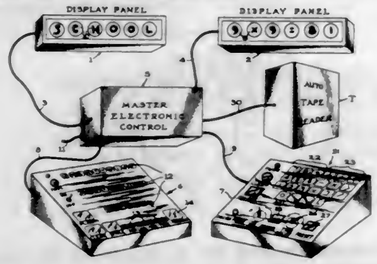


A nozzle-type drying machine for drying a web-like material, such as a paper web, has a cylindrical cover, the web moving over the cover at a distance therefrom supported by a cushion of the drying medium. The drying medium is supplied by at least two rotary impellers situated side by side within the cover and each drawing air or other drying medium from its own suction chamber and blowing it into its own pressure chamber surrounding the impeller. Then air is ejected through blow slits in the cover to form the drying cushion. Air is returned through suction slits provided in the cover. The impellers are at least partly enclosed by radiators for heating the air.

3,414,985
TEACHING APPARATUS
Robert E. Ashley, Texarkana, Tex., assignor to Educational Data Systems, Inc., Texarkana, Tex., a corporation of Texas
Filed Jan. 18, 1967, Ser. No. 610,046
1 Claim. (Cl. 35—8)

A visual instruction system consisting of a classroom display panel and an instructor's control unit, in which alpha or numeric information may be sequentially pro-

grammed into the control unit by an instructor's keyboard or by an automatic tape reader and subsequently

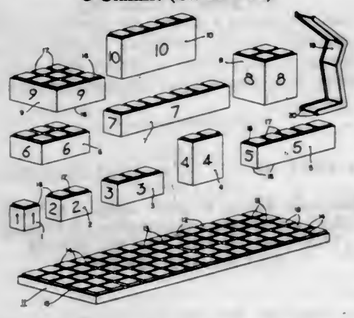


presented to the classroom via the display panel in varying time durations or in varying intervals between presentation of a problem and its respective correct answer.

3,414,986
VISUAL TEACHING AID

Harold E. Stassen, 721 Penn Towers Apartments, 1801 John F. Kennedy Blvd., Philadelphia, Pa. 19103

Filed Sept. 19, 1966, Ser. No. 580,298
8 Claims. (Cl. 35—31)

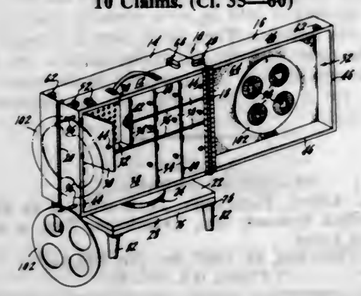


A visual teaching aid is provided in which numbered blocks of cubic size proportional to a number affixed thereto are mounted on an open base member having a plurality of raised rectangular mounting surfaces. The numbered blocks have raised rectangular surfaces extending from their upper surfaces corresponding in number and size to the base member raised rectangular surfaces covered by the numbered blocks thus providing a duplication of mounting surfaces at progressively higher levels.

3,414,987
VISUAL DISPLAY DEVICE

Geoffrey G. Lindenauer, 130 E. 39th St., New York, N.Y. 10016

Filed Apr. 6, 1967, Ser. No. 628,948
10 Claims. (Cl. 35—60)



A rotable mounted central frame has a first and second set of compartments on opposite sides of a central frame wall member and hingedly mounts first and second pivot structures, each carrying a display panel whereby in one rotable position of the central frame, the first set of compartments and the first pivotal structure define one operational visual display and in another rotable position, a second set of compartments and a second pivotal structure define another operational visual display.

3,414,988
SHOE HAVING A CUSHIONED INSOLE

Anthony A. Mattos, Bristol, R.I., assignor to Marbill Company, Providence, R.I., a corporation of Rhode Island

Filed Dec. 7, 1965, Ser. No. 512,097
4 Claims. (Cl. 36—2.5)

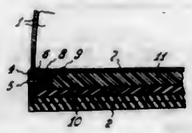


A shoe whose insole comprises a relatively thick, resilient cushioning layer of porous plastic foam and at selected areas a relatively thin, substantially non-resilient, shock-damping ply of unicellular plastic foam.

3,414,989
FOOTWEAR

Alois Odermatt, Zurzach, Aargan, Switzerland

Filed June 8, 1966, Ser. No. 556,086
Claims priority, application Switzerland, Jan. 14, 1966, 524/66
7 Claims. (Cl. 36—14)

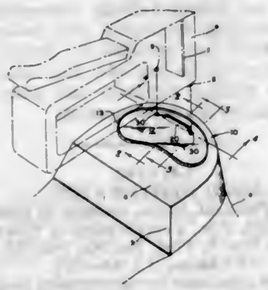


A shoe or boot having a lip close to the periphery of the insole projecting downwardly therefrom to define with the outsole a space which is filled with a packing band. A foxing strip is provided on the exterior of the upper at the lower marginal edge portion thereof, the foxing strip, packing band and lip being secured together by a threaded seam.

3,414,990
RESILIENT PLASTIC SHOE HEEL PROTECTOR

Marvin Donald Kessler, 60 Ladue Estates E., Creve Coeur, Mo. 63141

Filed Oct. 25, 1966, Ser. No. 589,769
4 Claims (Cl. 36—73)

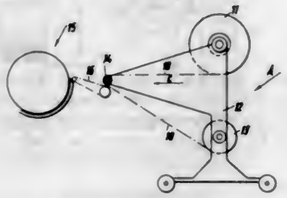


A resilient plastic heel plate with an adherent backing is designed to be applied by a stapling gun by unskilled persons, such as shoe clerks. The wearing surface of the heel plate has a lateral staple-accommodating groove, and a pair of spaced-apart locator recesses one adjacent to each end of the groove. These locator recesses receive projection on the undersurface of the stapling gun to assure driving the staple precisely.

3,414,991
TEXTILE PROCESSING AND HANDLING APPARATUS

Heinrich Oelkers, Duckwitzstrasse, Bremen, Germany, and Heinz Otto Manig, Bremen, Germany; said Manig assignor to said Oelkers

Filed May 21, 1964, Ser. No. 369,237
Claims priority, application Germany, May 24, 1963, O 9,442; July 27, 1963, O 9,579; Nov. 7, 1963, O 9,772
9 Claims. (Cl. 38—2)

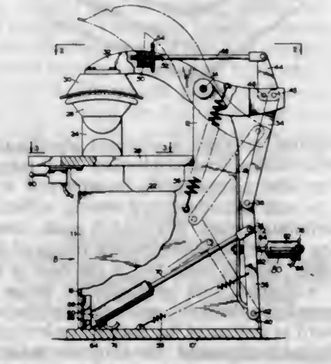


A combination of textile fabric processing machine and transportable winding device for handling and temporary storage of said fabrics, the winding device having at least two winding rolls and a winding band. The processing machine, such as a mangle, wringer, folder, or feeder and spreader, is coupled to said winding device by a releasable coupling, the machine and device respectively each having a complementary coupling element. The coupling element on the processing machine is positioned to engage the corresponding element on the winding device when the machine and device are in closely adjacent operative contact. The processing machine and winding band on the winding device each have a drive means, and these drive means are in releasable driving engagement when the coupling elements are engaged, the transportable winding device thereby being driven in a similar direction and at a speed synchronous to that of said textile processing machine.

3,414,992
POWER OPERATED CLOTHES PRESS

Emil Dachtler, 8757 SE. Con Battin, Portland, Oreg. 97266

Filed June 28, 1967, Ser. No. 649,718
1 Claim. (Cl. 38—41)

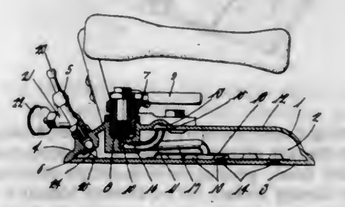


The invention is concerned with a clothes press of the type having a stationary pressing head and a movable pressing head. The movable pressing head is connected to a pair of links movable by a fluid operated cylinder. The cylinder is arranged to move the movable pressing head to open and closed positions as well as a semi-closed position with relation to the stationary head to accomplish pressing operations. A second fluid operated cylinder is used to restrict movement of the movable pressing head for positioning the latter in its semi-closed position. The parts are arranged so as to be installed on most conventional manually operable clothes presses to convert such manual structures to power.

3,414,993
STEAM IRON HAVING SUCTION DRAIN MEANS

Kiyoshi Naomoto, 2, 3-bancho, Kouzu, Minami-ku, Osaka, Japan

Filed Dec. 12, 1966, Ser. No. 601,086
Claims priority, application Japan, May 21, 1966, 41/48,361
2 Claims. (Cl. 38—77)

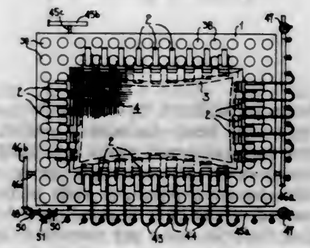


A steam iron with a suction drain means. The iron has a hollow body with a steam chamber therein, the base plate of the body having steam jet orifices therein. The body has a suction pipe with one end extending into the steam chamber and the other end protruding outside of the body, the suction pipe having a drain valve therein. There is a steam hole in the end of the suction pipe and inside the chamber positioned close to and above the rear end of the surface of the base plate.

3,414,994
APPARATUS FOR FITTING A TAUT SCREEN TO A FRAME

Jean-Paul Jaccard, 16 Rue de Savoie, Vevey, Switzerland, and Nicolas Engler, 17 Tiglio, 6900 Cassarate, Switzerland

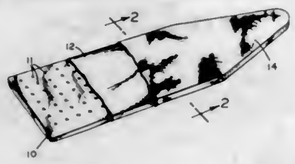
Filed Oct. 21, 1965, Ser. No. 499,369
Claims priority, application Switzerland, Jan. 25, 1965, 1,003/65
8 Claims. (Cl. 38—102.91)



An apparatus for fitting a taut screen to a frame comprising a removable frame, and pressure-medium-operated

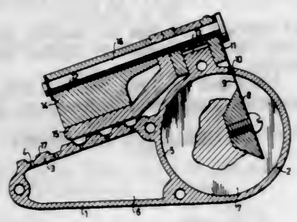
means mounted for stretching a screen prior to attachment to the removable frame and for subjecting simultaneously the frame to pressures proportioned to the forces exerted on the screen and distributed to the frame substantially in the same manner as the force distribution on the screen.

3,414,995
IRONING BOARD COVER
Joseph G. Adiletta, Thompson, and David Higgins, Bethel, Conn., assignors, by mesne assignments, to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Continuation of application Ser. No. 354,502, Mar. 20, 1964, which is a continuation-in-part of application Ser. No. 141,433, Sept. 28, 1961. This application July 14, 1966, Ser. No. 573,733
5 Claims. (Cl. 38—140)



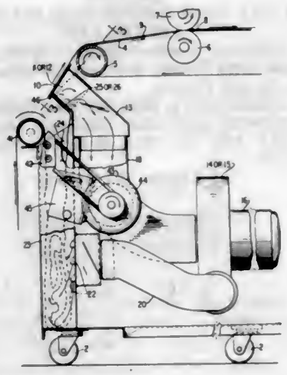
An ironing board cover is provided comprising a central panel formed of porous silicone rubber-impregnated woven glass fabric permeable to moisture and shaped to cover the ironing surface of an ironing board; a holding member is attached to the outer periphery of the central panel and shaped to fit over and around the ironing board in order to bring the central panel into close fitting contact with the ironing board surface.

3,414,996
FEED BEAM FOR A MANGLE
Adolf Helmer Petterson, P.O. Box 11005, Bromma 11, Sweden
Filed Aug. 26, 1965, Ser. No. 482,862
Claims priority, application Sweden, Sept. 11, 1964, 10,876/64
9 Claims. (Cl. 38—143)



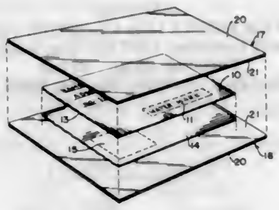
A feed beam to facilitate the introduction of laundry into a mangle. The beam includes a suction chamber with an upper perforated wall which is formed in a one-piece aluminum body. The aluminum body includes a cylinder which houses a piston. A yoke in the cylinder slidably mounted on the body is acted upon by said piston to displace the yoke and a peg connected thereto. The peg includes a movable member which is turnable on a shaft and is operative to clamp an article of laundry between the movable member and a fixed part of the peg at a location adjacent the upper perforted wall.

3,414,997
SUCTION BOX FEEDER FOR A FLATWORK IRONER
Frank B. Henry, Cape Elizabeth, Maine, assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 22, 1967, Ser. No. 669,943
10 Claims. (Cl. 38—143)



A feeding and smoothing apparatus for flatwork ironer wherein the flatwork is passed over a pair of belts moving toward the outer edges of the flatwork with a suction being applied to the belts so as to move the edges of the flatwork outwardly from the longitudinal axis thereof so that the flatwork is smooth before passing over an inclined feed plate and into the ironer.

3,414,998
COUNTERFEITPROOF, ENCAPSULATED IDENTIFICATION CARD
Louis Berger, 1428 Sorolla Ave., Coral Gables, Fla. 33134
Filed June 1, 1966, Ser. No. 554,474
5 Claims. (Cl. 40—2.2)



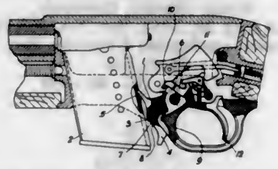
This invention provides a personal identification card that is substantially counterfeitproof and tamperproof. The card includes a structurally incorporated watermark distinctive to each individual card issuing authority, as an anti-counterfeiting means. The card is made tamperproof by providing an internal photographic image of the card's rightful holder, that is destroyed if the card is tampered with. The watermark and photographic image are disposed to permit simultaneous verification of the authenticity of the card as well as of the holder by viewing the card against a lighted background. The invention is also directed in part to a novel method for producing such identification cards.

3,414,999
ILLUMINATED SIGN
Leonard Mason, 1411 New York Ave., Brooklyn, N.Y. 11210
Filed May 4, 1967, Ser. No. 636,036
5 Claims. (Cl. 40—132)



In a street sign or the like, a housing is provided for totally enclosing illumination means and indicia. The housing is translucent and includes an access panel whereby the indicia may be readily changed and the illumination means may be replaced when needed.

3,415,000
MAGAZINE CATCH MEANS INCLUDING A TRIGGER SAFETY
Josef Koucky and Frantisek Koucky, Prague, Czechoslovakia, assignors to Zavody Jana Svermy, narodni podnik, Brno, Czechoslovakia, a corporation
Filed May 23, 1967, Ser. No. 640,697
Claims priority, application Czechoslovakia, May 25, 1966, 3,531/66
5 Claims. (Cl. 42—70)

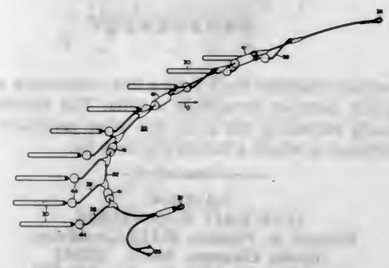


A firearm adapted to removably accommodate a magazine which is retained in the firearm by way of a catch lever which acts as a retainer for retaining the magazine in the firearm. This catch lever is capable of being turned to a position which will release the magazine for removal from the firearm, and the catch lever has projection which engages a trigger lever to prevent turning of the latter when the magazine is removed from the firearm, a spring acting on the retaining lever to turn it to the position where it will prevent turning of the trigger lever when the magazine is removed. The trigger guard itself coacts with the retaining lever to limit the turning thereof by the spring so as to locate the safety projection of the retaining lever in engagement with the trigger lever when the magazine is removed.

3,415,001
ELECTRODE ARRAY
Richard R. Ott and William W. Blair, Sarasota, Fla., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1966, Ser. No. 603,252
10 Claims. (Cl. 43—17.1)

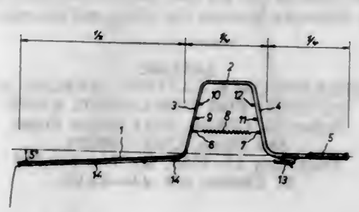
1. An electrode array for electrical shrimping operations wherein electrical energy is supplied to electrodes preceding a towed shrimping net, comprising:

(a) a plurality of elongated electrodes for extending in the direction of tow;
(b) electrical feeder line means for extending across the net opening for supplying electrical pulses to said electrodes, from an electrical source;
(c) a plurality of electrode feeder sections, each electrically connecting a respective electrode with said electrical feeder line means;



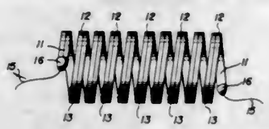
(d) said electrical feeder line means being of a buoyancy that, when towed, said electrical feeder line means rides above the sea bottom and above the lower part of the opening of the shrimping net;
(e) said electrode feeder sections each being of a length and flexibility that, when towed, said electrode feeder sections depend from said electrical feeder line means in a manner that substantially the entire length of the respective electrodes may ride on the sea bottom.

3,315,002
FISHING ROD
Charles Schaefer, Granada Hills, Calif., assignor to Hans U. Sieber, Zurich, Switzerland
Filed Jan. 24, 1967, Ser. No. 611,423
Claims priority, application Switzerland, Feb. 1, 1966, 1,334/66, Patent 432,927
16 Claims. (Cl. 43—18)



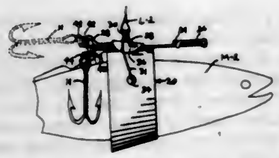
A fishing rod having a handle and a shaft portion formed from one piece of flexible material. The shaft portion is formed with an upwardly-extending offset portion comprising two sections bent laterally from the rod axis and connected together by a section extending parallel to the rod axis. The offset portion is integral with a forward shaft portion which is inclined downwardly at a slight angle relative to the rod axis. An elastic member is adjustably secured in a plurality of positions between the laterally bent sections to provide an adjustable springiness to the rod, and a reel is mounted on the rod below the rod handle.

3,415,003
TENSION ABSORBER FOR FISHING LINE
Victor Hudeley, 50 Brd. Victor-Hugo, Clichy, Hauts-de-Seine, France
Filed Apr. 11, 1966, Ser. No. 541,575
Claims priority, application France, Apr. 10, 1965, 12,766, Patent 1,468,691
10 Claims. (Cl. 43—42.72)



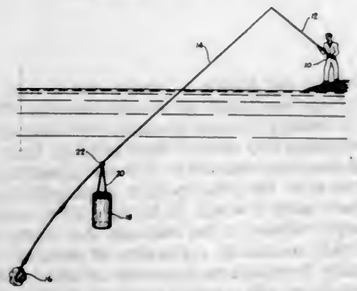
A tension absorber for a fishing line comprising a spiral spring-like member formed as a helix. The member has a helically extending slit along the outer periphery of its convolutions in which a fishing line may lie.

3,415,004
LIVE BAIT HARNESSES
Edward A. Whalen, 29251 Grandview, Mount Clemens, Mich. 48043
Filed May 16, 1966, Ser. No. 550,522
7 Claims. (Cl. 43—42.74)



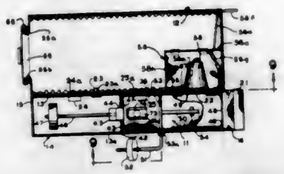
The improvement in a live bait harness having a band embracing the body of the live bait comprising two one-piece wire mechanisms one of which is fast to the band and the other of which is a spreader mechanism for holding a pair of fishhooks spaced apart on opposite sides of the live bait. The one mechanism forms a coil and a substantially right triangular loop, each upstanding in respect to said band. The spreader mechanism has a plural turn coil and is held on the one mechanism by said loop and the plural turn coil. Movement between the two mechanisms is restricted by the axial length of the plural turn coil and the size of the substantially right triangular loop. At both ends of the spreader mechanism the spreader arms are crimped and are then formed into coils for snap-holding fishhooks between the crimp and the end coils.

3,415,005
WATER-SOLUBLE CASTING WEIGHT AND METHOD FOR DISPENSING SAME
Robert B. Gilham, 1621 Ocean Front, San Diego, Calif. 92107
Filed May 13, 1966, Ser. No. 549,965
11 Claims. (Cl. 43—43.12)



A casting weight comprising a solid body of water-soluble material that may be ice or other lighter than water material that has an attachment means embedded therein for securing the casting weight to a fishing line, and the method of making an ice casting weight and dispensing it at the point of use.

3,415,006
SELF-SETTING, REPEATING ANIMAL TRAP
John W. Gilbaugh, 19396 Monte Vista, Saratoga, Calif. 95070
Filed Sept. 16, 1965, Ser. No. 487,733
10 Claims. (Cl. 43—67)



A counter-balanced trapping compartment is pivotally mounted in a casing and has a front entrance opening adapted to be aligned and misaligned with an opening in the casing. A side exit opening in the compartment is adapted to be aligned with a side opening in the casing when the front openings are misaligned. A latch member releasably secures the compartment in the position in which the front entrance openings are misaligned. A detachable receiving cage is secured to the casing adjacent the side exit opening. A counter-balanced, animal operated latch releasing member is positioned exteriorly of the compartment exit opening.

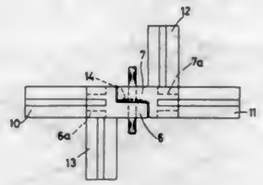
3,415,007
TOY BUILDING SET
August-Wilhelm Höwe, 8 Gottelmannstrasse, Mainz (Rhine), Germany
Filed July 20, 1964, Ser. No. 383,597
Claims priority, application Germany, July 26, 1963, H 49,842
11 Claims. (Cl. 46—19)



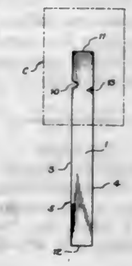
Toy building set with basic construction elements of cubic shape having a socket in one face and one or more complementary plugs in other faces, the plugs opposite the socket having a throughgoing bore for the insertion of a pin, the corresponding pin head or a ring tightly fitted onto the pin being receivable in the socket while an end of the pin shank projects beyond the plug; other elements include frames of staggered sizes with interfitting peripheral formations, and wheel-forming sectors connectable via lateral plugs with a central element serving as a hub, and with rim ports.

3,415,008
TOY BUILDING KIT
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed Sept. 21, 1966, Ser. No. 580,943
Claims priority, application Germany, Sept. 27, 1965, F 47,284
14 Claims. (Cl. 46—26)

1. In a toy building kit, in combination, at least two toy building blocks each provided with at least one undercut connecting portion; and coupling means for coupling said toy building blocks to one another with freedom of relative angular displacement, said coupling means comprising two coupling sections each provided with at least one connecting portion adapted to mat with an undercut connecting portion of one of said toy building blocks for securing such toy building block fixedly to the respective coupling section, and said coupling means further comprising joint means joining said coupling sections to one another with freedom of relative angular displacement, so that the building blocks connected to said coupling sections are similarly angularly displaceable.



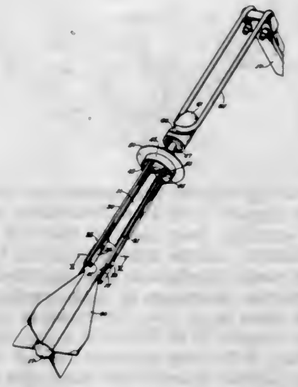
3,415,009
ICE CREAM STICK AND WHISTLE
Karl Otto Knauf, Wielandstr. 11, Lubeck, Germany
Filed Oct. 13, 1966, Ser. No. 586,535
Claims priority, application Germany, Nov. 16, 1965, K 52,765
5 Claims. (Cl. 46—175)



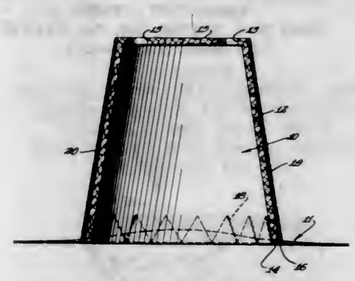
1. A hollow ice cream stick and whistle comprising a hollow rectangular body having a flat top and a flat bottom, sides joining said top and bottom and open ends, and a first notch extending through one side wall into said body adjacent one end of said body, said notch being enclosed in a block of ice cream when said body is an ice cream stick, and uncovered when said body is a whistle.

3,415,010
TOY PARACHUTE APPARATUS
Franklin D. Belz, 2102 Ave. E, Brownwood, Tex. 76801
Filed Nov. 17, 1966, Ser. No. 595,200
4 Claims. (Cl. 46—241)

Disclosed herein is a toy parachute apparatus having parachute expulsion means that includes a trigger mechanism that utilizes a movable magnet which is drawn toward a stationary magnet when the apparatus reaches its maximum height. While the apparatus is traveling upward, the force of gravity, acting on the movable magnet, prevents it from moving relative the stationary magnet. Further, a wind resistor may be combined with the movable magnet to prevent movement thereof toward the stationary magnet is disclosed. The force of the wind acting against this resistor helps keep the movable magnet in a fixed position until the maximum height of the trajectory is reached, at which time the velocity of the apparatus and the force against the resistor decrease. Also disclosed is a form of trigger mechanism that utilizes a trigger arm control bar to hold a trigger arm in place until the movable magnet is drawn toward the stationary magnet.



3,415,011
FLANGED PLANT CONTAINER
Lloyd Hornbostel, Jr., Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 11, 1966, Ser. No. 533,686
3 Claims. (Cl. 47—34)



A contoured brim is provided around the upper circular edge of a pot having the shape of frustum of an inverted cone by making a centrally located opening in the brim of an elliptical shape with the long axis equal to the outer diameter of the upper circular edge of the pot and the short axis of slightly lesser extent than said outer diameter. Assembly is effected by inverting the pot on a work surface, telescoping the brim, which has upstanding triangular teeth around the brim opening, over the smaller end of the pot until the brim wedges around the larger end with the teeth directed away from the upper edge of the pot, and then sliding a conical sleeve over the smaller end to clamp the teeth between the conical pot and the sleeve.

3,415,012
BULB PLANTING AND RECOVERY DEVICE AND METHOD

Albert Stubbmann, 127 Executive Drive, Manhasset Hills, N.Y. 11040

Filed Aug. 10, 1966, Ser. No. 571,485
1 Claim. (Cl. 47—37)

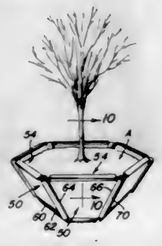


A tubular bag with an open mouth and closed bottom. The bag is formed from limp deformable stranded netting of a synthetic resin inert to materials in the soil. The bag contains a single bulb. The netting forms a large number of similar contiguous large apertures. The minimum transverse dimension of each aperture is a great number of times larger than the thickness of the netting. The bag is adapted to be placed in a hole in the ground at which time bulb roots can pass through the apertures in the bag without interference. Also, due to the large aperture the soil can contact the bulb directly. The length of the bag is sufficiently great so that when the bag is in the ground the mouth of the bag will be above the ground. At the end of a growing season when the leaves and stalks have withdrawn from the bulb and the bulb is wholly below the ground, the bulb nevertheless may be found and recovered by grasping the mouth of the bag and pulling the bag with the bulb therein out of the ground. The great number and large size of the apertures in the netting allows free ventilation of the bulb and an essentially unimpaired view of the bulb when the bag is out of the ground.

3,415,013
INTERLOCKING-TYPE BORDER BUILDING UNIT

Donald D. Galbraith, 1855 Cox Road, Aptos, Calif. 95003

Filed Nov. 2, 1966, Ser. No. 591,525
3 Claims. (Cl. 47—37)

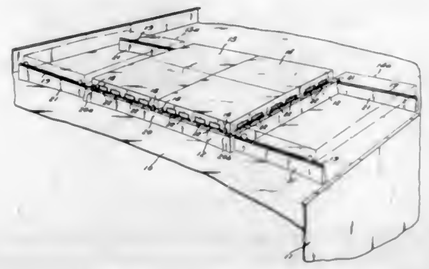


Releasably interconnectible ground penetrating units configured so as to join in the formation of an area defining border. Each of the units includes a pair of opposed substantially vertical edges, one of which is provided with a substantially full height split sleeve and the other of which is provided with a substantially full length rib receivable in the sleeve of an adjacent unit for releasable interconnection therewith. The opposed edges may converge downwardly toward each other whereby, upon the releasable interlocking of a plurality of units, a container-like configuration is defined for forming and confining balls of soil in transplanting operations.

3,415,014
HATCH COVER SYSTEM

Wallace Hamilton, Bentleyville, Ohio, assignor to McDowell-Wellman Engineering Co., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 18, 1966, Ser. No. 543,140
17 Claims. (Cl. 49—120)

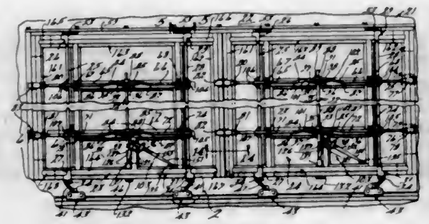


A marine hatch cover system is disclosed which includes two horizontally extending panels movable between a closed position over a hatchway and an open position clear of the hatchway. The panels are supported on trackways by rollers located adjacent to each corner of each panel. Power for opening and closing the panels is provided through two closed loop tension members providing oppositely moving substantially parallel reaches. One reach is connected to one panel and the other reach to the other panel so that the panels counterbalance each other. When closed, the panel rollers are positioned over jacking sections which are lowered to lower the panel into the fully closed position. The jacking actuators consist of elongated tubular members which collapse for lowering and are inflated to a substantially round condition for jacking the panels. Dogging is provided by channel shaped dog members which swing into engagement with opposed surfaces on the panels and hatchway.

3,415,015
BOXCAR DOOR

Herbert E. Rolfe, Jr., Westland, Mich., assignor to Evans Products Company, a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 604,034
15 Claims. (Cl. 49—220)

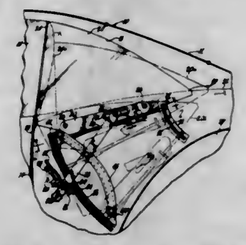


A railway car door arrangement having a pair of plug doors that coact to close a single doorway opening. Each of the doors incorporates a locking mechanism for holding the door in its closed position and an operating mechanism for moving the door axially into and out of the doorway opening. The locking mechanism and operating mechanism are interrelated so that the locking mechanism is moved between its engaged and released positions before the door is moved. An operating handle is supported on the outside of the door for actuating both the operating and locking mechanisms and provision is made for an inside operator whereby the mechanisms may be operated from internally of the car.

3,415,016
CLOSURE OPERATOR

Leonard A. Lystad, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 14, 1966, Ser. No. 565,294
3 Claims. (Cl. 49—227)

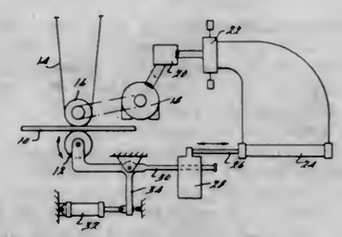


A vehicle body closure is moved between a position closing a body opening and an open position stored within the body by an operating mechanism that includes a pair of spaced concentric arcuate racks that are engaged by spaced pinions of different size mounted on the end of a support rod that slidably supports the closure. The closure includes a guide member which is received within a curved guide channel mounted on the body so that movement of the closure by a driving device slides the closure relative to the support rod as the rod moves along the racks, thus moving spaced portions of the closure through a compound curvilinear path at different rates of travel between the closed and stored positions.

3,415,017
APPARATUS FOR FINISHING WORKPIECES UNDER CONTROLLED PRESSURES

Ernest E. Murray, Birmingham, Mich., assignor, by mesne assignments, to Zech-Murray Corporation, Detroit, Mich., a corporation of Michigan

Filed May 13, 1965, Ser. No. 455,432
12 Claims. (Cl. 51—135)



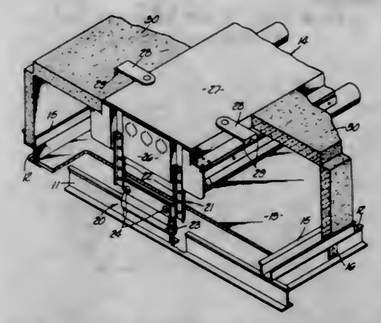
Apparatus for finishing workpieces with an abrasive belt in which the pressure between the belt and workpiece is automatically varied to compensate for wear of the abrasive belt.

3,415,018
GRID SUPPORTED CEILING LIGHTING FIXTURE

Ormond S. Sutter, Placentia, Calif., assignor to Lok-Products Co., Fullerton, Calif., a corporation of California

Filed Oct. 5, 1967, Ser. No. 673,184
10 Claims. (Cl. 52—28)

Supporting apparatus for mounting lighting fixtures in ceilings of the suspended grid type. Brackets are provided that can be fitted onto the grid members which extend parallel to the longitudinal axis of the lighting fixture and which also can be connected to the lighting

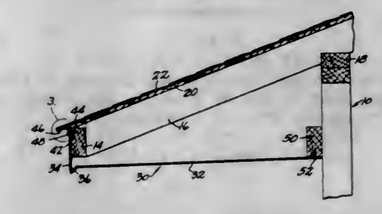


fixture by a reflecting light shield. Other brackets are provided for connecting the light fixture to the grid members extending parallel to the lateral axis of the fixture.

3,415,019
INTEGRAL SOFFIT AND FASCIA UNIT OF SYNTHETIC PLASTIC

Melvin A. Andersen, 303 Hillcrest Drive, Berrien Springs, Mich. 49103

Filed Mar. 10, 1967, Ser. No. 622,296
5 Claims. (Cl. 52—94)

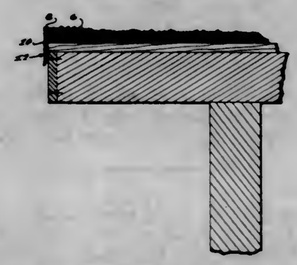


A soffit and fascia unit formed of rigid synthetic resin with an integral trough between the soffit and fascia portions.

3,415,020
GRAVEL STOP SPLICED BUTT JOINT

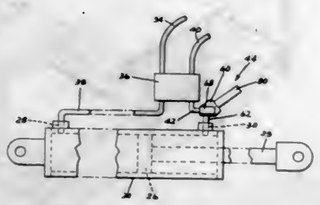
Herbert R. Windle, 530 W. Cucharras, Colorado Springs, Colo. 80905

Filed Mar. 27, 1967, Ser. No. 626,006
1 Claim. (Cl. 52—96)



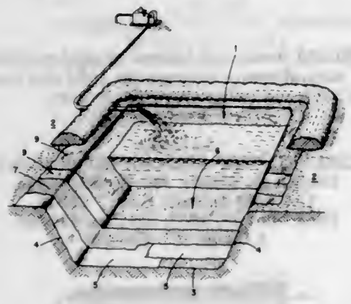
A gravel stop splicing section for butt joining the anchor strip and upwardly extending flange of two lengths of gravel stop. The splicing section has a flat anchor strip with a bent edge forming a depending flange folded back upon itself and extended upwardly beyond the anchor strip to form a single thickness rib over which the hemmed flanges of the gravel stop are clamped in abutting relation.

3,415,021
FLUID CONTROL SYSTEM FOR AERIAL TOWER
Lester L. Myers, Fort Wayne, Ind., assignor to Mobile Aerial Towers, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Sept. 13, 1967, Ser. No. 667,545
9 Claims. (Cl. 52—115)



A stop valve for a fluid motor provided to raise and lower the boom of an aerial tower, the stop valve comprising means defining a passage through which fluid flows to the motor, a member arranged alternatively to block the passage and to permit flow of fluid therethrough, and means defining a chamber in which the member freely moves between its blocking position and its position permitting flow of fluid through the passage, the chamber being arranged for movement corresponding to the boom movement so that, when the boom approaches its rest position, the stop valve is operated to deenergize the motor.

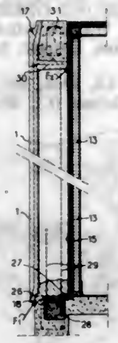
3,415,022
SALT WATER PIT LINER
William A. Schaefer, Seabrook, and Edmund C. Schmidt, Jr., and Billy E. Davis, Houston, Tex., assignors to Esso Production Research Company
Filed Feb. 1, 1967, Ser. No. 613,288
9 Claims. (Cl. 52—169)



A salt water pit is lined with a linear comprising a sheet of a polyolefin coated with a reinforced polyester coating. The polyester is reinforced with fiber glass.

3,415,023
PREFABRICATED BUILDINGS AND PANELS UTILIZABLE IN CONSTRUCTING SAME
Jean Lebreton, 3 bis Rue Kleber, Le Chesnay, Yvelines, France
Filed June 2, 1966, Ser. No. 554,868
6 Claims. (Cl. 52—213)

A building wall made from a plurality of pre-cast concrete panels having rabbetted vertical edges receiving sealing strips where the panels adjoin each other and two vertical inwardly projecting flanges, reinforcing rods extending the length of the panels and having ends projecting into the substructure and superstructure to form therewith a monolithic unit, inner wall sheets parallelling said panels and spaced from the ends of said flanges, and ventilating channels venting the space between the panel and sheet to the outside air. Preferably the upper and lower edges of the panels are matingly sloped to provide a passage which slopes downwardly and outwardly between superposed panels.



3,415,024
GLAZING PANEL SUPPORTING FRAMEWORK WITH HEATING AND COOLING SYSTEM
Joseph C. Kotlarz, 109 W. Woodlawn Drive, Mundelein, Ill. 60060
Filed Aug. 9, 1965, Ser. No. 478,233
7 Claims. (Cl. 52—220)

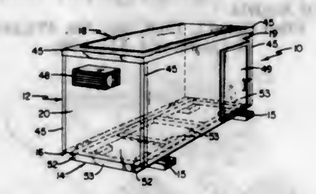


A glazing panel supporting framework and building structure comprising a supporting framework of generally vertical and horizontal hollow channel-like members having disposed therein a fluid-flow manifold system for heating and cooling the structure in accordance with temperature conditions to thereby minimize the relative expansion and contraction between the supporting framework and the glazing panels. The framework can be utilized for a single wall or a complete building structure and, if desired, each separate wall can contain its own fluid-flow manifold radiant panel heating and chilling zoned control system.

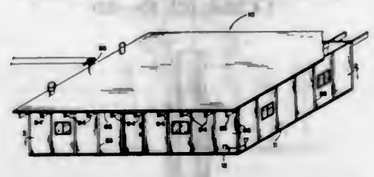
3,415,025
PREFABRICATED PORTABLE BUILDING
Frank C. Walz, Jr., Golden, Stacey F. Pickup, Denver, and Clyde A. Kratochvil, Arvada, Colo., assignors to Armadillo Manufacturing Co., Denver, Colo., a corporation of Colorado
Filed Feb. 21, 1966, Ser. No. 529,028
9 Claims. (Cl. 52—222)

A prefabricated portable building installation has a prestressed cambered roof section and vertical wall sections formed of rectangular panels rigidly connected to and supported by a floor section which rests on inwardly spaced skids such that the weight of the prestressed roof

and walls is carried into the outer peripheral edges of the floor to develop a bending moment about the skids counteracting any concentrated loading or weight applied to the floor section between the skids. Further, the cambered roof section is provided with undercut surrounding edges to afford better drainage.



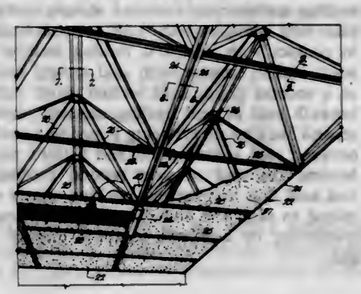
3,415,026
BUILDING OF GYPSUM STRUCTURAL WALL ELEMENTS
Paul W. Tillisch, George E. Meyer, Robert R. Chiffoleau, and Rocco Papalia, Antioch, Calif., assignors to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington
Filed Oct. 23, 1965, Ser. No. 503,057
8 Claims. (Cl. 52—262)



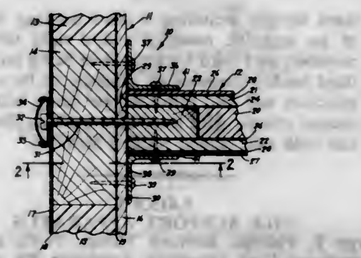
In a substantially incombustible, weather-resistant building structure of lightweight loadbearing materials, assembled wall panels of spaced-apart, paper-covered, gypsum-core skin boards so designed that when assembled there is formed a beam-receiving slot, a spline disposed within a vertical slot at each edge and across the joint between adjacent panels and adhesively affixed to the inner surface of each of the skin boards, a beam disposed within the slot, such beam being of a particular hollow, lightweight construction and providing electrical raceways and the like. In another particular feature, the structure includes a combination comprising a board, adhesive and a metal member, adjacent one board face, having openings to receive adhesive and accelerate set thereof.

3,415,027
TRUSS OF SPACED PYRAMIDAL UNITS
Marvin K. Snyder, Overland Park, Kans., and James E. Bradley and Raymond L. Cowie, Kansas City, Mo., assignors to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed July 30, 1965, Ser. No. 475,960
9 Claims. (Cl. 52—263)

A structural framework for a building roof comprising a plurality of side by side elongate truss-like members, each made up of parallel bottom chords and sequentially disposed pyramidal modules formed from upwardly inclined struts joined to the bottom chords. The apices of the modules are connected by a top chord running parallel with the bottom chords. These struts and bottom chords provide surfaces for supporting ceiling panels and heating and lighting components. The truss members include side mounted combined connectors and spacers which in an assembled roof establish a gap between adjacent side chords and during shipping and prior to assembly support the trusses in a desired nested relationship.



3,415,028
PANEL JOINT STRUCTURE
Marvin E. Nerem, Forest City, Iowa, assignor to Winnebago Industries, Inc., Forest City, Iowa, a corporation of Iowa
Continuation-in-part of application Ser. No. 560,159, June 24, 1966. This application Nov. 30, 1966, Ser. No. 597,983
33 Claims. (Cl. 52—281)

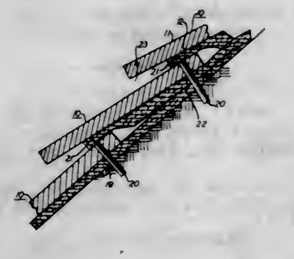


A T-joint structure connecting normally disposed sandwich panels. A first sandwich panel has a support member interposed between an inner plywood facing and an outer sheet metal facing adjacent core material. Bonding means secures the facings to opposite sides of the core material and the support member. A second sandwich panel has an anchor member located between sheet-like members and extended along one side of the panel. Bonding material secures the anchor member to the sheet-like members. Right angle holding members are located on opposite sides of the second panel. First screws attach the holding members to the inner facing of the first panel and second screws extended into the anchor member attach the holding members to the second panel. Third fastening screws extend through the facings and support of the first panel and into the anchor member of the second panel to hold the panels in assembled relation. Adhesive material is interposed between the engaging surfaces of the first and second panels.

3,415,029
ROOFING MATERIAL
Daniel F. Coletta, 15 Short Hills Ave., Short Hills, N.J. 07078
Filed Aug. 4, 1966, Ser. No. 570,202
7 Claims. (Cl. 52—419)

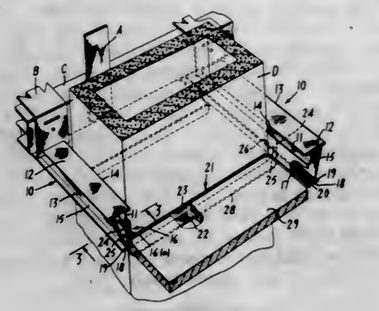
4. In a roof covering, the combination comprising:
a first shingle including a first backing sheet made of an asphaltic material and a rigid first roofing member;

a second shingle including a second backing sheet made of an asphaltic material and a rigid second roofing member, said second shingle being laid over said first shingle with said second backing sheet in contact with said first roofing member at a first point and in contact with said second backing sheet at a second point, said second point being located beneath said second roofing member, said first and second backing sheets being joined in a seal extending between said second point and a third point located beyond the end of said second roofing member, and said first and second backing sheets each being joined to said first and second roofing members, respectively, by a mastic to form unitary structures; and



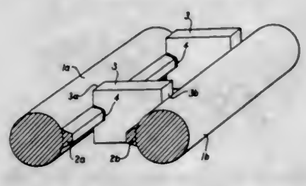
a third shingle including a third backing sheet made of an asphaltic material and a rigid third roofing member, said third backing sheet being joined to said third roofing member by a mastic to form a unitary structure and said third shingle being laid over said second shingle with said third backing sheet in contact with said second roofing member.

3,415,030
TILE SUPPORT APPARATUS
George T. Phillips, Bedford Village, N.Y., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 14, 1966, Ser. No. 557,526
5 Claims. (Cl. 52—493)



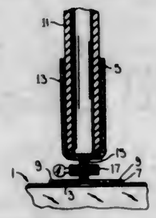
A support device for a suspended ceiling system. A support runner consists of a flat base, one perpendicular side and one inclined side. The flat perpendicular side rests against a wall structure and the flat side and inclined side form a slot structure for receiving tile support splines. The tile support splines have flanges which snap into the slot of the runnner. The splines have a horizontal surface which supports the ceiling tiles, while a flat side perpendicular thereto is adjacent a wall structure.

3,415,031
STRUCTURAL STEEL ELEMENT
Josef Ritter and Wilhelm Boyer, Graz, Styria, Austria, assignors to AVI Alpenlaendische Veredelungs-Industrie Gesellschaft m.b.H., Graz, Styria, Austria, a corporation of Austria
Filed Oct. 12, 1965, Ser. No. 495,261
1 Claim. (Cl. 52—690)



A structural steel element, for use as a reinforcement in concrete, includes two or more parallel longitudinal bars and a series of cross-braces that extend at intervals between the bars; each bar has an axial rib on its external surface, and the ribs of the two bars are disposed opposite each other; and each cross-brace is welded to the bars at their ribs.

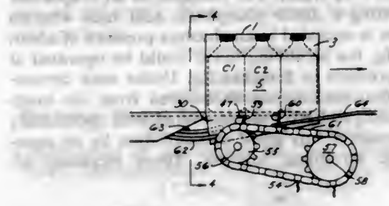
3,415,032
EVACUATION PORT SEAL
John A. Woller, Decatur, Ala., assignor to the United States of America as represented by the National Aeronautics and Space Administration
Filed Aug. 12, 1965, Ser. No. 479,353
1 Claim. (Cl. 53—22)



A method of evacuating a vacuum container and sealing the evacuation port of the container. A rigid evacuation tube is coated with lubricant and inserted into a relatively thin-walled flexible tube extending from the vacuum container and communicating with the evacuation port. The container is evacuated via the rigid tube which is then withdrawn from the flexible tube with an attendant collapse of the unsupported portion of the flexible tube. The flexible tube is temporarily clamped while a permanent seal is made adjacent the free end of the flexible tube permitting reuse of the tube for evacuating by cutting off the permanently sealed end portion thereof.

3,415,033
PACKAGING MACHINE AND METHOD
John H. Perry, Doraville, and Howard A, Dyer, Jr., Atlanta, Ga., assignors to The Mead Corporation, a corporation of Ohio
Filed Aug. 15, 1966, Ser. No. 572,287
6 Claims. (Cl. 53—32)

6. A method of forming a package for a plurality of articles comprising arranging the articles in a group, moving the group along a predetermined path, placing a wrapper type blank in transverse relation to the path of movement thereof above the group of articles and moving it in synchronism therewith, folding the ends of the blank downwardly and underneath the group of articles, folding a transverse tab formed in the blank in a part thereof which is foldable underneath the group of articles to a position normal to said part of the blank and between a pair of adjacent articles, folding of said tab being simultaneous with the folding of said part of the blank toward a generally horizontal position underneath the group of articles.



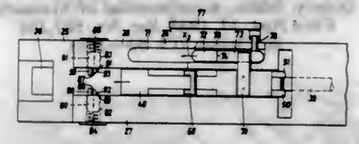
3,415,034
BOTTLE CAPPING MACHINE
Johann Schmitt, Nierstein, Germany, assignor to Vereinigte Kapselfabriken Nackenheim GmbH, Nackenheim (Rhine), Germany
Filed July 14, 1965, Ser. No. 471,982
Claims priority, application Germany, July 23, 1964, V 26,419; Jan. 8, 1965, V 27,511
11 Claims. (Cl. 53—128)



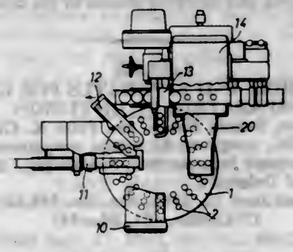
8. A bottle capping machine comprising a cap conveyor cup adapted for applying caps to bottles, a centering clamp adapted for centering the bottles relative to said cup, said cup including a housing, a gripper head in said housing and provided with slits and a flexible membrane on said head covering said slits, and a flexible compressed air conduit coupled to said head to force the membrane through said slits, said centering clamp including complementary guide members, complementary holding elements on said guide members and swinging arms supporting said holding elements and guide members for centering the bottles.

3,415,035
PACKAGING MACHINES
August Wickersheim, 4 Industriestrasse, Egenbuttel, near Hamburg, Germany
Filed Sept. 13, 1965, Ser. No. 486,992
Claims priority, application Germany, Mar. 6, 1965, W 34,499; June 19, 1965, W 35,169
12 Claims. (Cl 53—131)

An apparatus for closuring and separating a filled package from a length of tubular packaging material, including a closer head, a feed arrangement for feeding two metal strips to the closer head, means for severing from each metal strip a portion thereof, a member movable in the closer head and connected with the feed arrangement, a pair of stamping dies movable relative to the member and adapted to be intermittently coupled therewith, said dies being adapted to cooperate with stationary dies to bend the metal strip portions about the packaging material, pins projecting into the path of the stamping dies, each pin being adapted to hold the metal strip and to be withdrawn from the path of its respective stamping die on engagement with said die, and a separating knife operable to sever the packaging material between the two clamps so formed, the drive for the stamping dies including a drive disc with a spring-loaded drive rod eccentrically articulated thereto, whose free end is held in a link slide releasably connected with the stamping dies.



3,415,036
PACKAGING INSTALLATION INCLUDING CONTAINER FORMING AND CONTAINER CLOSING MEANS, AND TRANSFER DEVICE THEREBETWEEN
Hans Beckers, Monchen-Gladbach, Germany, assignor to Hamac-Hansella Aktiengesellschaft, a corporation of Germany
Filed Oct. 21, 1966, Ser. No. 588,397
Claims priority, application Germany, May 18, 1966, H 59,434
6 Claims (Cl. 53—184)

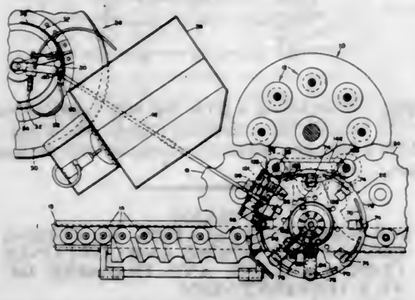


1. A packaging installation including container-forming means and container filling and closing means, said container-forming means comprising means for punching container blanks from a continuous web of packaging material, the blanks being punched from areas aligned longitudinally of the web, and means for simultaneously forming a plurality of blanks into containers, each container having a diameter smaller than the diameter of its respective blank, the center-to-center spacing between said containers as they leave said forming means being equal to the center-to-center spacing of the larger blanks from which they were formed, said container filling and closing means including a lidding station comprising means for punching lids from a continuous web of lid material and placing said lids on said containers, said lid punching means simultaneously producing a number of lids equal to the number of containers produced during each container-forming operation, the center-to-center spacing between said lids being smaller than the center-to-center spacing between said container blanks, and a transfer device for conveying said containers from said forming means to said filling and closing means, said transfer device comprising a number of guide channels equal to the number of containers produced during each container-forming operation, one end of each channel being arranged to receive one of the containers and the other end being arranged to deposit the container at said filling and closing means, said guide channels being tapered so that the center-to-center distance between them at said one end corresponds to the center-to-center spacing between the formed containers as they leave said forming means and the center-to-center spacing at said other end corresponds to the center-to-center distance between the lids.

3,415,037
CLOSURE FEEDING AND TRANSFERRING DEVICE

Alfred L. Bergeron, Wollaston, and Walter S. Sterling, Quincy, Mass., assignors to Pneumatic Scale Corporation, Quincy, Mass., a corporation of Massachusetts

Filed Nov. 12, 1965, Ser. No. 507,300
20 Claims. (Cl. 53—308)



Closure feeding and transferring apparatus particularly adapted for handling small lightweight closures wherein the closures are first oriented and then delivered to a rotary transfer spider having provision for guiding, supporting and transferring the closures into successive closure gripping and applying chucks of the closure applying machine.

3,415,038
METHOD AND APPARATUS FOR GAS SEPARATION BY DIFFUSION

Ulrich Merten, Solana Beach, and Peter K. Gantzel, San Diego, Calif., assignors, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,823
17 Claims. (Cl. 55—16)



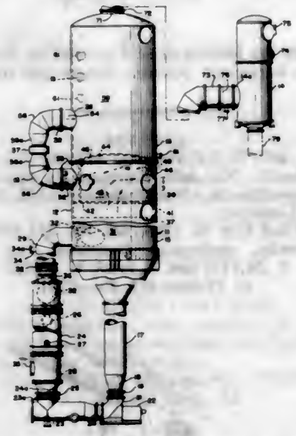
Method and apparatus for gas separating using dry cellulose acetate membranes having a relatively thick porous layer which backs and supports a thin selectively permeable layer. The gas mixture is applied to the surface of the thin layer under suitable pressure and at room temperature. Helium can be very effectively separated from various gas mixtures, hydrogen from carbon monoxide and oxygen from nitrogen.

3,415,039
METHOD AND APPARATUS FOR THE RECOVERY OF FLUORINE

William E. Rushton, South Holland, Ill., and George Kleinman, Charlotte, N.C., assignors to Whiting Corporation, a corporation of Illinois

Filed Nov. 3, 1965, Ser. No. 506,235
13 Claims. (Cl. 55—51)

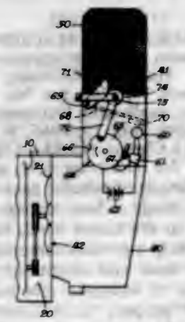
A method and apparatus by which fluorine compounds evolved in equilbrium concentrations from an evaporator can be recovered in increased amounts by scrubbing the vapor product from such evaporator in a scrubbing tower operated at a reduced pressure with respect to the pressure in the evaporator. For example, in an evaporator for concentrating a dilute phosphoric acid feed wherein the evaporator is operated at an absolute pressure of about 8½ inches Hg, the scrubbing tower could be operated at an absolute pressure of 2 inches Hg. Under such circumstances, the fluorine compounds evolved from the evaporator (e.g., SiF_4 and HF) are recovered with appreciably higher efficiencies at any given concentration by an aqueous fluosilicic scrubbing solution. These increased efficiencies become particularly significant in those situations wherein the scrubbing solution has a fluosilicic acid concentration of 20% or more. The pressure in the scrubber should be at least ½ inch Hg lower than in the evaporator, however, improved results are obtained where greater differential pressures are employed. As such, the present invention advantageously provides improved fluorine recovery together with substantially reduced stream and air contamination. Suitable pressure reducing devices include, for example, throttle valves and entrainment separators having high flow restriction properties.



3,415,040
CONTROL FOR CLEANING AIR SCREEN

Stuart D. Pool, Naperville, and Arnold Zimmerman, Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,962
6 Claims. (Cl. 55—283)

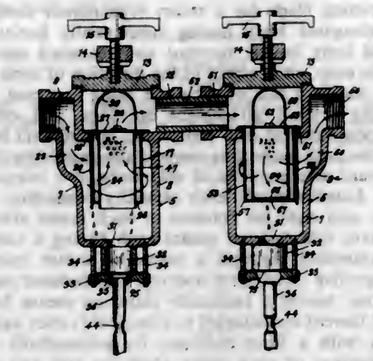


An air screening device having means for automatically interrupting the air flow through the screen, to thereby release dust particles that have collected on the windward side of the screen. The means for interrupting the air flow is energized in response to a pressure sensitive device that senses a reduction in air pressure on the leeward side of the screen when the screen becomes blocked by dust particles.

3,415,041
OIL SEPARATORS

Frederick Kraissl, Jr., 244 Kinderkamack Road, North Hackensack, N.J. 07661

Continuation of application Ser. No. 348,116, Feb. 28, 1964. This application Aug. 18, 1967, Ser. No. 661,725
4 Claims. (Cl. 55—342)

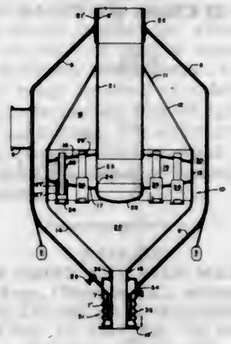


An oil and gas separator provided with spaced foraminous sleeves and deflecting baffle interposed between the inlet and outlet.

3,415,042
CENTRIFUGAL SEPARATOR VESSEL

Joseph G. Wilson, New York, N.Y., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Apr. 8, 1966, Ser. No. 541,360
3 Claims. (Cl. 55—348)

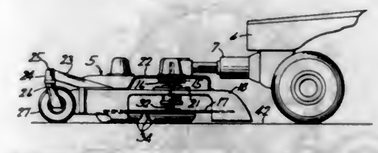


A centrifugal separator wherein a casing having a plurality of tubular separators and associated apparatus is internally and symmetrically suspended within an outer pressure retaining vessel leaving an annular space therebetween which cooperates with an expansion joint interconnected between the casing and the outer vessel to accommodate unconstrained vertical and horizontal expansion of the casing within the outer vessel in order to reduce thermal stresses upon the latter.

3,415,043
ANTI-SCALPING DEVICE FOR ROTARY LAWN MOWERS

Arnold J. Shones, 1208 Toft, Rockford, Ill. 61111

Filed May 5, 1966, Ser. No. 547,845
9 Claims. (Cl. 56—25.4)

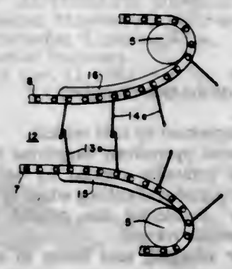


1. In a power mower comprising, in combination, a substantially horizontal open bottom housing, front and rear means supporting said housing in a predetermined elevation with respect to the ground over which the mower is to operate, a rotary cutter blade operable on a substantially vertical axis inside said housing, and power operated drive means for transmitting drive to said cutter blade, the improvement which consists in a vertical drive shaft that is in floating relation to said housing and drive means but provides the driving connection between said cutter blade and drive means in any position up or down from a previous position within a predetermined range of adjustability of said cutter blade relative to said housing and independently of said housing support means, and a rotary ground engaging cup-shaped spacer element fixed in concentric relation to and under said cutter blade and shaft to turn therewith and adapted to raise or lower said cutter blade and shaft in response to unevenness in the contour of the ground over which the mower is moved.

3,415,044
CANE GATHERING SYSTEM FOR SUGAR CANE HARVESTERS

Joseph J. Munson, Viewpoint, P.O. Box 243, Houma, La. 70360

Filed Sept. 17, 1965, Ser. No. 488,208
5 Claims. (Cl. 56—119)



The invention, as disclosed, provides a pair of endless chains separated by a throat with an introductory mouth, the chains having flights adapted to come together at the mouth, where, through the intermediary of cam means, approach one another in substantially direct lines to embrace canes in a gathering function, after which the canes are moved through the throat.

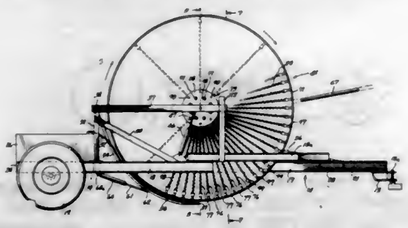
3,415,045
HARVESTING APPARATUS AND METHOD

Schuyler M. Hibbard, 212 Florence Ave., Penn Yan, N.Y. 14527

Filed July 7, 1966, Ser. No. 563,524
18 Claims. (Cl. 56—153)

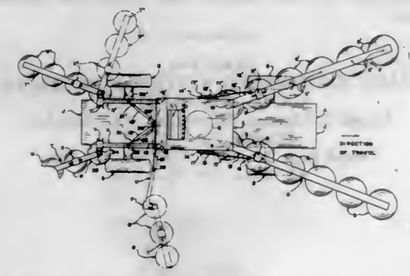
1. Apparatus for harvesting articles of produce consisting of cabbage heads or the like, comprising frame means, wheel means associated therewith for rotation on

a horizontal axis, said frame means and wheel means being arranged to be advanced along a row of said articles with the wheel means turning to abut successive articles in the row, said wheel means having a surface of revolution which comprises structure movable radially inward,



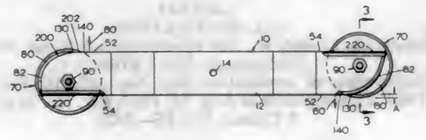
to engage each article abutted by the wheel means, for displacing the article, and means providing a guiding surface extending rearwardly below the wheel means, upon which the wheel means displaces successive articles that are engaged by said movable structure.

3,415,046
TREE TOPPER WITH DOUBLE MAIN BOOM AND DOUBLE CLEAN-UP BOOM
Clyde O. Leydig and Melvin O. Langford, both of P.O. Box 276, Exeter, Calif. 93221
Filed Aug. 8, 1966, Ser. No. 570,942
9 Claims. (Cl. 56—235)



1. In a device of the type described:
(a) a vehicle;
(b) a tower supported by said vehicle;
(c) a main boom operatively supported by said tower;
(d) disc saws rotatably carried by said boom and having their peripheral cutting edges lying in a plane substantially paralleling the ground surface over which the vehicle travels;
(e) means for swinging said boom to extend to one side of said vehicle for positioning its saws so that they will extend over an area that lies on one side of said vehicle;
(f) means for rotating said saws while moving the vehicle along a row of trees for topping them;
(g) a clean-up boom operatively supported by said tower;
(h) disc saws rotatably carried by said clean-up boom and having their peripheral cutting edges lying in a plane substantially paralleling the ground surface;
(i) means for swinging said clean-up boom to extend to the same side of the vehicle as that occupied by said main boom for positioning its saws so that they will extend over the same row of trees; and
(j) means for rotating the saws of said clean-up boom for causing them to top any branches in the row of trees that have not been properly cut by the saws on the main boom.

3,415,047
MOWER BLADE
Willard Blecke, 214 S. Pearl, Wayne, Nebr. 68787
Filed Apr. 18, 1966, Ser. No. 543,256
9 Claims. (Cl. 56—295)



1. A cutting blade for a rotary type mower comprising an elongated body having substantially horizontal ends, said body having forward and rearward sides at each of its ends with respect to the direction of orbit and with the rearward side of each end being upturned, cutters having vertical attachment openings, said cutters being disposed one at each end of and lapping said body, said cutters each projecting beyond the respective adjacent forward side portions of said body, two releasable clamping fastener means each pivotally connecting said cutters to said ends for rotation of each cutter about a vertical axis, said fastener means each having a vertical portion extending through a respective cutter opening and a respective attachment opening, said fastener means each further having a releasable clamping means forming a part thereof and adapted to clamp said cutter against said body with a force sufficient for substantially preventing rotation of each cutter about its said axis during mowing, the outer edge of each of said cutters extending beyond said body and being at least sufficiently thin as to effectively cut grass in use.

3,415,048
PROCESS FOR PRODUCING ALTERNATING TWIST
Anton Welbers, Wildtal, near Freiburg im Breisgau, Germany, assignor to Deutsche Rhodiaceta A.G., Freiburg im Breisgau, Germany
Filed Mar. 28, 1966, Ser. No. 540,556
Claims priority, application Germany, Apr. 7, 1965, D 46,979
15 Claims. (Cl. 57—34)



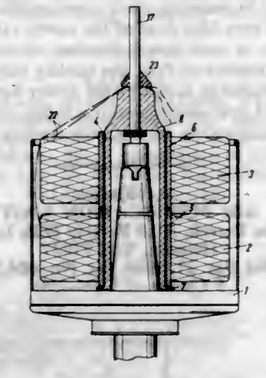
A novel process for imparting alternating twist to yarn consists of maintaining constant the rate of feed of the yarn, the speed and the direction of the twister, but alternately increasing and decreasing the length of the thread

segment in the path before the twister. Twists accumulate from the longer segments to the shorter segment and they are transferred to the segment on the other side of the twister, with the opposite direction. This occurs when the number of twists has reached

$$\frac{a \times n}{v}$$

in which a is the length of the longer segment, n is the number of turns of the twister in a unit of time and v is the speed of the thread. The length of the thread segment is varied by the use of two twist barriers, of which the one which is closer to the twister, operates intermittently. It is also possible to have a single twist barrier which moves back and forth.

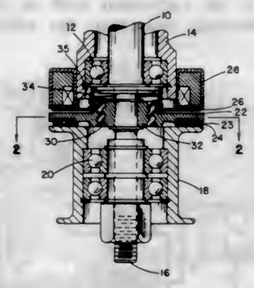
3,415,049
DOUBLE TWIST SPINDLE
Klaus Nimtz, Krefeld, Germany, assignor to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed June 5, 1967, Ser. No. 643,643
Claims priority, application Germany, June 6, 1966, P 39,624
13 Claims. (Cl. 57—58.49)



A double twist spindle in which a plurality of yarns that are to be twisted together are withdrawn overhead from at least two draw-off bobbins mounted one above the other in a stationary bobbin carrier, the tubular cores of the bobbins being mounted on a hollow cylindrical holder which can be inserted into the spindle and doffed as a unit with the bobbins. The stationary bobbin holder further having markings thereon which cooperate with a brake to indicate the degree of braking applied to the double twist spindle.

3,415,050
SPINDLE DRIVE AND STOP MECHANISM
John Douglas Page, Clemson, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1967, Ser. No. 609,225
5 Claims. (Cl. 57—88)

An electro-magnetic drive and stop mechanism adapted for driving and stopping a textile spinning or twisting spindle blade, including a clutch plate connected to drive the blade and adapted to be engaged alternatively with a driving whirl or an electrically activated friction brake which has a rubber sleeve interposed between the spring blade and the clutch plate providing a positive but distortable connector for positioning the clutch plate alternatively in driving engagement with the whirl friction drive surface on the friction brake. In one embodiment, the clutch plate is spring biased to maintain the clutch plate in driving engagement with the whirl. In a second embodiment, the rubber sleeve is initially distorted to maintain the

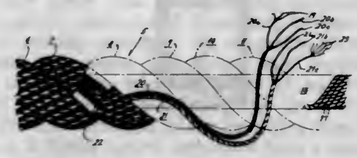


clutch plate in driving engagement with the whirl, and the spring is omitted.

3,415,051
PIECE-DYEABLE CARPET AND YARNS THEREFOR
Raymond Adrian Levesque, Stamford, and Richard Cecil Newton, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 13, 1966, Ser. No. 542,223
8 Claims. (Cl. 57—140)

Piece-dyeable carpets of acrylonitrile polymer fibers and yarns for making such carpets are provided wherein such yarns are composed of bicomponent fibers of acrylonitrile polymer, the components of which have a shrinkage differential of 5–20% and substantially the same hydrophilic properties, the yarn developing in water at 200° C. a compression bulk of at least 6.0 cc./g. under a load of 18 g./inch of yarn and/or a specific bulk of at least 7.0 cc./g.

3,415,052
SYNTHETIC PLASTIC ROPE FOR AUTOMATIC DEVICES
Robert L. Stanton, Maplewood, N.J., assignor to American Manufacturing Company, Inc., Brooklyn, N.Y., a corporation of Delaware
Filed Apr. 12, 1966, Ser. No. 542,007
7 Claims. (Cl. 57—144)

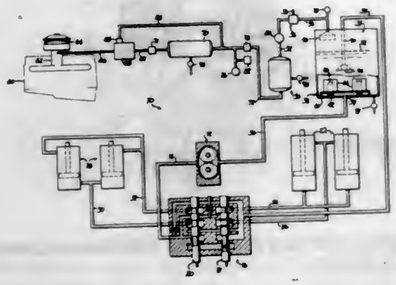


This rope contains six outer strands twisted around a central core, this central core comprising a plurality of twisted yarns of nylon. The outer layer of each of the six outer strands comprises alternating yarns of plied nylon and plied polypropylene. The inner core of each of these outer strands is comprised of substantially untwisted continuous filaments of nylon.

3,415,053
HYDRAULIC METHOD AND APPARATUS
Gene L. Omon, Wauwatosa, Wis., assignor to J. I. Case Company, Racine, Wis.
Filed May 5, 1967, Ser. No. 636,401
6 Claims. (Cl. 60—14)

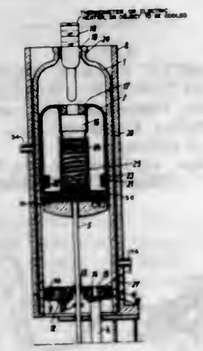
An internal combustion engine powered vehicle having a hydraulic system for supplying a hydraulic liquid under

relatively high pressure to motor elements under the control of a valve. The entire hydraulic system is maintained at a super-atmospheric pressure by drawing filtered air at the carburator inlet to the combustion engine, continuously deliverying the withdrawn air at a



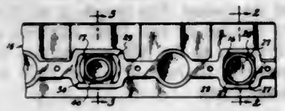
predetermined pressure to maintain a chamber at a predetermined pressure level with means for interconnecting the chamber and the hydraulic system to continuously maintain the hydraulic system at the predetermined super-atmospheric pressure.

3,415,054
DEMONSTRATION MODEL OF HOT AIR MOTOR AND HEAT PUMP
Harald Schulze, Bochum, Germany, assignor to Leybold Holding A.G., Zug, Switzerland
Filed Mar. 21, 1967, Ser. No. 624,930
Claims priority, application Germany, Apr. 5, 1966, L 53,283
14 Claims. (Cl. 60—24)



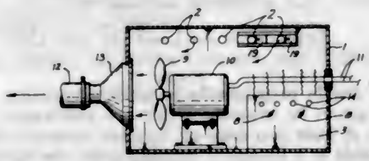
To demonstrate the fundamental principles of hot air motors and heat pumps, a working piston and a displacer piston are slidably mounted within a transparent cylinder which is water cooled in one portion of the cylinder by means of a transparent water jacket therearound. The working piston and displacer piston are connected to a common crank drive at a displacement angle of approximately 90° from each other. A heating element (or material to be cooled) is inserted in one end of the cylinder adjacent to the displacer piston and entered into a heat exchange relationship with the gas in the cylinder. The center of the displacer piston is hollow to permit gas flow therethrough and is packed with a porous material such as copper wool and Teflon wool. The demonstration model can be operated either as a hot air motor or as a heat pump to visibly demonstrate the operating principles of these devices to students.

3,415,055
EXHAUST BURNERS FOR INTERNAL COMBUSTION ENGINES
Vincent Guarnaschelli, Greenlawn, N.Y., assignor to Mutual Industries, Inc., Worcester, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 540,614, Apr. 6, 1966. This application July 24, 1967, Ser. No. 655,559
13 Claims. (Cl. 60—29)



A high heat conducting metallic insert positioned inside the exhaust chamber of one or two cylinders (in some constructions two contiguous cylinders exhaust into a common chamber) in a motor block, with the forward end of the insert positioned close to the exhaust valve, where the flaming exhaust meets the insert. The insert provides a partial obstruction to the flow of the exhaust gases and thus momentarily retards or slows them down, giving them additional time to be heated to further combustibility or to maintain their combustible temperature, owing to the very high heat of the insert, rather than permitting them to cool down. Further, owing to the momentary retardation of flow, the trailing richer portion of an exhaust discharge is met by the hotter flaming advance portion of the next subsequent discharge, thereby further enhancing combustion of the said trailing portion.

3,415,056
AIR PURIFICATION UNIT
John Farrell, 5320 Beverly Hills Lane, Houston, Tex. 77027
Filed Dec. 27, 1966, Ser. No. 604,730
5 Claims. (Cl. 60—30)

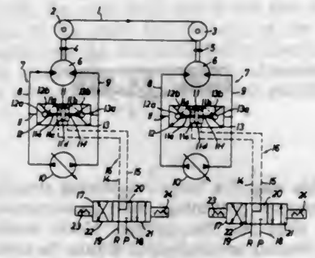


An apparatus for introducing the fumes from a neutralizing chemical into the exhaust stream of noxious gases with the amount of chemical dispensed into the exhaust stream being controlled by filtering the evaporating fumes thereof through a sponge, such as a cellular block of polyurethane foam.

3,415,057
HYDRAULIC FREE-WHEELING MEANS FOR THE HYDRAULIC DRIVES OF CONVEYORS AND THE LIKE
Harry Rosenberg, Ludinghausen, Germany, assignor to Gewerkschaft Eisenhütte Westfalia, Wetmar, near Lünen, Westphalia, Germany
Filed Nov. 14, 1966, Ser. No. 594,243
Claims priority, application Germany, Dec. 2, 1965, G 45,331
10 Claims. (Cl. 60—53)

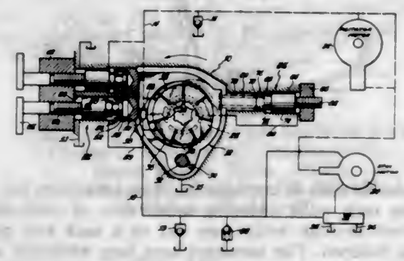
Hydraulic drive arrangement including hydraulic drive means having main working flow line means and main return flow line means operatively flow-connected therewith for hydraulic actuation thereof, short-circuit flow line means disposed correspondingly in such short-circuit flow

return flow line means to bypass such drive means, a pair of independently openable operatively opposed check valve means disposed correspondingly in such short-circuit flow line means to permit when open short-circuit bypass flow therethrough, and control means operatively connected with such check valve means to open the check valve



means independently of one another, such control means including, for example, hydraulic control valve means and control flow line means operatively flow connecting the control valve means with the check valve means to open hydraulically each check valve means independently, the control valve means being manually or automatically operable.

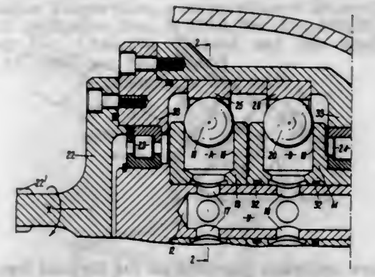
3,415,058
HYDRAULIC PUMP CONTROL SYSTEM
Herbert N. Underwood, Chicago, Ill., and Ronald H. Haas, Lansing, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 26, 1967, Ser. No. 633,921
10 Claims. (Cl. 60—53)



A hydraulic transmission for a clothes washer including a variable flow fluid pump with separate controls for the pump for each cycle of operation including a fluid pressure responsive piston to vary the spring load opposing movement of an element by said controls to vary the flow of the pump whereby the proper spring load is provided for each cycle.

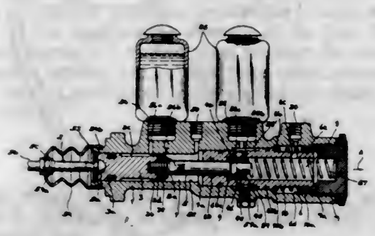
3,415,059
APPARATUS FOR GENERATING FLUID PULSES
Keith Foster, Birmingham, England, and Donald Firth, East Kilbride, near Glasgow, Scotland, assignors to National Research Development Corporation, London, England
Filed Nov. 1, 1965, Ser. No. 511,584
Claims priority, application Great Britain, Nov. 2, 1964, 44,656/64
10 Claims. (Cl. 60—54.6)

Fluid pulse generating apparatus comprising first and second fluid pulse generators communicating with a common fluid passage to produce fluid pulses therein with zero net flow in the passage, and means for changing the



phase of the second generator relative to the first to permit adjustment of the resultant pulse amplitude in the passage.

3,415,060
TANDEM BRAKE MASTER CYLINDER
Juan Belart and Gert Schrader, Walldorf, Germany, assignors to Alfred Teves Maschinen- und Armaturenfabrik KG., Frankfurt am Main, Germany, a corporation of Germany
Filed Mar. 31, 1967, Ser. No. 627,427
Claims priority, application Germany, July 22, 1966, T 31,657
10 Claims. (Cl. 60—54.6)

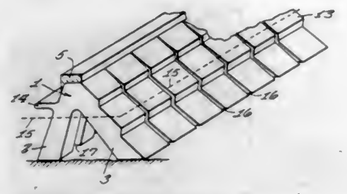


Tandem brake cylinder for a dual-network brake system in which a primary piston is rigidly connected with a secondary piston (the pistons forcing hydraulic fluid from respective chambers of a common cylinder to the respective braking cylinders), the secondary piston being surrounded by a sleeve with limited axial mobility and adapted to act upon the development of an overriding hydraulic pressure in one chamber to force hydraulic fluid in the other chamber to the respective wheel brake. The sleeve is biased against movement from a normal position in either axial direction by a spring.

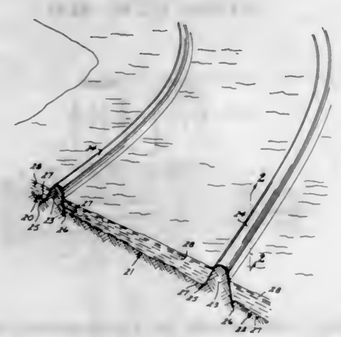
3,415,061
SEA WALL STRUCTURE
Alexandre John Stempfli, Mies, Waadt, Switzerland
Continuation-in-part of application Ser. No. 136,551, Sept. 7, 1961. This application Aug. 24, 1966, Ser. No. 574,588
6 Claims. (Cl. 61—4)

A sea wall type structure formed of a series of individual inverted V-shaped structural elements the lower ends of which are supported by an underwater ground surface. The convergent upper end portions of the elements are located above the water and are interconnected by a continuous superstructure. The forward legs are directed toward the open sea and the rearward legs are directed toward the sheltered water. Each series of legs is spaced

to define a series of turbulence producing upwardly convergent outer slots and similarly upwardly convergent turbulence producing inner slots for dissipating the energy in the water flowing therethrough. Wave breaking projections are optionally provided on the forward legs, or the entire structure may serve as a wave breaking protector for a conventional structure. In the latter case, the superstructure operates as a wave breaking device.



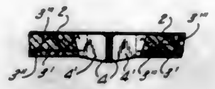
3,415,062
DIKING METHOD AND PRODUCT PRODUCED THEREBY
Robert M. Ziegenmeyer, Sutter, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,738
3 Claims. (Cl. 61—12)



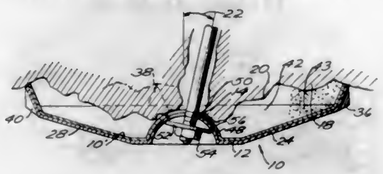
A barrier to impound water is formed by gathering earth from a field to provide a continuous mound along a path around the periphery of the field. A plastic sheet is continuously fed over the mount to cover it and to extend on both sides of the mound. Additional earth is deposited adjacent the mound to embed and hold the longitudinal side edges within the earth.

3,415,063
SHIELD SEGMENT FOR COVERING THE INNER WALL OF THE TUNNEL MADE OF COMPOSITE SHELL UNITS
Yoshio Akita, Tokio Fujii, and Masao Sasagawa, Tokyo-to, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan, a company of Japan
Filed Aug. 6, 1965, Ser. No. 477,773
Claims priority, application Japan, Aug. 12, 1964, 39/46,367
8 Claims. (Cl. 61—45)

A tunnel lining element to be assembled with a plurality of other tunnel lining elements of the same construction so as to form therewith the lining for a tunnel. The tunnel lining element is prefabricated and is composed of a concrete block having opposed inner and outer faces. The inner face of the block is adapted to be directed toward the interior of the tunnel while the outer face thereof is adapted to be directed away from the interior of the tunnel. Located against one of these faces of the block is a steel plate, and embedded within the block is a reinforcing structure of wavy or corrugated configuration having crests welded to the steel plate so that in this way this latter reinforcing structure forms a shear connector preventing shearing movements between the steel plate and the concrete block. Additional reinforcing elements are embedded within the concrete block, and a connecting means is fixed with the steel plate at the ends of the element for connecting each element to the adjoining elements so as to form therewith the tunnel lining structure.



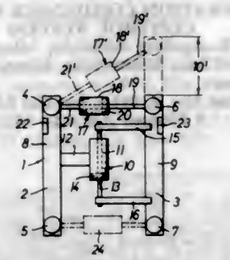
3,415,064
SUPPORTING DEVICE FOR ROCK WALLS
Joseph Antoine Talobre, 50 Rue de Boulainvilliers 75, Paris 16, France
Filed Apr. 17, 1967, Ser. No. 636,235
Claims priority, application France, Apr. 22, 1966, 58,657
5 Claims. (Cl. 61—45)



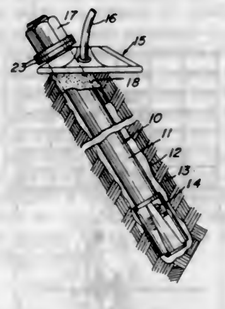
A device used in combination with rock bolts for supporting rock walls including a plurality of shell-shaped members through which one end of a rock bolt passes and is fastened. The members have long extending arms which effectively engage a large substantial surface of the wall.

3,415,065
ADVANCEABLE MINING PROP ARRANGEMENT CONTAINING STABILIZER MEANS
Alfons Helder, Henrichenburg, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Continuation of aplication Ser. No. 529,018, Feb. 21, 1966. This application Oct. 6, 1967, Ser. No. 673,520
Claims priority, application Germany, Feb. 22, 1965, G 42,902
13 Claims. (Cl. 61—45)

Advanceable mining prop arrangement for supporting a mine roof including two prop units in substantially parallel disposition, interconnected by guiding and energizable advancing means (e.g. an advancing piston-cylinder means or advancing cylinder) for shifting the units longitudinally with respect to one another from a side-by-side position of the two units to an advanced position of one unit with respect to the other, with energizable stabilizer means (e.g. a piston-cylinder device or stabilizer cylinder) supporting the two units in substantially aligned upright parallel disposition both in the side-by-side position and advanced position of the two units, such stabilizer means being swingably connected at the respective ends thereof to a part of the respective units to permit swinging of the stabilizer means when the units are successively shifted, the stabilizer means being connected with the units such that in the first or side-by-side position of the units the cylinder of the stabilizer means is normal to the longitudinal direction of advance of the units whereas in the second or advanced position of one unit with respect to the other such stabilizer cylinder is situated at an acute angle to the direction of advance, the stroke of the stabilizer means, e.g. piston-cylinder means, being such that in the first or side-by-side position such stabilizer means has a minimum effective length determined by the maximum incursion of the piston rod thereof within the cylinder while in the second or advanced position of one unit with respect to another such stabilizer means has a maximum effective length determined by the maximum excursion of said piston rod with respect to such cylinder, and control means for controlling the supply of pressure medium to the piston-cylinder device of the stabilizer means.

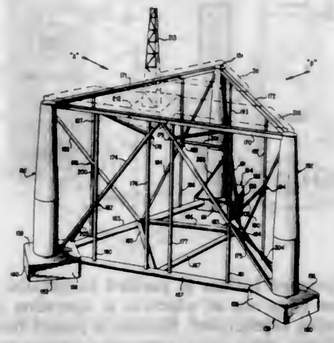


3,415,066
BEARING BRACKET FOR ROCK BOLTS
Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich. 49506
Filed Jan. 12, 1966, Ser. No. 520,135
4 Claims. (Cl. 61—45)



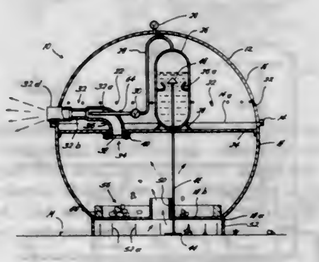
A bearing plate for rock bolts, having a peripheral bearing flange and central walls extending perpendicularly to the plane of the bearing flange to define an opening for receiving a bolt rod, a central structure defining a clearance space around the opening and provided with holes for the passage of grout tubes, and also having stiffening flanges uniting the walls, the central structure defining the clearance space, and the bearing flange for efficient transfer of stresses.

3,415,067
METHOD OF OPERATING A SUBMERSIBLE VESSEL FOR SUBMARINE OPERATIONS
Paul A. Wolff, Oklahoma City, Okla., assignor to Kerr-McGee Corporation, a corporation of Delaware
Original application Dec. 5, 1963, Ser. No. 328,301, now Patent No. 3,246,476. Divided and this application Jan. 11, 1966, Ser. No. 555,653
1 Claim. (Cl. 61—46.5)



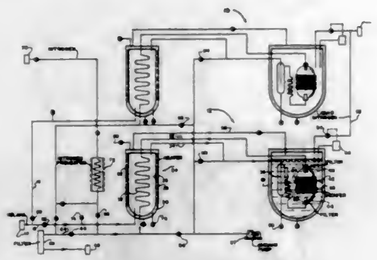
Submersible vessels for submarine operations include a plurality of upstanding stabilizing members located at apices of substantial polygonal stabilizing patterns. Methods of operating such vessels are disclosed, including ballasting to establish maximum permissible loading as determined by the load-bearing strength of the land bottom, and deballasting to a backoff value less than the maximum permissible loading but at least three times greater than cyclic loading anticipated to be applied by winds, waves and currents.

3,415,068
SUBMARINE DEVICE
Sam R. Casey, Jr., 2233 Troon Road 77019, and William L. Eddleman, Sr., 2810 Prescott 77025, both of Houston, Tex.
Filed Apr. 18, 1966, Ser. No. 543,164
9 Claims. (Cl. 61—69)



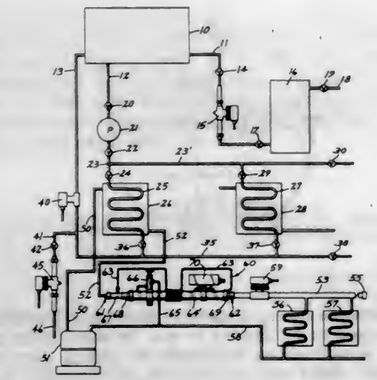
In submarine device, apparatus preferably including a body adapted to be flooded to sink to the bottom of a body of water; means responsive to arrival thereat to agitate the bottom and collect benthonic materials therefrom with a compartment during lateral movement on the bottom; means for generating a gas accumulated therein to obtain positive bouyancy and initiating a rise to the surface; said submarine device being non-rigid and constructed with a yieldable structure subjected to pressure variations without consequence and without crushing or failure.

3,415,069
HIGH PRESSURE HELIUM PURIFIER
John A. Hauser, Decatur, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 31, 1966, Ser. No. 591,000
3 Claims. (Cl. 62—40)



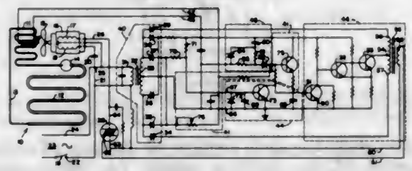
High pressure helium is purified in parallel identical purification units one of which is in operation while the other is being regenerated. Helium is passed through the inner chamber of a heat exchanger having inner and outer chambers wherein the helium is cooled by purified helium passing through a coil in the inner chamber causing moisture and hydrocarbons to be condensed therefrom. The partially purified helium is then passed through a cold trap and an adsorber section including filters both of which are contained within a body of liquid nitrogen to effect removal of the remainder of the impurities. Purified helium then passes through the coil of the inner chamber while nitrogen, vaporized from the body of nitrogen, passes through the outer chamber of the first heat exchanger.

3,415,070
REFRIGERATION WARNING SYSTEM
Dale A. Weum, Minneapolis, Minn., assignor to Red Owl Stores, Inc., Hopkins, Minn., a corporation of Delaware
Filed June 22, 1966, Ser. No. 559,577
7 Claims. (Cl. 62—129)



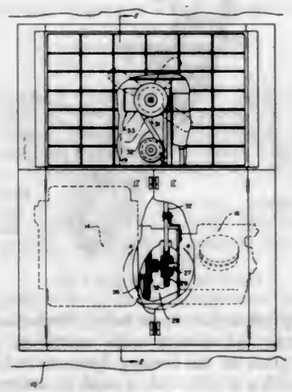
A refrigeration malfunction warning system including a chamber formed by a jacket surrounding a refrigerant liquid header connected to receive a small amount of refrigerant liquid from the end of the header adjacent the condenser so that in the event the refrigerant liquid supply becomes low the chamber will be the first to receive an insufficient supply and will, therefore, increase in temperature. Electrical contacts associated with a temperature sensor in the chamber provide a remote signal of this occurrence. Electrical contacts associated with a pressure sensor in the header also provide a remote signal in the event of a loss of pressure or excess pressure in the header. In the event cool water is utilized in the condensers the warning system also includes pressure and temperature sensors in the water system to remotely indicate malfunctions therein.

3,415,071
REFRIGERATION CONDENSER FAN SPEED CONTROL SYSTEM
Arlon D. Kompelien, Richfield, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 540,048
8 Claims. (Cl. 62—158)



A fan speed control system wherein a modulating signal is applied to modulate the speed of the condenser fan under normal operating conditions. The control system includes a time delay which overrides the speed control at the startup of the motor to provide maximum speed of the fan at each startup of the system.

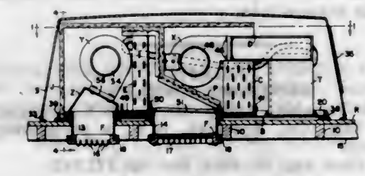
3,415,072
DRIVE UNIT FOR TRANSPORT REFRIGERATION SYSTEM
Jack H. White, Huntington Beach, Calif., assignor to Transicold Corporation, Montebello, Calif., a corporation of California
Filed Apr. 18, 1967, Ser. No. 631,811
2 Claims. (Cl. 62—239)



A drive unit for a nose mount refrigeration system wherein fans are located inside and outside a commodity space to be refrigerated. The outer fan is adapted to be

associated with a condenser unit of the system, and the inner fan cooperates with a cooling evaporator in the commodity space. A clutch serves to decouple the inner fan so as to preclude rotation thereof during selected periods, such as during a defrost cycle. An endless drive belt is interposed both between the two fans, and between the compressor and the compressor's prime mover in a manner which permits the drive belt to be readily replaced. The shaft which couples the compressor to its prime mover is readily demounted or separated for longitudinal relative movement to provide a gap in the drive shaft between the compressor and its prime mover. The gap serves to pass the endless belt therethrough when replacing worn or defective belts.

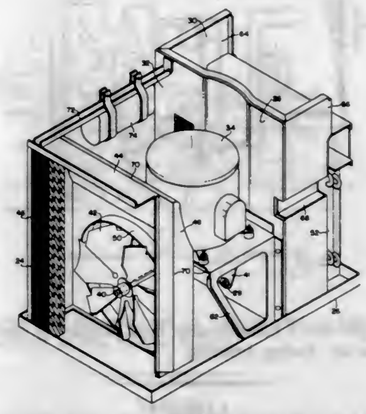
3,415,073
ROOF-TYPE AIR CONDITIONING SYSTEM
Walter D. Ammons, 1165 N. Rio Vista Blvd., Fort Lauderdale, Fla. 33301
Filed June 12, 1967, Ser. No. 651,931
13 Claims. (Cl. 62—259)



An elongated base for an air conditioning system adapted for fixed level positioning upon a roof top, comprising an elongated bottomless insulating jacket fixedly supported upon the base to enclose a major portion thereof including various units carried thereby, an elongated bottomless shroud removably secured to the roof top in a fixed position, enclosing the jacket in spaced relation thereto to provide therebetween an air space through which air may freely circulate, and, carried on the base, a unitary air conditioning system which includes a horizontal duct for delivery of blower-driven heated air through a side opening in the shroud near one end thereof. Two vertical ducts near the opposite end of the shroud are also extended downwardly through the base and roof top, one to supply air to a room therebelow and the other to return air upwardly therefrom. Also mounted on the base adjacent the upper ends of both vertical ducts is an evaporator together with an associated blower means which propels cooled air downwardly through the supply duct into the room therebelow, the lower end portions of both vertical ducts terminating at or about the ceiling level of the room into which cooled air is delivered. Grilles are also affixed within the lower end portions of the vertical ducts within one of which is mounted a switch mechanism for controlling operation of the air conditioning system. The mounting of both grilles is such as to leave the head room therebelow substantially intact.

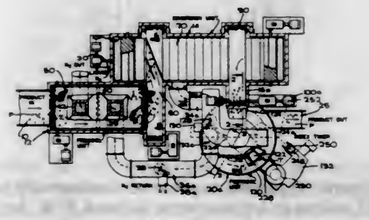
3,415,074
WINDOW MOUNT ROOM AIR CONDITIONER
Frederick S. Metcalfe, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1967, Ser. No. 618,640
4 Claims. (Cl. 62—262)

An air conditioner having interior parts organized for compactness in a shape lending itself to use in a relatively high, narrow, window space. The compressor is mounted on a shelf secured to the upright bulkhead separating the interior of the housing. A single motor below



the shelf drives opposite end fans serving the condenser and the evaporator at opposite end faces of the housing.

3,415,075
IMMERSION FREEZING
John P. Pelmulder, Saratoga, and Erik Thuse, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Dec. 13, 1963, Ser. No. 330,298. Divided and this application Jan. 11, 1967, Ser. No. 632,471
3 Claims. (Cl. 62—381)

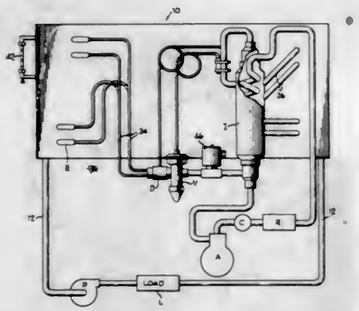


A refrigeration unit for subjecting foods to a flow of gaseous refrigerant embodies a turntable with baskets having open top and bottom walls, staggered refrigerant conduits above and below the turntable, a product inlet and outlet, and air locks between a refrigerant gas inlet and outlet and the product inlet and outlet.

3,415,076
LIQUID CHILLER
Edward Rodak, Mexico City, Mexico, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 20, 1967, Ser. No. 647,543
2 Claims. (Cl. 62—435)

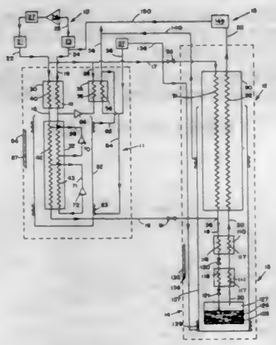
A shell-and-coil liquid chiller which may be operated to chill water or other heat exchange medium at close to the freezing point thereof without danger that a freeze-up would damage the shell, the piping, or the refrigera-

tion system. This is accomplished by establishing and maintaining an air pocket in the upper portion of the



shell to provide a compressible fluid permitting expansion of the water during freezing.

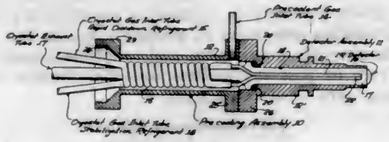
3,415,077
METHOD AND APPARATUS FOR CONTINUOUSLY SUPPLYING REFRIGERATION BELOW 4.2° K.
Samuel C. Collins, Belmont, Mass., assignor, by mesne assignments, to 500 Incorporated, Cambridge, Mass., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 612,859
23 Claims. (Cl. 62—467)



A cryogenic apparatus capable of continuously supplying liquid helium at a temperature below 4.2° K. by reducing the vapor pressure over liquid helium to the extent required to obtain the desired temperature. The subatmospheric vapor which is withdrawn is used to cool, in an adjuvant heat exchanger, a portion of the high-pressure helium which is to be liquefied, the remaining liquefied helium being supplied either from a reservoir of liquid helium at atmospheric pressure or, preferably, from a cryogenic refrigerator the cycle and apparatus of which are integrated with that of the adjuvant heat exchanger.

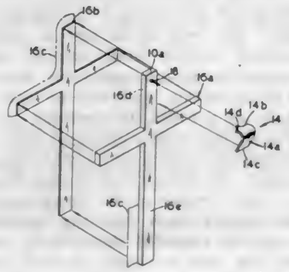
3,415,078
INFRARED DETECTOR COOLER
Novell D. Liston, Pomona, Calif., assignor to General Dynamics Corporation, a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,147
7 Claims. (Cl. 62—514)

The disclosure is directed to an infrared detector cooling arrangement wherein the cryostat assembly includes an exhaust tube which extends through a precooling chamber into a detector chamber with cooldown gas and stabilization gas tubes closely wrapped about the exhaust tube and which also extend into the detector chamber. The cryostat assembly is precooled by application of a precoolant gas which flows over the gas inlet tube, stabilization tube, and exhaust tube in the precooling chamber. The cryostat or cooldown gas is then applied to the inlet tube and expands in the detector chamber to rapid-



ly drop the temperature thereof and discharges through the exhaust tube where it additionally precools the gas in the inlet and stabilization tubes. At some predetermined time preselected gas is applied through the stabilization tube and expands in the detector chamber to maintain or stabilize the temperature therein and discharges through the exhaust tube.

3,415,079
PENDANT JEWELRY
Ronald E. Tomchin, Valley Stream, N.Y., assignor to Philips Mfg. Co., Brooklyn, N.Y., a partnership of New York
Filed Aug. 16, 1966, Ser. No. 572,812
3 Claims. (Cl. 63—23)

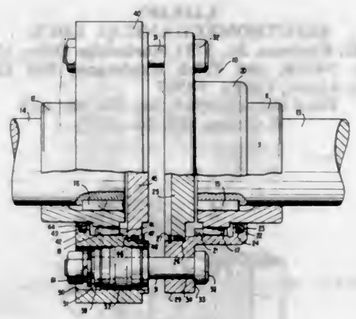


1. As an article of manufacture, an article of pendant jewelry including a body having a shell and top, said shell including a rear wall having at least one aperture formed therein and a finding having opposite free ends shaped to cooperate with said rear wall to form a bail, said finding including an alignment projection at one end thereof received within said aperture and means securing said projection within said aperture and securing the other end of said finding to said rear wall.

3,415,080
FLEXIBLE COUPLING
Arthur Swanson, Towson, Md., assignor to Poole Foundry & Machine Company, Baltimore, Md., a corporation of Maryland
Filed Nov. 23, 1966, Ser. No. 596,590
10 Claims. (Cl. 64—9)

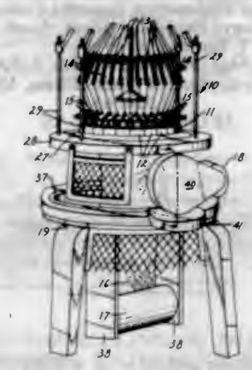
A gear type flexible shaft coupling in which a hub having crowned gear teeth formed thereon is mounted on adjacent ends of a pair of aligned shafts, and a pair of sleeves having internal gear teeth formed therein is mounted, one on the crowned gear teeth of each hub.

Torsionally resilient, antifriction connecting means connect the two sleeves to permit limited free axial move-



ment of the sleeves relative to one another and to absorb torsional vibration and impact loads.

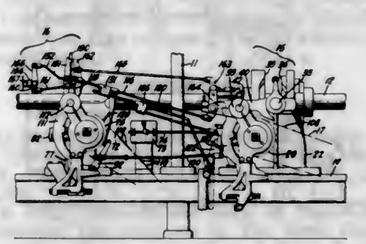
3,415,081
MACHINE FOR KNITTING NON-TORQUE FABRIC
Carroll R. Anderson, Minneapolis, Minn., assignor to Munsingwear, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 1, 1965, Ser. No. 510,794
3 Claims. (Cl. 66—151)



A knitting machine for producing a jersey fabric wherein the takeup reel is rotated in a direction corresponding with the direction of relative rotation between the yarn inputs and the knitting head but at a rate determined by the amount and direction of twist in the yarn so that the wales in the finished fabric are skewed slightly to compensate for torque produced in the fabric by the natural torque of the yarn. The change in speed is accomplished by altering the gear ratio between the knitting head and the takeup reel.

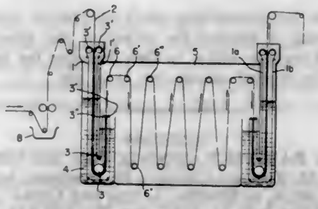
3,415,082
PATTERN MEANS FOR KNITTING MACHINES
Herbert E. Haehnel, Reading, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1967, Ser. No. 613,523
10 Claims. (Cl. 66—155)

The invention disclosed herein relates to straight bar or full-fashioned knitting machines for knitting flat fabric blanks and more particularly to pattern mechanism for controlling the knitting cycles of the machine to form the knitted courses of the fabric blanks, and the stitch trans-



ferring cycles of the machine to fashion and to form lace stitch patterns in the fabric blanks.

3,415,083
APPARATUS FOR TREATING SHEETLIKE MATERIAL UNDER SUB- OR SUPERATMOSPHERIC PRESSURE
Narukazu Okazaki, Wakayama-shi, and Joyu Ishimaru, Tokyo, Japan, assignors of one-half to Wakayama Iron Works Ltd., Wakayama-shi, Japan, a corporation of Japan
Filed Dec. 5, 1966, Ser. No. 598,998
Claims priority, application Japan, Dec. 20, 1965, 40/77,996
6 Claims. (Cl. 68—5)

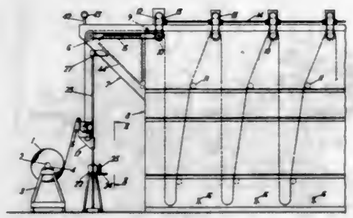


Apparatus for subatmospheric or superatmospheric pressure treatment of sheetlike materials. The apparatus has a liquid seal between the pressure chamber and the outside atmosphere which is a fused metal, which is fused at a low temperature. A pair of endless belts runs through the liquid seal in a manner such that they hermetically clasp the sheetlike material between them as they pass through the liquid seal.

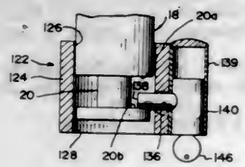
3,415,084
APPARATUS FOR DYEING CARPETS AND OTHER FABRICS
Ernest Wilford, Bingley, England, John K. Hanson, Bangor, Northern Ireland, and John Whalley, Whitefield, England, assignors to The Bradford Dyers' Association Limited, Bradford, Yorkshire, England, a British company
Filed Jan. 25, 1967, Ser. No. 611,760
Claims priority, application Great Britain, Jan. 25, 1966, 3,339/66
6 Claims. (Cl. 68—9)

An apparatus for dyeing carpets and other fabrics includes a dye bath and a steaming chamber through which the carpet is led for dyeing and then steaming. The entrance to the steaming chamber is above the dye bath

and the dye bath is vertically adjustable to vary the distance of travel between the dye bath and steaming chamber to accommodate different fabrics having varying dye requirements.

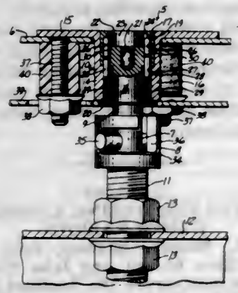


3,415,085
LOCK FOR TRUCK TRAILER
George Eble, Jr., 101 W. 126th Place, Chicago, Ill. 60628
Filed June 1, 1966, Ser. No. 554,466
1 Claim. (Cl. 70—232)



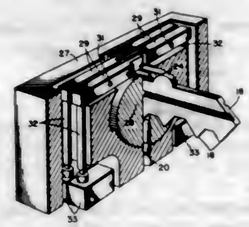
A device for preventing theft of tractor trailers, the device having a shroud for covering the grooved king pin of such trailers and a locking member for detachably securing the shroud about the king pin.

3,415,086
LOCKING BAYONET CONNECTOR SECUREMENT
Patrick M. Trainor, Chicago, Ill., assignor, by court order, to Shapiro, Levine and Crane
Filed July 27, 1967, Ser. No. 656,526
2 Claims. (Cl. 70—240)



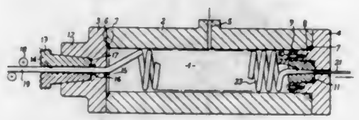
One of a pair of cooperating bayonet connector members comprises the projecting rear portion of a pin tumbler lock cylinder that is rotatable in a case having a large flange on its front end. Studs project rearwardly from the flange for fastening the lock case to a movable panel. The other bayonet member is formed as the head of a bolt that is receivable in a hole through a stationary part and is axially adjustably securable by a pair of nuts engaging opposite sides of the stationary part.

3,415,087
ELECTROMECHANICAL LOCK
Joseph G. Kramasz, Jr., 3751 Northridge Drive, Concord, Calif. 94520, and Erich Kaufmann, 935 Underhill Drive, Alamo, Calif. 94507
Filed Oct. 22, 1965, Ser. No. 501,619
6 Claims. (Cl. 70—277)



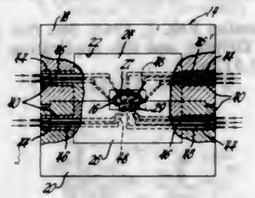
Electromechanical lock having security of mechanical lock and in which the key carries code means for operating selected switches of a plurality of switches.

3,415,088
EXTRUSION METHOD AND APPARATUS
John M. Alexander and Bela Lengyel, both of Department of Mechanical Engineering, Imperial College of Science and Technology, Exhibition Road, South Kensington, London SW. 7, England
Filed Mar. 21, 1966, Ser. No. 535,925
Claims priority, application Great Britain, Mar. 23, 1965, 12,326/65
12 Claims. (Cl. 326/65

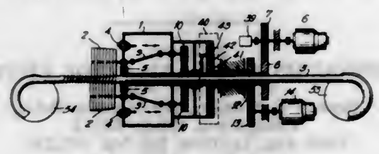


In the hydrostatic extrusion of a billet through a die while the billet is subjected to a high hydrostatic pressure within a pressure chamber, the billet may be of indefinite length and is extruded cyclically length by length. The billet extends through an inlet passage in the wall of the chamber where it can be gripped to prevent backward extrusion of the billet material in the region of this material. The process is repeated cyclically, each cycle comprising the steps of advancing the billet to feed a portion thereof into the chamber, gripping the billet and extruding a length of the billet through the die while the interior of the chamber is subjected to high hydrostatic pressure. This pressure is then relieved in preparation for the next cycle.

3,415,089
HYDROSTATIC CONTINUOUS FORMING MILL
Harold W. Ferchland, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 600,922
10 Claims. (Cl. 72—60)
This invention relates to forming mills and more particularly to mills for progressively transforming the contours of continuously fed material such as elongated sheets of metal or plastic by the application of fluid pressure thereto.

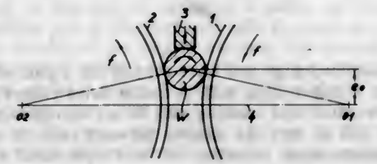


3,415,090
STAND FOR HELICAL ROLLING
Felix Petrovich Kirpichnikov, Leninsky prospekt 32, kv. 18; Viktor Ivanovich Bykasov, Ryazanskoe chaussee 17, kv. 41; Leonid Nikolaevich Reshetov, 13 Parkovaya ulitsa 25, korpus 1, kv. 56; and Serafim Porfirievich Miljutin, Novye Kuzminki, 116 kvartal, korpus 10, kv. 87, all of Moscow, U.S.S.R.
Filed Dec. 15, 1965, Ser. No. 514,001
4 Claims. (Cl. 72—100)



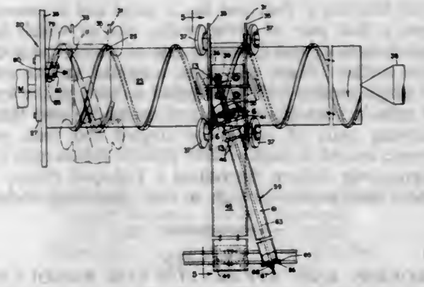
A working stand which comprises a driven rotary head on which are mounted carriages supporting driven grooved rolls, the head and rolls being driven by respective driving components of an epicyclic gear system, the driving components being driven with a constant relationship of torque in opposite directions.

3,415,091
PROCESS FOR ROLLING OF THREADS OR THREADLIKE PROFILES TOGETHER WITH APPARATUS FOR CARRYING OUT THE PROCESS
Burkhart Grob, Munich-Solln, and Hermann Schulz, Munich, Germany, assignors to Ernst Grob Werkzeug- und Maschinenfabrik, Munich, Germany
Filed Feb. 7, 1966, Ser. No. 525,437
Claims priority, application Germany, Feb. 9, 1965, G 42,792
10 Claims. (Cl. 72—104)



A process and an apparatus for rolling threads on cylindrical workpieces. The workpiece is fed into the gap between a pair of thread form rolls rotating at substantial equal peripheral speeds. The imposition of a relative difference in the peripheral speeds of the pair of rolls causes the workpiece to roll into the gap whereupon threads are formed thereon. After the thread rolling operation, the pair of rolls are returned to their equal peripheral speed relationship so as to be in phase to receive a further workpiece therebetween.

3,415,092
APPARATUS FOR FORMING TUBING INTO HELICAL CONFIGURATION INCLUDING A ROTATABLE MANDREL HAVING TRACK GUIDE MEANS
Walter B. Dean, Narberth, and Harry M. Russell-French, Philadelphia, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1967, Ser. No. 628,580
1 Claim. (Cl. 72—144)



Apparatus for forming tubing into helical configuration. A mandrel having a projecting track of the required helix angle is secured to the outside surface of the mandrel. A carriage cooperates with a track to feed and wrap tubing around the forming surface of the mandrel.

3,415,093
COTTER PIN SPREADING DEVICE
George K. Newell, Level Green, Penn Township, Westmoreland County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1966, Ser. No. 530,564
3 Claims. (Cl. 72—166)

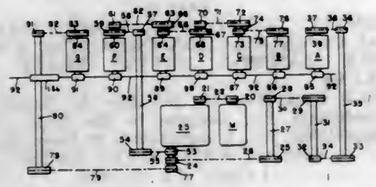


A cotter pin spreading device stamped out of an integral flat blank of thin sheet metal and foldable into a form suitable for installation on a shaft. The folded form of spreading device comprises a pair of annular portions in spaced coaxial relation connected by a double-walled radial web which serves to spread the legs of a cotter pin. An apertured tab on one of the annular portinos is bent at right angles thereto to provide a guide for insertion of the pin at a point in diametrical relation to the radial web.

3,415,094
SYSTEMS FOR FORMING T-SHAPED FINS FROM METAL RODS

Alan Stikeleather, 25 Green Lodge St., Canton, Mass. 02021, and Robert M. Stikeleather, 324 N. Franklin St., Holbrook, Mass. 02343

Filed Nov. 16, 1966, Ser. No. 594,750
6 Claims. (Cl. 72—187)

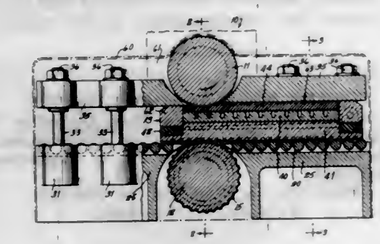


For forming a T-shaped fin, a metal rod is passed between a first pair of driven rolls, one of which has a rippled surface, and the other one of which has a cylindrical surface. These rolls form a rippled surface on the rod which meshes with the rippled surface on the one of the rolls in gear-like action, and forces the rod through following pairs of rolls. The rippled rod then passes between second through seventh pairs of driven rolls which progressively deform the rod to a T-shaped ribbon. The ribbon then passes through a burr removing station.

3,415,095
PROCESS AND APPARATUS FOR PRODUCING METAL PLATES WITH INTEGRAL STIFFENERS

August R. Bringewald, Huntington, N.Y., assignor to Bringewald Process Corporation, Huntington, N.Y.

Filed Feb. 8, 1967, Ser. No. 614,702
8 Claims. (Cl. 72—192)



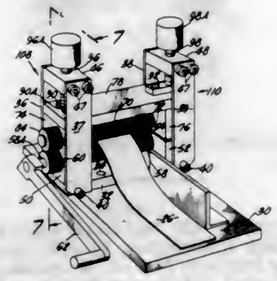
Rolling mill techniques are applied to blanks of aluminum or other materials by loading a blank on the upper sculptured face of a die that is located in a novel form of container, having a flexibly supported frame, which container definitely prevents the flow of material under rolling mill pressure outside the container by confining the material to a space constituting a pressure chamber, composed of a traveling portion defined by the upper sculptured face of the die and the projecting upper edge of the container frame, and stationary closures on both feeding ends of the rolling mill, thereby forcing the material to follow the path of least resistance by filling the cavities of the die and producing the desired part and avoiding waste of material.

Although any high power impact or constant pressure equipment may be adapted to facilitate the new process, modified standard rolling mill equipment is considered the most efficient equipment to execute the present invention.

3,415,096
APPARATUS FOR PRODUCING SHIELDED RIBBON-TYPE CABLES

Lee M. Griswold, Pasadena, Calif., assignor to Digital Sensors Inc., Los Angeles, Calif., a corporation of California

Original application Feb. 1, 1965, Ser. No. 432,063, now abandoned. Divided and this application Feb. 9, 1967, Ser. No. 633,312.
8 Claims. (Cl. 72—196)

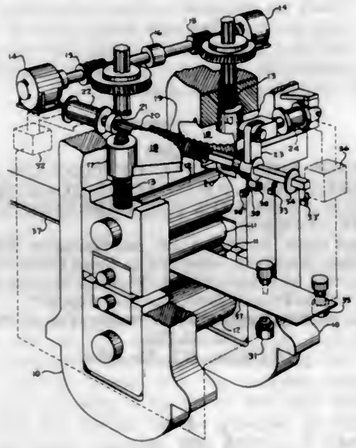


An apparatus for subjecting ribbon type electrical cable sandwiched between copper sheets to a pair of entermeshing rotating gears to impart a hill and dale configuration to the assembly without appreciably stretching the copper of the cable or sheets for greater flexibility and long life.

3,415,097
COMBINATION GAGE AND GUIDE CONTROL FOR STRIP MILLS

Stephen W. Wheeler, 4033 Hudson Drive, Youngstown, Ohio 44512

Filed Aug. 18, 1966, Ser. No. 573,231
10 Claims. (Cl. 72—248)

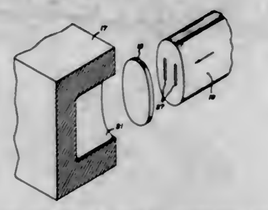


A combined gage and level control for a pair of work rolls of a strip rolling mill. A motor drive causes a pair of screwdowns and reacting nuts to act on opposite ends of one roll to vary the spacing between rolls. A second independent drive, including left and right hand threads driving correspondingly threaded arcuate segments integral with said reacting nuts, cause the nuts to turn in opposite directions to change the parallelism between the rolls, without affecting their average spacing, so as to properly guide the strip.

3,415,098
METHOD OF EXTRUDING CAPACITOR CASES

Franklin W. Daniels and Edward A. Barlow, Glens Falls, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 8, 1966, Ser. No. 532,684
2 Claims. (Cl. 72—267)

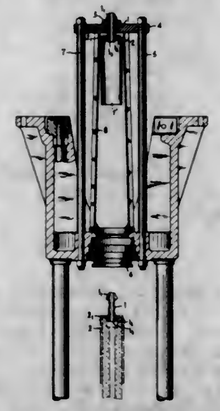


A zinc alloy casing of ovate cross-section is extruded by the combined use of a heated zinc alloy blank and a punch whose flat punch face includes a pair of parallel grooves therein, parallel to the longer axes of the cross-section with one groove on each side of the center of the punch face.

3,415,099
EXTRACTOR FOR DRAWING PRESSES

Oreste Biginelli, Rue Buffon, Clermont-Ferrand, Puy-de-Dome, France

Filed Oct. 18, 1965, Ser. No. 497,273
Claims priority, application France, Dec. 1, 1964, 996,988
7 Claims. (Cl. 72—290)

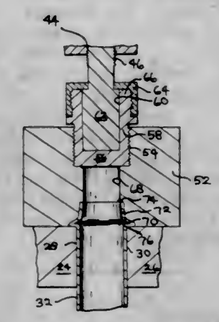


The present disclosure relates generally to drawing presses and more particularly to an improved extractor for such presses. The press provided with the extractor according to the invention comprises a drawing die and a drawing piston received in a tubular element to be drawn. This piston is movable axially to draw the tubular element. The extractor comprises a stop spaced from the die and has an opening aligned with the piston. A retractor is provided comprising a body of revolution having a stem portion and integral heads at opposite ends of the stem portion. A first one of the heads is seated on the end of the piston and is too large to pass through an opening in the bottom of the tubular element. The second of the heads is small enough to pass through the opening in the bottom of the tubular element and through the opening in the stop plate. The second head passes through the plate opening when the tubular element is fully drawn. A movable locking fork slides under the second head of the retractor element and is supported by the stop plate to immobilize the retractor element and thereby hold the drawn tubular element while the piston is withdrawn from the tubular element.

3,415,100
HAND TOOL

Frank J. Britts, Largo, Fla., assignor of fifty percent to J. B. Hazelrig, Tampa, Fla.

Filed May 2, 1966, Ser. No. 546,701
3 Claims. (Cl. 72—317)

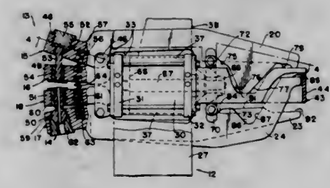


A hand tool for swaging and flaring the end of a thin walled tubing wherein the tool is capable of simultaneously swaging the end of the tubing and forming an outwardly flared bead spaced inwardly from the end.

3,415,101
WELDLESS METAL BONDING DEVICE

Adolf Reincke, 23335 Clairwood, St. Clair Shores, Mich. 48080

Filed Oct. 11, 1965, Ser. No. 494,754
23 Claims. (Cl. 72—333)



There are disclosed an improved method, and a number of embodiments of a device for carrying out this method, for the weld-free, rivet-free and grommet-free bonding of metal sheets flatwise against one another. This bond is accompanied by an initial penetration of the superposed sheets in one way or another, accompanied by an extrusion of the penetrated material out of the plane of the sheets, as clamped by the device, then a final upsetting or crimping of the material outwardly onto one of the sheet surfaces to complete the union. The device may be a manually operated one, either portable or mounted on a permanent base; it may also be automatically operated in various ways, i.e., under hydraulic or pneumatic power, by cam and follower provisions of various sorts, slidable or rotatable, etc.

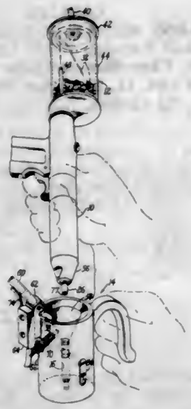
The device comprises a pair of jaw sets, each including an inner material clamping jaw and an outer material forming jaw, the jaws of these sets being hereinafter designated male and female. The operation of the device involves conjoint relative movements of the two sets, each considered as a whole, relative to one another, accompanied by relative movements of the component male and female jaws relative to one another.

In a single cycle of operation of the device, the male and female jaw pairs first clamp the sheets to be joined between apertured inner male and female jaws, with a

punching or penetrating tool on the outer male jaw telescoping within the aperture of the inner male jaw to effect the desired penetration of the sheet material. This is accompanied by the extrusion of the material out of the plane of the sheets, as indicated above.

As the male tool penetrates the clamped material, it takes mating engagement with a female or die tool carried on the outer female jaw and telescoped within the aperture of the latter; and as the penetration and extrusion proceed the female tool retracts within its aperture. In a following phase, however, the female tool reverses its direction and, with at least one of the inner jaw members separated from the sheets, the female tool engages the extruded material to upset it flaringly outwardly, in the lateral sense, into a clearance space which is made available by the separation of the male and female inner jaw members. Thus a wide radial outward overlap of the extruded material onto a surface of the sheets is effected: and a strong bond is the result.

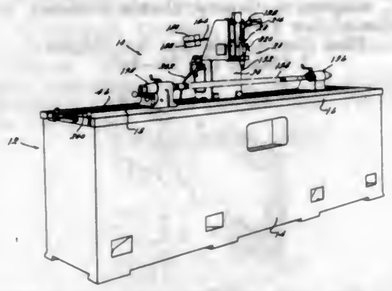
3,415,102
TOOLS FOR SETTING BLIND RIVETS
Richard M. Elliott, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Sept. 23, 1966, Ser. No. 581,482
5 Claims. (Cl. 72—391)



1. In combination with a tool having a hollow nose piece and a pair of rivet setting jaws for setting a rivet including a rivet body and a frangible mandrel to which a tractile force is applied for setting the rivet body in a work piece and then breaking the mandrel after the rivet body has been set, means defining a spent mandrel collecting canister mounted on the tool, a vacuum source connected to the canister and means defining a relatively straight passage interconnecting the nose piece with the canister and adapted to guide spent mandrels from the nose piece to the canister.

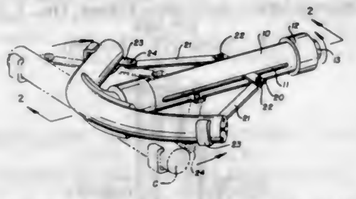
3,415,103
STRAIGHTENING APPARATUS AND METHOD
Charles H. Crawford and Harry H. Gotberg, Warren, Mich., assignors to Colonial Broach & Machine Company, Warren, Mich., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,475
9 Claims. (Cl. 72—389)

An apparatus and method for straightening bent elongated workpieces and having means for supporting the workpieces and a movable pneumatically actuated impacting head adapted to repeatedly impact the concave sides of the bends in the workpieces for relieving the



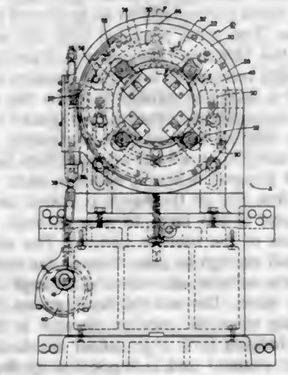
structural stress in the workpieces to spring back to their original shape.

3,415,104
CABLE BENDER
John B. Conklin, Jr., P.O. Box 237, New Bedford, Pa. 16140
Filed Oct. 13, 1965, Ser. No. 495,459
4 Claims. (Cl. 72—400)



A cable bending tool having a cable engaging die and oppositely disposed arms for engaging the cable at either side of said die, and means for moving said arms relative to said die.

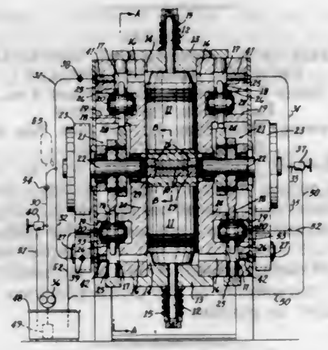
3,415,105
APPARATUS FOR FORMING SHEET METAL CONTAINERS
George W. Brown, Allestree, and Clarence W. Boxall, Eaton, England, assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,565
5 Claims. (Cl. 72—402)



A can beading machine which has a circular housing and a central opening adapted to receive a can body.

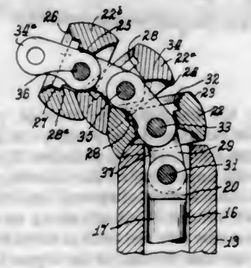
Mounted in the housing is a circular slide carrier having a plurality of radially mounted tool slides which reciprocate towards and away from a can body in the can receiving opening. The slide carrier is rotatable within the housing so that the tool slides reciprocate along different lines of action relative to the can body surface, depending upon the configuration of the can. A circular cam plate is also provided within the housing having annular and arcuate cam slots which engage the tool slides. Rotary oscillating movement of the cam plate causes the tool slides to reciprocate radially in the tool slide carrier.

3,415,106
CONTINUOUS BAND FORGING MACHINE
Wilhelm Friedrich Lauener, Langenhard, Zurich, Switzerland, assignor to Prolizenz AG, Chur, Switzerland, a corporation of Switzerland
Filed Mar. 7, 1966, Ser. No. 532,474
Claims priority, application Switzerland, Mar. 9, 1965, 3,216/65
10 Claims. (Cl. 72—408)



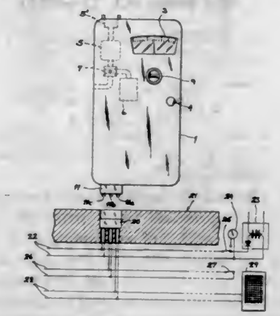
A machine for the forging of a continuous band has two forging dies driven by two oppositely positioned hydraulic pistons that are oscillated oppositely synchronously by oscillatable plungers driven by eccentric driving means.

3,415,107
TUBE BENDING MANDREL
Oronzo J. Ruscitti, Melrose Park, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois
Filed June 15, 1966, Ser. No. 557,822
5 Claims. (Cl. 72—466)



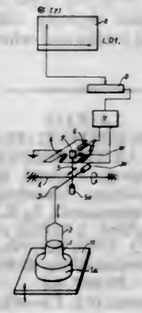
A flexible mandrel comprised of a series of ring members arranged on a series of links and wherein a first and third member only is connected to first and third links of the series.

3,415,108
PORTABLE GAS ANALYZER WITH REMOTE-INDICATING FACILITY
Rolf Hübner, Westfalendamm 267, Dortmund, Germany
Continuation-in-part of application Ser. No. 427,047 Jan. 21, 1965. This application Jan. 17, 1966, Ser. No. 521,104
Claims priority, application Germany, Jan. 16, 1965, H 54,880
5 Claims. (Cl. 73—23)



A portable gas-analyzer system in which a concentration-measuring device determines the concentration of a component of a gas mixture in a mine or the like at a station connected by a transmission line to a remote monitoring location while contacts are provided to enable the portable gas analyzer to be plugged in the measuring station and the monitoring station has switches for triggering a timing network in the gas analyzer.

3,415,109
INSTRUMENT FOR MEASURING AND RECORDING THE BOUNDARY SURFACE PROPERTIES OF LIQUIDS
Christian Sucker and Walter Meskat, Leverkusen, and Rudolf Heusch, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Continuation of application Ser. No. 491,135, Sept. 29, 1965. This application Feb. 19, 1968, Ser. No. 706,705
Claims priority, application Germany, Oct. 10, 1964, F 44,195
2 Claims. (Cl. 73—64.4)



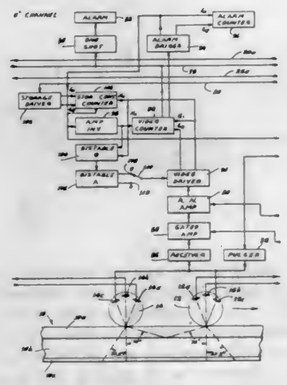
A device for measuring and recording the boundary surface properties of liquids, having a Wheatsone bridge measuring circuit operatively connected to a recording

means; a horizontally disposed torsion wire connected at right angles to a pair of right-angularly disposed levers, one of which levers is attached to ring means adapted for insertion into a liquid to be measured, and the other of which levers terminates in a ferromagnetic plate disposed between a pair of induction coils within the Wheatstone bridge circuit.

3,415,110
ULTRASONIC INSPECTION

Gerald De G. Cowan, New Preston, Conn., assignor, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California

Filed July 31, 1964, Ser. No. 386,534
25 Claims. (Cl. 73—67.8)



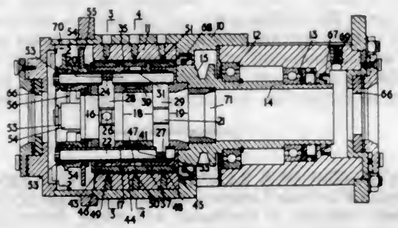
This invention relates to the inspecting of materials such as railroad rails at high rates of speed with little or no operator interpretation. The system utilizes a plurality of differently orientated beams of ultrasonic energy which simultaneously probe different regions of the workpiece. The ultrasonic energy is transmitted in pulses and the characteristics of any targets are determined by counting the number of returning echoes. The characteristics of the target may then be identified by determining the accumulated counts. From this a decision can be made as to whether or not the target is an acceptable one or an objectionable defect. In addition several different types of logic are incorporated into the system whereby the response characteristics of the system are adjusted to correlate with the types of target being inspected so an intelligent decision can be automatically made as to the type of target and whether or not it is an objectionable defect.

3,415,111
APPARATUS FOR TESTING TUBES OR RODS BY ULTRASONICS

Maurice David Chattaway, Walsall, Staffs, and Kenneth Edward Bowen, Norton, Stourbridge, England, assignors, by mesne assignments, to S.T.D. Services Limited, Edgbaston, England, a British company

Filed Sept. 13, 1965, Ser. No. 486,702
Claims priority, application Great Britain, Sept. 14, 1964, 37,457/64
8 Claims. (Cl. 73—67.8)

An ultrasonic testing equipment makes use of a head having a passage therethrough for the reception of the elongated test piece, there being a plurality of elongated cylindrical carriers extending through bores in the head parallel to the passage. Each carrier supports a crystal transducer element in a recess therein. Each carrier is provided with a coupling winding which is magnetically



coupled when the carrier is in position in the head with a winding on an insert in the bore. Means are provided for simultaneously angularly adjusting the carrier members.

3,415,112
WATER-FREE PENETRANT INSPECTION PROCESS AND MATERIALS

James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 91011

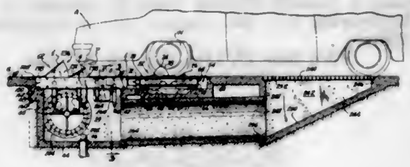
No Drawing. Filed May 3, 1965, Ser. No. 452,861
6 Claims. (Cl. 73—104)

A water-free penetrant process, and an applicable family of process materials, which utilizes a dyed liquid glycol penetrant, a solvent coupler which acts to render the surface penetrant on a test part rinsable with a mineral thinner, and a mineral solvent wash liquid which acts to rinse off surface penetrant and at the same time renders flaw entrapments of the glycol penetrant insoluble and "frozen" in position.

3,415,113
VEHICLE EXHAUST HANDLING SYSTEM

Edwin L. Cline, Pasadena, Calif., assignor to Clayton Manufacturing Company, El Monte, Calif., a corporation of California

Filed Dec. 27, 1965, Ser. No. 516,365
20 Claims. (Cl. 73—117)

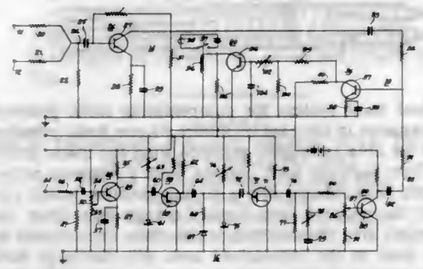


A system for handling the exhaust products from a motor vehicle positioned stationarily on a floor, the floor having an upwardly opening chamber therein. A frame is mounted at the upper end of the chamber, and supports a plurality of transversely disposed, individually operated shutters. Each shutter is hinged along its rear edge to the frame, and is movable between a closed horizontal position resting on the frame, to an open inclined position wherein it defines a forwardly facing passage. Exhaust fan means is connected to the chamber, and is effective to draw air and entrained exhaust products from beneath the motor vehicle through the open shutters to discharge.

3,415,114
DYNAMIC ENGINE ANALYZER

Gale W. Crampton, Des Plaines, and Howard J. Fremont, Chicago, Ill., assignors to Atlantic Licensing Corporation, a corporation of Illinois

Filed Nov. 23, 1966, Ser. No. 596,551
9 Claims. (Cl. 73—117.2)

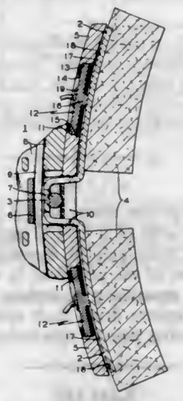


An internal combustion engine analyzer in which electrical pulses representative of the intake or exhaust pressure fluctuations are compared with an "ideal" pulse train derived from the ignition system fluctuations.

3,415,115
RAILWAY BRAKE SHOE WITH BRAKE FORCE MEASURING MEANS

George K. Newell, Penn Township, Westmoreland County, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Dec. 27, 1965, Ser. No. 516,547
10 Claims. (Cl. 73—121)

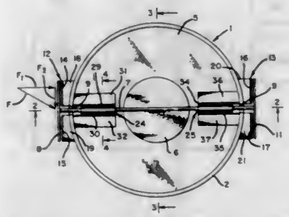


A brake shoe for a railway wheel comprising a pair of backing plates arranged in closely spaced parallel relation with a brake block attached to one. A load cell carried by one of the backing plates and in contact with the other backing plate transmits the force of brake application from the one to the other backing plate while being deformed under compression forces incidental to relative movement between the backing plates. A strain gage attached to the load cell reflects the distortion of the load cell as a measure of the force applying the brake shoe to the wheel.

3,415,116
FLOATING TWO-FORCE-COMPONENT MEASURING DEVICE

Earl D. Knechtel, Mountain View, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 18, 1966, Ser. No. 573,432
11 Claims. (Cl. 73—141)

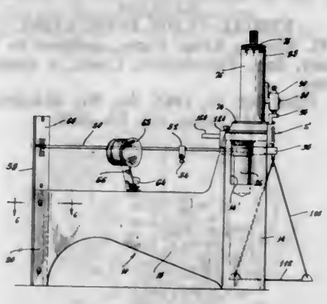


A two-component force balance utilizing a liquid suspended target. An arm floats on a liquid. A force-receiving target is attached to the arm. Electrode plates are fastened to the arm and the container holding the liquid. The plates and the dielectric therebetween form variable capacitors. A force under test alters the capacitance of the capacitors. Servo circuits coupled to electrodes indicate the force components and move the arm and target to null the displacement caused by the force.

3,415,117
SPRING TESTER

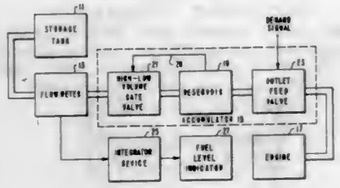
Frank C. Holmes, Trumbull, Conn., and Murray G. Clay, Evanston, Ill., assignors to The U.S. Baird Corporation, Stratford, Conn., a corporation of Connecticut

Filed May 4, 1966, Ser. No. 547,642
3 Claims. (Cl. 73—161)



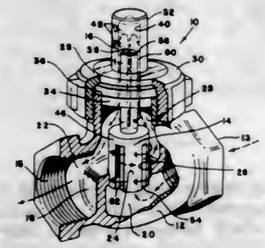
A device for testing both tension and compression springs. An elongated balance arm is supported on a flat torsion spring which serves as a pivot. One end of the balance arm terminates in a pointer adjacent a fixed scale. The balance arm carries an anvil on one side of the pivot point and a spring engaging stud on the other side. A vertically mounted gauge is positioned above the balance arm and carries a vertically movable spring-engaging element which may be either a second anvil or a second stud. The gauge is reversibly positionable so that a spring may be stressed in either compression or tension. A weight tray is suspended from the balance arm to provide the stressing force.

3,415,118
FLUID GAUGING SYSTEM
Malcolm M. McQueen, Northridge, and Alfred F. Donnelly, Thousand Oaks, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed May 12, 1966, Ser. No. 549,638
10 Claims. (Cl. 73—199)



The fuel flow rate through a flowmeter is maintained constant during filling of a downstream reservoir by the action of a toggle operated gate valve. The downstream reservoir has a variable volume defined by a movable fluid tight partition that divides a fixed volume enclosure. The oppositely variable volume on the opposite side of the partition is connected to be filled by fluid upstream of the flowmeter. Once filled, the downstream reservoir discharges the fluid contained therein on demand to an outlet or utilization device until the volume has decreased to a level where the position of the partition snaps open the gate valve to produce a sustained flow of fluid through the flowmeter to refill the reservoir. When the reservoir is filled, the position of the partition causes the gate valve to close, stopping flow through the flowmeter. The flowmeter generates pulses in proportion to the measured rate, and a selected proportion of the pulses generated are passed by a gating circuit to an integrator or accumulator under the control of a temperature sensitive circuit.

3,415,119
VISUAL FLOW INDICATOR
Edward H. Moore, Avon, Conn., assignor to The Gems Company, Inc., Farmington, Conn., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,692
13 Claims. (Cl. 73—208)



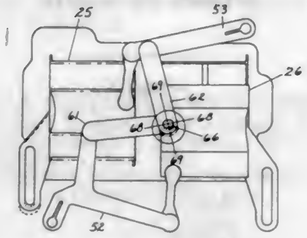
A visual flow indicator having a hollow housing which provides a path of flow for a fluid to be indicated contains an indicator element which both rotates and axially translates in response to flow of the fluid through the housing. The relative movement of the indicator element may be viewed through a transparent dome which forms a part of the housing.

3,415,120
DUAL STATIC TUBE
Richard V. De Leo, Hopkins, and Floyd W. Hagen, Minneapolis, Minn., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 12, 1966, Ser. No. 520,247
10 Claims. (Cl. 73—212)



A dual static system for compensating static pressure measurements in the case of failure of one static pressure line in an area of higher pressure than the static probe itself. Two lines are used, coming from a common probe, and both lines exhaust into a mixing chamber which surrounds the ends of both lines. Leakage flow from the pressurized area through one of the static lines caused by a leak hole in the pressurized area will discharge fluid into the mixing chamber and the ejector action of the flow from the damaged tube will cause an apparent reduction in pressure in the adjacent line in relation to the pressure in the static chamber. Because the static chamber pressure will rise due to the leakage flow into the chamber, the net result is that the static pressure in the unbroken line will remain substantially constant and give reliable readings.

3,415,121
GAS METER
Robert R. Douglas, Philadelphia, Pa., assignor to American Meter Company, Incorporated, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,309
9 Claims. (Cl. 73—264)

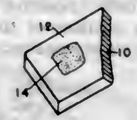


A diaphragm type gas meter with a pair of measuring chambers on each side of a central partition and with a transfer valve for each pair of measuring chambers reciprocable crosswise of the partition, in which the flag rod for each pair of measuring chambers drives the same crank pin on the register drive shaft and drives the transfer valve for the other pair of measuring chambers.

3,415,122
MAXIMUM TEMPERATURE INDICATING CERAMIC FILM
Tin B. Yee, 209 Walker Ave. NE., Huntsville, Ala. 35801
Filed Apr. 15, 1963, Ser. No. 273,229
2 Claims. (Cl. 73—356)

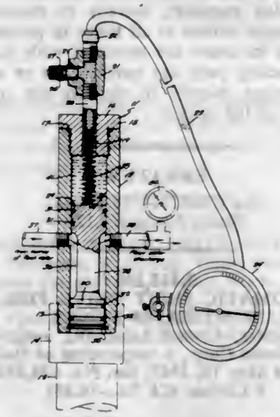
1. A maximum temperature indicator for temperatures in excess of 900° C. comprising:
(a) a supporting member of refractory material having a flat, smooth, polished area;
(b) an organic ceramic film consisting of a solid state solution of porcelain enamel enriched with cupric oxide and having a film thickness of less than .0001 inches;

(c) said ceramic film being attached as a surface layer to said polished surface area of said supporting



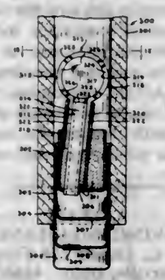
member, whereby the maximum temperature reached is indicated by crystal sizes developed in said ceramic film.

3,415,123
MUD PRESSURE GAUGE PROTECTIVE DEVICE FOR OIL DRILLING RIG
Vernon P. Broughton, P.O. Box 313, Sinton, Tex. 78387
Filed Dec. 2, 1966, Ser. No. 598,720
4 Claims. (Cl. 73—395)



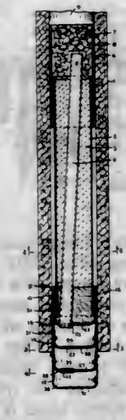
A protective attachment in the form of a piston mounted within a body member to be connected between an oil well drilling pipe and a pressure gauge to prevent drilling mud from entering the pressure gauge while allowing the drilling mud pressure to be transmitted to the gauge.

3,415,124
DEVICE FOR SAMPLING MOLTEN METAL
William J. Collins, 722 Buchanan St., Gary, Ind. 46402
Continuation-in-part of application Ser. No. 391,654, Aug. 24, 1964. This application Oct. 31, 1966, Ser. No. 590,829
18 Claims. (Cl. 73—425.4)



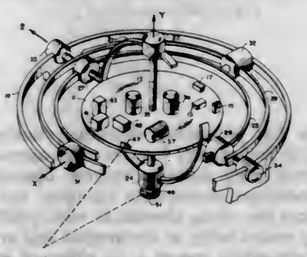
A device for sampling molten metal. A particular mold comprising two frangible and separable portions is enclosed at the end of a long handle. The sample when solidified is in a shape resembling a lollipop.

3,415,125
DEVICE FOR SAMPLING MOLTEN METAL
William J. Collins, 7005 Madison St., Merrillville, Ind. 46307
Continuation of application Ser. No. 391,654, Aug. 24, 1964. This application May 12, 1967, Ser. No. 649,764
23 Claims. (Cl. 73—425.6)



A device for obtaining samples from molten metal. A sample chamber fixed to the lowermost end of a handle is closed by a fusible plug and provides a tortuous path through which the molten metal flows when the device is immersed in the metal to be sampled. The tortuous path leads to a frangible tube open at its upper end. The frangible tube is surrounded by material which hastens the solidification of the molten metal.

3,415,126
AZIMUTH LAYING SYSTEM
Herman E. Thomason, Huntsville, and Carl H. Mandel, Madison, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 25, 1964, Ser. No. 399,419
5 Claims. (Cl. 74—5.47)

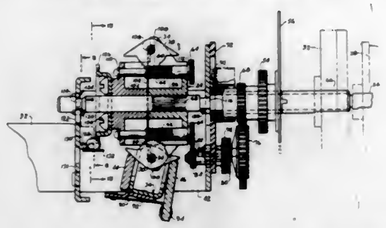


An azimuth alignment system for a stable platform. A synchro transmitter assembly is mounted on an end of the platform's gimbal axle with its stator and rotor co-axial to the gimbal axle. The rotor is rigidly connected to the gimbal axle whereby rotation of the platform about the axis of the gimbal axle will rotate the rotor. A first prism is mounted on the stable platform and a second prism is mounted on the transmitter's stator. A theodolite is provided to establish the initial position of the stable platform by aligning the prisms along a known line. Control means are also provided for rotation of the stable platform about the gimbal axle according to a predetermined time function azimuth program based on the initial alignment of the stable platform.

3,415,127
TURRET TUNER FOR UHF TELEVISION AND OTHER PURPOSES

Carroll R. Miner, Wilbraham, and John L. Franke, Fairview, Mass., assignors to General Instrument Corporation, Newark, N.J., a corporation of New Jersey

Filed Mar. 20, 1967, Ser. No. 624,608
21 Claims. (Cl. 74—10.6)

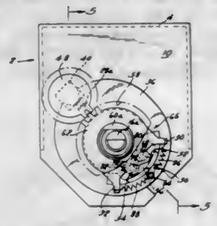


A continuously variable tuner, such as a ganged tuning capacitor for the tuning of a UHF television receiver, is accurately indexed by means of a detented turret having a fixed axis. The turret has angularly spaced cams projecting outward, one or another of which bears against collateral cam followers on a rocker having a fixed axis which is perpendicular to and spaced from the turret axis. The rocker is geared to the rotatable shaft of the tuning capacitor. The turret knob is supplemented by a fine tuning knob with high ratio reduction gearing for independent precision adjustment of the angle of that cam which is then engaging the cam followers. The fine tuning is continuously available during reception.

3,415,128
PRE-SET TUNER WITH ENGAGEMENT-LOCKING MEANS

Sidney K. Smart, Westfield, Mass., assignor to General Instrument Corporation, a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,655
22 Claims. (Cl. 74—10.8)



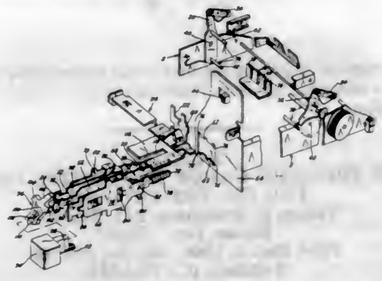
Structure for pre-setting individual tuning elements adapted to be sequentially brought to an operative station, said structure being shiftable between operative and inoperative positions respectively engaging and being disengaged from the tuning element in said operative station, the shifting means being so constructed and arranged that when the pre-setting means is in either of its operative positions it remains locked therein until such time as the shifting means is actuated to move it therefrom.

3,415,129
DUAL BAND PUSHBUTTON TUNER

Russell D. Stamm, Wilbraham, Mass., assignor to General Instrument Corporation, a corporation of Delaware

Filed Nov. 16, 1966, Ser. No. 594,865
9 Claims. (Cl. 74—10.33)

In a pushbutton tuner provided with a plurality of operating members each of which is designed to be selectively associated with one of a pair of movable control members by means of a connecting part shifted from one position to another, the connecting parts are provided with locating portions engageable with shift means which moves the connecting parts so as to cause them to engage one or the other of their respective associated control members, the locating portions of the connecting parts and the shift means being so constructed as to remain in



engagement throughout the entire operative movement of the operating members, thereby to ensure that the connecting means remain at all times in proper position. The operating members are provided with pushbuttons, and the connecting parts are mounted on or adjacent to those pushbuttons, thereby to simplify the construction and assembly of the device.

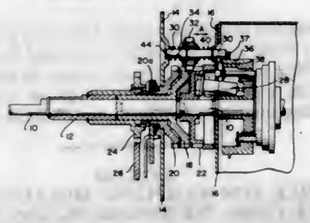
ERRATUM

For Class 74—10.22 see:
Patent No. 3,416,129

3,415,130
AUTOMATIC SHIFT DRIVE FOR A MULTIBAND TUNER

Ludwig J. Fichter, Crystal Lake, Ill., assignor to Oak Electro/Netics Corp., a corporation of Delaware

Filed May 15, 1967, Ser. No. 638,292
9 Claims. (Cl. 74—10.45)



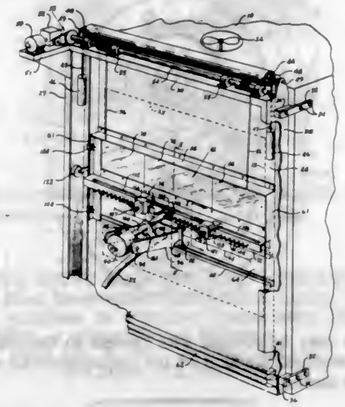
A tuning mechanism for two high frequency tuners, includes a pair of rotatable control shafts in concentric relation. A drive gear is mounted on one of the shafts and tuning gears on opposite sides of the drive gear are concentric with the control shafts for independent rotation to operate the tuners. An idler gear is in driving engagement with said drive gear for rotation independently of said tuning gears. A cam responsive to rotation of the other of the control shafts selectively shifts the idler gear from engagement with one of the tuning gears to the other in one angular position of said other control shaft.

3,415,131
DRIVING MECHANISM

Harold C. Zieber, 218 Fike Ave., Orrville, Ohio 44667

Filed Mar. 9, 1967, Ser. No. 621,862
10 Claims. (Cl. 74—31)

An apparatus for reciprocably driving a load support carriage along a trackway by a unidirectional rotary motor mounted on the carriage. The motor directly drives a gear which intermittently engages along the top and the bottom of a row of pins parallel to the trackway. The gear is guided around the row of pins from top to bottom, and vice versa, at the end of each carriage stroke in either

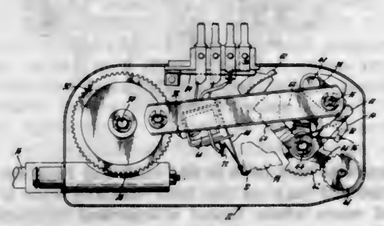


direction. By moving the pins into operative positions or into inoperative positions, the effective stroke of the carriage or the position of the carriage with respect to the trackway is changed.

3,415,132
WINDSHIELD WIPER DRIVE MECHANISM

Frederick Druseikis, Kettering, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,608
3 Claims. (Cl. 74—42)

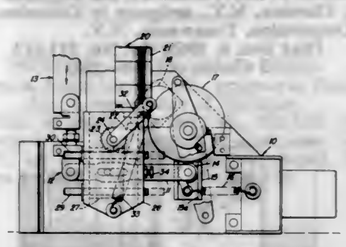


In a preferred form, this disclosure relates to a drive mechanism for oscillating a windshield wiper through a given angular sweep between first and second positions during running operation and through a greater angular sweep to a parked position spaced from the first position when running operation is being terminated. The drive mechanism includes a drive means for reciprocating a drive link, a lever pivotally supported for oscillatory movement in opposite directions about a fixed axis and which is drivingly connected with the windshield wiper to effect oscillatory movement of the latter when the lever is being oscillated, a second link pivotally connected to the lever and pivotally connected to the drive link by a pivot pin means and with the pivot pin means also being received within a generally radially extending slot in the lever. The pivot pin means is shiftable within the slot between a first position in which engages an outer end surface to provide a first effective lever arm for the lever and a second position in which it engages an inner end surface to provide a second effective lever arm which is of a lesser length than the first effective lever arm. The drive mechanism also includes a control means which is operable to move and hold the pivot pin means in its first position during running operation of the windshield wiper and to move and hold the pivot pin means in a second position when running operation is being terminated and initiated, respectively.

3,415,133
VARIABLE AMPLITUDE DRIVE

Robert W. Chambers, Willingboro, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 21, 1966, Ser. No. 560,964
3 Claims. (Cl. 74—53)

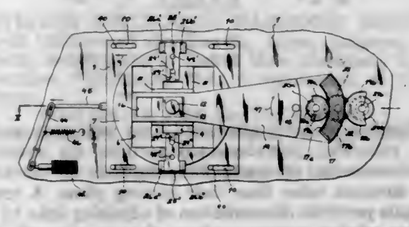


This invention relates to a means for changing the amplitude of the rectilinear movement of a driven member while the member is in motion. The drive means comprises a pivotally mounted lever arm one end of which is coupled to the driven member and the other end of which is reciprocated by a cam and follower arrangement to cause the lever arm to pivot about its fulcrum. The fulcrum is movable relative to the ends of the lever arm to enable adjustment of the proportionate lengths of the arm on either side of the fulcrum and thus to vary the amplitude of movement of the driven member. The fulcrum is mounted on a carriage movable by means of a worm and wheel arrangement powered by a shift motor to provide continuous variation in the amplitude of motion of the driven member. A snap action spring drive mechanism is provided to snap the carriage to its final position after initial movement thereof by the shift motor.

3,415,134
STEPLESS TORQUE CONVERTER

Karl Nittka, 6002 Uhlandstr. 7, Wiesbaden, Germany

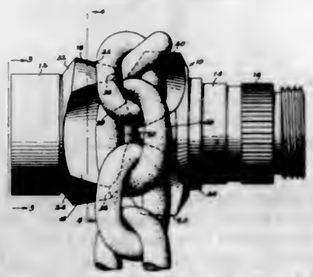
Filed May 17, 1967, Ser. No. 639,208
11 Claims. (Cl. 74—117)



Torque converter of the general type disclosed in U.S. Patent No. 3,321,984 wherein a longitudinally slotted slide is mounted for transverse displacement in a rectangular cutout of a disk whose center is adjustably offset from a stationary fulcrum about which the slide is rotatable by means of an input shaft centered on that fulcrum; this input shaft terminates in a key received in the slot of the slide whereby every shaft revolution causes a longitudinal reciprocation of the key in its slot and a transverse reciprocation of the slide in its cutout. As a result of this composite motion, the midpoint of the slide describes a circular path whose diameter equals the

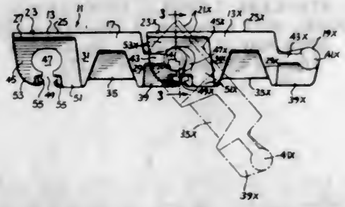
offset between the disk center and the slide fulcrum; this midpoint is coupled with a swingable arm whose oscillations about a fixed pivot are translated by means of overrunning clutches into a unidirectional rotation of an output shaft which in turn may be connected with the input shaft through a one-way gear train preventing the output shaft from outrunning the input shaft.

3,415,135
OBLIQUE LAY POCKET WHEEL
William W. Royer, Charlotte, N.C., and Dennis Molnar and Russell F. Kaye, Kenmore, and Raymond M. Robinson, Clarence, N.Y., assignors to Columbus McKinnon Corporation, Tonawanda, N.Y.
Filed Dec. 6, 1965, Ser. No. 511,613
2 Claims. (Cl. 74—229)



A pocket wheel for driving chains is provided with teeth having inclining side surfaces materially less than 45° in inclination to the axis of rotation so that chain links lying within the pockets assume an angle materially less than 45° with respect to the axis of rotation. In this way, periodic overloading of the chain is materially reduced to effectively increase the life of the chain.

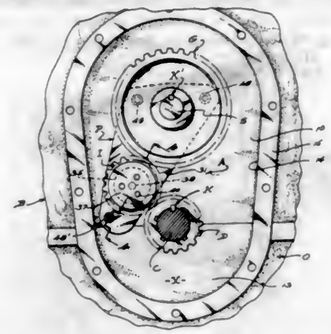
3,415,136
LINK CHAIN
Oliver W. Mojonnier, 522 Monroe Ave., River Forest, Ill. 60305
Filed Mar. 13, 1967, Ser. No. 622,527
1 Claim. (Cl. 74—249)



Adjoining rockably associated links with male and female releasably interconnected portions are assembled and disconnected by conditioning the links for movement in a direction other than their rocking plane. A removable gate prohibits disconnection of adjoining links by precluding relative movement in a disconnection direction while permitting relative rocking thereof.

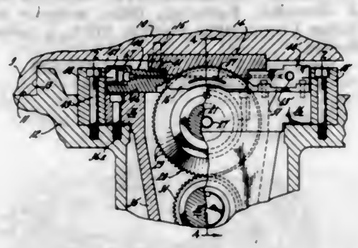
3,415,137
TIMING MEANS
Ernest R. Casale, Hacienda Heights, Calif. (% Casale Engineering, 161 8th Ave., City of Industry, Calif. 91744)
Filed Apr. 7, 1967, Ser. No. 629,183
9 Claims. (Cl. 74—395)

A valve timing gear train structure for replacement of sprocket and chain timing means of a stock engine has a crank shaft gear which has a plurality of keyways to engage selectively a key disposed on the crank shaft so that



the gear may be rotated with respect to the crank shaft a predetermined fraction of the circumferential extent of one gear tooth.

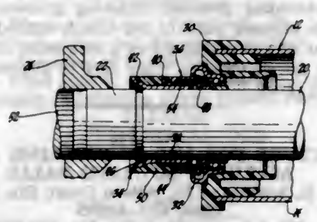
3,415,138
WORM-RACK TRANSMISSION WITH HYDROSTATIC TOOTH BEARINGS
John H. Rumbarger, Wayne, and Wilbur Shapiro, Huntingdon Valley, Pa., assignors to The Ingersoll Milling Machine Company, Rockford, Ill., a corporation of Illinois
Filed May 22, 1967, Ser. No. 640,281
9 Claims. (Cl. 74—409)



A machine tool table is slid back and forth by means of a toothed rack on the table meshing with a power rotated worm whose thread is separated hydrostatically from the opposed areas of the meshing rack teeth by delivering high pressure fluid from a stationary but transversely floating manifold to so-called pads in the flanks of those rack teeth which are in mesh with the thread in the different positions of the table. Pressure fluid delivered into the manifold is utilized to supply not only the pressure pads in the meshing rack teeth but also a hydrostatic bearing between the opposed surfaces of the rack and the manifold. The compensating orifices for the pressure pads in the rack teeth are disposed in the rack downstream from the hydrostatic manifold bearing.

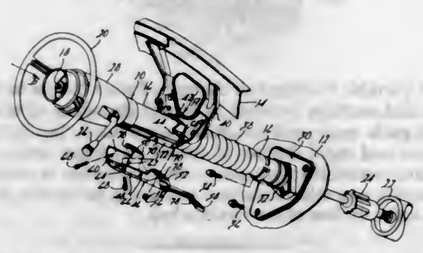
3,415,139
VEHICLE STEERING COLUMN ASSEMBLY INCLUDING MOLDED SPACER MEANS
Dan R. Kimberlin and Lawrence J. Mahalak, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,967
5 Claims. (Cl. 74—492)

The steering shaft and support jacket components of an energy absorbing steering column are provided at the column lower end with firm connection for transfer of axial force directly between the steering shaft and the support jacket by means of an intermediate spacer construction



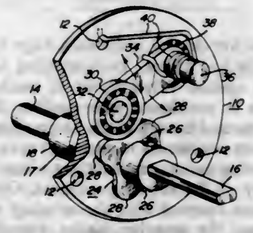
seated therebetween and including an in situ molded spacer element.

3,415,140
SLIDING JOINT MEMBER AND STRUCTURE
Alfred A. Blen, Birmingham, and Adam J. Lavich, Detroit, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,146
10 Claims. (Cl. 74—492)



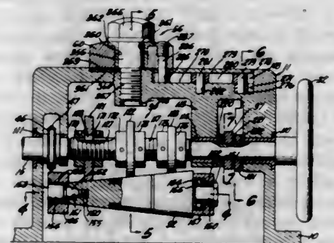
A friction shoe having opposed body portions which are adapted to engage flange portions of a support bracket is provided with spring means interposed between the body portions for accommodating relative movement of the body portions which may be made necessary because of physical characteristics of the associated components. A screw, carried by a support member, passes through the friction shoe and extends beyond the shoe permitting the assembly thereto of a spring washer and nut. Upon sufficient tightening of the nut the washer causes the shoe to clamp against said flange portions thereby establishing a joint or connection. Such joint or connection will slide and separate if a sufficient force is subsequently applied to the flange portions.

3,415,141
DETENT MECHANISM
Warren J. Ungerman, Hatboro, Pa., assignor to Manufacturers Engineering and Equipment Corporation, a corporation of Pennsylvania
Filed Nov. 4, 1963, Ser. No. 320,984
4 Claims. (Cl. 74—527)



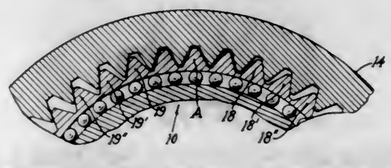
1. A detent mechanism comprising in combination a support member, a control shaft, means including a first bearing race with inner and outer relatively rotatable race portions for mounting said control shaft in said support member, the inner race portion of said first bearing race being fixed to said control shaft and the outer race portion of said first bearing race being fixed to said support member, a detent member having a scalloped configuration, means for mounting said detent plate on said control shaft, a roller member having a second bearing race with inner and outer relatively rotatable race portions, means supporting said inner race portion of said second bearing race so that the periphery of said roller member engages said detent member, and means for urging said roller member against said detent plate.

3,415,142
POWDER COMPACTING PRESS
Paul Vinson, Costa Mesa, Calif., assignor to Pentronix, Inc., a corporation of Michigan
Continuation of application Ser. No. 529,735, Feb. 24, 1966, which is a continuation of application Ser. No. 450,427, Apr. 23, 1965, both now abandoned. This application Feb. 23. 1967, Ser. No. 618,230
7 Claims. (Cl. 74—568)



An automatic powder compacting press having an actuating mechanism for actuating reciprocating punches, filling and ejecting mechanism and the like, such actuating mechanism comprising a cam shaft having a threaded portion and at least one cam mounted on the cam shaft and longitudinally adjustable along the threaded portion of the cam shaft, a lever actuatable by the cam and provided with an elongated cam follower having a surface disposed for engagement with the cam, the angular motion of the lever being adjustable by adjusting the cam along the threaded portion of the cam shaft.

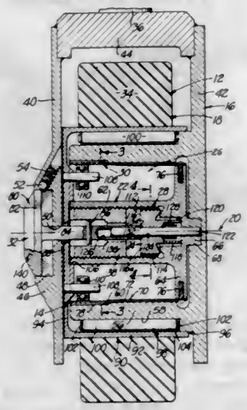
3,415,143
DEVIATED DEFLECTION HARMONIC DRIVE
Shoichi Ishikawa, Yokohama-shi, Japan, assignor, by mesne assignments, to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Oct. 12, 1966, Ser. No. 586,190
Claims priority, application Japan, Oct. 20, 1965, 40/63,904
3 Claims. (Cl. 74—640)



In prior transmissions of the type employing strain wave gearing, a radially deflectible gear or flexspline cooperating with a coaxial circular spline or reaction gear has tooth contacts at the major axis (assuming a wave

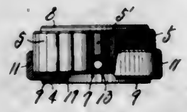
generator internal of the flexspline), but there is meshing in adjacent areas without tooth contact. Such "non-deviated" arrangements employ a deflection (i.e. half the difference between major and minor axes) equal to the quotient of the pitch diameter of the undeflected flexspline and the gear ratio. The present disclosure provides for a flexspline having a "deviation" from such deflection resulting in tooth contact at points or areas ahead of or behind the major axis, and meshing but no contact at the major axis. Consequent advantages, depending on whether the deviation be positive or negative, include overcoming of tooth ratcheting, for instance, or effecting a lower gear ratio with reduced stresses.

3,415,144
DISTANCE GOVERNOR
Robert C. Carson, 15809 Loukelton St., La Puente, Calif. 91744
Filed Feb. 27, 1967, Ser. No. 618,723
8 Claims. (Cl. 74—640)



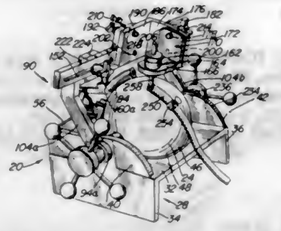
A mechanical revolution counter for various applications, including automatic braking of a shopping cart wheel and measuring fluid flow, having a pair of driven members which are driven in relative axial movement in response to relative rotation of a pair of rotary driving members and through a distance which is proportional to the number of relative revolutions of the driving members.

3,415,145
DIVIDING UNIT FOR DIVIDING DEVICES FOR MACHINE TOOLS
Shigeru Takamori, Nishinomiya-shi, Japan, assignor to Asahi Kiko Haubai Kabushiki Kaisha, Nishinomiya-shi, Hyogo-ken, Japan
Filed Dec. 13, 1966, Ser. No. 601,525
Claims priority, application Japan, Dec. 25, 1965, 40/79,062
3 Claims. (Cl. 74—813)



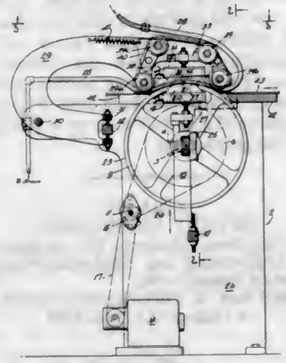
A dividing unit for dividing devices is provided by locating a set of cylindrical rollers of precisely similar diameters, in axially parallel contact with each other, in an annular cylindrical recess in an inner ring and pressing the assembly of rollers into a precisely annular array by an outer ring having a shrink fit thereto and covering about half the length of the rollers leaving exposed the axially extending precision indexing grooves found between the exposed parts of the axially extending rollers. The outer ring may also cover a restricting rod of roller diameter driven into the inner ring in alignment with a shortened roller.

3,415,146
FIXTURE FOR USE IN DRILLING AND MARKING BOWLING BALLS
Kenneth K. Schroeder, Jr., Wilson Court, Rte. 2, Box 550, Zion, Ill. 60099
Filed Apr. 4, 1966, Ser. No. 539,995
13 Claims. (Cl. 77—62)



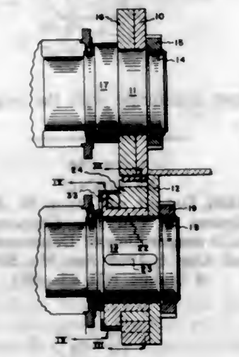
A portable bowling ball clamping fixture for use in drilling and marking bowling balls and including adjustable drill guide means and measuring apparatus to facilitate accurate and rapid drilling of thumb and finger holes, and fixture-carried marking guide means operable in conjunction with engraving apparatus to provide permanent lettering in the surface of the bowling ball.

3,415,147
BAG CUTTER
John T. Frydryk, Springfield, Mass., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Oct. 20, 1966, Ser. No. 588,215
6 Claims. (Cl. 83—171)



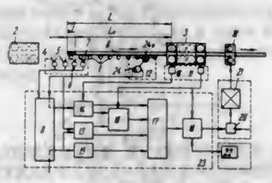
Apparatus for cutting individual bags from continuous two-ply textile bag fabric. Twin rotating feed surfaces are mounted in spaced relationship to each other. A first heated blade is positioned intermediate the rotating surfaces and a second heated blade having spaced twin severing surfaces is positioned to place its severing surfaces of the first severing means and abutting a line passing through the periphery of the rotating surfaces. Guide means urge the fabric into contact with the rotating surfaces to feed the fabric past the severing blades whereby the fabric is severed along a line by the first blade and whereby one face ply of the fabric is severed along another line by the second blade to provide internal access to the fabric.

3,415,148
SCRAP CUTTING SHEAR AND IMPROVED KNIFEHEAD
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1966, Ser. No. 556,810
Claims priority, application Great Britain, June 14, 1965, 25,135/65
4 Claims. (Cl. 83—302)



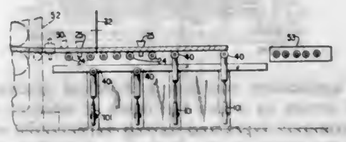
The present disclosure relates to a combined side trimming and scrap chopper shear of the type employed to trim the marginal edge from a metallic strip as it is passed through the shear and, at the same time, cut into short lengths the sheared marginal edge. The shear includes a star-type scrap chopper knife which is mounted on an arbor and adapted to be rotated into and out of a shearing position. To allow penetration of the knife, an anvil member is provided which serves as a backing for the knife during the cutting period. In order to allow for limited relative movement between the knife and arbor a ring is provided between the arbor and knife for driving the knife. The actual driving of the knife takes place by means of a projection that interconnects the knife and ring through means of an extendable backing member made out of rubber.

3,415,149
DEVICE FOR WASTELESS CUTTING OF METAL
Boris Zalmanovich Ziljberman, Vladimir Dmitrievich Grigorenko, and Mikhail Borisovich Ziljbershtein, Kharkov, U.S.S.R., assignors to Ukrainsky Gosudarstvenny Proektny Institute Tjazhpromelektroproekt, Kharkov, U.S.S.R.
Continuation of application Ser. No. 393,529, Sept. 1, 1964. This application Aug. 25, 1967, Ser. No. 663,449
7 Claims. (Cl. 83—311)



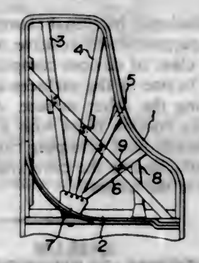
Apparatus for the wasteless cutting of a metal billet by means of flying shears provided with an automatic speed regulator controlled by a computer on the basis of measurements obtained during the actual operation of a rolling mill. These measurements are obtained by means of photoelectric transducers arranged along the path of the billet being rolled, a tachogenerator which measures the velocity of the billet being rolled, load relays detecting the position of the rolled billet as it passes along the finishing stands and an analog computer which receives signals from the transducers and generates a control signal which is applied to an automatic regulator which controls the velocity of the aforesaid shears.

3,415,150
TRAVELING SAW
Glenn N. Krueger, Riverside Township, Cook County, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 21, 1965, Ser. No. 488,933
3 Claims. (Cl. 83—319)



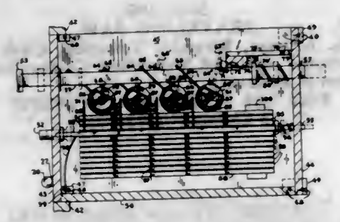
Apparatus for sawing a traveling slab is supported on a main carriage mounted for limited movement along the path thereof. Above the path and spaced therealong, two downwardly engaging clamp means are disposed on the carriage. They are normally fixed but may be adjusted by jackscrews. Below the path and also disposed on the carriage are upwardly engaging movable clamp means actuated by fluid pressure cylinders toward and from the fixed clamping means. A saw-mounting carriage is movable on the main carriage transversely of the slab path and carries a rotary saw the plane of which is intermediate the two sets of upper and lower clamp means, and a tiltable head on which the saw is journaled. Conveyor rollers on the main carriage support the advancing slab when the carriage is in retracted or starting position. Auxiliary lower conveyor rollers may be advanced from out-of-the-way positions to engage and support the slab when the carriage is in such position that its rollers leave a portion of the slab unsupported.

3,415,151
GRAND PIANO CONSTRUCTION
Haruhisa Noda, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka-ken, Japan, a corporation of Japan
Filed Dec. 15, 1966, Ser. No. 602,049
Claims priority, application Japan, Dec. 20, 1965, 40/78,460; Feb. 8, 1966, 41/10,505; Feb. 15, 1966, 41/13,193
5 Claims. (Cl. 84—186)



1. A grand piano construction including an inner rim, a cross block connected within said inner rim, a plurality of braces, and a metal frame, said construction comprising a beam extending from the inner surface of said inner rim to said cross block and connected to said braces while intersecting them nearly at central portions thereof.

3,415,152
MUSIC TEACHING AID
Cecil F. Gullickson, 2018 Fosgate Drive, Winter Park, Fla. 32789
Filed May 17, 1966, Ser. No. 550,820
11 Claims. (Cl. 84—478)



This application contains a technical disclosure of a musical device by which the notes of musical chords of all the common types and having harmonious relation to each of the twelve root notes of a musical scale may be indicated on an indicator light assembly. This device is disclosed as consisting of a switching mechanism having two sets of selectors, by one set of which any one of a type of musical chord which it is desired sohuld be indicated may be selected, and by the other set of which, any one of the twelve root notes for which the type of chord is desired may be selected. Electrical circuitry connects the switching mechanism to the indicator light assembly whereby the notes which compose the chord of the selected chord type, for the selected root note, are indicated. Such a musical device thus becomes an effective music teaching device by presenting a display of each of the various note compositions which either make up all of the common chords or one selected type for each of the twelve root notes, or make up all of the common chords of each type for a selected root note. Such a device also assists experienced musicians in selecting harmonious variations of melodies which they may be playing, or in composing such variations.

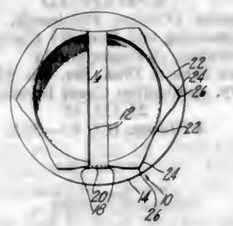
3,415,153
MECHANICAL CLAMPING DEVICE
Lajos Steiner, 2 Beresford House, 1 Harriette St., Neutral Bay, New South Wales, Australia
Filed Apr. 2, 1965, Ser. No. 445,183
1 Claim. (Cl. 85—5)



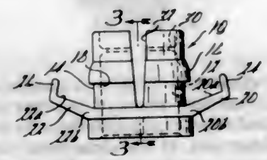
There are disclosed frictional clamping devices for constraining non-perpendicular relative motions between two surfaces. One class of devices comprising an elastic ridge member fixed to one of the surfaces and having a bearing surface engaging the other surface. Another class of the devices includes friction bolts with a central core having at least two longitudinal clamping ridges each including a base portion attached to the core and bearing surfaces at the other ends of the ridges.

3,415,154
POLYGONAL FASTENERS HAVING MILLED SLOTS
Edwin J. Skierski, Wayne, N.J., assignor to Parker-Kalon Corporation, Clifton, N.J., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,550
4 Claims. (Cl. 85—9)

A wrench engageable polygonal fastener portion such as a screw head or a nut having a milled screw driver slot in which the sides of the polygon are concave to provide space in which burrs resulting from the milling of the slot may lie without interfering with the engagement of the wrench.

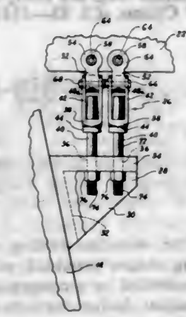


3,415,155
BUSHING
Edwin O. Riddell, Detroit, and Oscar W. Abel, Royal Oak, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,350
4 Claims. (Cl. 85—80)



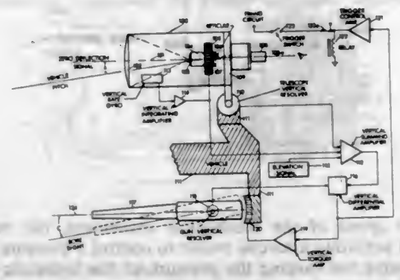
A bushing formed of a suitable plastics material and including resilient ears projecting radially outwardly from the main body portion of the bushing adjacent one end of the latter and a radial shoulder on the bushing adjacent the other end of the latter, the ears and shoulder coacting upon insertion of the bushing into an aperture in a first member to positively snap the bushing into that member and the main body portion further including a central cylindrical bore having an annular inwardly projecting ridge which snappingly receives an annular groove on a pin carried by a second member to be jointed to the first member.

3,415,156
CONTROLLED RELEASE DEVICE
Terry W. Burcham, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 29, 1966, Ser. No. 547,072
2 Claims. (Cl. 89—1.806)



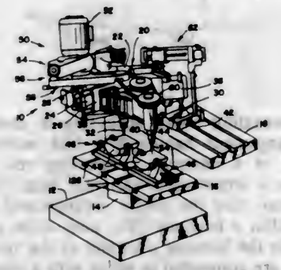
A controlled release device for use in launching rockets or missiles that utilizes the expedient of absorbing energy by deforming a ductile elongated pin as it moves through a die.

3,415,157
ALIGNMENT CONTROL APPARATUS
Robert G. Marchisio, North Andover, and Robert Hennessy, Concord, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed May 11, 1967, Ser. No. 637,727
14 Claims. (Cl. 89—41)



Gun alignment apparatus having a telescopic seeker gimbaled for two degrees of motion with respect to a vehicle and controlling the position of a gun with two degrees of freedom. Rate gyro means and circuits are coupled to the telescope to produce error signals indicative of displacement of the telescope optical axis from an inertial reference axis. The error signals are coupled to the deflection coils of an image intensifier tube to stabilize the target image in the presence of spurious motions. The error signals are also coupled to the gun to maintain the boresight aligned with respect to the inertial reference axis.

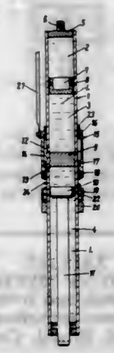
3,415,158
MOLD BLANK CENTERING AND CLAMPING DEVICE
James J. Kindelan, Greensburg, Pa., assignor to Overmyer Mould Company of Pennsylvania, Greensburg, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1966, Ser. No. 542,148
4 Claims. (Cl. 90—13.1)



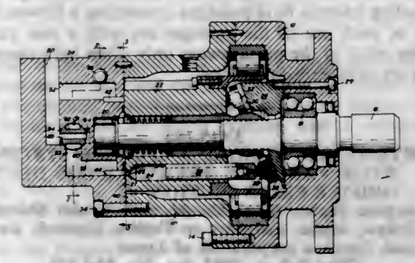
This invention relates to workpiece centering and clamping devices, and more particularly to a mold blank centering and clamping device for use in conjunction with die sinking apparatus.

3,415,159
FLUID-OPERATED EXTENDABLE AND CONTRACTABLE ARRANGEMENT
Reinhard Hornlein and Otto Tacke, Holzminden, Germany, assignors to Reinhard Hornlein K.G., Holzminden, Germany
Filed Nov. 16, 1965, Ser. No. 508,008
Claims priority, application Germany, Dec. 23, 1964, H 54,677; Jan. 28, 1965, H 55,001; Mar. 23, 1965, H 55,540; Mar. 24, 1965, H 55,561
31 Claims. (Cl. 91—5)

A fluid-operated extendable and contractable arrangement in which a movable partition divides cylinder means into a gas chamber means filled with compressed gas and a liquid chamber means filled with liquid in which an elongated displacement member extends into the liquid chamber means and project fluid-tightly sealed through and beyond one end of the cylinder means while a second partition is located between the displacement member and the movable partition and dividing the liquid chamber into a first liquid chamber and a second liquid chamber placed by passage means in communication with each other, which passage means may be opened and closed by control means so that when the passage means are closed, the arrangement will be locked in any position it had been brought to while the passage means were open.



3,415,160
MULTI-SPEED FLUID TRANSLATOR
Gary Stein, Brookfield, and Larry E. Halwas, Pewaukee, Wis., assignors to Applied Power Industries, Inc., Menomonee Falls, Wis., a corporation of Wisconsin
Filed Dec. 8, 1966, Ser. No. 600,159
4 Claims. (Cl. 91—6)

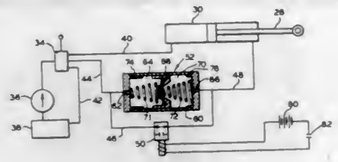


A fluid motor having an end plate in which a valving system is housed with an operating handle rotatably secured in the end plate and connected to the valve for changing the fluid intake capacity of the motor in either direction.

3,415,161
PISTON STROKE LIMIT MEANS
Kenneth H. Mindrum, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 12, 1966, Ser. No. 601,054
13 Claims. (Cl. 91—19)

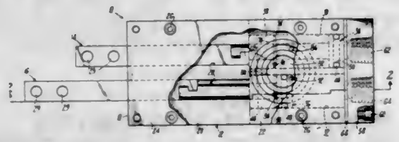
An adjustable hydraulic stroke limit device for variably controlling the amount of piston movement in a hydraulic cylinder assembly in which a flow control valve is selec-

tively in series flow relation with both ends of the cylinder. a second valve is in series with said control valve and with one end of said cylinder and in parallel flow relation with



a piston stroke limiting device which limits the stroke of the piston in one position of said second valve and which is inoperative to limit said stroke in a second position of the second valve.

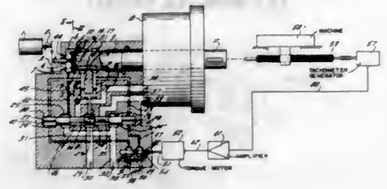
3,415,162
ESCAPEMENT MECHANISM
Grant N. Willis, Bristol, and Irving Y. Lake, Terryville, Conn., assignors to Arthur G. Russell Company, Incorporated, Bristol, Conn., a corporation of Connecticut
Filed Sept. 2, 1966, Ser. No. 577,059
5 Claims. (Cl. 91—189)



Mechanism comprising a pair of operating rods reciprocable within a pair of passageways formed in a housing, and fluid operating means for controlling reciprocation of the operating rods, the fluid operating means including internal fluid passages connecting a forward portion of each one of the passageways with a rear portion of the other of the passageways only when both operating rods are in extended positions.

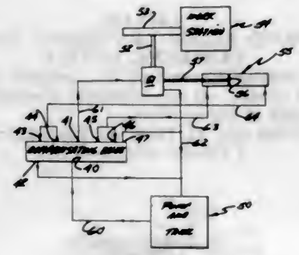
3,415,163
HYDRAULIC TORQUE AMPLIFIER SYSTEM WITH VARIABLE PREAMPLIFIER DUCT ORIFICE CROSS SECTION
Seiuemon Inaba, Kawasaki-shi, and Ryoko Shirafuji, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Feb. 6, 1967, Ser. No. 614,372
Claims priority, application Japan, Feb. 9, 1966, 41/11,003
6 Claims. (Cl. 91—363)

The hydraulic torque amplifier system has an hydraulic preamplifier component for imparting a given pressure to a flow of hydraulic fluid therethrough in response to a given torque applied thereto, an hydraulic fluid servomotor component responsive to the pressure of the hydraulic fluid flow for producing a mechanical movement at a speed substantially proportional to the pressure, and a feedback component for detecting the speed of the mechanical movement and reducing the pressure of the hydraulic fluid flow in proportion to the speed of the mechanical movement. The preamplifier component includes an hydraulic fluid duct system provided with orifices having fixed cross sections and having variable cross sections. The servomotor component includes a four-directional pilot valve and an hydraulic motor. The feedback component includes a tachometer generator which produces an output signal proportional to the de-



tected speed of the mechanical movement, the output signal actuating a torque motor to control a pressure control valve for varying the pressure of the hydraulic fluid flow in proportion to the output signal.

3,415,164
COMPENSATING VALVE
Joseph F. Gilewski, Grand Rapids, and Ray E. Teter, Lake Leelanau, Mich., assignors to Electrical & Mechanical Service Co., Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 1, 1967, Ser. No. 619,701
10 Claims. (Cl. 91—412)

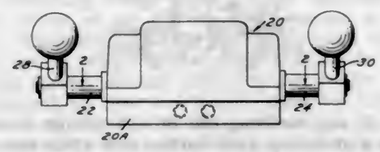


A compensating valve including a dumbbell-shaped piston arrangement having first and second pistons at either end of a common connecting rod. One of the pistons has a larger cross-sectional area than the other of the pistons and the piston arrangement is positioned slidably within a housing. Inlet and outlet ports are provided within the housing centrally of the two pistons and these ports are connected in series with a hydraulic supply line to a device such as a buffer. The pressure within the supply line causes the piston arrangement to shift within the housing to selectively open and close control ports. The control ports control a second hydraulic device such as a hydraulic cylinder utilized to move the buffing head into and out of abutment with the workpiece.

3,415,165
SAFETY DEVICE
John W. Grotewohl, Southfield, Mich., assignor, by mesne assignments, to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 29, 1967, Ser. No. 626,743
10 Claims. (Cl. 91—425)

The invention disclosed herein relates in general to a safety device including control mechanism for use in controlling the operation of power driven machinery. The device comprises two spaced-apart actuating members so

arranged as to require the constant simultaneously operative presence of two hands of the machine operator on two handles of the actuating mechanism, which must be manually simultaneously actuated in one direction of movement to initiate and maintain power movement of the machine, which handles may be movable in a second direction to de-actuate the power machine. Control cir-

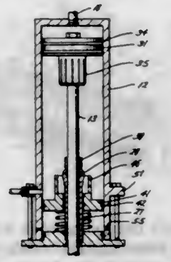


cuitry is provided which positively insures that the system, once actuated, remains "locked in" until a second operation is performed to "unload" or return the system to its inoperative position. The device has been designed to provide a means of loading and unloading certain types of equipment through manual operation, and demands two-handed operation for each operating function to achieve ultimate operator safety.

3,415,166
AUTOMATICALLY OPERATIVE POSITION HOLDING ARRANGEMENT FOR DIRECTIONAL CONTROL VALVE DEVICE
Horst Hinrichs, Hannover, and Friedrich Gross, Harenberg, Bergfeld, Germany, assignors to Westinghouse Bremsen- und Apparatebau, G.m.b.H., Hannover, Germany
Filed May 26, 1966, Ser. No. 553,141
Claims priority, application Germany, June 4, 1965, W 39,287
1 Claim. (Cl. 91—426)

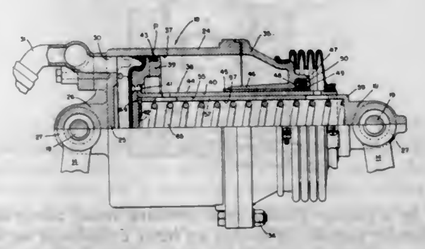
Automatically operative valve position hold and release arrangement for a directional control valve device in which a pressure chamber acting on the end of a spool valve is series connected between the exhaust end of a cylinder and the return passage in a fluid pressure system by movement of the spool valve from a neutral position against spring-return to a cylinder operating position, which chamber is pressurized to hold the spool valve in the operating position by a pressure limiting valve in the return line, and is pressure relieved to provide automatic return of the valve to the neutral position via a choke connecting the pressure chamber in the return line in bypass of the pressure limiting valve when the fluid flow ceases in the pressure system.

3,415,167
LOCKING CYLINDER
Whitney J. Champagne, Theriot, La. (Box 114, Dularge Rte., Houma, La. 70360)
Filed Oct. 20, 1966, Ser. No. 588,022
6 Claims. (Cl. 92—26)



A locking cylinder that is arranged to be locked in in the extended position. It is so designed that the cylinder may be removed from the assembly for repair purposes and the like while the apparatus remains locked.

3,415,168
DISK BRAKE APPARATUS
Albert G. Dean, Narberth, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1967, Ser. No. 632,598
2 Claims. (Cl. 92—30)

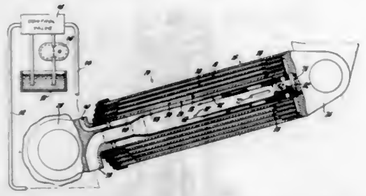


Disk brake apparatus for railway passenger cars including an air actuated cylinder for moving brake shoes into engagement with a rotating disk. An air piston cylinder having a primary piston cylinder with a telescoping spring loaded secondary cylinder cooperating therewith actuates a pair of brake shoes into engagement with a rotating disk. An elastic fricton ring grips the exterior surface of the primary piston-cylinder and requires a greater force than can be exerted by the coil spring to move the friction ring relative to the primary cylinder. When air is released from the cylinder during the nonduty cycle of the brake, the coil spring reacts through the primary piston cylinder and elastic friction ring to exert a force on the brake shoes so that the same lightly drag the rotating disk at all times.

3,415,169
HYDRAULIC CYLINDER
Manuel Naddell, Van Nuys, Calif., assignor, by mesne assignments, to Euclid, Inc., a corporation of Ohio
Filed June 10, 1966, Ser. No. 556,742
7 Claims. (Cl. 92—85)

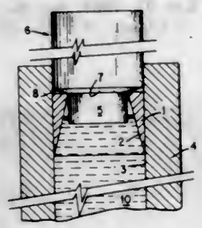
A hydraulic cylinder having a piston member formed with first and second passages which respectively connect with the piston head end and the rod end of the cylinder. A valve assembly for decreasing the speed of cylinder contraction is located in the first passage and includes

an open-ended flow control valve slidably mounted in the passage and formed with a plurality of elongated slots. A spring biases the flow control valve whereby the slots are located outside of the associated passage when the cylinder is expanded. During contraction of the cylinder,



a boss formed with the cylinder is adapted to block one open end of the flow control valve and urge the latter against the influence of the spring into the passage so that fluid from the piston head end of the cylinder is exhausted through the slots at a decreasing rate.

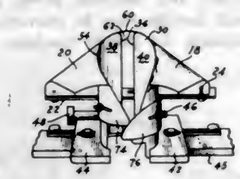
3,415,170
SEALING ARRANGEMENT FOR PISTON-CYLINDER PRESSURE VESSEL
Alfred E. Smith, Clinton, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 21, 1966, Ser. No. 581,422
2 Claims. (Cl. 92—246)



1. In a piston-cylinder type pressure vessel comprising an annular female die having an inner cylindrical surface defining a pressure chamber, and a piston having a free end slidably engaging said inner surface of said die along its lateral surface, wherein advancement of said piston into said die increases the pressure within said pressure chamber; the improved sealing arrangement comprising a soft-ductile-metal sealing member disposed on said free end of said piston, said sealing member comprising an upstanding annular lip of substantially triangular cross section, said annular lip having a base contiguous with said free end of said piston and a terminal edge subtending said base, said terminal edge engaging said inner surface of said die in an interference fit prior to a pressing operation, said base of said lip, inner surface of said die, and free end of said piston defining an annular space of substantially triangular cross section prior to the commencement of a pressing operation, said sealing member deforming into said annular space and against said inner surface during a pressing operation.

3,415,171
ADJUSTABLE PACKAGE-FORMING MACHINE
Russell W. Wilson, 760 Country Club Road, York, Pa. 17403
Filed May 10, 1967, Ser. No. 637,392
8 Claims. (Cl. 93—82)

A tubular forming device to guide a continuous strip of sheet material delivered to the receiving end of said device and form it into bag-like packages, the forming device being split axially into two halves mounted for transverse movement relative to each other to vary the circumference of packages formed by said device, in combination with bridging guide means extending between the



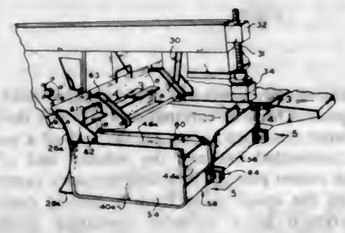
halves of said receiving end of said tubular device to provide a continuous guide surface over which said material moves onto said device regardless of spaced adjustment of said halve of said device.

3,415,172
SKI MAT
John P. Horton, Bernardsville, and Robert E. Sollmann, Far Hills, N.J.; said Sollmann assignor to Ski-Mor, Inc., Kenilworth, N.J., a corporation of New Jersey
Filed Dec. 3, 1965, Ser. No. 528,323
1 Claim. (Cl. 94—3)



Ski mats having fasteners which space individual elements and hold the elements for free relative rotational movement and having alternating elongated and recessed longitudinal ends of elements so that laterally adjacent mats may be smoothly interfitted are described herein.

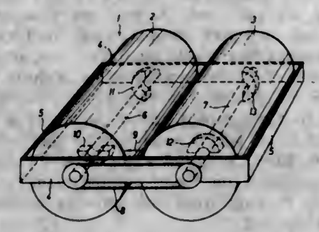
3,415,173
EXTENSION ATTACHMENT FOR A PAVING MACHINE
John M. Paul, Portland, Oreg., assignor to Rogers Construction, Inc., Portland, Oreg., a corporation of Oregon
Filed Aug. 21, 1967, Ser. No. 662,158
17 Claims. (Cl. 94—45)



This application discloses an asphalt paving machine having a screed for laying down a mat of asphalt of predetermined width and thickness. The machine includes improved screed extension sections incorporating quick-coupling connection means for rapidly extending, in increments as required, the effective width of the screed

and thus increasing the width of the mat laid. Each screed section, including the main screed section, includes opposite end plates which adjoin similar end plates on adjoining screed sections. One end plate of each screed section is provided with a pair of spaced U-shaped female connecting blocks having a generally wedge shaped inner recess opening in either the forward or rearward direction of travel of the machine. The opposite side plate of each screed section has a pair of spaced, wedge shaped male connecting blocks which slidably interengage the female blocks of the adjacent screed section when inserted within the recesses of the latter blocks. This requires that the two screed sections to be joined are moved in a fore-and-aft direction relative to one another. When interengaged, the male and female connecting blocks interlock along dovetailed surfaces of each so as to prevent longitudinal separation of the screed sections in use. The complementary configurations of the male and female connecting blocks inherently limit the extent of sliding interengagement possible so that the various screed sections are accurately aligned with one another when joined together. A stop member on each screed section engageable with the rear end of the connected adjacent screed section is to prevent fore and aft separating movement of the screed sections when the machine is moving.

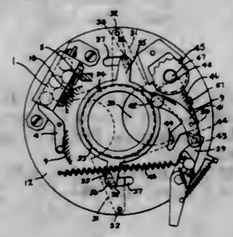
3,415,174
TANDEM-TYPE ROAD ROLLER
Benno Kaltenegger, Am Pleistalhof, Birlinghoven, Kreis Siegburg, Germany
Filed Sept. 23, 1966, Ser. No. 581,540
Claims priority, application Germany, June 11, 1966, K 59,476
15 Claims. (Cl. 94—50)



This provides a tandem-type road roller comprising drums lying one behind the other in the direction of travel mounted in a fixed frame. Off center weights are mounted on the shafts of each of the drums. The weights on each of the shafts are mounted so that they are offset by 90° relative to one another on each shaft and to the weights on the shaft of an adjacent drum.

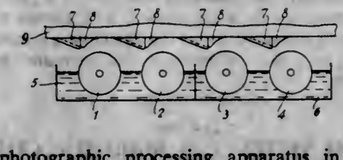
3,415,175
DIFFERENTIAL CONTROL APPARATUS, ESPECIALLY FOR THE ADJUSTMENT OF APERTURE OPENINGS IN PHOTOGRAPHIC CAMERAS
Wilhelm Bertram, Jr., Munich-Grafelfing, Germany, assignor to Ernst and Wilhelm Bertram, Munich-Pasing, Germany
Filed June 8, 1965, Ser. No. 462,207
Claims priority, application Germany, June 11, 1964, B 77,209
25 Claims. (Cl. 95—64)

A differential apparatus for cameras for controlling one exposure influencing factor in relationship to a plurality of other exposure influencing factors, the apparatus being positionable between a movable driven member and at least two movable driving members. The apparatus includes a spacer means confined and movable between the driving and driven members and being in abutting contact therewith, the spacer means being confined and movable within a housing with the driving and driven members being substantially positioned exteriorly of the housing.



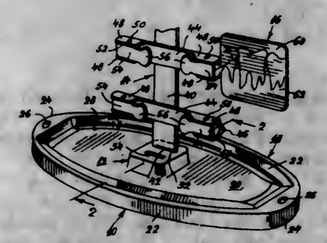
The spacing means preferably includes a plurality of individual spacing elements, which elements are separate and free of positive connection with said driving and driven members.

3,415,176
PHOTOGRAPHIC PROCESSING APPARATUS
William J. Calder and Leonard F. Jarvis, Ilford, England, assignors to Ilford Limited, Ilford, England, a British company
Filed Dec. 5, 1966, Ser. No. 599,219
Claims priority, application Great Britain, Dec. 9, 1965, 52,390/65
5 Claims. (Cl. 95—94)



A photographic processing apparatus in which the processing solutions are applied to exposed material by applicator rollers. The material is guided on to the applicator rollers by a material guiding system having two sets of guide teeth provided in advance of each roller. The guide teeth serve to guide the leading and trailing edges of the material on to the applicator rollers.

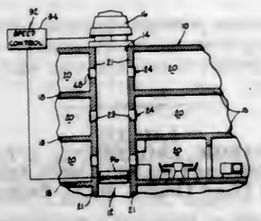
3,415,177
X-RAY FILM DEVELOPING RACK HOLDER AND DRIP STAND
Herbert Abramowitz, 143—19 25th Ave., Whitestone, N.Y. 11357, and Ellen L. Sachs, 930 Cranford Ave., Valley Stream, N.Y. 11581
Filed Dec. 29, 1966, Ser. No. 605,871
2 Claims. (Cl. 95—100)



A film rack holder and drip tray adapted to be economically manufactured from readily available material and which will provide a firm support for the film rack to hold the support in an upright position in which the films carried thereby are clearly visible. The combined

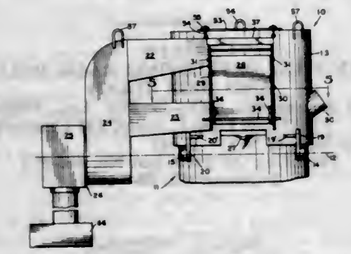
holder and tray includes an upright member with cross arms for supporting films, and a tray with bottom and side walls, the bottom wall having an integral enlargement thereon with slots constituting a socket for receiving the bottom end of the upright member. The film when supported is above the side wall of the tray.

3,415,178
VENTILATING SYSTEM AND DEVICE
Donald Ball, Deerfield, and Robert Gurney, Chicago, Ill., assignors to ILG Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,195
4 Claims. (Cl. 98—33)



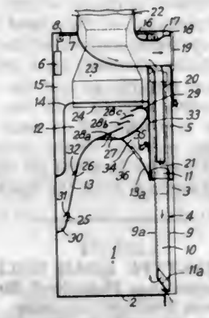
A system and device for ventilating a room communicating with an air flow duct through a passageway, including a damper movable into and out of a position in which the passageway is obstructed, with means such as a motor being provided to permit selective movement of the damper to a desired position and to maintain it in such position.

3,415,179
EXHAUST SYSTEM FOR HOOD STRUCTURE
John R. Scheel, Anderson, Ind., assignor, by mesne assignments, to Hawley Manufacturing Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Oct. 12, 1966, Ser. No. 586,107
11 Claims. (Cl. 98—115)



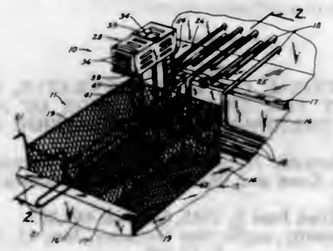
A ventilation system comprises a hood designed to cover the open top of a cylindrically-shaped furnace which is supported for rocking movement about a horizontal axis. The hood is arranged to rock with the furnace. An upper duct and a lower duct are arranged to rock with the hood and communicate, respectively, with the upper region of the interior of the hood and with an annular duct disposed about the inner wall of the hood just above the open top of the furnace. Said annular duct communicates with the interior of the hood to receive vapors emanating from the furnace. The upper duct and the lower duct communicate with exhaust through a swivel connection coaxial with the said horizontal axis, whereby the hot gases evolved in the furnace are more effectively exhausted to prevent overheating and consequent warping of the hood.

3,415,180
MULTIPLE COMPARTMENT FUME CABINET INCLUDING AN EVACUATION CHAMBER
Jean Arhex, Paris, René Blanchet, Fresnes, Bernard Lebas, Bagneux, and André Mical, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed May 1, 1967, Ser. No. 635,054
Claims priority, application France, May 14, 1966, 61,668
5 Claims. (Cl. 98—115)



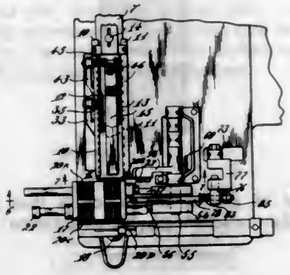
A fume-cabinet having a lower compartment with a front opening which is opened and closed by a hollow, double-walled, transparent panel vertically slidable into a forward compartment. A medium evacuation compartment and an upper compartment are formed above the lower compartment with the upper compartment being provided with evacuation and blowing conduits. The blowing conduit is divided into two pipes one of which is connected to the atmosphere by means of a flap valve and the other of which extends into the hollow panel which is in fluid communication with the lower compartment to enable the lower compartment to be evacuated by air flowing from the blowing conduit to the evacuation conduit.

3,415,181
DEEP FAT FILTER APPARATUS
Warren Bruce Hart, 7228 Burt St., Omaha, Nebr. 68114
Filed May 4, 1967, Ser. No. 636,208
8 Claims. (Cl. 99—408)



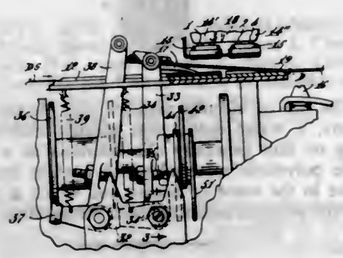
This invention pertains to a deep fat filter apparatus which is mounted in fluid communication with a deep fat fryer and is operable continuously and simultaneously to filter the cooking medium while food is being prepared. The apparatus includes a power driven pump disposed in the deep fat fryer, a filter unit fluidly connected to the pump, an inlet tube fluidly connecting the pump and filter unit, and an outlet tube fluidly connected to the filter unit for returning the filtered medium to the fryer.

3,415,182
TICKET PRINTING AND FEEDING MACHINE
Kenneth J. White, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Nov. 9, 1966, Ser. No. 593,111
3 Claims. (Cl. 101—68)



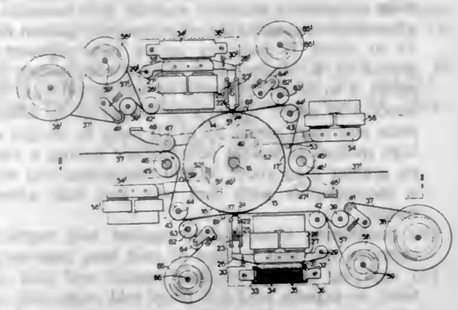
This invention relates to apparatus for printing price tickets or other stock, particularly apparatus using strip stock from which tickets are cut. The apparatus may also attach the tickets to articles, as for example by pinning the on fabrics as disclosed in the patent to Flood 2,023,045. The apparatus is especially useful in so-called dial-set machines of the type where the printing characters are carried by belts trained over rollers side by side so that various combinations of printing characters may be brought into printing position by turning dials or knobs, thereby enabling rapid changes of printing characters.

3,415,183
BED AND PLATEN DUPLICATE TICKET PRINTING MACHINE
John S. Dudley, Douglas, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Nov. 9, 1966, Ser. No. 593,112
5 Claims. (Cl. 101—68)



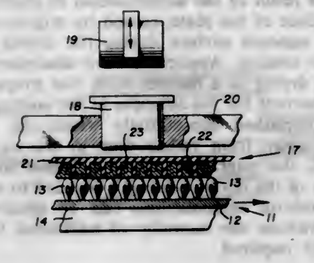
Apparatus for printing on strip stock from which tickets are cut, the stock being fed along a predetermined path past first and second printing stations during each cycle of operation, printers at said stations for printing parallel lines of indicia, the printers being disposed along said path so that one printer prints spaced lines of indicia and the other printer prints a line of indicia between said spaced lines, whereby the lines may be closely juxtaposed with dial-set printers.

3,415,184
HIGH SPEED SERIAL PRINTING DEVICE FOR TELEPRINTERS, ACCOUNTING MACHINES AND DATA PROCESSING EQUIPMENTS
Vincenzo Perucca, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Mar. 31, 1967, Ser. No. 627,443
Claims priority, application Italy, Apr. 12, 1966, 9,148/66, Patent 33,056
11 Claims. (Cl. 101—93)



A serial printing device comprises a horizontally continuously rotating typewheel cooperating with a hammer so wide as to engage during each revolution of the typewheel any type to effect a flying printing in a constant point of the paper, despite a continuous mutual letter spacing movement. The typewheel comprises a sector devoid of types, whereas the other sector is provided with the types arranged at a variable mutual distance. The hammer is cushioned by a stack of plates. The typewheel may cooperate with more than one hammer or may be caused to print both during the advancing and the return stroke of a carriage.

3,415,185
METHOD OF PENETRATION PRINTING A FABRIC UTILIZING IMPACT FORCES
James G. T. Paterson, Ashley P. Smith, and Bobby R. Thrasher, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,696
8 Claims. (Cl. 101—211)



1. The process of penetration printing a fabric, comprising positioning a plurality of supplies of a coloring agent of a predetermined color in close proximity to each other to thereby form a color area, said supplies being isolated from each other, said supplies each having a cross-sectional area no greater than ½ square inch, positioning said color area in contact with a fabric to be printed, and applying impact forces to the coloring agents to drive said coloring agents deep into the fabric.

3,415,186
DUPLICATING SYSTEM

Fred A. Fend, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,362
5 Claims. (Cl. 101—468)

3. A duplicating method comprising:

(a) providing a pressure transfer duplicating master having a base member and a profusion of pressure rupturable capsules attached to a surface of said base member in image configuration, said rupturable capsules comprising an outer capsule wall material and a homogeneous inner ink core comprising from about 33 to about 72 parts by weight of a pigment dispersed in a binder, said binder comprising from about 3 to about 11 parts by weight of wax, from about 3 to about 10 parts by weight of an adhesive resin and from about 25 to 50 parts by weight of a high molecular weight polysiloxane having a viscosity greater than about 30,000 centistokes and which is incompatible with said wax and said adhesive resins;

(b) positioning a copy sheet against said rupturable capsules and said surface of said base member;

(c) applying pressure to said master and said copy sheet to express said ink from said rupturable capsules into engagement with said copy sheet; and

(d) removing said copy sheet from said master whereby a portion of said ink is transferred from said surface of said base member to said copy sheet in accordance with said image configuration.

5. The method of claim 3 wherein steps (b), (c) and (d) are repeated with additional copy sheets to produce a plurality of copies from said master.

3,415,187
LITHOGRAPHIC PLATE AND METHOD FOR MANUFACTURING SAME

Burton P. Bailey, Dayton, and Arne E. Gomsi, Chillicothe, Ohio, assignors to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 549,061, May 10, 1966. This application Mar. 16, 1967, Ser. No. 623,555
4 Claims. (Cl. 101—463)

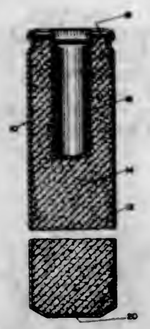
Conventionally prepared lithographic plates are subject to several disadvantages and particularly to lack of uniformity of the printing surfaces unless the lithographic surfaces are subjected to a special treatment before use to remove surface defects. These surface defects are usually the result of the accumulation of excess adhesive on the surface of the plate, caused by migration of adhesive to the exposed surface during the drying of the lithographic coating. Applicants have discovered that by effecting drying in a manner such that evaporation of the liquid solvent for the adhesive in the coating composition is accomplished substantially within the coating in a region away from rather than at the exposed surface thereof, the migration of the adhesive to the exposed surface of the drying coating is reduced to such an extent that uniform reproductions can be obtained from the plate without the necessity of additional treatment customarily required.

3,415,188
SEA WATER DESTRUCTIBLE BOOSTER ASSEMBLY

Thomas Z. Ball, New Ringgold, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Mar. 31, 1967, Ser. No. 627,481
8 Claims. (Cl. 102—24)

In the art of explosive boosters, a sea water destructible member positioned in barrier relation with an explosive booster assembly to render same sea water destructible

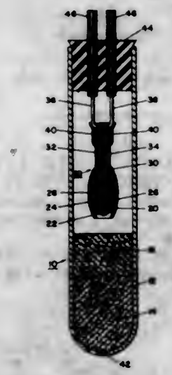


in the event of misfire and which is thus particularly useful for offshore seismographic exploration.

3,415,189
WATER DESTRUCTIBLE ELECTRIC MATCH

William D. Trevorrow, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Mar. 24, 1967, Ser. No. 625,736
12 Claims. (Cl. 102—28)



In the art of electric matches and electric explosion initiators, a water destructible electric match having a coating or film generally characterized as a water dispersible polymeric material which renders the match ineffective in the event of misfire and which is particularly useful for offshore seismographic prospecting.

3,415,190
ANTI-DISTURBANCE FUSE

Otho E. Hart, China Lake, and Lewis W. Imm, North Hollywood, Calif., assignors to the United States of America as represented by the Secretary of the Navy

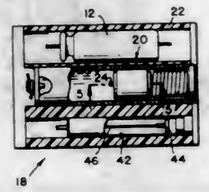
Filed Dec. 9, 1964, Ser. No. 417,255
6 Claims. (Cl. 102—70.2)

6. An anti-disturbance fuse for initiating an explosive charge, comprising;

(a) a casing containing an electric battery, an arming timer, a self-destruct timer, and a sensitive inertia actuated anti-disturbance switch,

(b) said arming timer and self destruct timer comprising a pair of parallel cylinders, one being an arming cylinder and the other a self-destruct cylinder, each having a spring urged piston in same and a fluid adapted to be metered from one side of a piston to the other under urge of its spring to thereby permit the pistons to move predetermined distances within their cylinders, the piston in the arming cylinder adapted to close a switch after a relatively short time after commencement of its movement to arm the fuse, and the piston in the self-destruct cylinder adapted to close a relatively long time after commencement of its movement to initiate an explosive,

(c) a pull pin extending across both cylinders for blocking movement of the pistons and for permitting the pistons to move under urge of their springs when the pull pin is removed from the fuse,



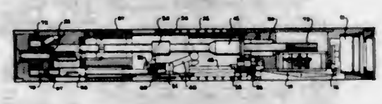
(d) said anti-disturbance switch comprising a cylindrical elongated metallic tube, a metallic resilient wire disposed axially of the tube and insulatingly supported at one end of the same, the other end of the wire having a circular metallic weight thereon disposed centrally of the tube with an annular space between its periphery and the tube, the weight adapted to move relative to the tube in all directions in a plane perpendicular to the longitudinal axis of the tube when the fuse is disturbed, to thereby engage the tube and close an electric circuit to initiate an explosive,

(e) and an electric circuit including said battery and switches operated by said pistons for arming the fuse a short time after said pull pin is removed, for threafter initiating an explosive if the use is disturbed, and for initiating the explosive a relatively long time after said pull pin is removed in event the fuse has not been disturbed.

3,415,191
SAFETY AND ARMING MECHANISM

James M. Meek, Silver Spring, Md., James J. Charuhas, Washington, D.C., and Harvey A. Foure, Landover, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Aug. 31, 1959, Ser. No. 837,291
3 Claims. (Cl. 102—78)

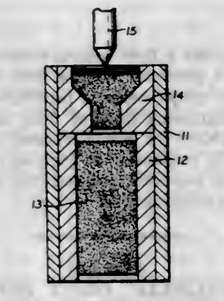


1. A safety and arming mechanism, comprising first and second G-weights movable in the same direction from an initial to a final position, a coil spring substantially enclosing both G-weights, said spring having two ends, means for preventing expansive movement of one end of said spring connected to said second G-weight and compressing said spring as a result of movement of said second G-weight towards said final position, a catch member engaging said first G-weight for releasing the other end of said spring, said member releasing said other end of said spring as a result of movement of said first G-weight to said final position, and detonator means connected to said other end of said spring and movable to an armed position as a result of spring expansion.

3,415,192
PERCUSSION CAP AND FUSE AND ORDNANCE PIECE

Hans Stadler, Nurnberg, and Heinz Gawlick and Hellmut Bendler, Fürth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk, Cologne, Germany

Continuation of application Ser. No. 326,742, Nov. 29, 1963. This application Jan. 9, 1967, Ser. No. 608,225
Claims priority, application Germany, Nov. 29, 1962, D 40,378
5 Claims. (Cl. 102—86.5)

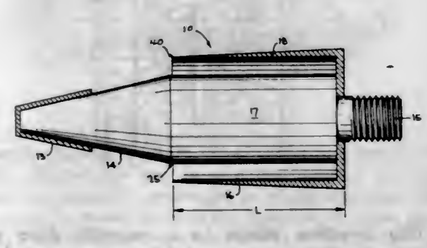


An ordnance piece such as a mortar shell is provided with a percussion cap having a bore characterized by including a length of large diameter, a length of small diameter and a ledged bore connecting said lengths. A charge is compacted in the bore and extends into the length of large diameter.

3,415,193
FLUERIC SCREAMER

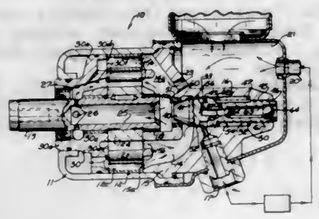
Carl J. Campagnuolo, Chevy Chase, Md., and Raymond W. Warren, McLean, Va., assignors to the United States of America as represented by the Secretary of the Army

Filed June 7, 1967, Ser. No. 645,096
7 Claims. (Cl. 102—92.4)



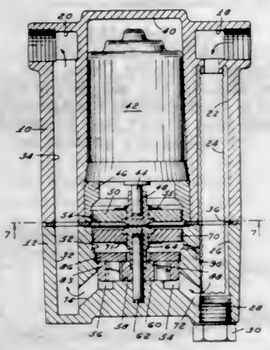
A flueric screamer is designed to be mounted on the nose of an ordnance projectile. The flueric screamer has a resonating cavity and is designed to have the ram air of the projectile alternately directed into and away from the resonating cavity. The continual entering and leaving of ram air from the resonating cavity will generate high energy acoustic waves which will have a distressing effect upon enemy troops over which the projectile will pass on its way to a designated target.

3,415,194
PUMP
Lavern R. Connelly, Marshall, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 16, 1966, Ser. No. 579,930
17 Claims. (Cl. 103—41)



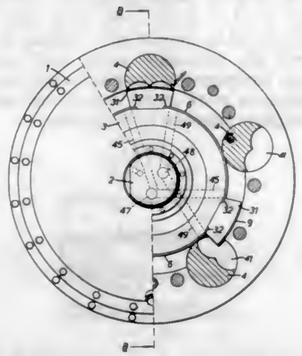
A pump includes a flow control means which is effective to provide a generally constant flow of fluid to a fluid system at pump speeds below a predetermined speed and a controlled decreasing flow of fluid to the system at pump speeds above the predetermined speed. The flow control means is responsive to increases in the pressure in the system to provide increased flow to the system as a load is applied to the system.

3,415,195
MAGNETIC DRIVE PUMP
Robert K. Catterson, Columbus, Ohio, assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed June 5, 1967, Ser. No. 643,704
6 Claims. (Cl. 103—118)



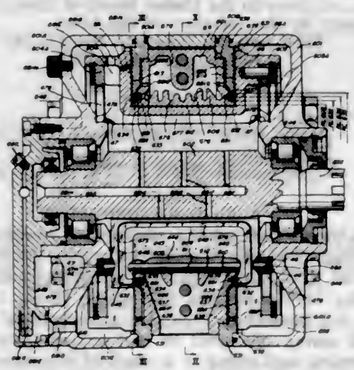
This invention relates to a magnetic drive pump wherein an electrical powered drive rotor is sealed from a pump chamber and transmits by electromagnetic forces a rotary drive to a pump impeller in the pump chamber, the invention relating specifically to a two-piece housing with facing motor and pump chambers and a pump passage arrangement to facilitate priming, the bearing relationship of the parts with respect to the sealing membrane, and to an included magnetic relief valve which in conjunction with magnetic parts completes the pump housing and forms also a by-pass in the event of build-up of pressure beyond a predetermined amount.

3,415,196
ROTARY ABUTMENT HYDRAULIC PUMPS AND MOTORS
George Fritz Werner Adler, Netherton, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Aug. 29, 1966, Ser. No. 575,623
Claims priority, application Great Britain, Aug. 27, 1965, 36,895/65; Apr. 14, 1966, 16,473/66
7 Claims. (Cl. 103—125)



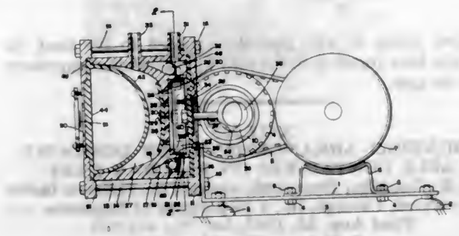
Rotary abutment hydraulic pumps and motors having cylindrical casing members containing a co-axial lobed member which is driven for rotation about its axis with respect to a casing member, in which a partial cylindrical surface of an abutment member rolls against the partial cylindrical surface of the lobed member lying between projections thereof, and which surfaces are covered with a layer of flexible material which is pinched between the rolling surfaces so as to form an effective seal, the projection on the lobed member being securely fitted to the body of the lobed member and having means so as to prevent momentary short-circuiting of fluid from one side to the other of the projection while the projection is passing such rotary abutment.

3,415,197
GUIDING DEVICE FOR THE VANE ASSEMBLIES OF A FLUID HANDLING DEVICE
Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan
Original application Dec. 5, 1963, Ser. No. 328,395, now Patent No. 3,320,898, dated May 23, 1967. Divided and this application May 22, 1967, Ser. No. 640,108
15 Claims. (Cl. 103—136)



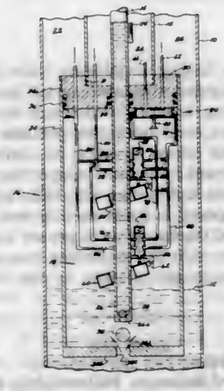
The vane assemblies of a fluid handling device have turnable control pins with end portions axially projecting from the other parts of the respective vane assembly and guided along endless guide tracks matching the outline of an endless inner casing face along which the radially outer parts of the vane assemblies move during rotation of the rotor in which the vane assemblies are mounted.

3,415,198
PUMP
George J. Lappo, 1448 W. 45th St., Cleveland, Ohio 44102
Filed Aug. 16, 1966, Ser. No. 572,738
8 Claims. (Cl. 103—150)



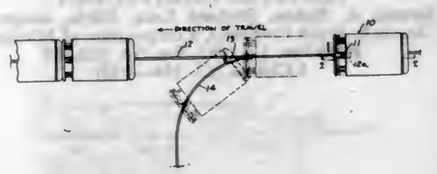
The invention is concerned with a pump which is especially useful for prividing a water pressure system for trailers and the like, and which comprises a one-piece housing having a concentric arrangement of fluid antechamber and inlet chambers, a novel disposition of a fluid pumping diaphragm over these chambers, novel means for introducing atmospheric air into the fluid inlet chamber, and for controlling the fluid pumping action.

3,415,199
AUTOMATIC DOWNHOLE GAS LIFT APPARATUS
James K. Elliott and Joe E. Edwards, Jr., Houston, Tex., assignors to Macco Oil Tool Company, Inc., a corporation of Texas
Filed Oct. 13, 1966, Ser. No. 586,468
6 Claims. (Cl. 103—248)



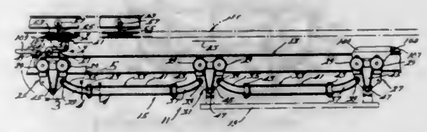
For use in oil wells produced by gas lift, apparatus including a chamber for accumulation of fluid from a producing formation, there being upper and lower float means in said chamber which control the admission of gas under pressure to said chamber when a suitable accumulation of liquid is attained therein for lifting same through a suitable tubing string to thereafter remove a predetermined quantity of liquid from said chamber.

3,415,200
TOW TRUCK CONVEYOR SYSTEM
Leonard J. Bishop, Birmingham, Karl Karlstrom, Roseville, and Paul Klamp, St. Clair Shores, Mich., assignors to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan
Filed Jan. 4, 1966, Ser. No. 518,696
22 Claims. (Cl. 104—172)



The tow truck conveyor system disclosed herein comprises a track defined by a slot in the floor and a plurality of tow trucks having tow pins extending into the slot and engaging a conveyor in the floor. Each tow truck has a front bumper which is movably mounted and operatively connected to the tow pin so that when an obstacle or preceding carrier is engaged, the tow pin is elevated out of engagement with the conveyor. Each tow truck also includes a rear bumper which is movably mounted from a first vertically disposed position wherein it may be operatively engaged by the front bumper of succeeding carrier to a second vertically disposed position where the rear bumper may not be operatively engaged by the front bumper of a succeeding carrier. In one form, the front and rear bumpers are operatively connected. In another form, the rear bumper is moved by cams along the floor. A second bumper at the front of each tow truck is yieldingly mounted for absorbing shock of contact with an obstacle or preceding carrier.

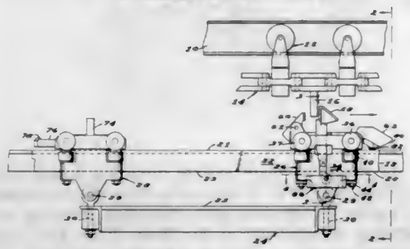
3,415,201
POWER-AND-FREE CONVEYOR SYSTEM
Adolph Czarnecki, Birmingham, Mich., assignor, by mesne assignments, to Standard Alliance Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,797
15 Claims. (Cl. 104—178)



Specifically, the invention is embodied in a novel work carrier adapted for use in a power-and-free conveyor system and uniquely constructed to release a pivoted driving lug on the power chain of the conveyor for close packing of the carriers in selected sections of the system. To this end, each carrier comprises front and rear trolleys interconnected by articulated mechanical means. The two trolleys have identical bodies of a known and conventional construction. However, oppositely facing pivoted flop dogs are mounted on the front trolley body in the conventional manner and a cam plate is mounted on the rear trolley body. It is a special feature of the invention that the cam plate has a rearwardly extending portion provided with a rearwardly opening recess that is adapted to receive the front driven dog of a following work carrier and that is of sufficient size to entirely accommodate

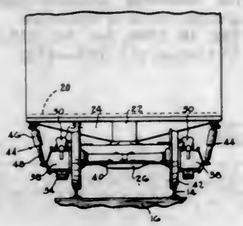
the dog so that a portion of the cam plate laterally of the recess engages and releases the driving lug which propels the following carrier as the driven dog of the latter moves into the recess and into nestling relation with the cam plate of the preceding carrier.

3,415,202
CONVEYOR CONSTRUCTION
Clarence A. Dehne, Orchard Lake, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Jan. 13, 1966, Ser. No. 520,468
3 Claims. (Cl. 104—242)



A construction for limiting movement of the wheels of a load carrying trolley of a power and free conveyor vertically off the track and for preventing disengagement of the trolley driving dog from a propelling pusher resulting from such rocking movement, wherein a hold-down member is secured to the trolley body below the track and has portions engageable with the track forwardly and rearwardly of the trolley wheels and trolley dogs.

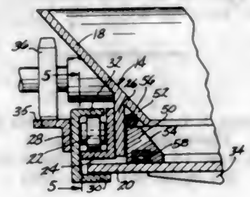
3,415,203
DAMPENING MEANS BETWEEN THE CHASSIS AND TRUCK OF A RAILROAD CAR
Frank W. Hughes, Rosemont, Pa., and Stuart A. Schwam, 372 Robinson Drive, Broomall, Pa. 19008, said Hughes assignor to said Schwam
Continuation of application Ser. No. 521,603, Jan. 19, 1966. This application Sept. 11, 1967, Ser. No. 670,010
6 Claims. (Cl. 105—199)



A damper is disposed on the outboard side of each side frame of a truck underlying the body of a railroad car. The connection of each damper to the associated side frame is by a ball-and-socket joint located at the bottom of the side frame. The damper extends upwardly and outwardly from its connection to the side frame for connection by a ball-and-socket joint to the body of the car.

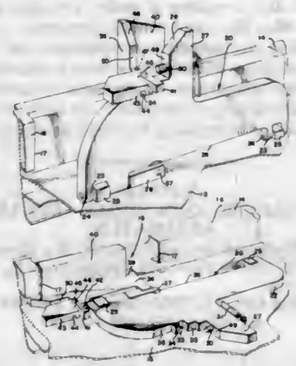
3,415,204
HOPPER GATE SEALING MEANS
Hugh H. Pase, 75 Creamery Road, Cheshire, Conn. 06410
Filed Aug. 3, 1966, Ser. No. 570,085
9 Claims. (Cl. 105—282)

A device for sealing hopper doors having sliding gates commonly used in railroad hopper cars, in which a frame-like sealing member fits in telescoping manner within the opening of the door and is supported along its under edge entirely by the sliding gate, the upper edge of the sealing



member being at least partially exposed to the load, so that the load forces it down into tight sealing engagement with the gate.

3,415,205
MOUNTING ARRANGEMENT FOR DEMOUNTABLE CONTAINERS ON RAILWAY CARS
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 23, 1967, Ser. No. 662,769
5 Claims. (Cl. 105—366)

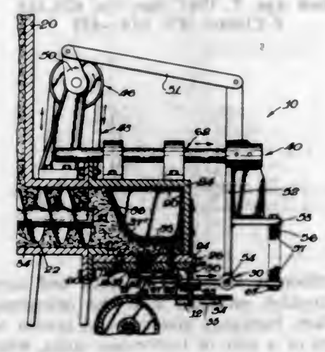


A railway car having upstanding side sills providing tire guides for highway trailers carried thereon includes container mounting brackets which are movable from a rest position to an erect operative position wherein they coact with the four corner brackets of a container carried on the car. The brackets include supporting beams which cooperate with the upstanding side sills of the car and which may be disposed in a non-used or rest position lying flat on the deck of the car so as to permit loading and unloading of trailers with the mounting brackets providing a minimum obstruction relative to the rolling of the wheels.

3,415,206
PRETZEL FORMING
Howard Reisman, Philadelphia, Pa.
(1417 Georgian Drive, Moorestown, N.J. 08057)
Filed Mar. 31, 1965, Ser. No. 448,908
50 Claims. (Cl. 107—14)

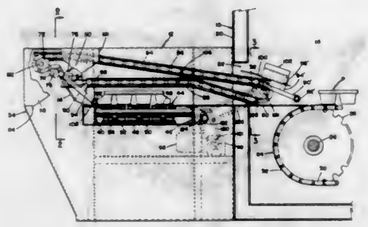
A stream of dough is extruded and cut off into pretzel-shaped articles. The flow resistance and extruding pressures are minimized by suitably shaping and arranging the extruder and knife and by coating dough-contacting surfaces with an antifriction means. The sharp edge of the knife is pushed in contact across the extruding plate

with its blade disposed at an angle to it. The individual articles are cleanly severed and deflected from the stream



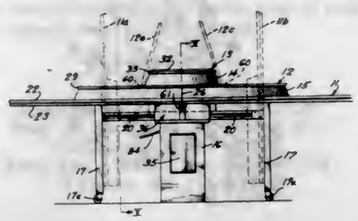
with remarkably slight distortion and minimal obstruction to the flow of dough.

3,415,207
LEVEL PLANE OVEN LOADER
Gary A. Messerly, York, Pa., assignor to Read Corporation, York, Pa., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,146
6 Claims. (Cl. 107—57)



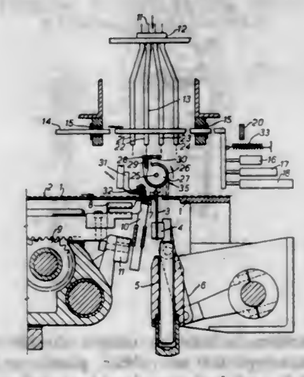
A loader mounted outside and adjacent the front wall of an oven including an outer pan supporting surface for receiving successive transverse rows of pans of dough and an inner pan support extension projecting through the lower portion of a transversely elongated loading opening in the oven front wall. A transversely extending pusher bar is adapted to be moved across the outer and inner pan supports for pushing successive rows of pans thereacross onto means for traveling the pans of dough through the oven and is adapted to be retracted in a path spaced above the outer pan support to permit a succeeding row of pans to be delivered in front of the oven. The means controlling the movement of the pusher bar includes a pair of transversely spaced longitudinally extending endless chains having an outer portion guided in a path spaced above the outer pan support and an inner portion guided in a path sloping downwardly over the inner pan support. Control arms are pivotally connected at one end of the chains and attached at the other end to opposite ends of the pusher bar, and guide shoes at opposite ends of the chains cooperate with guide members carried by the pusher bar and control arms for raising the pusher bar at the beginning of its retracting path and lowering the pusher bar at the beginning of its pushing path.

3,415,208
TABLE CONSTRUCTION
Gunnar Thoresen, Medinah, and Thoralf Thoresen, Itasca, Ill., assignors, by mesne assignments, of one-half each to Gunnar Thoresen, Medinah, and Thoralf Thoresen, Itasca, Ill.
Filed Apr. 14, 1967, Ser. No. 630,900
9 Claims. (Cl. 108—94)



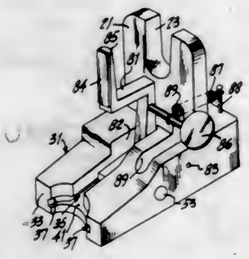
A circular, multi-level terraced table supported by a central pedestal and two pairs of legs which are expandibly connected by dovetailed table slides. The upper levels of the table are rotatable relative to the supports and the lower level. The lower and middle levels are hinged and the table is foldable in such a manner as to present a front surface having the appearance of a semi-circular arch.

3,415,209
MACHINE FOR MAKING TUFTED CARPETS AND LIKE FABRICS
Ronald Ellison, Blackburn, and John Pritchard, Rishton, England, assignors to Ellison Tufting Machinery Limited, Blackburn, England, a corporation of Great Britain
Filed Mar. 23, 1967, Ser. No. 625,425
Claims priority, application Great Britain, Mar. 28, 1966, 13,625/66
4 Claims. (Cl. 112—79)



A machine for producing a tufted fabric from a plurality of differently constituted yarns. The machine includes needles, means for reciprocating said needles through a backing fabric to effect loop formation, a supply of a plurality of yarns for each needle, control means for selecting a particular yarn and presenting it to its associated needle during loop formation, and means for severing said yarns after said loop formation.

3,415,210
ATTACHMENT FOR SEWING MACHINES
Aaron Glassman, Scranton, Pa., assignor to Pennsylvania Sewing Research Corp., a corporation of Pennsylvania
Filed Jan. 3, 1966, Ser. No. 518,320
4 Claims. (Cl. 112—114)



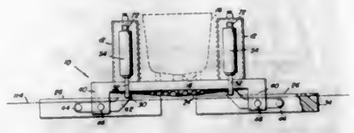
A hook and eye attachment, usually for mounting on a button clamp of a sewing machine. Once set up, the attachment may be used to sew a metal hook, or a metal eye, or to form by sewing a thread eye without further adjustment. In some embodiments, the attachment may be used for holding a magnetic hook or a magnetic eye in a predetermined position for sewing.

3,415,211
AQUATIC PROPULSION ASSEMBLY FOR SWIMMERS
Bauswell H. Hampton, 705 Logan Lane, Blythville, Ark. 72315
Filed Aug. 7, 1967, Ser. No. 658,875
10 Claims. (Cl. 114—16)



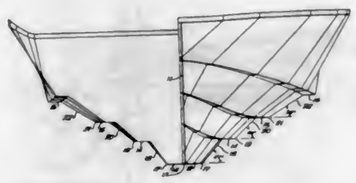
The invention includes a unique double walled air filled skeleton type suit of rubber, plastic or other suitable material, and includes shoulder portions with opposite arm outlets and a front panel which extends only to about the waist of the wearer and substantially semicircular legs which surround about half of the legs from about the ankle up to the crotch. There are suitable bindings that maintain the leg portions in their proper position about the lower and upper part of the limbs. The complete back portion of the unique suit is substantially open from the back of the shoulders down to the ankle portions thereof.

3,415,212
FLOATING DRYDOCK
Irving Hennig, 1332 Caillavet St., Biloxi, Miss. 39532
Filed Apr. 7, 1967, Ser. No. 629,318
9 Claims. (Cl. 114—45)



This invention is a floating drydock and consists of a floating drydock provided with two independent but complementary, buoyancy systems. One system of buoyancy consists of a pair of bottomless tanks, which may be controllably pneumatically pressurized or depressurized to range between maximum positive buoyancy and negative buoyancy, the tanks being supported in spaced apart relationship on a drydock floor, the floor between the tanks providing the support for the boat being drydocked.

3,415,213
BOAT HULLS
Robert V. Nemetz, 1645 NE. 176th St., North Miami Beach, Fla. 33162
Filed May 1, 1967, Ser. No. 634,939
4 Claims. (Cl. 114—56)

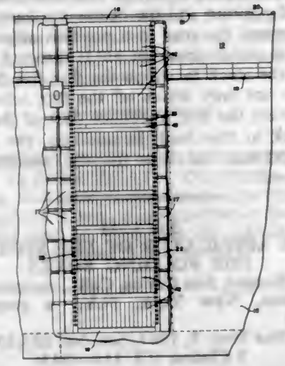


A boat hull construction combining the best features of planing and displacement type hulls and being of substantially V-shaped cross-section along its length from stem to stern, the sides of the hull meeting at the bow to form a V-shaped prow and being formed along their lengths with a plurality of opposed pairs of laterally-outwardly-extending planar surface portions vertically spaced at each side of the hull and defining therebetween gradually decreasing amounts of deadrise upwardly of the keel.

3,415,214
SHIPBOARD CARGO STOWAGE CONSTRUCTION
Jerome L. Goldman, 5724 Bancroft Drive, New Orleans, La. 70122
Filed Aug. 2, 1967, Ser. No. 657,996
6 Claims. (Cl. 114—72)

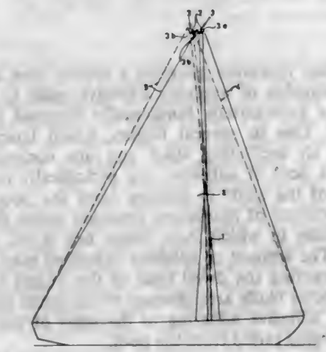
The invention relates to a new type of shipboard cargo hold cells for the rapid and efficient stowage of cargo on or in cargo receivers, such as pallets and/or containers, in which a plurality of horizontal supports for the cargo cooperates with a vertical supporting structure in the cell whereby the horizontal supports, adjustable to any desired height in the vertical structure and employed in any appropriate numbers, individually sustain each its own load quite apart from and independently of the load

or loads sustained in like manner by the several other receivers to the end that superposed loads need not be



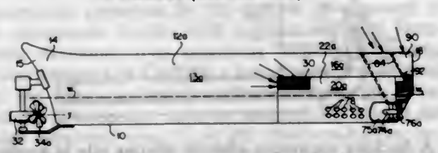
increased beyond limits creating liability to crushing or damage to cargo beneath.

3,415,215
ARRANGEMENT IN MASTS FOR SAILING-BOATS
Oscar Vilhelm Plym, Generalsvagen 131, Osterskar, Sweden
Filed Nov. 21, 1967, Ser. No. 684,865
Claims priority, application Sweden, Nov. 25, 1966, 16,158/66
3 Claims. (Cl. 114—90)



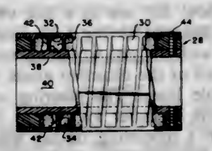
A flexible mast having a lever means mounted on the top. This lever connects the fore and aft stays to the hull of the boat. The lever is pivotally connected to the mast.

3,415,216
HULL FOR A NAVIGATING VESSEL
Andrew J. Strobel, 16301 Mozart Ave., Los Gatos, Calif. 95030
Filed Dec. 23, 1965, Ser. No. 515,941
3 Claims. (Cl. 115—35)



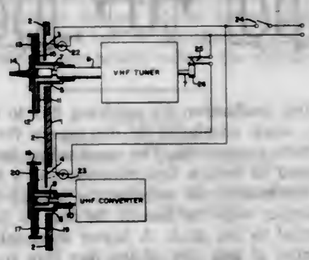
A hull for a navigating vessel comprising a bottom and side walls having parallel middle areas and end areas arranged to converge towards their front and rear ends to form the bow and the stern of the hull, fenders arranged adjacent the converging rear areas of said side walls to form straight continuations of said parallel middle areas, covers above and floors below the spaces formed between said fenders and the converging rear areas of said side walls, and a plurality of vertically spaced, inclined slats arranged to cover the rear ends of said spaces above the normal water line of the hull. In addition the hull contains a number of straight, smooth-walled air-conducting channels extending from an area of its deck adjacent the stern at a steep angle obliquely to an area of said stern below the normal water line of the hull.

3,415,217
ANGULAR TURN INDICATOR
Paul H. McGrath, 23 Harold St., Chelmsford, Mass. 01824
Filed Apr. 17, 1967, Ser. No. 642,273
3 Claims. (Cl. 116—115)



A simple indicator for indicating the extent of angular rotation about a horizontal axis of a rotatable member to which it is attached comprises a continuous helical channel wound circumferentially around the axis at a distance from it and extending longitudinally along it. A gravity-responsive indicator element such as a ball-bearing or a bubble in liquid moves axially in the channel as the indicator is rotated and it is compared with indicia associated with the channel to indicate the total angular rotation from a given starting point.

3,415,218
CHANNEL INDICATOR FOR TELEVISION RECEIVER
Peter Korol, De Witt, and Robert J. Wallis, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 27, 1965, Ser. No. 428,451
4 Claims. (Cl. 116—124.4)



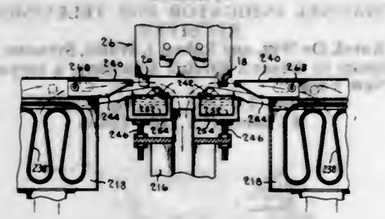
In a combination UHF and VHF channel selector and indicator apparatus, VHF and UHF channel selector shafts extend through an apertured light emitting panel and are terminated by UHF tuning and VHF selector discs. The VHF selector disc is substantially transparent and is separated from the light emitting panel by a translucent fine tuning disc which allows light to pass from the panel to illuminate indicia on the VHF selector disc. The UHF tuning disc is transparent with a separate translucent indicator disc mounted between the UHF tuning disc and the light emitting panel for providing illumination of the indicia on the indicator disc.

3,415,219
STEERING WHEEL WITH HORN, FOR TOY VEHICLES
Raymond J. Lohr, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Feb. 18, 1966, Ser. No. 528,630
3 Claims. (Cl. 116—139)



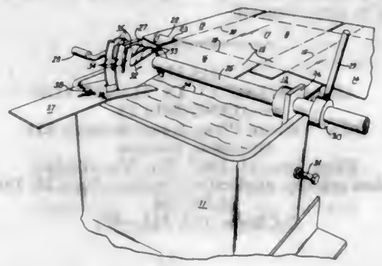
A steering wheel for use in a toy vehicle formed of molded plastics material having a depressible chamber integrally formed with the rim which on manual depression of an exterior wall of the chamber emits a sound simulating an automobile horn. The steering wheel includes a spoke-like support member riveted to the base of the chamber to form a mounting frame, which member has a central socket for mounting on the steering column of the toy vehicle.

3,415,220
APPARATUS FOR FLUXING AND PREHEATING PLATES OF A BATTERY STACK
Anthony Sabatino, Minneapolis, Minn., and Richard A. Buttke and Paul V. Lowe, Milwaukee, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Original application Dec. 30, 1960, Ser. No. 79,728, now Patent No. 3,253,306, dated May 31, 1966. Divided and this application Sept. 16, 1965, Ser. No. 487,870
7 Claims. (Cl. 118—58)



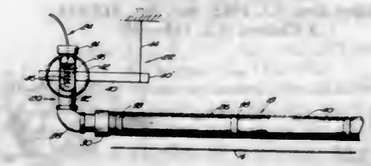
A fluxing mechanism for applying flux to the plates of a battery stack employed in machinery for fabricating storage battery elements. The mechanism includes a flux tray adapted to hold a flux material and a battery stack transfer mechanism for moving the battery stack in and out of contact with the flux in the tray to thereby apply flux material to the stack. A heater mechanism is movably mounted at one side of the flux tray for movement toward and away from the tray. A heater mechanism is operatively associated with the stack transfer mechanism so that as a battery stack is moved into and out of contact with the flux by the stack transfer mechanism, the heater mechanism will be moved toward and away from the tray. A movable cover mechanism is provided for the flux tray and is operatively connected to the heater mechanism so that the cover will close and open over the tray as the heater mechanism is moved toward and away from the tray. In operation, as the battery stack is lowered toward the flux tray, the movable cover will move to its open position and the heater mechanism will move away from the tray. After the battery stack has been lowered into contact with the flux material in the tray, it is withdrawn therefrom at which time the cover is moved to its closed position and the heater mechanism is moved inwardly toward the tray to a position adjacent the battery stack at which time hot air is directed towards the portion of the stack to which the flux has been applied. The hot air not only drives off the flux solvent but also acts to activate the flux to reduce part of the lead oxide on the stack to free lead. In addition, the hot air also serves to preheat the lugs for the welding operation which follows.

3,415,221
ADHESIVE APPLICATOR OF THE SPOTTER TYPE FOR FOLDING BOXES
Richard C. Stenger, San Carlos, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,173
3 Claims. (Cl. 118—243)



The present invention provides a spotter type adhesive applicator capable of applying adhesive spots to the top surface of a substantially horizontally disposed panel of paperboard. One or several fingers, which laterally extend from an oscillating shaft and are normally submerged in a pool of adhesive, are periodically raised by oscillation of the shaft to emerge from the pool, swing beyond a position of maximum elevation above the shaft into a position in which they, finger tips down, contact the board. The amount of adhesive deposited may be controlled by varying the dwell time of the fingers and further by a doctor blade arrangement which limits the thickness of the adhesive adhering to the sides of the fingers as they are being raised from the pool.

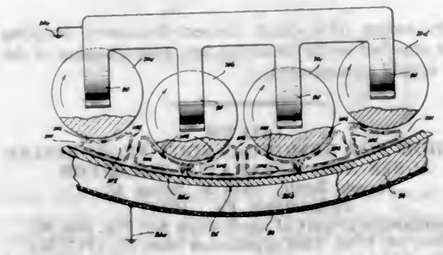
3,415,222
ELECTROSTATIC GRID
Kenneth E. Roberts, Riverside, and George E. Corneau, Central Falls, R.I., assignors to Indev, Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed Mar. 20, 1967, Ser. No. 624,552
5 Claims. (Cl. 118—636)



A flocking apparatus wherein fibrous pile is applied to an adhesive surface of a selected article as it is moved along a plane through the apparatus, including supply means for holding a supply of flock over the adhesively

coated surface and two electrical conducting systems, one above and one below the plane of movement of the article, one grounded and the other connected to a source of alternating current, and wherein the upper conductor system is a series of parallel, rounded, elongated fluid-tight tubular members, of circular cross-section, filled with a conductive fluid such as water.

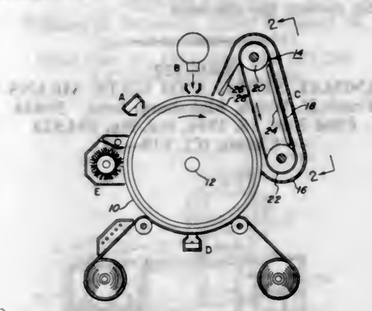
3,415,223
DEVELOPMENT APPARATUS FOR ELECTROSTATIC COPIERS
Gilbert Zweig, Stamford, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,262
21 Claims. (Cl. 118—637)



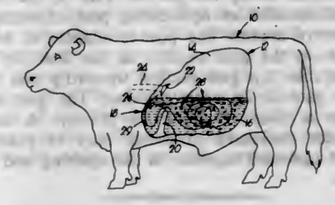
A developer tank contains a liquid developer, consisting of a dispersant having electrical insulating properties in which is dispersed electroscopic carbon black toner particles. Guides mounted on the tank position a coated paper bearing an electrostatic image pattern as it is moved through the liquid developer. A development electrode in the form of parallel, elongated metallic rods is submerged in the liquid developer with the rods extending perpendicular to the direction of paper travel. The rods, in intimate proximity to the paper but insulated therefrom by a thin film of liquid developer, are maintained at a potential different from the electrostatic image pattern, thus producing an electrostatic field therebetween; this field causing the dispersant to circulate toward the individual rods and away from the paper adjacent the region of minimum clearance therebetween, while the particles are drawn into this minimum clearance region. With adjacent rods in lengthwise parallel contact, containment zones are provided for accommodating cataphoretic movement of the dispersant and particles in relation to each rod. From this circulatory movement toner particles are deposited on the paper surface to develop the image pattern.

3,415,224
MAGNETIC CASCADE DEVELOPMENT APPARATUS
Frederick W. Hudson, West Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,213
6 Claims. (Cl. 118—637)

Xerographic apparatus for the cascade development of latent electrostatic images with a two-component ferromagnetic developer. The apparatus includes a rotating magnetic transport belt having a lower portion positioned across the photoconductive surface adjacent the lower end of the development zone to magnetically attract the cascaded developer away from the photoconductive surface. The upper portion of the transport belt is positioned above the upper end of the development zone and has a scraper blade to remove developer from the transport belt. The scraper blade then guides the developer onto the photoconductive surface at the upper end of the development zone for cascade developing latent electrostatic images formed on the photoconductive surface. A plurality of these development units may be employed sequentially along a photoconductive surface.

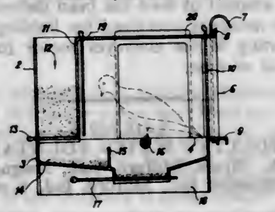


3,415,225
ARTIFICIAL ROUGHAGE FOR RUMINANTS
Byron Leslie Collier, Kansas City, Mo., assignor to Farmland Industries, Inc., Kansas, City, Mo., a corporation of Kansas
Filed Nov. 21, 1966, Ser. No. 595,869
19 Claims. (Cl. 119—1)



This disclosure relates to a method and product for avoiding adverse effects of feeding a high energy low roughage ration to ruminants. A quantity of relatively light weight, inert bodies or pellets of plastic or other suitable material are orally administered to the ruminant. The pellets have rough outer surfaces to stimulate production of saliva for maintaining proper pH in the animal's stomach by physical contact of the pellets against the stomach wall. The low specific gravity of the pellets enhances retention of the pellets within the stomach.

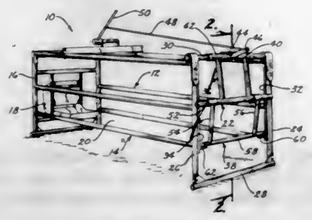
3,415,226
BIRD FEEDER
Alan L. Cheung, 9 Park Vale St., Brookline, Mass. 02146
Filed Aug. 5, 1966, Ser. No. 570,634
4 Claims. (Cl. 119—18)



The disclosed bird feeder is just large enough to completely contain a feeding bird, and will catch and hold the seeds and husks naturally scattered by the bird as it

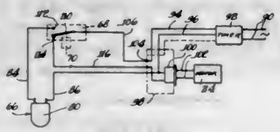
feeds. The feeder includes structure for attaching its entrance against the open door of a bird cage, and for selectively closing the entrance.

3,415,227
ANIMAL STALL AND GATE MEANS
Frank H. Welsh, Blairsburg, Iowa 50034
Filed Nov. 15, 1966, Ser. No. 594,524
6 Claims. (Cl. 119—27)



A device including an enclosure structure with a gate at one end opposite a feeding station wherein the gate includes a pair of pivotally interconnected vertically arranged sections that may be raised by a pig or the like. A shaft extends along the pivotal axis of the top gate section and includes an upstanding post connected to a manual control means. The post is adapted to engage a stop means on the gate section as the shaft is rotated for pivoting the top gate section upwardly and thereby raising the gate to an open position. The gate may be returned to a closed position by gravity. A series of animal feeder enclosure structures may be placed side by side and operated together in the opening and closing of the gate.

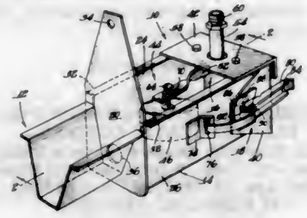
3,415,228
FEED CONTROL APPARATUS
Lawrence A. Myers, Milford, Ind., assignor to Chore-Time Equipment, Inc., Milford, Ind., a corporation of Indiana
Filed Aug. 22, 1966, Ser. No. 573,979
8 Claims. (Cl. 119—51.11)



There is disclosed a control system for a mechanical poultry feeder in which a feed actuated panel switch is provided for stopping a conveyor motor when a predetermined amount of feed has been delivered, and electromagnetic means is energized for holding the panel to prevent starting of the conveyor motor for a predetermined period of time.

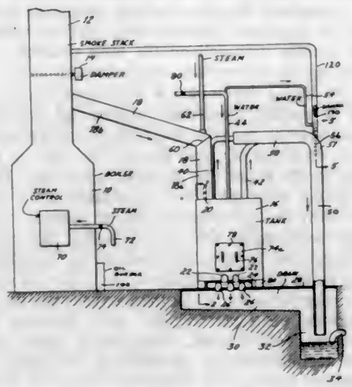
3,415,229
POULTRY WATER FOUNTAIN
Lawrence A. Myers, Milford, Ind., assignor to Chore-Time Equipment, Inc., Milford, Ind., a corporation of Indiana
Filed Oct. 19, 1965, Ser. No. 497,813
3 Claims. (Cl. 119—80)

An animal water supply arrangement comprising a float box including a separate end panel having mounted thereon a liquid level responsive valve means for determining the amount of water in the supply arrangement. The separate end panel along with the valve means can be quickly connected to or disconnected from the float



box by means of a quick connect-disconnect coupling means attached to the panel for fast, easy cleaning of the water supply arrangement.

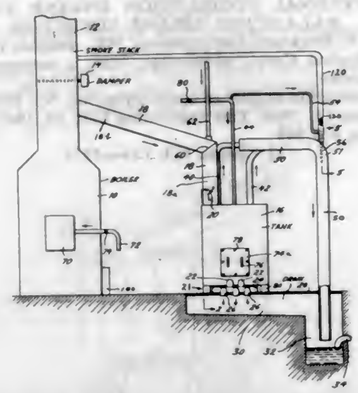
3,415,230
METHOD FOR REMOVING SOOT FROM BOILER TUBES AND APPARATUS THEREFOR
Joseph Reale, 1425 S. Broad St., Philadelphia, Pa. 19147
Continuation-in-part of application Ser. No. 606,302, Dec. 30, 1966. This application Mar. 23, 1967, Ser. No. 625,464
22 Claims. (Cl. 122—379)



This invention relates to minimizing air pollution by reducing to a minimum the escape, into the atmosphere, of soot from a boiler during the removal of the soot from the boiler tubes when steam is sprayed at the boiler tubes to dislodge the soot. After the steam dislodges the soot, it is carried by the steam into a tank, in which most of the steam is condensed. The tank is connected by a pipe to the smoke stack, and the tank is provided with cooling water for condensing the steam, the condensed steam, water and soot then flowing to a suitable drain.

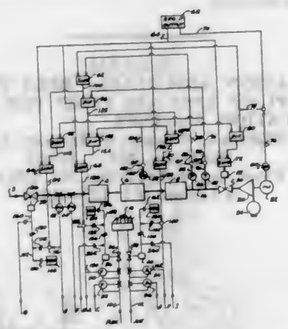
3,415,231
METHOD FOR REMOVING SOOT FROM BOILER TUBES AND APPARATUS THEREFOR
Joseph Reale, 1425 S. Broad St., Philadelphia, Pa. 19147
Filed Jan. 3, 1968, Ser. No. 695,413
11 Claims. (Cl. 122—379)

This invention relates to minimizing air pollution by reducing to a minimum the escape, into the atmosphere, of soot from a boiler during the removal of the soot from the boiler tubes when a fluid is injected into a boiler to clean the tubes of soot. The fluid carries the soot to a tank where the soot is substantially removed from the



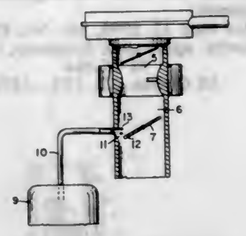
fluid. The tank is connected by a pipe to the smoke stack to vent the cleaned fluid to the atmosphere. The soot is removed in the tank by a liquid which carries the soot to a suitable drain.

3,415,232
SAFETY SYSTEM FOR STEAM GENERATOR
Carlos J. Garrett, Jr., Granby, and Richard D. Hottenstine, Windsor, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,349
50 Claims. (Cl. 122—448)



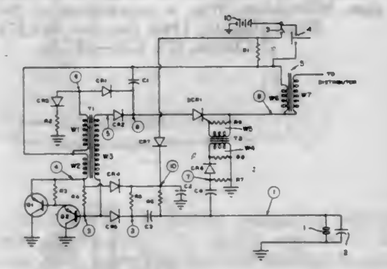
A safety system for a steam generator with the steam generator having an independent simultaneously operating control system. The safety system determines the ratio of air and fuel inputs and of fuel and feedwater inputs. Only when either of the ratios deviates a preselected amount from a preselected ratio does the safety system take controlling action, overriding the actions of the independent simultaneously operating system. The safety system at this time controls the inputs until the ratio returns to within the preselected ratio range, then releasing control of the inputs to the independent control system. Each ratio is determined by two independent means and the determinations compared. An alarm is sounded if the determinations do not agree, and corrective action is taken only if each of the two determinations of any particular ratio indicate an excessive deviation.

3,415,233
VACUUM FLOW CONTROL FOR CRANKCASE VENTILATION
William R. Drysdale, 22240 Prospect St., Hayward, Calif. 94541
Filed Oct. 17, 1966, Ser. No. 587,218
3 Claims. (Cl. 123—119)



The vacuum flow control for crankcase ventilation makes use of a conduit leading from the engine crankcase and communicating with the carburetor chamber through an opening positioned at a point above the throttle valve and below the venturi for delivering crankcase fumes to the carburetor when the throttle valve is open. This opening is closed by the throttle valve when the latter is closed. However, a groove in the wall of the carburetor chamber communicates with the conduit, and the throttle valve has a recess in its periphery that registers with the groove when the valve is closed. The groove and recess form a passageway when the throttle valve is closed and this passageway places the conduit from the crankcase in communication with the carburetor chamber on the downdraft side of the throttle valve so that fumes from the crankcase can be delivered to the carburetor below the throttle valve when the latter is closed and the engine is idling.

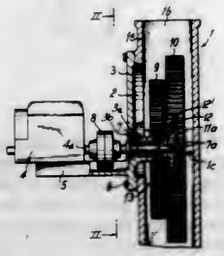
3,415,234
ELECTRONIC IGNITION SYSTEM
Wilbur A. Dammann, 1925 N. 65th St., Lincoln, Nebr. 68505
Filed June 6, 1966, Ser. No. 555,298
10 Claims. (Cl. 123—148)



An ignition system has a primary capacitor which is charged when distributor points are closed and discharged through an ignition coil when the points are opened. The charging and discharging of which is under control of the secondary of a transformer with resettable core and the discharge of the capacitor is under control of a silicon controlled rectifier whose gate is coupled with a triggering transformer the action of which is dependent on the charge and discharge of a secondary capacitor, the charging and discharging of which is under control of the opening and closing of the distributor points. The

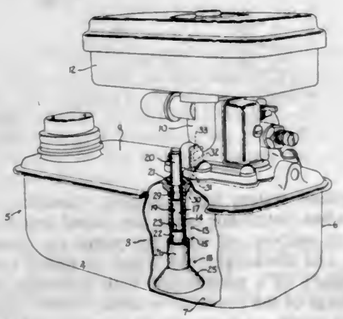
circuitry is such that the charging current for the capacitor by the battery is reduced by utilizing the energy of the collapsing field of the first transformer.

3,415,235
SPARK IGNITION FOR OTTO ENGINES
Friedrich Hanke, Kiel, Germany, assignor to Maschinenfabrik Buckau, R. Wolf Aktiengesellschaft, Grevenbroich, Germany
Filed May 31, 1966, Ser. No. 553,762
Claims priority, application Germany, May 28, 1965, M 65,388
10 Claims. (Cl. 123—149)



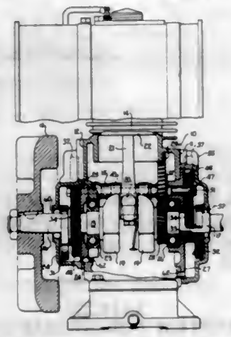
A transmission arrangement especially for transmitting rotation between an output shaft of an Otto engine and the input shaft of the magneto of the spark ignition system of the engine, in which the output shaft is rotatably mounted about a fixed axis in a housing and wherein the input shaft is rotatably carried by an adaptor mounted on the housing adjustable between a plurality of different position in which the input shaft is located at different distances from the output shaft and in which the transmission arrangement includes a gear train having at least one gear which is replaceable by different gear to thereby change the ratio of the transmission when the adaptor is adjusted to change the distance between the shafts.

3,415,236
PRIMER FOR SMALL INTERNAL COMBUSTION ENGINES
Joseph V. Reichenbach and Robert G. Thompson, Milwaukee, Wis., assignors to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,270
7 Claims. (Cl. 123—187.5)



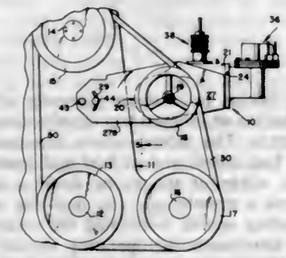
The plunger element of the primer has the form of a "plumber's friend," engageable with the bottom of the fuel tank. Fuel passage portions extending through the plunger stem and the plunger guide are communicated with one another only during movement of the plunger.

3,415,237
INTERNAL COMBUSTION ENGINE AND BALANCING MEANS THEREFOR
Joseph R. Harkness, Germantown, Wis., assignor to Briggs & Stratton Corp., Milwaukee, Wis., a corporation of Delaware
Continuation-in-part of application Ser. No. 558,039, June 16, 1966. This application Feb. 14, 1967, Ser. No. 629,048
12 Claims. (Cl. 123—192)



Counterbalances mounted at the exterior of the crankcase of an internal combustion engine concentric to the axis of its crankshaft, are driven at crankshaft speed but in the opposite direction and so as to be in phase with the directly driven conventional crankshaft counterweights only at the dead center positions of the latter to minimize vibration.

3,415,238
COMBINATION ADJUSTABLE BELT TIGHTENER, FUEL PUMP AND AIR PUMP FOR INTERNAL COMBUSTION ENGINES
William C. Wagner, 47 Jamaica Ave., Plainview, N.Y. 11803
Filed Aug. 4, 1967, Ser. No. 658,573
6 Claims. (Cl. 123—195)



A unitary structure embodying an adjustable belt tightener pulley adapted to be driven by, for example, the fan belt of an engine, which pulley actuates the rocker arm of a conventional fuel pump and the piston of an air pump, both pumps forming part of the unitary structure. The device includes a housing and a supporting elongated

flat arm having an extension pivotally adjustably secured to the motor block. If the air pump is omitted from the structure, the adjustable device will serve as a fuel pump adjuster.

3,415,239
LAUNCHER WITH ADJUSTABLE-TENSION ELASTIC BANDS
William E. Swett, P.O. Box D, Imlay, Nev. 89418
Filed Aug. 5, 1965, Ser. No. 477,407
2 Claims. (Cl. 124—20)



This invention relates to a slingshot that is readily usable for projecting arrow-like missiles and shot missiles with extreme accuracy. The slingshot also provides for anchoring the ends of the elastic bands at different positions on the body of the slingshot so that different tensions may be obtained as desired by the operator. The slingshot also provides an adjustable rest for guiding the projectile when the slingshot is used for spear-like objects.

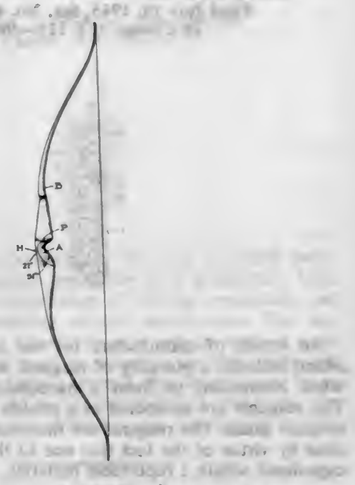
3,415,240
TAKEDOWN ARCHERY BOW
Fred B. Bear, Grayling, Mich., assignor, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 14, 1965, Ser. No. 495,836
8 Claims. (Cl. 124—23)



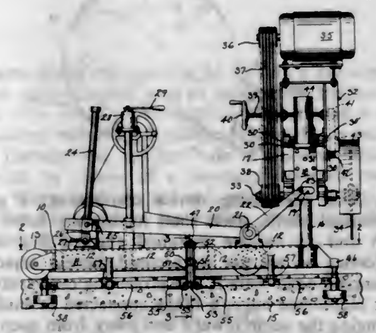
An archery bow having a handle section and a pair of separate limbs including tapered socket members in the ends of the handle section which receive tapered butt portions of the limbs. The assembly includes displaceable block means within the sockets operable to tightly engage and release the butt portions disposed within the socket members.

3,415,241
HANDGRIP ADAPTER FOR ARCHERY BOW
Fred B. Bear, Grayling, Mich., assignor, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,610
1 Claim. (Cl. 124—24)

A handgrip member adapted to be snap-fitted upon the handle section of an archery bow and including, a body of resilient material provided with a central cavity undersized with respect to the handle section to permit ready attachment and removal therefrom.

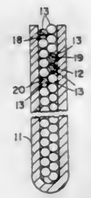


3,415,242
PLANK-CUTTING SAW
Robert H. Nagy, 2421 N. 111th St., Milwaukee, Wis. 53226
Filed Nov. 7, 1966, Ser. No. 592,384
10 Claims. (Cl. 125—13)



1. In a plank-cutting saw having a carriage adapted for movement longitudinally on top of a plank of the type provided with oppositely-disposed palallel longitudinal edges, and having a saw mounted on the carriage for feed movement relative to the carriage and plank, the improvement comprising squaring means on the carriage having elements positioned for engagement with said oppositely-disposed edges of the plant, said squaring means including mechanism for causing relative movement of said squaring elements at one edge of the plank with respect to said squaring elements at the opposite edge of the plank to clamp the plank therebetween, said squaring elements being so arranged with respect to the saw as to insure cutting of the plank at a predetermined angle with respect to an edge of the plank.

3,415,243
MEANS FOR MAKING A SURGICAL CAST
Zachary D. Sheldon, Andover, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,783
26 Claims. (Cl. 128—90)

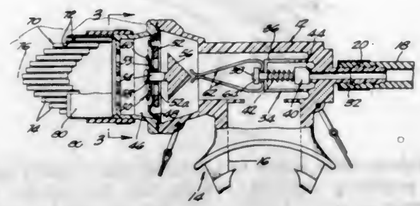


An article of manufacture for use as a surgical cast which includes a plurality of reagents which are reactive when intermixed to form a hardenable cast material. The reagents are embodied in a pliable sheet, preferably surgical gauze. The reagents are maintained in a dormant state by virtue of the fact that one of the reagents is encapsulated within a rupturable material.

3,415,244
HAND RESTRAINING DEVICE
Alvin Lee Block, 3250 Beard Road, Napa, Calif. 94558
Filed Nov. 21, 1966, Ser. No. 595,687
9 Claims. (Cl. 128—133)

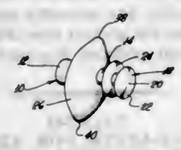
8. A hand restraining device comprising: a pair of hemispherical shells, each shell having air holes therethrough and an arcuate marginal edge, a first of said shells having an arcuate lip secured thereto adjacent to said marginal edge thereof and projecting outwardly from the last mentioned edge; a hinge connected to said shells for swinging the same toward and away from each other, said shells being movable into respective positions with said marginal edges thereof in abutting relationship to form a closed, hand-receiving space, said lip being disposed to guide said marginal edges into said abutting relationship as said shells are moved together; a semicylindrical wrist portion for each shell respectively, each wrist portion being integral with the corresponding shell at a location thereon adjacent to the ends of the marginal edge thereof and diametrically opposed to said hinge, each wrist portion further being provided with a pair of spaced, outer edges, said outer edges being in abutting relationship when said shells are in said positions, whereby said wrist portions define a transversely circular, wrist-encircling unit; and a pair of resilient tongues secured to and extending outwardly from respective outer edges of one of said wrist portions, each tongue having a rib thereon, the other shell having recesses on the inner surface thereof adjacent to respective outer edges thereof, said tongues being movable into said other wrist portion and said ribs being receivable in respective grooves, whereby said wrist portions are releasably interconnected and said shells are held in said positions to form said space.

3,415,245
NOISE-SUPPRESSION DIVING APPARATUS
Yujiro Yamamoto and Edwin S. Hamberg, Santa Ana, Calif, assignors to Y² Associates, Santa Ana, Calif., a corporation of California
Filed Mar. 8, 1965, Ser. No. 437,968
8 Claims. (Cl. 128—147)



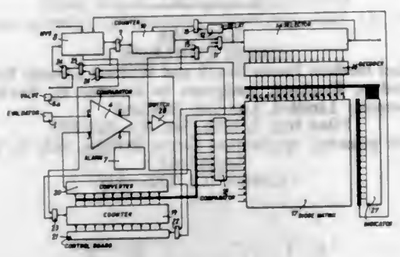
1. In a single-hose underwater breathing apparatus, the combination comprising:
means defining a breathing chamber having an opening for communication to the mouth of a diver;
means defining an exhaust passage opening at one end to said chamber, and at its outer end communicating with the surrounding water;
an exhalation valve in said exhaust passage which permits flow of air through said passage only in the direction from said chamber to the surrounding water;
an exhaust diffuser having a plurality of elongated restricted passageways formed therein, each of said passageways being of substantially the same length and the outer ends of said passageways terminating at various different longitudinal positions;
and means securing said diffuser to the outer end of said exhaust passage means so that all of the air discharged from said exhaust passage flows through said diffuser, and upon reaching the end of respective ones of said passageways is immediately discharged into the surrounding water.

3,415,246
EAR FITTINGS
George M. Hill, Van Nuys, Calif., assignor to Sigma Sales Corporation, North Hollywood, Calif., a corporation of California
Continuation-in-part of application Ser. No. 550,743, May 17, 1966. This application Sept. 25, 1967, Ser. No. 677,822
9 Claims. (Cl. 128—152)



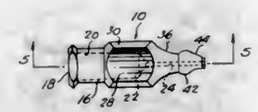
An ear fitting adapted to be used to restrict the entry of sound to the human ear and also adapted to be used to filter out the entry of undesired sound to the human ear when said fitting is utilized as an earphone fitting or extension.

3,415,247
SEQUENTIAL PROGRAMMERS FOR AUTOMATIC DECOMPRESSION
Bernard Louvel, Buros, and Michel Lacoste, Pau, France, assignors to Societe Nationale des Petrole d'Aquitaine, Paris, France, a corporation of France
Filed Apr. 13, 1966, Ser. No. 542,256
Claims priority, application France, Apr. 16, 1965, 13,527
3 Claims. (Cl. 128—204)



1. Automatic decompression apparatus having a decompression chamber, and a sequential programmer that comprises
(a) a member for controlling the internal pressure of said chamber, means for cyclically opening and closing said member to permit the execution of a programme of degrees of decompression and linear decompressions, and a diode matrix for setting up and indicating said programme;
(b) means for comparing the voltage proportional to the pressure prevailing in said chamber with a voltage delivered by an analogue-digital-converter connected to a digital counter whose contents vary by one unit at periods of time defined by a multivibrator, when the value of the contents of said counter and the programmed value for the following decompression step are not equal; and
(c) an alarm system associated with said comparison system for controlling the complete stopping of decompression in the case of ascertained anomaly, and for effecting an optional recompression.

3,415,248
SYRINGE NOZZLE
Waldo E. Scott, R.F.D. 3, Kenton, Ohio 43326
Filed May 3, 1966, Ser. No. 547,256
7 Claims. (Cl. 128—245)



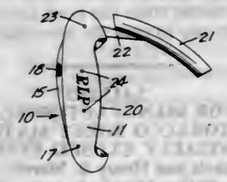
A self-sealing nozzle to be used with an injection syringe for injecting medication into an animal teat. The nozzle consists of a tapered body having a large rear bore portion adapted to fit on the neck of a standard injection syringe. A reduced forward bore portion leads to the small end of the body. At its small end the body is provided with a short cylindrical tip having a flat annular sealing surface adapted to be pressed into the muscle ring surrounding the animal teat to act as a mechanical seal.

3,415,249
SUPPOSITORY
George S. Sperti, Cincinnati, Ohio, assignor to Stanley Drug Products, Inc., Portland, Oreg., a corporation of Oregon
Filed Jan. 7, 1966, Ser. No. 519,389
9 Claims. (Cl. 128—271)



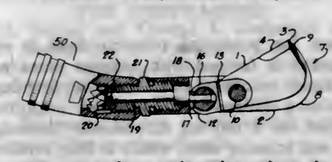
A suppository comprising a first and a second body. The first body consists essentially of a suppository base, an agent for the stimulation of cellular respiration and an agent for promoting cellular proliferation. The second body consists essentially of a vehicle and an anesthetic. The second body is joined to the first body and is exposed at the surface thereof, the second body being of such character as to become liquefied and to be distributed prior to the softening and distribution of the first body.

3,415,250
EMERGENCY TRACHEOTOMY KIT
Roy L. Peterson, 73 Wildwood Beach Road, Mahtomedi, Minn. 55115
Filed Aug. 2, 1965, Ser. No. 476,247
3 Claims. (Cl. 128—305)



An emergency tracheotomy kit having a self-contained tracheal cutting blade and an emergency tracheal tube therein. The kit is constructed in the form of a pocket knife casing with the pivotally mounted blade normally folded therein. The tracheal tube is likewise secured to the casing by means of a pivotally mounted retaining handle. When used, the blade is swung out of the casing and utilized to puncture the trachea after which the tube is inserted therein.

3,415,251
MUCOSATOME
Milton J. Knapp, Fort Knox, Ky. (1210 N. Taft St., Arlington, Va. 22201); John E. Pleasants, 2536 Dryden Road, Houston, Tex. 77025; and John Szekeres, Jr., 222 Forresta Court, Hodgenville, Ky. 42748
Filed June 14, 1966, Ser. No. 558,213
5 Claims. (Cl. 128—305)



1. A mucosatome for cutting tissue in strips of a uniform and predetermined thickness comprising:
(a) a housing having twin, parallel, guiding members extending therefrom, each member having an arcuate distal surface;

(b) a U-shaped cutting blade having legs pivotally mounted within said housing, between said members, said blade being transversely disposed between said surfaces, and internally sharpened at a leading edge of its base and adjacent legs, the edge describing a fixed relationship to the pivotal mounting;

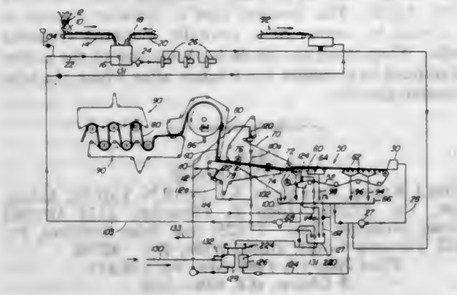
(c) means for imparting oscillating motion to the sharpened leading edge of said blade so that the sharpened leading edge of said blade oscillates about the pivotal mounting thereof, and within said the distal arcuate guiding surfaces.

3,415,252
CIGARETTE IMPROVEMENT
Rulon L. Christiansen and Catheryen J. Christiansen, both of 302 North 1st West, Tooele, Utah 84074
Filed June 30, 1967, Ser. No. 650,479
5 Claims. (Cl. 131—10.7)



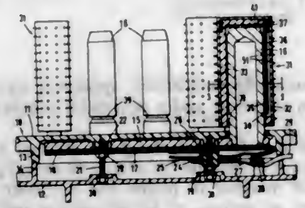
A smoking product such as a cigarette with a unique filter comprised in the main of pulverized bone material. The purpose of the filter is to reduce the amount of condensate which is entrained within the inhaled smoke. Such a filter material has proven through laboratory tests to be very effective. The bone material is preliminarily treated, preferably, with an agent such as borax powder in an aqueous solution. Such a solution tends to aid the removal of all foreign matter from the bone from which the filter is prepared and also to cure the bone material.

3,415,253
PROCESS FOR MANUFACTURING RECONSTITUTED TOBACCO SHEET MATERIAL IN A SUBSTANTIALLY CLOSED SYSTEM
Donald G. Michels and Henry B. Merritt, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Jan. 13, 1967, Ser. No. 609,204
10 Claims. (Cl. 131—140)



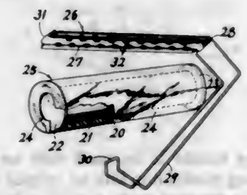
A process for producing tobacco sheet in which an aqueous slurry is formed with tobacco plant parts and a process liquor recovered from the sheet forming system and containing tobacco solubles and insolubles. The slurry is cast on a moving foraminous forming carrier to form a wet tobacco sheet which is then removed from the forming carrier with a non-felt type fabric carrier and delivered to a press station at which process liquid is removed from the sheet and returned to the system so as to avoid loss of tobacco solubles. The pressed sheet is thereafter directed through a series of drying units to evaporate water from the sheet down to the dry state weight with the tobacco solubles contained in the water evaporated being retained in the sheet. The process liquid recovered from the system is employed as a rinsing media for cleaning the forming carrier and the fabric carrier thereby avoiding the need to dilute or flood the system with a fresh water rinsing media. The process liquor and process liquid sub-systems are maintained as closed loop circuits within the system and insure that no tobacco solubles or insolubles are lost from the system as a consequence of which, the tobacco sheet has substantially the same tobacco solubles and insolubles content as the plant parts with which it is produced.

3,415,254
HAIR CURLERS
William Hudson James Brock and William George Turriff, London, England, assignors to George E. Taylor & Company Limited, London, England
Filed July 5, 1966, Ser. No. 562,879
Claims priority, application Great Britain, July 5, 1965, 28,365/65
7 Claims. (Cl. 132—33)



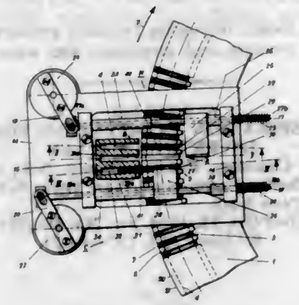
1. A hair curler comprising a generally cylindrical tubular former, in combination with heating means for said curler, said heating means including a stem on which the curler is fitted for heating, a latch on the inner surface of the curler cooperating with a groove on said stem retaining the curler in a predetermined position on the stem against the action of a force tending to move it axially relative to the stem, the latch comprising a bi-metallic element the heat-induced deformation of which, when a predetermined temperature is reached, releases said latch and permits the curler to be displaced from the predetermined position.

3,415,255
HYGROSCOPIC HAIR CURLER
Heihachi Mitsumoto, 20 Nishi Oi 4–13, Shinagawa-ku, Tokyo, Japan
Filed June 17, 1965, Ser. No. 464,755
5 Claims. (Cl. 132—39)



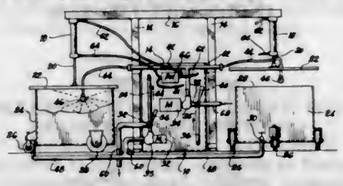
A hair curling device consisting of a cylindrical roller having a flanged spool-shaped core on the shank of which a layer of hygroscopic material is disposed, filling the space between the flanges of the core. A cover of fabric or other suitable fibrous material surrounds the core to retain the hygroscopic material. A roller-embracing clip is used with the device to retain rolled-up wet hair strands on the roller and to allow moisture to be absorbed from the hair strands by the hygroscopic material so that the strands will retain a curled configuration after they are dry.

3,415,256
COIN CHANGER FOR AN AUTOMATIC VENDING MACHINE WITH AUTOMATIC REFILLING OF THE COIN MAGAZINE
Mario Meloni, Bern, Switzerland, assignor to Autelca A.G., Gumligen, Bern, Switzerland, a corporation of Switzerland
Filed Aug. 9, 1967, Ser. No. 659,356
Claims priority, application Switzerland, Aug. 12, 1966, 11,771/66
9 Claims. (Cl. 133—2)



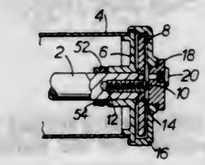
A coin changer for an automatic vending machine with automatic refilling or loading of the coin magazine, wherein said coin magazine is provided with a forwardly and rearwardly stepwise rotatable magazine plate for each coin denomination. The stepwise rotatable magazine plate includes means providing a rim of uniformly distributed coin compartments, each of which is adapted to receive a coin. Further, the invention contemplates the provision of drive means for forwardly rotatably indexing the magazine plate through one coin compartment before receiving a coin from a coin deposit channel and for rearwardly rotatably indexing the aforesaid magazine plate through one coin compartment before the removal of a coin for transferring the latter to a coin return channel.

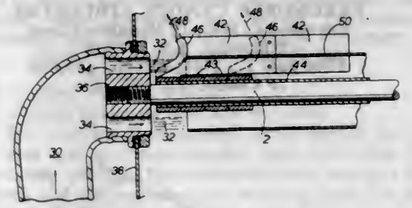
3,415,257
TUB WASHING CONSTRUCTION
Glenn F. Wellman, Chicago, Ill., assignor to Wellco Chemical Products Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 21, 1966, Ser. No. 595,965
11 Claims. (Cl. 134—98)



1. A construction for use in the cleaning of tubs used for the handling of chemicals comprising a tank for holding a cleaning agent, a plurality of booms attached to said tank, a lid construction attached to each of said booms, said lid construction being dimensioned to extend over the open top of said tubs to thereby close said tubs, a spray head associated with each lid construction, said spray heads extending downwardly from said lid constructions whereby the spray heads extend into the interiors of said tubs when said lid constructions are in place over the tubs, conduits extending between said tubs and said tank, and means for passing said cleaning agent through said conduits for circulation between said tubs and said tank.

3,415,258
DISHWASHER WITH ROTATABLE SPRAY MEMBER SPEED CONTROL MEANS
Robert John Gilson, Naphill, England, assignor to Charles Colston Limited, High Wycombe, England, a corporation of the United Kingdom
Filed May 23, 1966, Ser. No. 551,999
Claims priority, application Great Britain, May 28, 1965, 22,746/65, and 22,747/65
7 Claims. (Cl. 134—112)





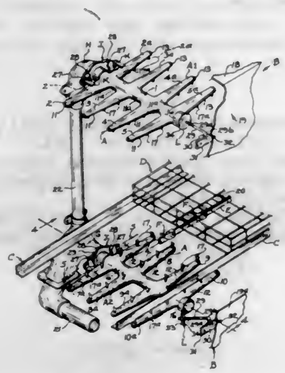
A dishwasher of the type including an elongated rotatable reaction jet operated spray member having jet reaction means spaced along its longitudinal axis about which it rotates including braking means for restricting the speed of rotation of the spray member without reducing the rotation producing torque applied by the reaction jet means. The speed of rotation is so restricted, as for example, by viscous fluid braking means, that spray pulses are delivered by the jet reaction means so timed as to allow spent surface water resulting from one pulse to drain away from a soiled dish surface before the next pulse arrives, best results being obtained when the pulses are timed to arrive at intervals of not less than about half a second.

3,415,259
REMOVABLE WATER SPRAY MANIFOLD FOR DISHWASHER
Tore H. Noren and George J. Federighi, both of 1350 Donner St., San Francisco, Calif. 94124
Continuation of application Ser. No. 409,185, Nov. 5, 1964. This application Jan. 5, 1967, Ser. No. 607,578
6 Claims. (Cl. 134—180)

5. In a dishwasher having a dishwashing compartment with a water outlet opening therein;

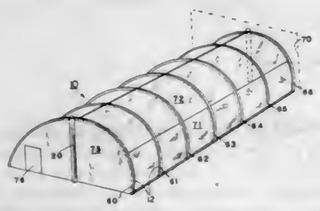
(a) a water spray manifold positionable in said compartment, said manifold having a central passageway open at each end; one of the ends of the central passageway of said manifold being removably connected to said water outlet opening;

(b) a closure member mounted in said compartment, said closure member being removably connected to the other end of said central passageway of said manifold for closing same;



(c) said water outlet opening and said closure member constituting supports for said manifold within said compartment.

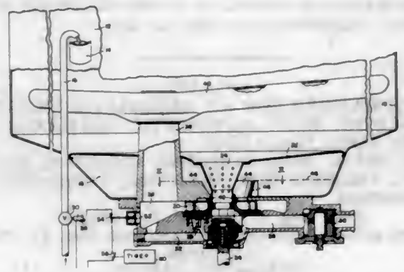
3,415,260
EXTENSIBLE CANOPY STRUCTURE
Raymond L. Hall, 19 Hamilton Court, Whippany, N.J. 07981
Filed July 17, 1967, Ser. No. 653,696
15 Claims. (Cl. 135—1)



A plurality of frames or arch members are independently movable between two fixed posts or support members and each is maintained in aligned parallelism by four cables, each cable being disposed in a Z-pulley arrangement. Between each frame there may be provided a flexible cover or screen or a combination thereof so that when assembled the structure may be expanded to its maximum limit to provide an enclosure or canopy and may be moved to its minimum or closed limit for storage of the structure and cover.

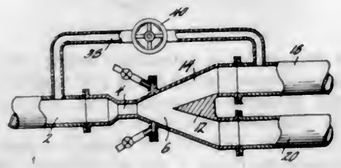
3,415,261
DISHWASHER CONTROL
Olan L. Long, Lafayette, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1966, Ser. No. 530,561
5 Claims. (Cl. 137—2)

A water fill control arrangement for a dishwasher in which the pump, which draws water from the dishwasher sump and forces it through separate passage means back into the dishwasher, has an inlet arrangement which results in the pump drawing partly air and cavitating until the sump water level reaches the proper fill height, at



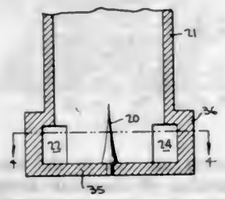
which time means responsive to pump pressure sense the full pump pressure and terminate the water fill.

3,415,262
ASPIRATION ELIMINATION FOR DIVERTING VALVES
William C. Chatman, Chester County, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 500,939
8 Claims. (Cl. 137—81.5)



A fluid diverting valve for selectively diverting fluid in which the adverse effect of aspiration generated in the valve is substantially prevented. A portion of the main fluid is continuously conveyed to a source of ambient fluid to substantially prevent entrainment of the ambient fluid with the main fluid.

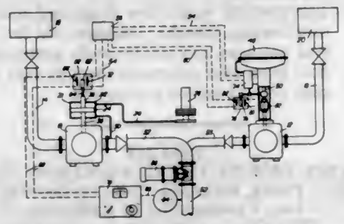
3,415,263
FLUID LOW NOISE VORTICAL IMPEDANCE MATCHING DEVICE
Raymond W. Warren, McLean, Va., and Leonard M. Sieracki, Beltsville, and Carl J. Campagnuolo, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 13, 1966, Ser. No. 579,791
10 Claims. (Cl. 137—81.5)



1. A fluid transfer vortex device comprising:
(a) conduit means to receive a fluid vortex;

(b) plural outlet means communicating tangentially with said conduit means;
(c) means placed in said conduit means to guide the flow therein;
(d) means to direct said vortex into selective outlet means;
(e) said conduit having a base formed at the bottom thereof perpendicular to said conduit means; and
(f) said means placed in said conduit means to guide the flow therein being a spike attached to said base.

3,415,264
BLENDERS FOR BLENDING TWO OR MORE LIQUIDS
Stanley Graham Brown, Newbury, and Michael Arthur Howard Walford, Baughurst, near Basingstoke, England, assignors to Plenty and Son Limited, Newbury, England
Filed Dec. 5, 1963, Ser. No. 328,216
Claims priority, application Great Britain, Dec. 6, 1962, 46,140/62
12 Claims. (Cl. 137—92)

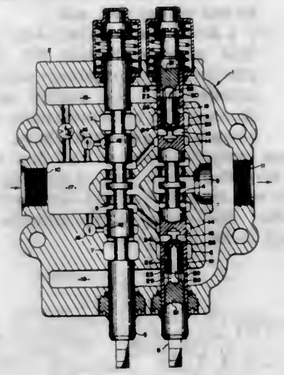


9. A blender for blending two liquids comprising: two variable capacity pumps, one for each liquid; said pumps having a common outlet; a capacity control device for controlling at constant pressure the capacity of the first pump responsive to the outlet pressure of said first group and including a cylinder and piston assembly in which a bias is applied to one side of the piston and the outlet pressure of the first pump is applied to the other side, the piston being connected to a capacity adjusting means of the first pump; an electric circuit including electrical sensing means connected to the capacity control device of the first pump and arranged to provide a signal indicative of the capacity of the first pump, and electric circuit means including means to vary the capacity of the second pump responsive to the said signal and operatively arranged to vary the capacity of the second pump dependent upon the desired ratio of the capacity of the second pump to that of the first.

10. A blender as claimed in claim 9 in which electrical sensing means is connected to the capacity adjusting means of the second pump and arranged to feed back to the electric circuit means a signal indicative of the position of the capacity adjusting means of the second pump.

3,415,265
DIRECTIONAL CONTROL VALVE WITH PRIORITY FLOW DIVIDER
William T. Clemmshaw, Cleveland, and Phillip E. Robinson, Cleveland Heights, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 3, 1966, Ser. No. 531,575
16 Claims. (Cl. 137—117)

A directional control valve assembly having a spool containing a flow control orifice in the path of fluid flow established by movement of the spool to an operating position communicating a motor passage with a pressure feed passage, and a flow control valve member which, upon predetermined pressure drop across the flow control orifice, is moved thereby to open communication between



the pressure feed passage and a return passage to divert excess fluid flow to the return passage.

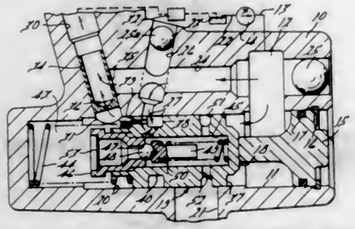
3,415,266
POWER STEERING FLOW CONTROL DEVICE
Charles E. Brady, Bloomfield Hills, and Christopher Nuss, Warren, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,426
10 Claims. (Cl. 137—117)

1. In a power steering system,
(A) a pump having an inlet and an outlet,
(B) first working fluid passage means having an upstream end in communication with said outlet for receiving working fluid therefrom and having a delivery end for supplying said working fluid to a hydraulic motor,
(C) means for metering the flow of said working fluid to said delivery end including
(1) first metering restriction means in said working fluid passage means for metering the flow of working fluid therein and
(2) valve controlled secondary fluid passage means for said working fluid having upstream and downstream ends in communication with said working fluid passage means at locations upstream and downstream respectively of said first metering restriction means for partially bypassing the latter,
(3) flow restricting means in said secondary passage means for metering the flow of working fluid therein including
(a) secondary metering orifice means and
(b) trigger metering orifice means in series with said secondary metering orifice means and downstream thereof,
(D) means for exhausting excess fluid from said outlet comprising
(1) a bypass port,
(E) means cooperable with said metering restriction means for maintaining a substantially constant rate of flow of working fluid to said delivery end when the output of said pump is less than a predetermined value comprising
(1) pressure actuated flow control valve means responsive to the fluid output of said pump for controlling the communication between said outlet and bypass port and having

(a) an upstream surface area in communication with the fluid pressure at said pump outlet and responsive thereto for actuating said flow control valve means to increase the communication between said pump outlet and bypass port, and

(b) a downstream surface area responsive to fluid pressure thereat for opposing the pressure at said upstream surface area and actuating said flow control valve means to decrease the communication between said pump outlet and bypass port,

(F) means comprising part of said flow control valve means for reducing the flow of working fluid to said delivery end to less than said substantially constant rate when said pump output exceeds said predetermined value comprising



(1) secondary fluid flow control means for restricting said secondary passage means when said pump output exceeds said predetermined value,

(G) means for communicating the pressure in said secondary passage means at a location between said secondary metering orifice means and trigger metering orifice means to said downstream surface area, and

H) pressure relief valve means responsive to a predetermined fluid pressure at said downstream surface area for discharging fluid therefrom to reduce the pressure thereat, thereby to enable actuation of said flow control valve means to increase the communication between said pump outlet and bypass port.

3,415,267
LIQUID SUPPLY APPARATUS
Harvey R. Karlen, Chicago, Franz L. Herbsthofer, Evanston, and Lewis W. Martin, Chicago, Ill., assignors to Cory Corporation, a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,477
7 Claims. (Cl. 137—132)

1. Liquid supply apparatus comprising:

means defining a heating chamber for holding water to be heated therein;

means defining an inlet receptacle superjacent said chamber means;

means defining a first passage communicating between an upper portion of said heating chamber and the bottom portion of said receptacle;

means defining a second passage communicating between the bottom portion of said receptacle and said heating chamber for conducting water from said receptacle to said heating chamber;

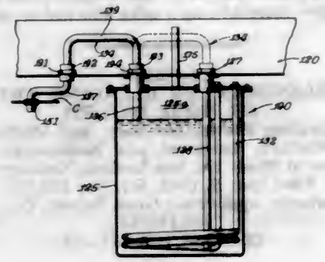
means for heating water in said heating chamber;

means defining a hot water delivery structure;

means defining a third passage communicating between said bottom portion of the receptacle and said delivery structure; and

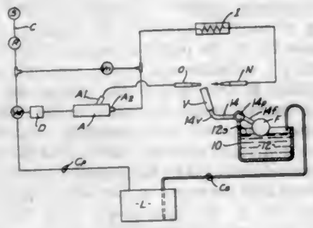
means for selectively

(a) providing a connecting passage between said first passage and said third passage, with said second passage being open, to conduct hot water from the heating chamber to said delivery structure as the result of water flow from said receptacle through said second passage into said heating chamber, or



(b) preventing water flow from said receptacle to said heating chamber through said first and second passages and concurrently permitting water flow from said receptacle through said third passage to said delivery structure.

3,415,268
VISCOUS LIQUID LEVEL CONTROL SYSTEM
Donald G. Tweed, Riverside, Calif., assignor to Bourns, Inc., a corporation of California
Filed Oct. 3, 1966, Ser. No. 583,559
4 Claims. (Cl. 137—209)

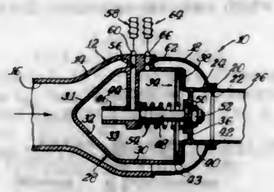


The invention herein described and explained pertains to liquid level control systems of the type used to maintain the surface of a body of viscous liquid in an open vessel at a level as constant as is practicable while liquid may be drawn from the vessel at uniform or nonuniform rates. More specifically, the invention is directed to improvements in systems of the abovementioned type whereby the initial cost of the system is made very low and the operating power required is made negligible, all while providing a system capable of maintaining the liquid level with an extremely slight maximum deviation from a desired level.

3,415,269
MULTIPLE POSITIONED PILOT CONTROLLED POPPET VALVE
Paul G. Salerno, Glenview, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 24, 1967, Ser. No. 611,447
6 Claims. (Cl. 137—219)

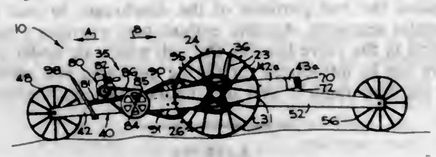
A valve assembly having a chamber with poppet valve piston means on the downstream side movable between

a closed position, an intermediate open position and a full open position, to control the flow of fluid under pressure



through the valve assembly. Selective venting of the chamber controls the position of the poppet valve piston means.

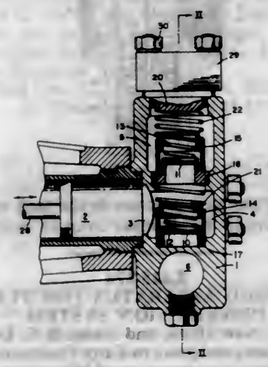
3,415,270
PORTABLE IRRIGATION APPARATUS
Robert E. Stilwell, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,408
2 Claims. (Cl. 137—344)



1. A power drive unit for an irrigation pipe line that is supported above the ground surface by radially extending wheels, said drive unit comprising a first elongated frame unit rotatably mounted to said pipe line and extending transversely thereof and away from said line in a first direction, power means on said first frame unit for alternatively exerting torque on the pipe line in opposite directions to roll the pipe line over the ground, a second elongated frame unit rotatably mounted to said pipe line independently of said first frame unit and extending transversely thereof and away from said line in a second direction opposite to said first direction, ground engaging means on the laterally extending ends of each of said frame units to counteract the reaction torque exerted on said frame units by the power means, and means on said first frame unit for engaging said second frame unit for transmitting the reaction torque to said second frame unit when said pipe line is moved in said first direction.

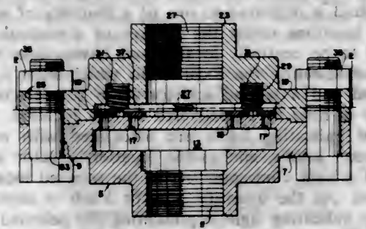
3,415,271
VALVE ASSEMBLY FOR RECIPROCATING PUMPS AND THE LIKE
Wolfgang Maasberg, Duisburg, and Willy Heinrich, Rheinkamp-Repelen, Germany, assignors to Firma Woma-Apparatebau Wolfgang Maasberg & Co. GmbH, Rheinhausen, Germany, a corporation of Germany
Filed Dec. 17, 1965, Ser. No. 514,540
Claims priority, application Germany, Aug. 19, 1965, W 39,762
4 Claims. (Cl. 137—512)

Valve assembly with a stack formed by a first sleeve, a first collar, a first loading spring, a second sleeve, a second collar and a second loading spring disposed in a generally cylindrical housing with a lower port, an upper port and an intermediate port, the latter leading to a piston cylinder and communicating alternately with the lower and upper ports through lateral apertures in the two sleeves upon a lifting of respective valve disks from



seats within the sleeves against the pressure of associated biasing springs which are weaker than the corresponding loading springs.

3,415,272
CHECK VALVE
Edward A. Blackhawk, Box 1232, Bartlesville, Okla. 74003, and Drew E. Moore, 530 N. Cherry, Ottawa, Kans. 66067
Filed June 7, 1965, Ser. No. 461,746
1 Claim. (Cl. 137—516.13)

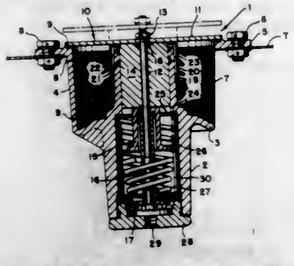


A check valve is provided having a fibrous heat resistant gasket valve cooperating with helical spring means which maintain said gasket valve under compression. The fluid passing through the valve is under pressure and lifts the gasket against the spring pressure thus allowing passage of fluid through the valve in only one direction.

3,415,273
VENT VALVE
James S. Elbogen, Northridge, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 29, 1965, Ser. No. 505,706
4 Claims. (Cl. 137—522)

A vent valve for a fuel tank and the like including a spring biased valve member exposed to tank pressure for opening movement thereby when the tank pressure reaches a predetermined level, and a piston connected to the valve

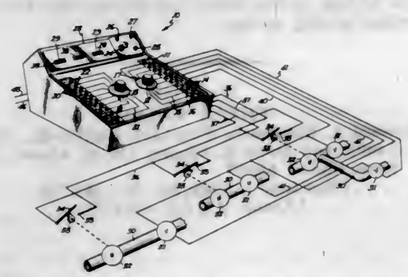
member which defines a chamber with the valve body, such piston being adapted to open the valve member independently of the fluid pressure in the tank upon supplying fluid pressure to the chamber from an external source.



3,415,274
CONTROL APPARATUS FOR FLUID DISTRIBUTION SYSTEM

Leo A. Kiefer, New Hope, and Kenneth E. Lehrke, Minneapolis, Minn., assignors to Gray Company, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 23, 1966, Ser. No. 596,679
8 Claims. (Cl. 137—551)



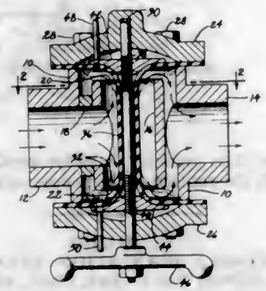
A fluid dispensing system in which a preselected quantity of fluid is delivered to one of a plurality of separate remote locations under the control of a control device adapted to be centrally located and having one selector knob for selecting the location to which fluid is to be dispensed and a second selector knob for selecting the quantity of fluid to be delivered to that location. A plurality of indicating lights are associated with each of the selector knobs, and as the location selector knob is adjusted a light corresponding to the selected location is energized. As the quantity selector knob is adjusted, a quantity indicating light representing the selected quantity is energized. After selection of the location and quantity, a starting button on the control device is depressed to open an electrically operated valve and initiate delivery of fluid to the selected location. As the fluid is dispensed, the quantity indicating lights are sequentially energized in response to the quantity of fluid which has been delivered to the selected location. After delivery of the preselected quantity, the control device causes the closing of the valve connected to the conduit through which the fluid is being delivered, thereby terminating delivery.

3,415,275
SPOOL-SHAPED DIAPHRAGM ELEMENT FOR PLURAL SEATINGS

Harold A. Berggren, Cromwell, Conn., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 3, 1967, Ser. No. 665,657
6 Claims. (Cl. 137—556)

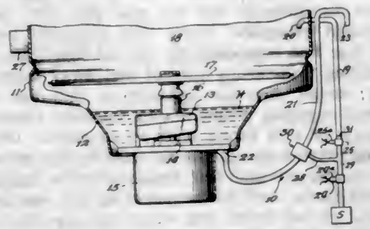
An elastomeric spool-shaped diaphragm is mounted in the tubular inner portion of a valve housing so that annular segments of its opposite end portions can seat against annular seating surfaces on the tubular portion. The end portions of the diaphragm are flared radially outwardly to define the annular segments, and a central portion thereof defines an axial opening for receiving a valve stem, which stem has oppositely threaded end portions, each of which carries a nut, so that rotation of the stem moves both nuts axially toward one another and against the end portions of the diaphragm to seat said annular segments. Another embodiment provides a single fitting in the valve housing through which air under pressure can be introduced for flexing the flared end portions of the diaphragm to seat the annular segments thereof.



3,415,276
FLUID CONTROL SYSTEM

Wallace E. Lind, Anoka, and Wynn G. Winkler and Wilbur G. Peyer, St. Paul, Minn., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Dec. 16, 1966, Ser. No. 602,216
7 Claims. (Cl. 137—563)



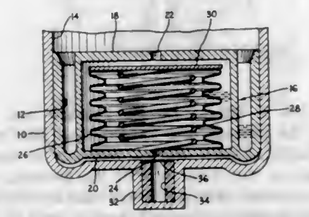
1. A fluid control system comprising:
means for receiving a fluid;
means defining an inlet passage for conducting fluid under pressure from a source to said receiving means;
means defining a discharge passage for conducting the fluid from said receiving means;
first valve means for closing said inlet passage at a first point thereof;
second valve means for closing said inlet passage at a second point thereof spaced downstream from said first point;
pressure control means maintaining fluid pressure in the portion of said inlet passage between said valves when each of said valves is open to permit flow of the fluid through said inlet passage to said receiving means; and

means responsive to pressure of the fluid in said inlet passage portion for closing said discharge passage when said first valve is open and said second valve is closed and when said first and second valves are concurrently open.

3,415,277
ULLAGE CONTROL

William H. Mitchell, Dover, Bernard Fishman, Fort Lee, and Charles G. Sage, Caldwell, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Mar. 20, 1967, Ser. No. 624,567
3 Claims. (Cl. 137—593)

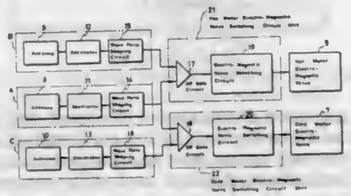


Ullage in a tank is eliminated by means of a device having a bellows that expands or contracts to compensate for change in liquid volume. The bellows is mounted inside a housing which is movably mounted in the tank on a rolling diaphragm. Liquid is expelled from the tank when pressurizing gases from a gas generator move the housing and rolling diaphragm.

3,415,278
AUTOMATIC WATER VALVE DEVICE

Mititaka Yamamoto and Saburo Takechi, Otokuni-gun, Kyoto-fu, Japan, assignors to Tateisi Electronics Co., Ukyo-ku, Kyoto-shi, Japan, a corporation of Japan

Filed Aug. 16, 1966, Ser. No. 572,729
Claims priority, application Japan, Aug. 31, 1965, 40/71,862
3 Claims. (Cl. 137—607)



1. An automatic water valve device comprising a first antenna block, the second antenna block, a third antenna block, a hot water electromagnetic valve switching circuit unit and a cold water electromagnetic valve switching circuit unit, wherein an output of the first antenna block controls simultaneously both the hot water electromagnetic valve switching circuit unit and the cold water electromagnetic valve switching circuit unit, an output of the second antenna block controls only the hot water electromagnetic valve switching circuit unit, and an output of the third antenna block controls only the cold water electromagnetic valve switching circuit unit.

3,415,279
COAXIAL CONTROL VALVE

Ernest H. Bucknell and Irving A. Ward, Los Angeles, Calif., assignors of ten percent to estate of Ralph E. Bletcher, deceased; five percent each to Frederick Robertson and Gary Robertson; ten percent each to Lenora Bucknell, Richard H. Bletcher, and Dan G. Liston; five percent each to Dan G. Liston, as trustee for Daniel E. Liston and Carol Ann Liston, and James H. Liston; ten percent each to Hazel Brondum and Pearl Bletcher; five percent to Marcia Liston; and ten percent to Ernest H. Bucknell

Filed Oct. 22, 1965, Ser. No. 501,388
11 Claims. (Cl. 137—625.17)

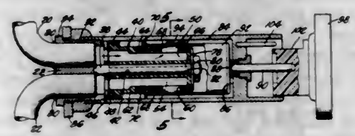


A mixing type control valve for varying the volume and relative amounts of inlet fluids, such as hot and cold water. The control valve includes a first tube for receiving fluid and has a discharge port, and a second tube mounted over the first thereby defining a chamber between the first and second tubes for receiving fluid, the second tube also having a discharge port. A sleeve member having discharge openings which are capable of overlapping the respective discharge ports is mounted over the first and second tubes. Longitudinal and rotational movement of the sleeve member enables the volume and relative amounts of the fluids to be varied and supplied to an outlet.

3,415,280
CONTROL VALVE

Ernest H. Bucknell and Irving A. Ward, Los Angeles, Calif., assignors of ten percent to estate of Ralph E. Bletcher, deceased; five percent each to Frederick Robertson and Gary Robertson; ten percent each to Leanara Bucknell, Richard H. Bletcher, and Dan G. Liston; five percent to Dan G. Liston, as trustee for Daniel E. Liston, and Carol A. Liston, and James H. Liston; ten percent each to Hazel Brondum and Pearl Bletcher; five percent to Marcia Liston; and ten percent to Ernest H. Bucknell

Filed June 24, 1965, Ser. No. 466,657
5 Claims. (Cl. 137—625.17)



A control valve employing a hollow post and a movable control sleeve mounted over said post. Fluid is supplied to the post which has one or more discharge openings and which cooperate with one or more discharge ports through said sleeve. Resilient rings surround each discharge opening in the post, and a cover surrounds said rings for retaining the same in position.

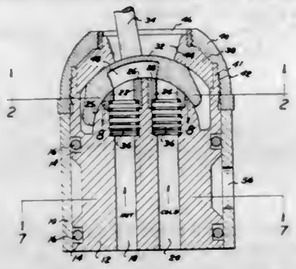
3,415,281
VALVES

Milton Perlman, North Miami, Fla., assignor to Nile Corporation, Royal Oak, Mich., a corporation of Michigan

Continuation of application Ser. No. 274,677, Apr. 22, 1963. This application Aug. 11, 1965, Ser. No. 478,959
9 Claims. (Cl. 137—625.4)

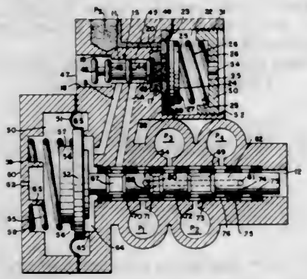
3. A valve including in combination:
a body having three generally parallel bores opening to its upper end;

and a control plate for closing or opening the upper ends of said three bores, and, thus, being movable across such upper ends;
two of said bores being inlet bores for hot and cold water respectively;
the third bore being an outlet bore for a mixture of hot and cold water determined as to volume and mixture by the position of the control plate relative to the upper ends of the three bores;



said control plate being a large area plate formed with means for communicating the upper ends of the two inlet bores with the upper end of the outlet bore;
said plate being a generally saucer like disk which is relatively thin with respect to its diameter;
and means for desirably moving the control plate across the upper ends of the bores;
the upper end of the body being convexly domed and the lower surface of the control plate, engaging the body, being complementarily concave.

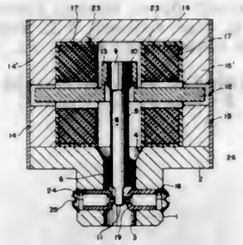
3,415,282
PNEUMATIC DIVERTING RELAY
Richard S. Zoludow, South Bend, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 23, 1965, Ser. No. 509,403
3 Claims. (Cl. 137—625.48)



A pneumatic fast acting diverting relay with an intercoupled arrangement of two spring loaded valve assemblies in a single valve body and one of the valves serving to activate or deactivate the second spring loaded valve, which second valve controls a multiway flow from a plurality of ports.

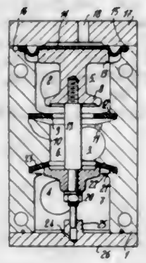
3,415,283
TORQUE MOTOR
Nicholas D. Trbovich, West Seneca, and William H. Meyer, East Aurora, N.Y.; said Meyer assignor to Servotronics, Inc., Buffalo, N.Y.
Filed Sept. 8, 1964, Ser. No. 394,897
12 Claims. (Cl. 137—625.62)

The nozzle block has a magnetic shunt integral therewith and a bore. A flexure tube is seated in the bore, and a flapper, carried by the flexure tube, extends beyond the tube into the bore. An armature is carried by the tube and magnetic control means are associated with the armature. Also, the magnetic control means includes an energizing coil and a terminal connected to the coil, the coil and the inner end of the terminal being encapsulated as a unit in electrically insulating material. In addition,



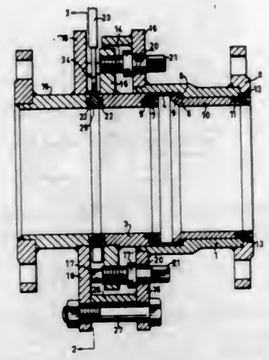
the block has a lateral nozzle passage and a nozzle mounted in the passage and opening into the bore. A resiently yieldable dished sealing member is mounted in the block across the outer end of the passage, the block being of curvilinear side wall form and the sealing member normally projecting beyond the side wall of the block, the sealing member having a generally elliptical opening therethrough elongated circumferentially of the block.

3,415,284
FLAP VALVE
Harald Stampfli, Petit-Saconnex, Switzerland, assignor to Lucifer S.A., Chemin Lucifer (Rondeau), Carouge-Geneva, Switzerland, a company of Switzerland
Filed Oct. 26, 1966, Ser. No. 589,735
Claims priority, application Switzerland, Nov. 11, 1965, 15,548
6 Claims. (Cl. 137—625.66)



1. A flap valve comprising an elongated shell provided with at least one flap seat facing one longitudinal direction of the shell and at least one flap seat facing the opposite longitudinal direction and with communication ports to either side of each seat, a flap adapted to cooperate with each seat, an elongated member rigidly carrying the flaps and adapted to move longitudinally of the shell between a first position raising the flap cooperating with the first-mentioned seat off its seat and urging the flap cooperating with the last-mentioned seat into its closed position with reference to its seat and a second position urging the flap cooperating with the first-mentioned seat into its closed position with reference to its seat and raising the flap cooperating with the last-mentioned seat off its seat and a yielding washer extending between each seat and the cooperating flap and adapted to fluidtightly engage both said seat and flap as long as the movable member is near the position for which said flap engages the seat.

3,415,285
PACKING MEANS FOR CONDUITS
Egil Odvar Severin Torp, Lidingo, Sweden, assignor to Ingenjorsfirma G. Karlbom AB, a corporation of Sweden
Filed Sept. 24, 1965, Ser. No. 489,902
3 Claims. (Cl. 138—94.3)



A packing between two tubes includes a gland slidable in one of the tubes and having an impervious resilient sleeve sealed between the gland and the tube in which the gland slides. The gland and both tubes have radially outwardly extending flanges, with the gland flange disposed between the tube flanges. Screws axially abut against and between the tube flanges and are screw threaded to the gland flange, so that the screws can be rotated in either direction to move the gland toward or away from the tube within which the gland does not slide, thereby to permit insertion of a plate or other member between the gland and the tube within which the gland does not slide.

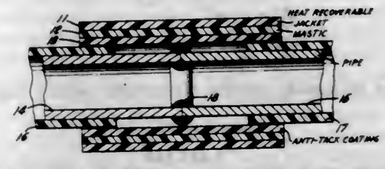
3,415,286
TUBE-LIKE STRUCTURE AND PACKAGE MADE THEREFROM
Julian R. Arnold and George W. Turner, Miami, Fla., assignors to Arnold Cellophane Corporation, Miami, Fla., a corporation of Florida
Filed Aug. 25, 1964, Ser. No. 391,847
10 Claims. (Cl. 138—128)



A tube-like structure and a package manufactured therefrom, the tube-like structure being made from a flexible multi-ply film having an inner flexible ply and an outer flexible ply of dissimilar materials bonded to each other with the longitudinal edge portion of the inner ply extending beyond the longitudinal edge portion of the outer ply. The tube-like structure is provided with a fin-type seal extending longitudinally of the same, the fin-type seal being bonded to the outer longitudinal edge portion of the outer ply.

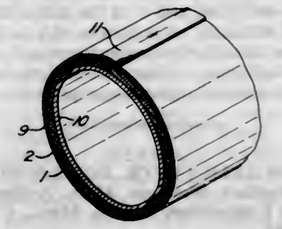
3,415,287
PROTECTIVE COVERING AND ARTICLE
William Rosse Heslop, Vincent L. Lanza, and Edward C. Stivers, Atherton, Calif., assignors to Raychem Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 21, 1964, Ser. No. 391,090
11 Claims. (Cl. 138—141)

Means for covering pipes or other substrates comprising a heat recoverable member having an adhesive material which is tacky at normal temperature on one side thereof and an anti-tack coating which is soluble in the adhesive at the recovery temperature of the heat recoverable member and covering said tacky adhesive so that the non-tacky surface is exposed. This covering means may be used to cover pipes or other substrates by positioning the covering means adjacent to the substrate and



applying heat such that the heat recoverable member changes dimension and forces the adhesive and dissolved anti-tack coating into contact with the substrate to produce a covered article in which the forces exerted on the adhesive by the heat recoverable member and the substrate will cause the adhesive to fill any holes or abrasions which may be made in the outer surface of the covering.

3,415,288
HEAT INSULATED CONDUIT AND METHOD OF MAKING SAME
Irving L. Marshack, La Jolla, Calif., assignor to Califoam Corporation of America, Compton, Calif., a corporation of California
Continuation-in-part of application Ser. No. 396,490, Sept. 15, 1964. This application Dec. 27, 1966, Ser. No. 604,947
7 Claims. (Cl. 138—141)

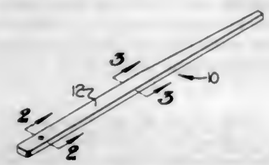


A heat insulated conduit and method for preparing it by first heatsealing a polyurethane foam to self-sustaining thermoplastic film by interposing between the film and the foam a plastisol having dispersed therein a resin compatible with the film and heating the resulting assembly until the resin in the plastisol is fused and pressed into the pores on the surface of the foam while avoiding substantial distortion of the film and second, adhering a metalized thermoplastic film directly onto the film heatsealed to the foam. The resulting laminate is then either shaped into a conduit or wrapped about a conduit.

3,415,289
TEXTILE LOOM PICKER STICK
Philip Patrick Lacey and Wilbur Langley Pridgen, Charlotte, N.C., assignors to Nemo Engineering Co., Charlotte, N.C., a corporation of North Carolina
Filed Feb. 8, 1967, Ser. No. 614,580
5 Claims. (Cl. 139—157)

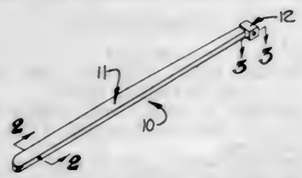
A composite textile loom picker stick having desirable physical characteristics of fracture strength, resilience and abrasive wear resistance is obtained by the combination of a core member having an overall configuration substantially that of a conventional picker stick and a layer of polymeric material forming a sheath at least substantially encasing the core member. Preferred materials for the

core member are wood and fiberglass, and preferred materials for the sheath are polyurethanes within specific



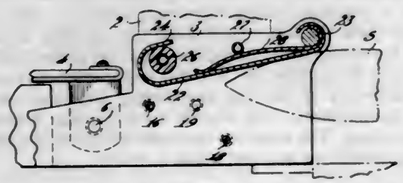
ranges of specific gravity, Durometer values, and thickness.

3,415,290
INTEGRALLY FORMED TEXTILE LOOM PICKER STICK AND PICKER HEAD
Philip Patrick Lacey and Wilbur Langley Pridgen, Charlotte, N.C., assignors to Nemo Engineering Co., Charlotte, N.C., a corporation of North Carolina
Filed Feb. 8, 1967, Ser. No. 614,579
6 Claims. (Cl. 139—159)



An integrally formed textile loom picker stick and picker head, comprising respectively a core member and an encasing layer of polymeric material and a body of polymeric material integral with the picker stick, enhance the ease and economy of operation of a textile loom by the avoidance of recurrence adjustment and of the introduction of weakness, as have heretofore been necessitated by conventional maintenance practices.

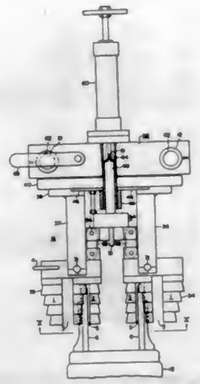
3,415,291
SHUTTLE CHECK FOR LOOMS
Lloyd G. Urquhart, Westboro, Mass., Assignor to H. F. Livermore Corporation, Boston, Mass., a corporation of Delaware
Filed Jan. 25, 1967, Ser. No. 611,597
2 Claims. (Cl. 139—183)



Apparatus for checking a shuttle as it enters a shuttle box in a loom so that the shuttle is decelerated gradually and smoothly.

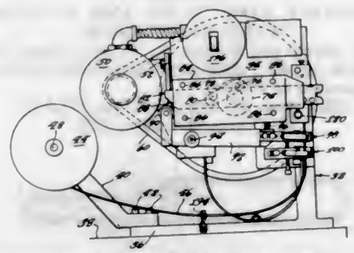
3,415,292
COIL WINDING AND TRANSFER APPARATUS FOR DYNAMOELECTRIC MACHINE CORE MEMBERS
Gene S. Ericson, Cridersville, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,488
14 Claims: (Cl. 140—92.1)

Apparatus for winding dynamoelectric machine coils and transferring the wound coils directly to the finger elements of coil transfer apparatus. A support is provided having a plurality of coil forms thereon, each coil form having an opening therein adapted to receive the distal end portions of a group of adjacent finger elements. Means are provided for moving the support means successively to position the coil forms adjacent winding apparatus for winding the coils thereon, and for simultaneously moving all of the coils forms to a second position



in which the forms are located with the finger elements extending toward the forms and with the openings in the forms having the distal end portions of respective groups of finger elements received therein so that the coil may be transferred from the form directly onto the groups of finger elements.

3,415,293
SEMIAUTOMATIC WIRE FED TOP STOP MACHINE
Morris Perlman, 1326 38th St., Brooklyn, N.Y. 11218
Filed Mar. 31, 1966, Ser. No. 539,162
5 Claims. (Cl. 140—93)

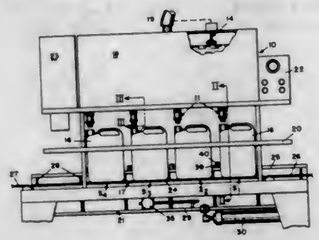


A semiautomatic wire fed top stop machine comprising a frame, a supporting bracket for a reel of flat wire, motor means for driving a slidable driver assembly, a stationary die block, a disappearing arbor. A roller assembly for a pair of wire feed jaws form a wire feed mechanism. The machine includes a top stop forming mechanism and a top stop clinching mechanism for placement of top stops on slide fastener slingers adjacent the ends of the rows of teeth of the slide fastener, to prevent disengagement of a slider off the ends of the rows of teeth.

3,415,294
METHOD AND APPARATUS FOR ANTIFOAM FILLING A CONTAINER
Norman A. Kelly, Warsaw, Ind., assignor to Haskon, Inc., Warsaw, Ind., a corporation of Delaware
Continuation-in-part of application Ser. No. 418,987, Dec. 17, 1964. This application May 1, 1967, Ser. No. 635,006
11 Claims. (Cl. 141—1)

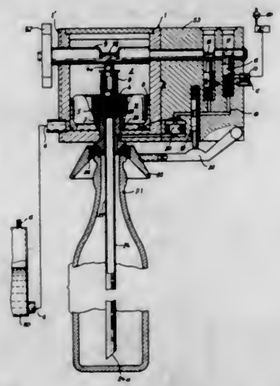
This invention relates to a filling machine for introducing liquids into a container while minimizing the

formation of foam, and comprises a plurality of relatively closely spaced fine mesh screens at the discharge opening whereby the effective head on the liquid is substan-



tially reduced. In this manner, a higher head pressure can be used while the liquid at discharge has a minimum of energy.

3,415,295
BOTTLE FILLING APPARATUS
Hermann Wolf, Schriesheim, Germany, assignor to Holstein & Kappert, Maschinenfabrik "Phonix" GmbH, Dortmund, Germany
Filed Dec. 27, 1966, Ser. No. 604,971
Claims priority, application Germany, Dec. 29, 1965, H 58,097
17 Claims. (Cl. 141—46)

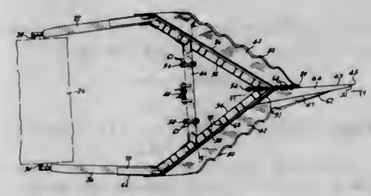


Apparatus for filling bottles with liquids, particularly with beer or other carbonated beverages, wherein each filling cycle includes a counter-pressure stage. A system of valves for each filling head and actuating means including a float connected with each valve which regulates the outflow of liquid from a filling head.

Automatic sealing of gas-conveying conduits in response to separation of filled containers from filling heads.

3,415,296
LAND CLEARING DEVICE
Edward V. Frankenberg and Norman N. Griffith, Jacksonville, Fla., assignors to Fleco Corporation, Jacksonville, Fla., a corporation of Florida
Filed May 21, 1965, Ser. No. 457,602
14 Claims. (Cl. 144—34)

A land clearing device for use in combination with a bulldozer which comprises a movable substantially horizontally disposed frame. The frame includes first and second elongated side members disposed in a V-shape which terminate in a forwardly facing apex, these side members have rearwardly extending supporting arms rigidly fixed thereto and pivotally mounted at their aft ends to the bulldozer. A first substantially horizontally disposed cutting blade is mounted on the first side member of said frame and extends forwardly and inwardly from one side of the frame to the apex thereof and a second substantially horizontally disposed cutting blade is mounted on the second side member of the frame and extends forwardly and inwardly of the other side of the frame to the apex thereof. Attaching means and selectively releaseably connecting means for the attaching means are provided on the side members of the frame adjacent the apex thereof such that the two side members of the frame are easily and readily attachable and detachable one from the other to provide for convenient transportation and compact storage of the device. The apparatus further includes a forwardly extending tree splitting element which has a rearward end portion connected to one of the side members of the frame adjacent the apex thereof and a sharpened forward end portion. This tree splitting element includes a first elongated vertical side portion between its end portions parallel to and

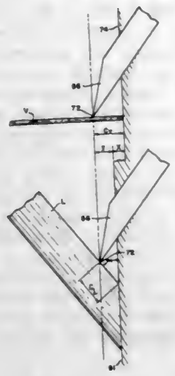


adjacent a vertical plane through the apex of the frame, and a second elongated vertical side portion between its end portions offset from the first side portion and extending at an angle acute with respect to the first side portion such that the element is formed in the shape of a wedge of decreasing width toward its forward end portion. The first and second elongated vertical side portions of the element are adapted to wedge a part of a tree being felled laterally of the second side portion during the splitting of the tree, while the first side portion is adapted to pass inwardly of the tree in a relatively unobstructed manner. The tree splitting element further includes an elongated horizontally disposed wedge shaped cutting blade attached to the lower edge portion of the second side portion of the element, which wedge shaped cutting blade is of decreasing width toward the forward end portion of the element and which extends laterally outward of the second vertical side portion such as to shear and cut the wedged out portion of the tree being felled.

3,415,297
MACHINE FOR CHIPPING CORE LOGS AND VENEER
Lewis M. Yock, P.O. Box 6366, Portland, Oreg. 97206
Filed June 20, 1966, Ser. No. 558,898
9 Claims. (Cl. 144—176)

1. A machine for chipping veneer and core logs comprising:
a disk cutter mounted for rotation about its axis;
said cutter including a first planar face portion normal to said axis;
said cutter including a plurality of radially entending knives having cutting edges extending perpendicularly to said axis and lying in a common plane,
said common plane being spaced a predetermined distance outwardly from said first planar face portion;
said cutter including a second planar face portion parallel to and positioned between said first planar face portion and said common plane;

means to feed veneer against said first planar face portion and perpendicularly thereto; and

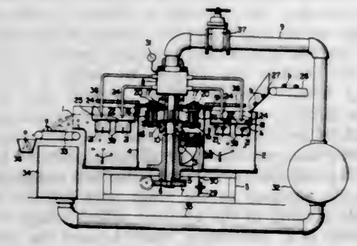


means to feed core logs against said second planar face portion at an oblique angle thereto.

3,415,298
MACHINE FOR AUTOMATICALLY SECTIONING CITRUS FRUITS

Masaru Ishibashi, Shimizu-shi, Japan, assignor to Toyo Seikan Kabushiki Kaisha (also known as Toyo Seikan Kaisha Ltd.), Tokyo-to, Japan, a joint-stock company of Japan

Filed May 12, 1966, Ser. No. 549,633
Claims priority, application Japan, June 18, 1965, 40/36,279
1 Claim. (Cl. 146—3)



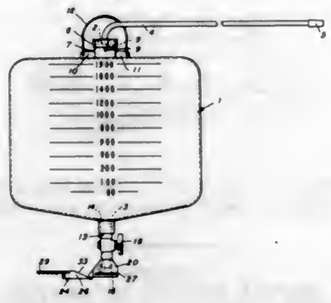
The automatic sectioning of oranges in which peeled unsectioned oranges are supplied into funnel shaped sectioning baskets having apertures through which orange segments may pass into a vessel containing a water bath and provided with an outlet. Mechanism is provided to impart a combination of a horizontal rotation and a horizontal oscillatory motion to the baskets. Water jet nozzle means above and confronting each basket serve to section each orange into segments with the segments passing through the apertures into the bath and floating upwardly to be discharged from the vessel through the outlet with the overflow water.

3,415,299
BOTTOM EMPTYING URINE COLLECTION CONTAINER

Frank Hinman, Jr., San Francisco, Bern D. Folkman, Van Nuys, and Joseph J. Arcarese, North Hollywood, Calif., assignors, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois

Filed Nov. 21, 1966, Ser. No. 595,872
8 Claims. (Cl. 150—8)

1. A combination for handling urine comprising: a container with an inlet for connecting to a conduit leading from a patient and with an outlet at its bottom for draining urine from the container; an emptying tube with a longitudinal passage therethrough, said tube connected to the container's outlet and extending downwardly from the container's outlet to the tube's lower end; a rigid housing connected to the tube, which housing has a wall

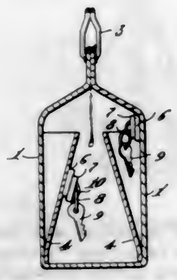


spacedly supported a distance from the tube's lower end, said housing having a mouth of greater cross-sectional area than the cross-sectional area of the tube's passage at its lower end; a removable closure closing off the housing's mouth; and a manually manipulable means for opening and closing the passage through said tube.

3,415,300
KEY HOLDER

Gurdon S. Worcester, High St., Gloucester, Mass. 01930

Filed Nov. 30, 1966, Ser. No. 598,031
2 Claims. (Cl. 150—40)



A key holder adapted to be removably attached in a purse, or to another wall, by a tab mating with and held mechanically to a like supporting tab on the wall.

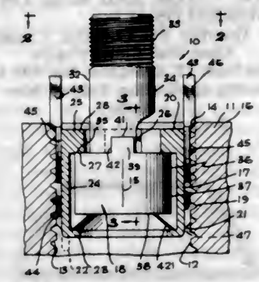
3,415,301
SELF-ALIGNING THREADED ELEMENTS

Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif. 90210

Continuation-in-part of applications Ser. No. 524,055 and Ser. No. 524,086, Feb. 1, 1966. This application Dec. 13, 1967, Ser. No. 690,184
20 Claims. (Cl. 151—23)

A self-aligning threaded stud assembly, or threaded insert assembly, including an outer hollow body and an element mounted at least partially within and shiftable relative to the body, with the shiftable element having threads for engagement with a coacting member. The outer body has a flange projecting radially inwardly at

the axially outer end of the body, and engageable with the element to transmit axial load forces from the element

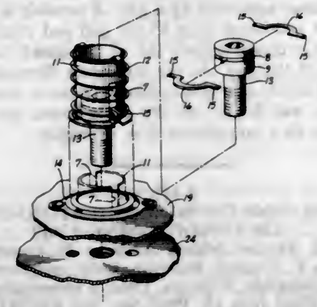


to the body. The flange contains a notch into which a lug formed on the element projects to retain the element against rotary motion.

3,415,302
CAPTIVE FASTENER ASSEMBLY

Josiah D. Beck, 2585 Oak Park Lane, Campbell, Calif. 95008

Filed Oct. 4, 1967, Ser. No. 672,792
3 Claims. (Cl. 151—69)

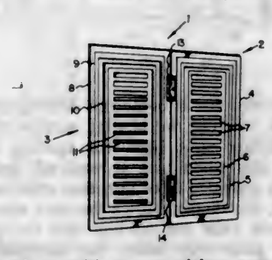


A fastener device for holding adjacent workpieces is provided with a captivating floating receptacle which retains the fastener. Retention of the fastener is provided by a pair of split rings having tab ends which slide within slots cut in the wall of the captivating receptacle. A spring is provided to hold the fastener in its desired position when not in use.

3,415,303
PORTABLE PARTITION

Anthony L. Diebold, Saginaw, Mich., assignor to Great Lakes Express Co., Saginaw, Mich., a corporation of Michigan

Filed June 9, 1966, Ser. No. 556,411
3 Claims. (Cl. 160—229)

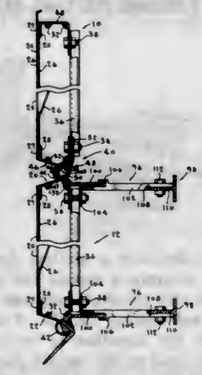


A portable partition comprising a pair of semirigid panel members each of which has a plurality of undulating ribs formed therein, the panel members being joined to one another by flexible hinges to enable either panel member to be swung through 360° relatively to the other. The panel members and their respective ribs are so oriented to one another that when either of the panels is swung to a position in which it overlies the other, the ribs of the respective panels nest.

3,415,304
OVERHEAD DOOR

Eugene H. Sawyer, West Bend, Wis., assignor to Phenix Manufacturing Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Continuation of application Ser. No. 324,401, Nov. 18, 1963. This application May 4, 1967, Ser. No. 636,220
4 Claims. (Cl. 160—235)



A sectional door for a garage having panel sections positioned with their edges adjacent each other and a hinge assembly for hingedly connecting the sections to each other. The hinge assembly is comprised of a pair of curved hinge sections which mate one with the other with the inner surface of one section serving as a bearing surface against which the outer surface of the other section is adapted to rotate in a substantially sealed relationship. To complete the assembly, hinge pin members are provided to hold the adjacent sections firmly together in pivotal relationship. Each hinge pin member is comprised of a pin section which snaps snugly into the inner hinge section and a base section adapted for removable connection to one of the panel sections. The panel sections are spaced from each other and slope outwardly from the hinge in such a manner so that at no point in the relative movement of the two sections is there a closing of one part onto another between which the fingers of the operator could accidentally be inserted.

ERRATUM

For class 160—566 see:
Patent No. 3,415,882

3,415,305
PROCESS FOR PREPARING ALUMINUM ALLOYS

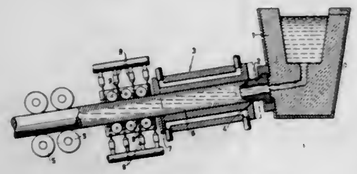
Charles F. Schrieber and John J. Newport III, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1966, Ser. No. 556,877
4 Claims. (Cl. 164—57)

1. I novel process for preparing aluminum alloy castings exhibiting a high electrochemical efficiency and an oxidation potential in the range partcularly suitable for use as sacrificial anodes with ferrous based structures in saline water applications which comprises;

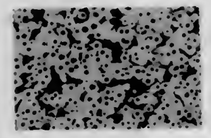
(a) melting at a temperature of from about 1400 to about 1800° F. a mercury containing aluminum alloy which exhibits an oxidation potential of from about 0.9 to about 1.2 volts,
(b) maintaining the resulting molten alloy within this temperature range while casting said alloy, and
(c) casting said alloy into a mold.

3,415,306
METHOD OF CONTINUOUS CASTING WITHOUT APPLYING TENSION TO THE STRAND
Erik Allan Olsson, Oerlikonerstrasse 88, Zurich, Switzerland
Filed July 23, 1965, Ser. No. 474,279
Claims priority, application Sweden, July 23, 1964, 8,982/64
2 Claims. (Cl. 164—83)



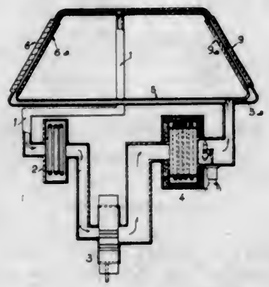
This invention discloses a method for the continuous casting of metal wherein a nozzle for supplying molten metal is telescopically received into one end of an open-ended water-cooled casting mould. The casting mould is reciprocated in the direction of its length during the process of casting, and as the mould moves forward, i.e., in the direction of the travel of the metal being cast, the partly-solidified casting in the mould travels forwardly with the mould. As the previously-cast metal in the mould recedes from the nozzle, fresh metal enters the mould on this forward stroke. It immediately solidifies around the interior wall of the mould. On the backward stroke of the mould, this solidified ring of fresh metal interposed between the end of the nozzle and the previously-cast metal prevents the metal in the mould from traveling back with the mould, thereby effecting relative movement between the mould and the casting. Rollers may be used on the casting outside the mould to apply a regulated opposing force to the free forward travel of the casting.

3,415,307
PROCESS FOR CASTING DUCTILE IRON
Arthur E. Schuh, Riverton, Martin A. Rice, Florence, and Andrew B. Malizio, Delran, N.J., assignors to United States Pipe and Foundry Company, Birmingham, Ala., a corporation of New Jersey
Filed Mar. 3, 1966, Ser. No. 533,133
7 Claims. (Cl. 164—114)



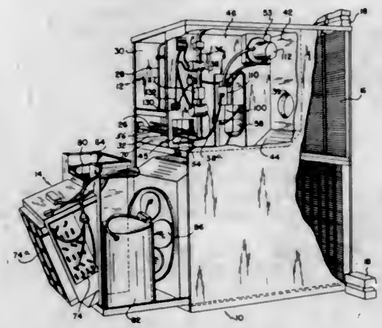
A method for casting ductile iron pipe wherein pipe are centrifugally cast in a metal mold provided with a dual coating consisting of a first layer of refractory coating material having a thickness of .01 to .06 inch and a second layer of powdered inoculating material and the metal is treated with inoculating material as it is poured into the mold, the metal in the pipe comprising 3.0–3.6% C, 2.3–3.75% Si and .02–.07% Mg.

3,415,308
METHOD AND MEANS FOR PREVENTING THE DEPOSIT OF VAPOR AND RIME ON WINDOWS AND WINDSHIELDS
Felix Lévy, Quartier des Collettes, Cagnes-sur-Mer, Alpes-Maritimes, France
Filed Nov. 17, 1966, Ser. No. 595,119
Claims priority, application France, Nov. 22, 1965, 7,686
9 Claims. (Cl. 165—2)



An arrangement for preventing the deposit of vapor and rime on the surfaces of windows is formed by a pair of glass panes separated by a gap. A conduit is connected at its inlet and outlet ends to the gap and combines with it to form a closed circuit. Air is circulated through the conduit and the gap. As the air passes through the conduit it is heated, next it is cooled to remove any moisture it contains, and finally, the dry air is heated and returned to the gap in a continuous flow operation.

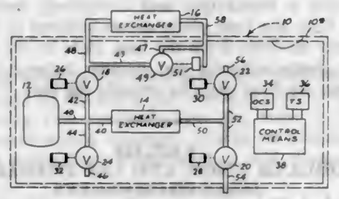
3,415,309
CONTROL FOR COMBINED HEATING-COOLING AIR CONDITIONING UNIT
George H. Fiedler, Milan, Anthony R. Passarello, and William E. Taggart, Bellevue, Ohio, assignors to Johnson Corporation, Bellevue, Ohio, a corporation of Ohio
Filed June 15, 1967, Ser. No. 646,262
10 Claims. (Cl. 165—26)



A control system for a combined heating-cooling air conditioner unit wherein the heating section of the unit contains a standing pilot light for igniting the main burners of the unit when heat is required, and wherein control means is provided in conjunction with the thermostat for the unit, for shutting down the pilot whenever the thermostat circuit calls for cooling and for permitting lighting of the pilot only when the thermostat circuit calls for heating. Such an arrangement increases the cooling capacity of the air conditioner unit since the cooling

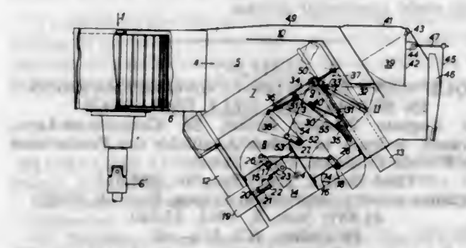
air does not pick up any heat from the "off" pilot and condensation from the pilot combustion is eliminated during the cooling cycle. The unit contains an exhaust blower and sealed combustion chamber, with the blower drawing the combustion products out of the heat exchanger to force such combustion products exteriorly of the unit. A draft switch is provided in the vent of the unit for automatically shutting off the gas valve controlling the gas flow to the burners, if the pressurized flow of combustion products through the vent is interrupted. Also, if for any reason the flue gases are not exhausted from the unit and the temperature increases beyond a predetermined limit in the heat exchanger area of the unit, a link fuse means located adjacent the heat exchanger area is adapted to melt, shutting down the unit by interrupting the flow of fuel to the burners of the unit.

3,415,310
APPARATUS FOR CONTROLLING THE TEMPERATURE AND OXYGEN CONCENTRATION IN A COMPARTMENT
Kurt Kuhlmann, Portland, Oreg., assignor to Industrial Air Products Co., Portland, Oreg., a corporation of Oregon
Filed June 26, 1967, Ser. No. 648,643
7 Claims. (Cl. 165—27)



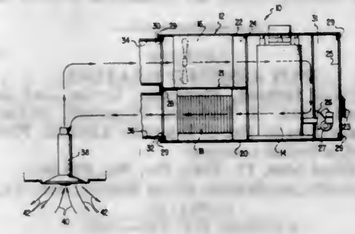
Apparatus for controlling the temperature and oxygen concentration in a compartment including a source of liquefied inert gas, a conduit system for discharging such gas inside the compartment to vary the oxygen concentration therein, a conduit system for conveying gas through the compartment to cool the same, and control equipment for sensing the temperature and oxygen concentration in the compartment, and for regulating gas flow through the conduit systems whereby temperature and oxygen concentration in the compartment are maintained at certain predetermined levels.

3,415,311
ENGINE COOLING AND PASSENGER COMPARTMENT HEATING APPARATUS FOR MOTOR VEHICLES
Raymond Edwin George Sheppard, Burford, and Anthony Geoffrey Plackett, Aston, England, assignors to Smiths Industries Limited, London, England, a British company
Filed Sept. 1, 1966, Ser. No. 576,611
8 Claims. (Cl. 165—33)



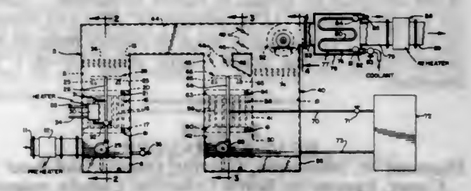
The disclosure relates to engine cooling and passenger compartment heating apparatus for a motor vehicle. The apparatus includes a mixing compartment from which air can flow to the passenger compartment and a heat exchanger for receiving engine coolant. A fan draws air from the exterior through the heat exchanger and into the mixing compartment. A wall on the downstream side of the heat exchanger divides the air into two air streams so that part of the heat transfer surface is contacted by one air stream and a part by the other air stream, and the wall is movable to alter the ratio of the areas of heat transfer surface contacted by the two air streams.

3,415,312
AIR TEMPERATURE REGULATING DEVICE
Arthur Stamm, Englewood Cliffs, N.J., assignor to Pow R Matic Inc., Finksburg, Md., a corporation of Maryland
Filed May 24, 1967, Ser. No. 641,008
11 Claims. (Cl. 165—48)



A compact and efficient heat exchange system or air temperature regulating device. The system itself contemplates use of a heat exchange means, a baffle or wall located to one side of the heat exchange means, an inlet and an outlet on the opposite side of the heat exchange means for creating an air flow from the inlet which is directed through a portion of the heat exchange means, and redirected by the baffle or wall so that it passes to the outlet. The system can be used for heating alone or heating and cooling and is so constructed that the firing mechanism for the heat exchange means is disposed outside of the path of the air flow through the heat exchange means.

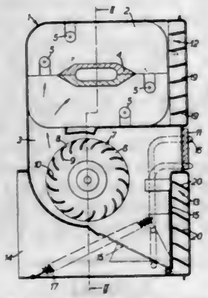
3,415,313
APPARATUS FOR PRODUCING AIR AT WIDELY DIFFERENT TEMPERATURES AND RELATIVE HUMIDITIES
Martin H. Olstad, Port Washington, N.Y., assignor to Niagara Blower Company, New York, N.Y., a corporation of New York
Filed June 12, 1967, Ser. No. 645,255
7 Claims. (Cl. 165—60)



The apparatus is a two stage apparatus which can have a third stage if very low output temperatures are desired. When the output air is desired at dewpoints not below 35° F. or near the freezing point of water, only the first stage water sprayed coil is employed which coil can be

supplied with a coolant to remove the major part of the moisture from the incoming air and to lower its dry bulb, wet bulb and dewpoint temperatures close to freezing. Where subfreezing and subzero output air is desired, the first stage output is passed through a second stage low temperature cooling coil sprayed with water containing an antifreeze component which is maintained at required strength, the air leaving the second stage sprayed coil being capable of being cooled far below zero and a substantial amount of water from first stage output air being condensed into the spray liquid of the second stage. Further, an absorbent liquid can be used in this second stage to reduce the dewpoint of the air without resorting to lowering the temperature of the second stage coil merely to obtain such lowered dewpoint. To obtain still lower output air temperatures, say —100° F., the output from the second stage sprayed coil can be passed over a dry third stage cooling coil, the frost formation on the latter being insignificant. Air preheaters and reheaters can be employed as well as a heater for the water of the first stage where the desired output air conditions require them.

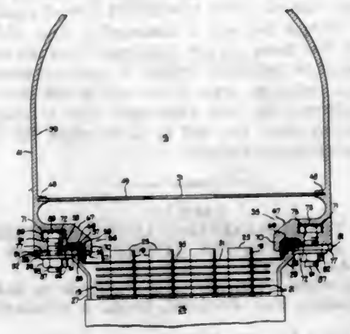
3,415,314
FAN ASSISTED HEATERS
Harold Ernest Jackson, Plympton, Devon, and Douglas Raymond Dean, St. Budeaux, Plymouth, Devon, England, assignors to Petrol Injection Limited, Plympton, England, a British company
Filed Mar. 17, 1966, Ser. No. 535,063
Claims priority, application Great Britain, Mar. 24, 1965, 12,461/65
4 Claims. (Cl. 165—122)



A transverse flow fan, air heater the housing of which has a front face containing closely spaced air intake and outlet apertures, superposed to ensure adequate forwards directivity of the emergent heated air stream and separation of the emergent and intake air streams, shaped and positioned louvre strips spaced across its width and tilted to diverge from the inlet aperture in the direction of the emergent air stream to reduce turbulence. Trapezium (angle of tilt 9°–11°), aerofoil (4°–6°) and triangular (14°–16°) cross-section strips of plastics material and parallel-sided, round edged metal strips (4°–6°) are described.

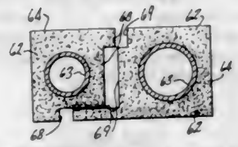
3,415,315
HEAT EXCHANGER
Desmond M. Donaldson, Oakville, Ontario, and Peter M. Comer, Vancouver, British Columbia, Canada, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 29, 1966, Ser. No. 561,437
14 Claims. (Cl. 165—148)

A heat exchanger for use in a cooling system such as an automotive cooling system. The heat exchanger includes a plurality of coolant tubes and at least one header connected to the coolant tubes for distribution of coolant to the tubes. The header includes a rigid base plate connected to the coolant tubes in liquid-tight relation, a header body secured to the base plate to define a header volume open to the coolant tubes, a resilient seal member disposed between the base plate and the header body



to provide a liquid-tight seal completely insulating the header from the base plate, means secured to the header body and insulated from the base plate by the seal member for compressing the seal member between the header body and the base plate to provide the seal.

3,415,316
MODULAR UNITS AND USE THEREOF IN HEAT EXCHANGERS
Frederick A. Burne, Hamden, Conn., and Emery I. Valyi, Riverdale, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 11, 1967, Ser. No. 629,954
13 Claims. (Cl. 165—164)

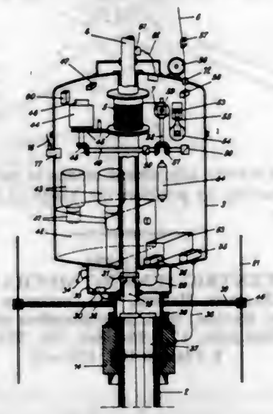


A heat exchange unit and a method of exchanging heat is provided utilizing a tube for conducting a heat exchange medium therethrough, heat conductively bonded to a layer of pervious material. The contour of these units is such that they can be fitted together and assembled to form heat exchangers of any desired size and length which avoid substantial by-pass.

3,415,317
EQUIPMENT FOR WIRE-LINING OPERATIONS IN SUBMARINE WELL DRILLINGS
Jean Auguste Prosper Drivet, St. Germain-en-Laye, France, assignor to Societe Auxiliaire des Producteurs de Potrole Flopetrol, Paris, France
Filed Dec. 2, 1966, Ser. No. 598,813
Claims priority, application France, Dec. 11, 1965, 41,881; Nov. 8, 1966, 82,844
18 Claims. (Cl. 166—.6)

1. An equipment for wire-lining operations by means of tools suspended from a wire-line in submarine or subaqueous well bores, adaptable to a submerged well head

including an assembly comprising a tight housing, a lubricator rigid with said housing and engaged therethrough, connecting means on the lubricator for its tight connection with the submerged well head, a winch drum having a vertical axis mounted inside the housing, the tool carry-



ing wire-line being wound upon said drum, a prime mover in the housing for actuating the winch, means for guiding and upholding said assembly from the water surface, a remote control station arranged outside the housing, and conductors connecting said housing to said station.

3,415,318
METHOD OF CURING LOSS OF CIRCULATION OF A FLUID USED IN DRILLING A HOLE IN AN UNDERGROUND FORMATION
Franciscus H. Meijs, Port Harcourt, Nigeria, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,533
Claims priority, application Netherlands, July 20, 1966, 6610183
9 Claims. (Cl. 166—29)



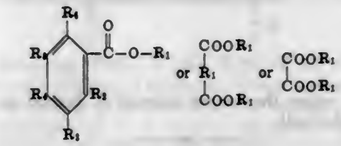
A method of preventing loss of circulating fluid during drilling of formations containing large cavities comprising injecting into such cavities a viscous liquid containing suspended particles and a viscosity breaking liquid.

3,415,319
FLUID LOSS CONTROL OF ACIDIC SOLUTIONS
Daniel L. Gibson, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 6, 1966, Ser. No. 577,158
5 Claims. (Cl. 166—33)

Acid treatment of oil- or gas-bearing formations is made more effective by incorporating, in the aqueous acid medium employed, an effective quantity of a particulated acrylamide polymer.

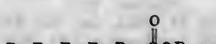
3,415,320
METHOD OF TREATING CLAY-CONTAINING EARTH FORMATIONS
Bill M. Young, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Feb. 9, 1967, Ser. No. 614,794
18 Claims. (Cl. 166—33)

A method of consolidating loose or incompetent sands or earth formations containing clays, using a resin or plastic consolidating fluid and a clay treating material having the formula:

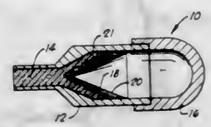


wherein,

R_1=1 to 8 carbon atoms in a linear, alicyclic, aromatic, branched chain, or unsaturated arrangements or a combination thereof and



3,415,321
SHAPED CHARGE PERFORATING APPARATUS AND METHOD
Alexis A. Venghiattis, Weston, Conn., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,216
11 Claims. (Cl. 166—35)

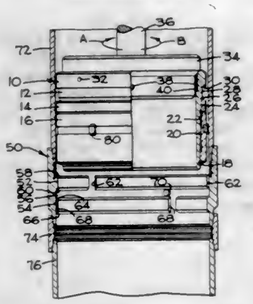


Apparatus for perforating oil and gas wells and the like and methods for completing such wells in an unconsolidated formation. The apparatus includes one or more shaped charges having inert particles located therein arranged to be carried, upon detonation of the charge, into the perforation formed by the charge and also including a carrier for positioning the shaped charge in the well. The method includes the steps of positioning the shaped charge and carrier in the well adjacent the unconsolidated formation to be perforated and detonating the charge to simultaneously form the perforation and place the inert particles in the perforation to form a permeable bridge therein.

3,415,322
EXPANDABLE BUSHING FOR WELL CASING HANGERS
Sam W. Putch, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,702
8 Claims. (Cl. 166—217)

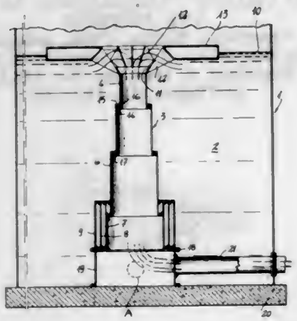
An apparatus for supporting a string of casing in a well, including a specially-shaped landing sub and a radially-expandable tubular bushing that can be locked in the sub

by rotation in one direction to provide a casing support, and passed through the sub by rotation in the opposite



direction when the casing support is desired at another level of the well.

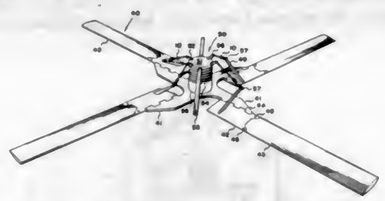
3,415,323
METHOD AND APPARATUS FOR SPONTANEOUS FIRE EXTINCTION IN TANKS OF COMBUSTIBLE OR INFLAMMABLE LIQUIDS
Pietro Ajovalasit, 57 via Niccolo Turrisi, Palermo, Italy
Filed July 21, 1966, Ser. No. 566,939
Claims priority, application Italy, July 28, 1965, 16,877/65
9 Claims. (Cl. 169—1)



A method and apparatus for extinguishing fires in tanks which contain combustible liquids. The liquid in the tank is withdrawn from the region of the surface of the liquid and re-introduced into the tank at the region of the base thereof so that the hotter liquid at the top of the tank is mixed with the colder liquid at the bottom thereof, and in addition it is possible to direct the liquid through cooling devices prior to re-introduction of the liquid into the base of the tank. A suction means is capable of progressively withdrawing the liquid from the interior of the tank at the region of the surface of the liquid, and a conduit means receives the liquid from the suction means and directs it back into the tank at the region of the base thereof.

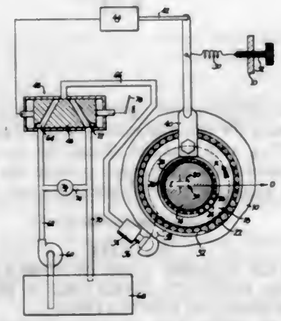
3,415,324
MICROMETER PITCH LINK
Robert D. Austin, Jr., Woodland Hills, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 15, 1967, Ser. No. 638,552
17 Claims. (Cl. 170—160.22)

A micrometer pitch link connecting rod for providing a linkage between a helicopter blade and a gyro assembly, the pitch link being connected to the blade in such a manner as to position the blade on a hub at a predetermined pitch angle. The length of the pitch link is adjust-



able by two vernier adjustment means to provide a proper pitch link setting to position the blade at its preselected pitch angle.

3,415,325
ECCENTRIC SENSING MECHANISM
Milton C. Bennett, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 17, 1966, Ser. No. 535,218
6 Claims. (Cl. 172—7)

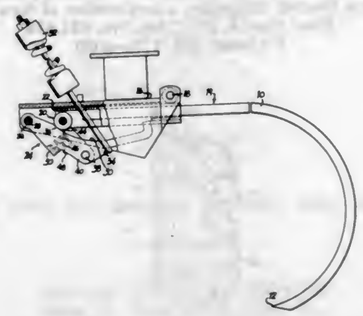


1. In a tractor implement hitch assembly having a rock shaft mounted in the tractor frame for rotation about a first axis normal to the fore and aft axis of the tractor, implement draft arms coupled to said rock shaft for transmitting draft from the tractor to an implement drawn thereby, power means actuable to rotate said rock shaft to raise or lower the implement, and draft control means including a draft sensing mechanism for controlling actuation of said power means in response to draft variations to raise or lower said implement to maintain a generally constant predetermined draft upon the implement; the improvement wherein said draft sensing mechanism comprises means supporting said rock shaft on the tractor frame for rotation about a second axis located in spaced parallel relationship to said first axis in proportionate response to variations in draft applied to said implement, and means responsive to rotation of said rock shaft about said second axis for controlling actuation of said power means.

3,415,326
CHISEL PLOW RESETTING MEANS
Michael P. Cafferty and Danold E. Jewell, Rockford, Ill., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed May 12, 1966, Ser. No. 549,718
6 Claims. (Cl. 172—269)

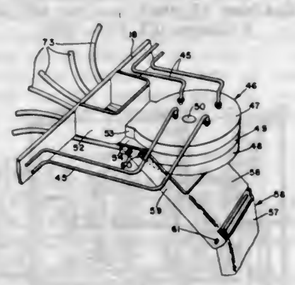
1. In an apparatus for lifting a soil engaging element out of a normal soil engaging working position and subsequently resetting said element to said normal position, said apparatus including implement means pivotal about a point located forwardly of said element and including a

downwardly projecting shank portion mounting said soil engaging element, a roller journaled on said implement means forward of said pivot point, an arm pivotal about a point forward of said roller and having a cam surface, and a first spring urging the cam surface into engagement with said roller, the improvement comprising a latch mem-



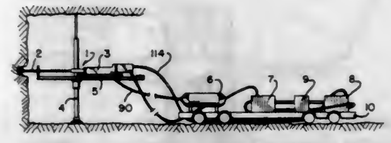
ber, means pivotally mounting said latch member on said arm, and a second spring substantially weaker than the first spring biasing the latch member about said mounting means so that said latch member projects above said cam surface, said latch member coacting with said arm to initially oppose movement of said implement means and said soil engaging element out of working position.

3,415,327
HYDRAULIC COUPLING
Paul Edmund Hanser, Rock Island, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,181
9 Claims. (Cl. 172—793)



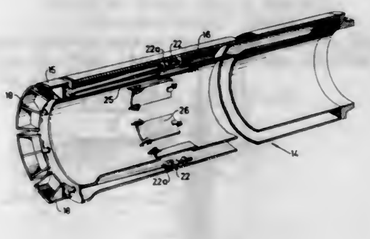
1. In a power implement in which there is provided a main frame, an implement, a connecting means between the frame and implement for adjusting the implement angularly about an axis, a hydraulic source on the frame, and hydraulic motors on the implement, the improvement residing in a hydraulic coupling that is self-adjustable to accommodate movement of the implement relative to the frame comprising: a plurality of parallel and stacked plates with adjoining surfaces with part thereof having annular and radially spaced surface grooves therein; annular sealing rings between the grooves; means fixing one of the plates to the frame; means fixing another of the plates to the implement; a plurality of fluid inlets in said one of the plates for receiving fluid from the hydraulic source and passing it to the annular grooves; and fluid outlets in said another of the plates in communication with the grooves, with each of the outlets being adapted for connection to fluid lines extending to the hydraulic motors on the implement.

3,415,328
HYDRAULIC-PNEUMATIC IMPACT DEVICE
Alois A. Buehler, Easton, Pa., and Ewald H. Kurt, Phillipsburg, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 23, 1966, Ser. No. 596,525
16 Claims. (Cl. 173—105)



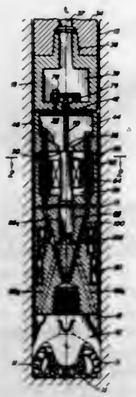
This disclosure relates to rock drills of the cam actuated type and includes a hydraulic motor for reciprocating the hammer. A chamber in the drill casing is supplied with compressed air to provide a pre-loaded air spring which provides the energy for delivering an impact to the drill steel. A hydraulic motor rotates the hammer and a cam and follower raise the hammer into the chamber to further pressurize the air. On further rotation, the hammer is released and the compressed air forces the hammer toward the drill steel to deliver an impact. An air cushion is provided to prevent the hammer from striking the casing end wall. The impacting force may be varied by increasing or decreasing the air chamber pre-load and speed of rotation of the hammer.

3,415,329
METHOD AND AN APPARATUS FOR INSTALLING UNDERGROUND PIPES
Göran Mårlind, Goteborg, Sweden, assignor to AB Vavra Hydraulteknik, Goteborg, Sweden
Filed Jan. 13, 1967, Ser. No. 609,190
Claims priority, application Sweden, Jan. 20, 1966, 711/66
8 Claims. (Cl. 175—19)



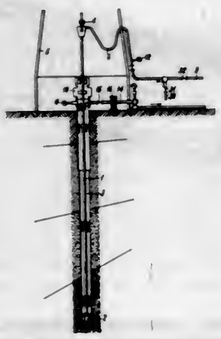
This invention relates to an elongated sleeve member useful in connection with the installation of underground pipes, the back end of said sleeve being adapted to be mounted on the foremost end of the pipeline, the front end of said sleeve being provided with guide means for guiding the direction of penetration of said sleeve through the earth, adjustment means associated with said sleeve and mounted to the rear of said guiding means, and means interconnecting said guiding means and said adjustment means.

3,415,330
HYDROACOUSTIC APPARATUS
John V. Bouyoucos, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Feb. 10, 1967, Ser. No. 615,090
16 Claims. (Cl. 175—56)



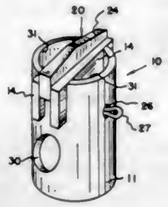
A hydroacoustic drilling apparatus is described. The apparatus modulates a column of liquid acted upon by a self-excited valving member which is resiliently and yieldingly urged to a center position by a mechanical spring in the apparatus. A driven rotating drill string, coacting with the modulating fluid column penetrates the earth formation while fluid jets urge chips and cuttings up the bore hole. Modulation of the fluid is substantially confined to the bottom of the bore hole by filter elements on the driven drill string.

3,415,331
PROCESS AND AN APPARATUS FOR BRINGING UNDER CONTROL AN UNEXPECTEDLY PRODUCING WELL
Adrianus Wilhelmus van Gils, % B.S.P. Co. Ltd., Seria, Brunei, British Borneo
Filed Oct. 25, 1965, Ser. No. 505,184
9 Claims. (Cl. 175—65)



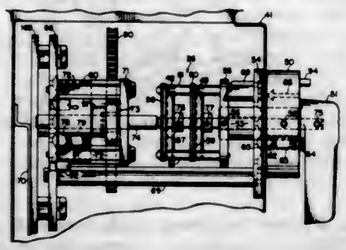
The invention relates to the method and apparatus for bringing an undesirably producing well under control. The heavier mud for bringing the mud under control is pumped into the drill pipe by a pump driven by the pressure difference between the fluid being discharged by the well and the pressure in the drill pipe, there being a fixed relationship between the quantity of the heavier mud pumped into the well and the quantity of the fluid being discharged from the well, a smaller quantity of the heavier mud being pumped in until the well is brought under control.

3,415,332
DRILL BIT
Arnold B. Bower, Jr., St. Clair Shores, Mich., assignor to General Electric Company, a corporation of New York
Filed Mar. 8, 1967, Ser. No. 621,618
5 Claims. (Cl. 175—410)



A drill bit, useful in drilling mine roof bolt holes, formed of a hollow tube having an open end upon which is provided a diametrically transverse socket formed by a pair of spaced-apart plates secured to the end of the tube, and a removable cutter insert arranged within the socket, that is, between the plates, with the tube end being otherwise open for the flow of fluid, such as air and coolant liquids.

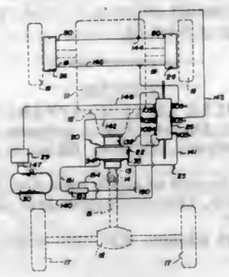
3,415,333
MANUAL RANGE CHANGER FOR WEIGHING SCALES
Clarence S. Simonds, Toledo, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio
Filed Nov. 17, 1965, Ser. No. 508,328
5 Claims. (Cl. 177—210)



An electronic weighing scale having a certain capacity and a range changer for increasing the capacity. The range changer is mechanically adjusted to offset tare and/or to offset net or gross load.

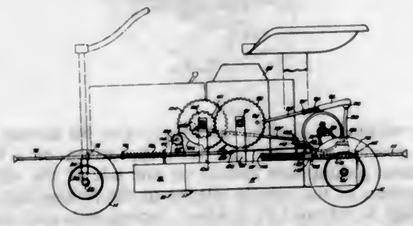
3,415,334
HYDRAULIC DRIVE FOR MOTOR VEHICLES
Joseph A. Vriend, Government Road, Squamish, British Columbia, Canada
Filed Nov. 14, 1966, Ser. No. 593,786
4 Claims (Cl. 180—66)

Hydraulic drive apparatus for motor vehicles having a hydraulic pump driven by the vehicle engine and connected to a hydraulic motor at each of the wheels to be driven. The wheels are drivingly connected to the hydraulic motors through the mediacy of over-running clutches which operably connect the wheels and hydraulic



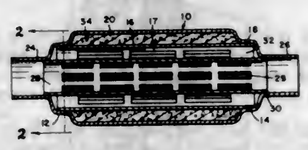
motors when the latter seek to rotate faster than the wheels.

3,415,335
DRIVERLESS LAWN MOWER
John D. Wise, 99 E. 33rd St., Paterson, N.J. 07514
Filed May 22, 1967, Ser. No. 639,998
9 Claims. (Cl. 180—79)



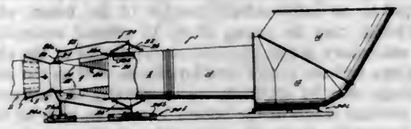
A driverless, self-powered lawn mower or the like land processing device, including abutment rods and mechanism controlled by actuation of the abutment rods upon striking an abutment at the end of a straight line path of travel for reversing the line of travel along a path adacent the last previous path for systematically mowing or otherwise processing a predetermined land area.

3,415,336
RESONATOR AND METHOD OF MAKING IT
James C. Arthur and Raymond L. Placek, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Nov. 14, 1966, Ser. No. 593,762
1 Claim. (Cl. 181—48)



A sound attenuating resonator which is formed from an open-ended imperforate shell having a first pair of axially spaced reduced diameter shoulders and a second pair of axially spaced reduced diameter shoulders having a smaller diameter than the first pair of shoulders and disposed axially outwardly therefrom. A first perforated tube is carried within the shell and supported on its ends from a first pair of shoulders, and a second perforated tube is carried within the first tube with its ends supported on the second pair of shoulders.

3,415,337
AIR INJECTOR DEVICE FOR AIR-COOLED NOISE SUPPRESSORS
Julian J. Karaslevich, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 20, 1966, Ser. No. 543,987
11 Claims. (Cl. 181—51)



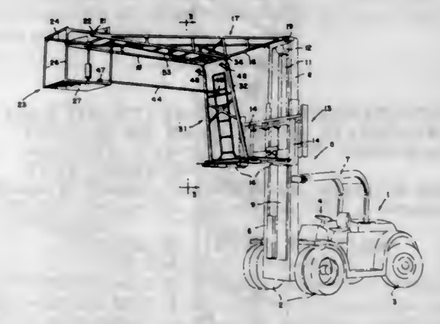
A jet engine ground waterless type noise suppressor directed primarily to the detailed aerodynamic structure of the injector means to introduce cooling air into the hot stream by use of a daisy or lobe arrangement using overlapping or shingled construction. The lobes are formed of curved wall members with upstream edges having flange means for forming slot-like openings for inducing the flow of secondary cooling air into the hot engine exhaust gas stream.

3,415,338
ANTI-WHISTLE PIPE CONNECTION
Robert H. McMillan, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Jan. 23, 1967, Ser. No. 611,035
7 Claims. (Cl. 181—59)



An anti-whistle connection between a gas-carrying pipe and a second pipe or tube connected thereto at an opening formed in the wall of said gas-carrying pipe in which a transverse projection is provided adjacent the upstream end of the opening to project into the gas-carrying pipe to prevent the gas stream from whistling as it passes over said opening.

3,415,339
FORK LIFT ATTACHMENT
Clyde M. Range, Rte. 1, Box 257, Oroville, Wash. 98844
Continuation-in-part of application Ser. No. 588,039, Oct. 20, 1966. This application Apr. 18, 1967, Ser. No. 631,722
14 Claims. (Cl. 182—2)



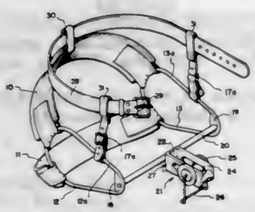
An attachment for dirigible vehicles known as "fork lifts" which include a rigid upright mast or frame, a second guide frame mounted for vertical telescoping movement on the first frame and an elevator carriage which

is mounted for vertical movement on the second guide frame. The attachment comprises a boom having one end pivotally connected to the upper end of the vertically telescoping guide frame with the opposite end of the boom being adapted to be connected to a load. A secondary frame structure is pivotally connected to the horizontally extending tines of the elevator carriage and pivotally connected to an intermediate portion of the boom whereby the boom may be swung about its pivotal connection to the secondary frame by vertical movement of the elevator carriage and the entire attachment, as well as the elevator carriage, may be vertically raised thereby vastly increasing the vertical reach of the boom. The boom may be extended forwardly from the fork lift vehicle or may be so mounted as to extend laterally therefrom according to a second embodiment.

3,415,340
SAFETY SLING FOR WORKMEN

Jerald H. Kinkade, Cody, Wyo., assignor to Manufacturing Patents Associates, a partnership

Filed June 9, 1967, Ser. No. 645,050
6 Claims. (Cl. 182—7)

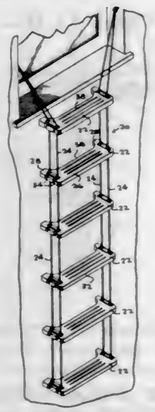


A rope-suspended sling, for workmen required to work on the outside of buildings or in other high places, gives secure support yet may be readily shifted along the rope by the occupant of the sling to permit a change in work position, without danger of a fall.

3,415,341
EMERGENCY FIRE ESCAPE

Ernest R. Hostetler, Rte. 2, Edom Road, Harrisonburg, Va. 22801

Filed June 15, 1967, Ser. No. 646,398
3 Claims. (Cl. 182—198)

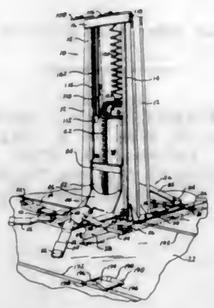


A stackable ladder having a plurality of stackable metal step plates connected by flexible ropes, or chains extending through each end of the step plates with an open space being provided on one side of each step plate to enable obtainment of a hand hold on each step when the ladder is extended adjacent a building wall with the step plates engaging the wall.

3,415,342
VEHICLE LIFTING APPARATUS

Ion V. K. Hott, Dayton, Ohio, assignor to The Joyce-Cridland Company, Dayton, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 474,825. July 26, 1965. This application June 28, 1967, Ser. No. 649,497
19 Claims. (Cl. 187—8.41)

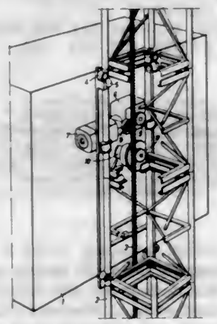


A vehicle is raised by a frame contact lift having four rails pivoted on a carriage vertically driven by a floor-mounted jacking unit located on one side of the vehicle. Alignment of the vehicle relative to the jacking unit and carriage is indicated by a wheel locater plate and, in one embodiment, by braces or gussets adjacent the floor and the vehicle lift chassis. A semihydraulic jacking unit is provided with a low oil control valve and a speed control valve. The latter valve opens to increase the descending speed of the carriage as the vehicle engages the floor.

3,415,343
CATCH APPARATUS FOR THE CAGES OF SCAFFOLD ELEVATORS AND THE LIKE

Torbjörn Svensson, Skelleftea, Sweden, assignor to Alimak-Verken AB, Skelleftea, Sweden

Filed Apr. 18, 1967, Ser. No. 631,805
11 Claims. (Cl. 187—19)

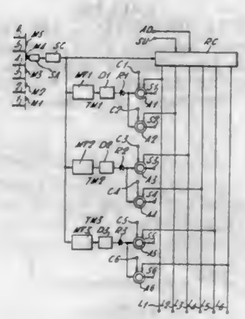


In scaffold elevators or the like, in which the elevator cage by means of a driven gear wheel climbs along a toothed rack in a mast structure, a centrifugal regulator and a drum brake are built as one unit attached to the cage, and the drum brake is successively braking the regulator shaft, which has a gear wheel meshing with the rack, thereby successively stopping the cage in relation to the rack by the aid of the apparatus frame and the regulator gear wheel meshing with the rack, without the aid of wedges or the like.

3,415,344
SYSTEM FOR PRODUCING SPEED REDUCTION SIGNALS FOR AN ELEVATOR CAR

Akira Abe, 168 Tenno-cho, Takatsuki-shi, Osaka, Japan; Jukichi Takahashi, 53–7 Tojiin Minami-machi, Kita-ku, Kyoto, Japan; and Shosuke Morita, 37 Nagaoka-cho, Otokuni-gun, Kyoto, Japan

Filed Dec. 20, 1965, Ser. No. 514,841
Claims priority, application Japan, Dec. 21, 1964, 39/72,434
6 Claims. (Cl. 187—29)



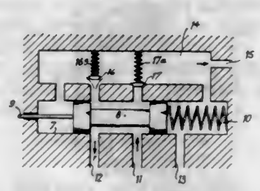
1. A system for producing a speed reduction signal for an elevator car serving a plurality of floors, comprising: a proximity detector provided on said elevator car; a member provided at the center of the distance between each adjacent pair of said floors and adapted to be detected by said proximity detector as said elevator car moves up or down; time-delaying means comprising electrical static components and adapted to be triggered by the output signal of said proximity detector to produce a first signal a predetermined period of time after said detector has detected said member; means for producing a second signal corresponding to that one of said floors which said elevator car has been called to serve; means for producing a third signal corresponding to the position of said elevator car relative to said floors; and means for producing a fourth signal upon reception of said first, second and third signals at the same time, said fourth signal being utilized to reduce the speed of said elevator car.

3,415,345
TORQUE CONVERTER WITH CLUTCH ENGAGED AND RELEASED BY DIFFERENT PRESSURES

Jean G. Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French societe

Filed Sept. 30, 1966, Ser. No. 583,332
Claims priority, application France, Oct. 26, 1965, 36,295
7 Claims. (Cl. 192—3.33)

A hydraulically operated torque converter and a mechanical clutch adapted to be connected to one element of the converter. A distributor device for selectively establishing the hydraulic fluid pressure at suitable predetermined values in control circuits for the mechanical clutch. A first fluid circuit to feed fluid under pressure to a first face of the clutch plate in the direction of declutching and a second fluid circuit to feed fluid under pressure to the torque converter and simultaneously to the other face of the clutch plate in the direction of clutching. The two fluid circuits each having a discharge valve therein, and the discharge valve of the first fluid circuit

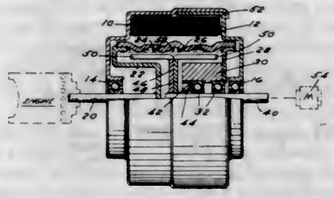


controlling the pressure in the first circuit so that the pressure therein is greater than the discharge pressure controlled by the valve of the second fluid circuit.

3,415,346
STARTING CLUTCH FOR ENGINES

Irvin L. Boeskool and Richard Grau, Grand Rapids, Mich., assignors to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,090
5 Claims. (Cl. 192—21.5)



A starting assembly for a high speed engine such as a turbine engine which utilizes a prime mover such as an electric motor driving through a magnetic particle clutch, the assembly being so arranged that the clutch can be actuated utilizing the magnetic field to start and restart the engine but when the engine reaches a certain speed the magnetic particles will be centrifugally locked in a position wherein the clutch can no longer be engaged, thus making it impossible to overrun the clutch when the engine is operated. The invention also includes specific designs for reducing the inertia of the rotating parts by mounting the field-creating means in a stationary housing with a separate rotatable housing for retaining the magnetic particles, including a special hub arrangement for simultaneously mounting the toroidal coil and the rotatable portions of the clutch.

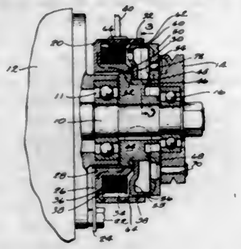
3,415,347
POLE STRUCTURE FOR ELECTROMAGNETIC CLUTCH OR BRAKE WITH STATIONARY MAGNET AND METHOD OF MANUFACTURE THEREOF

Bernard E. Wrensch, Brookfield, Wis., assignor to Stearns Electric Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 26, 1967, Ser. No. 612,004
9 Claims. (Cl. 192—84)

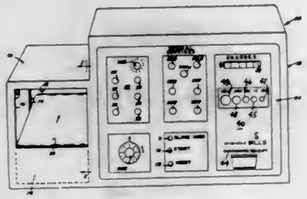
The primary annular poles of a stationary magnet energize outer and inner extension poles on one of the members to be clutched and for which the other member provides an armature. The armature has a floating mounting for movement to and from engagement with the extension poles. The hub of the first member provides the inner extension pole and a specific feature of the invention consists in an arrangement whereby the outer extension pole

is formed by a cup-shaped stamping having an intermediate web portion offset and having its rim peripherally



ground or otherwise machined to true cylindrical form to fit closely within the primary outer pole of which it is an extension.

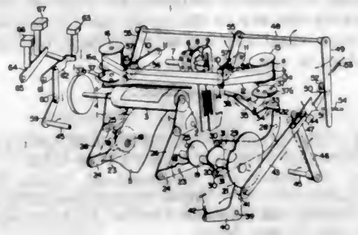
3,415,348
PACKAGE HANDLING APPARATUS HAVING TRANSPORTATION COST DETERMINING MEANS
Eric C. Wahlberg, 32 8th St., Stamford, Conn. 06905
Continuation of application Ser. No. 453,802, May 6, 1965. This application Jan. 8, 1968, Ser. No. 696,482
11 Claims. (Cl. 194—4)



Package handling apparatus comprising a mechanism for weighing the package and providing an output indicative thereof, circuitry for selecting the destination of the package, circuitry for selecting the classification of the package, means for combining the output from the weighing mechanism with the selected destination and classification of the package to provide an indication of the cost of transporting the package, a mechanism for receiving money and totaling the amount received and a mechanism for issuing a receipt, routing the package and dispensing change when the money received is equal to or greater than the transportation cost.

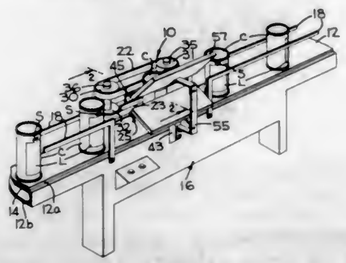
3,415,349
MULTICOLOR PRINTING DEVICE FOR BUSINESS MACHINES AND EQUIPMENT
Tetsuo Sato and Harutaro Oba, Takata-gun, Shizuoka-ken, Japan, assignors to Tokyo Denki Kabushiki Kaisha, Tokyo-to, Japan
Filed Dec. 27, 1965, Ser. No. 516,296
Claims priority, application Japan, Dec. 30, 1964 (utility model), 39/102,781, 39/74,813
3 Claims. (Cl. 197—157)

A business machine having a cam actuated, key controlled linkage for changing the ribbon field between red and black in accordance with the printing of negative and positive numerals. The ribbon shifting means has two guide levers having respective guide slots therein for guiding the printing ribbon in a straight path between the platen roll and the positioned type faces, and each guide lever has a guide slot at its free end and is pivoted at the other end, whereby said guide slot is shiftable in the transverse, width direction of the ribbon. Two actuating levers are coupled to the ribbon actuating means and are actuated in unison by the actuating movement of each actuating lever first causing respective ribbon holding means to hold the ribbon against movement in its feed direction and then causing the respective guide lever, to-



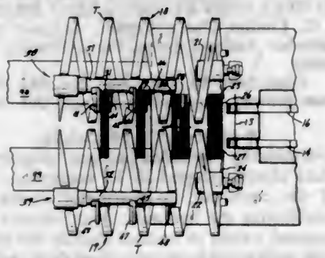
gether with the ribbon so held, to shift, thereby to change the color of printing.

3,415,350
ARTICLE ORIENTING APPARATUS
Hugh W. Murphy, Saratoga, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,953
11 Claims. (Cl. 198—33)



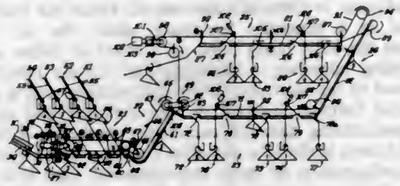
An endless belt conveyor transports a series of spaced cans in upright positions past a photoelectric detective device. A driving belt and pusher bar are caused to successively engage each can on opposite sides thereof adjacent to the detecting means to rotate it about its vertical axis without disturbing its spacial position on the conveyor belt until the detecting device senses a specially marked area upon the surface of the can. At that time control means are actuated to remove the driving belt and pusher bar to leave the can in a predetermined rotated orientation.

3,415,351
BAG ACCUMULATOR
Walter S. Ware and Donald R. Cannon, West Monroe, La., assignors to Olinkraft, Inc., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,388
8 Claims. (Cl. 198—33)



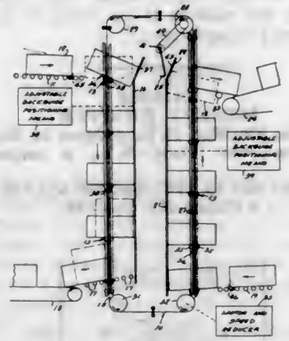
An apparatus and method for alternating or reversing the butts or bottoms of bag groups in preparation for baling to ensure relatively right rectangular bales.

3,415,352
TRANSPORTING SYSTEM AND METHOD
Rudolph F. Gerisch, 1317 Portsmouth Ave., Westchester, Ill. 60153
Filed Oct. 21, 1965, Ser. No. 499,421
21 Claims. (Cl. 198—38)



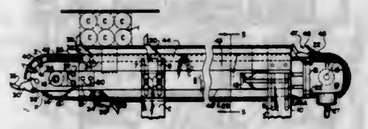
Disclosed herein is a transporting system for moving hangers or other articles from an input station to preselected discharge or disbursing stations. The transporting system includes a feed section having closely spaced forks or elements for moving articles to a distributor section. The distributor section has relatively widely spaced forks or elements for moving the articles to the spaced apart disbursing stations. The ratio of the spacing of the elements of the feed section to the speed of movement of these elements is the same as the ratio of the spacing of the elements of the distributor section to the speed of movement of the distributor section. An actuator is advantageously provided for simultaneously releasing a plurality of articles at a plurality of preselected delivery stations.

3,415,353
APPARATUS FOR SIMULTANEOUSLY ELEVATING AND LOWERING PACKAGING ARTICLES
Lawrence C. Oertle, Jr., Random Lake, Wis., assignor to H. G. Weber and Company, Inc., Kiel, Wis., a corporation of Wisconsin
Filed Oct. 7, 1966, Ser. No. 585,146
6 Claims. (Cl. 198—156)



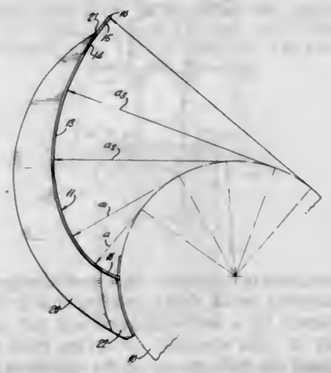
Endless chain and flight conveyor for elevating and lowering packaging articles. Laterally spaced endless conveyor chains have roller flights connected at their ends to the chains and extending in the space between the chains. The uprunning flights serve as elevators while the downrunning flights serve to lower packaging articles. Individual back guides are spaced inwardly of the uprunning and downgoing flights distances sufficient to place the greater part of the weight of a packaging article toward the back guides and to bias the boxes against the back guides by gravity. These back guides are adjustable relative to the conveying runs of the conveyor in accordance with the size of article being elevated or lowered. The packaging articles are loaded onto the flights to engage the back guides by roller ramps and are discharged from the downrunning flights by roller ramps extending in the path of travel of the packaging articles and spaced from the conveyor chains distances sufficient to accommodate the flights to pass through the roller ramps. The packaging articles on the elevating run are ejected from this run of the conveyor by a rotating camming ejector engaging a packaging article as the article is elevated to a discharge position.

3,415,354
FEEDER MECHANISM
Victor Benatar, Atlanta, and Richard T. Wilcox, Clarkston, Ga., assignors to The Mead Corporation, a corporation of Ohio
Filed Feb. 25, 1966, Ser. No. 530,150
2 Claims. (Cl. 198—173)



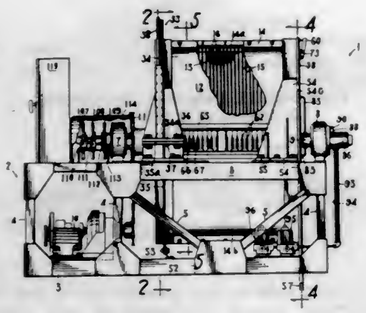
For feeding articles along a predetermined path and in a predetermined spaced relationship to each other, an endless conveyor is arranged with its working reach alongside and parallel to the path of movement of the articles. A plurality of feeder lugs mounted in spaced relationship to each other on the conveyor are arranged to move in behind and to import movement to predetermined articles. The conveyor is mounted at its ends on rotatable elements and each lug is provided with a cam follower for engaging a cam at the entry end of the conveyor. The cam is constructed at the initially engaged portion thereof with a curvature of shorter radius than a subsequently engaged portion. The subsequently engaged portion of the cam is of generally parabolic configuration and is arranged relative to the periphery of the rotatable element so as to impart oscillatory movement to each lug as it approaches the path of movement of the articles.

3,415,355
PLOW FEEDER WITH INVOLUTE BLADES
Bernard H. Ash, Los Angeles, Calif., assignor to Litton Industries, Inc., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,655
6 Claims. (Cl. 198—209)



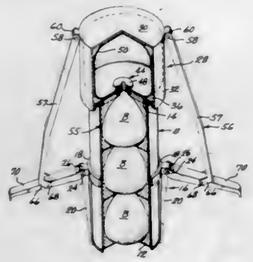
A plow feeder having a rotor rotatable about an axis and having one or more plow blades on the rotor with a contour following the involute of a circle concentric with this rotor axis.

3,415,356
STORAGE AND FEEDING APPARATUS
Takao Wakabayashi, Tarumi-ku, Japan, assignor to Nakanishi Metal Works Company, Ltd., Osaka, Japan, a joint-stock corporation of Japan
Substituted for abandoned application Ser. No. 410,627, Nov. 12, 1964. This application May 24, 1967, Ser. No. 656,612
Claims priority, application Japan, Jan. 31, 1964, 39/5,037
6 Claims. (Cl. 198—215)



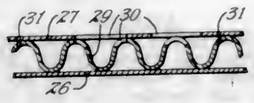
Briefly, this invention encompasses a storage and feeding apparatus comprising a channel means having a front end and a rear end and having the form of a spiral and into which rear end items may be inserted, means for rotating the channel means about its spiral axis to cause the items to move in a forward direction, means for preventing the items from going in a reverse direction when said channel means is being rotated, and means for releasing the items in predetermined quantities from the front end of the channel means, which releasing means comprising gating means on the channel means responsive to predetermined rotational position of the channel means.

3,415,357
SELF-CONTAINED TENNIS BALL STORAGE CONTAINER AND PRESSURIZING DEVICE
William J. Van Natter, 401 Tower Bldg., Seattle, Wash. 98101
Filed Dec. 26, 1967, Ser. No. 693,589
19 Claims. (Cl. 206—1)



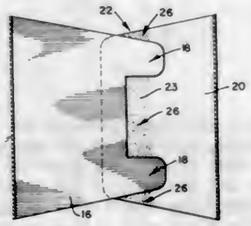
Self-contained or combined tennis ball storage container and pressurizing device. One embodiment is in the form of an attachment for a conventional tennis ball can having a plurality of filler elements occupying most of the air space around the balls placed in the container to form a ball occupying chamber, with a compression cylinder fitted in airtight relation over the top of said container and containing a collapsible air bladder, and with toggle linkages for telescoping the compression cylinder over the container to force air from the bladder into the container, thus pressurizing the ball occupying chamber. A second embodiment includes a cylindrical container having filler elements to fill the air space around the balls, a collapsible bellows removably fastened in airtight relation over the top of the container, and two latches for fastening the compressed bellows to the sides of the container. A third embodiment includes a container in which the balls are placed in a generally horizontal plane, the air space around the balls being filled with fillers to define a ball occupying chamber, a container end closure removably fastened to the container in airtight relation, and a screw actuated bellows fastened to the container end closure for pressurizing the ball occupying chamber. A fourth embodiment includes a container having a bottom half in the configuration of three semi-spherical cups in a generally horizontal plane, a top half removably fastened in airtight relation to the bottom half and having the configuration of three inverted semi-spherical cups, and a pump in the form of a resilient disk integrally formed on said top half of the container and being provided with check valve means for retaining air pumped into said ball occupying chamber.

3,415,358
BOTTLE PACKAGES
Rudolph A. Faller, Cincinnati, Ohio, assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,660
1 Claim. (Cl. 206—46)



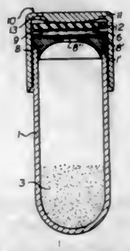
A bottle package including in combination a bottle of liquid and a carton of corrugated paperboard, the corrugated medium being absorbent and the inner liner having perforations through which liquid may penetrate for absorption by the medium if the bottle be broken, the outer liner being imperforate.

3,415,359
HOSIERY WRAPPER
George Vrana, Flushing, N.Y., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,179
5 Claims. (Cl. 206—46)



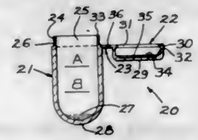
The invention is directed to a sleevelike paperboard wrapper for hosiery and the like which includes a bifunctional glue lap. The glue lap maintains the integrity of the wrapper tube after it is folded from a blank and additionally releasably holds the hosiery within the wrapper.

3,415,360
RECEPTACLE FOR DENTAL PREPARATIONS
Erwin Baumann, Nendeln, and Garhard Beham, Vaduz, Liechtenstein, assignors to Etablissement Dentaire Ivoclar, Schaan, Germany
Continuation-in-part of application Ser. No. 471,986, July 14, 1965. This application Dec. 19, 1966, Ser. No. 602,754
12 Claims. (Cl. 206—47)



A package for dental preparations comprising two telescoping members each open at one end and closed at the other end, one of the members having a separating means having an opening therein positioned in the open end thereof and a pouch positioned thereon between the separating means and the closed end wall of the other member, whereby upon telescoping of the two members together rupture of the pouch results in expelling of the contents therefrom, through the opening in the separating means and into the other member for mixing.

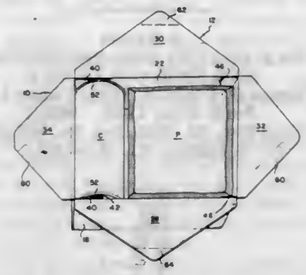
3,415,361
TEST DEVICE AND CONTAINER THEREFOR
Keith Wayne Chambliss, Margaret Rozman Weiss, Barbara Evers Loughman, and Ernest Clarence Adams, Jr., Elkhart, and James Gilbert Beeny, Jr., South Bend, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Filed Dec. 22, 1966, Ser. No. 604,046
19 Claims. (Cl. 206—47)



The disposable test device includes a receptacle and a corresponding closure member which is pivotable into a closed position over said receptacle to provide a closed reaction vessel. Any necessary chemical reagents for the test are carried by the receptacle and/or the closure member and in use a liquid test sample is added directly to said receptacle prior to closing of said closure member. The device may include support means for supporting said receptacle in an upright position on a flat surface.

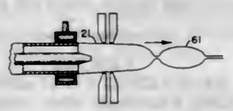
3,415,362
MULTI-PRODUCT CARTON WITH PRODUCT-RETAINING FEATURE
Donald R. Kuehl, Menasha, and Clifford G. Peters, Appleton, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 2, 1968, Ser. No. 695,193
10 Claims. (Cl. 206—47)

An edge-to-edge nesting foldable carton blank having means for retaining a rigid product container in predetermined position when formed into a package composed of the carton, a container of product, and a flexible pouch of product packed side-by-side within the carton. In particular, the carton is provided with ear portions which engage means such as can chimes to prevent the can from



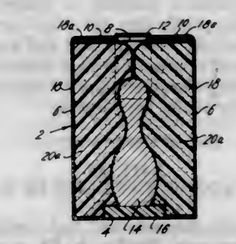
moving about within the carton to damage either the soft pouch or its contents, without usage of adhesive or auxiliary internal compartments or partitions.

3,415,363
AUTOMATIC MUD SAMPLER AND PACKAGER
John M. Horeth, Richard H. Langenheim, and William D. Howard, Tulsa, Okla., assignors to Esso Production Research Company, a corporation of Delaware
Original application Apr. 21, 1964, Ser. No. 361,513, now Patent No. 3,333,391, dated Aug. 1, 1967. Divided and this application Apr. 3, 1967, Ser. No. 644,422
7 Claims. (Cl. 206—56)



A packaging material for a drilling mud sampler. The packaging material is tubular in form and made of a flexible, heat-sealable, gas-retentive material with a relatively high tensile strength.

3,415,364
FOAM PACKAGE CONSTRUCTION
Marvin Schneider, Wyncote, Pa., assignor, by mesne assignments, to Pyles Industries, Inc., Southfield, Mich., a corporation of Michigan
Original application Nov. 20, 1961, Ser. No. 153,406, now Patent No. 3,222,843, dated Dec. 14, 1965. Divided and this application Mar. 12, 1965, Ser. No. 446,459
7 Claims. (Cl. 206—46)



2. A package comprising an article in a container, said container having inner walls and outer walls, and at least one bag positioned between the inner walls of the container and the external surfaces of the said article, said bag having disposed therein a cellular plastic material

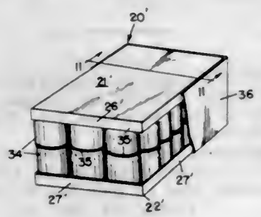
which substantially fills the volume of the container and maintains the said bag in intimate contact with the exterior surfaces of the article and the inner surfaces of the container.

3,415,365
WAX COATED DISC-PROTECTING AND STORAGE DEVICE
Thomas G. Faulkner, 10910 Lillian Lane, South Gate, Calif. 90280
Filed Dec. 29, 1966, Ser. No. 605,859
3 Claims. (Cl. 206—62)



A moisture-proof device for storing a supply of wax coated paper discs of the type used on Tachograph units in the cab of an automotive truck or tractor in such a manner that said wax coatings are not defaced due to frictional contact between the discs caused by vibration and shock from said vehicle when the latter is in motion.

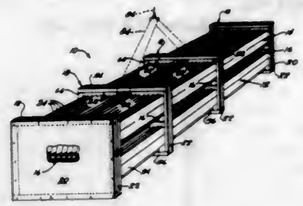
3,415,366
PACKAGING CONTAINERS
Kenneth H. Lillis, Cincinnati, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Continuation of application Ser. No. 249,463, Jan. 4, 1963. This application Nov. 29, 1966, Ser. No. 597,799
4 Claims. (Cl. 206—65)



A package wherein a plurality of articles are arranged in layers on tray panels one of which serves as a supporting bottom of the package. Side and end walls of the package may be of relatively flexible material and are adhered to depending marginal edges of the tray panels and not to the articles within the package.

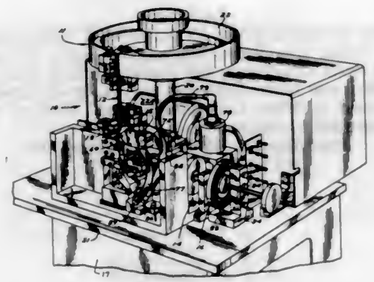
3,415,367
SELF-SUSTAINING PACKAGE OF BUILDING PANEL UNITS
William A. Lynch, Connersville, Ind., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1966, Ser. No. 602,739
8 Claims. (Cl. 206—65)

A self-sustaining package of building panel units comprising at least one group of panel units arranged in face-to-face relation and presenting opposite side edges. A plurality of frames are spaced along the length of the group of panel units. The frames include upper and lower horizontal elements, and vertical elements. Compressible members are compressed between the opposite side edges



and the upper and lower horizontal elements of the frames. The panel units are thereby resiliently clamped in the aforesaid face-to-face relation. The frames are connected together solely by the group of panel units.

3,415,368
CORE HANDLING DEVICE WITH AIR SORTING SYSTEM
Eugene A. Vosika, New Brighton, Minn., assignor to The Ramsey Engineering Company, St. Paul, Minn., a corporation of Minnesota
Filed Sept. 13, 1966, Ser. No. 579,018
12 Claims. (Cl. 209—73)

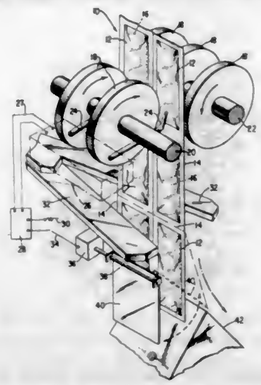


A testing and handling device for magnetic cores including a testing station in which each of the cores is tested, and is either accepted or rejected in accordance with predetermined standards. After the core has passed through the testing station, it is directed either into an accept or a reject passageway. The passageways use jet aspirating means comprising symmetrical nozzles around a tubular member which causes cores to be pulled into the correct station, either accept or reject, and handles the delicate cores without damage to them. The accept passageway comprises a lateral passageway having an upwardly extending portion so that accepted cores have to be moved out of the path of their gravity fall from the testing station.

3,415,369
SHORT FILL DETECTOR AND REJECTOR
Roy K. Hennig, Cincinnati, Ohio, assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 596,924
2 Claims. (Cl. 209—88)

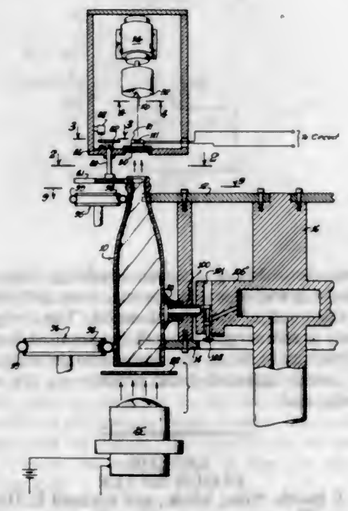
A reciprocating sensing arm detects presence or absence of articles in a receptacle. The arm reciprocates in

timed relation to detect only the bottom position of each receptacle without contacting the other portions of said



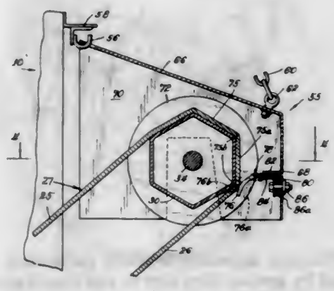
receptacle. The receptacles are then sorted according to the results of this test.

3,415,370
EMPTY BOTTLE BOTTOM AND NECK INSPECTION MACHINE USING RADIATION SENSITIVE MEANS
Robert Glenn Husome, El Segundo, Calif., assignor to San Marino Electronic Corporation, El Segundo, Calif., a corporation of California
Continuation-in-part of application Ser. No. 504,471, Oct. 24, 1965. This application June 3, 1966, Ser. No. 555,148
17 Claims. (Cl. 209—111.7)



1. In an empty bottle inspection machine, a detection system for detecting the presence of foreign matter within a bottle, said detection system comprising:
(a) means for directing radiant energy through a bottle;
(b) means for focusing from said radiant energy an image of the bottom of said bottle;
(c) a rotating surface having thereon a reflective segment, said surface being concave and located in the image plane of said bottom of said bottle as focused by said focusing means;
(d) said reflective segment being arranged to scan said image of said bottom of said bottle during rotation of said surface;
(e) a radiant energy sensor, said sensor being disposed in the path of radiant energy reflected from said segment, whereby the amount of said energy received by said segment is momentarily substantially varied whenever said segment in the course of rotation thereof coincides with the image of a particle of foreign matter disposed in said bottle proximate the bottom thereof;
(f) said rotating surface having a predetermined concavity and being arranged so that the area proximate the neck of said bottle is focused by said reflective segment on said surface to an image plane;
(g) said radiant energy sensor being located in said image plane of said bottle neck;
(h) means for scanning said bottle neck image by said sensor whereby the amount of radiant energy received by said sensor is momentarily substantially varied whenever said sensor in the course of scanning coincides with the image of a particle of foreign matter disposed in said bottle neck;
(i) circuit means for producing an output signal indicating the condition of said sensor; and
(j) means responsive to said output signal for rejecting a bottle from said inspection machine whereby when said output signal indicates the presence of foreign matter, the bottle is rejected.

3,415,371
PORTABLE HARVESTERS FOR LEGUMINOUS VEGETABLE CROPS
Dennis R. Schultz, Rossville, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,899
9 Claims. (Cl. 209—114)



The present invention is directed to apparatus for use in portable harvesters for leguminous vegetable crops such as peas, beans and the like, and more particularly is directed to valve means in the form of a shield for preventing gusts of wind from blowing extraneous material such as parts of leaves, stems, pods and debris in a direction opposite to the normal path of travel of such extraneous material, which path is outwardly from the separating mechanism for ejection through a side opening of the machine.

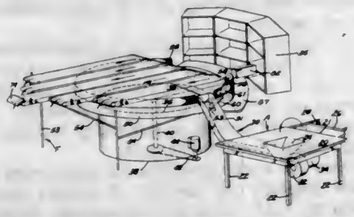
3,415,372
SOILED LAUNDRY CLASSIFIER
Lawrence V. Drace, 2020 Howard Ave., Las Vegas, Nev. 89105
Filed Sept. 27, 1966, Ser. No. 582,303
14 Claims. (Cl. 209—124)

14. Apparatus of the character described for segregating classes of fabric pieces and the like from a jumble of

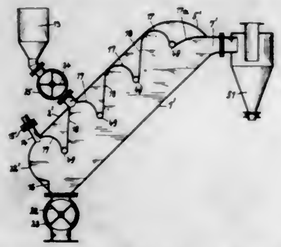
the same, such as a mixture of laundry items, said apparatus comprising in combination:

a generally flattop rotary table having at least one manual sorting station for a worker located adjacent an edge thereof, and means for continuously rotating said table relative to said station;

a cluster of conveyers directed transversely to said rotary table, and vertically spaced therefrom, each having a loading end disposed closely adjacent a sorting station and having operating means to convey successive items placed thereon to a discharge end distant from said rotary table, said conveyers having their loading ends disposed closely adjacent one another and characterized by longitudinally directed, inverted-V-shape deflector guides overlying the intersections between channels of adjacent conveyers.



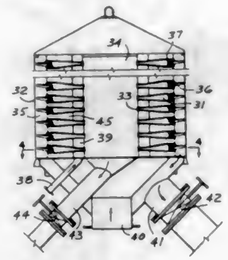
3,415,373
PARTICLE SIZE CLASSIFICATION METHOD AND APPARATUS
Peter Pink, 78 Klein-Rotz, near Korneuburg, Austria, and Wolfgang Schlitter, Auhofstrasse 240, Vienna XIII, Austria
Filed Aug. 27, 1965, Ser. No. 483,245
Claims priority, application Austria, Aug. 31, 1964, A 7,503/64
20 Claims. (Cl. 209—137)



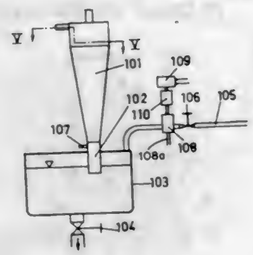
In classification apparatus wherein particulate material is separated by gravity into coarse and fine fractions, the coarse fraction sinking through an upwardly moving fluid stream and the fine fraction being carried upwards with the stream, portions of the fluid carrying the particles are diverted from the straight main stream into laterally adjacent pockets wherein they are formed into a vortex having a transverse axis, the coarser particles being centrifugally thrown outwardly in the vortex whence they are returned to a lower portion of the main stream.

3,415,374
METHOD AND APPARATUS FOR VORTICAL SEPARATION OF SOLIDS
Nils Anders Lennart Wikdahl, 42 Bravallavagen, Djursholm, Sweden
Filed Sept. 23, 1964, Ser. No. 398,496
Claims priority, application Sweden, Mar. 5, 1964, 2,713/64; July 20, 1964, 8,800/64
14 Claims. (Cl. 209—211)

Horizontally oriented hydrocyclones disposed in superimposed layers are arranged to discharge light fractions into a common compartment and heavy fractions into another common compartment. A third compartment is arranged common to all feed inlets. Conduits and regulating devices maintain the operational levels in the compartments above the heavy fraction outlets in the uppermost layer.



3,415,375
METHOD AND APPARATUS FOR VORTICAL SEPARATION OF SOLIDS
Nils Anders Lennart Wikdahl, 42 Bravallavagen, Djursholm, Sweden
Filed Mar. 2, 1965, Ser. No. 436,560
Claims priority, application Sweden, Mar. 5, 1964, 2,713/64
9 Claims. (Cl. 209—211)

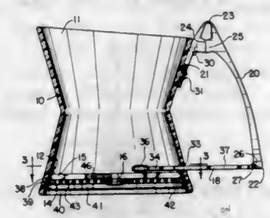


Hydrocyclone heavy fraction discharge compartment has radially inwardly extending members defining a constricted inlet and a constricted outlet. The compartment outlet end is submerged beneath the level of heavy fraction maintained in heavy fraction discharge collecting vessel and means maintain back pressure on the compartment outlet end.

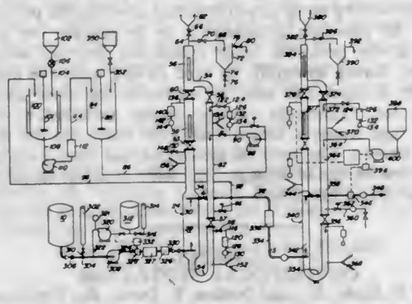
3,415,376
FLOUR SIFTER
Mahlon J. Smith, Niles, Mich., and Richard E. Henderson, Oregon, Ill., assignors to The Washburn Company, Worcester, Mass., a corporation of Massachusetts
Filed Jan. 20, 1967, Ser. No. 610,689
9 Claims. (Cl. 209—236)

This flour sifter is of a small size designed to fit in one's hand and be operated by opening and closing the hand. It is of plastic construction throughout, making it possible to wash it thoroughly at intervals without danger of any part thereof rusting. There is no separate spring, spring action being obtained by flexing a resilient lever fixed on one side of the sifter at one end and pivotally connected at the other end to an agitator operating link.

The lever and link, also the lever attaching part, are all molded in one piece of polypropylene or the like with an integral web hinge connection between the lever and driver link for the one pivot, and a similar integral thin web hinge connection between the other end of the lever and the part attached to the sifter body.



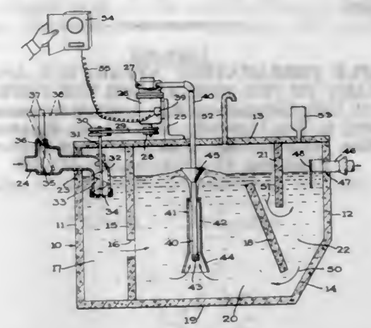
3,415,377
APPARATUS FOR THE TREATMENT OF MILK
Irwin R. Higgins, Oak Ridge, Tenn., assignor to Chemical Separations Corporation, Oak Ridge, Tenn., a corporation of Tennessee
Original application Apr. 1, 1963, Ser. No. 269,585, now Patent No. 3,194,663, dated July 13, 1965. Divided and this application May 22, 1964, Ser. No. 373,127
3 Claims. (Cl. 210—96)



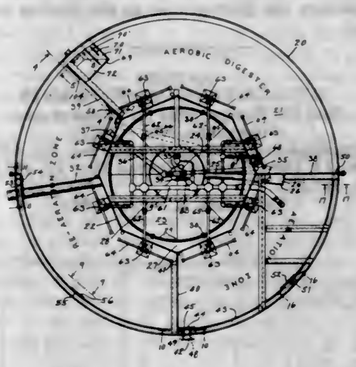
A milk decontamination system including in combination, a pH adjustment means, a moving bed ion exchange resin column loop and means for restoring the original pH of the decontaminated milk after removal from the ion exchange resin column loop. An electrolytic pH adjustment cell is provided to reduce the pH of the contaminated milk prior to delivery to the ion exchange resin column loop to a pH level between 5 and 6. The same cell is also employed to restore the original pH of the milk after it has been decontaminated in the ion exchange resin column loop.

3,415,378
SEWAGE TREATMENT SYSTEM
Fukuichi Fukuda, 12–12 6-chome, Minami-oi, Shinagawa, Tokyo, Japan
Filed Feb. 10, 1966, Ser. No. 526,569
7 Claims. (Cl. 210—152)

The presence of sewage is detected by a sensor in the inflow pipe which causes the operation of a comminuting means and an air supplying means. Comminuted sewage undergoes bacterial treatment in a first compartment and is aerated in a second compartment after which it passes to a third compartment having a divided wall consisting of a substantially vertical baffle and a downwardly inclined baffle separated therefrom so that the effluent follows a tortuous path.



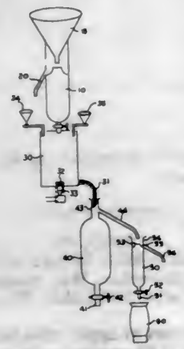
3,415,379
SELECTIVE SEWAGE TREATMENT PLANTS
Paul M. Thayer, Milwaukee, Wis., assignor to Water Pollution Control Corp., Milwaukee, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 488,704, Sept. 20, 1965. This application Sept. 18, 1967, Ser. No. 675,733
8 Claims. (Cl. 210—195)



A selective sewage treatment plant having a surrounding circular tank with partitions dividing the tank into U-shaped aeration zones constituting a first tank portion, and into a second tank portion usable either to increase the capacity of the first tank portion, if an extended aeration process is being carried out in the plant, or as an aerobic digester if a pre-aeration activated sludge process, a step aeration activated sludge process, or a contact stabilization process is being carried out. There is means selectively directing raw sewage into said second tank portion if an extended aeration process is being employed, or into selected locations in said first tank portion if one of the other processes is being employed. There is a settling tank within and surrounded by the surrounding tank, and there is gate means for selectively permitting flow from said second tank portion into one end of the first tank portion when the plant is being used for extended aeration, there being means adjacent the other end of the first tank portion for conducting mixed liquor into

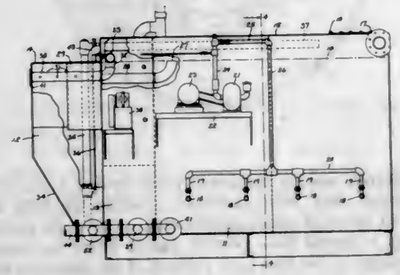
the settling tank, and there is means for removing sludge from the settling tank and flow divider means for delivering it to said second tank portion and/or to the first tank in predetermined portions dependent upon the process being used.

3,415,380
SAMPLE PREPARATION APPARATUS AND UNITARY FILTER-PIPETTE FOR USE THEREIN
John H. Ellis, Georgetown, Ky., assignor, by mesne assignments, to The University of Kentucky Research Foundation, Lexington, Ky., a corporation of Kentucky
Filed Aug. 10, 1966, Ser. No. 571,519
4 Claims. (Cl. 210—202)



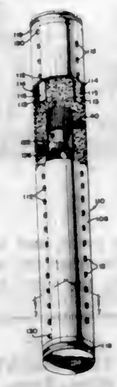
A unitary filter-pipette which dispenses an accurate aliquot of filtrate is constructed to insure easy washing and rapid dispensing. An assembly of laboratory apparatus employing the filter-pipette as the leading section is disclosed.

3,415,381
SEWAGE TREATMENT PLANTS
Paul M. Thayer, 3933 N. Prospect Ave., Milwaukee, Wis. 53211
Continuation-in-part of application Ser. No. 557,117, June 13, 1966. This application Dec. 29, 1967, Ser. No. 701,521
19 Claims. (Cl. 210—202)



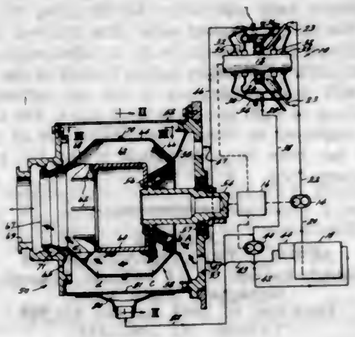
A sewage plant having an aeration tank, a settling tank, and a holding tank, a withdrawal pipe leading from the aeration tank to the settling tank, there being effluent removal means communicating with the liquid in the settling tank and there being means providing for a restricted rate of discharge from the settling tank when displacement occurs as a result of inflow of mixed liquor from the aeration tank, said effluent removal means having a discharge opening in the holding tank, the settling tank having a roof which is no higher than the lowermost portion of the discharge opening of the effluent removal means so that the settling tank is maintained full to the roof.

3,415,382
FILTER UTILIZING GLASS BALLS FOR FILTERING FLUIDS
John E. Martin, 4215 York, Wichita Falls, Tex. 76309
Filed July 18, 1966, Ser. No. 570,387
3 Claims. (Cl. 210—282)



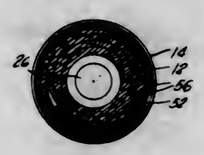
A filter unit utilizing minute glass balls within an annular space formed between perforate cylindrical members, which members are normally closed at one end and open at the opposite end, except when a series of filter units are joined in end to end relation. The filter media is minute glass balls, which filter media is maintained within the annular space between the perforate cylindrical members by mesh screen material covering the perforations. An alternate arrangement is to provide the inlet holes in the perforate outer cylindrical member with a closure, during assembly, of tape having adhesive material on at least one side, to maintain the filter media within the cylindrical casings during installation, and which tape forms a longitudinal inlet valve for the fluid being filtered. The ends of the cylindrical filter members are screw threaded engagement with pipe or to permit the use of multiple filters.

3,415,383
CENTRIFUGAL SEPARATOR
Roger T. Earle, Jr., and Nathan E. Davis, Jr., Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Feb. 23, 1966, Ser. No. 529,317
5 Claims. (Cl. 210—377)



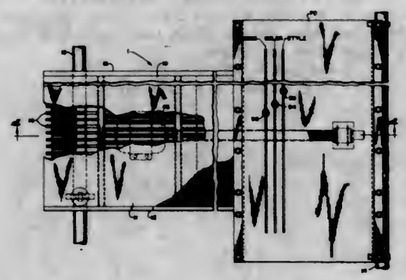
A separator having a rotatable separator element disposed in a housing and forming an annular passage which is segmented by a plurality of radially extending blades and formed with a divergent inlet communicating with the housing inlet and a convergent outlet communicating with the housing outlet. The leading edge of each blade is disposed within the divergent inlet and extends radially inwardly of the trailing edge of each blade. The outer wall of the separator element is formed with apertures intermediate the divergent inlet and convergent out for removal of denser material centrifuged from a fluid flowing through the separator element passage. The housing is adapted to collect the denser material centrifuged from the separator element.

3,415,384
ELEMENTS FOR REMOVING CONTAMINANTS FROM LIQUID
Walter Kasten, Franklin, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 572,967
1 Claim. (Cl. 210—484)



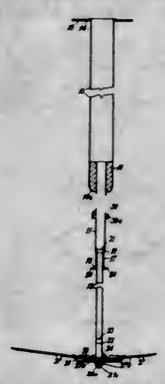
An element for removing contaminants from liquid consisting of a tubular body of porous material having end faces and end caps mounted on the end faces wherein strips of thermoplastic material are embedded in the body so that they extend to the end faces. The end caps are formed of thermoplastic material and are friction welded to the end faces of the body so that the thermoplastic strips become integral with the end caps to provide the necessary fluid-tight seal between the end caps and the body.

3,415,385
AUTOMATIC GARMENT HANDLING MACHINE
Anthony M. Rossello, Chagrin Falls, and John B. Fox, Shaker Heights, Ohio, assignors to Rosse-Fox Company, Cleveland, Ohio, a partnership
Filed June 27, 1966, Ser. No. 560,429
14 Claims. (Cl. 211—1.5)
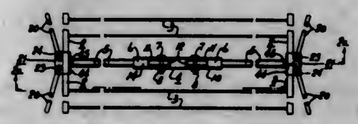


A garment handling apparatus including a plurality longitudinal reciprocable support arms having retainer means on their outer ends for releasably carrying a garment, a power-driven member mounted for movement in the same general direction as the support arms, and a carriage mounted for movement substantially transversely of the support arms, such carriage having selector means thereon for securing the engaging means of certain preselected support arms to the power-driven member for movement therewith between retracted and extended positions.

3,415,386
CLOTHES DRYING DEVICES
George Ogilvie, 12 Livingstone Ave., corner of 3rd St., Salisbury, Southern Rhodesia
Filed Oct. 13, 1966, Ser. No. 586,435
Claims priority, application Southern Rhodesia, Oct. 15, 1965, 386/65
2 Claims. (Cl. 211—118)



A clothes hanger having a telescopic mechanism so that it can be easily extended and retracted and which will enable the radial arms to be stowed within the retracted telescopic support. The clothes hanger consists of a tubular casing having an open ended slot at its bottom end. An outer tube is slidably fixed within the casing by a plunger attached to one end. This outer tube has an internal annular shoulder adjacent its other end. An inner tube is slidable within the outer tube and has an outwardly flared end portion to co-operate with the annular internal shoulder of the outer tube. The other end of the inner tube has a series of radial arms carried by a hub. These arms can be rotated so that they lie adjacent the axial length of the inner tube and the clothes hanger can be telescopically closed so that the inner tube, outer tube, and radial arms are all within the tubular casing. A pin is carried at the hub end of the inner tube, which pin engages with the slot in the tubular casing so as to retain the clothes hanger in closed condition. Preferably the outer tube carries a collar with downwardly extending skirt for housing the ends of the radial arms when lying adjacent the inner tube.

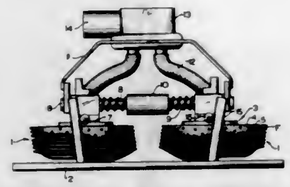
3,415,387
PORTABLE CLOTHES DRIER
Harold M. Lowe, 145 Beekman Road, Summit, N.J. 07901
Filed Oct. 26, 1966, Ser. No. 589,703
17 Claims. (Cl. 211—119.15)



Elongated clothesline cleats which secure passes of clothesline for a clothes drier. Each cleat consists of two

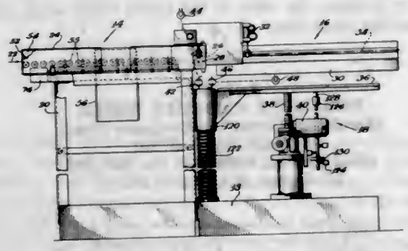
elongated members which have lateral interpolating projections which extend longitudinally with the members. The clothesline is cooperatively gripped by and between these projections through reverse curvature to prevent it from being withdrawn laterally. U-shaped channels are received over the interengaged cleat with the side flanges of the channel extending therebeyond to provide overlying top and bottom plates. These plates have vertically misaligned openings to receive elongated ground supports in an outwardly disposed manner.

3,415,388
DEVICE FOR TRANSFERRING PREFORMED FOILS FROM STACKS INTO MOULDS
Roland Hörnlein, Schwabisch Gmund, and Gerold Domhan, Waldstetten, Kreis Schwabisch Gmund, Germany, assignors to Walter Hörnlein Metallwarenfabrik KG, Gmund, Germany
Filed Oct. 19, 1965, Ser. No. 497,959
Claims priority, application Germany, Feb. 6, 1965, H 55,086
12 Claims. (Cl. 214—8.5)



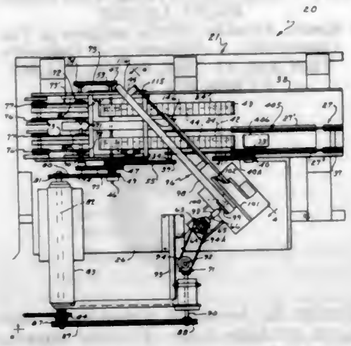
A device for the removal of pre-shaped foils from a foil stack and insertion into production moulds, in installations for the production of foil-wrapped chocolate bodies. For obliquely arranged stacks of preshaped foils, the device has a suction head that is obliquely guided by a stationary guide rail against the bias of a spring. The suction head is geometrically similar to the preformed foil bodies and is three-dimensionally reduced with respect thereto at least in the outer edge region by multiple of the foil thickness, for example 1–2 millimeters to produce a gap having a wedge shape in cross section.

3,415,389
STACKER
Stanley Bryan Smith, State College, Pa., assignor to Chemcut Corporation, State College, Pa., a corporation of Pennsylvania
Filed Sept. 27, 1966, Ser. No. 582,449
15 Claims. (Cl. 214—6)



Stacker for stacking articles in a vertically lengthening stack on a downwardly moving receiving table, and having a longitudinal conveyor feeding the articles in edge aligned relation to the stacker. The conveyor is a roller table having power driven elements in multiple rows, alternate ones of which comprise longitudinal rollers, and each remaining one of which comprises a row of eccentrics rotating in a transverse vertical plane so as to swing cyclically up through the plane of the tops of the rollers, laterally transferring the articles thereon gradually against a side rail so that they are edge aligned longitudinally.

3,415,390
TILESETTER LOADING DEVICE
Mitchell Friedman, Yorktown Heights, N.Y., assignor to Atco Ceramics Corp., Keyport, N.J.
Filed Aug. 24, 1965, Ser. No. 482,155
11 Claims. (Cl. 214—16.4)



A mechanized tile handling and loading apparatus designed to protect the decorated face of said tile having conveyors to pick up tile in a single line and transfer the flow of tile into two parallel lines to be advanced into a loading position for each line of tile and load one tile from each line of tile into a pair of parallel slots in a setter in a timed relationship so that the setter can be moved upward one shelf at a time until all shelves are loaded and said setter is picked up and moved into a furnace for firing said tile and further in which said tile are retained in a horizontal relationship and advanced horizontally and moved upward when loaded so as to prevent any debris or foreign matter from falling upon the face of said tile.

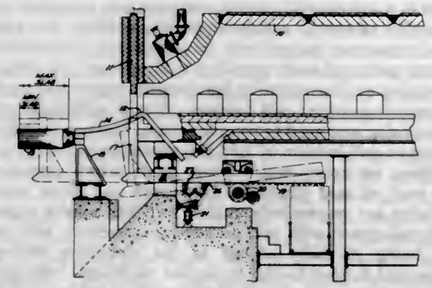
3,415,391
ADJUSTABLE CAM CONTROL SYSTEM FOR A SHEET-HANDLING APPARATUS
Charles L. Larson, Grants Pass, Oreg., assignor to Jeddeloh Bros. Sweed Mills, Inc., Gold Hill, Oreg., a corporation of Oregon
Filed Oct. 6, 1967, Ser. No. 673,445
5 Claims. (Cl. 214—16.4)



Sheet-handling apparatus including a multideck dryer, a feeder for feeding during a feed cycle successive charges of veneer sheets onto the infeed ends of different decks in the dryer, and an unloader including an intermittently-operated, motor-driven discharging mechanism for each dryer deck, operable to transfer sheets

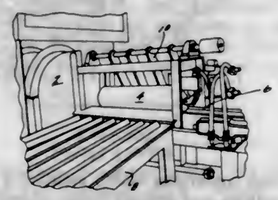
away from the offbearing end of the deck. Cam mechanism is provided which is positively driven by the feeder for rotation through a given angular distance during each feed cycle. The cam mechanism, during rotation, engages and actuates successive switches which, in turn, effect operation of different discharging mechanisms in the unloader. The cam mechanism is adjustable to vary the length of time that it engages a switch, thus to vary the duration of the operating periods of the discharging mechanisms.

3,415,392
WORKPIECE POSITIONING DEVICE
Lane Johnson, Jr., Carnegie, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1966, Ser. No. 534,781
Claims priority, application Great Britain, Mar. 31, 1965, 13,747/65
4 Claims. (Cl. 214—23)



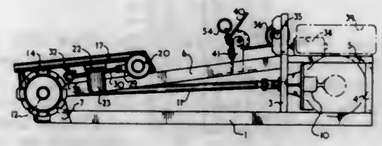
The disclosure of this invention relates to a slab reheating furnace of the type used in the operation of a hot strip mill. The disclosure teaches in combination with an horizontal slab reheating furnace and a roller table arranged below the furnace for conveying slabs away from the furnace, the employment of a curved shaped discharge chute arranged between the furnace and the table. The curved surface of the chute is constructed so that, notwithstanding the differences in size and weight of the slabs, their energy during the descent from the furnace to the table will be dissipated prior to passing the center of the table. The invention also teaches the employment of a pusher ram mounted beneath the furnace designed to position slabs on the center of the table once they have come to rest on the table.

3,415,393
BILLET DISCHARGING
Robert M. Scanlon, Grand Rapids, Mich., assignor to Granco Equipment, Inc., Grand Rapids, Mich., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,122
10 Claims. (Cl. 214—29)



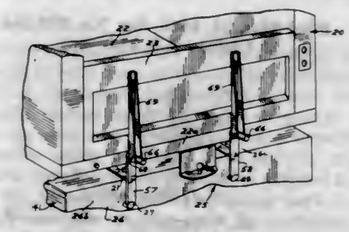
This disclosure relates to the retrieval of a billet from the discharge end of a heating furnace. A billet retrieving member is advanced into the exit end of the furnace and a wedging surface on the retrieving member pushes the end billet upwardly until the billet falls onto the billet retrieving member. The falling of the billet actuates a switch which stops the inward movement of the billet retrieving member and causes the same to begin retracting from the furnace. After the billet has been removed from the furnace, the billet strikes a stop member which positions the billet for further treatment. A switch is actuated by the movement of the billet to the stop position. A switch then causes a pusher to roll the billet laterally down an inclined surface for further processing.

3,415,394
EMERGENCY STARTING DEVICE AND HANDLING MECHANISM FOR AUTOMOBILES
Adrien Leger, 225–R5, St. Louis de Gonzague, Quebec, County of Beauharnois, Canada
Filed Oct. 18, 1966, Ser. No. 587,615
4 Claims. (Cl. 214—75)



A transportable emergency starting device for stalled automobiles, having a self-contained or independent motor-powered wheel spinning apparatus with a foldably connected ramp section up which the drive wheels of a stalled car can be drawn to engage the spinning apparatus, the whole device being easily unloaded from and reloaded on a light truck.

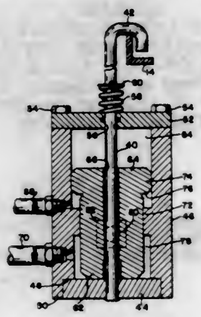
3,415,395
POWERED TRUCK LOADING PLATFORM APPARATUS
Walter A. Bishman, 10400 Bass Lake Road, Minneapolis, Minn. 55428
Continuation-in-part of application Ser. No. 510,498, Nov. 30, 1965. This application Dec. 20, 1967, Ser. No. 692,075
28 Claims. (Cl. 214—75)



A truck box having a combined platform-tailgate movable between a horizontal condition to elevate or lower a load and a vertical condition to form a tailgate closure for the box. In both embodiments of the invention, the platform is pivotally supported by a pair of parallel shafts, each shaft being mounted on a crank arm and the crank arms are simultaneously rotated in the same angular direction the same angular amount to move the platform between ground level and the level of the floor of the truck. As to the first embodiment, through chain driven lobe shaped sprockets, the crank arms are moved, there being provided limit switches to stop the drive to the chain when the platform is at each one of said levels. As to the second embodiment, parallel control arms are connected

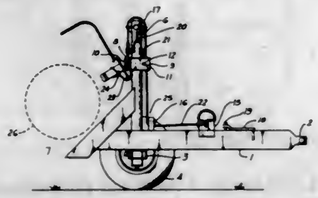
to the crank arm shafts to move the crank arms in the above mentioned manner, limited axial movement of the screw terminating the rotary drive through the clutch to the screw when the platform is either at ground level or at the level of the floor of the truck.

3,415,396
SUSPENDED VIBRATOR
Edwin H. Peterson, Neponset, Ill., assignor to Vibrator Mfg. Co. Inc., Neponset, Ill., a corporation of Illinois
Filed Feb. 20, 1967, Ser. No. 617,352
4 Claims. (Cl. 214—83.3)



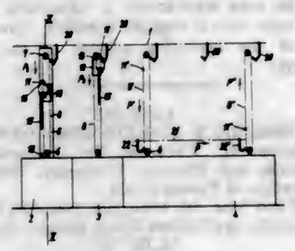
A suspended vibrator having an elongated depending suspensor member capable of being freely attached at its upper end to a container, hopper, conveyor or the like and including at its lower end power-operated means in the form of a vertically reciprocable hammer for striking repeated downward blows to an anvil rigid with the suspensor member, and thereby creating vibratory forces in the container etc. to facilitate the movement, settling etc. of fluent material therein.

3,415,397
VEHICLE TOWING DEVICE
John D. O'Banion, Corpus Christi, Tex., assignor of thirty percent each to Paul Bardwell and Gene Crane, and ten percent to Harmon Dobson, all of Neuces County, Tex.
Filed Mar. 21, 1966, Ser. No. 535,804
3 Claims. (Cl. 214—86)



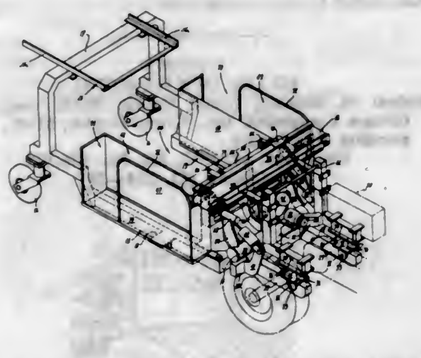
A vehicle towing device to be towed by another vehicle, having a framework, comprising an elongated tongue and a transverse axle adjacent one end thereof, a pair of wheels rotatably mounted on said axle and an upstanding support mounted over the axle and on said tongue, a tow bar supported on said upstanding support by means of a cable mounted over a pulley in the extended end of said support and an inclined support extending from said upstanding support adapted to receive and support the bumper of a vehicle to be towed.

3,415,398
CONVEYOR SYSTEMS
Heinz Strecke, Lindenbaumstrasse 13, Solingen, Germany
Filed Dec. 15, 1964, Ser. No. 418,472
2 Claims. (Cl. 214—89)



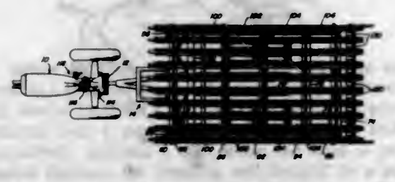
1. In a conveyor system, a first conveyor arranged to travel in a substantially horizontal path and provided with a plurality of spaced article-supporting holders; two additional conveyors respectively travelling in a substantially vertical path and each provided with at least one article-supporting carrier movable between an uppermost and a lowermost position, said carriers of said additional conveyors being arranged to receive articles from or to deliver articles to said holders of said first conveyor in one of said positions; an upper and a lower guide wheel associated with each of said additional conveyors and about which the latter are respectively guided; carriage means respectively associated with said additional conveyors, said carriers being pivotally affixed to the respective carriage means and further to the respective additional conveyors so that relative movement of the carriage means and the respective additional conveyor results in pivotal movement of the associated carrier; and reversible drive means for driving said additional conveyors and reserving the direction of travel of the same in response to the respective carrier reaching one of said positions.

3,415,399
PALLET CARRIER VEHICLE FOR MOBILIZED LOADING OF SAME
John F. Nunes, Jr., Rte. 1, P.O. Box 166, Patterson, Calif. 95363
Filed Apr. 3, 1967, Ser. No. 628,132
9 Claims. (Cl. 214—390)



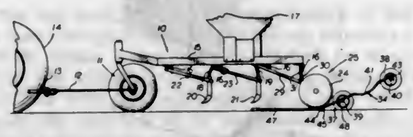
A vehicular apparatus which includes a zone bounded by work stations and upright walls wherein a dischargeable pallet may be loaded by workers in the work station. A transversely extending conveyor carries a commodity to be loaded onto the pallets. The conveyor is disposed within ready reach of the workers by supporting and coupling the trailer to the tractor by means which eliminates lateral articulation between the trailer and tractor. A supply of pallets is also carried within ready reach of the workers at the work stations.

3,415,400
HAYSTACK MOVER
Ray L. Olin, Almont, N. Dak. 58520
Filed May 4, 1966, Ser. No. 547,628
6 Claims. (Cl. 214—505)



A haystack mover in the form of a wagon with wheels adapted to be connected to a tractor and towed thereby with fluid power from the tractor operable to actuate the actuators on the haystack mover. The wagon includes a main frame having the wheeled supports and a support frame pivotally mounted thereon which is tiltable relative to the main frame to an inclined position such that it may be moved underneath the stack. Portions of the support frame include lifting and moving members which are guided between fixed supports and elevatable above and below the height of the fixed supports and movable longitudinal thereof through separate actuators such that the elevating and longitudinal movements may be separated and independently controlled. The support frame is similarly moved to tilt relative to the main frame through a separate actuator.

3,415,401
IMPLEMENT TRANSPORT ATTACHMENT
Nils O. Olsson, Ancaster, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,204
4 Claims. (Cl. 214—506)



A transport attachment for an implement such as a grain drill having press wheels upon which the implement customarily rolls when being transported. The transport attachment comprises a low platform mounted on longitudinally spaced wheels and having a central well section to receive certain of the press wheels of the implement, the wheels of the transport attachment being prevented from rolling while the implement is being loaded upon it by a locking pin insertable in one of the transport wheels and engageable with the platform, the pin being removable when the implement is ready to be transported.

3,415,402
CONTAINER
Robert Louis Webber, Winslows Motel, 734 W. Grand River Ave., Okemos, Mich. 48864
Filed Aug. 15, 1966, Ser. No. 572,408
10 Claims. (Cl. 215—1)

A disposable container dissolved on being exposed to normal atmospheric conditions, such as moisture in the air, dew and rain after being opened. The container may be constructed of an inner polyethylene layer for protecting the contents of the container, a polystyrene and aluminum powder layer for adding strength to the inner layer, a subsequent layer of caustic soda and aluminum powder, followed by a layer of temporary polyvinyl alcohol solu-



ble in cold water and an exterior layer of permanent polyvinyl alcohol over the layer of temporary polyvinyl alcohol. In use, on breaking of the exterior layer of permanent polyvinyl alcohol, the temporary polyvinyl alcohol is exposed and dissolves to react with the caustic soda and dissolve the remainder of the container.

3,415,403
CLOSURE APPARATUS
Ralph V. Bardell, Homewood, Ill., assignor to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,794
6 Claims. (Cl. 215—42)

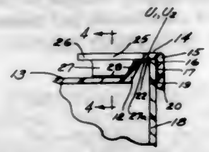


An improved container has a threaded annular projecting neck with at least one resilient lug member being provided thereon. A closure, adapted for closure over the neck, includes thread means designed to engage thread means on the neck and further includes a separably attached annular collar having at least one lug engaging ratchet tooth member, which member is adapted to interlock with the lug means on the container neck in order to lockingly hold the closure onto the container neck. The lug means on the container neck are chamfered and preferably are tapered from top to bottom in order that such lug means becomes more resistant to flexing as the closure is threaded onto the container neck.

3,415,404
SEVERABLE PACKAGING STRUCTURE
William H. Robinson, New Vienna, Ohio 45159
Continuation-in-part of application Ser. No. 557,837, June 16, 1966. This application Mar. 15, 1967, Ser. No. 623,433
9 Claims. (Cl. 215—46)

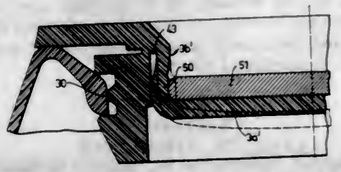
A sealed container-closure structure with closure portion having a severable portion joined with a gripping member and having certain weakened sections to facil-

itate severability and to insure that it occurs at desired locations. Closure portion may also include a tamper



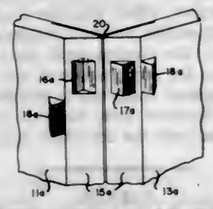
resistant member joined with the gripping member to prevent inadvertent or other unintended severing action.

3,415,405
CAP
Anders Ruben Rausing, Blentarp, and Rolf Lennart Ignell, Lund, Sweden, assignors to Sobrefina S.A., Fribourg, Switzerland, a Swiss company
Filed Oct. 27, 1966, Ser. No. 590,090
Claims priority, application Sweden, Nov. 9, 1965, 14,423/65
5 Claims. (Cl. 215—48)



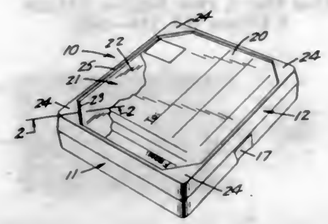
A bottle having an inwardly turned lip at its opening is provided with a tear-off cap having an outer tubular plug portion designed to sealingly engage said lip and remain in the bottle opening, an inner tubular plug portion having a dome-shaped closed end attached to said outer tubular plug portion at a tear-off connection, and a slot extending upwardly between said outer and inner tubular portions to said tear-off connection which is sealingly closed when the cap is inserted into said bottle opening by inward deflection of said outer tubular portion and/or outward deflection of said inner tubular portion, the latter deflection being promoted by pressure within the bottle and/or by a disc inserted into said inner tubular portion.

3,415,406
CORNER JOINT STRUCTURE FOR RECTILINEAR CONTAINERS
Robert P. Habgood, Jr., and Joseph N. Ianuzzi, Bradford, Pa., assignors to Plexowood, Inc.
Filed May 19, 1967, Ser. No. 639,825
6 Claims. (Cl. 217—65)



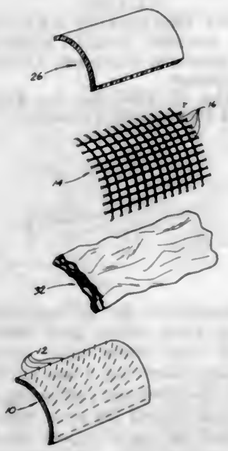
A furniture case and jointure system for rectilinear objects having side and end panels of molded wood chips and resin, each panel having a joining edge with a 45° bevel face, spaced recesses in each said face and spaced shoulders on each face between said recesses, the shoulders on the faces of each side panel fitting within the recesses of the faces of adjacent end panels and connecting means, such as glue, between the faces.

3,415,407
CONTAINER
Charles L. Alden, White Bear Lake, and David F. Berkey, Columbia Heights, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,202
6 Claims. (Cl. 220—4)



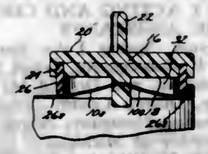
This invention provides a durable, substantially dustproof, inexpensive, light-weight plastic mailer for magnetic recording tape that may be used in hundreds or more mail shipments and which may be quickly and conveniently addressed at each shipment by use of a removable, nonadhesive address card.

3,415,408
INSULATED TANK
Thomas H. Seltz, Riverside, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,210
7 Claims. (Cl. 220—15)



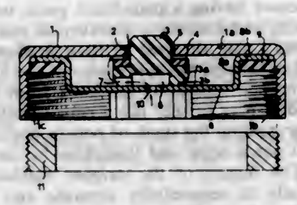
This invention relates to an insulated tank; and more particularly to a tank that is designed to hold cryogenic liquids for a long period of time. Broadly speaking, the present invention contemplates an evacuated double-walled vessel for cryogenic fluids, the outer wall being a thin flexible plastic membrane that is lightweight and nonporous. The lightweight plastic membrane is supported by a net-like mesh of strands, that is in turn supported by posts attached to the inner wall. In this way, the gas-impermeable mesh membrane outer wall envelopes and seals the inner wall, can withstand atmospheric pressure, and is extremely lightweight.

3,415,409
CONTAINER SEALING DEVICE
Homer J. Blaisdell, % Blaisdell Manufacturing, Inc., 6881 Stanton Ave., Buena Park, Calif. 90620
Filed July 6, 1967, Ser. No. 651,496
9 Claims. (Cl. 220—40)



A device for removably sealing an elongate opening formed in a resilient sheet defining one end of a container, which device includes a flat plate, resilient ring supported therefrom, and a cam, with the resilient ring and plate cooperatively defining a seal when the cam is partially extended through the opening and rotated to a substantially transverse position relative thereto. As the cam, ring and plate are concurrently rotated, those portions of the sheet adjacent the opening are bowed towards said plate, and the ring is forced into sealing pressure contact with the exterior surface of said sheet material, with said device being removable from said sheet when returned to its initial positon.

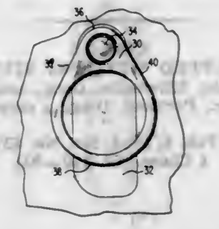
3,415,410
FUEL TANK FILLER CAP
Enzo Franchini, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy
Filed Jan. 18, 1967, Ser. No. 610,159
1 Claim. (Cl. 220—44)



The fuel tank filler cap prevents spilling of fuel from the tank through a vent hole in the cap following a collision or sudden overpressure in the tank by means of a valve. The valve has a stem extending through the cap vent hole with radial clearance and a head which seals against the underside of the cap around the hole. A cup-shaped valve retaining member holds the valve so that the stem is always extending through the hole and the vent passage is through the retaining member, through radial passages in the valve head and through the clearance between the valve stem and vent hole. A ring gasket serves not only as a seal with the filler tank neck but also to hold the valve retaining member in place. The filler cap skirt has means for connecting the cap to the filler neck strong enough to prevent the cap from being blown from the neck before the tank fractures in the event of collision.

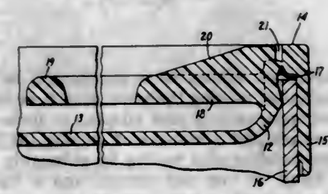
3,415,411
HAND-OPENING SHEET METAL END CLOSURE
William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,442
1 Claim. (Cl. 220—54)

An improved hand-openable metal end closure in which an elongated tab opener is secured to the end closure to provide class 1 lever action for puncture of the end closure along a preformed scoreline. The tab opener has a wedge-shaped configuration at its puncturing end. Portions of the tab opener forming the wedge-shaped configuration cross the scoreline and prevent puncturing beyond



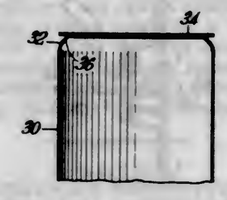
a desired limit and spread sheet metal along the scoreline to make possible removal of the punctured portion of sheet metal from the remainder of the end closure without binding along the scoreline.

3,415,412
SEVERABLE PACKAGING STRUCTURE
William H. Robinson, New Vienna, and Gerald A. Shiffer, Wilmington, Ohio, assignors to Buckeye Molding Company, New Vienna, Ohio, a corporation of Ohio
Filed Dec. 6, 1967, Ser. No. 688,559
10 Claims. (Cl. 220—54)



Sealed container-closure structure with closure portion having a severable portion joined with a gripping member and having certain weakened sections to facilitate severability and to insure that severability occurs at desired locations.

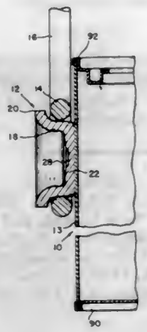
3,415,413
CONTAINERS AND METHOD OF MAKING SAME
William E. Morley, Bay Village, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Original application May 21, 1963, Ser. No. 281,917, now Patent No. 3,290,478. Divided and this application June 17, 1966, Ser. No. 558,292
14 Claims. (Cl. 220—67)



A metal container is formed with a container body having an open end and a cover therefor, both being generally configured with two main sides and an edge, at least one of the container body and cover having thereon a curl formed by disposing an integral portion thereof proximate the edge at an angle with the main plane or direction of a side. Either the cover or the container body includes a corner, defined between the edge and a side, with the other having an area on one of its sides coextensive

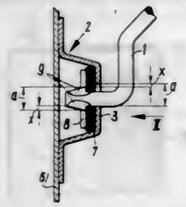
with the corner. The corner and the area are placed in abutting relationship under pressure to form a substantially linear contact therebetween while an electric current passed therethrough heats the parts to fusion temperature.

3,415,414
CUPPED WELDING STUD
Ricardo Gonzalez, Milwaukie, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Feb. 8, 1965, Ser. No. 431,054
1 Claim. (Cl. 220—91)



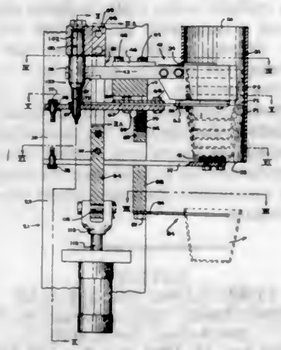
This invention relates to a cup-shaped welding stud and a method of making the same, and more particularly to a cup-shaped welding stud adapted to form a bail ear for a container and a method of making the same. The cup-shaped welding stud having an outwardly projecting annular flange at one end thereof and a base portion closing the opposite end thereof. The base portion being characterized by a frusto-conical configuration, the apex of said frusto-conical configuration terminating in an outwardly projecting welding tip to establish a welding stud.

3,415,415
CONTAINER HANDLE ATTACHMENT
Eberhard Stolz, Kreis Siegen, 15 Wiesenstr., 5908 Altenseelbach, Germany
Filed Mar. 11, 1966, Ser. No. 533,628
Claims priority, application Germany, Mar. 18, 1965, H 55,502
5 Claims. (Cl. 220—91)



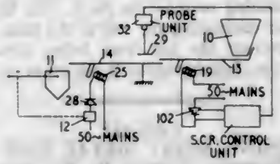
A handle is swingably attached to a container by a plate secured to the container and having an outwardly projecting intermediate portion with an opening therethrough. A resilient member on the inner side of that intermediate portion partially closes the opening. The end of the handle has a laterally extending portion such that when the end of the handle is pushed through the opening, the laterally extending portion pushes aside the resilient material that overlaps the opening. The handle is turned out of alignment with its path of entry when the container is suspended from the handle.

3,415,416
POT DISPENSER WITH MULTIPLE, SIMULTANEOUSLY ACTING AND CIRCUMPOSED DISCHARGE ASSISTANTS
Robert J. Broersma, Spring Lake Township, Ottawa County, Peter F. Boomgaard, Grand Haven, Paul E. Droppers, Muskegan, and Donald M. Wilson, Spring Lake Township, Ottawa County, Mich., assignors to B & B Engineering Company, North Grand Haven, Mich., a partnership of Michigan
Filed Oct. 31, 1966, Ser. No. 590,804
15 Claims. (Cl. 221—221)



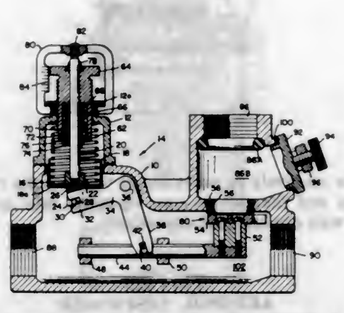
A pot dispenser having a cylindrical guide tube thereon for receiving and holding a plurality of stacked pots and also having a cam actuated stripper mechanism having fingers which engage the upper edge of the lowermost pot for pushing and separating the same from the stack of pots. The dispenser further has a cam actuated clamp mechanism for holding the stack of pots in position while the lowermost pot is separated therefrom by the stripper mechanism. The fingers of the stripper mechanism are moved vertically to sequentially separate and dispense the lowermost pot from the stack.

3,415,417
MATERIAL FEEDING APPARATUS WITH CAPACITIVE CONTROL
Henry John Steel, Malvern, England, assignor to Autopack Limited, Malvern Link, Worcestershire, England
Filed Jan. 31, 1967, Ser. No. 612,942
Claims priority, application Great Britain, Jan. 31, 1966, 4,097/66
1 Claim. (Cl. 222—55)



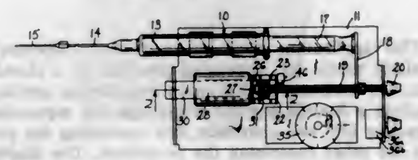
A pair of electro-magnetically driven vibratory feeders are arranged in series, feeding from a hopper to a weigh pan. A capacitive depth control sensitive to the depth of material on the second conveyor is arranged of material on the second conveyor is arranged to control the amplitude of vibration of the first conveyor.

3,415,418
METERING DEVICE
David H. Van Tuyl, Palo Alto, Calif., assignor to Clemco Clementina Ltd., San Francisco, Calif., a general partnership
Filed Mar. 6, 1967, Ser. No. 620,995
9 Claims. (Cl. 222—57)



This invention relates to a device for metering granular material into a fluid stream which includes a housing and a diaphragm within the housing which is linked to a valve for introducing granular material therein so that movement of the diaphragm under fluid pressure within the housing determines the extent of opening of the valve, thereby determining the rate of flow of said granular material into the fluid stream through and from the housing so that a nozzle used in conjunction with the device secures the proper amount of granular material to operate efficiently at all fluid pressures.

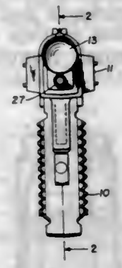
3,415,419
FLUID ADMINISTERING SYSTEM
Warren R. Jewett, 44 Russell Ave., Orange, Conn. 06477; Frank L. Petree, Idaho Falls, Idaho; and Walter C. Bialobrzeski, Kensington, Conn.; said Petree and said Bialobrzeski assignors to said Jewett
Filed Oct. 27, 1966, Ser. No. 590,082
6 Claims. (Cl. 222—76)



This invention relates to fluid administration systems for dispensing fluids at a controlled rate. More particularly, this invention is directed to a system having a syringe with a plunger, the plunger being driven by a pulse generator and motor combination. In addition, this invention is directed to a system driven in a like manner but utilizing rollers to dispense fluid.

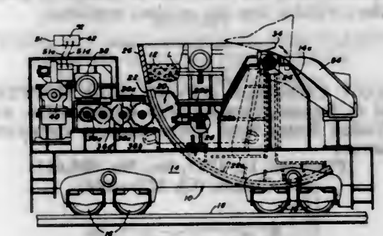
3,415,420
TOY GUN
Willard Henry White, 128 Wooded Crest, Waco, Tex. 76710
Filed Feb. 20, 1967, Ser. No. 617,177
5 Claims. (Cl. 222—79)

A top gun having a spring actuated projectile and a pump operated multiple shot water discharge mechanism. The multiple shot water mechanism in one embodiment is separate from the spring actuated projectile, and in another embodiment arranged such that the water shots are discharged through a passage in the projectile. With either



arrangement, the projectile and water shot can be operated simultaneously or independent of each other.

3,415,421
MATERIAL POT WITH CONTROLLED DUMPING MECHANISM
Harry H. Britcher, Jr., Johnstown, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,596
3 Claims. (Cl. 222—166)

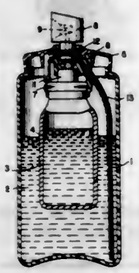


The present invention relates to material handling apparatus and, more particularly, to an improved dumping mechanism for such material handling apparatus, which improved dumping mechanism provides a uniform pouring rate of a fluid material from the improved dumping mechanism. The improved dumping mechanism comprises a dumping member oscillatable on a frame, a material pot mounted on the dumping member, connectable to and movable with the dumping member and adapted to receive the fluid material. The material pot is provided with material-discharge means. Drive means are connected to the dumping member for rotating the material pot and the fluid material through a path of material-dumping movement to empty the fluid material from the material pot, and control means are associated with the dumping member, connected to the drive means and are operable to cause the drive means to vary the velocity of rotation of the dumping member and the material pot to provide a substantially uniform rate of material discharge from the material-discharge means.

3,415,422
AEROSOL DISPENSER WITH DIFFERENTIALLY PERMEABLE RECEPTACLES
Felix Rousselot, Liguge, France, assignor to Geigy Chemical Corporation, Ardsley, N.Y.
Filed May 16, 1967, Ser. No. 638,944
Claims priority, application France, May 16, 1966, 61,700
6 Claims. (Cl. 222—193)

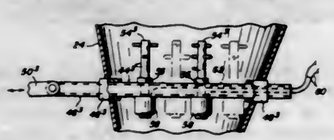
A push-button dispensing apparatus, of the aerosol bomb type, for dispensing solid or liquid material in a finely-divided state, and comprising a product container containing the active agent to be distributed, a propellant

cartridge within said product container and containing a liquefied propellant gas, the said apparatus further comprising a valve, a push-button valve actuator actuating the valve, the valve including a high pressure obturation means for the propellant cartridge and low pressure obturation means respectively controlling the outlet of the



active agent and the admission of air from outside the product container into the product container, the wall of the product container being more permeable to the propellant than the cartridge and the rate of escape of the propellant by permeation through the product container wall being greater than the total rate of escape of propellant from the cartridge into the product container.

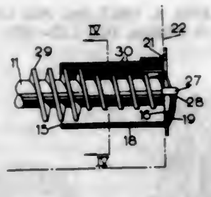
3,415,423
FLOW CONTROL DEVICE FOR HOPPERS
Donald G. Bowser, Pleasant Hills Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 11, 1967, Ser. No. 608,661
13 Claims. (Cl. 222—244)



This invention relates to hoppers for delivering material and, more particularly, to an improved flow control device for insuring free flow of substantially all of the material from the hopper when its gate is opened.

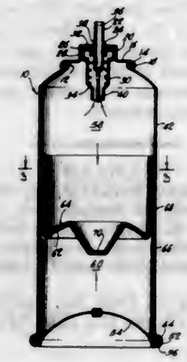
3,415,424
MEANS FOR DISPENSING PREDETERMINED QUANTITIES OF POWDERED OR GRANULATED MATERIALS
Ernest E. Crossley, Lytham St. Annes, England, assignor to Ditchburn Vending Machines Limited, Lytham, England, a corporation of Great Britain
Filed Jan. 10, 1967, Ser. No. 608,432
Claims priority, application Great Britain, Jan. 11, 1966, 1,142/66
9 Claims. (Cl. 222—311)

Dispensing means for granulated or powdered material, for example for dispensing dry ingredients such as coffee, tea and sugar in a beverage vending machine, comprising a tube having an open end into which a feed screw extends for feeding the material to a delivery opening in an end wall at the other end of the tube, shutter means being provided by varying the effective size of the delivery opening, and a by-pass opening being disposed in the side wall of the tube, for diverting material from the inner side of the delivery opening, means being provided for varying the effective size of the by-pass opening, the latter means and the shutter being interconnected so that when one opening is enlarged the other opening will be reduced, and vice versa. The said tube may be disposed within an outer tube which also has an outlet opening in its end wall and a by-pass opening in its side wall, the two tubes being



rotatable relatively to one another to bring the two outlet openings and the two by-pass openings into and out of register with one another respectively.

3,415,425
AEROSOL DISPENSER
Francis J. Knight, New Brunswick, and Frank J. Mack, New Shrewsbury, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Nov. 15, 1966, Ser. No. 594,561
3 Claims. (Cl. 222—386.5)

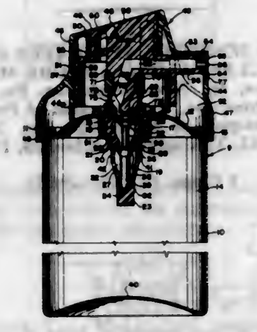


This application discloses an aerosol dispenser particularly useful for dispensing products in a closed system, i.e., medications through a hypodermic needle, that employs a flexible bag-like diaphragm for separating the container into two chambers, one containing the product and the other containing the propellant. The diaphragm is equipped at its closed end with a rigid disk-like member which by its configuration conforms to the top of the aerosol container and is adapted to accommodate the valve located at the top of the container in such a manner as to permit tactile discernment and inactuation of the contents from the container.

3,415,426
DISPENSING VALVE
Nels B. Kleveland, East Cleveland, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 16, 1966, Ser. No. 550,392
14 Claims. (Cl. 222—402.11)

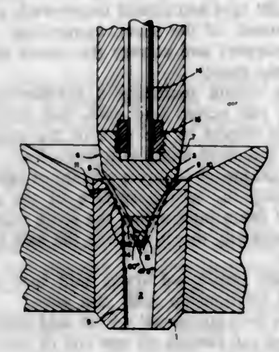
A pressurized container having an opening in which is mounted a resilient housing for a valve. The valve housing includes an outlet, a valve for sealing the outlet, and a moveable nozzle for operating the valve. The nozzle and outlet of the valve housing are in spaced relation during

operation of the valve. A resilient hollow sleeve is provided in surrounding sealing relation with the outlet and



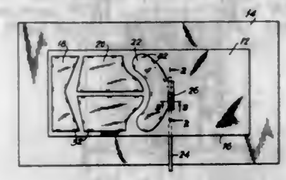
nozzle for directing material, under pressure, from the container into the nozzle when the valve is operated.

3,415,427
NOZZLE AND STOPPER ASSEMBLIES FOR TEEMING LIQUID METAL
John D. Sharp, Sheffield, England, assignor to The United Steel Companies Limited, Sheffield, England, a British company
Filed Aug. 30, 1966, Ser. No. 576,082
5 Claims. (Cl. 222—509)



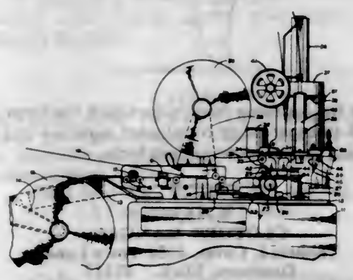
A nozzle and stopper assembly for teeming of molten steel from a bottom-pour ladle includes a refractory stopper penetrating deeply into the bore of a refractory nozzle. Both the stopper and nozzle are tapered downwardly, but the taper of the nozzle has a portion with a greater included angle than a corresponding portion of the stopper so that the stopper, which makes line contact with the nozzle when stopping molten metal flow, when raised provides an annular space which increases in cross sectional area to accurately control the flow of molten metal. There is an outwardly flaring surface on the nozzle immediately above the area of contact to avoid metal being trapped between the stopper and nozzle when the stopper is moved into the closed position. The nozzle is made from a refractory material in the green dried but unfired state, preferably dead-burnt magnesite containing at least 85% magnesium oxide. A stopper lifting mechanism includes a limit stop so the stopper cannot be completely lifted out of the bore of the nozzle.

3,415,428
DEVICE TO FACILITATE PINNING A PAPER PATTERN TO FABRIC
Sidney Mishkin, New York, N.Y., assignor to David Fraum, Inc., New York, N.Y., a corporation of New York
Filed Mar. 3, 1967, Ser. No. 620,392
10 Claims. (Cl. 223—1)



This device assists a home dressmaker in pinning a paper pattern to the fabric which is to be cut. It comprises a long slender stick to be slid beneath the fabric, with one end portion of the stick exposed for manipulation, and a short pin guide dimensioned to bend the pattern and fabric over the stick. The sides of the guide are notched to receive a pin which is inserted through the pattern and fabric between the stick and the top of the guide.

3,415,429
APPARATUS AND METHOD FOR MAKING LOOPED RIBBON ORNAMENTS
Ira L. Lopata, 35 Sutton Place, New York, N.Y. 10022
Filed Jan. 5, 1967, Ser. No. 607,573
10 Claims. (Cl. 223—46)

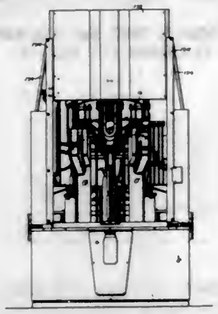


The method for making looped ribbon ornaments in which the ribbon is delivered at a constant, uninterrupted rate to an impaling station while it is being impaled and twisted into loops; an apparatus that continuously feeds ribbon without pause, at the same time impaling and twisting it into successive loops.

3,415,430
MACHINE FOR FINISHING TROUSERS
Jerry N. McMillan, % Colmac Industries Inc., Box 167, Colville, Wash. 99114
Filed Aug. 2, 1965, Ser. No. 477,663
14 Claims. (Cl. 223—73)

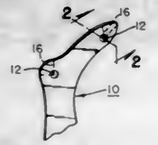
A machine for finishing the trousers that includes an upright center buck for receiving the trouser crotch and the inside of the trouser legs. A tiltable waistband expander head carrying a front movable fly buck, two rear movable seat bucks, right and left stationary hip bucks and a movable fly press is positioned above the center buck for receiving the torso portion of the trousers. Side press bucks extending from below the trouser legs to above the waistband are movably mounted for pressing against the center buck and the head bucks for pressing the trousers therebetween. The upper portions of the side

press bucks are contoured to cooperate with the hip and seat bucks. Cuff expanders are positioned between the side bucks and the center buck for receiving the trouser cuffs



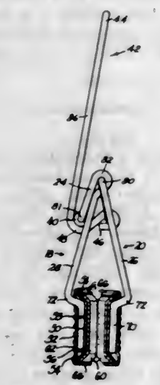
and stretching the trousers between the cuffs and waistband. The side bucks are hollow and contain liquid of 400° F. for finishing the trousers as they are being pressed.

3,415,431
HOSIERY BOARDING FORM
Martin S. Maltenfort, Glen Farm, Md.
(603 E. Pulaski Highway, Elkton, Md. 21921)
Filed Aug. 9, 1967, Ser. No. 659,425
3 Claims. (Cl. 223—75)



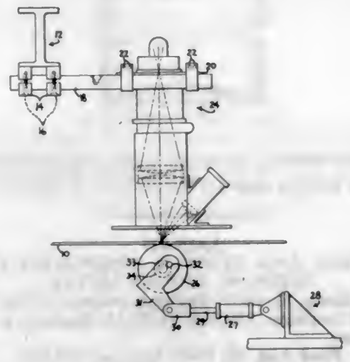
A form for boarding hosiery in which the form is provided with transparent or translucent windows and means for retaining said windows in said form.

3,415,432
CLOTHES HANGER
Thomas J. Caves, 6952 Town Lane,
Dearborn, Mich. 48127
Filed Aug. 31, 1966, Ser. No. 576,413
6 Claims. (Cl. 223—96)



A garment hanging device having a pair of clamping members interconnected by a hanging member which is utilized for moving the clamping members between garment engaging and garment releasing positions. Each clamping member comprises spaced plates clampingly receiving free ends of legs depending from the hanging member with cooperating clamping means on the plates for locking the legs between the plates and the plates to each other.

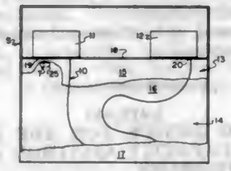
3,415,433
RADIATION SENSITIVE APPARATUS FOR SEVERING GLASS ALONG A SCORE MARK
Hugh E. Shaw, Jr., New Kensington, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 189,142, Apr. 20, 1962. This application Jan. 28, 1964, Ser. No. 341,838
1 Claim. (Cl. 225—96.5)



1. Apparatus for severing a moving sheet of glass along a score mark on a surface of the glass which score mark will scatter light rays and extend transversely of the direction of movement of the sheet, comprising:
means to support and convey the sheets along a predetermined path;
a snapping means, including a horizontally disposed snapping roll across said path, and vertically movable with respect to the path of the glass sheet for severing the sheet along said score line;
a light source, means to direct a beam of light from said source onto the scored surface of the glass sheet, said light beam intersecting the score mark when located essentially directly above the axis of the snapping roll;
a lens holder positioned above said snap roll and in a spaced relationship with said glass;
an objective lens positioned within said holder;
an apertured cap closing off one end of said cylindrical lens holder;
a photocell mounted over said apertured cap, said photocell responsive to changes in intensity of said light beam when said light beam intersects said score line;
means operable in response to the sensing of the intersection of the beam with a score mark to actuate the snapping roll so as to sever the sheet along the intersected score line.

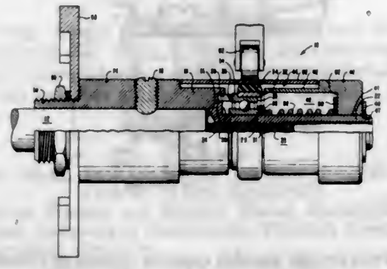
3,415,434
TAPE CONTROL DEVICE
Fred C. Bollck, Jr., Atlanta, Ga., assignor to Lanier Electronics Laboratory, Inc., Atlanta, Ga., a corporation of Georgia
Filed May 27, 1966, Ser. No. 553,506
10 Claims. (Cl. 226—25)

What is disclosed is a tape control device for a recording-reproducing system in which a tape is pulled from a tape magazine by a tape driving device. The tape control device includes a pin member positioned in the tape magazine for substantially horizontal slidable movement in response to the tape being placed in a particular position



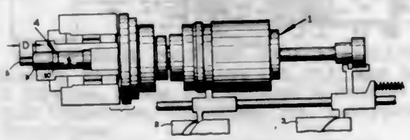
by the tape driving device and a switch means responsive to the slidable movement of the pin member for rendering the tape driving device inoperative.

3,415,435
CAPSTAN
Jeffrey M. Bevis, Long Beach, Calif., assignor to Chalco Engineering Corporation, Gardena, Calif.
Filed Jan. 30, 1967, Ser. No. 612,437
11 Claims. (Cl. 226—102)



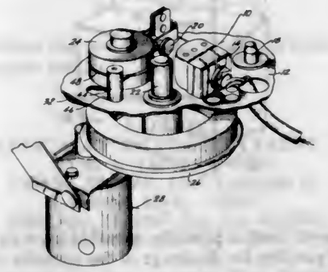
The low inertia capstan is a continuously rotating shaft connected to a suitable tape drive wheel through a slip clutch. When tape is to be drawn through a reading head, a pinch roller presses the tape against the tape drive wheel. When brakes are suddenly applied to the tape, rubbing of the tape drive wheel against the surface of the tape is prevented both because of the low inertia of the tape drive wheel and because the slip clutch is designed so the frictional resistance between the rubbing surfaces of the slip clutch is less than the frictional resistance between the surface of the tape drive wheel and the tape. This arrangement permits the tape drive wheel to stop simultaneously with the tape so that slippage occurs only between the rubbing surfaces of the slip clutch.

3,415,436
DEVICE FOR FEEDING STOCK IN A SCREW MACHINE
Paul Ducanis, 1520 NE. 103rd St.,
Miami Shores, Fla. 33153
Filed May 23, 1967, Ser. No. 640,705
4 Claims. (Cl. 226—167)



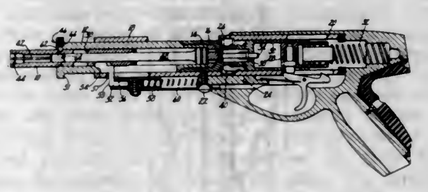
A replacement for conventional feed fingers in an automatic screw machine comprising a sleeve containing a plurality of cantable rings for engaging and precisely sequentially feeding stock through said sleeve when the latter is reciprocated by the screw machine.

3,415,437
STRIPPER MEMBER FOR PINCH ROLLERS
Leonard W. Coulson, Slinger, and Harry L. Thies, Oconomowoc, Wis., assignors to La Belle Industries, Inc., Oconomowoc, Wis., a corporation of Wisconsin
Filed Sept. 20, 1965, Ser. No. 488,528
3 Claims. (Cl. 226—187)



This disclosure relates to a stripper member extending into a circumferential recess around the periphery of the pressure roller of a magnetic tape transport system. The stripper extends into the recess on the discharge side of the pressure roller so as to be positioned to remove any tape tending to adhere to the roller. The pressure roller is mounted for movement toward and away from the capstan, or drive roller, of the transport system and preferably the stripper is connected for joint movement with the pressure roller relative to the drive roller, and correspondingly the tape.

3,415,438
DEVICES FOR PREVENTING DROP-FIRE
Charles J. De Caro, Orange, Conn., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 29, 1967, Ser. No. 641,946
3 Claims. (Cl. 227—10)

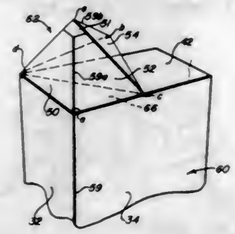


A safety device to prevent drop-fire of an explosively actuated tool consists of a nosepiece having releasable, energy-absorbing mounting on a barrel muzzle. The nosepiece is adapted to be predeterminedly releasable when incurring shock absorbing force less than that required to impact-ignite an explosive charge, but is nonreleasable when subjected to normal endwise cocking force.

3,415,439
CONTAINER WITH AN IMPROVED POUR SPOUT
Jack J. Skillman, 727 E. 60th St., Chicago, Ill. 60637
Filed June 7, 1967, Ser. No. 644,391
13 Claims. (Cl. 229—17)

A boxlike container having an improved pour spout at one top corner thereof, the spout being in the shape of a trigonal bipyramidal hexahedron, one triangular side

of which is open and is disposed over a triangular opening in the top panel of the container. Two of the three tetrahedral angles of the spout include a respective one of the base angles of the triangular opening and one of the trihedral angles includes the apex angle of the said triangular opening. At least one of the side faces forming the third tetrahedral angle of the spout body is apertured,

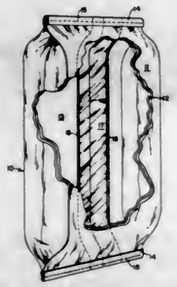


and the spout body is pivotally movable from an upwardly extended position for discharge of the contents of the container through said aperture and a retracted position wherein one of the side faces extends across and closes the triangular opening in the container, and the other faces extend downwardly therefrom and overlie portions of the adjacent side panels of the container body.

ERRATUM

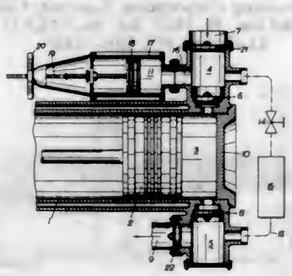
For Class 229—17 see:
Patent No. 3,415,349

3,415,440
DECOMPOSITION RESISTANT BAG
Charles K. Watters, Middletown, Ohio, assignor to Albemarle Paper Manufacturing Company, Richmond, Va., a corporation of Virginia
Filed July 6, 1965, Ser. No. 469,778
3 Claims. (Cl. 229—55)



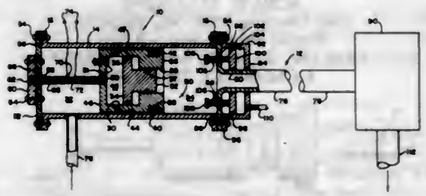
2. A decomposition-resistant bag comprising:
(a) a plurality of nested tubular plies of paper, the inner tubular ply of paper having a longitudinally extending, lapped, adhesively bonded seam throughout its length;
(i) said inner ply of paper being coated on its interior surface with a thin layer of synthetic resin;
(b) a longitudinally extending narrow flexible strip of plastic sheet material superimposed over said adhesively bonded seam in the interior of said inner ply,
(i) said inner ply of paper being coated on its insively attached only along a narrow portion adjacent its longitudinal edges to the interior surface of said inner ply by means of a fungi resistant synthetic resin adhesive applied by the hot melt technique and
(c) means closing at least one end of said plurality of tubular plies of paper.

3,415,441
METHOD AND DEVICE FOR THE INFINITELY VARIABLE CAPACITY CONTROL OF PISTON-TYPE COMPRESSORS
Theodor Karl Kehler, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Feb. 6, 1967, Ser. No. 614,192
Claims priority, application Austria, Feb. 11, 1966, A 1,260/66
2 Claims. (Cl. 230—22)



A device for the variable capacity control of piston-type compressors with a by-pass duct at the delivery end of the compressor with an adjustable throttle valve in the duct and a clearance chamber at the termination of the by-pass duct and an automatic check valve provided between the clearance chamber and the cylinder of the compressor and connecting the clearance chamber with the cylinder space of the compressor.

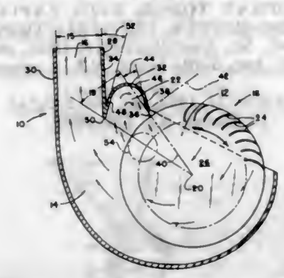
3,415,442
ISENTROPIC COMPRESSION TUBE
Frank J. Stoddard, Depew, and John G. Hall, East Aurora, N.Y., and Abraham Hertzberg, Bellevue, Wash., assignors to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,054
7 Claims. (Cl. 230—54)



A compression tube that develops high velocity gas flows by means of a substantially isentropic compression process. The isentropic compression is achieved by a piston unit that is designed to follow a natural trajectory

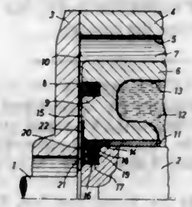
in response to an initial predetermined pressure differential thereacross.

3,415,443
TRANSVERSE FLOW BLOWER WITH HIGH VELOCITY DISCHARGE
Dov Z. Glucksman, Torrington, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed May 23, 1966, Ser. No. 552,327
4 Claims. (Cl. 230—125)



A high velocity transverse flow blower unit having a recirculation cup which is relatively short and deep and which is provided with a reversely curved section adjacent the inlet to induce a tight high velocity vortex.

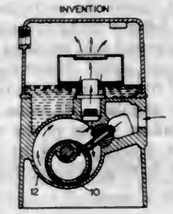
3,415,444
OIL SEAL FOR ROTARY PISTON INTERNAL-COMBUSTION ENGINES
Manfred Frenzel and Herbert Kiebel, Burscheid, Germany, assignors to Goetzewerke Friedrich Goetze AG, Burscheid, Germany
Filed Dec. 7, 1966, Ser. No. 599,773
Claims priority, application Germany, Dec. 15, 1965, G 45,462
10 Claims. (Cl. 230—145)



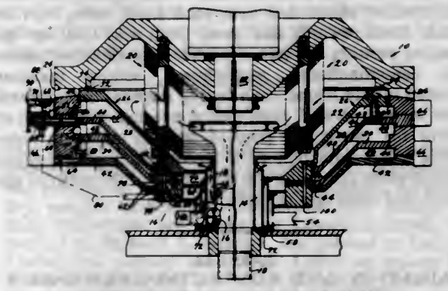
A seal for rotary internal-combustion engines to seal off the gas chamber of the engine from the oil lubrication chamber. The seal includes at least one seal ring which has one surface in fluid-tight contact with the eccentric and another surface in fluid-tight contact with the piston.

3,415,445
INDUSTRIAL PROCESS AND APPARATUS
Manuel E. Fuentevilla, Cherry Hill, N.J., and Anthony J. Saraceno, Devon, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed No. 21, 1966, Ser. No. 595,961
11 Claims. (Cl. 230—207)

A vacuum pump system for operation at temperatures above 212° F. which is devoid of any expedient to avoid condensation or to revaporize water or solvent vapor (such as water jackets or gas ballasting) whereby a lubricant maintains the seal between the pump rotor and the pump chamber wall.



3,415,446
HYDRAULICALLY ACTUATED VALVE PLATE FOR A CENTRIFUGE
Carl W. Weiland, 1300 Lafayette E. Detroit, Mich. 48207
Filed Apr. 11, 1967, Ser. No. 629,983
10 Claims. (Cl. 233—20)

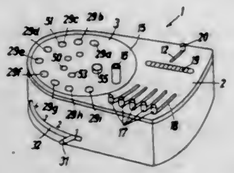


A centrifuge construction is provided with sludge discharge openings about the bowl of the centrifuge, and a hydraulically operated valve plate means is utilized for opening and closing the openings. Control means are provided for admitting fluid into various portions of the centrifuge device to operate the valve plate to empty the centrifuge bowl when sludge has accumulated around an inner perimeter of the bowl. A frusto-conical shaped valve plate having spaced pressure receiving members is positioned in the lower portion of a centrifuge bowl, and the valve plate is moved to separate positions which open and close discharge openings spaced around the centrifuge bowl. An application of fluid pressure on the spaced pressure receiving members of the plate determines the actuated position of the plate. The invention also provides for valve control devices which contain piston means for controlling and directing the flow of fluid through the valve plate actuating system.

3,415,447
COMPUTING MACHINE
Arno Heyer, 12 Ludwigstrasse, 7314 Wernau (Neckar), Germany
Filed Oct. 27, 1966, Ser. No. 589,989
Claims priority, application Germany, Oct. 28, 1965, H 57,540
13 Claims. (Cl. 235—60)

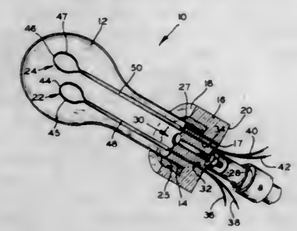
1. A computing machine comprising a frame, a rotary totalizer composed (1) of a support mounted in said frame for rotation about a totalizer axis and for stepwise displacement along said axis into sequential axial positions spaced equal distances, (2) of a plurality of denomi-

national totalizer wheels mounted in said support for rotation about individual axes which extend parallel to said totalizer axis and are circumferentially distributed on a cylindrical surface coaxially surrounding said totalizer axis, said totalizer wheels being located in different parallel planes which intersect said totalizer axis at right angles and are spaced said equal distances, and (3) of ten-carrying means for rotating each totalizer wheel of one denomination by an angular unit upon completion of the rotation of the totalizer wheel of the next lower denomination through ten units, a stack of superimposed rows of teeth, each row having nine teeth and extending in a



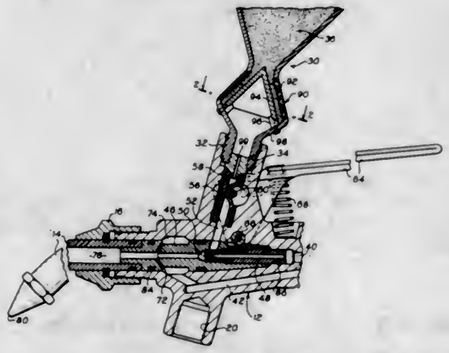
plane coinciding with one of said planes, said stack being mounted within said frame for successive engagement of said stack with said totalizer wheels upon rotation of said totalizer about said axis, each tooth being movable in said stack towards and away from said totalizer into engaging position and into a retracted position, and adjustable denominational multiplicand setting members mounted in said frame, each setting member being coordinated to one of said rows and connected with the teeth therein for moving a selected number of teeth representing a denomination of a multiplicand into engaging position while retracting the remainder of the teeth of said one of said rows into retracted position.

3,415,448
RADIATION AND CONVECTION RESPONSIVE THERMO-ELECTRIC DETECTOR
Ray E. Williams and Harold C. Nye, Fostoria, Ohio, assignors to Fostoria-Fannon, Incorporated, Fostoria, Ohio, a corporation of Ohio
Filed May 12, 1967, Ser. No. 638,038
10 Claims. (Cl. 236—15)



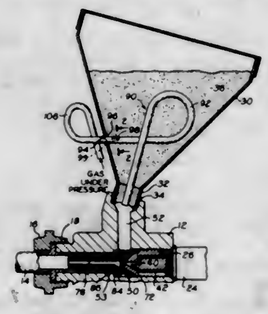
This is a heat sensing device for measuring and controlling radiant energy oven temperatures within prescribed ranges, having a protective envelope supported by an apertured base and containing a pair of independent thermocouples having flattened loops in parallel offset planes also supported by the same base. Each thermocouple is sensitive to both radiation and convection heat. Each thermocouple also has a fast response to heat radiating from the oven's source as well as its heated products, and a relatively slower response to convection heat within the oven so as to generate a balanced electromotive force which is proportional to the oven's temperature unaffected by spurious convection currents which may occur in the oven. One of the thermocouples of the pair is connected to a temperature indicating meter for checking the oven's temperature at a particular location or zone, while the other thermocouple of the pair is connected to an automatic temperature controller for controlling the degree of heat at that location or zone. A plurality of these sensing devices may be connected together for individually checking oven zone temperature and averaging these temperatures throughout a zone of an oven or furnace or the whole oven or furnace.

3,415,449
POWDER SPRAY TORCH WITH EXPLOSION-PROOF HOPPER CONSTRUCTION
Elwin A. Hawk, Sr., East Rochester, Ohio, assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware
Filed Apr. 27, 1966, Ser. No. 545,742
12 Claims. (Cl. 239—85)



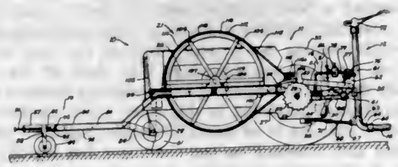
A torch, for supplying powdered metal to a heated surface through the flame of the torch, supplies the powder to the interior of the torch through a passage that makes the hopper explosion-proof. The powder passage has a fine mesh screen extending around most of the circumferential angular extent of the passage to provide a large area for rapid escape of gas pressure if any such pressure builds up within the torch, but the screen stops escape of powder from the passage.

3,415,450
POWDER SUPPLY CONSTRUCTION FOR SPRAY TORCH
Elwin A. Hawk, Sr., East Rochester, Ohio, assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware
Filed May 24, 1966, Ser. No. 552,623
9 Claims. (Cl. 239—85)



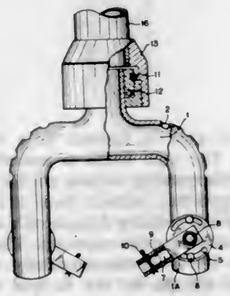
This is a spray torch for applying powdered hard-surfacing material to the heated surface of a work piece. The powdered metal is in a container on the torch, or at a location where it is connected with the torch by a flexible tube, and the container is higher than the torch with a loop in the passage through which the powder flows to the torch. This loop prevents free flow by gravity when no powder flow is wanted. A controlled gas flow through the powder passage, including the loop, is used to carry the powder around the loop to obtain powder flow to the torch. The gas is preferably one of the gases used for spraying the torch.

3,415,451
TRAVELING IRRIGATION SPRINKLER APPARATUS
Thomas R. Karmann, 6441 McKinley St., Omaha, Nebr. 68112
Filed Aug. 1, 1966, Ser. No. 569,159
17 Claims. (Cl. 239—191)



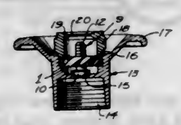
This invention relates to a self propelled traveling irrigation sprinkler apparatus having a frame supported on a pair of axles with wheels mounted thereon, a power unit mounted on the frame for propelling same, a transmission interconnecting the power unit and one of the axles, a steering mechanism mounted on the frame and operably connected to the other axle for turning same, sprinkler means carried by the frame and operable in response to the application thereto of water under pressure, a length of hose interconnected between the sprinkler unit and a source of water under pressure, a hydraulic mechanism fluidly connected to the hose and carried by the frame, the hydraulic mechanism operable to propel the frame in response to the application thereto of water under pressure, and a furrow follower connected to the steering axle for guiding the frame along a preformed furrow.

3,415,452
LIQUID SPRAY DEVICE
Shoji Kato and Choji Kanda, Nishinomiya-shi, Japan, assignors to Asahi Breweries Co. Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 1, 1967, Ser. No. 619,834
Claims priority, application Japan, June 1, 1966, 41/35,264
2 Claims. (Cl. 239—257)



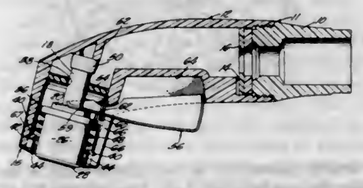
A liquid spray device comprising a spray pipe unit having liquid spray orifices and also a rotational speed regulating means consisting of a tiltable tube having at least one closed end and containing a ball adapted to slide along the inner wall of said tube, said tiltable tube being fixed at one end portion thereof to said spray pipe unit for pivotal movement, whereby the rotational speed of said spray pipe unit is controlled as desired by changing the centrifugal force imparted by the rotation of said unit to said slideable ball as a result of altering the tilting angle of said tube.

3,415,453
SWIRL DEVICE FOR SPRINKLER HEADS
Robert B. Costa, Covina, Calif., assignor to Anthony Manufacturing Corp., Glendora, Calif., a corporation of California
Filed Mar. 13, 1967, Ser. No. 622,681
4 Claims. (Cl. 239—465)



A swirl device formed of two identical disks to provide helical swirl channels having circumferentially overlapping walls. Each disk has a partial screwthread so disposed that when the disks are joined, the screwthreads are out-of-phase thereby to provide an interference fit on an adjustment screwthreaded through the disks.

3,415,454
SPRAY VALVE
Ernest H. Bucknell, Los Angeles, and Jack K. Rauh and Irving A. Ward, Hacienda Heights, Calif., assignors of ten percent to estate of Ralph E. Bletcher, deceased, five percent to Frederick Robertson, five percent to Gary Robertson, ten percent to Lenora Bucknell, ten percent to Richard J. Bletcher, ten percent to Dan G. Liston, five percent to Dan G. Liston as trustee for Carol A. Liston, five percent to James H. Liston, ten percent to Hazel Brondum, 10 percent to Pearl Bletcher, five percent to Marcia Liston, 10 percent to Ernest H. Bucknell, and five percent to Dan G. Liston as trustee for Daniel E. Liston
Filed June 13, 1966, Ser. No. 557,171
6 Claims. (Cl. 239—562)

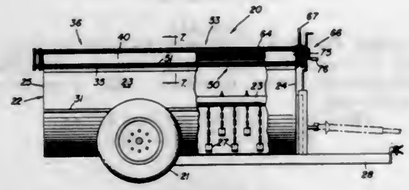


A spray valve having a handle, which may be molded, and which has a discharge opening therein and a valve seat spaced from the opening. A nozzle is mounted within the discharge opening in fluid communication with a hollow valve stem, and a spring is provided for biasing said valve stem to seat on the valve seat. A trigger is provided for positioning the valve stem. A nozzle supporting element may be provided within the discharge opening for supporting the nozzle and valve stem.

3,415,455
FLAIL TYPE MATERIAL SPREADER
Robert G. Ferris, Harvard, Ill., assignor to Starline, Inc., a corporation of Illinois
Filed Aug. 29, 1966, Ser. No. 575,850
6 Claims. (Cl. 239—658)

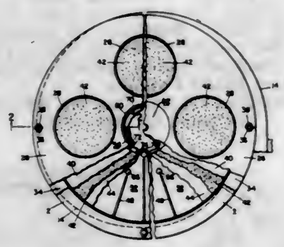
A flail type material spreader in which a cylindrical tank has its top margins not less than about three-fourths

of the way from the bottom to the top of the circumference of the tank so as to provide a large capacity for solid, semi-solid or liquid material, and in which a combined closure and shield means includes a first portion hinged along a first tank margin, a second portion hinged to the first portion substantially on the vertical median



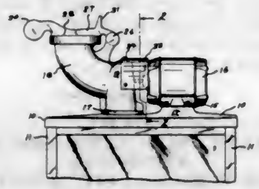
plane of the tank and having a free edge adapted to close against the second tank margin, and in which means are provided for opening both portions for loading, or for opening the second portion only and fixing it in any desired position with respect to said second tank margin to provide a discharge opening that may be varied from a narrow slit to a wide opening.

3,415,456
METHODS AND APPARATUS FOR DRY DEFIBERING OF FIBROUS MATERIALS
Howard Bidwell, 56 Aldrich St., Granby, Mass. 01033
Continuation-in-part of application Ser. No. 172,321, Feb. 9, 1962. This application Oct. 22, 1965, Ser. No. 502,102
5 Claims. (Cl. 241—21)



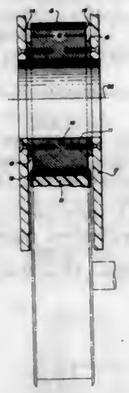
The within invention is concerned with a method of defibering fibrous in a dry state. The materials are charged into a plurality of off-center radially-disposed material confining and feeding magazines of a type having a continuity of outlets common to the plurality of magazines in the form of a unitary stationary granular surfaced rotor fiber abrading surface, adjustably spaced from the opposing coarse jagged granular surfaced material defibering element part of an air flow impelling open center ported type rotating assembly, by which the material is caused to be pressed against the rotor defibering part, on the effective rotation of the rotor, while simultaneously directing air currents drawn through the material confining-feeding magazines, and over the granular surfaces, so as to convey the fibers freed from the material through the center port opening of the rotor, by the action of the air impelling vaned part of the rotating assembly, by which the airborne fibers are transported to the collecting circumventus type scroll to a discharge opening provided therefor.

3,415,457
ICE SHAVER
Samuel T. Echols, Jr., Bismarck, Mo. 63624
Filed Apr. 20, 1966, Ser. No. 545,221
2 Claims. (Cl. 241—92)



The portable ice shaver has a base member on which is mounted a body member and an electric motor. The body member includes a housing with outwardly flaring side walls opening downwardly through the base member and two opposed side openings. The shaft of the motor extends through one opening and a shaving element driven by the shaft is mounted in the other. Also, connected to the other opening is an arcuate hopper. Adjacent the one opening and mounted on the shaft is a fan repelling element. A U-shaped rigidizing plate member encloses the top of the housing and is rigidly secured to the sides thereof and detachably secured to the motor and bridges the space therebetween.

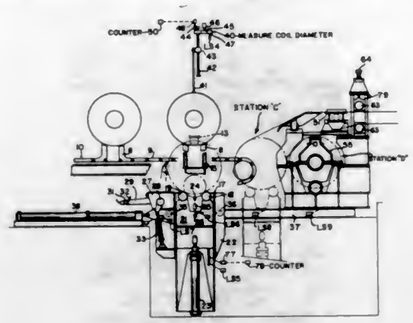
3,415,458
TAPE REEL CONSTRUCTION
Chester W. Newell, San Jose, Calif., assignor to Newell Associates, Inc., Sunnyvale, Calif., a corporation of California
Filed Jan. 25, 1967, Ser. No. 611,710
3 Claims. (Cl. 242—71.8)



A length of tape is formed in a roll upon a cylindrical hub. The tape width is essentially coextensive with the roll supporting surface of the hub. The ends of the roll supporting surface form a shoulder for cooperating with the rotating flanges of a drive capstan or other flanged arcuate guide members. The plane in which the shoulders lie is circumferentially unobstructed to provide access thereto by the flanged arcuate rotating member.

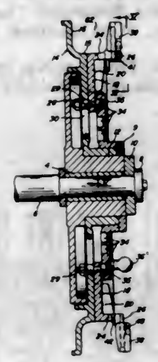
Readily detachable flanges are carried by resilient tangs engaging the reel hub. These flanges are axially spaced from the ends of the roll supporting hub surface.

3,415,459
COIL UNCOILING ARRANGEMENT
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, a corporation of Pennsylvania
Filed June 1, 1966, Ser. No. 554,601
Claims priority, application Great Britain, June 14, 1965, 25,134/65
10 Claims. (Cl. 242—79)



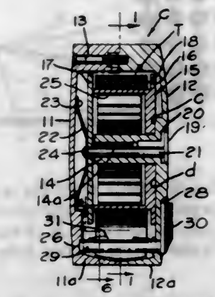
An apparatus for uncoiling strip material wherein a coil diameter measuring device causes a coil to be properly positioned on an uncoiler, the strip being delivered to a processing machine.

3,415,460
TAKE-UP BLOCK ARRANGEMENT
Albert J. Macknick, North Chicago, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,475
3 Claims. (Cl. 242—84)



Capacity of take-up block having radial retaining fingers of fixed length and limited radial movement is increased by slidably fitting shoes on the distal ends of the fingers and connecting the shoes with the take-up block levers. The levers are each slidably connected by opposite ends to a shoe and to the take-up block; and pivotally connected intermediate their ends to the finger on which the lever-associated shoe is fitted. The levers extend the shoes beyond the distal ends of the fingers on movement of the fingers radially outward of the take-up block.

3,415,461
MEASURING TAPE CONSTRUCTION
Charles Zelnick, Saginaw, Mich., assignor, by mesne assignments, to Cooper Industries, Inc., Houston, Tex., a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 503,452
11 Claims. (Cl. 242—84.8)



A measuring tape construction wherein a casing with a tape opening has a recoilable tapeline in engagement with a ramp inside the opening extending out the opening and wherein a pair of resilient, spaced apart clamp arms are movable into a position of engagement with the edges of the tapeline to clamp it against the ramp and lock it in a selected extended position.

3,415,462
VEHICLE SAFETY REEL
Chester J. Barecki and Walter E. Nordmark, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Aug. 7, 1967, Ser. No. 658,842
6 Claims. (Cl. 242—107.4)

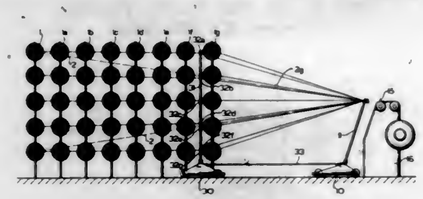


To protect the occupant of a car in case of collision or sudden stopping of the vehicle, shoulder straps about the occupant are connected with a cable which extends within a casing and around a drum equipped with a spring which tends to draw the cable toward the drum. The drum is rotatably mounted upon a vertically-positioned pivot pin within the casing, and above the drum is positioned a rotatable and vertically-slidable inertia disk equipped with upwardly-extending ratchet teeth adapted to engage with ratchet teeth carried by a fixed plate in the top of the casing. The disk and drum members are connected in all positions by lug and socket connections. Cam means between the inertia disk and drum are effective to raise the disk into locking engagement with the teeth of the fixed plate when there is a sudden pull of the cable as in the case where the vehicle is suddenly decelerated, thus checking the cable against outward movement, while immediately after the checking of the cable movement the disk is allowed to fall under its own weight to free the cable.

3,415,463
CREEL ASSEMBLY
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed May 10, 1966, Ser. No. 548,934
Claims priority, application Germany, May 22, 1965, R 40,695
4 Claims. (Cl. 242—131)

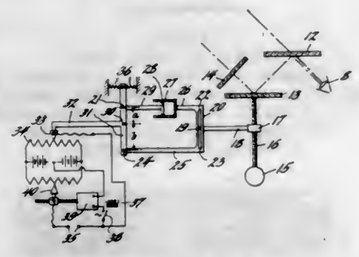
Combination with a beam warper having a thread guiding comb and a multilevel creel for supply coils, each

having adjacent thereto a thread tensioning eye from which respective threads of the supply coils extend directly to the comb during warper operation, of a perambulatory thread separator device having a travel path along the



creel from the creel side remote from the warper toward the side near the warper. The separator device comprises a thread divider for holding the threads of each creel level at substantially the same height spaced from the heights of the other levels.

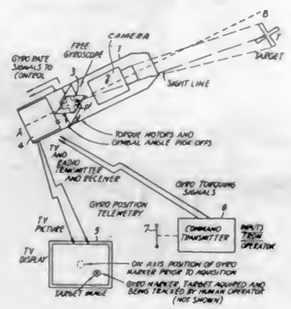
3,415,464
AIMING AND GUIDING COMMAND SET
Ludwig Bolkow, Stuttgart-Flughafen, and Hans Bender, Weil am Rhine, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung
Filed Sept. 18, 1957, Ser. No. 684,820
6 Claims. (Cl. 244—3.11)



1. A remote guide means for flying bodies by the target covering method operative with target and control devices comprising means for producing two superimposed images of the object area created by a target and a flying object, means for shifting one of the images relative to the other so that the images of the target and the image of the flying object are continuously brought into coincidence and means for delivering a control signal to said flying object indicative of the magnitude and rate of change of the deviation between the target and the flying object.

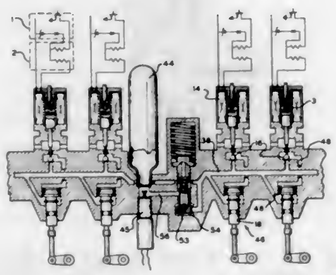
3,415,465
MISSILE CONTROL SYSTEM WITH A REMOTE DISPLAY OF MISSILE AND TARGET FOR OBTAINING CONTROL SIGNALS
Alan Bedford, Hatfield, England, assignor to Hawker Siddeley Dynamics Limited, Hatfield, England, a company of Great Britain
Filed Mar. 20, 1964, Ser. No. 353,651
Claims priority, application Great Britain, Mar. 22, 1963, 11,570/63
5 Claims. (Cl. 244—3.14)

1. A homing system for guiding a moving body towards a target, the homing system including a target-detecting device carried by the moving body and fixed relatively to an axis of the moving body and arranged to generate a first signal representing the angular inclination of the target relatively to the said fixed axis, display apparatus having a display face and arranged to receive the first signal and in response to display upon the display face a mark the position of which upon the display face represents the angular inclination of the target relatively to the said axis, movable means movable over the display face, control means capable of being changed in position to control the movement of the movable means over the display face so as to maintain a predetermined relationship of the positions, relatively to the display face, of the said mark and of the movable means, and generating means responsive to the rate of change with time of the position of the control means to generate a control signal



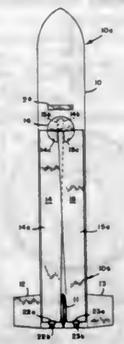
for the moving body, said control means including a gyroscope carried by the moving body and arranged to generate a second signal representing the angular inclination of the axis of the gyroscope relatively to the said axis of the moving body, the control means being arranged to control the movement of the movable means over the display face in response to the said second signal, whereby the position of the movable means relatively to the display face represents the angular inclination of the axis of the gyroscope relatively to the said axis of the moving body.

3,415,466
TIME RESPONSE MATCHING PROCESS AND PRODUCT
Harmon A. Poole, Jr., Simsbury, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,331
3 Claims. (Cl. 244—3.21)



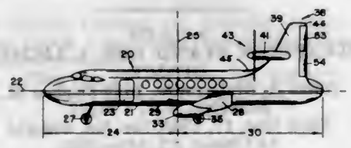
A bang-bang missile control system alters angle of attack by subjecting the missile to pure pitch or yaw moment influences produced by paired control surfaces disposed on opposite sides of a missile and separately actuated in time-mismatched limited concert, such that roll moments cancel out despite actuator hysteresis and one control surface is driven by a first actuator in an extend mode while the control surface paired therewith is driven by a second actuator in a retract mode.

3,415,467
RETRIEVABLE ROCKET WITH FOLDED WINGS
Joseph A. Barringer, 525 E. Maude Ave., Sunnyvale, Calif. 94086
Filed Jan. 30, 1967, Ser. No. 612,711
8 Claims. (Cl. 244—3.29)



A retrievable rocket with folded wings that unfold to enable the rocket to slowly glide when descending, said rocket including a rocket body having a supportive casing with three spaced connected supporting members to form a pair of parallel slots, and said rocket including a pair of oppositely rotatable wings connected to pivot means within the supportive casing, each of said wings having a structural member that overlaps the structural member of the other wing and is supported by the supportive casing when the wings are unfolded.

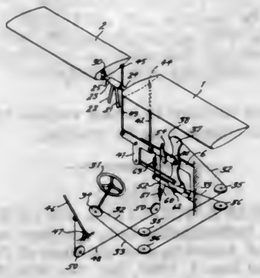
3,415,468
AIRCRAFT
Philip D. Labombarde, Indian Rock Road, Nashua, N.H. 03060
Filed Sept. 19, 1966, Ser. No. 580,342
7 Claims. (Cl. 244—13)



An aircraft having a forward fuselage free of engines, or protuberances, and a rearward fuselage with a low level monoplane main wing devoted entirely to lift and free of attitude controls is powered and directionally controlled by a pair of V shaped combined engine pylon and tail planes, there being a thrust-producing engine immovably fixed intermediate of each tail plane and movable control surfaces on each tail plane for controlling attitude on all three axes of the aircraft.

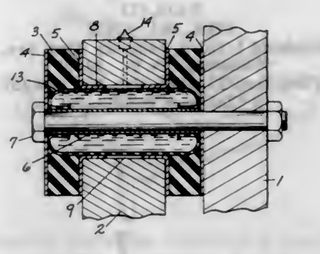
3,415,469
AIRPLANE
George G. Spratt, 110 Barley Mill Road, Wallingford, Pa. 19086
Filed Sept. 22, 1966, Ser. No. 581,385
5 Claims. (Cl. 244—48)

An aircraft is provided having wings pivotably attached to a fuselage and free to pivot in response to aerodynamic forces and control forces and having a control system for inducing equal pivotal movement of the wings in unison in the same direction through operation of a first pilot-actuated control and for inducing differential pivotal movements of the wings through operation of a second pilot-actuated control and having means interposed between the



first control and the wings for permitting the wings to pivot in unison and in the same direction in response to aerodynamic forces. A further feature of the control system consists in means for automatically adding to or subtracting from the angle of attack of both wings in unison and in the same direction on increase or decrease respectively of the pivot differential of the wings.

3,415,470
MOUNTING SYSTEM
Philip R. Woodford, Edward J. Straneva, and Richard A. John, Erie, Pa., assignors to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 17, 1965, Ser. No. 508,286
4 Claims. (Cl. 248—5)

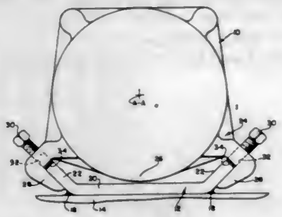


A mounting system having supporting and supported members connected by resilient mountings is damped by a viscous fluid filling the annular space between a cavity in one member and a stud on the other member.

3,415,471
VIBRATOR MOUNTING MEANS
Carl G. Matson, 401 E. Central Blvd., Kewanee, Ill. 61443
Filed June 9, 1967, Ser. No. 644,939
4 Claims. (Cl. 248—14)

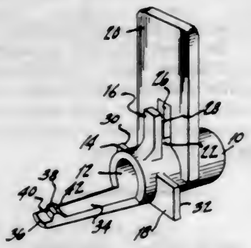
A vibrator mounting means for rigid, preferably permanent attachment to an object to be vibrated in connection with the unloading, settling, flowing, etc. of fluent, particulate etc. material, the mount being of substantial size

as compared with the area of the container etc. wall to which it is attached and having one or more pairs of



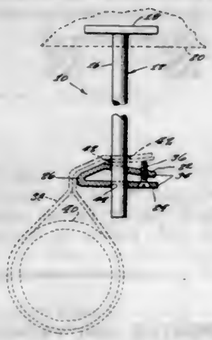
divergent clamp surfaces to which various types of vibrators or vibrator clamps may be attached.

3,415,472
SHAFT-MOUNTING DEVICE
Hien Vodinh, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,792
6 Claims. (Cl. 248—27)



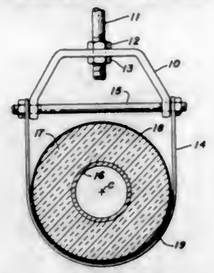
A one piece support member includes a cylindrical first portion adapted to receive and retain a rotatable control shaft, and a second portion shaped to provide for mounting of said support member on a bracket or support piece without the need of additional hardware.

3,415,473
PIPE HANGER
Reginald I. Ollen, 160—05 23rd Ave., Whitestone, N.Y. 11357
Filed Dec. 23, 1966, Ser. No. 604,259
2 Claims. (Cl. 248—59)



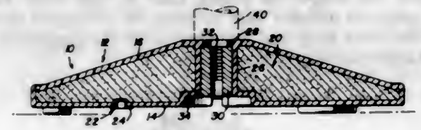
A pipe hanger including a post and a U-shaped retaining clamp having parallel legs and a circular toothed opening through each leg, the clamp being slidable on the post. The free leg ends of the clamp are tightened after the clamp and a pipe supporting strap mounted above it are set at a desired position on the post. The gripping action of the clamp's teeth secures the clamp to the post.

3,415,474
HANGER FOR INSULATED PIPE
Orlan C. Kindorf, 4024 Tilden Lane, Lafayette, Calif. 94549
Filed Oct. 21, 1966, Ser. No. 588,595
3 Claims. (Cl. 248—62)



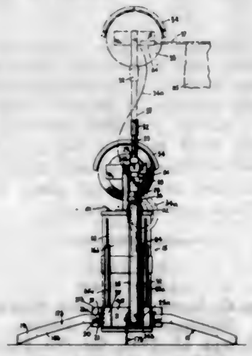
Clevis type pipe hangers to support a pipeline at a given elevation and grade including hole patterns in the strap portions to enable the application of insulation to the pipe without altering either its elevation or its grade.

3,415,475
WEIGHTED BASE
Robert R. Goodman, 707 N. 25th St., Reading, Pa. 19606
Filed Oct. 13, 1966, Ser. No. 600,299
14 Claims. (Cl. 248—158)



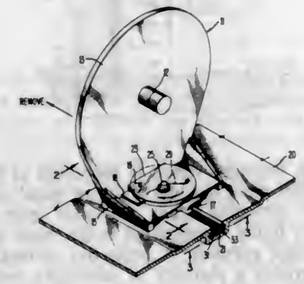
A shell molded of resilient material defining a cavity weighted with a solidified dense material filling the cavity and including a vertically extending, centrally disposed, cylindrical socket member for the coupling of a utilitarian device to the integrally molded weighted shell.

3,415,476
COLLAPSIBLE STAND FOR A LIGHTING DEVICE
Julian A. McDermott, 1639 Stephen St., Brooklyn, N.Y. 11227
Filed Mar. 17, 1965, Ser. No. 440,414
14 Claims. (Cl. 248—166)



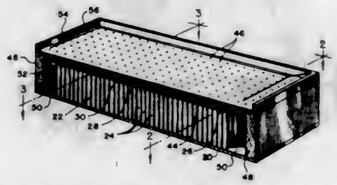
1. Means to provide a collapsible leg for a stand, said means including a leg member, a projecting element, an axle fixed to said projecting element and passing through a slot in said leg, and spring means in said slot to so position said leg on said projecting element that, when said leg approaches an extended position it engages a pin on said projecting element.

3,415,477
READILY RELEASABLE SELF-LOCKING CLAMP
Nicholas Kondur, Jr., Northville, Mich., assignor to Burroughs Corporation, Detroit, Mich, a corporation of Michigan
Filed June 23, 1967, Ser. No. 648,382
10 Claims. (Cl. 248—225)



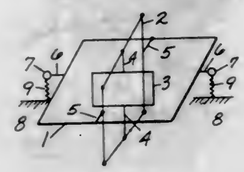
An apparatus for clamping a paper roll holder to a guide channel, the apparatus having a rail or slide member cooperating with the channel and a small-angled increasing radius cam forming a part of the rail, the cam being biased against one wall of the channel for providing a wedging action for preventing the sliding motion of the holder along the channel in one direction. An apparatus for clamping with two cams on a common pivot biased against opposite walls in the channel for increased frictional force for preventing motion in one direction. An apparatus for clamping with two cams placed in opposition and biased against opposite walls in the channel for preventing motion in either direction of the channel until released.

3,415,478
AIR TABLE
Thomas Walley Williams III, Belmont, Mass., assignor to The Ealing Corporation, Cambridge, Mass., a corporation of Delaware
Filed Jan. 27, 1967, Ser. No. 612,227
8 Claims. (Cl. 248—346)



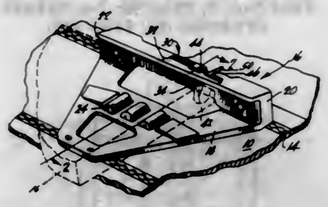
A laminated air table, the top surface of which has a number of small holes distributed therein, each hole communicating with a larger air plenum chamber located below the top surface. The plenum chambers are formed from two strata each having an ordered array of perforations, one strata being staggered relative to the other so that each perforation of one stratum communicates with several perforations of the other stratum. Below the chambers is a honeycomb support layer, the cells of the honeycomb being closed. A large air chamber is included for coupling a supply of air to a plurality of air plenum chambers simultaneously. The method of making the table involves forming it upside down on a preformed surface of a block, forcing at least the top surface of the table to conform to the preformed surface, and permitting bonding agent between layers to set while the table is under pressure.

3,415,479
GIMBAL STRUCTURE
Thomas J. Loftus, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1966, Ser. No. 592,185
8 Claims. (Cl. 248—358)



In a gimbal structure having a plurality of nested gimbal frames and associated means for journaling diametral portions of each individual gimbal frame on the adjacent gimbal frame, the rigidity, and therefore the accuracy, is increased by supporting the structure as a whole by a resilient free-free support for bearings of diametral portions of the outermost gimbal frame and located on an axis passing through the center of gravity of the structure. The free-free support also serves as a vibration isolating mounting for the gimbal structure.

3,415,480
CARGO PALLET LATCH
John J. Sertich, Wauwatosa, Wis., assignor to McDonnell Douglas Corporation, a corporation of Maryland
Filed June 7, 1967, Ser. No. 644,136
3 Claims. (Cl. 248—361)

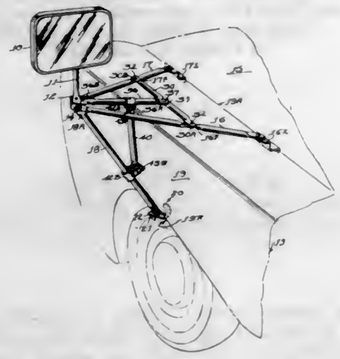


A temporary restraining device for a cargo pallet utilizing an over-center mechanism in which one of two jointed members of the linkage is constructed of a spring material.

3,415,481
REAR VIEW MIRROR ATTACHMENT
Alec Greenfield, Chicago, Ill., assignor to The Greenfield Company, Grove Village, Ill., a corporation of Illinois
Filed Feb. 14, 1967, Ser. No. 616,123
7 Claims. (Cl. 248—486)

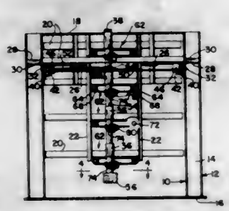
The invention relates to rearview mirrors of the detachable type employing an outboard mirror-supporting structure of a known form comprising three legs arranged in a tripodal array in which one leg is pivotable at the common apex conjunction of the three, and the other two legs are relatively fixed, the free ends of all three legs being equipped with claw or hook means adapted to engage marginal portions of the automobile

hood and wheel opening in the fender skirt, and some form of diagonal brace, preferably adjustable, is applied in some manner between the two fixed legs and the pivotable leg, the disclosed improvements being characterized in that they are directed to a combination bracing and adjusting structure affording a slideway for a diagonal adjusting and clamping link interconnecting with



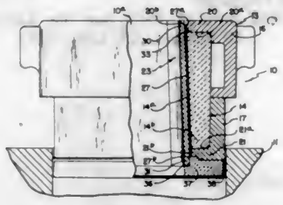
the third leg, the link being shiftable along the slideway in a direction which is toward and away from the tripod conjunction of the three legs and therefore in a direction which is substantially at right angles toward and away from the side of the fender skirt, whereby the positioning of the third leg in adjustment to the fender skirt is facilitated, the adjusting range is increased, and the rigidity of the structure is significantly improved.

3,415,482
FORM FOR MAKING CONCRETE PIPE WITH WALL OPENINGS
Hartzell H. Schmidgall, % Hawkeye Concrete Products Co., Inc., Mediapolis, Iowa 52637
Filed Nov. 9, 1966, Ser. No. 593,035
10 Claims. (Cl. 249—145)



1. In a concrete pipe making form including a hollow core surrounded by a jacket to provide between the core and jacket an annular space for receiving concrete, the improvement comprising supporting means within the core, a hole-forming element disposed within the core in transverse relation to the core axis, said core including a wall portion having an opening therethrough in alinement with said element, means mounting said element on the support means for selective projection through said hole and into the concrete-receiving space and for retraction from said space, and operating shaft means extending lengthwise of the core and rockably carried by the support means and operatively connected to and for selectively projecting and retracting said element.

3,415,483
HOT TOP STRUCTURE
Walter M. Charman, Jr., Shaker Heights, and Benjamin F. Anthony, Cleveland Heights, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Continuation of application Ser. No. 398,629, Sept. 23, 1964. This application Apr. 12, 1967, Ser. No. 630,464
11 Claims. (Cl. 249—201)



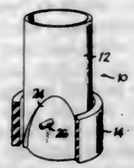
A hot top structure which is supported at the upper end of an ingot mold includes a hollow metal casing having inwardly extending upper and lower ledge portions. An insulating lining is supported in the metal casing between the ledge portions. A protective refractory insert means comprising a plurality of refractory panels is located in the casing to provide a protective layer for the insulating lining. The insert means comprises a plurality of refractory panels mounted in a flexible backing which interconnects the panels for relative angular movement from a side-by-side position to a position for insertion into the casing. The insert panels extend beyond the flexible backing at both ends thereof. A bottom ring underlies a lower end portion of the casing and has a cooperating portion engageable with a projecting portion of the panels for supporting the panels in the casing, and the upper projecting portions of the panels engage the inwardly located end surface of the upper ledge portion of the casing.

3,415,484
BRACING AND SPACING DEVICE FOR CONCRETE WALL FORMS
Hans-Dieter Klaiss, Stuttgart, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Aug. 27, 1965, Ser. No. 483,137
Claims priority, application Germany, Aug. 28, 1964, K 53,873
14 Claims. (Cl. 249—216)



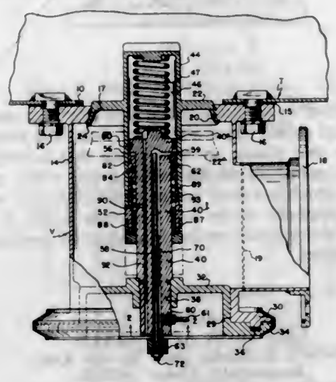
A bracing and spacing device for concrete wall forms to be inserted between oppositely positioned forms at spaced intervals to brace and accurately space the forms. A pair of head members are secured to the inner face of each of the opposite forms, respectively, by means of bolts inserted through the form from the outer side and screwed into outwardly opening blind end centrally located bores in the head members. Two parallel rod braces extend between the head members on diametrically opposite sides of the respective bolts. The head members are constructed of plastic molded about the rods, which are deformed at their ends for tight securement.

3,415,485
ASPIRATED VALVE FOR HANDLING PARTICULATE MATERIAL
Gene Hirs, Birmingham, Mich., and Arthur C. Schouw, Corunna, Mich., assignors to Hydromation Engineering Company, Livonia, Mich.
Filed Dec. 28, 1966, Ser. No. 605,427
14 Claims. (Cl. 251—5)



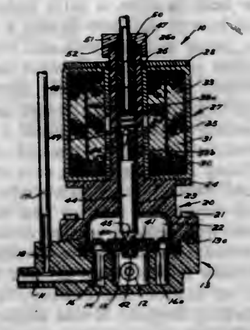
1. A valve comprising a tube of flexible material having permanent folds therein extending longitudinally of said tube from one end thereof, the edge of said tube at said one end thereof having a closed condition wherein portions of said edge abut each other to close said one end of said tube, and said edge having an open condition wherein said edge portions are spread apart to open said one end of said tube, said tube having pocket portions between said folds each including one of said edge portions of said tube, a plurality of flexible diaphragms each sealed all around the edges thereof to a respective one of said pocket portions of said tube to form pockets which can be inflated to close said edge portions of said tube and deflated to open said edge portions, and means for introducing gas into and removing gas from said pockets.

3,415,486
SPRING BIASED TANK OUTLET VALVE
Joseph H. De Frees, Warren, Pa., assignor to Anne S. De Frees, Warren, Pa.
Filed May 25, 1966, Ser. No. 552,873
5 Claims. (Cl. 251—63.6)



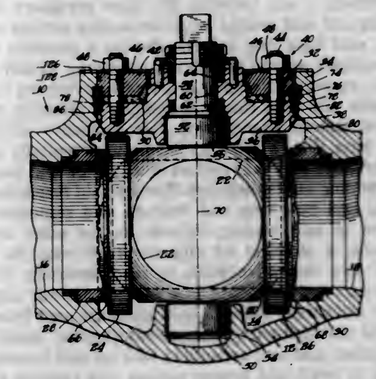
A fluid storage tank outlet valve disposed at the bottom of the tank, exteriorly thereof, and including a valve disc which closes against the flow of the stored product. The valve is removable exteriorly of the tank, with all parts in contact with the product being readily accessible. The valve disc is hydraulically controlled and is biased to a normally closed position, thereby providing a fail-safe feature on inadvertent failure of the hydraulic pressure. The valve hydraulic fluid control system is formed completely separate from the tank outlet flow system, thus preventing intermingling of the two liquids.

3,415,487
MAGNETIC CONTROL VALVE WITH CONCENTRIC COILS
Robert E. Robarge, Minneapolis, Minn., assignor to North American Plastics, Edina, Minn., a corporation of Minnesota
Filed May 16, 1966, Ser. No. 558,533
3 Claims. (Cl. 251—137)



This invention relates to a solenoid valve structure designed to open against a pressure. The force required to open a valve is normally greater than that required to maintain the valve in open position, and the valve therefore includes a pair of magnetic coil members arranged in concentric relation with respect to an internal valve member whereby a relatively large force may be initially placed on the valve member and the force thereafter reduced. In order to protect the valve housing from heat damage the means for effecting the magnetic force reduction is designed to be heat sensitive.

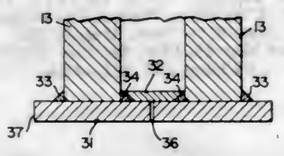
3,415,488
BALL VALVE
Werner K. Priese, Tower Lake, Barrington, and David J. Davies, Naperville, Ill., assignors to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois
Filed Dec. 9, 1966, Ser. No. 600,548
8 Claims. (Cl. 251—315)



1. A high pressure ball valve adapted to be disassembled with ease and reassembled after long exposure to a corrosive atmosphere and comprising, in combination, a valve body defining an internal valve chamber and two flow passages opening into said chamber, a flow control ball defining a flow bore therein and being rotatably disposed within said chamber, valve seat means supported on said

valve body in encircling relation to one of said flow passages and slidably engaging said ball to form a seal therewith, said valve body including an annular portion defining between said flow passages a circular bonnet well opening outwardly from said chamber and having a minimum diameter which is at least equal to the diameter of said ball to permit passage of said ball through said well into and out of said chamber, said well being defined in part by a high pressure sealing surface of cylindrical form on said annular body portion, a valve bonnet removably disposed in said bonnet well and having a generally circular periphery fitting into the well and having a diameter limited to that of the well, a bonnet sealing ring encircling said bonnet and being closely encircled by said high pressure sealing surface, said bonnet sealing ring defining on the axially inward side thereof a seal expanding face of inwardly diverging truncated conical shape, said bonnet defining a seal tightening cam of inwardly diverging truncated conical shape confronting and fitting against said seal expanding face on said bonnet sealing ring, said annular well defining portion of said body having therein an annular anchor groove opening radially inward on the axially outward side of said high pressure sealing surface, an anchor ring contractible in diameter and being removably disposed in said anchor groove and projecting radially inward in relation to said high pressure sealing surface, an annular gland disposed between said anchor ring and the axially outward side of said bonnet sealing ring to anchor the latter against axially outward displacement, said annular well defining portion of said body defining a first lubricant sealing surface of concave cylindrical form extending axially outward from said anchor groove and defining a portion of said well, said bonnet defining a second lubricant sealing surface of convex cylindrical form disposed in axially proximate relation to said first lubricant sealing surface and having a diameter much less than that of said first lubricant sealing surface, an outer base ring of annular form dimensioned and shaped to extend removably into said well in encircling relation to said bonnet and fit firmly against said anchor ring, said outer base ring having an outer periphery of circular form closely encircled by said first lubricant sealing surface on said body and having an inner periphery of circular form closely encircling said second lubricant sealing surface on said bonnet, a first O-ring seal forming a lubricant seal between said base ring outer periphery and said first lubricant sealing surface, a second O-ring seal forming a seal between the inner periphery of said base ring and said second lubricant sealing surface on said bonnet, said base ring defining therein a plurality of circumferentially spaced stud holes extending axially therethrough, an annular washer disposed in overlying engagement with said base ring and defining a plurality of stud apertures therein aligned with said respective stud holes in said base ring, a plurality of circumferentially spaced studs threaded into said bonnet inwardly of said base ring and extending axially outward through said respective stud holes in said base ring and through said respective stud apertures in said washer, threads on the outer ends of said studs, a plurality of nuts threaded onto the outer ends of said respective studs to react inwardly through said washer and said base ring on said anchor ring and to react outwardly through said studs on said bonnet to urge said seal tightening cam on said bonnet axially outward against said seal expanding face on said bonnet sealing ring to swell said bonnet sealing ring radially against said high pressure sealing surface on said body to produce a high intensity sealing engagement of said bonnet sealing ring with said sealing surface and a high intensity sealing engagement of said bonnet sealing ring with said bonnet which are intensified by the force of fluid pressure within said chamber acting axially outward on said bonnet, said base ring and the annular portion of said bonnet disposed axially inward of said base ring being shaped and positioned in relation to each other and to said anchor ring to define therebetween when said nuts are tightened on said studs an annular lubricant space disposed inwardly of said first and second O-ring seals on said base ring and outwardly of said bonnet sealing ring, a charge of lubricant disposed within said lubricant space, said lubricant space containing said charge of lubricant being positioned with respect to said studs so that said studs extend outwardly through said lubricant space in contact with lubricant therein which is free to move inwardly along the studs to continuously lubricate the threaded inner ends thereof and which lubricant is free to move outwardly along said studs through said base ring and said washer to said nuts to provide lasting lubrication to mutually engaged threads on said nuts and said studs by capillary movement of the lubricant outwardly between the threads on the studs and adjacent threads on said nuts, a control stem connected in rotary driving relation to said ball and extending outwardly through said bonnet, sealing means forming a seal between said bonnet and said control stem, said washer defining thereon a plurality of circumferentially spaced anchoring lugs extending radially outward, said well defining portion of said body defining a plurality of abutments coacting with said washer anchoring lugs to anchor said washer and said bonnet against rotation upon turning of said control stem to open and close the valve.

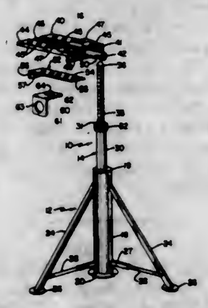
3,415,489
VALVE BODY CONSTRUCTION
Donald L. Gray, Houston, Tex., assignor to M & J Valve Company, Houston, Tex., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,426
2 Claims. (Cl. 251—329)



A fabricated valve body made box-like with end and side walls and closed upper and lower ends. The lower end is closed by two plates, an outer plate that is welded to the exterior periphery of the end and side walls, and an inner plate which is seated on the outer plate and welded about its periphery to the end and side walls. A weep hole in the outer plate prevents build-up of pressure between the plates.

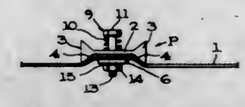
3,415,490
LIFT JACK APPARATUS
Richard S. Steele, 1605 W. 6th Ave., Broomfield, Colo. 80020
Filed Aug. 15, 1966, Ser. No. 572,591
16 Claims. (Cl. 254—45)

1. The combination with a vehicle body having outboard horizontal lift surfaces along opposite sides thereof of a series of lift jack units being adapted for placement in load-balanced relation to the body for vertical displacement of the body between raised and lowered positions, a lift bracket for each lift jack unit including a relatively broad, flat bracket plate portion attached to a lift surface, a tubular socket member attached beneath said plate portion for lateral extension outwardly therefrom, each tubular socket being provided with a transverse downwardly directed opening, and each of said lift jack units including an elongated, vertically displaceable lift member being sized and adapted for insertion through the transverse opening in each respective tubular socket for



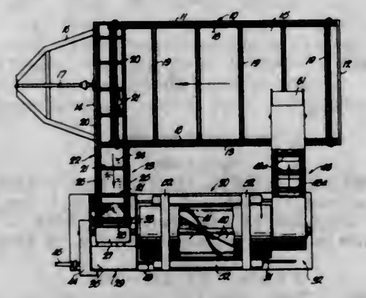
tiltable engagement with the inner surface of the socket upon vertical displacement of each lift member.

3,415,491
AUTOMATIC FENCE TIGHTENER AND EXTENSION JOINT
Ezra M. Wilcox, 221 Maplewood Lane, Nashville, Tenn. 37207
Filed Oct. 31, 1967, Ser. No. 679,339
4 Claims. (Cl. 256—39)



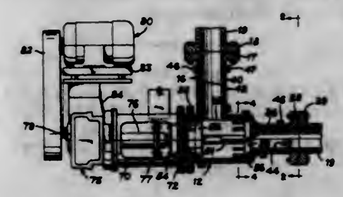
A fence line support including a post member having a channel on one side within which is disposed a clamp bar and between which the fence line passes. Nut and bolt assemblies connect the bar and post and include adjustable, yieldable spring means to provide a constant tension upon the fence line.

3,415,492
FEED MIXER
John H. Rule, Herington, Kans. 67449
Filed Feb. 17, 1966, Ser. No. 528,114
4 Claims. (Cl. 259—3)



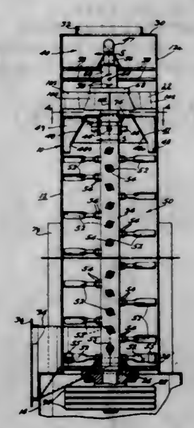
An apparatus for mixing and dispensing feed for animal consumption has an array of combined elements including a wagon floor conveyor with a cross conveyor located at the forward end thereof. A mixing unit receives the feed discharged from the wagon by the cross conveyor, mixes same, and delivers the mixed feed to another conveying means. The final conveying means deposits the mixed feed into the end opposite the discharging cross conveyor.

3,415,493
MIXING DEVICE
Robert L. Bates and Philip L. Fondy, Dayton, Ohio, assignors to Chemineer, Inc., Dayton, Ohio, a corporation of Ohio
Filed Aug. 21, 1967, Ser. No. 661,888
10 Claims. (Cl. 259—7)



An in-line paste mixer mountable in a line handling a continuously flowing high viscosity material, includes a cylindrical vessel defining a mixing chamber with a radially extending inlet and an axially extending centrally located outlet of substantially equal cross-sectional area. A driven rotatable shaft supported within the chamber includes baffles each with axially extending finger-like elements rotatable between corresponding elements of stationary baffles mounted on the vessel. A mounting flange on each conduit for connecting the mixer within the line and sealed jackets surounding the vessel and the conduits for circulating a heat transfer fluid to control the temperature of the material within the mixer. By maintaining the chamber substantially completely full, plug flow characteristics and a shear-type mixing are accomplished in a very brief time.

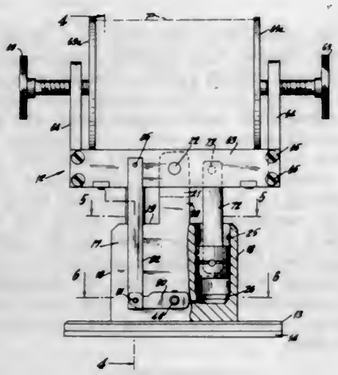
3,415,494
LIQUID ADDITION MIXER
Chester Donald Fisher, Muncy, and Robert L. Stroup, Williamsport, Pa., and Wayne Zerkel, Fort Wayne, Ind., assignors to Sprout, Waldron & Company, Inc., Muncy, Pa., a corporation of Pennsylvania
Filed July 13, 1966, Ser. No. 564,944
5 Claims. (Cl. 259—8)



A liquid addition mixer characterized by a vertical cylindrical casing containing a coaxial rotatable shaft extending therethrough and carrying a plurality of mixing paddles in the lower mixing region of the casing. A downwardly flaring frusto-conical liquid distribution element on the shaft above the mixing paddles is positioned adjacent a port communicating with a bore of the shaft through which a liquid is centrifugally discharged onto

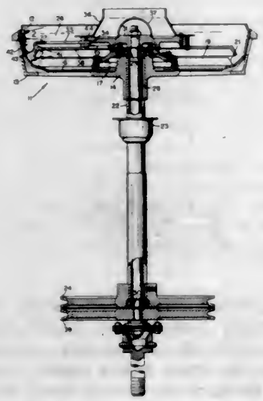
the underside of the frusto-conical distribution element. A material inlet is provided at the top of the casing and mixing and distributing blades on the shaft above the distributor element provide a uniform feed of material over the outer surface of the element. The liquid is outwardly directed by centrifugal force in small droplets and is dispersed uniformly into the flow of materials at the lower edge of the liquid distribution element.

3,415,495
APPARATUS FOR SHAKING PAINT CANS
Nicholas Grubelic, 480 NW. 12th St., North Miami, Fla. 33161
Filed Mar. 15, 1967, Ser. No. 623,288
18 Claims. (Cl. 259—75)



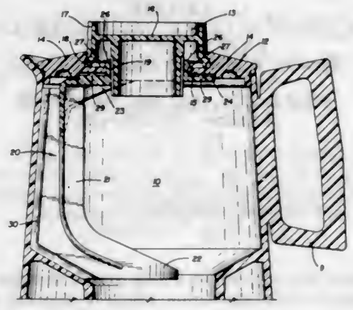
A can shaker for paints or other material comprising a clamp adjustable to carry different sized cans, centrally pivoted to a base and oscillated by compressed air actuated means controlled by a valve actuated by the oscillation of the clamp to alternately feed compressed air and exhaust compressed air.

3,415,496
SORTING MACHINE
John S. Evans, Jr., Houston, Tex., assignor to Mandrel Industries, Inc., Houston, Tex., a corporation of Michigan
Filed July 13, 1967, Ser. No. 653,062
5 Claims. (Cl. 259—85)



Objects such as rice grains to be sorted are fed into a rapidly rotating bowl, and centrifugal forces distribute the grains at the periphery of the bowl to facilitate their being picked up by a rotating suction wheel for examination, classification and sorting. As each grain is picked up, the remaining grains shift their positions in the bowl to fill up the vacancy. However, static friction between the grains and the bowl opposes this shifting action. Also, the grains tend to build up in clusters around the sides of the bowl. Therefore, a paddle member is provided extending radially from the axis of the bowl and rotating at a different speed. The paddle member sweeps the inner bowl surface near its periphery, and periodically disturbs the rice grains to initiate the desired shifting motion and provide a more uniform distribution.

3,415,497
COMBINED BLENDER AND SPATULA
Clarence James Johnson, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Apr. 24, 1967, Ser. No. 632,989
10 Claims. (Cl. 259—118)

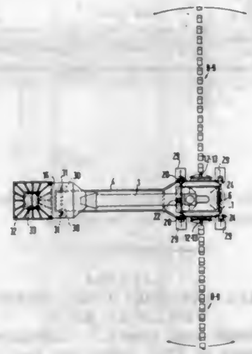


In combination with a blender having a removable container cover with a central opening and a cap closing the opening, a spatula which comprises a blade and snap-in fingers which extend through the central opening and engage the cover to detachably mount the spatula on the cover. The cap has a depending tapered splined portion which extends downwardly through the container cover opening and engages the spatula for rotating the spatula when the cap is manually rotated. The spatula has anti-friction means located between the spatula and cover which serve to reduce friction when the spatula is rotated and to position the spatula relatively to the cover. The splined sleeve portion of the cap locks the snap-in fingers in cover engaging position which prevents the spatula from becoming disengaged during blender operation.

3,415,498
MOBILE CONCRETE MIXING EQUIPMENT
Luigi Zaccaron, Via Nazionale, S. Caterina, Udine, Italy
Filed Jan. 23, 1967, Ser. No. 610,968
Claims priority, application Italy, Oct. 15, 1966, 55,691/66
3 Claims. (Cl. 259—165)

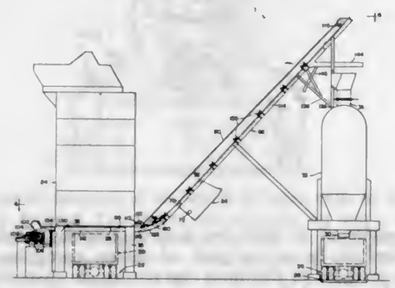
A mobile concrete mixing equipment with the various apparatus forming the equipment being predisposed on one or more vehicles, ready for being mounted in situ and for automatic operation. The equipment comprises a framework forming a trailer and provided with wheel sets adapted to be easily mounted and dismounted to enable the framework to be readily and quickly installed on and removed from a site, and a cement silo mounted on a truck so as to be easily removed therefrom and attached to the framework. A square supporting frame is arranged at the front end of said framework to support

a basin type balance adapted to be emptied automatically. At least two laterally radially movable bucket conveyors are pivotally mounted on the supporting frame so as to be movable through an angle of about 180°. A con-



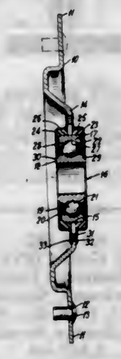
veyor belt extends with one of its ends below the balance and with its other rearward end between the bucket conveyors. A drum concrete mixer is disposed at the rear end of the framework between the bucket conveyors.

3,415,499
ASPHALT PREPARING AND DELIVERING SYSTEM
Glenn W. Ebert, Eugene, Oreg., assignor to McKenzie Sand & Gravel Co., Eugene, Oreg., a corporation of Oregon
Filed June 2, 1967, Ser. No. 643,212
15 Claims. (Cl. 259—171)



Asphalt mixtures are formulated in an elevated mixing plant. Standard mixtures are dumped from the plant into a skip which delivers them to large capacity, elevated surge tanks which dump weighed loads into trucks. The plant dumps special mixtures directly into trucks therebelow. Thus, the plant can normally be operated to build up reserve quantities of standard mixtures while providing quick delivery of special mixtures. The skip is carried by front and rear rollers which travel along elevating tracks, and, when the skip nears its dumping position, the front rollers travel through gaps in the tracks and onto branch, dumping tracks, the bridging rollers travel along bridging tracks as the rear rollers approach the gaps in the elevating tracks and support the rear end of the skip as the rear rollers travel over the gaps and into upper portions of the elevating tracks, and further travel of the rear rollers up the upper portions of the elevating tracks while the front rollers travel horizontally tilts the skip to discharge it. The skip is moved by two advancing cables and two haulback cables, the cables being driven by drums driven by two parallel chains of a drive having a brake drum against which two brake shoes are normally biased. The drive includes an electric motor and a dynamic braking circuit actuates the motor to brake the cable drive to provide additional braking to that of the brake shoes.

3,415,500
COMBINED SEAL AND SHOCK MOUNT FOR A BEARING
James J. Pethis, Farmington, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Sept. 21, 1966, Ser. No. 581,004
4 Claims. (Cl. 308—184)

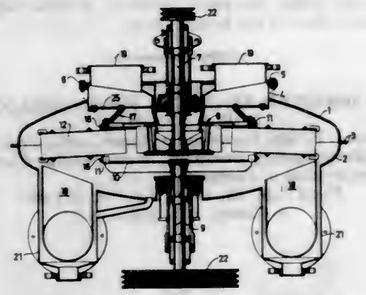


A bearing assembly is provided comprising a bearing-mounting bracket having a peripheral mounting flange formed with an annular offset located radially from said flange and having an opening centrally located therein, said bracket being sufficiently flexible to yield to axial pressure caused by shock end loading and the like. The assembly includes an antifriction bearing comprising inner and outer annular rings with rolling elements therebetween located coaxially with respect to said centrally located opening, means mounting the bearing to the bracket comprising at least one flanged annular cap supporting the outer ring of said bearing against axial displacement, the flanged annular cap having integrally associated within it an annular shock-absorbing means, said shock-absorbing means supportingly engaging the periphery of the outer bearing ring and extending radially as a thin sealing element along each side of said outer bearing ring in flexing and wiping engagement with the outer periphery of the inner bearing ring, and a peripheral lip extending radially outward from said flanged cap, said peripheral lip being joined along its periphery to said annular bracket, whereby said antifriction bearing is concentric with the opening of said annular bracket.

3,415,501
CENTRIFUGAL CONTACT APPARATUS
Claes-Wilhelm Pilo, Stockholm, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Dec. 27, 1965, Ser. No. 516,504
Claims priority, application Great Britain, Dec. 29, 1964, 52,633/64
9 Claims. (Cl. 261—89)

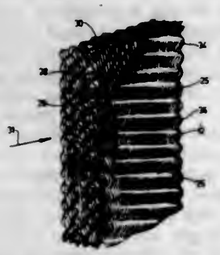
Gas washer apparatus is provided with a substantially rigid casing structure for operation under pressure if desired and which is so constructed to provide easy access for removal of the rotating parts for replacement or cleaning with the accessible openings still being small enough

to maintain the overall strength of the apparatus for high pressure use and including a rotor disposed in said casing, a rotatable carrier disposed in said casing coaxial with said rotor, a plurality of contact plates formed into groups of contact elements and carried by the carrier, a



first opening coaxial with the rotor and the carrier and large enough to provide removal thereof and a second opening disposed radially of the axis of the first opening and adjacent the periphery of the carrier for insertion and removal of the groups of contact elements.

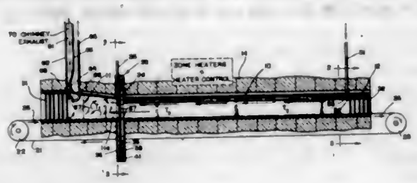
3,415,502
LIQUID AND GAS CONTACT BODY
Carl Georg Munters, 3 Danderydsvagen, Stocksund, Sweden
Filed Mar. 23, 1965, Ser. No. 441,961
Claims priority, application Sweden, Mar. 24, 1964, 3,667/64
4 Claims. (Cl. 261—112)



A contact body or exchanger packing composed of a plurality of layers or sheets bearing against one another. The sheets are corrugated or otherwise formed by wrinkling, creasing or grooving them to produce a plurality of channels between the sheets. The sheets are preferably composed of plastic material and in addition to the corrugations in them, the sheets are undulated or provided with transverse folds extending angularly across the channels. The folds cross one another in adjacent sheets and the apices of the folds are preferably spaced apart for distances greater than the distances between the apices of the channels.

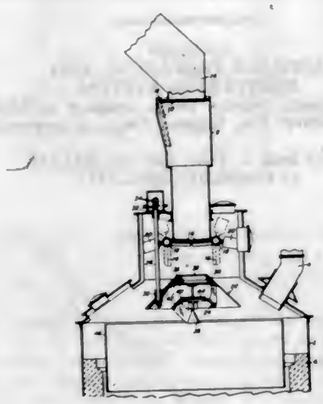
3,415,503
CONDITIONED ATMOSPHERE FURNACE MUFFLE
Jacob Howard Beck, Waban, Mass., assignor to BTU Engineering Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Aug. 18, 1967, Ser. No. 661,652
11 Claims. (Cl. 263—8)

An elongate furnace muffle formed with a venturi section at one end arranged to provide relatively smooth nonturbulent axial gas flow over the work in process. Gas introduced under pressure into the venturi section establishes the desired laminar axial gas flow but may also be



used to provide substantial gas agitation for specific purposes in a limited region of the muffle.

3,415,504
MATERIAL DISTRIBUTING DEVICE IN A VERTICAL KILN
William D. Smith and Henry J. Liebmann, Barberton, Ohio, assignors to PPG Industries, Inc., a corporation of Pennsylvania
Filed Mar. 20, 1967, Ser. No. 624,432
28 Claims. (Cl. 263—29)

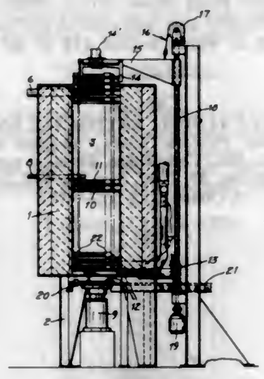


A series of at least two truncated conical shells are disposed to lie in the path of falling particulate material in order to distribute the particulate material in a pile of substantially uniform depth. The upper truncated conical shell is the larger, and both shells have their smaller ends uppermost.

3,415,505
METHOD AND APPARATUS FOR HEATING FORMED PRODUCTS
Arnold M. Cook, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Dec. 29, 1966, Ser. No. 605,908
10 Claims. (Cl. 263—36)

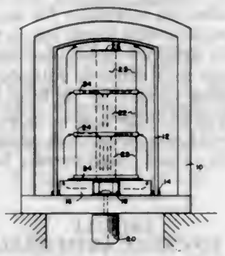
This invention relates generally to an improved method for firing, sintering or otherwise heat treating a wide variety of products such as grinding wheels, dinnerware, ceramic tile and the like earthenware, and refractory products and apparatus for carrying out the method. The invention is particularly concerned with the method of heat treating formed products by establishing two bodies of hot gas rotating in opposite directions in rolling contact with each other about parallel vertical axes, and an

apparatus for carrying out the method comprising a continuous vertical gas fired kiln having two intersecting el-



liptical heating chambers in communication with each other along their adjacent sides.

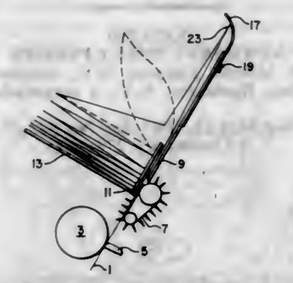
3,415,506
COIL SPACER
Calvin C. Blackman, 24272 W. Lake Road, Bay Village, Ohio 44140
Filed Apr. 6, 1966, Ser. No. 540,725
14 Claims. (Cl. 263—47)



A spacer adapted to be placed between coils in an annealing furnace. The spacer has an upper set and a lower set of support plates welded together in superimposed relationship with the plates defining intersecting gas passages, at least some of which in each set extend from the central opening to the periphery.

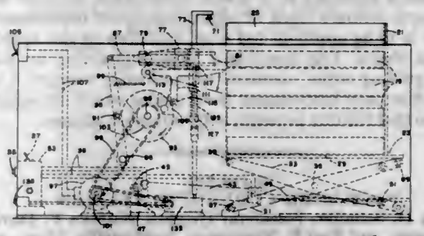
3,415,507
ZIG-ZAG PAPER STACKER
John F. Eckert, Malden, and John C. Sims, Jr., Sudbury, Mass., assignors, by mesne assignments, to Mohawk Data Science Corporation, East Herkimer, N.Y., a corporation of New York
Filed Sept. 8, 1965, Ser. No. 485,828
2 Claims. (Cl. 270—61)

A continuous web of pre-folded forms is stacked in its original folded condition after having been run through a processing machine, such as a printer, by a device having a vertically oriented throat, a guide plate located above the throat and a stacking platform located adjacent to and even with or below the throat. Feeding means forces an unfolded portion of the web upwardly through the throat and along the guide plate, which is inclined away from the stacking platform, whereby the weight of the web already on the platform pulls the upwardly travelling portion onto the top of the stack, causing it to assume its prefolded condition. A deflector is positioned at the top of the guide plate less than two form-



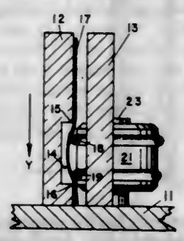
lengths away from the stacking platform to assist gravity in directing the web onto the stack.

3,415,508
WRAPPING MACHINE SHEET SELECTOR
John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 542,442
1 Claim. (Cl. 271—9)



Article wrapping apparatus having suction means for delivering individual sheets of wrapping material from selected supply bins and into position for easy access by a wrapping operator.

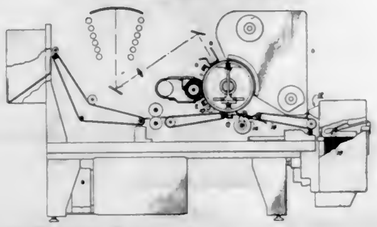
3,415,509
DOCUMENT HANDLING APPARATUS
Robert M. Tyburski, Fairfax County, and Robert F. Springer, Prince William County, Va., assignors to Farrington Electronics, Inc., Springfield, Va., a corporation of Massachusetts
Filed Oct. 13, 1966, Ser. No. 586,419
16 Claims. (Cl. 271—45)



A document transport device is disclosed wherein a guide plate having a recess therein is disposed at one side of the document transport path. At the other side is disposed a pair of O-rings which run on a suitable pulley system. The O-rings extend into the guide plate recess and thus, documents can be transported from one end of the guide path to the other along the guide path between the recess and the pair of O-rings. The upper one of the pair of belts is driven at a higher rate of speed than the lower one thereby rotating the documents downwardly

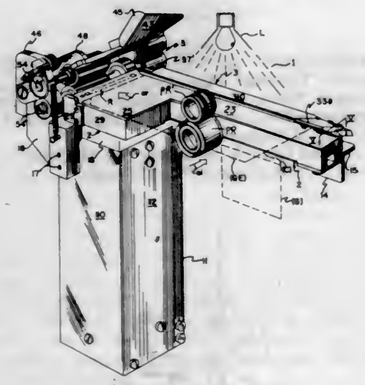
and preventing them from flying up and away from the document transport path.

3,415,510
AUXILIARY SHEET FEEDER
Raymond P. Mileski, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 29, 1967, Ser. No. 641,855
5 Claims. (Cl. 271—61)



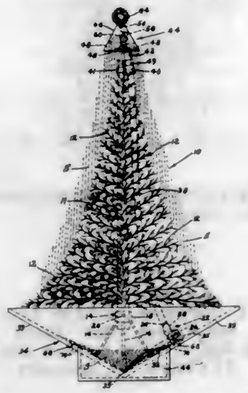
A paper tray adapted to support supplemental copy sheets in position to be automatically fed through a xerographic reproducing machine or the like. The tray holds the sheets deflected at a proper orientation without disturbing a primary stack of sheets supported therebeneath which is to be similarly fed after depletion of the supplemental sheets. The tray has a paper supporting surface, sheet guiding edges, elements to removably support it on a machine, and loop-shaped sheet guides which are adjustable so that the tray is usable with various machines.

3,415,511
PACKAGED CORNERING STATION
Frank H. Schaller, Needham Heights, Wilbern F. Davis, Sharon, and Earl E. Masterson, Newtonville, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 5, 1966, Ser. No. 547,878
11 Claims. (Cl. 271—80)



A cornering station package for incorporation in a document handling machine where, in a prime embodiment, the station comprises an integral, replaceable unit 1 including the following integrally-packaged elements: a wait-station surface strobe cell mask 23 for receiving injected documents (e.g. picked cards) thrust along arrow *ai* there-onto; a resilient aligning and damping stop-rail assembly 3 for decelerating and aligning documents so-injected along surface 23 to be thereafter thrust transversely, along direction *ar*, past a read station R by a pinch roll assembly and transport roller assembly 5 mounted upon unit 1 and adapted to receive cards so thrust to advance them past read station R; a depressing guide assembly 4 supported by unit 1 and including a hold-down plate 41 adapted to resiliently depress and align documents while being thrust across reference surfaces 23, 25 and preferably also with control electronics housed in unit 1 (such as within section 110 of the frame).

3,415,512
APPARATUS CAUSING ARTIFICIAL SNOWFALL
Jack Burnbaum, Newton, Mass., assignor to Bradford Novelty Co., Inc., Cambridge, Mass., a corporation
Filed Jan. 27, 1967, Ser. No. 612,257
6 Claims. (Cl. 272—15)



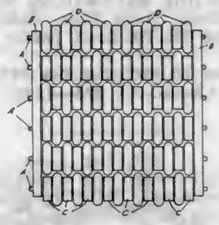
Apparatus for causing artificial snowfall having an inverted cone collecting receptacle for snow particles, an electrically operated blower, supported on the cone's slanting wall, to blow artificial snowflakes upwardly through an upright conduit to a deflector rotatably supported by said tube and being rotated by air from the blower impinging upon its inner surface. Said snow particles thereafter fall into said receptacle and again are similarly blown upwardly, said movement being repeated indefinitely.

3,415,513
APPARATUS TO CAUSE ARTIFICIAL SNOWFALL
Jack Burnbaum, Newton, Mass., assignor to Bradford Novelty Co., Inc., Cambridge, Mass., a corporation
Filed Aug. 16, 1966, Ser. No. 572,747
5 Claims. (Cl. 272—15)



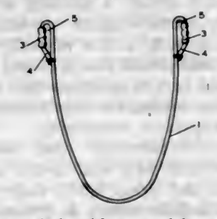
Apparatus for causing artificial snowfall having a collecting receptacle for snow particles, an electrically operated blower adapted to cause vibration of the receptacle to aid in causing movement of the particles to the blower and to blow the particles upwardly through an upright conduit to a deflector from which the particles fall downwardly into the receptacle and again are blown upwardly, this movement being continuous.

3,415,514
FOOT MASSAGE ROLLER
Edith Weihs, 155 Siedlungstrasse, Burlafingen uber Neu-Ulm, Germany
Filed Mar. 23, 1965, Ser. No. 442,040
Claims priority, application Germany, Apr. 2, 1964, W 36,488
1 Claim. (Cl. 272—57)



Disclosed is a massage device having skin contacting rollers alternating in size and disposed on parallel shafts in staggered relationship so that large diameter rollers are separated from each other by smaller diameter rollers, and so that the large rollers on one shaft fit between large rollers on the adjacent shaft and opposite and in line with smaller rollers on said adjacent shaft.

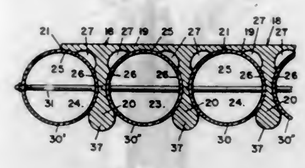
3,415,515
RUBBER CORD SKIPPING ROPE AND EXERCISER
Jan H. Otto, 5 Water Lane Gardens, Johannesburg, Transvaal, Republic of South Africa
Filed Jan. 3, 1966, Ser. No. 518,095
Claims priority, application Republic of South Africa, Jan. 13, 1965, 196/65
2 Claims. (Cl. 272—75)



A rope of stranded rubber cord has a loop formed at each end. A tubing handle grip is threaded on the looped portion. The loop is of sufficient size to permit the tubular handle grip to slide to a position longitudinally of the length of the cord or to a position at right angles to the length of the cord. The rope may be doubled back midway of its length and a loose ring slipped over the doubled back portion to form a further loop which may be slipped over a stationary hook.

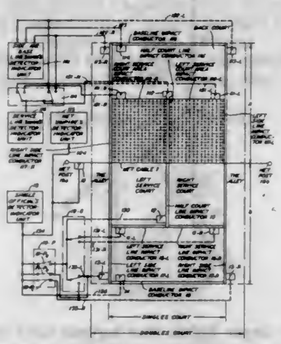
3,415,516
DIVING BOARDS
Charles D. Mattingly, 729 E. Central, Wichita, Kans. 67202
Filed Feb. 20, 1964, Ser. No. 346,226
16 Claims. (Cl. 272—66)

1. A diving board comprising a plurality of parallel longitudinal members disposed in juxtaposed contacting relation, each of said longitudinal members having a horizontal top flange and a plurality of vertically elongated ribs depending from said top flange, the top flanges of said longitudinal members being in abutment with one another and constituting the deck of the diving board said ribs being laterally spaced apart and unconnected at their lower extremities, the undersides of each of said



top flanges and sides of each of said ribs being provided with concave seating surfaces, a plurality of longitudinally extending tube-like supporting elements disposed in the spaces between said ribs in engagement with said seating surfaces, and means for securing said longitudinal members and said supporting elements together.

3,415,517
AUTOMATIC IMPACT INDICATOR SYSTEM FOR TENNIS
Henry Kelvin Krist, De Camp Drive, R.D. 1, Boonton, N.J. 07005
Filed Oct. 18, 1965, Ser. No. 497,406
14 Claims. (Cl. 273—31)

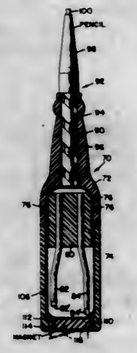


An automatic impact detector and indicator system is disclosed to assist in the umpiring of tennis matches. The system utilizes impact conductor devices which define selected boundaries and areas of a tennis court. Transducers are connected to the conductor devices for converting an impact on a conductor into a signal which operates an indicator-detector to aid an umpire in judging a match. Impact devices and transducers are also associated with the tennis net for detecting and indicating impacts thereon.

3,415,518
GOLFER'S AID
Bailey S. Root, 510 Lexington Ave., Newport, Ky. 41071
Filed Oct. 22, 1965, Ser. No. 501,283
4 Claims. (Cl. 273—32)

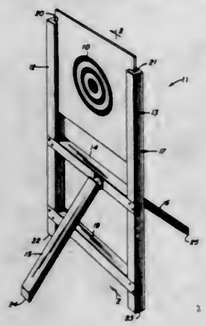
A golfer's aid including detachably connected first and second portions. The second portion is cylindrical and has a cavity therein. The first portion has rigidly embedded therein a pair of spaced elongated rigid tool members having sharp pointed ends which normally extend into the cavity of the second portion. The second portion also has a recess formed in its outer end surface with a metal

disc ball marker positioned therein and held in said position by a magnet carried by the second portion. The free



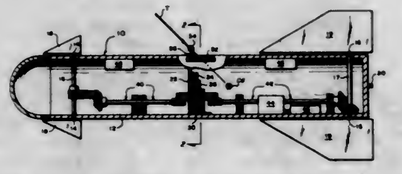
end of the first portion may include a mechanical pencil which is accessible from the exterior of the body means.

3,415,519
PORTABLE TARGET HOLDER
Gene William Hand, Lykens, Pa.
(701 Reed Ave., Norman, Okla. 73069)
Filed June 16, 1965, Ser. No. 464,430
13 Claims. (Cl. 273—102)



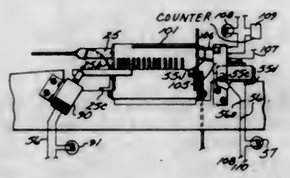
A portable target holder for targets used in rifle and pistol target practice. The holder is supported by at least one freely pivoted leg attached to each side thereof. The supporting arrangement is particularly adapted to support the target vertically on uneven terrain.

3,415,520
MANEUVERING TOW TARGET
Wilmer C. Woodward, Blue Bell, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 26, 1966, Ser. No. 582,477
13 Claims. (Cl. 273—105.3)



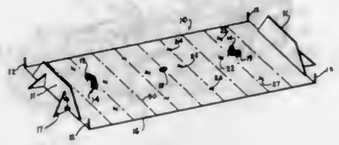
1. A maneuverable tow target comprising:
an elongated body portion;
foil means movably mounted on said body portion;
orientation means carried by said body portion intermediate the ends thereof and including means for contacting the trailing end portion of a tow cable for varying the peripheral position thereof; and
control means operatively connected to said foil means and said orientation means for correspondingly and selectively varying the angle of incidence of said foil means, together with the peripheral position of the cable about the longitudinal axis of said body portion to maintain a selected roll attitude of said body portion while said target is in flight.

3,415,521
GAME WITH SCORE RECORDING MECHANISM
Vincent C. Engstrom, South Gate, Calif., assignor to Arthur Looff and Etta M. Looff, jointly, both of Long Beach, Calif.
Filed Oct. 17, 1966, Ser. No. 587,175
8 Claims. (Cl. 273—124)



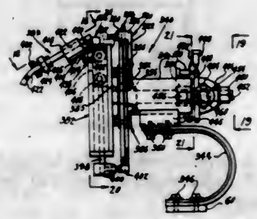
1. In a score recording mechanism for use with a game apparatus having a plurality of parallel, laterally spaced levers pivotally supported from a rectangular open frame and projecting forwardly therefrom, which levers are located below a playing surface and have spaced openings formed therein through which a ball drops to sequentially tilt said levers, a plurality of bars slidably supported on said frame with each bar being engageable by a predetermined group of levers, first means for moving each of said bars when said group of levers associated therewith are tilted to be disengaged therefrom, a normally open electrical circuit, a plurality of signal lights and an electrically operable game win-indicating device connected to said circuit, a first normally open switch forming a part of said circuit that is closed by the movement of one of said bars to complete said circuit to said game win-indicating device, the improvement for operation of said game apparatus, comprising:
(a) a plurality of normally open second electric switches associated with said levers and connected to said circuit and signal lights, each of which second switches include means to protect the contact points thereof from corrosion, with each of said second switches when closed by the tilting of said associated lever completing said circuit to one of said signal lights to indicate the progress being made in securing a winning score;
(b) second electrically operable means, which when energized, indicate said game is in an operative condition;
(c) third electrically operable counter means for maintaining a record of the number of times said game is played;
(d) a third normally open electrical switch, which when closed, completes said circuit to said second and third means, and
(e) fourth means for closing said third switch when said fourth means moves from a first to a second position, with said fourth means being moved to said second position by any one of said levers as tilted.

3,415,522
FIELD GAME WITH TIRE GOALS
William Bauer, 212 Forester St., El Campo, Tex. 77437
Filed July 1, 1965, Ser. No. 468,718
3 Claims. (Cl. 273—126)



The game is a field game with automobile tire goals at the ends of the field. Each goal comprises tires having forward and oblique scoring entries which are the central tire openings. A stake arrangement anchors the tires to the playing field. The playing piece is a covered, inflatable quoit.

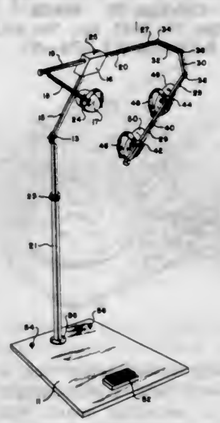
3,415,523
GOLFER'S TRAINING DEVICE
Alvin M. Boldt, 1147 High St., Eugene, Oreg. 97401
Filed Aug. 17, 1966, Ser. No. 573,054
10 Claims. (Cl. 273—186)



1. A training device for teaching the correct swing of a golf club, including a full backswing, comprising:
an upstanding support;
a golf club swing guide mechanism;
means resiliently mounting the swing guide mechanism on the support for accommodating minor variations in the individual's swing; and
a golf club holder including means for grasping a golf club shaft;
the swing guide mechanism including
means mounting the shaft grasping means for arcuate movement about and at a varying distance from a substantially horizontal axis, the distance increasing at a given rate during rearward backswing movement of the grasping means and decreasing at a greater rate during forward downswing movement of the grasping means so that a loop at the top of the golfer's backswing may be formed.

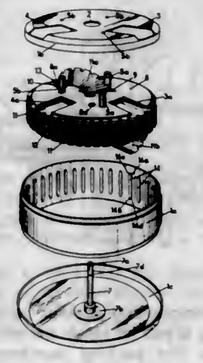
3,415,524
GOLF SWING TRAINING APPARATUS
Robert M. Vickers, 5101 Dawne St., San Diego, Calif. 92117
Filed Jan. 28, 1965, Ser. No. 428,646
4 Claims. (Cl. 273—189)

An elongated member, vertically and angularly adjustable relative to a supporting base, is adapted to be positioned substantially horizontal parallel to a golfer's shoulders. The opposite ends of the elongated member carry respectively, (1) a coil spring for securement to one of a golfer's arms and (2) elements securable to the other arm for restricting bending of the golfer's elbow. The letter elements are secured to an end of the elongated



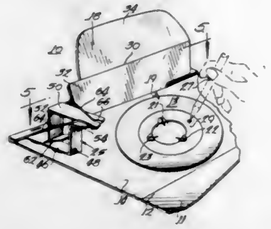
member which is rotatable about the longitudinal axis of the elongated member.

3,415,525
DEVICE FOR RECORDING AND READING OF A HELICOIDAL SUPPORT TAPE
Serge Leon Louis Cailliot, 38 Rue du Bois de Boulogne, Neuilly-sur-Seine, France
Filed Nov. 10, 1966, Ser. No. 593,438
Claims priority, application France, Nov. 15, 1965, 38,448
10 Claims. (Cl. 274—4)



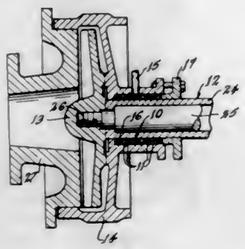
A helicoidal recording tape mounted on a fixed drum enclosed by a cover, a base, and an annular drive element located between the cover and base. The opposite ends of the tape form loops interconnected by a portion of the tape which extends through the drum. To guide the end coils of the tape in planes generally perpendicular to the helicoidal axis of the tape, two pairs of end plates are fixed at opposite ends of the drum with portions of the tape passing between the end plates by means of apertures in the latter. Magnet heads are received through overlying apertures formed in the cover and the adjacent end plate to be engageable with the tape as it is driven through apertures in its periphery which receive projections on the annular drive element.

3,415,526
SOUND EMITTING DEVICE
Jack S. Wiener, 1460 N. Sandburg Terrace, Chicago, Ill. 60610
Filed May 29, 1967, Ser. No. 641,997
8 Claims. (Cl. 274—9)



A sound emitting device comprising a phonographic record mounted on a base, a phonograph needle, and a resonant means or sounding board which carries the needle, all of which elements are combined in a generally flat, compact package. The package is readily adapted to be transported through the mails as, for example, a postcard. When the package is opened the elements readily assume operative position and in this position, the record may be manually rotated and the device will emit audible sound.

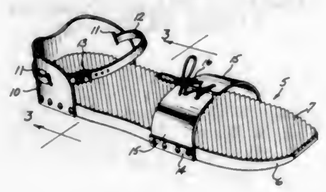
3,415,527
CAGE FOR COMPRESSING PACKING MEMBERS
Russell Joseph Ginther, Creve Coeur, Mo., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 6, 1967, Ser. No. 614,781
5 Claims. (Cl. 277—62)



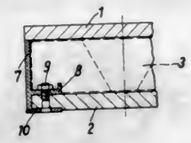
A cage for compressing annular packing members, the cage comprising a pair of rings and circumferentially extending springs. The packing members seal the driving shaft of a water pump. The cage is located in the midst of the packing members and at the region of the pumping casing to which a lubricant line is connected, so that lubricant passes from the line through the cage to the pump shaft.

3,415,528
ICE SKATE
Karl Herold, 2359 N. 120th St., Wauwatosa, Wis. 53226
Filed Oct. 18, 1966, Ser. No. 587,572
2 Claims. (Cl. 280—11.12)

A skate has a flat member that is basiacally the same size and configuration as the bottom of a shoe, a sheet of corrugated rubber covers the upper surface of said member, there is means for securing the skate to a shoe, and two spaced and parallel runners project downwardly slightly below the bottom of the horizontal flat member, each end of each of the said runners is curved upward and projects through said member thereby providing a means for securing each runner to the said member.

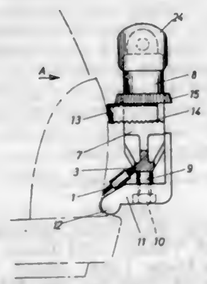


3,415,529
LAMINATED SKI HAVING MULTIPLE CORE ELEMENTS WITH INDIVIDUAL GLASS FIBER WRAPPINGS
Fritz Grill, Bruckmull, and Siegfried Holmer, Ingolstadt, Germany, assignors to Georg Fritzmeier KG.
Filed Nov. 18, 1966, Ser. No. 595,522
4 Claims. (Cl. 280—11.13)



A ski with a core covered at the top and at the bottom with a coat of plastic material, wood or metal, and at the sides with a side cover.

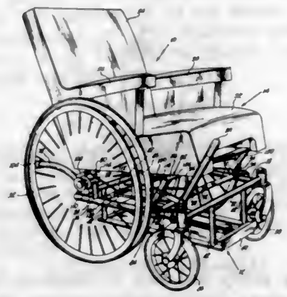
3,415,530
HEEL RELEASING DEVICE FOR SAFETY SKI BINDINGS
Hermann Scheib, Garmisch-Partenkirchen, Germany, assignor to Hannes Marker, Garmisch-Partenkirchen, Germany
Filed July 6, 1966, Ser. No. 563,145
Claims priority, application Germany, July 8, 1965, M 65,877
1 Claim. (Cl. 280—11.35)



A heel release device for safety ski bindings of the type which pivotally moves about an axis parallel to the surface of the ski which consists of a yoke and lever combination which is engaged with a ski by means of a pair of tensile elements having loops at one end to engage the yoke and attached at their other ends to the ski. A pusher member consisting of an angle member to engage a heel

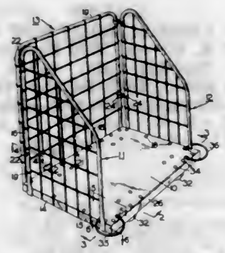
groove also includes a rod which slidably engages with the lever. A spring is effective between the rod and lever. The yoke and lever combination is provided with adjustable racks to preset the position of the yoke and lever combination relative to the uppers of the boot.

3,415,531
ROCKING WHEEL CHAIR
Louise A. Kiel, 815 S. 5th Ave., Newton, Iowa 50208
Filed Sept. 9, 1966, Ser. No. 578,222
8 Claims. (Cl. 280—30)



A rocking wheel chair where the rocking motion of the chair is possible only when the driving wheels are braked and an anti-tilt leg is engaged with the ground at the rear. With the wheels unbraked and the anti-tilt leg out of engagement with the ground, the chair is locked against a rocking motion.

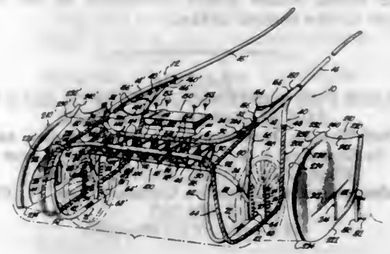
3,415,532
MERCHANDISING CARRIER
Boris M. Fingerut, Lake Oswego, Oreg. 97034, and Arthur E. May, Jr., Lake Grove, Oreg. 97034
Filed Apr. 27, 1967, Ser. No. 634,299
3 Claims. (Cl. 280—34)



An open wheeled carrier consisting of a bottom platform and walls on three sides, the carrier designed for the purpose of moving and displaying a quantity of merchandise in a sales area, and capable of being disassembled into compact condition for storage when not in use.

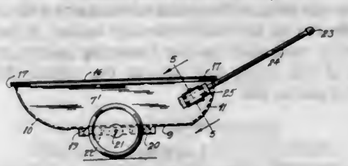
3,415,533
SULKY
Max D. Bliss, Jr., East Putney, Vt., assignor of one-half to Shirley A. Bliss, East Putney, Vt.
Filed Dec. 21, 1966, Ser. No. 603,510
11 Claims. (Cl. 280—43)

A sulky includes spaced shafts each having an inwardly extending transverse portion. An outer arch means is supported by each shaft and includes a second inwardly extending transverse portion. An inner arch means has one end thereof secured to the shaft and the other end thereof secured to the outer arch means. A wheel is supported by wheel support means on the inner and outer arch means respectively. A third inwardly extending transverse portion is supported by an intermediate portion of



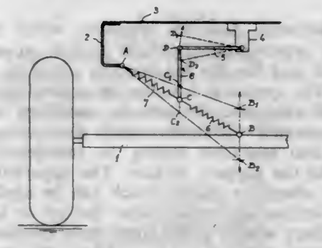
the inner arch means. A cross framework is connected between the three inwardly extending portions at each side of the sulky. Fender means is fixedly attached to the outer arch means to strengthen and rigidify the structure.

3,415,534
HANDY BARROW
Stanley Wieczorek, 5012 N. 64th Ave., Glendale, Ariz. 85301
Filed Apr. 21, 1967, Ser. No. 632,799
1 Claim. (Cl. 280—47.26)



A light wheel barrow including a body formed from a blank of sheet material and provided with a reinforcing flange, a wheel axle adjustable toward the front and rear of the vehicle body, and an adjustable handle member.

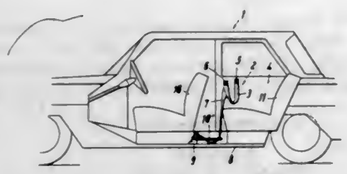
3,415,535
DEVICES FOR CONTROLLING AN EQUIPMENT OF WHEELED VEHICLE AS A FUNCTION OF VARIATIONS IN THE CONDITION OF THE SUSPENSION SYSTEM OF THE VEHICLE
Roland Gamard, Lyon, France, assignor to Automobiles M. Berliet, Lyon, Rhone, France, a corporation of France
Filed Oct. 4, 1966, Ser. No. 584,250
Claims priority, application France, Oct. 7, 1965, 34,125
4 Claims. (Cl. 280—124)



Elastic means separate from the suspension system proper of the vehicle extend between the sprung and unsprung portions of the vehicle, and a control linkage extends from an intermediate point on the elastic means to

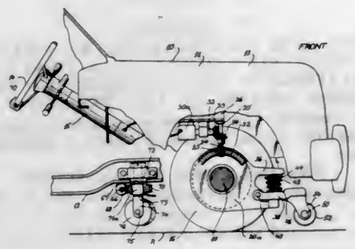
a control member responsive to variations in the suspension system, for example, a valve controlling the distribution of fluid in the suspension system, whereby vibrations and the like in the suspension system are dampened by the elastic means before transmittal to the control member via the control linkage.

3,415,536
MEANS FOR FASTENING A SAFETY BELT ON THE FLOOR OF A VEHICLE
Per-Olaf Weman, Hamburg-Garstedt, Germany, assignor to Sigmatex A.G., Basel, Switzerland, a firm
Filed Dec. 9, 1966, Ser. No. 600,482
Claims priority, application Germany, Jan. 11, 1966, S 101,373
10 Claims. (Cl. 280—150)



This provides a safety belt assembly for a vehicle. The assembly comprises a fastening means fixedly attached to the vehicle floor and at least one end of a safety belt anchored to the said fastening means. A bow means is pivotally mounted on the fastening means to press a portion of the safety belt against the vehicle floor when the belt is not in use.

3,415,537
ANTISKID APPARATUS FOR A VEHICLE
Franklin Goggins, White Plains, N.Y., assignor to True Car Value, Inc., White Plains, N.Y.
Filed Apr. 12, 1967, Ser. No. 630,428
10 Claims. (Cl. 280—150)



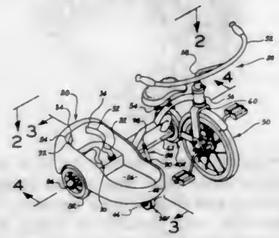
The disclosure describes apparatus which can be attached to a conventional vehicle such as an automobile, bus, truck, and the like for stopping a skid on a slippery surface. The apparatus is under the control of the driver during an emergency. It includes auxiliary wheels and rollers operated by motors and electromagnets, and brought into operation during the emergency to apply traction to the slippery surface. The apparatus includes auxiliary wheels or blades which can be applied to the slippery surface in camber, either toe-out or toe-in. Further auxiliary wheels at the front apply traction and prevent excessive front dip of the vehicle while stopping the skid. Auxiliary traction rollers with internal braking members are provided at the back of the vehicle. A three-wheel vehicle is also described, provided with auxiliary lateral rollers or casters which are set down automatically when the front steerable wheel is turned too far or when the vehicle encounters an obstruction, so that the vehicle is held stable while being laterally deflected.

3,415,538
SAFETY SEAT BELT WITH BUCKLE STORAGE MEANS
Donald G. Radke, Troy, and Frederick C. Booth, Birmingham, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.
Filed Apr. 21, 1967, Ser. No. 632,647
9 Claims. (Cl. 280—150)



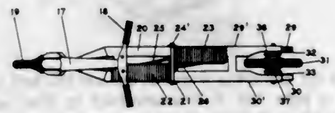
A vehicle safety seat belt arrangement having both pelvic and upper torso restraint portions. A section of webbing having its lower end anchored to the vehicle on one side of the seat has two extending free ends each with a buckle section. A second lower webbing section anchored to the vehicle on the opposite side of the seat has a tongue engageable with one of the buckles to provide a pelvic restraint for the occupant. A third webbing section mounted to the ceiling of the vehicle has a lower end with a tongue engageable with the second of the buckles to form an upper torso restraint for the occupant. A secondary tongue attached to the dual buckle webbing section adjacent the pelvic restraint buckle provides means for storing the torso restraint buckle when the upper torso portions of the seat belt are not joined together.

3,415,539
AUXILIARY VEHICLE BODY FOR A TRICYCLE
Gerald K. Stevens, 2000 Parkside Ave., Burbank, Calif. 91506
Filed Feb. 3, 1967, Ser. No. 613,927
10 Claims. (Cl. 280—203)



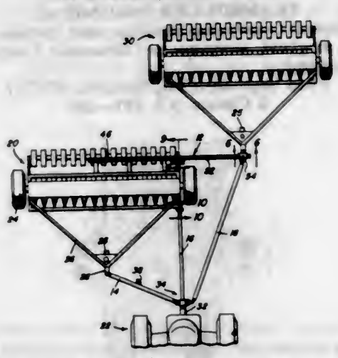
The specification discloses an auxiliary sidecar for a tricycle which can comprise a separate auxiliary unit or assembly adapted to be attached to a pre-existing conventional tricycle to convert it into a combination tricycle and sidecar assembly or which can be provided as a part of a tricycle at the time of original manufacture. The sidecar has rear wheel means mounted in coaxial relationship with respect to the rear wheel means of the tricycle and is provided with connection and coupling frame means adapted to rigidly hold the sidecar means in said position and in parallel, forwardly directed relationship to the tricycle, and is additionally provided with forwardly positioned caster-type front wheel means of a freely swiveling type, thus causing the sidecar to easily follow any type of turning or steering movement of the tricycle. In one form of the invention, the rear wheel means of the sidecar may be mounted on a common rear, interchangeable replacement axle means which also carries the rear tricycle wheel means after the shorter, initially provided rear axle of the tricycle is removed. In another form of the invention, the rear wheel means of the sidecar and the rear wheel means of the tricycle may be on separate axles which are still coaxially aligned, however. The connection and coupling frame, in one form of the invention, provides a substantially truss-type rigid connection between the sidecar and the tricycle, and thus makes it possible for the construction of the sidecar and the extended common axle to be of relatively lightweight material since it is not required to provide rigidity to the joined tricycle and sidecar assembly.

3,415,540
OCCUPANT-PROPELLED PLAY VEHICLE
Lawrence A. Portnoff, St. Louis, Mo. (% Sidney B. Ring, P.O. Box 6825, Brentwood, Mo. 63144)
Continuation-in-part of application Ser. No. 525,077, Feb. 4, 1966. This application Nov. 10, 1966, Ser. No. 593,370
5 Claims. (Cl. 280—221)



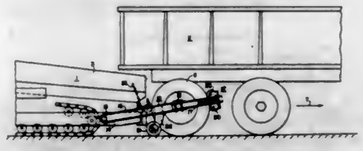
Play vehicle, for example a platform type play vehicle such as a skate board or scooter, capable of foot propulsion by occupant without pushing against the ground, having vehicle conveying means, such as wheels, activated by a toothed arm-gear assembly means for substantially immediate translation of motion from said toothed arm to said vehicle conveying means and means for substantially immediately moving said toothed arm of said toothed arm-gear assembly means, said means including at least one pedal.

3,415,541
TANDEM HITCH
Pete Thiessen, Nye Road, Meade, Kans. 67864
Filed May 25, 1967, Ser. No. 641,267
10 Claims. (Cl. 280—413)



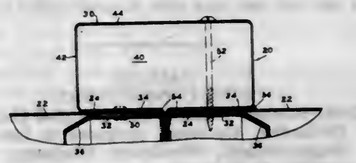
A hitch system for grain drills towed in tandem by a tractor. A drawbar having a lateral hinged extension is fixed to one grain drill and slidably mounts a pivot assembly to which the other grain drill is connected at a laterally adjusted location either on the fixed section of the drawbar or the hinged extension. Hitch links couple the drawbar mounting grain drill to the tractor with the hinged extension either folded or unfolded.

3,415,542
VEHICLE COUPLING MEANS
Joseph A. Urich, 5036 Northlawn Drive, Murrysville, Pa. 15668
Filed Dec. 27, 1966, Ser. No. 604,735
3 Claims. (Cl. 280—460)



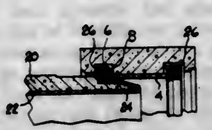
A coupling apparatus for coupling together at least two mobile units for close coordination of movement comprising a pair of arm assemblies pivotally mounted on a first mobile unit and arranged to extend in a generally parallel relationship with the first mobile unit. The apparatus includes further an adapter plate or a roller assembly arranged to engage the wheels of a second mobile unit at a location substantially diametrically opposed to a point of contact between the first mobile unit and the wheels of the second mobile unit. Each arm assembly includes further a displaceable arm portion for permitting displacement of the adapter plate or roller assembly when it is desired to clear the wheels of the second mobile unit, for example, when the second mobile unit is coupled or uncoupled from the first mobile unit.

3,415,543
COUPLING FRAME
Henry M. Keating, 18945 Gilchrist, Detroit, Mich. 48235
Filed July 8, 1965, Ser. No. 470,374
7 Claims. (Cl. 285—24)



This disclosure relates to a coupling frame, including a hollow channel which overlies the duct or wall sections to be joined, and a pair of reversely folded legs which define opposed wall receiving channels. In the preferred embodiment, the frame is rectangular and defines a chamber which overlies the junction of the duct or wall sections.

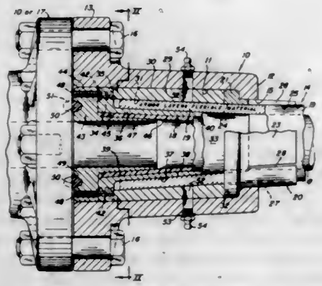
3,415,544
PIPE COUPLING
Robert Tyler Hucks, Jr., Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,384
3 Claims. (Cl. 285—55)



A thermoplastic plastic coupling liner for the inner surface of an asbestos-cement coupling having a pair of

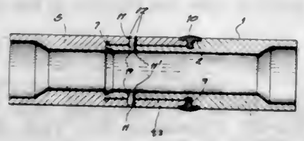
spaced annular grooves wherein the coupling liner may be folded upon itself and inserted into the coupling.

3,415,545
TERMINAL FOR ARMORED HOSE
John A. Frey, Hudson, and George F. Wald, North Olmsted, Ohio, assignors to United States Steel Corporation, a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,355
4 Claims. (Cl. 285—149)



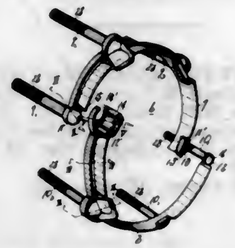
A cup having a frusto-conical bore and flanged ends receives sequentially a sleeve extending through the smaller end of the bore, a lead tube, second and third sleeves. All sleeves have shoulders and walls tapering in thickness away from the shoulder. A hose end extends through the bore of the first sleeve and lead tube. The wall of the second sleeve extends between the outer armor layer and a plastic, tubular liner of the hose. The wall of the third sleeve extends into the liner. The telescoping terminal is assembled by forcing a plate axially against the larger bore end of the cup. Hose lengths are joined by bolting these terminals together. Gripping is enhanced by slotting the ends of the first sleeve and by forcing an adhesive between the cup and lead tube through radial holes in the cup.

3,415,546
PIPE CONNECTORS
Erwin Rubner, Munich, and Siegfried Hausotter, Tacherting, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany
Filed Jan. 20, 1967, Ser. No. 615,291
Claims priority, application Germany, Feb. 4, 1966, L 52,773
7 Claims. (Cl. 285—173)



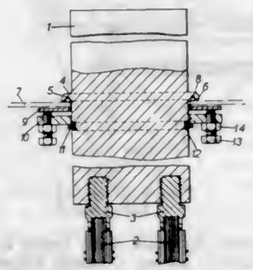
A pipe connector for the gas and vacuum tight coupling of aluminum and austentic steel (stainless steel) pipe members, which are difficult to join mechanically by welding, wherein a male coupling member of one of these metals and a female coupling member of the other metal are matingly screwed together and fixed against relative angular movement by radial pins transfixing both members at their mating thread portions welded externally in a fluid-tight manner to the female coupling member; the male coupling member has a shoulder at the end of its thread defining with the juxtaposed end of the female coupling member an outwardly open circumferential groove at the transition region of both coupling members, filled with a weldment or bead of weld material sealing the members together.

3,415,547
ANNULAR LOCKING ASSEMBLY USED IN RING ATTACHMENTS FOR PREVENTING WATER LEAKAGE IN WATER PIPE CONNECTIONS
Shinkichi Yano, 137–1 7-chome, Sakurazuka-Hondori, Toyonaka-shi, Osaka-fu, Japan
Filed Aug. 26, 1966, Ser. No. 575,283
Claims priority, application Japan, June 17, 1966, 41/39,488
5 Claims. (Cl. 285—337)



Means for clamping a gasket against the bell and spigot joint of a pipe line is characterized in that one of the clamping rings is formed of two unitary sections, each arcuate, each provided at one end with a unitary first stud parallel to the pipe axis, and each having an apertured retaining means at its other end through which the first stud of the other section can be passed on flexing of the planes of the sections to cross each other. The two unitary sections have further studs thereon and preferably are duplicates of each other. The second ring has apertures to receive all the studs of the assembled first ring. The second ring, preferably, is made up of two arcuate parts, duplicates of each other, secured together in complementary abutting relation to complete the ring; is provided with a gasket compressing shoulder on one face; and is provided with radially acting means on its other face to clamp it to the pipe after the gasket has been compressed.

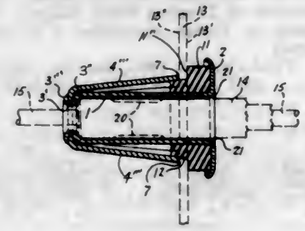
3,415,548
TRANSDUCER MOUNTING
John Edward Goodman, Rawdon, and Arthur Grange, Ilkley, England, assignors to Ultrasonics Limited, Shipley, England
Filed Sept. 16, 1965, Ser. No. 487,787
2 Claims. (Cl. 287—20)



A mounting for a transducer probe assembly which is placed at the inner wall of a vessel containing a liquid

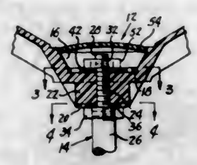
subjected to ultrasonic energy comprising a flange located adjacent the nodal plane of the vibrations in the vessel and shaped in a circle having the smallest convenient diameter in relation to the vessel, the flange having a groove bearing against the inner wall of the vessel, a resilient sealing ring in the groove, a bearing collar freely surrounding the probe on the outer face of the vessel, a thrust ring freely mounted and surrounding the probe adjacent the collar, a circularly shaped split ring fitted in an annular groove in the probe which is tensioned in the longitudinal direction away from the flange to serve as a buttress for the thrust ring when the bearing elements are fastened to mount the assembly in a tightened condition.

3,415,549
CABLE HOUSING ANCHORING UNIT
Newton L. Chatham, 1200 Woodmont Ave., Williamsport, Pa. 17701
Filed Sept. 23, 1965, Ser. No. 489,691
4 Claims. (Cl. 287—20)



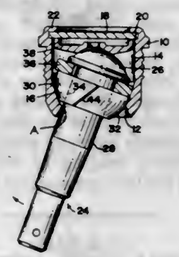
A cable housing anchoring unit having an inner tubular member with a flange at one end and a reduced tubular extension at the other end thereof, an outer tubular finger element having an inturned flange at one end permanently attached to the reduced tubular extension and resilient fingers extending outwardly from the tubular finger element in an inclined direction toward the flange of the inner tubular member. A third optional element in the form of a resilient seal may be employed, this seal has a flange abutting the flange of the inner tubular member and a reduced tubular extension which projects along the inner tubular member and under the fingers.

3,415,550
VEHICLE STEERING ASSEMBLY
Harry Golden, New York, N.Y., assignor to Ideas for Auto and Bike Specialties, Inc., a corporation of New York
Filed May 6, 1966, Ser. No. 548,081
3 Claims. (Cl. 287—53)



An improvement in coupling a plastic steering member to a metal steering rod, such as that used on a small or toy vehicle, wherein the plastic steering column is provided with a central hub having a non-circular bore extending therethrough. A metal locking element is juxtaposed to each surface of the hub with each metal locking element having a non-circular aperture therein in alignment with the non-circular bore of the hub. The steering rod has a non-circular portion which projects through the apertures in the locking elements and the bore in the hub, and the projecting end of this steering rod portion is threaded to receive a nut. The steering rod also contains a metal abutment surface adjacent the non-circular portion so that as the locking nut is tightened against one of the metal locking elements, the other metal locking element is pressed against the abutment surface, thus securely and non-rotatably attaching the plastic steering member to the metal steering rod with a metal-to-metal contact on each side of the central hub.

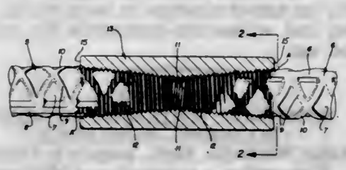
3,415,551
BALL JOINT ASSEMBLY
Allan J. Korecky, Chagrin Falls, and Henry A. Tesmer, Macedonia, Ohio, assignors to Barmatic Machines Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed May 15, 1967, Ser. No. 638,291
7 Claims. (Cl. 287—90)



A ball joint assembly having a ball member and a separate annular bearing ring mounted on a stud, in a socket. The ring has a larger inside diameter than the stud diameter, permitting the ring to slide during most of the pivotal travel of the stud. When the stud reaches the limit of its pivotal travel, the ring bearingly engages the socket and resists forces tending pivotally to dislodge the ball member and stud from the socket.

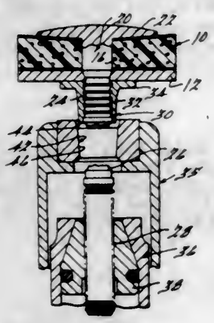
In a modified arrangement the ring is provided with lobe portions and its periphery which resist axial forces tending to dislodge the ball member and stud from the socket.

3,415,552
SPLICING METALLIC REINFORCING RODS WITH A THREADED COUPLING SLEEVE
George H. Howlett, Oakland, Calif., assignor to Howlett Machine Works, a corporation of California
Filed Nov. 29, 1966, Ser. No. 597,659
9 Claims. (Cl. 287—117)



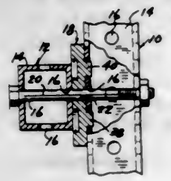
Metallic reinforcing rods are spliced in coaxial relation by a rigid, internally threaded, coupling sleeve, the rod ends and sleeve having mating tapers and the threads on the rods extending into the central body portion of the rods near their ends and only into their ribs at points farther from the rod ends.

3,415,553
JOINT CONSTRUCTION
Charles W. Baugh, St. Clair Shores, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed June 2, 1966, Ser. No. 554,817
10 Claims. (Cl. 287—189.36)



A two-piece fastener including a pin and a collar adapted to be swaged into locking grooves on the pin with the fastener constructed for use with materials having a low compressive strength with the collar having a thin wall permitting swaging of the collar to the pin without crushing the low compressive strength material.

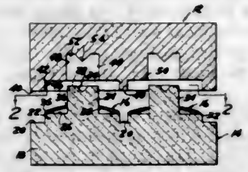
3,415,554
STRUCTURAL JOINT ASSEMBLY AND CONNECTORS THEREFOR
Hristo V. Papayoti, Ann Arbor, Mich., assignor to Unistrut Corporation, Wayne, Mich., a corporation of Michigan
Filed Oct. 17, 1966, Ser. No. 588,278
16 Claims. (Cl. 287—189.36)



A structural joint assembly including two structural members joined together in a right angle relationship by means of a connector plate engaging each of the structural members and received thereto by a bolt and nut. The connector plate takes a number of forms but in each the plate is provided with at least a pair of perforations engaging in spaced openings in each of the structural members and at least one perforation for receiving the bolt and nut.

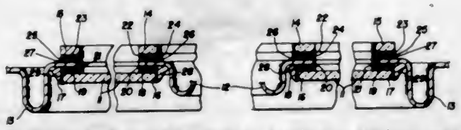
3,415,555
COMPOSITE SINTERED POWDERED MATERIAL WORKPIECE
John Haller, Northville, Mich., assignor to Federal-Mogul Corporation, a corporation of Michigan
Original application Apr. 16, 1964, Ser. No. 360,376, now Patent No. 3,341,932, dated Sept. 19, 1967. Divided and this application Jan. 6, 1967, Ser. No. 607,825
3 Claims. (Cl. 287—189.36)

A set of interlockable component parts of sintered powdered material, one of which possesses a wedging or spreading portion which deforms a portion of the other component part when the two parts are pressed into engagement with one another, thereby inseparably interlocking the component parts into a single workpiece, the interlocking action being assisted or effected by a coupling



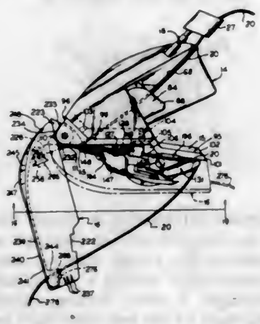
member which is deformed or spread apart by the wedging portion or by the engagement of the two parts with one another to penetrate or indent the other part.

3,415,556
CERAMIC-TO-METAL SEAL AND METHOD OF MAKING SAME
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Leonard Reed, assignor, by mesne assignments, to Varian Associates, a corporation of California
Filed Dec. 13, 1963, Ser. No. 330,211
22 Claims. (Cl. 287—189.365)



6. A ceramic-metal assembly having ceramic-to-metal seals impervious to liquid and gaseous mercury at elevated temperatures comprising a thin flat annular ceramic body having annular metalized areas on the inner and outer portions thereof, a first annular convoluted metal member secured to a portion of said inner metalized area, a first coating of iron bridging an exposed portion of said inner metalized area and an adjacent portion of said first metal member to provide a hermetic seal therebetween, a second annular convoluted metal member secured to a portion of said outer metalized area, and a second coating of iron bridging an exposed portion of said outer metalized area and an adjacent portion of said second metal member to provide a hermetic seal therebetween.

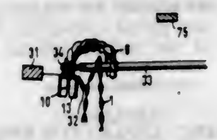
3,415,557
TYING IMPLEMENT AND METHOD
Stephen A. Crosby, 815 Shore Drive, P.O. Box 736, Twin Lakes, Wis. 53181
Filed June 6, 1966, Ser. No. 555,590
46 Claims. (Cl. 289—1.5)



A hand held and manipulated cord or twine tying implement containing a tying bill and guides immovably

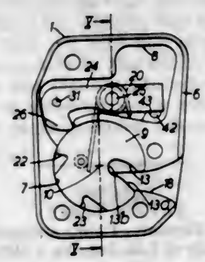
held on the interior of the implement and through which the cord or twine is fed, the parts of the implement on its interior being capable of directing the twine to tie a weaver's knot as the implement is moved longitudinally along the tensioned twine or cord, such as when the cord extends about a package.

3,415,558
METHOD AND APPARATUS FOR MANUFACTURING A PILE FABRIC
Walter Johann Holzknecht, Furstenfeldbruck, Germany, assignor to Pangafin Societe Anonyme Holding, Luxembourg, Luxembourg
Filed Aug. 25, 1966, Ser. No. 574,980
Claims priority, application Germany, Sept. 10, 1965, H 57,140
15 Claims. (Cl. 289—1.5)



An apparatus for manufacturing a pile fabric comprises a row of tying needles and an elongated suspending means extending along the row of needles. A plurality of pile yarns hang down from the suspending means to the needles preparatory to being tied and knotted by the needles to a filling yarn of a woven fabric.

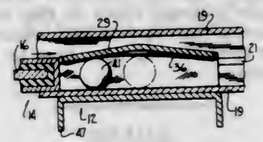
3,415,559
DOOR LATCHES
Philip Swingewood Jeavons, Birmingham, England, assignor to Wilmot-Breeden Limited, Birmingham, England
Filed Apr. 24, 1967, Ser. No. 633,194
Claims priority, application Great Britain, July 15, 1966, 31,795/66
21 Claims. (Cl. 292—216)



The application relates to a door latch for a motor vehicle and comprising a recessed body and a latch member in the form of a rotatable circular disc received in the body recess. The boundary of the recess locates and provides a bearing for the latch member which is peripherally notched for latching engagement with a striker. A detent engages the latch member and acts to retain the latter in the latching position.

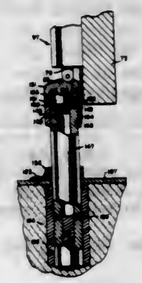
3,415,560
LOCK FOR SLIDING WINDOWS
Donald B. Hawkins, Oakland, Calif. (2233A Washington, P.O. Box 221, San Leandro, Calif. 94577)
Filed Aug. 17, 1966, Ser. No. 572,979
8 Claims. (Cl. 292—252)

A lock device for installation on a sliding casement window having a plurality of walls defining a passage. The passage has a minimum height adjacent the center thereof and a ball is disposed in the passage. When the device is installed, a spring urges the ball towards a surface of the window structure and upon relative move-



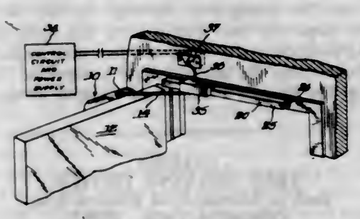
ment between the portion of the structure on which the device is mounted and said surface, the ball becomes wedged in the passage, and further movement of the structure is prevented.

3,415,561
DOOR HOLDERS AND STOPS
H. Knox Bryson, Vienna, Va., and Alfred B. Castle and Milford A. Juten, Brookmont, Md.; said Alfred B. Castle and said Henry K. Bryson assignors, by direct and mesne assignments, to Lavona Andrews Bryson, St. Petersburg, Fla.
Original application Jan. 24, 1961, Ser. No. 84,675, now Patent No. 3,239,261, dated Mar. 8, 1966. Divided and this application Sept. 24, 1965, Ser. No. 505,422
22 Claims. (Cl. 292—341.19)



A door stop is positioned adjacent an edge of a door. In some disclosed forms, a part of the stop forms a detent for engagement with a downwardly-biased wheel detent housed on the door. The detent mechanism may be vertically adjustably positioned, and the stop may also be rotatably and axially adjustable.

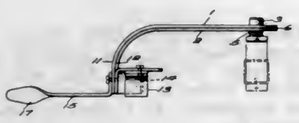
3,415,562
MAGNETIC HOLD-OPEN DEVICE
Byron H. Petersen, 1301 E. Armour, Kansas City, Mo. 64109
Filed Mar. 15, 1967, Ser. No. 623,265
6 Claims. (Cl. 292—273)



The invention relates to door closing and checking mechanism having a lever arm providing a spindle and roller combination which travels within a trackway. An

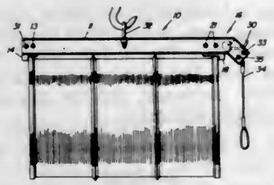
electromagnet together with an armature unit and a holding plunger are mounted with respect to the trackway so as to coact with the spindle whereby to hold the door open when in a hold magnet-energized position and to release the door when the magnet is de-energized. The holding plunger is spring biased so that an over-ride is provided whereby the operator with slightly more than normal effort can close the door from its hold magnet-energized position.

3,415,563
SAFETY TOOL
Robert G. Millington, Treichlers, Pa., assignor to Hims, Inc., Allentown, Pa.
Filed Dec. 9, 1966, Ser. No. 600,642
6 Claims. (Cl. 294—25)



A safety tool for removing hands from hazardous zones while manipulating objects within that zone which includes a pair of arms hinged at the wrist of the wearer and extending forward beyond the fingers, each arm having a finger socket to provide for manipulation of the respective arms by the thumb and a second finger, and the forward extension of the arms terminating in members suitable for engaging the object to be handled.

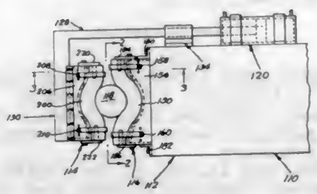
3,415,564
DRUM HOISTING BEAM
Carroll D. Childers, King George, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 16, 1966, Ser. 602,413



A strongback is provided with a fixed jaw at one end and a movable jaw at the other end which is slidable axially of the strongback. Springs on the strongback normally urge the movable jaw to the open or drum releasing position. An over center cam mechanism is provided for caming the movable jaw toward the fixed jaw to engage the rims of a drum and clamp it to the strongback.

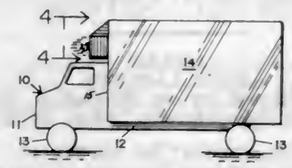
3,415,565
TREE SHAKING DEVICE
Jack L. Martin, 5144 Western Ave., Olivehurst, Calif. 95961
Filed Dec. 16, 1966, Ser. No. 602,350
10 Claims. (Cl. 294—103)

Mounting supports for resilient tubular buffer members utilized for gripping and shaking trees is described. The mounting support has an elongate supporting surface provided with a concave incurvation in the center of the elongate surfaces with transversely concavely incurvated



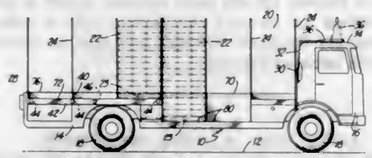
elongately linear end portions for supporting the resilient tubular member and partial cylindrical inserts for engaging the ends of the resilient tubular members are disclosed.

3,415,566
STREAMLINING APPARATUS FOR CARGO CARRYING VEHICLES
William H. Kerrigan, Miami, Fla. (1201 SW. 5th Court, Fort Lauderdale, Fla. 33312)
Filed Jan. 16, 1967, Ser. No. 609,393
4 Claims. (Cl. 296—1)



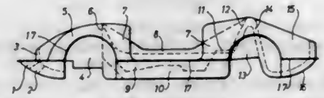
Streamlining apparatus for a cargo carrying vehicle having a front and side flat walls comprising air entrapping means having wall portions and means for securing said wall portions to said front flat wall whereby upon movement of said vehicle said air entrapping means forming a streamline buffer of air at said wall portions for reducing the resistance of the following air whereby said buffer of air directs the following air in close proximity to said side walls.

3,415,567
TRUCK BODY
Jack McChesney, Torrance, Calif., assignor to Coca-Cola Bottling Company of Los Angeles, Calif., a corporation of California
Filed Apr. 17, 1967, Ser. No. 631,392
5 Claims. (Cl. 296—3)



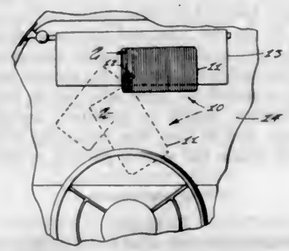
A side and rear loading and unloading truck body particularly suited for carrying cases of bottles and the like. A truck bed with open side storage bays and a central longitudinal pedestrian passageway therebetween interconnecting the cab and rear end. Lateral movement of some of the bays provides additional passage space at the rear of the truck bed.

3,415,568
VEHICLE UNDERBODY OF SANDWICH CONSTRUCTION
Hans Gugelot, deceased, late of Ulm, by Marie-Helene Gugelot-Chuard, heir, Ulm, Peter Hoppe, Troisdorf, Ernst Reichl, Oberelchingen, and Erwin Weinbrenner, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Mar. 17, 1966, Ser. No. 536,193
Claims priority, application Germany, Mar. 26, 1965, F 45,650
11 Claims. (Cl. 296—31)



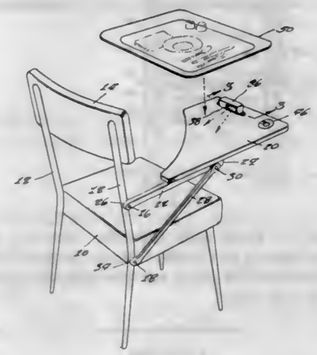
Underframe for vehicle bodies, comprising a frame, together with conventional components of the bodywork, which is designed as a single, one-piece sandwich body composed of two shells corresponding to the outer and inner contours of the vehicle bodywork, force-locked together at their edges and forming a cavity therebetween filled with a hard foam produced from an expandable reaction mixture to provide a stiff, lightweight, large surface area underframe of high stability and bearing strength sufficient to absorb all internal and external forces acting on the vehicle body.

3,415,569
SUN VISOR ATTACHMENT
Voldemar Leevo, 830 Cross St., Lakewood, N.J. 08701
Filed June 30, 1967, Ser. No. 650,327
1 Claim. (Cl. 296—97)



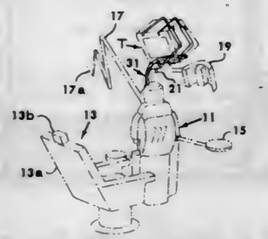
A sun shield for an automobile, including a shaded, translucent shield and a mounting bracket for securing the device to the conventional visor of the car, so as to permit a driver to look therethrough and prevent sun glare particularly during the hours of sunset and sunrise when the sun is low on the horizon. This sun-flex visor will prevent sun glare, including the glare on the shiny hood of a car or truck or airplane, by easily pulling the transparent plastic material to any angle it is desirable as there is no protection for eyes from present sun visor when the sun is low on the horizon.

3,415,570
CHAIR WITH PORTABLE ARM
Sterling Mosley, Hosea Jackson, Archie Mitchell, Jr., and Jacob Walls, all of 1408 Magnolia St., North Little Rock, Ark. 72114
Filed Apr. 10, 1967, Ser. No. 629,692
1 Claim. (Cl. 297—160)



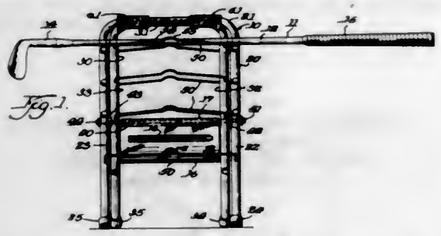
A ballroom chair with a portable arm detachably securable thereto in horizontal position.

3,415,571
DENTAL TREATMENT ASSISTANCE ARRANGEMENT
Albert E. Helmert III, 306 Weatherbee Road, Baltimore, Md. 21204
Filed Oct. 22, 1965, Ser. No. 501,124
13 Claims. (Cl. 297—188)



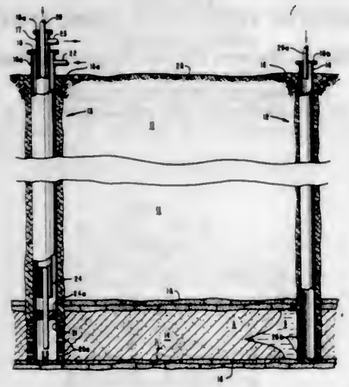
A dental treatment method and dental treatment assistance arrangement is disclosed by and with which the patient's attention is diverted from the treatment area and focused onto a secondary area of visual and auditory interest while effecting dental operatory steps on the patient. The illustrated and preferred arrangement includes a dental unit, a reclining chair, an adjustable light source, and a television set supporting arrangement having a television set supporting and viewing zone disposed above the light source, and a television set disposed on the support therefor and tilted downwardly and forwardly toward the patient and in the visual zone of the patient when sitting up or tilted rearwardly to a reclined position in the chair. A configuration of television set support is disclosed which enables attachment to the light bar, and substantially unencumbered work by the dentist, while enabling viewing of the television picture by the patient.

3,415,572
SHAFT HOLDER AND SEAT
Anthony T. Zegwyn, Delavan, Wis., assignor to Ajay Golf Products Incorporated, Delavan, Wis., a corporation of Wisconsin
Filed Mar. 2, 1967, Ser. No. 620,126
7 Claims. (Cl. 297—192)



A collapsible stool with clips for securing golf club shafts to the legs of the stool, so that the stool may serve as a club carrier. The clips are generally bracket-shaped lengths of spring wire.

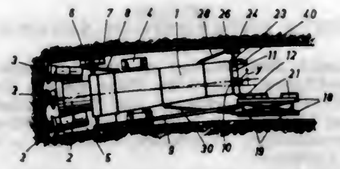
3,415,573
METHOD OF SULFUR RECOVERY FROM SULFUR-CONTAINING HYDROGEN SULFIDE RICH FORMATIONS
John P. Fraser, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 573,960
5 Claims. (Cl. 299—4)



A method of recovering sulfur from an underground formation containing sulfur-hydrogen sulfide rich hydrocarbons, without plugging the formation or equipment used in the process, by means of a miscible driving fluid injected into the formation through a well at elevated temperature and pressure and recovering the sulfur-containing hydrocarbon from the well and thereafter separating the sulfur from the hydrocarbon.

3,415,574
TUNNEL DRIVING MACHINE STEERING SYSTEM
Ernst Lauber, Thun, Switzerland, assignor to Maschinenfabrik Habegger AG, Thun, Switzerland
Filed Mar. 6, 1967, Ser. No. 621,038
Claims priority, application Germany, Mar. 11, 1966, M 68,725
19 Claims. (Cl. 299—31)

A tunnel driving system comprises a tunnel driving machine adapted to be guided by the walls of a tunnel being driven, a steering device consisting of a self-contained unit, and towing means detachably connecting said steering device as a trailer to said tunnel driving machine. The rear end of the tunnel driving machine has a rear-



wardly extending trunnion, which is adjustable in two different directions which are normal to the axis of the trunnion and at an angle to each other. The steering device comprises adjusting means which engage the trunnion and are operable to adjust the trunnion in said two directions.

3,415,575
BALANCING WEIGHT HOLDER FOR WHEEL COVER
Edward G. Spisak, Wayne, Mich., assignor to Gar Wood Industries, Inc., Ypsilanti, Mich., a corporation of Michigan
Filed Nov. 17, 1966, Ser. No. 595,174
7 Claims. (Cl. 301—5)

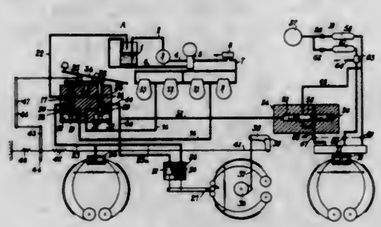


A wheel cover assembly comprising a wheel cover member having balancing weight support means thereon; weight attaching means adapted to secure at least one balancing weight on the support means of the wheel cover member and comprising a one-piece stamped metal clip member having a first portion defining a generally U-shaped portion adapted to clampingly receive and engage the support means and a second portion defining another U-shaped channel portion adapted to clampingly receive and engage the balancing weight, the second portion being formed with a struck-out area adapted to resiliently engage the balancing weight to positively secure the same within the clip, and at least one balancing weight clampingly disposed within the second portion of the clip member.

3,415,576
BRAKING SYSTEMS OF ARTICULATED VEHICLES
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French body corporate
Filed May 2, 1967, Ser. No. 635,483
Claims priority, application France, May 4, 1966, 60,215
1 Claim. (Cl. 303—7)

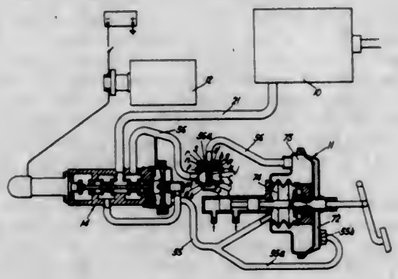
Braking system for articulated vehicles of the type comprising a tractor to which a trailer or semitrailer can be coupled, comprising a source of fluid under pressure feeding the brake cylinders of the tractor through a brake distributor, characterised in that a normally closed valve inserted in the control circuit of the trailer brakes is connected through a control pipe line to the tractor rear

brake cylinder feed line so that said valve opens instantaneously when the second slide valve of the brake dis-



tributor is opened and thus controls the application of the trailer brakes before the actuation of the tractor rear axle brakes.

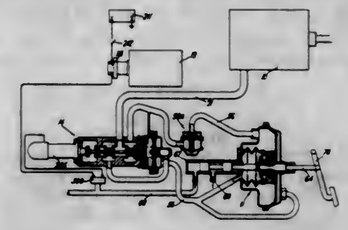
3,415,577
VEHICLE BRAKING SYSTEMS
Frederick J. Walker, Kenilworth, England, assignor to Harry Ferguson Research Limited, Abbotswood, Stow-on-the-Wold, Gloucestershire, Great Britain
Filed Apr. 11, 1967, Ser. No. 630,083
Claims priority, application Great Britain, Apr. 15, 1966, 16,555/66
8 Claims. (Cl. 303—21)



1. A vehicle having a servo-assisted braking system, an anti-skid device operable in response to inertia changes, and valve means interposed in the servo system and operatively connected to said anti-skid device whereby on operation of the latter said valve means is operated to sequentially reduce, remove and reverse the servo-assistance to decrease the braking effect, and a pressure responsive control valve interposed between said valve means and said servo-mechanism and operable to control fluid flow from the latter to the former subsequent to anti-skid operation, to thereby control re-application of the brakes.
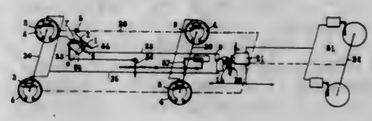
3,415,578
VEHICLE BRAKING SYSTEMS
Frederick J. Walker, Kenilworth, England, assignor to Harry Ferguson Research Ltd., Abbotswood, Stow-on-the-Wold, Gloucestershire, Great Britain
Filed Apr. 11, 1967, Ser. No. 630,085
Claims priority, application Great Britain, Apr. 15, 1966, 16,556/66
5 Claims. (Cl. 303—21)

1. A vehicle having a servo-assisted braking system, an anti-skid device operable in response to inertia changes, and valve means interposed in the servo-system and operatively connected to said anti-skid device whereby on operation of the latter said valve means is operated to sequentially reduce, remove and reverse the servo-assistance to decrease the braking effect, said anti-skid device and said valve means being operatively interconnected by a circuit incorporating a circuit breaker device opera-



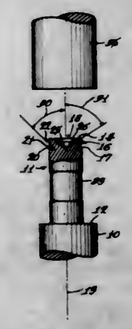
tively connected to means for applying the brakes to close the circuit-breaker device when the brakes are applied.

3,415,579
HYDRAULIC-CONTROL BRAKE SYSTEMS OF VEHICLES
Edmond Henry-Biabaud, Paris, France, assignor to Société Anonyme André Citroen, Paris, France, a French body corporate
Filed July 10, 1967, Ser. No. 652,146
Claims priority, application France, July 18, 1966, 69,722
6 Claims. (Cl. 303—22)



Hydraulic system for controlling the braking installation of a vehicle by distributing the braking effort among the trains of wheels of the vehicle as a function of their specific load, in which the distributor comprises means such that when depressed the brake pedal exerts firstly a moderate thrust on the slide valve controlling the hydraulic circuit of the brakes of the rear train of wheels and actuates the rocker only subsequently through the thrust roller.

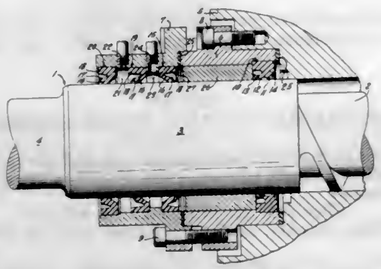
3,415,580
SHAFT WITH DEFORMABLE END PORTION
Robert O. Malmsten, Barrington, Ill., assignor to Skill-Di, Inc., a corporation of Illinois
Filed July 7, 1966, Ser. No. 563,549
2 Claims. (Cl. 308—15)



A shaft which has an end with an axially deformable riveting portion defined by a peripheral groove spaced from the end of the shaft. The peripheral groove is bounded by a radial surface which faces the end of the shaft

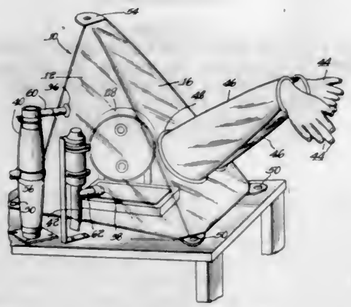
and a truncated conical surface on the deformable riveting portion. The radial surface defines the axial extent of the deformation. A recess is formed in the end face of the shaft and the peripheral groove defines with the recess a cup-shaped end portion which has a thinner wall thickness at the periphery of the shaft than at the center.

3,415,581
SHAFT SEAL
William A. Seubert, Belle Meade, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed June 16, 1967, Ser. No. 646,544
4 Claims. (Cl. 308—36.3)



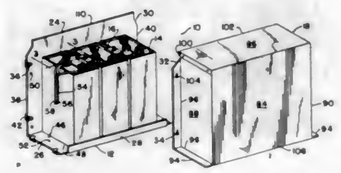
Shaft seal including a shaft and a surrounding housing having disposed therebetween a bearing in which the shaft is journalled, a spring loaded seal on one side of the bearing and three spring loaded seals on the other side of the bearing spaced apart and defining a vacuum chamber and a lubrication chamber between adjacent seals.

3,415,582
TETRAHEDRON ISOLATOR AND METHODS OF MAKING THE SAME
Philip C. Trexler, Hatfield, Herts, England, assignor to Snyder Manufacturing Company, Inc., New Philadelphia, Ohio, a corporation of Ohio
Filed Dec. 20, 1965, Ser. No. 514,960
7 Claims. (Cl. 312—1)



An isolator structure and the method of forming such a structure. The isolator comprises a totally enclosed housing of a flexible, impervious material, hermetically sealed from the surrounding atmosphere, and formed in the shape of a tetrahedron. The isolator includes a fluid inlet and outlet connected thereto to control the atmosphere within the housing and an entrance which permits the bringing of objects into and out of the housing without subjecting the atmosphere within the housing to the surrounding atmosphere. One embodiment of the isolator structure includes a pair of gloves connected to the wall of a housing for manipulating objects within the housing.

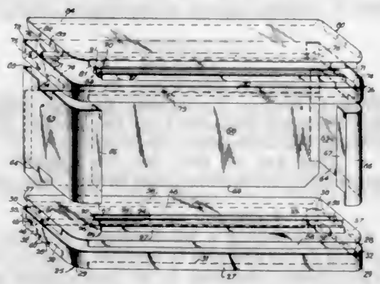
3,415,583
CAPACITOR MOUNTING CASE
Myron J. Zucker, 708 W. Long Lake Road, Bloomfield Hills, Mich. 48013
Filed July 18, 1966, Ser. No. 565,968
7 Claims. (Cl. 312—223)



A capacitor mounting case including an L-shaped tray having means for mounting the tray by either of the perpendicular portions thereof including depressed portions in the tray having openings extending therethrough which depressed portions and openings may extend to the sides of the tray. An upwardly extending portion is provided on the side of the tray opposite the back thereof and parallel thereto and a shroud is provided for completely enclosing equipment in conjunction with the tray with the equipment spaced relative to the tray and shroud to allow installation and connection of the equipment from any side of the case. The shroud includes a front, top and two side portions and flanges extending from the two side portions for securing the shroud to the tray with the shroud over the portion of the tray parallel to the back thereof. A flange at the top fitting over the upper end of the back of the tray is also provided on the shroud.

A plurality of means for securing capacitors in the case, including screws extending through the bottom of the tray between the capacitors, brackets extending over the adjacent edges of capacitors and secured to the screws and locating abutments positioned adjacent the bottom end of the outside capacitors for preventing outward movement of the capacitors on tightening of the brackets thereon are also provided. Other means for securing capacitors in the case include bolts extending through the back of the tray, a bar positioned in surface to surface engagement with the surface of the capacitors opposite the back of the tray through which the bolts extend and a U-shaped bracket extending around the individual capacitors and secured to the back of the tray.

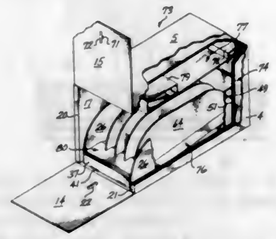
3,415,584
KNOCKDOWN CABINET CONSTRUCTION
Michael J. Levy, Bay Shore, N.Y., assignor to Combined Industries Inc., Far Rockaway, N.Y., a corporation of New York
Filed Sept. 12, 1966, Ser. No. 578,765
6 Claims. (Cl. 312—257)



This invention relates generally to cabinet constructions cabinet construction having a pair of upper and lower

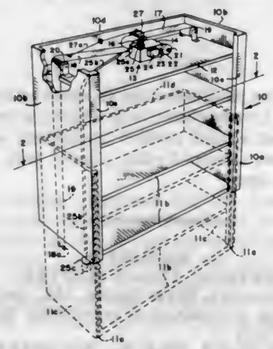
bands, each of said bands having internal extensions folded to define upwardly and downwardly facing grooves, a bottom wall engageable in the grooves of the lower band and a top wall engageable in the grooves of the upper band, and front, back and side walls engageable in the grooves of both of said bands to define a cabinet.

3,415,585
STORAGE CONTAINER
Nelson J. Morris, Houston, Tex., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 14, 1966, Ser. No. 601,762
17 Claims. (Cl. 312—261)



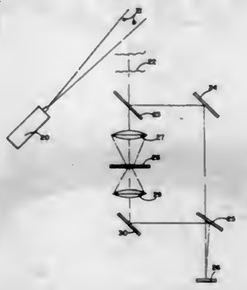
A container having a tray slidably mounted within a box which fully encloses the tray. The box may have its cover flaps folded over or be provided with additional internal liners for stacking strength. The tray has a number of internal partitions which are held upright within the tray. A ramp inclines downwardly toward the front of the tray between each of the partitions. The container may be used for storing reels.

3,415,586
CABINET SHELF ELEVATOR AND CONTROL
James F. Hammond, 17 Pleasant St., Apt. 1, Los Gatos, Calif. 95030
Filed June 12, 1967, Ser. No. 645,343
5 Claims. (Cl. 312—312)



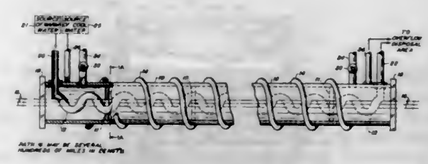
Cabinet structure provided with an outer shell and shelf structure slidably supported in the shell by webs which are adapted to be wound on a motor driven roller. The motor and an electromagnetic brake provided thereto are both adapted to be energized when the shelf structure is being raised. Only the electromagnetic brake is adapted to be energized when the shelf structure is being lowered by gravity. A flexible cable is provided for controlling the double pole double throw switch which is positioned on the motor casing so that this switch may be operated from a remote point to control the raising and lowering of the shelf structure.

3,415,587
LOCAL REFERENCE BEAM GENERATION FOR HOLOGRAPHY
Wade T. Cathey, Jr., Placentia, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Dec. 8, 1965, Ser. No. 512,388
8 Claims. (Cl. 350—3.5)



A system for providing a reference beam for generating a hologram from an electromagnetic wave reflected from an object comprising dividing the reflected wave into a reference portion and an object bearing portion, the object bearing portion being directed onto a photographic plate at a first preselected angle thereto, and focusing the reference portion onto a member having a pinhole aperture therein, the focused reference portion being directed onto the photographic plate at a second preselected angle thereto, the first and second preselected angles being sufficiently different so as to form a hologram on said photographic plate.

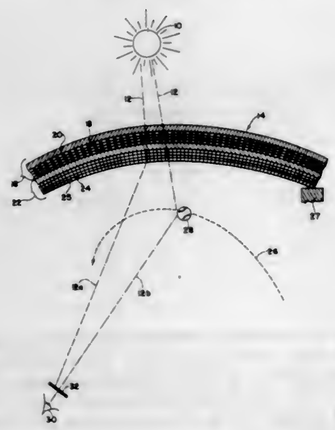
3,415,588
LIGHT TRANSMISSION SYSTEM UTILIZING TRANSVERSE TEMPERATURE GRADIENTS IN A TRANSPARENT GAS
Dwight W. Berreman, Westfield, N.J., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 25, 1964, Ser. No. 347,166
10 Claims. (Cl. 350—96)



This application describes a waveguiding structure for electromagnetic wave energy and, in particular, for light beams. It is disclosed that by establishing a radially decreasing temperature gradient in a transparent gas, rays, which tend to diverge away from the beam axis, are

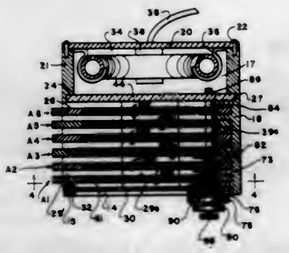
refracted back towards the axis in much the same way as they would be by a thin converging lens. In accordance with one embodiment of the invention the gradients are distributed longitudinally along the wavepath and vary continuously in their transverse direction. In a second embodiment, thermal gradients are discretely spaced along the wavepath. Arrangements for negotiating curves are also described.

3,415,589
METHOD FOR IMPROVING VISIBILITY OF A MOVING OBJECT BY CIRCULAR POLARIZED LIGHT
Justin M. James, Jr., Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,428
1 Claim. (Cl. 350—156)



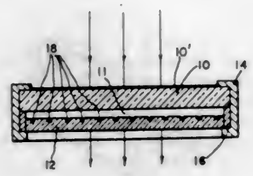
The present disclosure relates to a method of improving the visibility of a moving object such as a baseball, when viewed against a background of alternately light and dark areas existing in the roof of a domed sports stadium. To achieve this result, a controlled use of circularly polarized light is utilized to extinguish the background light when viewing the moving object.

3,415,590
OPTICAL DISPLAY DEVICE
Bertram Adler, 44A Iozia Terrace, East Paterson, N.J. 07407
Filed Mar. 24, 1965, Ser. No. 442,272
1 Claim. (Cl. 350—158)



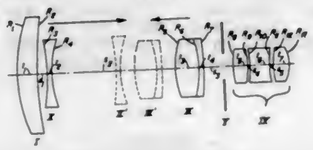
An optical display device wherein it is possible to see different images by changing polarized light passing through the images and simultaneously providing color changes. The device embodies polarizing materials and birefringent materials individually or collectively movable with respect to each other for producing changeable colored effects. The materials are carried by rotatable disks.

3,415,591
HIGH SPEED OPTICAL SHUTTER
Eugene C. Letter, Penfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1964, Ser. No. 335,691
5 Claims. (Cl. 350—160)



A high speed optical shutter which may be opened or closed in less than 50 microseconds by the vaporizing action of mercury deposited on one of the optical shutters thereof.

3,415,592
LINEAR MOTION ZOOM OBJECTIVE
William H. Price, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 1, 1965, Ser. No. 435,873
6 Claims. (Cl. 350—184)

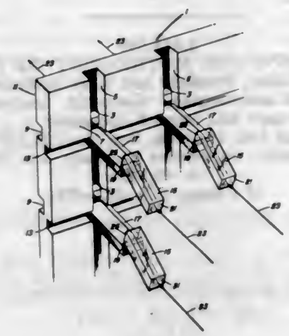


Particular lens parameters are provided which give good corrections in a zoom objective in which a second negative component and a third positive component move in opposite directions at rates having a linear ratio of approximately two to one.

3,415,593
OPTICAL PHASE SHIFTER
Adolph M. Chwastyk, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 3, 1964, Ser. No. 415,824
4 Claims. (Cl. 350—285)

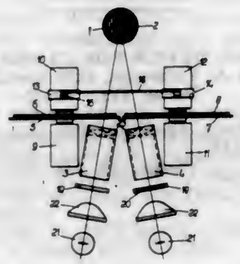
3. An optical phase shifter, including
an aperture plate having a plurality of spaced apertures therein,
a plurality of prisms connected to said aperture plate such that light impinging on each of said prisms will be transmitted through a discrete aperture in said aperture plate, and

means for selectively moving each of said prisms for effecting a change in the angle of incidence of light



impinging thereon so as to result in a shift in the phase of such light relative to its phase prior to its passage through said prisms.

3,415,594
PROJECTION TYPE SIGHT TESTING APPARATUS WITH ADJUSTABLE LIGHT INTENSITY CONTROL MEANS FOR VISION TEST CHARACTER
Elfriede Aulhorn University Eye Clinic, Tubingen, Germany
Filed Sept. 18, 1964, Ser. No. 397,485
Claims priority, application Germany, Sept. 18, 1963, A 44,082
2 Claims. (Cl. 351—30)



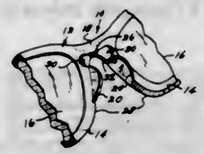
1. Sight testing apparatus for the linear adjustment of the illumination intensity of a visual test character on a screen within an illuminated surrounding area in which the illumination intensity of the test character is varied while the illumination of the surrounding area is held uniform, comprising a pair of duplicate optical projectors to illuminate the same surface of the screen, one of said projectors illuminating both the character and the surrounding area, the other of said projectors having an opaque test character masking element and illuminating only the surrounding area, and control means in the light beams of both projectors and coupled so that the light intensity of one of the beams will intensify as the other beam de-intensifies, said control means comprising two pairs of rotatable segmented plates, one pair of plates being coaxially disposed in the path of one of said beams, and the other pair of plates being coaxially disposed in the path of the other of said beams, four constant speed devices and means for connecting said devices one to each of said plates, said devices being operable to rotate all said plates at the same speed, link means operable to couple one device of one pair of plates with one device of the other pair of plates, said coupled devices being rotatably mounted and operable to vary simultaneously and by equal amounts the angular disposition of one plate of each pair with respect to the other plate of each pair and said constant speed devices being synchronous electric motors.

3,415,595
PRESCRIPTION LENSES FOR WELDER'S HELMET AND THE LIKE
Harry W. Nelson, 1669 Riverside Drive, Akron, Ohio 44310
Filed Jan. 21, 1965, Ser. No. 426,881
1 Claim. (Cl. 351—44)



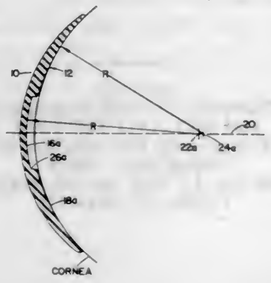
A construction for a welder's helmet in which prescription lenses are removably mounted by a bayonet joint means in a firmly fitting insulated relation within the helmet in the proper position and spaced from ordinary protective glass or plastic located on both sides of the lenses.

3,415,596
SPECTACLE BRIDGE STRUCTURE WITH INTEGRAL NOSE GRIP AND REARWARDLY DISPOSED RECESSES
Walter C. Carmichael, West Peabody, Mass., assignor to American Optical Corporation, a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,660
5 Claims. (Cl. 351—131)



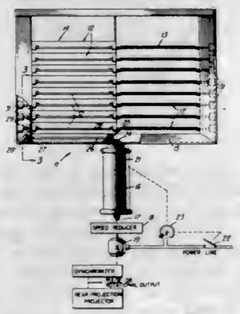
A spectacle frame comprising a pair of lens receiving rims interconnected by a bridge having an arcuate lower edge. Nasal sides of the rims extend divergently directly from the lower edge of the bridge along generally straight lines as oppositely disposed nose bearing surfaces of the frame. Each of the rims has a rearwardly disposed recess adjacent the lower edge of the bridge for receiving nasal flesh displaced by the nose bearing surfaces. The recesses each extend a substantial distance across the width of its respective rim from the nose bearing surface thereof and into the frame to a maximum depth of less than the thickness of the frame.

3,415,597
CORNEAL CONTACT LENS WITH OFFSET CONCAVE SURFACE PORTIONS
Willard J. Harman, 410 N. Jefferson St., Huntington, Ind. 46750
Filed Nov. 20, 1962, Ser. No. 239,402
2 Claims. (Cl. 351—160)



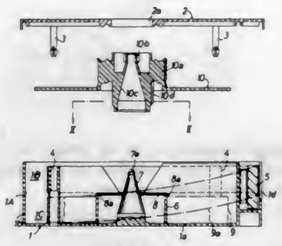
2. A corneal contact lens of generally concavo-convex form having a maximum diameter slightly smaller than the limbus of the eye, the concave surface of said lens including two stepped curvature portions, one of said portions being offset rearwardly of the other, said one of said portions which is offset rearwardly having a curvature which conforms substantially to the natural curvature of the cornea, said portions being of the same radius with the respective centers of curvature thereof being spaced apart on the optical axis of said lens, the other forwardly offset portion being substantially circular and centrally disposed in said surface, said one portion concentrically surrounding said other portion, said portions being joined by an annular axially extending surface substantially normal to the concave surface of said lens and disposed within the optic zone, said other portion providing a tear reservoir the convex surface of said lens having a uniform curvature throughout the optic zone, and the power of said lens being substantially uniform throughout the optic zone.

3,415,598
STEREO VIEWING APPARATUS
Robert Stevenson Neasham, 1910 W. Surrey Ave., Phoenix, Ariz. 85029
Filed Oct. 18, 1965, Ser. No. 497,561
1 Claim. (Cl. 352—63)



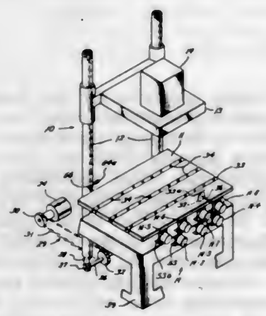
A hand held frame formed with two sections having blind elements mounted on horizontal shafts in each section. The blind elements of one section being normal to the blind elements of the other section, so that meshing gears on one end of each of the shafts will open one section while closing the other section, each blind element rotating in an opposite direction to that of its adjacent blind element.

3,415,599
MAGAZINE FOR MOTION-PICTURE FILM
Alfred Winkler, Munich, and Karl Bammesberger, Munich-Untermenzing, Germany, assignors to Agfa-Gevaert AG, Munich, Germany
Filed Jan. 19, 1966, Ser. No. 521,738
Claims priority, application Germany, Jan. 29, 1965, A 48,271
12 Claims. (Cl. 352—78)



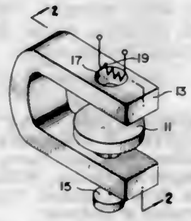
A magazine for motion-picture film wherein a rotary partition driven by the film transporting mechanism divides the interior of the housing into first and second compartments which respectively accommodate the exposed and unexposed parts of the film. The partition and the housing comprise coaxial cores which extend into the first and second compartments to respectively support the exposed and unexposed parts of the film. The core of the partition has a socket which receives a conical bearing member of the housing.

3,415,600
CONTROL DEVICE FOR CAMERA STAND
Kenneth A. Yarbrough, 1030 Medalist Drive, Dallas, Tex. 75232
Continuation-in-part of aplication Ser. No. 364,640, May 4, 1964. This application Mar. 2, 1967, Ser. No. 633,644
7 Claims. (Cl. 352—87)



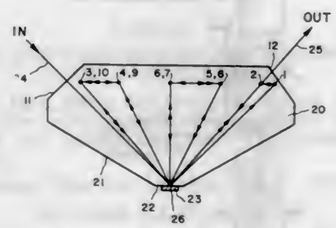
For operation of camera stands yielding animated film, control apparatus preferably including a tape reader which reads instructions encoded on punch paper tape, transfers the instructions to circuitry which distinguishes between first and second components of each instruction wherein the first component indicates the movable part of the camera stand to be operated and the second component of the instruction indicates a selected position of the movable part between two spaced positions, a plurality of stepping motors respectively connected to these movable parts, translator means for driving the selected stepping motor in response to the first component of the instruction with the second component of instruction controlling movement of the operable part of the camera stand to obtain the movement to the selected position.

3,415,601
MAGNETO-CARRIER PRESSURE MOTIVE FORCE MOTOR
Milton Green, Niantic, Conn., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 14, 1965, Ser. No. 471,898
2 Claims. (Cl. 356—225)



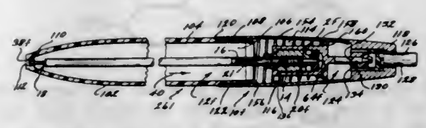
1. A semiconductor motor comprising
means for establishing a uniform magnetic field,
a semiconductor disc,
means for movably mounting said disc normal to and within said field, and
means for applying heat or light energy to a portion of said disc,
whereby as the heat or light impinges on the disc it creates an area of concentrated energy causing an electrical current flow in the disc transverse to the magnetic field thereby producing a net force urging the disc to move.

3,415,602
INTERNAL REFLECTION ELEMENT FOR MICRO-SAMPLE ANALYSIS
Nicolas J. Harrick, Ossining, N.Y., assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,767
8 Claims. (Cl. 356—256)



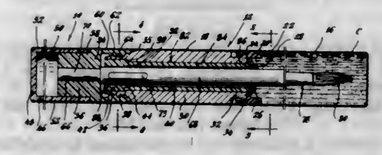
1. A multiple pass internal reflection element comprising a substantially optically transparent member having a receiving surface enabling an incident radiation beam to enter the member and having a sampling surface oriented relative to the incident beam so that the latter is incident thereon at an angle exceeding the critical angle for total internal reflection, said member including a plurality of reflecting surfaces oriented relative to the sampling surface and functioning in pairs to receive the beam reflected from the sampling surface at an angle exceeding the critical angle and to redirect it back onto substantially the same point of the sampling surface at an angle exceeding the critical angle, said member having an exiting surface oriented relative to the sampling surface to enable a beam incident on the existing surface to exit from the member.

3,415,603
SELF-PRESSURIZING RETRACTABLE BALLPOINT PEN
Floyd W. Blanchard, 2334 Loma Vista Place, Los Angeles, Calif. 90039
Continuation-in-part of application Ser. No. 441,796, Mar. 22, 1965. This application Mar. 17, 1967, Ser. No. 633,333
10 Claims. (Cl. 401—101)



A self-pressurizing ballpoint pen having a pressurizing member in fluid-communication with an ink reservoir for trapping and compressing air therein when a writing force seats the member against a seat which remains stationary during writing operations and which moves with the cartridge during retraction operations.

3,415,604
COSMETIC APPLICATOR
Warren S. Ahrens, Milford, and Daniel A. Viera, Monroe, Conn., assignors to The Bridgeport Metal Goods Manufacturing Company, Bridgeport, Conn., a corporation of Connecticut
Filed Sept. 12, 1966, Ser. No. 578,754
10 Claims. (Cl. 401—122)



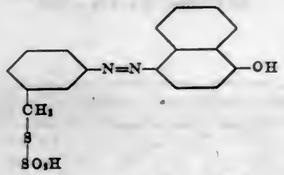
An improved liquid cosmetic container and applicator brush. The applicator brush is provided with a slidable sleeve so that the bristles are protected from splaying and deformation upon insertion of the brush through wiping means positioned at the entrance of the liquid cosmetic container.

3,415,605
COMBUSTION FLASH BULBS
Johannes Cornelis van der Tas, Willem Westerveld, and Rudolf Maurits Kruimink, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 15, 1967, Ser. No. 638,631
Claims priority, application Netherlands, May 17, 1966, 6606713
2 Claims. (Cl. 431—93)

Combustion flash bulb filled with a mixture of oxygen and nitrogen fluoride.

3,415,606
METHOD OF DYEING HUMAN HAIR WITH REACTIVE DYES
Rudolf Emmanuel Randebrock, Bernadottestrasse 71, Hamburg-Othmarschen, Germany
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,200
Claims priority, application Germany, Apr. 24, 1963, Sch 33,168
7 Claims. (Cl. 8—10.1)

Methods of dyeing human hair which include the step of treating the hair with a particular mercaptan which is adapted to form, with the keratin of the hair, a compound including one or more SH groups so as to form the aforesaid compound in the surface region of the hair. The methods further include the step of reacting the thus-treated hair with a dye of the formula:



This dye is adapted to react wih the SH group or groups so as to bind a portion of the same. Finally, the methods include the step of treating the thus-dyed hair with a blocking agent adapted to irreversibly block any residual SH group.

3,415,607
HAIR DYE COMPOSITION CONTAINING 2-HYDROXY-1,4-NAPHTHOQUINONE
Stanley Brechner, West Orange, and Kathleen De Vito, Union, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,267
1 Claim. (Cl. 8—10.2)

A hair dye prepared by reacting a naphthoquinone with a mono-lower alkanol amine.

3,415,608
STABILIZED OXIDATION DYE COMPOSITIONS
Harold H. Tucker, Scarsdale, N.Y., assignor to Lowenstein Dyes & Cosmetics, Inc., Brooklyn, N.Y.
No Drawing. Filed Jan. 26, 1968, Ser. No. 700,746
7 Claims. (Cl. 8—10.2)

The use of 2,3-dihydroxy naphthalene to stabilize oxidation dyestuff compositions for dyeing human hair, or other keratinaceous or proteinaceous fibers.

3,415,609
METHOD FOR FIXING DYES ON TEXTILE FIBERS AND TEXTILE FIBERS RESULTING FROM METHOD
Charles D. Weston, Charlotte, N.C., assignor to Martin-Marietta Corporation, a corporation of Maryland
No Drawing. Filed Apr. 26, 1965, Ser. No. 451,015
6 Claims. (Cl. 8—34)

Method for fixing dyes on textile fibers comprising the step of contacting an acid free aqueous fixing solution comprising water and a polythionate of the formula $X—O_3S—(S)_n—SO_3—X$, wherein X is a member selected from the group consisting of Na, K and NH_4 and n is a whole number from 1–4 inclusive, with a textile fiber having thereon at least one dyestuff in reduced form, said dyestuff being selected from the group consisting of (i) dyes which in their reduced form have at least one pendant mercaptide group per molecule of dye and (ii) dyes which in their reduced form have at least one pendant mercapto group per molecule of dye. Also textile fibers on which dye has been fixed according to the method.

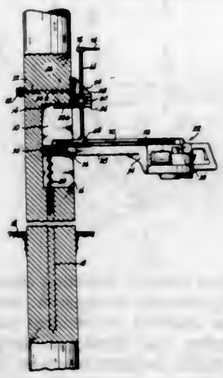
3,415,610
REACTION PRODUCT OF ALKALI METAL SULFIDE AND PHOSPHORUS SULFIDE IN AN 8:1 OR HIGHER RATIO, DEPILATORIES THEREFROM AND DEPILATION THEREWITH
Theodore H. Dexter, Lewiston, and Alfred O. Minkiel, Kenmore, N.Y., and Thomas C. Thorstensen, Chelmsford, Mass., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 27, 1964, Ser. No. 370,704
27 Claims. (Cl. 8—94.16)

Applicant reacts about 8 mols or more of sodium sulfide with one mole of phosphorous pentasulfide to produce a depilatory to which $CaCl_2$ sharpener can be added. Part of the sodium sulfide is replaced by sodium hydroxide in the other examples. Other alkali sulfide such as potassium, rubidium, cesium and lithium sulfide can be used in lieu of sodium sulfide.

3,415,611
METHOD OF IMPROVING HEAT STABILITY OF ACRYLONITRILE POLYMER FIBERS
Andrew J. Callahan, Newport News, and Richard E. Harder and Rupert B. Hurley, Williamsburg, Va., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 28, 1965, Ser. No. 505,449
7 Claims. (Cl. 8—137.5)

In a method for preparing heat stable acrylonitrile polymer fibers comprising immersing the wet spun gel filament of a polymer of an ethylenically unsaturated monomeric material containing at least about 80 weight percent of acrylonitrile in an aqueous solution of between about 0.1 and about 20 weight percent based on solution weight, of a compound selected from the group consisting of ethylene diamine tetraacetic acid and its alkali metal salts, the improvement which comprises maintaining said aqueous solution at a pH of less than about 7.0, at a temperature between about 0° to 30° C. and said immersion being done prior to stretching of the wet gel filament.

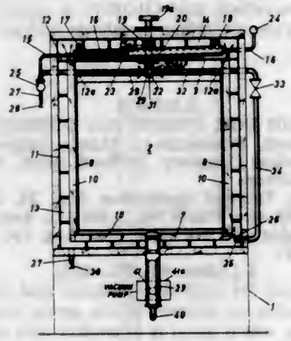
3,415,612
METHOD OF TREATING STANDING POLES AND THE LIKE
Richard L. Rosenberg, 2855 SW. Rutland Terrace, Portland, Oreg. 97201
Filed Apr. 1, 1966, Ser. No. 539,451
7 Claims. (Cl. 21—7)



This invention relates to the treatment of standing poles

with a preservative material, whereby the service life of the pole may be increased.

3,415,613
METHOD OF AND APPARATUS FOR STERILIZING AND DISINFECTING ARTICLES
Knut Anders Osborne Walliden, Kaptenagatan 1, Kungsbacka, Sweden
Filed Sept. 20, 1963, Ser. No. 310,244
22 Claims. (Cl. 21—56)

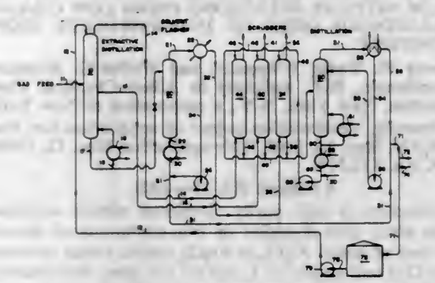


In an autoclave having a space for sterilizing and disinfecting articles, a source of supply of wet saturated steam which is at a pressure sufficient to effect sterilization of the articles, flowing the wet saturated steam through an elongated path of flow which is outside the space, heating the saturated steam to an elevated temperature while flowing through the elongated path of flow to dry the saturated steam and reduce its humidity, flowing the dry saturated steam through a passageway from the elongated path of flow into a steam dispersing zone at the upper part of the space, heating the dry saturated steam while flowing through the passageway to maintain the steam at least at the elevated temperature, dispersing the dry saturated steam from the zone into the space, and heating the dry saturated steam at the dispersing zone to maintain the saturated steam therein at least at the elevated temperature, the heating of the saturated steam flowing through the elongated path of flow and the passageway and in the dispersing zone functioning to insure that the saturated steam dispersed from the zone into the space will be substantially devoid of humidity and superheat.

3,415,614
PROCESS AND COMPOSITION FOR RETARDING WATER EVAPORATION
Richard R. Egan, Edina, and Stanley R. Sheeran, Minneapolis, Minn., assignors, by mesne assignments, to Ashland Oil and Refining Company, a corporation of Kentucky
No Drawing. Filed Feb. 16, 1966, Ser. No. 527,728
10 Claims. (Cl. 21—60.5)

6. A process for retarding surface evaporation from bodies of water which comprises adding to said body of water a normally solid composition comprising at least one solid, aliphatic alcohol having from 12 to 20 carbon atoms and from about 5 to about 25% by weight of said solid alcohol of a liquid heterocyclic compound having a five-membered ring, one member of which is oxygen.

3,415,615
RECOVERY OF CARBON MONOXIDE BY MEANS OF CUPROUS CHLORIDE IN PROPIONITRILE
George C. Blytas, Kensington, and Edward R. Bell, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,532
4 Claims. (Cl. 23—3)



Carbon monoxide, useful in various carbonylations, is recovered from admixture with other gases, such as hydrogen and lower aliphatic hydrocarbons, including olefins such as propylene, by selective complexation with a cuprous salt, e.g., cuprous chloride, in propionitrile at 20° C. to 100° C., after which the carbon monoxide is recovered from the complex by heating.

3,415,616
EXTRACTION OF VANADIUM AND MOLYBDENUM WITH A PHENOLIC OXIME
Donnell W. Agers, Kankakee, Ill., and Ronald R. Swanson, New Hope, Minn., assignors to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,374
9 Claims. (Cl. 23—22)

1. Process for the separation of metal values selected from the group consisting of vanadium and molybdenum from an aqueous solution containing the same, comprising: (1) contacting said aqueous solution with an organic phase comprising a liquid hydrocarbon and a 2-hydroxy benzophenoxime selected from the group consisting of alkyl substituted and alkoxy substituted 2-hydroxy benzophenoxymes to extract at least a portion of the said metal values into the organic phase, said 2-hydroxy benzophenoxime having a solubility of at least 2% by weight in the liquid hydrocarbon, and (2) separating the resultant metal-pregnant organic phase from the aqueous phase.

3,415,617
METHOD OF SEPARATING MAGNESIUM AND CALCIUM VALUES FROM CALCIUM AND MAGNESIUM CARBONATES
Ivan M. Thompson and John Maskal, Ludington, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 2, 1966, Ser. No. 524,482
8 Claims. (Cl. 23—85)

The present invention relates to a method of separating the magnesium and calcium values from materials containing magnesium and calcium carbonates which comprises calcining crushed magnesium and calcium carbonate containing material, slaking at least the CaO portion of the resulting calcined material to form

$$Ca(OH)_2$$

reacting the slaked material with a $CaCl_2$ solution to form calcium oxychloride crystals which are separable from

the smaller MgO and $Mg(OH)_2$ crystals. The method of the present invention includes the further step of contacting the calcium oxychloride so formed with a $MgCl_2$ containing brine thereby to produce a high purity

$Mg(OH)_2$

3,415,618

PROCESS FOR PRODUCING HIGH PURITY ALUMINUM NITRATE SOLUTIONS FROM LOW GRADE ALUMINOUS ORES OF INTERMEDIATE IRON CONTENT

Anthony W. Yodis, Whippany, and Walter G. Schnoor, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 489,379, Sept. 22, 1965. This application Mar. 12, 1968, Ser. No. 712,373

8 Claims. (Cl. 23—102)

Production of high purity aluminum nitrate solutions by the nitric acid digestion of iron-contaminated aluminous ores of initial Al_2O_3 to Fe_2O_3 weight ratios between about 12:1 and about 20:1, carried out using stoichiometric deficiencies of aqueous nitric acid of HNO_3 concentrations between about 15% and about 35% and temperatures between 140° C. and 220° C.

3,415,619

PROCESS FOR MAKING AMMONIUM PHOSPHATE

David M. Young, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 562,451

8 Claims. (Cl. 23—107)

This invention relates to a process for the preparation of water-soluble ammonium phosphates by extracting a substantially iron-free aqueous phosphoric acid, derived from the reaction of a calcium phosphate-containing ore and a strong mineral acid, into a water-immiscible trialkyl phosphate extractant, separating the phosphoric acid-laden extractant from the residual aqueous phase, removing the calcium impurities therefrom, contacting the phosphoric acid-laden extractant with anhydrous ammonia at a temperature of between about 20 and 90° C. and separating solid, water-soluble ammonium phosphate from the extractant.

3,415,620

PROCESS FOR THE PRODUCTION OF POTASSIUM SULFATE

Alberto Scarfì and Emanuele Gugliotta, Siracusa, Italy, assignors to Sincat Società Industriale Catanese S.p.A., Palermo, Italy

Filed May 17, 1967, Ser. No. 639,129

Claims priority, application Italy, May 18, 1966, 18,035

7 Claims. (Cl. 23—121)

Raw kainite is leached at temperatures greater than 90° C. with an epsomite brine into a langbeinite slurry, a portion of which is reacted with a schoenite brine, whereby there are obtained potassium chloride and epsomite which are separated from each other and an epsomite brine. A portion of the epsomite brine is recycled to the initial process step and another portion is reacted with the remainder of the langbeinite slurry and a portion of the epsomite, thus affording further langbeinite which is treated with a sulfate brine, whereby there are obtained a schoenite brine and schoenite which is reacted with potassium chloride and water to form potassium sulfate and a sulfate brine.

3,415,621

CRYSTALLINE METABORIC ACID BY HYDROLYSIS OF SECONDARY ALKYL BORATE ESTER

Peter W. Gilderson, Oakland, Stanley F. Newman, San Francisco, and Lloyd C. Fetterly, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,716

3 Claims. (Cl. 23—149)

When aliphatic secondary alcohols are produced by the controlled oxidation of paraffins in the presence of oxyboron compounds, an improved continuous process is obtained by separately hydrolyzing the resulting sec-alkyl borate ester in a controlled manner with a limited proportion of water directly to the alcohol and predominantly metaboric acid (HOBO) in crystalline form, and recycling the crystalline metaboric acid to the oxidation zone.

3,415,622

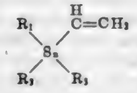
METHOD FOR INHIBITING CORROSION

Richard Waack, Framingham, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Aug. 26, 1963, Ser. No. 305,198, now Patent No. 3,305,388, dated Feb. 21, 1967. Divided and this application Aug. 15, 1966, Ser. No. 600,281

5 Claims. (Cl. 23—154)

1. A method for inhibiting protonic acid attack of a metal containing an element of the group consisting of zinc and iron, which metal is in contact with an aqueous system containing a dilute protonic acid, which method comprises introducing into such aqueous system a small amount of an organo tin composition sufficient to inhibit protonic acid attack of the metal, said organo tin compound having the general formula:



wherein R_1, R_2 and R_3 are independently selected from the group consisting of



alkyl hydrocarbons having from 2 to 6 carbons and aryl hydrocarbons having from 6 to 10 carbons, with the further overall limitation that at least one of the R groups shall be of the class of alkyl and aryl hydrocarbons as specified.

3,415,623

PROCESS FOR PREPARING CONDENSED PHOSPHOROUS ACID

Robert L. Carroll, Bridgeton, and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,281

14 Claims. (Cl. 23—165)

A process is described for preparing condensed phosphorous acid by adding phosphorus trihalide to a reaction medium of water, orthophosphorous acid or mixtures of these under reaction conditions which minimize the formation of separate phases of the phosphorus trihalide and the reaction medium and under temperature conditions which are below the decomposition temperature of condensed phosphorous acid until the reaction product has a P_4O_6 content of from greater than 67% by weight to about 75% by weight.

3,415,624

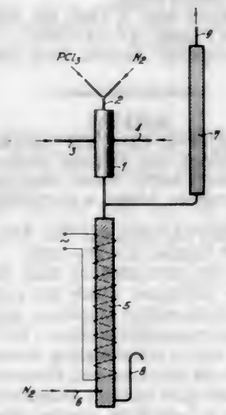
PROCESS AND APPARATUS FOR THE MANUFACTURE OF PHOSPHOROUS ACID

Joseph Cremer, Hermulheim, near Cologne, Ursus Thummler and Friedrich Schulte, Hurth, near Cologne, and Heinz Harnisch, Lovenich, Weiden, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Aug. 6, 1965, Ser. No. 477,715

Claims priority, application Germany, Sept. 19, 1964, K 540,461

6 Claims. (Cl. 23—165)



Apparatus and process for the manufacture of phosphorous acid from phosphorus trichloride and water by hydrolysis comprising introducing phosphorus trichloride and water as the starting components in finely divided form into a reaction zone, intimately mixing the components, reacting the components in the gas phase at a temperature of 150 to 200° C., and removing resulting final product in the form of a melt.

3,415,625

PREPARATION OF HEXAGONAL BORON NITRIDE

Albert Babl and Heinz Geng, Waldshut, Baden, Germany, assignors to Lonza-Werke G.m.b.H., Weil am Rhine, Germany

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,922

Claims priority, application Switzerland, Feb. 3, 1967, 1,642/67

4 Claims. (Cl. 23—204)

Hexagonal boron nitride is prepared by heating a mixture of an oxygen-containing boron compound and an organic nitrogen-containing compound in a reactor whose walls have a coating of preformed hexagonal boron nitride.

3,415,626

PROCESS FOR DETERMINING THE FREE-OXYGEN CONTENT OF A GAS OR DUST MIXTURE

Wilhelm J. Hanssen, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands

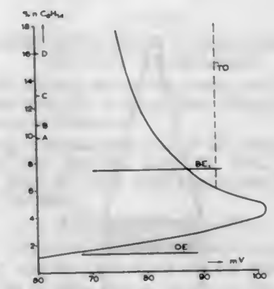
Filed June 29, 1964, Ser. No. 378,797

Claims priority, application Germany, July 2, 1963, St 16,145

Claims priority, application Netherlands, Dec. 6, 1963, 301,469

3 Claims. (Cl. 23—232)

A method of determining free-oxygen content of gaseous mixtures by combination of the oxygen with vaporized combustible material. The gaseous mixture is contacted with a vaporizable combustible material until it is saturated, and the combustible material is selected to have a saturation point above the upper explosive point of the mixture. The amount of oxygen is determined by catalyzing the combustion on the surface of a resistor whose resistance is measured. Preferably, the resistor is part of an arm of a resistance bridge circuit and the bridge also



includes a resistor having a negative temperature coefficient of resistance. This counteracts the effect of temperature which increases the amount of combustible material in the saturated mixture thereby diluting the oxygen.

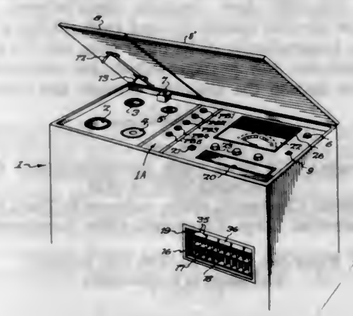
3,415,627

CHEMICAL TESTING APPARATUS

Joseph M. Rait, Snyder, N.Y. (95 Huxley Drive, Buffalo, N.Y. 14226)

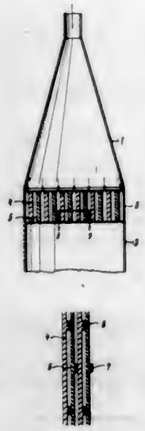
Continuation of application Ser. No. 201,677, June 11, 1962. This application Mar. 29, 1966, Ser. No. 544,648

15 Claims. (Cl. 23—253)



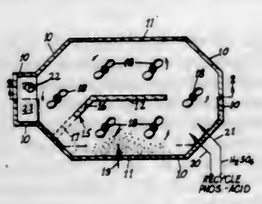
1. Apparatus of the class described comprising, processing means operable to prepare a sample solution, a housing enclosing said processing means, extractor means including a receptacle having an axis and means for rotating said receptacle about said axis, a cover movable relative to said housing between an open position exposing said extractor means and a closed position covering the same, and means for withdrawing a sample fluid from said receptacle including a conduit carried by said cover for movement therewith, said conduit being arranged for communication with said processing means and having an intake end positioned in said receptacle along said axis when said cover is in said closed position.

3,415,628
APPARATUS FOR THE THERMAL DECOMPOSITION OF SATURATED HYDROCARBONS TO PRODUCE UNSATURATED HYDROCARBONS
Mihály Freund, Zoltán Nagy, and László Szepesy, Budapest, Hungary, assignors to Magyar Asvanyolaj es Foldgaz Kiserleti Intezet, Veszprem, Hungary, a firm
Filed June 2, 1965, Ser. No. 460,718
Claims priority, application Hungary, June 4, 1964, MA 1,350, MA 1,351
6 Claims. (Cl. 23—277)



Apparatus for the flame reaction of a combustible gaseous mixture includes a diffuser having the gaseous mixture flowing longitudinally therethrough, a combustion chamber wherein the gaseous mixture is burned and an intermediate section connecting the diffuser to the combustion chamber. The intermediate section is formed by a series of laterally spaced substantially parallel plates forming restricted flow channels therebetween. These plates have parallel spacer ribs and each rib has a groove extending longitudinally of its outer edge and the grooves form additional flow passages which are restricted relative to the flow in the channels between the plates.

3,415,629
APPARATUS FOR THE PRODUCTION OF PHOSPHORIC ACID
Enrico Pelitti, Cincinnati, Ohio, assignor to The Chemical and Industrial Corp., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 21, 1966, Ser. No. 522,249
8 Claims. (Cl. 23—285)



A single compartment reactor for production of phosphoric acid from phosphate-containing rock and sulfuric acid, having a straight vertical wall disposed centrally in the reactor in spaced relation to the outer walls, a partial baffle positioned between the vertical wall and one of the outer walls, a plurality of agitators in the reactor compartment positioned to induce a continuous, unidirectional flow of reaction slurry, an inlet for introducing ground rock adjacent one side of the partial baffle, an inlet for sulfuric acid downstream from the inlet for ground rock, and a product withdrawal outlet adjacent the other side of the partial baffle.

3,415,630
BORON-NITROGEN COMPOUND
Ludwig Konrad Huber, Philadelphia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,612
2 Claims. (Cl. 23—358)

A nitrogen compound derived from boric acid and hydrazine.

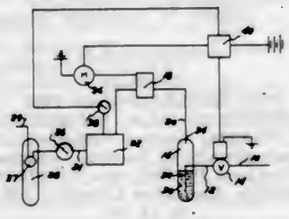
3,415,631
PROTECTIVE COATED ARTICLE
Neil N. Ault, Holden, and William Maxwell Wheildon, Jr., Framingham Center, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 12, 1965, Ser. No. 439,220
9 Claims. (Cl. 29—195)

A process for the protection of steel, ferrous metals and ferrous alloy substrates which are particularly subject to corrosion from molten aluminum and molten metal alloys melting at temperatures below 1200° C. by spraying the substrates with a metal melting above 700° C. and stable in air onto the substrate and thereafter spraying a resistant outer coating of calcium aluminate. The process also provides for a refractory coating intermediate the metal undercoat and outer coating of calcium aluminate.

3,415,632
FUEL OIL COMPOSITIONS
Alois Rechberger, Vienna, Austria, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 31, 1966, Ser. No. 553,677
Claims priority, application Austria, June 4, 1965, A 5,121/65
2 Claims. (Cl. 44—74)

A fuel oil composition containing a combination of cyclohexyl nitrate and an oil soluble barium salt of a sulfonic acid to inhibit exhaust smoke emission.

3,415,633
GAS CONVERSION MEANS AND METHOD
Steve S. Anthony, Brighton, Mich., assignor of one-half to Earl J. Berwick, Detroit, Mich.
Filed June 21, 1965, Ser. No. 465,522
11 Claims. (Cl. 48—196)

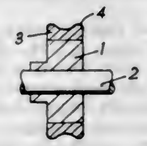


Method and apparatus for removing impurities such as sulfur and nitrogen from natural gas by passing the gas through a solution containing methyl salicylate.

3,415,634
TREATMENT OF HYDROCARBON CONTAINING OILS
Frederick James Dent and George Percival, Solihull, England, assignors to The Gas Council, London, England, a British body corporate
No Drawing. Filed July 31, 1963, Ser. No. 299,064
Claims priority, application Great Britain, Aug. 3, 1962, 30,016/62
10 Claims. (Cl. 48—213)

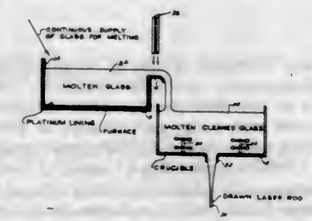
A process is disclosed for continuously reforming hydrocarbons by passing the vapor of a hydrocarbon feedstock along with a mixture of steam and a hydrogenating gas over an active steam reforming metal catalyst. Without regenerating the catalyst the hydrocarbon feedstock vapor is converted in a single stage into a gas containing no hydrocarbon above methane. The hydrogenating gas may be molecular hydrogen alone or in combination with carbon monoxide, carbon dioxide and gaseous hydrocarbons.

3,415,635
METHOD OF MAKING A GRINDING MEMBER
Raymond T. Hallewell, Hillingdon Heath, England, assignor to Toolmasters Limited, Hillingdon Heath, Middlesex, England
Filed July 28, 1966, Ser. No. 568,637
9 Claims. (Cl. 51—293)



A method of making a grinding member having a base and on said base a kneadable composition comprising a synthetic resin and abrasive particles, the improvement comprising the steps of:
rolling said composition on said base to a predetermined form with a master roller, and thereafter causing said composition to harden slowly without substantially changing the volume.

3,415,636
METHOD FOR TREATING MOLTEN GLASS WITH A LASER BEAM
Lee O. Upton, Sturbridge, Mass., assignor, by mesne assignments, to American Optical Corporation, a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,934
3 Claims. (Cl. 65—17)



A method of removing furnace refractory inclusions from melts of laser glass by causing the melt to flow, in the form of an attenuated ribbon exposed to the atmosphere, through the path of a laser beam directed thereon with an energy level sufficient to penetrate the ribbon and vaporize the refractory inclusions causing them to dissipate into the atmosphere. The energy level of the laser beam is preferably at least equal to that intended to be developed in laser devices subsequently formed from the glass melt so as to remove all inclusions which would tend to expand and cause cracking of the devices during use.

3,415,637
STRENGTHENING GLASS SHEETS BY ION EXCHANGE
Theodore W. Glynn, Kingsport, Tenn., assignor to American Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware
No Drawing. Continuation-in-part of abandoned applications Ser. No. 218,445, Aug. 21, 1962, and Ser. No. 549,828, May 31, 1966. This application June 14, 1967, Ser. No. 645,889
4 Claims. (Cl. 65—30)

A small amount of potassium silicate is advantageously added to a molten potassium nitrate bath used in the strengthening of glass sheets by ion exchange techniques. Soda-lime glass cullet can similarly be employed in certain of these molten potassium nitrate baths.

3,415,638
PROCESS FOR PREPARING AMMONIUM PHOSPHATE
John David Crowther Hemsley and Stanislaw Maria Janikowski, Felixstowe, Suffolk, England, assignors to Fisons Fertilizers Limited, Felixstowe, Suffolk, England
No Drawing. Filed Mar. 15, 1965, Ser. No. 439,978
Claims priority, application Great Britain, Mar. 26, 1964, 12,781/64; June 17, 1964, 25,168/64
11 Claims. (Cl. 71—36)

A process for making ammonium phosphate fertilizers is provided, wherein phosphoric acid and ammonia are reacted under pressure at a water content and temperature such that a solid product is obtained upon expulsion into a zone at ambient pressures.

3,415,639
METHOD FOR THE MANUFACTURE OF TANTALUM AND/OR NIOBIUM POWDER
Gustav Daendliker, Birsfelden, Alex Jacob, Reinach, Basel-Land, and Walter Scheller, Muenchenstein, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,179
Claims priority, application Switzerland, May 25, 1965, 7,279/65
3 Claims. (Cl. 75—.5)

1. A process for the manufacture of tantalum powders and niobium powders suitable for the manufacture of sintered anodes for electrolytic condensers, which comprises reducing a member selected from the group consisting of tantalum chloride, tantalum oxychloride, niobium chloride, niobium oxychloride, tantalum oxide and niobium oxide with a member selected from the group consisting of magnesium metal and calcium metal, mixing the resulting metal powder, after washing out the salt in a manner which is in itself known, with at most the stoichiometric amount of a member selected from the group consisting of carbon and metal carbide required for the formation of CO relative to the oxygen content present, purifying by sintering in vacuo at temperatures of 1600 to 2200° C., hydrogenating the sintered powder

in a manner which is in itself known, grinding it and dehydrogenating it.

3,415,640

PROCESS FOR MAKING DISPERSIONS OF PARTICULATE OXIDES IN METALS

John B. Lambert, Mill Creek Hundred, Del., assignor, by mesne assignments, to Fansteel Metallurgical Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 324,234, Nov. 18, 1963. This application Oct. 28, 1966, Ser. No. 590,216

8 Claims. (Cl. 75—.5)

When uniform dispersions of small-particle-sized refractory metal oxide particles, such as thoria, in certain matrix metals, such as nickel and nickel-chromium alloys, are made by first making a mixture of the refractory oxide particles and oxides of the matrix metals and then reducing the matrix metal oxide to metal at elevated temperature, there is a marked tendency for the refractory oxide particles to grow to a size larger than desired. This growth tendency is limited by spray-drying droplets of an aqueous solution of a compound of the matrix metal, in which there is dispersed a compound of the metal of the refractory oxide, under the following conditions:

(1) The spray droplets are atomized to a number average diameter in microns, X, less than 100 into an atmosphere at a temperature of $(0.075X^2+200)°$ C. to 950° C., and thereafter

(2) The matrix metal compounds in the dried droplets are reduced in a reducing atmosphere, the temperature of which does not exceed 950° C. until the reduction is at least 50% complete.

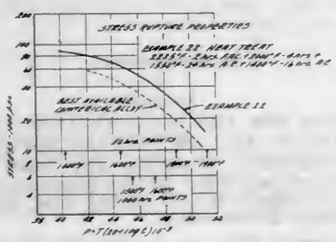
3,415,641

WROUGHT NICKEL BASE ALLOY

Earl W. Ross, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Aug. 24, 1966, Ser. No. 574,618

5 Claims. (Cl. 75—171)



1. An improved wrought nickel base alloy having a stress rupture life of greater than 900 hours at 1600° F. and 35,000 p.s.i. stress and virtually no sigma phase formation during such time, the alloy consisting essentially of, by weight:

0.2–0.3% C
0.005–0.2% B
about 14–16% Co
9–12% Cr
3–4% Mo
4.5–6% Al
3–4% Ti
5–6% W
up to about 0.05% Zr
8–9% Al+Ti
with the balance Ni and incidental impurities.

3,415,642

ADDITIVE FOR PRODUCTION OF SPHEROIDAL GRAPHITE CAST IRON CONSISTING MOSTLY OF CALCIUM-SILICON

Hiroshi Matsumoto, Yono, Japan, assignor to Tokyo Kakin Kogyo Co., Ltd., Tokyo, Japan

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,624
Claims priority, application Japan, Dec. 13, 1965, 40/76,207

2 Claims. (Cl. 75—130)

1. An additive for production of cast iron containing spheroidal graphite, consisting of 20 to 90% by weight of calcium-silicon as a main component, 2 to 60% by weight of at least one sub-component selected from the group consisting of calcium chloride and a mixture of calcium chloride and at least one of chlorides of rare earth elements, and 2 to 40% by weight of at least one auxiliary compound selected from the group consisting of magnesium chloride, barium chloride, oxides of rare earth elements, fluorides of rare earth elements, carbonates of rare earth elements, magnesium fluoride and barium carbonate.

3,415,643

HIGH TEMPERATURE FERROMAGNETIC COBALT-BASE ALLOY

John C. Freche, Fairview Park, Richard L. Ashbrook, Berea, Gary D. Sandrock, Cleveland, and Robert Lewis Dreshfield, Parma Heights, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed May 31, 1966, Ser. No. 554,950

9 Claims. (Cl. 75—170)

1. A cobalt base alloy having a high Curie temperature, high strength and high magnetic induction for low applied fields at elevated temperatures consisting essentially of from 5% to 14% tungsten, from .3% to 1.8% titanium, from 0.1% to 1% zirconium, from 0.3% to 0.7% carbon, up to 10% iron, and the rest essentially cobalt.

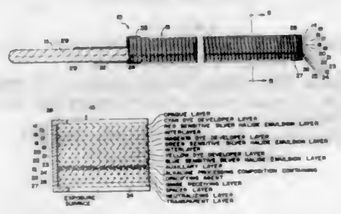
3,415,644

NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,283

60 Claims. (Cl. 96—3)



The present invention relates to photography, particularly, to photographic products specifically adapted for employment in specified photographic diffusion transfer color processes and, more particularly, to photographic products which comprise a composite photosensitive structure which contains a plurality of essential layers including, in sequence, a dimensionally stable opaque layer; one or more silver halide emulsion layers each having associated dye image-providing materials which are soluble and diffusible, in alkali, at a first pH; a polymeric image-receiving layer; a polymeric acid layer containing sufficient acidifying groups to effect reduction of a processing composition from a first pH to a second pH at which the dye image-providing materials are insoluble and nondiffusible; and a dimensionally stable transparent layer, and to specified photographic diffusion transfer processes employing such products. The photosensitive composite structure will include means securing the respective layers in fixed or laminate relationship and may include a rupturable container retaining an alkaline processing composition possessing the first pH and containing an opacifying agent which may reflect incident radiation, in a quantity sufficient to mask dye image-providing materials associated with the silver halide emulsion, upon distribution of the composition intermediate the silver halide emulsions and image-receiving layer during photographic diffusion transfer color processing in accordance with the present invention.

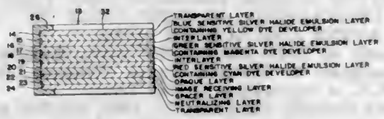
3,415,645

OPAQUE PERMEABLE POLYMERIC LAYER IN PHOTO-SENSITIVE ELEMENT

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,298

60 Claims. (Cl. 96—3)



1. A photographic film unit which is adapted to be processed by passing said unit between a pair of juxtaposed pressure-applying members and which comprises, in combination:

a photosensitive element comprising a composite structure containing, as essential layers, in sequence, a first dimensionally stable transparent layer, a photosensitive silver halide emulsion layer having associated therewith a dye image-forming material which is soluble and diffusible, in alkali, at a first pH, an alkaline solution permeable opaque layer, an alkaline solution permeable polymeric layer dyeable by said dye image-providing material, an alkaline solution permeable polymeric acid layer containing sufficient acidifying groups to effect reduction of a processing solution having said first pH to a second pH at which said dye image-providing material is substantially insoluble and nondiffusible, a second dimensionally stable transparent layer, and means securing said layers in fixed relationship, and

a rupturable container retaining an alkaline processing solution, having said first pH, fixedly positioned and extending transverse a leading edge of said photosensitive element to effect unidirectional discharge of the container's contents between said alkaline solution permeable and dyeable polymeric layer and the photosensitive silver halide emulsion layer next adjacent thereto upon application of compressive force to said container.

3,415,646

NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES

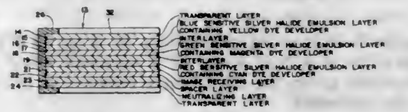
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 16, 1967, Ser. No. 638,817

60 Claims. (Cl. 96—3)

1. A photographic film unit which is adapted to be processed by passing said unit between a pair of juxtaposed pressure-applying members and which comprises, in combination:

a photosensitive element comprising a composite structure containing, as essential layers, in sequence, a first dimensionally stable transparent layer, a photosensitive silver halide emulsion layer having associated therewith a dye image-forming material which is soluble and diffusible, in alkali, at a first pH, an alkaline solution permeable opaque layer, an alkaline solution permeable polymeric layer dyeable by said dye image-providing material, an alkaline solution permeable polymeric acid layer containing sufficient acidifying groups to effect reduction of a processing solution having said first pH to a second pH at which said dye image-providing material is



substantially insoluble and nondiffusible, a second dimensionally stable transparent layer, and means securing said layers in fixed relationship, and

a rupturable container retaining an alkaline processing solution, having said first pH and containing dispersed therein an opacifying agent, in a quantity sufficient to mask said dye image-providing material, fixedly positioned and extending transverse a leading edge of said photosensitive element to effect unidirectional discharge of the container's contents between said alkaline solution permeable and dyeable polymeric layer and the photosensitive silver halide emulsion layer next adjacent thereto upon application of compressive force to said container.

3,415,647

PHOTOGRAPHIC SILVER HALIDE DIFFUSION TRANSFER PROCESS

Edwin B. Wyand and Raife G. Tarkington, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 104,819, Apr. 24, 1961. This application May 17, 1965, Ser. No. 456,496

21 Claims. (Cl. 96—29)

1. A light-insensitive reception element adapted for use in a silver halide diffusion transfer process comprising a support having coated thereon in order, a first layer containing from about 0.5–100 mg. of silver precipitating agent per square foot, superimposed on the first layer an alkali permeable second layer relatively opaque to light, and superimposed over the second layer an alkali permeable third layer containing substantially only enough silver precipitating agent for the formation of an image of good contrast, the said layers containing a hydrophilic colloid binder.

3,415,648

PVA ETCH MASKING PROCESS

Anthony J. Certa, Norristown, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware

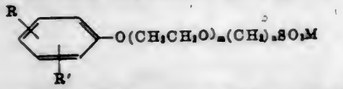
Filed Aug. 7, 1964, Ser. No. 388,200

2 Claims. (Cl. 96—36)

Formation of highly adherent etch mask by coating substrate with photosensitized PVA film, exposing film through mask to actinic radiation, washing film to remove unexposed portions, and re-exposing film, as washed, to actinic radiation to cause film to have good adherence.

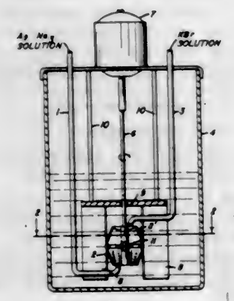
3,415,649
PROCESS FOR THE PRODUCTION OF LIGHT-SENSITIVE MATERIAL CONTAINING COATING AIDS
Fumihiko Nishio, Odawara-shi, and Yoshihide Hayakawa and Hideo Kawano, Minamiashigara-machi, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan
No Drawing. Filed June 22, 1964, Ser. No. 377,102
Claims priority, application Japan, July 1, 1963, 38/34,645
9 Claims. (Cl. 96—94)

By incorporating in a gelation-containing layer, e.g. a protective coating layer, for photographic light-sensitive elements a compound represented by the formula



wherein R is H or an alkyl group, R' is an alkyl group, *m* is 0–20, *n* is 3 or 4 and M is an alkali metal or an ammonium group, the formation of repellencies or comets can be prevented.

3,415,650
METHOD OF MAKING FINE, UNIFORM SILVER HALIDE GRAINS
Gordon F. Frame and Benjamin A. Johnson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 25, 1964, Ser. No. 413,807
18 Claims. (Cl. 96—94)



In making silver halide emulsions, the initial silver halide precipitation is carried out in a reaction zone beneath the surface of peptizer solution introducing a soluble silver and halide salt into a mixing chamber through which peptizing solution circulates. The silver halide reactants form silver halide precipitaties in the reaction chamber which are expelled by centrifugal force.

3,415,651
LIGHT-SENSITIVE MATERIAL WITH INCORPORATED DEVELOPER
Anita von Konig, Helmut Mader, and Edith Weyde, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 20, 1965, Ser. No. 449,633
Claims priority, application Germany, May 13, 1964, A 46,041
13 Claims. (Cl. 96—95)

Developers suitable for incorporation in light-sensitive silver halide emulsions are ortho- or para-aminophenol derivatives or ortho- or para-naphthol derivatives having a 2-carbon chain bridged between the amine groups of two such compounds and having a phosphonic acid group or an arylsulfonyl group substituted on each carbon of the branch. These developers can be either in the emulsion layer or in a separate layer contiguous to the emulsion layer and they provide a product having improved storage stability as well as less fog and high sensitivity.

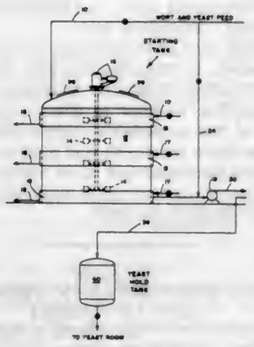
3,415,652
SILVER HALIDE COLOR PHOTOGRAPHIC ELEMENTS UTILIZING ALPHA-SULFONYLOXY SUBSTITUTED TWO-EQUIVALENT YELLOW-FORMING COUPLERS
Ralph F. Porter, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,822
11 Claims. (Cl. 96—100)

Alpha-sulfonyloxy substituted 2-equivalent yellow dye-forming couplers are used to advantage for forming yellow dye images in color photography, particularly because these couplers are characterized by not producing color fog and having very good coupling reactivity.

3,415,653
SILVER HALIDE PHOTOGRAPHIC EMULSIONS CONTAINING A COPOLYMER OF VINYLAMINE AND ACRYLIC ACID
Donald A. Smith and Ernest J. Perry, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,145
2 Claims. (Cl. 96—114)

In preparation of photographic silver halide emulsions, silver halide is emulsified by reacting soluble silver salt and soluble halide salt to form silver halide in aqueous medium with a peptizer in solution. The peptizer is a copolymer comprising vinylamine units and acrylic acid units in mole ratio in the range from 1.0:1.0 to 1.8:1.0. In some embodiments the copolymer can further comprise up to 5 molar parts ethyl acrylate.

3,415,654
DEEP VAT FERMENTATION OF BEER
Robert E. Zinn, Lexington, Mass., assignor, by mesne assignments, to Falstaff Brewing Corporation, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 107,356, May 3, 1961. This application June 10, 1965, Ser. No. 462,882
8 Claims. (Cl. 99—31)

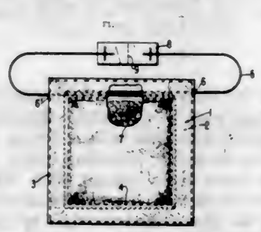


A beer-making process wherein a yeast and wort mixture is fermented as a liquid body having a depth in excess of 20 feet, the reciprocal ratio of the open surface area to volume of the body being at least 20.

3,415,655
MILK PRODUCT CONTAINING FREE AMINO ACIDS AND METHOD OF PREPARING THE SAME
Tetsuo Hino, Tokyo, Koichi Hayashi, Kanagawa-ken, and Noriko Iizuka, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Filed Oct. 19, 1965, Ser. No. 498,137
6 Claims. (Cl. 99—54)

1. A milk product selected from the group of fluid cow's milk, liquid cow's milk concentrate, and dry cow's milk containing at least one free indispensible amino acid selected from a first group consisting of tryptophan and methionine in an amount substantially corresponding to the deficiency of said protein in said amino acid as compared to human milk, monosodium glutamate, and at least one free amino acid selected from a second group consisting of glycine, alanine, serine, and threonine, said monosodium glutamate and said amino acid of the second group being each present in said milk product in an amount of 5 to 30 percent of the amount of said indispensible amino acid.

3,415,656
COMPRESSIBLE INFUSION BAG
Philip L. Lundgren, Box 124, Saugatuck Station, Westport, Conn. 06880
Filed Sept. 9, 1965, Ser. No. 486,116
3 Claims. (Cl. 99—77.1)



An infusion beverage bag comprising a body of permeable material, a channel about the periphery of said body which forms a central chamber for the material to be steeped, an infusion material in said central chamber and a single string means in said channel encircling the periphery of said body whereby the periphery is constricted and the surface area of the said bag is reduced simultaneously upon pulling the string ends.

3,415,657
YEAST REMOVAL FROM VESSELS BY FLUIDITY INCREASE
Cavit Akin, St. Louis, Mo., assignor to Falstaff Brewing Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 473,211, July 19, 1965. This application Aug. 3, 1967, Ser. No. 658,063
10 Claims. (Cl. 99—96)

Removal of yeast from a vessel or fermenter by increasing the fluidity of the yeast slurry with a solution of a suitable acid or base character such that the viscosity of the slurry is conditioned to allow easy flow, and for this purpose phosphoric acid accomplishes the desired result and also helps disinfection and nutrition of the yeast.

3,415,658
STORAGE-STABLE COOKING AND SALAD OILS HAVING ANTISPATTERING PROPERTIES
Robert G. Cunningham, Shaker Heights, Robert D. Dobson, Greenhills, Louis H. Going, Deerfield Township, Warren County, and Edward R. Purves, Forest Park, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,450
6 Claims. (Cl. 99—163)

Storage-stable, antispattering cooking and salad oil composition containing as an active antispattering agent from about 0.1% to about 1.0%, by weight of the total composition of acid-treated unsaturated fatty acid (having about 14 to 18 carbon atoms) monoester of polyoxyethylene sorbitan containing an average of about 20 oxyethylene units per molecule; and from about 20% to about 100%, by weight of said antispattering agent, of unsaturated fatty acid (having about 14 to 18 carbon atoms) polyester of polyglycerol having an average of from about 4 to about 6 glycerol units, the average ratio of free hydroxyl groups to fatty acid ester groups being from about .16 to not more than 1.0.

3,415,659
COOKING AND SALAD OIL HAVING ANTISPATTERING PROPERTIES
Edward R. Purves, Forest Park, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,448
5 Claims. (Cl. 99—163)

Storage-stable, antispattering cooking and salad oil composition containing from about 0.125% to about 0.3% by weight of the total composition of acid treated unsaturated fatty acid (having about 14 to 18 carbon atoms) monoester of polyoxyethylene sorbitan containing an average of about 20 oxyethylene units per molecule; from about 0.05% to about 0.20% by weight of the total composition of unsaturated fatty acid polyester (having about 14 to 18 carbon atoms) of polyglycerol having an average of from about 4 to about 6 glycerol units, the average ratio of free hydroxyl groups to fatty acid ester groups being from greater than 1.0 to about 2.5.

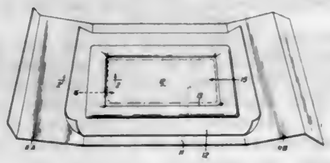
3,415,660
CLEAR COOKING AND SALAD OILS HAVING ANTISPATTERING PROPERTIES
Edward R. Purves, Forest Park, Louis H. Going, Deerfield Township, Warren County, and Robert D. Dobson, Greenhills, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,419
6 Claims. (Cl. 99—163)

Clear cooking and salad oils having anti-spattering properties by adding about 0.1% to about 1.0% by weight of an acid treated unsaturated fatty acid ester of polyoxyethylene sorbitan containing an average of about 20 oxyethylene units per molecule, said fatty acid having from about 14 to about 18 carbon atoms.

3,415,661
COATING COMPOSITION AND HEAT-SEALABLE COATED POLYSTYRENE ARTICLE
Thomas F. Sincock, Simsbury, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,429
6 Claims. (Cl. 99—171)

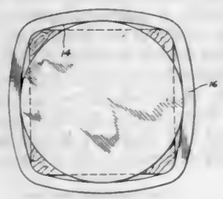
A coating composition for rendering polystyrene heat sealable, antifogging and antistatic comprising a mixture of ethoxylated sorbitan monostearate and ethoxylated sorbitan tristearate.

3,415,662
LAMINATE MATERIAL
Edward B. Koger and Dorothy G. Koger, both of 8040 Bobbyboyar Ave., Canoga Park, Calif. 91304
Filed Apr. 6, 1965, Ser. No. 445,930
16 Claims. (Cl. 99—171)



A package for cooking food therein containing food comprising a metal foil outer lamina, a tissue inner lamina and an absorbent frame on said tissue and surrounding said food whereby said tissue absorbs and carries liquids to said absorbent which are secreted during said cooking process.

3,415,663
PACKAGE FOR SQUARE AND ROUND SLICED PRODUCTS
Robert M. Raschke, 8326 S. Kolin, Chicago, Ill. 60652, and John C. Field, 187 Lester Road, Park Forest, Ill. 60466
Filed Feb. 27, 1967, Ser. No. 618,866
5 Claims. (Cl. 99—174)

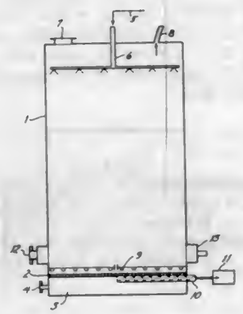


This invention relates to a package for holding stacks of square or round sliced products such as luncheon meat and the like. The package comprises a base upon which the stack rests and a wall joined to the base and generally perpendicular thereto. The wall is adapted to abut against the four corners of the square product or be in close spaced relationship thereto, and curve outwardly between each pair of corners to accommodate and abut against the circular product or be in close spaced relationship thereto at a portion intermediate of each pair of corners. A cover is provided on top of the wall for opening and closing the package.

3,415,664
METHOD OF PREPARING A FROZEN FOOD PACKAGE
Frederick Dorsey Montgomery, Chicago, Ill., assignor, by mesne assignments, to Montgomery, Frederick Dorsey, also known as F. Dorsey Montgomery, Chicago, Ill.
No Drawing. Filed July 8, 1964, Ser. No. 381,245
2 Claims. (Cl. 99—192)

1. The method of preparing a frozen food package which comprises the steps of
cooking the desired food pieces in the presence of water,
thereafter removing substantially all the free water present with the cooked food pieces,
collecting the cooked food pieces together in a container to form a mass of food characterized by the presence of voids in the food mass,
adding dried additives to the mass of mixed food,
sealing the container,
and freezing the food within the container while the voids remain.

3,415,665
PROCESS OF DEHYDRATING FOOD AND HEAT-SENSITIVE PRODUCTS
Peter Hussmann, Florence, Italy, assignor, by mesne assignments, to Uta-Patentverwaltungsgesellschaft m.b.H., Munich, Germany
Continuation-in-part of applications Ser. No. 735,299, May 14, 1958; Ser. No. 785,795, Jan. 9, 1959; Ser. No. 87,808, Feb. 2, 1961. This application Dec. 6, 1965, Ser. No. 511,650
19 Claims. (Cl. 99—199)



A process for dehydrating a heat-sensitive food material in a drying zone by contacting droplets of the material to be dehydrated first with a drying gas which has a high relative humidity, retarding initial evaporation of the droplets upon their contact with the gas, thereby maintaining them in their unexploded condition, gradually dehydrating the unexploded droplets by contacting them with an initially dehumidified, drying gas of moderate temperature while feeding the gas upwardly in the drying zone, and separating the dehydrated product; a powdery heat sensitive product, such as a food which is typified by being porous through crevices open to the exterior, wrinkled and shriveled, the product being free of water holes throughout its particle shell and throughout its body and being free of a outer, surrounding crust.

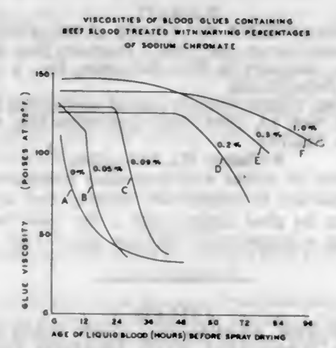
3,415,666
ELECTROLESS COPPER PLATING BATH
Satoshi Nagai, Tokyo, Koji Furumoto, Yokohama, Hisae Moriya, Urawa-shi, and Sakae Akimoto, Kawasaki-shi, Japan, assignors to Asahi Dow Limited, Tokyo, Japan, a corporation of Japan
No Drawing. Filed June 16, 1966, Ser. No. 557,893
Claims priority, application Japan, June 19, 1965, 40/36,245
2 Claims. (Cl. 106—1)

1. An electroless copper plating bath comprising 0.000001–1.00000 part by weight of sodium thiosulfate, 0.000080–2.400000 parts by weight of lower alcohol, in 100 parts by weight of an electroless copper plating solution consisting of 3.5–70 parts by weight of copper sulfate, 20–200 parts by weight of Formalin, 17–340 parts by weight of Rochelle salt, 5–100 parts by weight of sodium hydroxide, 8–160 parts by weight of sodium carbonate and 1000 parts by volume of water.

3,415,667
LINING MATERIAL FOR OXYGEN BLOWING BASIC STEEL MAKING VESSELS
John L. Cummings, Sr., deceased, late of Clearwater, Fla., by Marjorie G. Cummings, executrix, Clearwater, Fla.
No Drawing. Continuation-in-part of application Ser. No. 528,048, Feb. 17, 1966. This application Jan. 13, 1967, Ser. No. 609,261
5 Claims. (Cl. 106—58)

A refractory composition for use as a lining material in an oxygen blowing basic steel making vessel and a process for making the refractory composition in which the coarse refractory aggregates are wetted with a carbonaceous solvent, admixed with a mixture of powdered pitch and fine refractory aggregates and molded into a pressed shape. During admixing the solvent liquifies the powdered pitch so that the liquified pitch encapsulates the coarse aggregates. The pressed shape is then heated to an elevated temperature to evaporate the solvent and solidify the pitch and form a strong pitch bond for the refractory aggregates. The solvent is a carbonaceous liquid that readily liquifies the powdered pitch and has the property of remaining fluid at about room temperature and evaporating at an elevated temperature below the carbonization temperature of the pitch. The preferred solvent is a chlorinated aliphatic hydrocarbon such as trichloroethylene.

3,415,668
MAKING CHROMATED BLOOD PRODUCTS FOR USE IN ALKALINE BLOOD GLUES OF HIGH VISCOSITY
Dale J. Hohbach and Ronnie D. Davis, Hillsboro, Oreg., assignors to Pacific Adhesives Company, Inc., a corporation of Oregon
Continuation of application Ser. No. 409,815, Nov. 9, 1964. This application Jan. 22, 1968, Ser. No. 699,742
13 Claims. (Cl. 106—146)

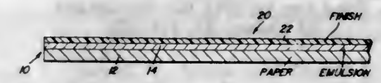


A chromated blood product for use in the manufacture of alkaline blood glues of stable viscosity is made by declotting freshly drawn animal blood. Within 12 hours from drawing, the declotted blood is reacted with from 0.01–30% by weight of a water-soluble, inorganic hexavalent chromium compound. The reaction is carried out at a temperature of between the freezing temperature of the mixture and the coagulating temperature of the blood and at a pH between the acid coagulation pH and the alkaline gelling pH of the blood. When the chromated blood product thereafter is employed in making a blood glue, it imparts to the glue a viscosity substantially greater than the inherent viscosity of a glue, made from unchromated blood of the same type and source, and of the same age after drawing.

3,415,669
BITUMEN COMPOSITIONS AS MOLD COATINGS
Edward G. Elste, Jr., Lutherville, Md., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 478,982, Aug. 11, 1965. This application July 28, 1967, Ser. No. 656,692
5 Claims. (Cl. 117—5.1)

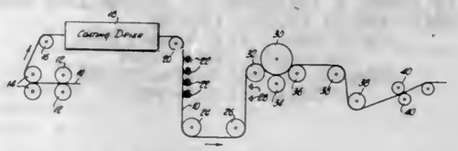
Bitumen compositions having high total asphaltene-aromatic components to paraffinic component ratios with high autoignition temperatures for ingot mold coatings.

3,415,670
METHOD AND COMPOSITION FOR SURFACE FINISHING PHOTOGRAPHS OR THE LIKE
Charles D. McDonald, P.O. Box 22224, McDonald Photo Products Inc., Dallas, Tex. 75222
Filed Apr. 1, 1965, Ser. No. 444,549
5 Claims. (Cl. 117—10)



A composition comprising a synthetic resinous film-former including nitrocellulose, alkyd resin, plasticizer, silica, an ultraviolet screening agent, alcohol, ester ketones, acidic stabilizers in a petroleum solvent vehicle. The composition is applied to the surface of photographs or the like, and prior to curing thereof, is normally manipulated in any suitable manner to texture the film-former.

3,415,671
PROCESS AND APPARATUS FOR PRODUCING HIGH GLOSS COATED PAPER
John C. Rice, Tenafly, N.J., assignor to Lowe Paper Company, Ridgefield, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 403,242, Oct. 12, 1964. This application Sept. 29, 1965, Ser. No. 491,138
11 Claims. (Cl. 117—64)



Paper products are produced having a high gloss and smooth finish by the use of highly pigmented coating compositions and by subjecting a paper web in coated and dried stage first to a polishing operation, thereafter to a pre-heating and, finally, while the coated web is in a pre-heated state, to a molding.

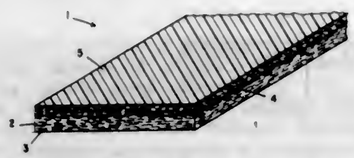
3,415,672
METHOD OF CO-DEPOSITING TITANIUM AND ALUMINUM ON SURFACES OF NICKEL, IRON AND COBALT
Moses A. Levinstein and John W. Grenier, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Nov. 12, 1964, Ser. No. 410,645
9 Claims. (Cl. 117—71)

The method for treating a metallic surface of a material based on iron, nickel or cobalt involves co-depositing Ti and Al in a non-oxidizing atmosphere onto such surface from a binary Ti-Al alloy in the vapor state through such a halide salt activator as NaF, KF and NH_4Cl.

3,415,673
COATED GLASS ARTICLE AND PROCESS FOR MAKING SAME
Gerald E. Clock, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich.
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,633
6 Claims. (Cl. 117—72)

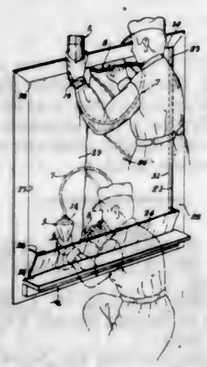
Glass containers such as bottles are made resistant to breakage by coating the exterior surface thereof with a thin, highly adheasive layer of plastic consisting essentially of a copolymer comprising, by weight, a major portion of ethylene and up to about 20 percent of an α,β-ethylenically unsaturated carboxylic acid such as acrylic acid.

3,415,674
IMPREGNATION OF ASBESTOS-CEMENT PRODUCTS WITH THERMOSETTING FORMALDEHYDE RESIN
Walter E. Voisinet, Colden, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 449,038
15 Claims. (Cl. 117—72)



A surface treatment of asbestos-cement products including application and impregnation of an aqueous solution of a thermosetting formaldehyde resin, curing the impregnated resin, stabilizing a surface layer of the product without destroying the porosity, and applying thereover a finish decorative coating which is of improved permanence due to the stability and the porosity of the product surface layer.

3,415,675
METHOD AND MEANS FOR APPLYING LIQUID TO FORM A COATING ON GLASS AND FOR RECOVERING EXCESS LIQUID
Alan A. Allen, 1123 W. Century Blvd., Los Angeles, Calif. 90044
Filed Jan. 21, 1964, Ser. No. 339,125
3 Claims. (Cl. 117—102)



1. A window-coating method that consists in
(a) masking around the sides, top and lower edges of the window,
(b) forming a temporary trough along the lower window edge,
(c) applying liquid coating material to the surface of window by a gravitational flow from a nozzle on the end of a hand-carried container of such material that is vented at the opposite end and is held inverted with the vented end of the container up, the application being begun at the upper edge of the window,
(d) collecting the excess of said flow in said trough as the same drains down along the surface of the window, and
(e) after coating the entire surface of the window, closing the vent in the container and, after re-inverting the same so the nozzle end is up, alternately squeezing and releasing the container to suck the collected excess from the trough directly from the trough back into the container from which the liquid had been gravitationally removed.

3,415,676
ALUMINUM CEMENTATION PROCESS
Sunao Nishi and Shojiro Ikeda, Nagasaki-shi, Japan, assignors to Shinto Kogyo Kabushiki Kaisha, Nagasaki-shi, Nagasaki-ken, Japan, a joint-stock company
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,624
Claims priority, application Japan, Sept. 14, 1964, 39/52,215
2 Claims. (Cl. 117—107.2)

When diffusing Al into the outer layer of a metal article (cementation), the following steps have been found to insure economic utilization of Al. An open or non-sealed vessel is filled with a penetrant which consists of a mixture of powder selected from a group consisting of Fe powder or Fe-Al alloy powder containing a lower concentration of Al than the total penetrant, as well as Al powder having a particle size greater than 300 mesh and a sufficient quantity of cementation accelerator. A metal article is then embedded in the penetrant and the vessel is heated to approximately 1000° C. to cause diffusion of the Al into the metal article.

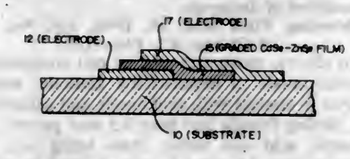
3,415,677
TREATMENT OF GLASS SURFACES
Frank Moser, Sarver, and John J. Everhart, New Kensington, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 495,717, Oct. 13, 1965. This application Dec. 9, 1965, Ser. No. 512,794
6 Claims. (Cl. 117—124)

A process to render soda-lime-silica transparent glass surface resistant to iridescence, staining and scumming by treating the glass surface with a zinc acetylacetonate solution at a temperature between about 100° F. and 800° F.

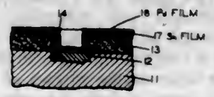
3,415,678
PROCESS FOR PRODUCING THIN FILM RECTIFYING JUNCTIONS WITH GRADED CdSe-ZnSe FILM
William A. Gutierrez, Alexandria, and Herbert L. Wilson, Arlington, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed May 26, 1966, Ser. No. 553,187
5 Claims. (Cl. 117—200)

1. Process for production of thin film rectifying junctions, comprising vacuum depositing on a metal electrode supported by a substrate a graded CdSe-ZnSe film of desired thickness in the range from approximately 1000 A. to 30,000 A., while maintaining the temperature of said substrate in the range from 200° C. to 250° C., said vacuum depositing being carried out by evaporating a CdSe-ZnSe mixture from a single source at a pressure less than 10^{-4} mm. Hg and at an increasing source temperature from the sublimation temperature of CdSe at said pressure to a value sufficient to vaporize the ZnSe,

said increase in source temperature performed at a rate to produce a controlled gradation of said film, and vacuum depositing another metal electrode on the surface of the graded film remote from the first-mentioned metal electrode.

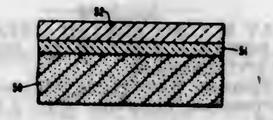


3,415,679
METALLIZATION OF SELECTED REGIONS OF SURFACES AND PRODUCTS SO FORMED
John T. Chuss, Hokendauqua, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 9, 1965, Ser. No. 470,843
8 Claims. (Cl. 117—212)



A selected region of a silicon slice is coated with a layer of nickel by (1) forming a layer of silicon dioxide on all portions of the slice except the selected region, (2) forming on the entire slice a porous film of tin-palladium having such integrity so as to permit nickel plating thereon and such porosity so as to permit solvent penetration therethrough, (3) removing the tin-palladium overlying the silicon dioxide by applying through the film a solvent that will dissolve the silicon dioxide but not the silicon or tin-palladium, and (4) plating nickel on the remaining tin-palladium film.

3,415,680
OBJECTS PROVIDED WITH PROTECTIVE COVERINGS
John A. Perri and Jacob Riseman, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application Sept. 29, 1961, Ser. No. 141,669, now Patent No. 3,247,428. Divided and this application Dec. 20, 1965, Ser. No. 553,583
9 Claims. (Cl. 117—212)

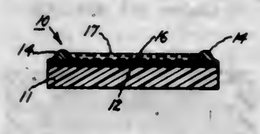


The specification discloses a semiconductor having a protective glass coating over a metal oxide first coating.

3,415,681
THERMOPLASTIC FILM RECORDING MEDIA
James F. Burgess, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,339
3 Claims. (Cl. 117—217)

This application discloses a deformation type thermoplastic recording medium in which a surface layer of material in excess of 10 A. in thickness is applied to the surface of the medium for the purpose of improving the readout characteristics of a recording made on the material. The material is vapor-deposited in the preferred form of the invention, in an agglomerated or islandic structure and increases the voltage of the second crossover of the secondary emission characteristic or, in the case of metal coatings, provides a specular reflective surface for reflective optical reproduction on the stored information. The materials include metals and inorganic insulators.

3,415,682
TRANSPORT STRUCTURE FOR DEFORMABLE MEDIUM IN A LIQUID LIGHT VALVE PROJECTION APPARATUS
George L. Gaines, Jr., Scotia, and Carlyle S. Herrick, Alplaus, N.Y., and Robert P. Anderson, Dalton, Mass., assignors to General Electric Company, a corporation of New York
Filed May 17, 1965, Ser. No. 456,088
4 Claims. (Cl. 117—218)



An improved structure for transporting a transparent deformable liquid medium past the scanning electron beam in a liquid light valve projection apparatus and a process for its preparation is described. A layer of thermoplastic polymeric solid having a surface energy greater than about 24 dynes/cm. is interposed between a transparent electrically conducting coating and a coating of the deformable liquid medium, the combination of electrically conducting coating, polymeric solid layer and liquid deformable medium being supported and carried on a transparent substrate. A tape construction and a method of preparing such a tape is described as exemplary of the transport structure of this invention.

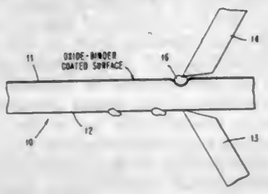
3,415,683
CORONA DISCHARGE COATING PROCESSES
John A. Coffman, Ballston Spa, and William R. Browne, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Sept. 23, 1964, Ser. No. 398,798
22 Claims. (Cl. 117—230)

This invention relates to the discovery that organic materials in the vapor form may be deposited upon substrates such as bare metal surfaces or paper-like materials in a corona reaction zone as adherent organic coatings resembling polymer films formed by conventional chemical techniques. These organic materials include vapors not generally polymerizable by conventional chemical techniques such as methane, benzene and toluene, for example. Such substrates as the interior surface of metal cans or the outer surface of metal rod-like bodies or wires, kraft paper and asbestos-paper are specifically disclosed.

3,415,684
METHOD OF PRECONDITIONING DIGITAL MAGNETIC TAPE

Carl Peter Hayunga, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 7, 1966, Ser. No. 519,251
8 Claims. (Cl. 134—15)

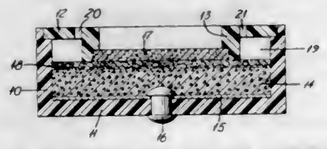


1. A method of preconditioning magnetic tape prior to use on a digital tape drive, including the steps of:
heating a roll of said tape to a temperature within the range of 90° to 120° F. until a uniform temperature is established within the roll,
cooling the roll to room temperature,
and scraping each surface of said tape.

3,415,685
GAS-DEPOLARIZABLE GALVANIC CELL

Robert E. Hansen, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed May 19, 1964, Ser. No. 368,665
7 Claims. (Cl. 136—83)



A gas-depolarizable galvanic cell comprising a casing having a top end provided with a hollow stem portion within which is situated a gas-depolarizable carbon cathode in traverse position thereto, an anode located in the lower portion of the cell and a separator containing liquid electrolyte interposed between the anode and cathode and contacting the lower end of the hollow stem portions so as to define an expansion space surrounding the hollow stem portions and having venting means open to the atmosphere. In the preferred version of the cell, the carbon cathode comprises at least two zones, a first zone extending inwardly from one surface and being electrochemically active and permeable to liquid electrolyte, and a second zone adjacent to the first zone and being repellent to liquid electrolyte and gas-permeable, the first zone being in intimate contact with the separator of the cell.

3,415,686
FUEL CELL ELECTROLYTE COMPRISING AN ALKALI METAL TUNGSTATE

Joseph A. Shropshire, Westfield, and Barry L. Tarmy, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,621
1 Claim. (Cl. 136—86)

1. In a fuel cell the improvement in combination therewith comprising an electrolyte of about 5 to 50 wt. percent sulfuric acid saturated with an alkali metal tungstate and an anode comprising a platinum support having thereon a layer of a member selected from the group consisting of sodium perrhenate, potassium perrhenate, rhenium trichloride, and rhenium heptoxide.

3,415,687
ELECTRIC CURRENT PRODUCING CELL

George J. Methlie II, Ambler, Pa., assignor, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,209
9 Claims. (Cl. 136—100)

1. An electric current-producing cell comprising a lithium metal anode, a depolarizing cathode, and, as the electrolyte in contact with said anode and cathode, methyl acetate having therein less than 0.5 mol percent of methanol, acetic acid and water, there being less than 500 parts per million of water in said electrolyte, and having therein anions selected from the group consisting of MX_4^-, $MX_6^=$ and $M'F_6^-$ where M is an element selected from the group consisting of boron, aluminum and indium, where M' is an element selected from the group consisting of phosphorous, antimony and arsenic, and where X is halogen.

3,415,688
ALUMINUM CELL

Jean Foucry, Montlhery, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,826
Claims priority, application France, Apr. 28, 1965, 14,995; June 11, 1965, 20,559
10 Claims. (Cl. 136—100)

An electrochemical cell comprising an aluminum anode, a cathode and an aqueous acidic electrolyte which contains therein a complexing agent to inhibit the formation of an oxide layer on the surface of the anode. Suitable complexing agents include the salts of EDTA, salts of ethanolamine, and the salts formed by neutralizing fluoboric acid or hydrofluoric acid with an organic base, for example, an amine. Preferably, the electrolyte also contains ammonium chloride and/or mercuric chloride.

3,415,689
FLUOROCARBON BONDED SPINEL OXYGEN ELECTRODE

William N. Carson, Jr., Schenectady, and Randall N. King, Johnstown, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 149,235, Nov. 1, 1961. This application Feb. 11, 1966, Ser. No. 526,687
17 Claims. (Cl. 136—120)

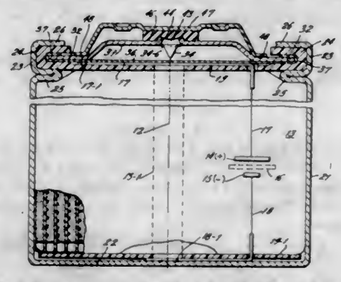
1. An oxygen electrode comprised of an electrocatalytic, conductive composition consisting essentially of
discrete particles of an inert conductive solid,
discrete particles of a spinel, and
a non-wettable, linear fluorocarbon thermoplastic polymer binder,
said discrete particles of said inert conductive solid, said discrete particles of said spinel, and said polymer binder being uniformly distributed throughout said composition.

3,415,690
NORMALLY SEALED VENTED METAL ENCASED RECHARGEABLE CELL WITH EXCESS PRESSURE VENT RELEASE

Samuel L. Richman, White Plains, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 476,063, July 30, 1965. This application June 28, 1967, Ser. No. 657,456
8 Claims. (Cl. 136—178)

A casing wall of a sealed metallic casing which encloses a rechargeable battery cell has a vent opening nor-



mally sealed by a compressed valve body set to release internal gases of a predetermined excess pressure.

3,415,691
METHOD OF PROTECTING METAL SURFACES DURING HEAT TREATMENT

Ramesh Vyas, Birmingham, England, assignor to Foseco International Limited, Birmingham, England

No Drawing. Filed Nov. 3, 1964, Ser. No. 408,672
Claims priority, application Great Britain, Nov. 7, 1963, 44,025/63
15 Claims. (Cl. 148—6.11)

A method of treating metal surfaces to protect the surfaces against scale formation during heat treatment such as annealing including applying to the surface a composition of a vitreous material such as powdered glass, a refactory filler such as silica and ferrosilicon.

3,415,692
METHOD OF PASSIVATING METAL SURFACES

Joseph A. Armentano, Manchester, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,457
1 Claim. (Cl. 148—6.14)

The water and steam containing portions of a steam generator are cleaned and passivated by cleaning with an acid cleaning solution followed by neutralization and then filling the portions with a passivating solution containing 25–1000 p.p.m. hydrogen peroxide or in excess of 300 p.p.m. hydrozine at a pH in excess of 7.0. The passivating solution is drained from the portions and the metal surfaces exposed to the atmosphere.

3,415,693
PROCESS FOR SEPARATING WORKPIECES

Karl Gollwitz, Sprendlingen-Hirschsprung, and Horst K. Lotz, Frankfurt am Main, Germany, assignors to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,628
5 Claims. (Cl. 148—9)

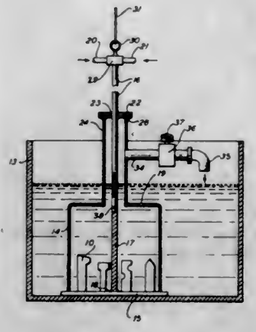
A process for cutting a metal workpiece partially cutting the workpiece by a plasma ray, preferably inclined at a 20–30 angle with the workpiece, to a predetermined depth and then cutting the remaining thickness by an acetylene cutting torch flame.

3,415,694
METHOD OF AND APPARATUS FOR TREATING PARTS

William E. Engelhard, Apalachin, N.Y., assignor to Owego Heat Treat, Inc., Owego, N.Y., a corporation of New York

Filed Feb. 2, 1966, Ser. No. 524,590
6 Claims. (Cl. 148—13)

This disclosure describes a method and apparatus for treating metal parts. The parts are mounted on a platform and enclosed by a heat shield after being heated to an initial temperature. The parts, the platform and the shield are lowered into an oil bath. As they are lowered, heat from the parts causes the oil to bubble and emit gases that are entrapped by the heat shield. The entrapped gases hold the heat shield at the oil line as the platform and parts are lowered into the oil bath. A pipe containing



a valve is connected to the heat shield; the pipe has a downwardly projecting end. When the valve is opened, the gases in the heat shield escape and are projected onto the surface of the oil bath. As the gases escape, the shield lowers to again cover the parts. Thereafter, the parts, the platform and the shield are removed from the oil bath. Oil contained in the shield around the parts escapes through apertures in the bottom of the shield.

3,415,695
PROCESS FOR PRODUCING IRON-RHODIUM ALLOYS HAVING IMPROVED MAGNETIC TRANSITION PROPERTIES

James S. Kouvel, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 29, 1966, Ser. No. 546,287
4 Claims. (Cl. 148—101)

1. In the process of homogenizing by heat treatment, iron-rhodium base alloy bodies containing a CsCl type ordered crystal structure and exhibiting an antiferromagnetic-ferromagnetic transition, comprising the steps of heating said bodies at temperatures above about 800° C. for long periods of time and then slowly cooling said bodies to room temperature, the improvement which consists of rapidly quenching said bodies from a temperature no lower than about 800° C. to about room temperature at the termination of said heating step in order to decrease the temperature range over which antiferromagnetic-ferromagnetic transition occurs.

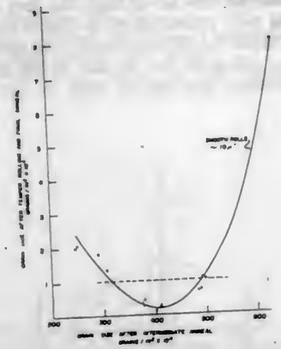
3,415,696
PROCESS OF PRODUCING SILICON STEEL LAMINATIONS HAVING A VERY LARGE GRAIN SIZE AFTER FINAL ANNEAL

Joseph P. Gimigliano, Pittsburgh, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 16, 1965, Ser. No. 479,750
2 Claims. (Cl. 148—110)

Non-oriented silicon-steel laminations of improved low hysteresis loss are produced by using a heat treatment that produces, in strip at final gage except for temper rolling, a grain size of $320–490 \times 10^4$ grains per square inch, and then temper rolling to final gage by using rolls with a smoothness of about 10 microinches surface rough-

ness. The steel is then annealed to develop a grain size of 0.45–1.0×10⁴ grains per square inch. Specific parameters



of temperature and time for obtaining the above results are disclosed and claimed.

3,415,697

METHOD AND COMPOSITION FOR EXOTHERMIC FLUXLESS BRAZING OF ALUMINUM AND ALUMINUM BASE ALLOYS

Nikolaja Bredzs and William Rostoker, Chicago, Ill., assignors, by mesne assignments, to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,202
21 Claims. (Cl. 149—109)

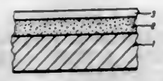
Fluxless brazing of aluminum and aluminum alloys employing an unreacted mixture of a particulate aluminum alloy (Al-X), such as an aluminum-magnesium alloy, and a particulate component (Al-Y) or Y', wherein X and Y or X and Y' are elements capable of reacting exothermically to form a high-melting intermetallic compound X_nY_m or $X_nY'_m$, where n and m are whole numbers, when the mixture is heated to the molten state. The mixture is heated in contact with the aluminum surfaces to be joined by brazing to melt the mixture and produce an exothermic reaction, permitting the filler metal thus formed to solidify to form a brazed joint. The component (Al-Y) may be an alloy of aluminum with silicon, zinc, or germanium, and component Y' may be a low-melting metal such as bismuth, tin, lead or antimony.

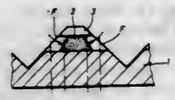
3,415,698

ENGRAVING FOIL WITH A LIGHT-ABSORBING LAYER FOR ELECTRONIC ENGRAVING

Ehrhard Hellwig and Walter Kleist, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Mar. 9, 1965, Ser. No. 438,231
Claims priority, application Germany, Mar. 20, 1964, A 45,550
9 Claims. (Cl. 156—1)





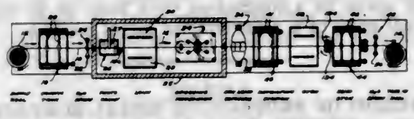
Foil for engraving of correctable half-tone images, has transparent support carrying layer of water-pervious binder in which is uniformly dispersed light-absorbing particles whose light absorption can be reduced by chemical action of aqueous bath. Binder can be plasticized and layer can be protected by covering water-impervious layer. After engraving dots, image is corrected by the chemical action which reduces optical area of dots.

3,415,699

PRODUCTION OF ETCHED PATTERNS IN A CONTINUOUSLY MOVING METAL STRIP

Silas Arthur Brown, Lake Elmo, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota

Filed Mar. 29, 1965, Ser. No. 443,338
7 Claims. (Cl. 156—13)



A strip of metal, such as stainless steel, is unwound from a supply reel and initially thoroughly cleaned then fed through a further processing area where it is coated with a light sensitive material or enamel. From there the strip is fed into a printing station where a predetermined pattern, which will be later etched out of the metal, is printed on the light sensitive coating. This is accomplished by placing a surface containing an opaque substance adjacent the coated metal strip while it is continuously moving and bringing the surface into momentary pressing contact with the coated surface to deposit the opaque substance on selected areas of the coating. The printed metal strip is then passed through an exposure chamber and a developing area where the unprotected enamel is hardened and the opaque substance with the underlying unhardened enamel is removed. Next the strip continues its travel into a etching chamber where the unprotected areas of the metal strip are chemically etched or milled. In this fashion the pattern to be etched out of the metal strip can be printed without the need for even momentarily interrupting the continuous flow of the metal strip. In the case of etching the metal strip through from both sides, the patterns are printed in register on opposite sides of the metal strip in the same fashion.

3,415,700

METHOD OF MAKING CONVEYOR BELT

Earle F. Webster, Riverton, N.J., assignor to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 18, 1963, Ser. No. 259,459
3 Claims. (Cl. 156—164)

The invention comprehends the production of conveyor belting material by subjecting synthetic fiber fabric such as heavy woven nylon cloth to severe longitudinal stress while heating the fabric to elevated stress-relieving temperature, maintaining it under stress while cooling and then incorporating it in a conveyor belt by application of elastomeric material, to the fabric surfaces and heatcuring it, plies of fabric made of other than synthetic fibers usually being incorporated in the belt together with the stressed and heat-set synthetic fiber fabric ply or plies.

3,415,701

METHOD FOR GLAZING A METAL FRAME

John Haldane, Midlothian, and Brian Ashworth, Edinburgh, Scotland, assignors to Uniroyal Limited, a corporation of Scotland

No Drawing. Filed Feb. 11, 1965, Ser. No. 431,973
Claims priority, application Great Britain, Apr. 9, 1964, 14,817/64
2 Claims. (Cl. 156—244)

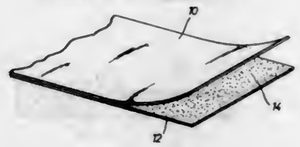
A method of glazing a metal frame comprises extruding a bead of polyurethane mastic between the frame and the marginal face portion of an adjacent glass panel and then curing the mastic. The glass panel is spaced from the frame by the use of temporary spacer members.

3,415,702

METHOD FOR INTRODUCING INTO PACKAGES OF ALL TYPES, BINDING AGENTS FOR UNDESIRED SUBSTANCES WHICH DETRIMENTALLY INFLUENCE THE PACKED MATERIAL

Ulrich Bauder, Stuttgart-Wurttemberg, Germany, assignor to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany

Filed Nov. 20, 1963, Ser. No. 324,920
Claims priority, application Germany, Feb. 4, 1963, H 48,182
8 Claims. (Cl. 156—276)



A method of making packaging material by applying an absorbing agent to an outer layer of thermoplastic material and superimposing an inner layer of thermoplastic material onto the absorbing agent and outer layer with the inner layer being permeable so that undesired substances in the contents of a package may be absorbed without diminishing the filling space of the package.

3,415,703

PROCESS FOR FACE-SEAMING CARPETING

Charles D. Burgess, Macon, Ga., assignor, by mesne assignments, to Giffen-Burgess Corp., a corporation of Delaware

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,333
3 Claims. (Cl. 156—304)

A process for face-seaming segments of carpeting is disclosed. A seaming tape comprising an open-weave tape coated with a hot-melt adhesive is positioned adjacent to and parallel with the backing of the sections to be joined. Thereafter the edges of the segments are upwardly bent and the adhesive of the tape is rendered tacky by the application of heat after which the backing of the segments is pressed into the adhesive before it cools.

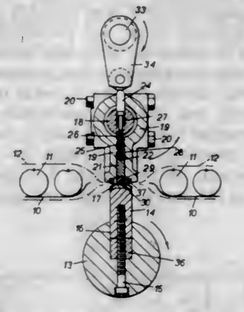
3,415,704

HEAT SEALING OF PLASTICS FILM

Fred Bate, Nelson, England, assignor to Rotostar S.p.A., Ceprano, Frosinone, Italy, a corporation of Italy

Filed Aug. 9, 1965, Ser. No. 478,045
Claims priority, application Great Britain, Aug. 14, 1964, 33,197/64
5 Claims. (Cl. 156—515)

A heat sealing and severing device for plastics film wrapping successive packages has an anvil and a sealing and severing head which rotate in unison so that they register in engagement with the film between each adjacent pair of packages. A radially reciprocable spring biased sealing member on the head carries an electrical resistance heating wire, and a cam rotating in unison with the



sealing and severing head presses the sealing member into engagement with film at the anvil at each revolution.

3,415,705

MACHINES FOR TAPE TRANSFER

Kitty S. Ettre, Stamford, Conn., assignor to Vitta Corporation, Wilton, Conn.

Filed Dec. 30, 1964, Ser. No. 422,135
1 Claim. (Cl. 156—540)



The invention is concerned with an automatic machine for continuously processing the coating of at least one side surface of each of a succession of parts to be coated with coating material carried by a transfer tape of the four-layer type consisting of a first carrier layer, a second transfer coating material containing layer, a third adhesive layer, and a fourth protective layer covering the adhesive layer, and contemplates the provision of means to bring the succession of parts to be coated and the transfer tape from a feeding source in the case of the parts to be coated and from a tape roll in the case of the transfer tape into juxtaposition for pressure bonding the coating material carried by the transfer tape to the surface of the parts, and further contemplates means to remove the protective layer for the four-layer type transfer tape from its covering relation with the adhesive layer simultaneously with the drawing of the tape from the tape roll, whereby as the tape is brought into juxtaposition with the succession of parts to be coated the adhesive layer is exposed and brought into direct contact with the parts. Following such juxtaposition, the parts and the three-layer remainder tape are drawn between a pair of opposed spaced pressure rollers, one in contact with the parts, and the other in contact with the carrier layer of the tape, to thus pressure bond the coating material to the surface of the parts. Following the bonding of the coating layer to the parts by the pressure rollers, means are provided for releasing the carrier layer of the tape from the coated parts in the transport of the coated parts to a coated parts receiving means and of the carrier layer of the tape to tape take-up reel means.

3,415,706

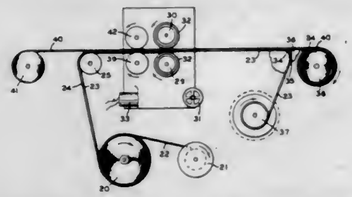
MACHINES FOR TAPE TRANSFER

Kitty S. Ettre, Stamford, Conn., assignor to Vitta Corporation, Wilton, Conn.

Continuation-in-part of application Ser. No. 377,998, June 25, 1964. This application June 16, 1965, Ser. No. 464,524
1 Claim. (Cl. 156—540)

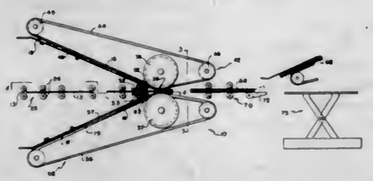
The invention is concerned with an automatic machine for continuously processing the coating of at least one side

surface of a strip of material with coating material carried by a transfer tape of the four-layer type consisting of a first carrier layer, a second transfer coating material containing layer, a third adhesive layer, and a fourth protective layer covering the adhesive layer, and contemplates the provision of means to bring the strip and transfer tape from rolls thereof into juxtaposition for pressure bonding the coating material carried by the transfer tape to the surface of the strip, and further contemplates means to remove the protective layer of the four-layer type transfer tape from its covering relation with the adhesive layer simultaneously with the drawing of the tape from the tape roll, whereby as the tape is brought into juxtaposition with



the strip the adhesive layer is exposed and brought into direct contact with the strip. Following such juxtaposition, the strip and the three-layer remainder tape are drawn between a pair of opposed spaced pressure rollers, one in contact with the strip, and the other in contact with the carrier layer of the tape, to thus pressure bond the coating material to the surface of the strip. Following the bonding of the coating layer to the strip by the pressure rollers, means are provided for releasing the carrier layer of the tape from the coated strip in the transport of the coated strip to strip take-up reel means and of the carrier layer of the tape to tape take-up reel means.

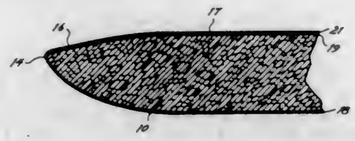
3,415,707
SHEET LAY-UP APPARATUS
Derek Barnes, Vancouver Island, British Columbia, Canada, assignor to MacMillan, Bloedel and Powell River Limited, Vancouver, British Columbia, Canada
Filed Oct. 23, 1965, Ser. No. 503,078
14 Claims. (Cl. 156—557)



Apparatus for laying up and gluing a plurality of sheets to form laminated panels including conveying means for convergingly moving at least three vertically spaced streams of individual sheets into the pressure nip of upper and lower pressure means, and spray means for directing glue into the nip and on to the converging opposing surfaces of the sheets as said sheets move between the pressure means to be pressed together.

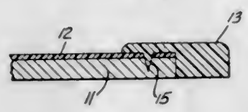
3,415,708
TABLE TOP
Svend B. Rondum, Bradford, Pa., assignor to Plexowood, Inc., Bradford, Pa., a corporation of Pennsylvania
Filed Nov. 10, 1964, Ser. No. 410,154
4 Claims. (Cl. 161—43)

A table top and method of making the same in the form of a composite body having top and bottom surfaces with a peripheral knife edge and a rounded surface on the top adjacent the knife edge, a layer of kraft paper impregnated with phenolic resin on both top and bottom surfaces



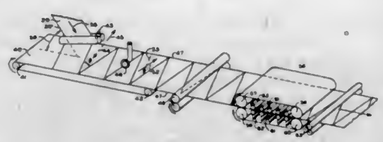
and a sheet of wood veneer over the top surface and bonded thereto by the impregnated paper and forming therewith a sealed knife edge.

3,415,709
EDGE REINFORCED PANELING
Francis J. Santangelo, Middlesex, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Aug. 2, 1965, Ser. No. 476,481
2 Claims. (Cl. 161—44)



A flexible panel including a fibrous base provided with a plastic surface coating and an edge recess extending through said coating into said base filled with a plastic material which extends along the marginal edges of said base providing edge reinforcing means therefor.

3,415,710
BIAXIALLY ORIENTED PLASTIC FILM LAMINATE AND METHOD FOR FORMING SAME
Philip M. Arnold, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Original application Mar. 8, 1965, Ser. No. 437,767. Divided and this application Jan. 23, 1968, Ser. No. 699,873
9 Claims. (Cl. 161—55)

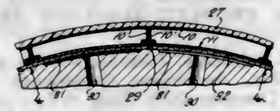


Method for producing a novel biaxially oriented plastic film laminate by which a uniaxially oriented plastic film is folded in a zig-zag fashion, pressure is applied to the central portion of the thus-folded film to preliminarily flatten same, and then the remainder of the thus-folded film is flattened and bonded to produce the film laminate.

3,415,711
CUSHIONING AND INSULATING MATERIAL
Marc A. Chavannes, Fort Lee, N.J., assignor to Sealed Air Corporation, Hawthorne, N.J., a corporation of New Jersey
Original application Sept. 10, 1963, Ser. No. 307,966, now Patent No. 3,346,438, dated Oct. 10, 1967. Divided and this application Apr. 20, 1967, Ser. No. 647,268
3 Claims. (Cl. 161—68)

An improved cushioning and insulating material formed

of at least two layers of plastic material, at least one of which has sealed embossments extending from the sur-



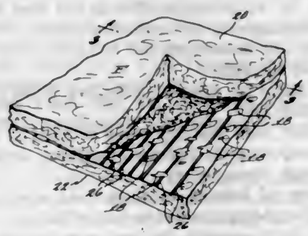
face thereof with the side walls of adjoining embossments being joined one to the others.

3,415,712
BIMATERIAL THERMOSENSITIVE ELEMENT
Robert E. Barker, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 31, 1963, Ser. No. 320,440
6 Claims. (Cl. 161—183)



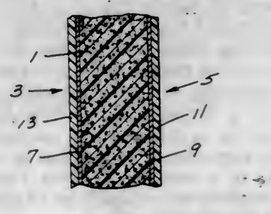
1. A bimaterial thermosensitive element consisting solely of two unified strips, the first strip being a thermoplastic material selected from the class consisting of bis-phenol A polycarbonate and polyphenylene oxide and the second strip being a metal having a thickness ⅓ or less than the thickness of said thermoplastic material, said strips being integrally bonded without the use of a bonding agent to provide a common interface to obviate relative displacement during deflection of said element with changes in ambient temperature.

3,415,713
NON-WOVEN FABRIC STRUCTURE AND METHOD OF MAKING SAME
Alexander M. Smith II, Elkin, N.C., assignor to The Fiberwoven Corporation, Elkin, N.C., a corporation of North Carolina
Filed Apr. 19, 1965, Ser. No. 449,068
11 Claims. (Cl. 161—141)



9. A non-woven fabric structure having a plurality of layers of fibers, the fibers of each of said layers being oriented into cohering fiber entanglement with each other and with fibers in the other layers, and chips of metallic foil distributed in at least one plane between layers and substantially covering the plane, all of said chips of metallic foil being substantially spaced from the surfaces of the fabric structure.

3,415,714
FOAM-PAPER-COMPOSITION BOARD LAMINATE
Shibley A. Hider, Toledo, Ohio, assignor to Owens-Illinois, Incorporated, a corporation of Ohio
Filed Sept. 13, 1965, Ser. No. 486,840
14 Claims. (Cl. 161—161)



1. An article of manufacture comprising a foamboard having a polymeric foam layer selected from the group consisting of foamed polyurethane, polystyrene, polyvinyl halide and poly-α-olefin, said foam portion being bonded to the paper side of at least one laminate comprising a paper liner selected from the group consisting of kraft pine paper, corrugated media, bleached kraft pine paper and bleached hardwood paper; and a composition board which is formed from a wood pulp selected from the group consisting of α-cellulose, groundwood, hardwood and softwood and a thermoplastic selecting from the group consisting of poly-α-olefin, polystyrene, polyvinyl halide and polyamide.

3,415,715
PROCESS FOR BONDING METALS TO RUBBERS
Henricus J. M. Van Gorcom, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,425
Claims priority, application Netherlands, Aug. 11, 1964, 6409201
24 Claims. (Cl. 161—190)

A method of laminating rubbery alkene-1 copolymers to metal is provided utilizing at least 2 separate adhesive layers, the adhesive layer adjacent the metal comprising halosulphonated polyolefine and a polyisocyanate, and the different adhesive adjacent the copolymer comprising a halosulphonated polyolefine, a polyisocyanate and a halogenated polyolefine.

3,415,716
PREPARATION OF HYDROXYCYCLOPENTENONES
Julius Berger, Passaic, Richard Wightman Kierstead, North Caldwell, Ronald Andrew Lemahieu, Bloomfield, and Benjamin Tabenkin, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed May 17, 1966, Ser. No. 550,599
18 Claims. (Cl. 195—51)

1. A process for the preparation of a

2-R-3-methyl-4-hydroxy-cyclopent-2-enone

wherein the symbol R represents alkyl, alkenyl or alkadienyl of 3 to 5 carbon atoms

which comprises enzymatically transforming a

2-R-3-methyl-cyclopent-2-enone

wherein R has the same significance as above by the action of an enzyme system of a microorganism selected from the group consisting of microorganisms

of the classes Phycomycetes, Ascomycetes, Deuteromycetes, Basidiomycetes, and Schizomycetes to form the corresponding 4 hydroxy compound.

3,415,717

BACTERIURIA TEST PAPERS

Souren Avakian, Westport, Conn., assignor, by mesne assignments, to Denver Chemical Manufacturing Company, Stamford, Conn., a corporation of Connecticut

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,262
4 Claims. (Cl. 195—100)

1. A bacteriuria test paper comprising paper impregnated with a sulfonamide, an N,N-dialkyl-1-naphthylamine, and an acyclic hydroxy polycarboxylic acid, in which the approximate proportions of said components are 1 part of a sulfonamide, 2 to 3 parts of an N,N-dialkyl-1-naphthylamine, and 9 to 15 parts of an acyclic hydroxy polycarboxylic acid.

3,415,718

COMPOSITION AND PROCESS FOR DETECTING BACTERIA IN URINE

Anders Carl Gunnar Forkman, Barnhemsgatan 1, Linkoping, Sweden, and Arne Lennart Dahlqvist, Husmansvagen 36, Lund, Sweden

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,836
Claims priority, application Sweden, Apr. 9, 1965, 4,626/65
5 Claims. (Cl. 195—103.5)

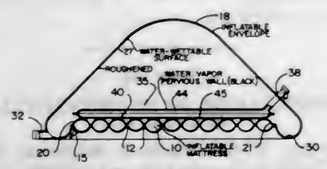
A composition for detecting bacteria in urine comprises substrates for the enzymatic reactions of the bacteria, and an indicator, a buffer system, and a catalyst having diaphorase effect. In detecting bacteria in urine, the latter is centrifuged, obtained sediment is suspended in water, and the suspension mixed with the said composition.

3,415,719

COLLAPSIBLE SOLAR STILL WITH WATER VAPOR PERMEABLE MEMBRANE

Maria Telkes, Falls Church, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,222
4 Claims. (Cl. 202—83)



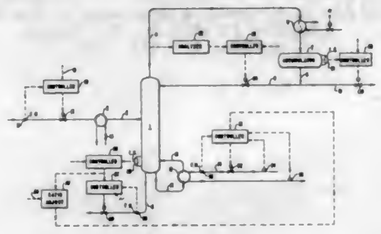
A solar still has a water vapor permeable bag for retention of brackish water and for use as the evaporator-absorber unit of the still. The spacing between upper and lower walls of the bag, with respect to position of the still in a generally horizontal plane during use, when the bag is filled with brackish water, is limited to approximately 0.25 inch to 0.35 inch. The bag has an inlet for receiving the water to be distilled, is disposed on a thermally insulating buoyant mattress, and is encompassed along its upper and side surfaces by an envelope having an inner water-wettable surface. One of the upper and lower walls of the bag is black, to enhance absorption of solar radiation, and thus ensure rapid heating of the contents of the bag for evaporation of pure water therefrom.

3,415,720

APPARATUS FOR THE AUTOMATIC CONTROL OF A CONTINUOUS DISTILLATION OPERATION FOR MAINTAINING A CONSTANT RATIO OF BOTTOM PRODUCT FLOW TO HEAT INPUT FLOW

Johannes E. Rijnsdorp, Johannes A. Van Kampen, and Hans Bollen, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 19, 1965, Ser. No. 497,716
Claims priority, application Netherlands, Oct. 28, 1964, 6412525
6 Claims. (Cl. 202—181)



1. Apparatus for the automatic control of a continuous distillation process for the separation of a feed stream into a top and a bottom product stream in a distillation column in which both reflux and re-evaporation are applied, comprising:

a distillation column having a feed line and top and bottom product flow lines, an accumulator, said top product flow line being coupled to said accumulator;

a top liquid product flow line, said top product liquid flow line being coupled to said accumulator;

means responsive to the variation in the liquid level in said accumulator for adjusting the flow in said top liquid product flow line to maintain the accumulator liquid level within desired limits;

an analyzer for continuously analyzing the quality of the top product withdrawn from said column;

a reflux flow line coupled to said column and said accumulator;

first control means responsive to the output signal from said analyzer for adjusting the flow in the reflux flow line to maintain the quality of the top product at the desired value;

means for adjusting the flow in the feed line to a desired independently controlled value;

a gauge for measuring the liquid level in the bottom of the column;

a flow meter for measuring the flow in the bottom product flow line;

a reboiler, said reboiler being coupled to said column to evaporate the portion of column liquid circulated through the reboiler;

a source of heating medium, said source of heating medium being coupled to said reboiler;

means for measuring the heat supplied to the column reboiler for evaporation; and

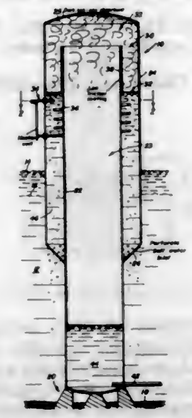
second control means responsive to the output signals from said gauge, said flow meter and said heat measuring means for adjusting the flow in said bottom product flow line and the flow of said heating medium to maintain the column bottom liquid level between desired limits and to maintain a predetermined constant ratio between the bottom product stream flow and the heat flow to said reboiler.

3,415,721

KATABATIC WATER PURIFICATION APPARATUS

Norman Bie, Jr., 301 Pierce St., Clearwater, Fla. 33516

Filed July 6, 1966, Ser. No. 563,101
6 Claims. (Cl. 202—187)



A distillation apparatus situated within and in heat exchange relationship with a body of contaminated water to be purified and including an elongated vertically disposed cylindrical member partially submerged in the body of water to be purified and including an open top and a closed bottom wall which comprises a condensation chamber means. The upper portion of the condensation chamber means is surrounded by an evaporation chamber means concentrically disposed with respect thereto, and extending above the top of the condensation chamber means, and including an imperforate top wall and a perforate bottom section through which contaminated water to be purified is introduced. A heating coil mounted within the evaporation chamber means, below the top of the condensation chamber means, volatilizes contaminated water entering the evaporating chamber and the resultant water vapor is carried over into the condensation chamber by the katabatic effect of convention currents established by the heat exchange characteristics of the lower portion of the condensing chamber means being immersed within the body of contaminated water being purified.

3,415,722

METHOD OF FORMING CAPACITOR ELECTRODES

Walter Scheller, Munchenstein, Switzerland, George Korinek, Summit, N.J., and Gustav Daendliker, Birsfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,268
Claims priority, application Switzerland, Mar. 25, 1965, 4,204/65
4 Claims. (Cl. 204—15)

1. A process for forming an electrolytic capacitor electrode from sintered valve metal pellets selected from the group consisting of titanium, zirconium, tantalum and niobium, which comprises subjecting the inner and the outer surface of a porous body of the sintered metal pellets to anodic oxidation in an electrolyte, the oxide layer on the outer surface of the porous body being formed at a higher voltage than that on the inner surface of the porous body.

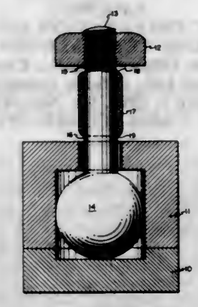
2. A process according to claim 1, which comprises a first stage pre-forming the pellets by anodization, then impregnating said pellets with a substance that is insoluble in the electrolyte whereby said inner and outer surfaces are coated, extracting the superficial impregnation, whereby said inner surface remains coated, post-forming by anodization the pellets against the higher voltage and removing the impregnation then completely by solvent extraction.

3,415,723

METHOD OF STOP-OFF OF CATHODE PIECES IN CHROMIUM PLATING BATHS

Ram Dev Bedi, Oak Park, and George Dubpernell, Huntington Woods, Mich., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,988
9 Claims. (Cl. 204—15)



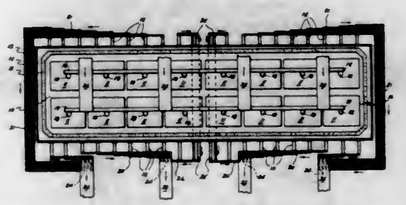
A process for electroplating a chromium plate from a chromium plating bath onto a workpiece having predetermined areas to be chromium plated and selected areas to be stopped-off which comprises placing a piece of etched high-carbon iron alloy immediately adjacent to and in electrical contact with said selected areas, subjecting said selected areas to plating current density whereby said plate is deposited onto the predetermined areas while the selected areas remain stopped-off, and to chromium plated products produced by said process.

3,415,724

PRODUCTION OF ALUMINUM

Edwin L. Heaton, Alcoa, Tenn., and Waldo Porter, Jr., Pittsburgh, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

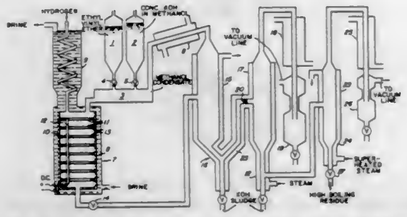
Filed Dec. 16, 1965, Ser. No. 514,260
10 Claims. (Cl. 204—67)



1. In that method of electrolytically producing aluminum in a cell-contained, anode-contacted, molten bath, in which method the produced aluminum is collected in a molten layer underlying said bath in said cell and resting upon a conducting lining of said cell which lining serves as cathode of the cell, and in which method a number of said cells are arranged sequentially and electrically connected in series to form a pot-line in which the current impressed on the anode circuit of a cell and collected from the cathode of said cell is conveyed to the anode circuit of the adjacent cell where it is again collected and passed to the anode of the next cell, and in which method a portion of the current collected from a

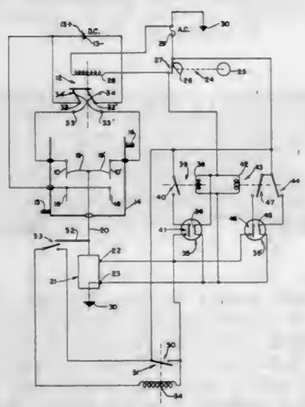
cell cathode is collected on the upstream side of the cell and passed around at least one upstream cell corner and past the adjacent cell end to the anode of the next cell in the pot-line, the improvement of diverting a part but less than half of the current collected on the upstream side of the cell and directing said diverted current towards the anode of a downstream cell in said line in a path having a portion intermediate the corners of the cell from which the current is collected whereby to effectively reduce electromagnetic flux effects induced by the upstream collected current at least in areas of the said molten aluminum layer which lie adjacent said upstream corner.

3,415,725
ELECTROLYTIC PREPARATION OF TRIALKOXYALKANES AND TETRAALKOXYALKANES
Bernard R. Belleau, Ottawa, Ontario, Canada, assignor to B. R. Belleau, Ltd., Ottawa, Ontario, Canada
Filed Oct. 1, 1965, Ser. No. 492,118
11 Claims. (Cl. 204—79)



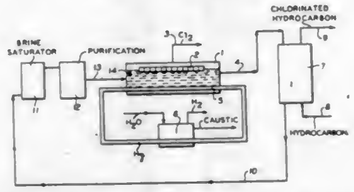
1. A process for converting α,β-unsaturated ethers into α,α,β - trialkoxyalkanes and $\alpha,\alpha,\delta,\delta$ - tetra - alkoxyalkanes which comprises subjecting the α,β-unsaturated ether to anodic oxidation in solution in a lower alkanol and in the presence of a dissolved inert basic or neutral electrolyte.

3,415,726
ELECTROLYTIC PRODUCTION OF METAL HYDROXIDE
Paul S. Roller, 1341 G St. NW., Washington, D.C. 20005
Filed Mar. 29, 1965, Ser. No. 443,284
7 Claims. (Cl. 204—96)



1. In the electrolytic production from metal electrodes of metal hydroxide in a liquid in which it is insoluble, applying reversing electrolytic current to the electrodes in cycles of substantial periods of time, wiping the electrodes for a brief interval at or subsequent to each current reversal, and discontinuing wiping during the major remaining portion of each cycle.

3,415,727
PROCESS FOR THE PURIFICATION OF SALT-DEPLETED SOLUTIONS OF THE ALKALI METAL CHLORIDE ELECTROLYSIS EMPLOYING A MERCURY CATHODE
Karl Hass, Niederkassel, and Rudolf Cordes, Ranzel, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezisk Cologne, Germany, a corporation of Germany
Filed Oct. 15, 1965, Ser. No. 502,757
Claims priority, application Germany, Oct. 31, 1964, D 45,758
9 Claims. (Cl. 204—128)



1. In the electrolysis of alkali metal chloride brine solution employing a mercury cathode to produce chlorine and an alkali metal amalgam, wherein a solution depleted in alkali metal chloride and containing dissolved chlorine is produced, the improvement which comprises removing chlorine from said depleted solution by contacting said depleted solution with a hydrocarbon compound gas or a hydrocarbon compound liquid.

3,415,728
PHOTOPOLYMERIZATION OF CYCLOTRISILOXANES
Edgar E. Bostick Scotia, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Mar. 17, 1967, Ser. No. 623,811
3 Claims. (Cl. 204—159.13)

Certain cyclotrisiloxanes are photopolymerized employing a heat activated zinc chalcogen catalyst to linear organopolysiloxane gums. These gums can be converted to silicone elastomers by conventional means and also are useful as viscosity modifiers.

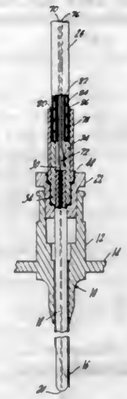
3,415,729
PREPARATION OF TETRAFLUORO-1,2-DIIODOETHANE
William J. Cunningham, Rockaway, and Anthony W. Yodis, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,320
9 Claims. (Cl. 204—163)

1. A process for preparing tetrafluoro-1,2-diiodoethane from tetrafluoroethylene and iodine in which the reaction is initiated at approximately atmospheric pressure by providing a source of actinic radiation, a reaction medium comprising a halogenated hydrocarbon solvent and a reactive temperature level.

3,415,730
FLEXIBLE ELECTRODE ASSEMBLY
Ihsan A. Haddad, Brighton, Mass., assignor to Instrumentation Laboratory, Inc., a corporation of Massachusetts
Filed Nov. 16, 1965, Ser. No. 508,087
18 Claims. (Cl. 204—195)

1. An elongated flexible electrode assembly comprising a first elongated flexible electrode element, a second elongated flexible electrode element disposed parallel to said first electrode element with one end of said second electrode element being adjacent one end of said first electrode element, electrical insulation disposed between said

first and second electrode elements, and a sheath of membrane material having a closed end disposed over said electrode elements with the closed end of said sheath



closely adjacent said one end of an electrode element and said sheath being secured on said electrode elements with the inner surface of the said sheath firmly engaged with the outer surface of an electrode element so that said sheath protects said electrode elements from contaminants, said electrode assembly being flexible as an assembly over a substantial portion of its length.

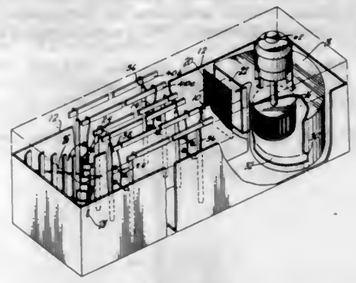
3,415,731
GLASS ELECTRODES AND METHOD FOR PRODUCING THE SAME
Norman W. Carter, Dallas, Tex., assignor to Beckman Instruments, Inc., a corporation of California
Continuation-in-part of application Ser. No. 429,145, Jan. 29, 1965. This application Sept. 27, 1965, Ser. No. 490,504
21 Claims. (Cl. 204—195)



A cation sensitive glass electrode with a selected area thereof coated with an insulating glaze which has high electrical and chemical resistance. The electrode may be incorporated in a hypodermic needle. The glaze is preferably a lead borosilicate titanium composition.

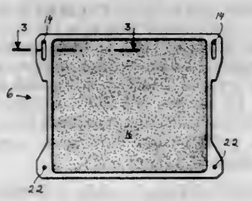
3,415,732
OPEN CHANNEL FLOW HIGH SPEED PLATING
Joseph S. Komjathy, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,536
10 Claims. (Cl. 204—237)

An open channel flow electroplating apparatus including a flow channel and means for inducing highly uniform rapid flow of electrolyte through the channel, the means including a high volume-low pressure delivery centrifugal



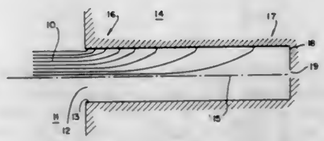
impeller in a log spiral enclosure for circulating electrolyte at a rate of about 0.5–4 feet per second.

3,415,733
FRAMES FOR ELECTRODES FOR THE ELECTROLYTIC DECOMPOSITION OF HYDROCHLORIC ACID AND METHOD FOR MAKING SUCH FRAMES
Hans-Joachim Koch, Karl-Heinz Berndt, and Volker Dölle, Bitterfeld, Germany, assignors to VEB Elektrochemisches Kombinat Bitterfeld, Bitterfeld, Germany
Filed Apr. 19, 1966, Ser. No. 543,622
3 Claims. (Cl. 204—279)



Frames for electrodes, particularly made of graphite, used in the electrolytic decomposition of hydrochloric acid, in filter press-like electrolytic cells, and method for making such frames.

3,415,734
ELECTRODE AND METHOD OF PRODUCING SAME
Fritz R. Kalhammer, South Pasadena, Calif., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 4, 1965, Ser. No. 453,047
17 Claims. (Cl. 204—284)

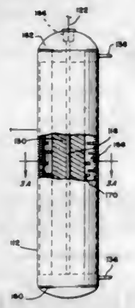


A method is provided for preparation of high surface area, catalyst impregnated, porous electrodes by cathodic reduction of catalyst metals. By control of the conditions of cathodic reduction, the invention achieves controlled concentration of catalyst metal on the walls of the pores in an amount directly proportional to the current that would flow per unit area in the pores of a uniformly catalyzed electrode.

3,415,735
APPARATUS FOR REMOVING CONTAMINANTS FROM HIGH-RESISTIVITY FLUIDS

Robert F. Brown, Piscataway Township, and Herbert J. Hall, Skillman, N.J., assignors to Research-Cottrell, Inc., Bridgewater Township, N.J., a corporation of New Jersey

Filed Sept. 23, 1964, Ser. No. 398,592
6 Claims. (Cl. 204—302)



An electrostatic device for the removal of contaminants from high-resistivity liquids such as petroleum based oils. A porous matrix affixed to the discharge electrode is employed to collect contaminants. A tortuous path is generally provided for the liquid.

3,415,736
LITHIUM-CONTAINING CRYSTALLINE ALUMINOSILICATE

Julius Ciric, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 20, 1965, Ser. No. 488,443
16 Claims. (Cl. 208—111)

A new zeolite composition having a characteristic X-ray diffraction pattern and having a composition, in terms of mole ratios of oxides:

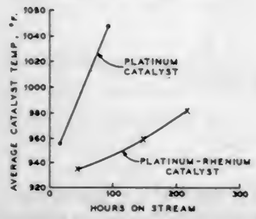
$$0.05–0.8Li_2O:0.95–0.2Na_2O:Al_2O_3:2.0–6SiO_2:0–9H_2O$$

a process for making the same and a process for utilizing a catalyst comprising the same for hydrocarbon conversion.

3,415,737
REFORMING A SULFUR-FREE NAPHTHA WITH A PLATINUM-RHENIUM CATALYST

Harris E. Kluksdahl, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Continuation-in-part of application Ser. No. 560,166, June 24, 1966. This application May 19, 1967, Ser. No. 639,719
7 Claims. (Cl. 208—139)

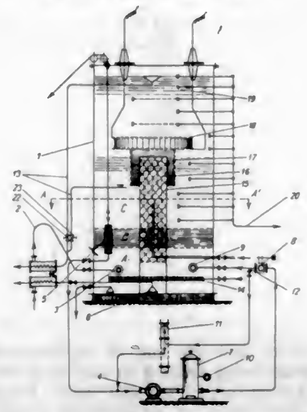


Reforming a sulfur-free naphtha in the presence of hydrogen with a catalyst composition of a porous solid catalyst support and 0.1 to 3 weight percent platinum and 0.01 to 5 weight percent rhenium, and the novel supported platinum-rhenium catalyst.

3,415,738
METHOD FOR CRUDE OIL PURIFICATION

Cornelu Nicodimescu, Bucharest, Rumania, assignor to Ministerul Petrolului, Bucharest, Rumania

Filed July 29, 1964, Ser. No. 385,867
Claims priority, application Rumania, Aug. 1, 1963, 46,731
6 Claims. (Cl. 208—187)

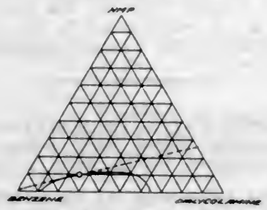


1. A method of purifying dirty emulsified crude oil, containing salt water and solid impurities, under atmospheric pressure conditions, in a vertical cylindrical space, in which there are present from the bottom to the top thereof: a zone A essentially consisting of salt water which contains solid impurities, a zone B essentially consisting of heated dirty crude oil, a zone C essentially consisting of de-emulsified crude oil; said method comprising the steps of simultaneously taking from said zones B and A a predetermined amount of said crude oil and water preheated to a temperature as high as 100° C., and containing about 40 to 60% water, compressing said mixture at about 5 to 10 kg. per cm.², and injecting said mixture into zone A, whereby a sudden release of pressure occurs, which results in a substantial separation of the oil from the water and said solid impurities, and evacuating said purified crude oil from zone C, the water with said solid impurities being evacuated from zone A.

3,415,739
RECOVERY OF AROMATICS BY EXTRACTION OR EXTRACTIVE DISTILLATION WITH SOLVENT MIXTURES OF N-METHYL PYRROLIDONE AND DIGLYCOL AMINE

Karl-Heinz Eisenlohr, Buchschlag, and Eckart Müller, Bergen-Enkheim, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Continuation-in-part of application Ser. No. 490,818, Sept. 28, 1965. This application Dec. 20, 1967, Ser. No. 692,016
Claims priority, application Germany, Sept. 29, 1964, M 62,610
3 Claims. (Cl. 208—323)



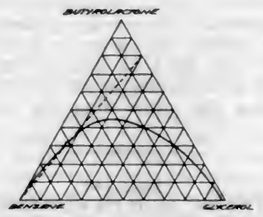
Aromatic hydrocarbons are extracted with solvent from hydrocarbon mixtures containing both armatic and non-

aromatic hydrocarbon components using a mixture of N-methyl pyrrolidone and diglycol amine as the solvent. The extractions are conducted by liquid-liquid extraction or by extractive distillation.

3,415,740
RECOVERY OF AROMATICS BY EXTRACTION WITH A SOLVENT MIXTURE OF BUTYROLACTONE AND GLYCEROL

Karl-Heinz Eisenlohr, Buchschlag, and Eckart Müller, Bergen-Enkheim, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, a corporation of Germany

Continuation-in-part of application Ser. No. 490,818, Sept. 28, 1965. This application Dec. 20, 1967, Ser. No. 692,017
Claims priority, application Germany, Sept. 29, 1964, M 62,610
1 Claim. (Cl. 208—323)

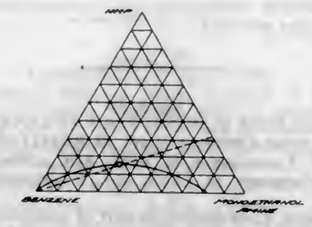


Aromatic hydrocarbons are extracted with solvent from hydrocarbon mixtures containing both aromatic and non-aromatic hydrocarbon components using a mixture of butyrolactone and glycerol as the solvent. The extractions are conducted by liquid-liquid extraction.

3,415,741
RECOVERY OF AROMATICS BY EXTRACTION WITH SOLVENT MIXTURE OF N-METHYL PYRROLIDONE AND MONOETHANOLAMINE

Karl-Heinz Eisenlohr, Buchschlag, and Eckart Müller, Bergen-Enkheim, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Continuation-in-part of application Ser. No. 490,818, Sept. 28, 1965. This application Dec. 20, 1967, Ser. No. 692,018
Claims priority, application Germany, Sept. 29, 1964, M 62,610
1 Claim. (Cl. 208—323)

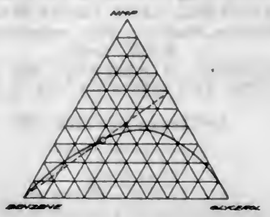


Aromatic hydrocarbons are extracted with solvent from hydrocarbon mixtures containing both aromatic and non-aromatic hydrocarbon components using a mixture of N-methyl pyrrolidone and monoethanolamine as the solvent. The extractions are conducted by liquid-liquid extraction.

3,415,742
RECOVERY OF AROMATICS BY EXTRACTION WITH SOLVENT MIXTURE OF N-METHYL-PYRROLIDONE AND GLYCEROL

Karl-Heinz Eisenlohr, Buchschlag, and Eckart Müller, Bergen-Enkheim, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Continuation-in-part of application Ser. No. 490,818, Sept. 28, 1965. This application Dec. 20, 1967, Ser. No. 692,019
Claims priority, application Germany, Sept. 29, 1964, M 62,610
1 Claim. (Cl. 208—323)

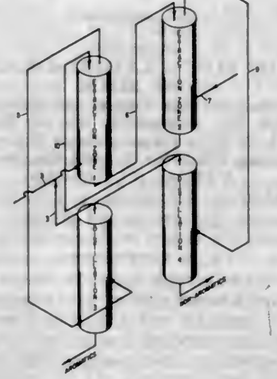


Aromatic hydrocarbons are extracted with solvent from hydrocarbon mixtures containing both aromatic and non-aromatic hydrocarbon components using a mixture of N-methyl pyrrolidone and glycerol as the solvent. The extractions are conducted by liquid-liquid extraction.

3,415,743
AROMATIC EXTRACTION WITH A MIXTURE OF DIMETHYLFORMAMIDE AND WATER

Alvin L. Benham, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 343,858, Feb. 10, 1964. This application Aug. 30, 1967, Ser. No. 674,687
10 Claims. (Cl. 208—330)



The present invention comprises a process utilizing a solution of dimethylformamide and from about 5 to about 18% water as a solvent for the extraction of heavy aromatics and heavy aliphatics from cycle oil derived from a petroleum cracking step and boiling substantially between about 204° C. to about 316° C., the steps comprising in a closed-loop the contacting of a displacer oil comprising a mixture of aromatic-nonaromatic hydrocarbons containing from about 10 to about 50% xylenes with a solvent comprising a solution of about 5 to about 18% water in dimethylformamide in a first extraction zone, removing a first extract mixture from said first extraction zone to a second extraction zone, removing from

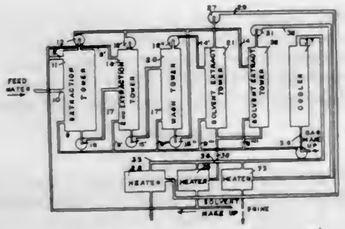
said first extraction zone a raffinate containing heavy aromatics, introducing into the second extraction zone said cycle oil having a boiling point higher than that of said displacer oil, removing from the second extraction zone a second extract mixture to the first extraction zone, removing from said second extraction zone a raffinate containing heavy aliphatics, and distilling each of said raffinates to recover said heavy aromatics and said heavy aliphatics, respectively. (All percents herein are by volume, except as noted.)

3,415,744
SOLVENT EXTRACTION METHOD FOR REMOVING SALT FROM WATER

Ralph W. Buetow, Madison, Wis., assignor of one-half to Keith Schoff

Continuation-in-part of application Ser. No. 434,686, Feb. 23, 1965. This application May 3, 1965, Ser. No. 452,650

11 Claims. (Cl. 210—22)



A solvent extraction method for reducing saline content of aqueous solution using solvents of cyclic structure comprising oxygen ring members and a condensible gas in solution.

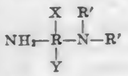
3,415,745
METHOD OF FLOCCULATING A WATER-BORNE OIL SLICK

Henry V. Isaacson, Oak Forest, and David W. Young, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,303

9 Claims. (Cl. 210—54)

1. A method of flocculating a water-borne oil slick which comprises applying to said oil slick a quaternary ammonium salt of a tertiary amine-containing, imidic reaction product of (A) a vinyl monomer-maleic anhydride polymer having an average molecular weight of about 600 to 100,000 and a molar ratio of vinyl monomer to maleic anhydride of about 1:1 to 4:1, said vinyl monomer being a monovinyl compound of 2 to about 12 carbon atoms and (B) a polyamine corresponding to the formula:



where X is hydrogen or



Y is hydrogen or



R is alkylene of 1 to about 10 carbon atoms and R′ is a monovalent hydrocarbon radical of 1 to about 8 carbon atoms, about 80 to 100 percent of the maleic anhydride units of said polymer being imidated with said polyamine.

3,415,746
METHOD FOR EXTRACTING SALT FROM SEA WATER

Ralph W. Buetow, Madison, Wis., assignor of one-half to Keith Schoff

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,686

6 Claims. (Cl. 210—59)

A solvent extraction method for reducing saline content of aqueous solution using solvents of cyclic structure and comprising oxygen ring members.

3,415,747
SOLUTION TREATMENT

David N. Glew, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,107

21 Claims. (Cl. 210—59)

This invention relates to a process for concentrating aqueous solutions and simultaneously producing potable water by contacting, at a pressure no greater than 50 p.s.i.g., an aqueous solution with a hydrate-forming, water soluble material to form a homogenous solution, reducing the temperature of such homogeneous solution to form a solid hydrate, separating the concentrated aqueous solution from the solid hydrate, decomposing the solid hydrate, to regenerate the hydrate-forming material and separating the water from the hydrate-forming material.

3,415,748
SULFURIC ACID PICKLING BATH

Leonard E. Kovalski, Allentown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed Apr. 27, 1966, Ser. No. 545,712

5 Claims. (Cl. 252—79.4)

In a method of removing mill scale from steel articles, a steel article is immersed in an aqueous solution containing specific amounts of sulfuric acid, a thiourea and an alkali metal monohydric hydrocarbon secondary alcohol sulfate in which the alcohol radical has from 8 to 19 carbon atoms. The article is retained in the pickling solution until substantially all mill scale has been removed therefrom.

3,415,749
ARYLENEDIOXYTIN COMPOUNDS AND OXIDATION INHIBITED COMPOSITIONS CONTAINING SAME

Robert F. Bridger, Hopewell Township, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 2, 1966, Ser. No. 569,568

8 Claims. (Cl. 252—42.7)

Organic materials normally degradable by oxidation are stabilized with arylenedioxytin compounds. Novel arylenedioxytin compounds and a process for preparing the same are provided.

3,415,750
IMIDAZOLINES HAVING POLYALKENYLSUCCINIMIDO-CONTAINING SUBSTITUENTS

Joseph F. Anzenberger, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 313,768, Oct. 4, 1963. This application May 19, 1967, Ser. No. 639,610

12 Claims. (Cl. 252—51.5)

Compounds of the class which are polyalkenylsuccinimido imidazolines and polyalkenylsuccinimido bis-imidazolines which can be utilized as ashless detergents in lubricating oil compositions.

3,415,751
MANGANESE-ZINC FERRITES

Eiichi Hirota, Sakai-shi, Osaka-fu, and Yutaka Neichi, Hirakata-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Oct. 22, 1965, Ser. No. 500,548

Claims priority, application Japan, Nov. 27, 1964, 39/67,351

2 Claims. (Cl. 252—62.59)

A sintered composition consisting essentially of (a) manganese-zinc ferrite which consists essentially of 54 to 65 mol percent of Fe_2O_3, 4 to 22 mol percent of ZnO and the balance being MnO, and (b) as an additive combination, 0.05 to 1 percent by weight of GeO_2 and 0.05 to 1% by weight of CaO, is a manganese-zinc ferrite material having both a low magnetic loss and a high permeability at frequencies ranging from 300 kilocycles to 3 megacycles, and is useful as a core material for various type inductors, transformers, antennae and tuners.

3,415,752
DETERGENT COMPOSITIONS

Hugh Reeves Browning, Gravesend, and Peter Carter, Wirral, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Apr. 15, 1966, Ser. No. 542,763

Claims priority, application Great Britain, Apr. 21, 1965, 16,701/65

5 Claims. (Cl. 252—96)

A detergent composition comprising a water-soluble organic anionic (soap or non-soap) or nonionic detergent compound, a water-soluble inorganic oxygen-releasing per compound, a fluorescer which is a derivative of 1,3-diphenyl-Δ^2-pyrazoline, and diethylene triamine pentaacetic acid to reduce substantially the loss of fluorescer due to the oxidative degradation thereof by the per compound.

3,415,753
LIQUID AND PASTE DETERGENT CONCENTRATES

Werner Stein, Erkrath-Unterbach, and Wilfried Umbach and Horst Baumann, Hilden, Germany, assignors to Henkel & Cie, GmbH., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed June 18, 1965, Ser. No. 465,164

10 Claims. (Cl. 252—121)

There is disclosed a novel method for reducing the viscosity of liquid and/or paste detergent concentrates containing an olefin monosulfonate. The process lies in the finding that by incorporating into the paste and/or liquid detergent concentrate a surface active olefin disulfonate the viscosity of the concentrate is significantly reduced and in addition the wetting and cleansing activity of the wash active materials present in the detergent are enhanced. The invention also includes the resultant concentrates characterized by reduced viscosity.

3,415,754
CORROSION INHIBITORS

Ludo K. Frevel, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,407

8 Claims. (Cl. 252—147)

The corrosive attack upon stainless steel by an aqueous sulfate solution containing H_2SO_4, a bisulfate, or a mixture thereof, at a concentration level in the range of 0.3 to 3 normal is markedly reduced upon adding to the solution from about 0.25 to 30 moles of vanadyl sulfate or uranyl sulfate or mixtures thereof per mole of H_2SO_4 and/or bisulfate. The inhibitory effect is marked, even at temperatures as high as 170° C. and over extended periods of time.

3,415,755
THICKENED PAINT STRIPPERS

Herbert O. Luck, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,846

4 Claims. (Cl. 252—171)

1. A thickened composition of matter consisting essentially of a powdered hydroxyalkyl alkyl cellulose ether, wherein the alkyl group contains from 1 to 3 carbons and the hydroxyalkyl group contains from 2 to 4 carbons dispersed in a solvent mixture of a halogenated aliphatic hydrocarbon solvent having from 1 to 4 carbons and from about 1 up to about 4.5 percent by weight based on the weight of the solvent of methanol carbon atoms, said cellulose ether being present in an amount from about 0.1 percent up to about 5 percent, based on the weight of the solvent mixture, and said cellulose ether being of reduced particle size small enough to pass a 100 mesh screen of the U.S.S. screen series.

3,415,756
SCANDIUM-CONTAINING ALKALINE EARTH PHOSPHATE PHOSPHOR HAVING GOOD TEMPERATURE-DEPENDENCE CHARACTERISTICS

Henry W. Rimbach, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 28, 1965, Ser. No. 467,243

7 Claims. (Cl. 252—301.4)

Phosphor composition is strontium phosphate or calcium phosphate plus scandium phosphate activated by copper or tin, with or without manganese. Phosphor has good temperature-dependence characteristics and its emission color under ultra-violet excitation can be varied over a wide range by selection of activators.

3,415,757
FLUORO-SUBSTITUTED EUROPIUM ACTIVATED GADOLINIUM, YTTRIUM AND LANTHANUM OXIDES

Willem Lambertus Wanmaker and Alfred Bril, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 5, 1965, Ser. No. 477,495

Claims priority, application Netherlands, Aug. 7, 1964, 6409066

3 Claims. (Cl. 252—301.4)

Red luminescent phosphor for color television cathode ray tubes consisting of an europium activated oxide of gadolinium, yttrium or lanthanum wherein a small portion of the oxygen is replaced by fluorine.

3,415,758
PROCESS OF FORMING MINUTE CAPSULES EN MASSE

Thomas C. Powell, Farmersville, Ohio, Melvin E. Steinle, Cupertino, Calif., and Robert A. Yoncoskie, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Continuation-in-part of abandoned application Ser. No. 13,725, Mar. 9, 1960. This application May 3, 1962, Ser. No. 192,071

The portion of the term of the patent subsequent to Nov. 3, 1981, has been disclaimed

32 Claims. (Cl. 252—316)

1. The process of forming minute capsules en masse which comprises

(a) establishing an agitated, un-ionized system consisting of a liquid vehicle forming a continuous first phase, a second phase dispersed therein consisting of minute mobile entities of core material, and a third phase dispersed therein consisting of minute, mobile

liquid entities of a wall-forming solution of a hydrophobic polymeric material, the said core material being wettable by said wall-forming solution, the said three phases being mutually incompatible, the third phase constituting such a part of the total three-phase system, by volume, that it can exist as a dispersed phase of minute mobile entities capable of and sufficient in amount to deposit around the core entities, and wherein said third phase has been formed by introducing a sufficient amount of polymeric complementary material in the presence of the wall-forming polymeric material and a solvent therefor to thereby effect a phase separation, whereby said wall-forming solution deposits on and around said core entities to form a liquid protective wall, and

(b) hardening the walls so formed.

32. The process of forming minute capsules en masse which comprises:

(a) establishing an agitated, un-inoized system consisting of a liquid vehicle forming a continuous first phase, a second phase dispersed therein consisting of minute mobile entities of core material, and a third phase dispersed therein consisting of minute, mobile liquid entities of a wall-forming solution of a hydrophobic polymeric material, the said core material being wettable by said wall-forming solution, the said three phases being mutually incompatible, the third phase constituting such a part of the total three-phase system, by volume, that it can exist as a dispersed phase of minute mobile entities capable of and sufficient in amount to deposit around the core entities, and wherein in said system there is present a polymeric complementary material sufficient in amount to effect the formation of said third phase, and

(b) hardening the walls so formed.

3,415,759

PREPARATION OF HYDROGENATION CATALYSTS

Oliver Johnson, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,226
5 Claims. (Cl. 252—455)

A hydrogenation catalyst is prepared by depositing cobalt carboxylate on a diatomaceous earth support and heating in the thus supported cobalt carboxylate at a temperature at 135° to 160° and thereafter reacting the thus heat treated product with an aluminum alkyl.

3,415,760

TWO STAGE HEAT TREATMENT OF COBALT MOLYBDATE CATALYSTS

David James Hadley, Epsom Downs, Surrey, and Rowland Harris Jenkins, West Ewell, Surrey, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Continuation of application Ser. No. 337,999, Jan. 16, 1964, which is a division of application Ser. No. 134,592, Aug. 29, 1961. This application June 28, 1967, Ser. No. 649,743
Claims priority, application Great Britain, Sept. 8, 1960, 30,923/60; Sept. 29, 1960, 33,411/60
6 Claims. (Cl. 252—470)

Process for preparing an oxidation catalyst containing cobalt, molybdenum and oxygen in which the atomic ratio of cobalt to molybdenum is not substantially greater than 1:1, by adding a nitrogenous base to a solution of a cobalt salt and molybdic acid or molybdates of a nitrogenous base to obtain a solution of pH less than about 7, forming a precipitate in said solution, heating the precipitate to 350° to 650° C., pelleting the material preferably after grinding, and then subjecting the pelleted material to a second heat treatment in the range of 500° to 650° C.

3,415,761

PROCESS FOR POLYMERIZATION OF EPOXIDES

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 31, 1960, Ser. No. 18,888
22 Claims. (Cl. 260—2)

1. The process of producing poly(epoxides) which comprises polymerizing at least one epoxide wherein the epoxy group is an oxirane ring by contacting said epoxide with the catalyst formed by pre-reacting a halogen-free organomagnesium compound with a polyreactive compound in an equivalent mole ratio of polyreactive compound to magnesium compound of from about 0.01:1 to about 0.7:1, said polyreactive compound being selected from the group consisting of (1) monomeric compounds containing at least two groups selected from the group consisting of active hydrogen, C=O, N=O, S=O, P=O, C=S, P=S, C≡N, and N=S, (2) monomeric compounds containing the group —N=N— (3) carbon monoxide, and (4) nitrogen monoxide.

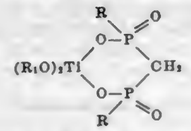
3,415,762

TITANIUM CHELATE COMPOUND AND TITANIUM PHOSPHINATE POLYMER PREPARED THEREFROM

Burton Peter Block, Chester County, Pa., and Gerd Helmut Dahl, Upper Merion Township, Montgomery County, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 2, 1966, Ser. No. 554,698
12 Claims. (Cl. 260—2)

1. A titanium chelate compound of the formula



where R_1 is an alkyl radical having one to four carbon atoms and R represents a radical selected from the class consisting of

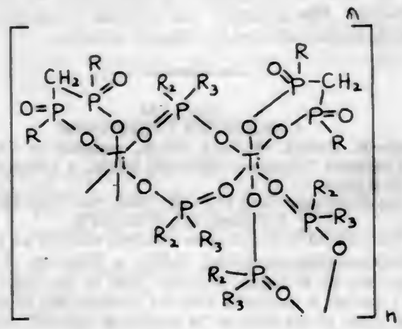
(a) alkyl having one to ten carbon atoms;

(b) halogeno-substituted alkyl having one to ten carbon atoms wherein the halogen substituents are selected from the group consisting of fluorine, chlorine and bromine;

(c) phenyl;

(d) substituted phenyl wherein the substituents are independently selected from the group consisting of fluorine, chlorine, bromine and alkyl groups having one to eight carbon atoms.

7. A titanium phosphinate polymer composed of the repeating unit



where R, R_2, and R_3 are radicals selected from the class consisting of

(a) alkyl having one to ten carbon atoms;

(b) halogeno-substituted alkyl having one to ten carbon atoms wherein the halogen substituents are selected from the group consisting of fluorine, chlorine, and bromine;

(c) phenyl;

(d) substituted phenyl wherein the substituents are independently selected from the group consisting of fluorine, chlorine, bromine and alkyl groups having one to eight carbon atoms.

3,415,763

METHOD OF MAKING FOAMED PHENOLIC RESINS AND PRODUCT OBTAINED THEREFROM

Lawrence F. Sonnabend, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,065
4 Claims. (Cl. 260—2.5)

The invention relates to a process for making a rigid thermoset foam which comprises heating in the presence of a Friedel-Crafts catalyst a mixture of a fusible phenol-chloromethylated diphenyl ether condensation product with a lower alkoxymethylated diphenyl ether in an amount sufficient to provide 0.5–2 alkoxy groups per phenol unit in said condensation product, said alkoxymethylated diphenyl ether having an average of 1.5–4 alkoxymethyl groups per diphenyl ether unit.

3,415,764

RETICULATE POLYMERIC STRUCTURE

John G. Erickson, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Original application Apr. 6, 1964, Ser. No. 357,812. Divided and this application Sept. 22, 1965, Ser. No. 509,456
4 Claims. (Cl. 260—2.5)

A composition of matter having a reticulate structure which comprises a polymer having repeating organic sulfur groups containing carbonyl linkages. The polymer is used for resilient packing materials and in sound dampening applications.

3,415,765

FIRE RESISTANT PARTICLE BOARD CONTAINING MONOBASIC AMMONIUM PHOSPHATE AND/OR AMMONIUM SULPHATE

Earland G. Hallonquist, Nanaimo, British Columbia, John M. Jaworsky, New Westminster, British Columbia, and Victor G. Kassay, Vancouver, British Columbia, Canada, assignors to MacMillan, Bloedel Limited, a corporation of British Columbia

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,077
11 Claims. (Cl. 260—17.3)

A fire resistant particle board made-up of wood particles, a resin binder, and one or more fire-retardant salts mixed together and pressed under heat to produce a board of a desired density, and the method of making this board.

3,415,766

COATING COMPOSITIONS COMPRISING IN COMBINATION A SICCATIVE ORGANIC COATING COMPOSITION AND A PHOSPHORUS-CONTAINING COMPOSITION

Woodrow W. Jedlicka, Euclid, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 301,588, Aug. 12, 1963. This application Dec. 9, 1966, Ser. No. 600,353
9 Claims. (Cl. 260—22)

The combination of a siccative material and a minor proportion of the product of the reaction of a benzene polycarboxylic reactant, a polyhydroxy compound and phosphorus pentoxide, phosphoric acid or a mixture thereof, provides protection from corrosion when applied to a metal surface as a film. This combination is especially effective for the protection of aluminum surfaces. Further, the above reaction product itself provides good protective films on metal surfaces, especially aluminum surfaces. Such films may be deposited by any of the usual methods, e.g., from solutions in volatile solvents.

3,415,767

PLASTICIZER COMPOSITIONS FOR NEOPRENE FILMS

Andrew J. Kelly, West Roxbury, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,684
4 Claims. (Cl. 260—27)

Elongation properties and low temperature characteristics of neoprene meteorological balloons are improved by using a plasticizer composed of butyl tallate alone or in admixture with compounds derived from 18 carbon monocarboxylic fatty acids, such as lower alkyl oleates and nitriles.

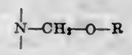
3,415,768

POLYURETHANES PREPARED FROM CHAIN-EXTENDERS HAVING N-ALKOXY METHYL GROUPS

Dieter Dieterich, Leverkusen, Wolfgang Keberle, Bergisch-Neukirche, and Erwin Muller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 3, 1966, Ser. No. 555,004
Claims priority, application Germany, June 5, 1965, F 46,274
7 Claims. (Cl. 260—29.2)

Polyurethanes which are prepared by reacting an organic polyisocyanate with an organic compound containing at least two active hydrogen containing groups and a chain-lengthening agent which has at least one active hydrogen containing group and at least one group of formula



wherein R is a hydrocarbon radical having 1 to 13 carbon atoms. The polyurethanes have good resistance to both water and oil and may be used as coatings or impregnations.

3,415,769

ETHYLENE-α-OLEFIN ELASTOMER COMPOSITIONS

David M. Todd, Warrington, and William D. McDavid, Pensacola, Fla., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,460
15 Claims. (Cl. 260—29.8)

Oligomers of cyclic monoterpene hydrocarbons, which have the formula $(C_{10}H_{16})_n$ wherein n is an integer in the range of 2 to 4 and which have boiling points in the range of 170° C. to 240° C. at 10 mm. can be used to tackify and at the same time to soften and plasticize elastomeric ethylene-α-olefin polymers. These oligomers do not adversely affect the rate at which the elastomer compositions cure or the physical properties of the compositions; they are resistant to oxidation and are not readily extracted from the compositions by solvents or by alkalies.

3,415,770

POLYVINYL CHLORIDE PLASTICIZED WITH MIXED ALKYL TERPENE DIBASIC ACID ESTERS

William J. Cunningham, Holland, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 398,107, Sept. 25, 1964, now Patent No. 3,342,852. This application June 29, 1967, Ser. No. 649,813
8 Claims. (Cl. 260—29.8)

A plasticized polyvinyl chloride composition made from polyvinyl chloride and a plasticizer consisting of a mixed alkyl terpene ester of a dibasic acid or an alkyl half terpene ester of a dibasic acid.

3,415,771

COATING COMPOSITIONS AND PROCESSES

Robert Wilson Woodruff, East Brunswick, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 21, 1965, Ser. No. 457,836
5 Claims. (Cl. 260—33.4)

A coating composition comprising:

(1) a dispersion of inert inorganic particles comprising particles 8–20 microns in size and particles below 0.5 micron in size, there being about 2 to about 2.5 times by weight more small size particles than large size particles in

(2) a solution of alkanol of 1–4 carbons or an aliphatic hydrocarbon of 5–10 carbons, containing

(3) an organic polymer containing a hydroxyl or amide group, and

(4) a cationic ammonium salt dispersing agent. Also a process of coating an opaque, microporous non-fibrous clear image-bearing layer of an addition polymer with the composition to form a matte surface.

3,415,772

PROCESS FOR THE PREPARATION OF POLYMER SOLUTIONS FROM POLYMER LATICES

Gerardus E. La Heij and Jacques A. Waterman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 13, 1964, Ser. No. 382,368
Claims priority, application Netherlands, July 16, 1963, 295,362
9 Claims. (Cl. 260—33.6)

Polymer solutions are prepared from a latex of the polymer by creaming the latex, contacting the creamed latex with a polymer solvent to form a solution of the polymer in the solvent and then separating the organic solution from the aqueous components of the original latex.

3,415,773

CEMENTITIOUS COMPOSITIONS

James D. Collins, Indianapolis, Ind., and John F. Corwin, Pittsburgh, Pa., assignors, by direct and mesne assignments, to Industrial Research and Manufacturing, Inc., Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,006
6 Claims. (Cl. 260—38)

An ultra high-strength concrete composition is provided. The concrete contains a major amount of concrete formed from water, calcium-aluminate cement and mineral aggregate and a minor amount of an in situ-formed cross-linked condensation product of a polyhydric phenol, such as resorcinol, and paraformaldehyde, either as such or in its higher polymerized form. Cementitious mixes made from the composition have a workable time prior to setting up of sufficient length to permit the use of the mix in large scale operations at ordinary temperatures.

3,415,774

PORTLAND CEMENT COMPOSITIONS

Richard T. Hood, Butler, and Myron I. Dietrick, East Brady, Pa., assignors to Industrial Research and Manufacturing, Inc., Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,054
5 Claims. (Cl. 260—38)

An ultra high-strength concrete composition is provided. The concrete contains a major amount of concrete formed from water, portland cement and mineral aggregate; a minor amount of an in situ-formed cross-linked condensation product of a polyhydric phenol, such as resorcinol, and heat-polymerized paraformaldehyde; and a minor percentage of a lower alcohol. The composition provides a cementitious mix having a workable time prior to setting up of sufficient length to permit the use of the mix in large scale operations at ordinary temperatures.

3,415,775

BLENDS OF N-ALKYL-N'-ARYL PHENYLENE DIAMINES AND A CARRIER

Richard T. Solsten, St. Albans, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,201
10 Claims. (Cl. 260—41.5)

Solid free-flowing rubber antidegradant compositions are prepared from low-melting N-alkyl-N'-aryl-p-phenylenediamines by absorption on a carbon black carrier having a BET surface area within the range of 25 to 88 $m.^2/g.$, oxygen content within the range of 0.15 to 1.00% and mineral oil absorbency within the range of 0.75 to 1.45% cc./g. the ratio of diamine to carbon black being substantially 50/50.

3,415,776

STABILIZATION OF RESINS AND PLASTICS

Roy A. White, Somers, Conn., assignor to Litton Business Systems, Inc., a corporation of New York

No Drawing. Filed July 8, 1964, Ser. No. 381,228
12 Claims. (Cl. 260—45.8)

A reaction product of a borane compound with a blue to violet triarylmethane dye, the dye having a methyl carbon united by a double bond to one of its three aryl rings. This reaction product, when incorporated into vinyl polymers, has the unexpected property of markedly inhibiting thermal discoloration of such polymers.

3,415,777

POLYMERIZATION OF CYCLIC ORGANOSILOXANES EMPLOYING AN ACTIVATED ZINC CHALCOGEN CATALYST

Edgar E. Bostick, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,812
6 Claims. (Cl. 260—46.5)

This disclosure is concerned with a process for the polymerization of certain organocyclotrisiloxanes by heat in the presence of a specially activated zinc chalcogen catalyst.

This disclosure is also concerned with a zinc chalcogen which is coated with certain specific linear organopolysiloxanes according to the disclosed process. These coated zinc chalcogens are useful as fillers for elastomers, as the light source in electroluminescent devices and as a charge carrier in electrostatic printing devices.

3,415,778

MODIFIED ORGANOPOLYSILOXANES AND PREPARATION THEREOF

Alfred J. Burzynski and Robert E. Martin, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation of application Ser. No. 419,216, Dec. 17, 1964. This application Feb. 5, 1968, Ser. No. 703,182
15 Claims. (Cl. 260—46.5)

Organopolysiloxanes, especially those produced from trifunctional silanes such as the trialkoxysilanes, are modified by incorporating into the organopolysiloxane molecule boron compounds that either contain or are capable of forming B—OH linkages in the aforesaid molecule. Examples of such compounds are the oxides, acids and hydrolyzable esters of boron. The products are useful as machinable casting resins and as film-forming material in coating applications.

3,415,779

THERMOCURABLE PRECONDENSATES FROM POLYEPOXY COMPOUNDS AND AROMATIC AMINES AND PROCESS FOR THEIR MANUFACTURE

Erich Preininger, Riehen, and Gustav Ott, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,702
Claims priority, application Switzerland, Dec. 13, 1963, 15,307/63
9 Claims. (Cl. 260—47)

Thermocurable precondensates are obtained by the reaction of a 1,2-epoxy compound having a 1,2-epoxy equivalency greater than one with a member selected from the group consisting of a phosphoric acid ester containing at least one member of the group consisting of aminoaryloxy group linked with phosphorus and aminoaryl group linked with phosphorus, at least one primary amino group being bound to an aryl radical and a phosphonic acid ester containing at least one member of the group consisting of aminoaryloxy group linked with phosphorus acid aminoaryl group linked with phosphorus, at least one primary amino group being bound to an aryl radical, at a temperature of at least 30 while preventing gelling.

3,415,780

POLYAMIDE ESTERS PREPARED FROM N,N'-DIARYL ARYLENE DIAMINES, DIPHENOLS AND AROMATIC DIACYL HALIDES

Fred F. Holub, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 17, 1965, Ser. No. 440,388
16 Claims. (Cl. 260—47)

An N,N'-diaryl arylene diamine and a diphenol are coreacted with an aromatic diacyl halide to produce an aromatic N-arylamide ester polymer. These polymers have exceptional resistance to heat and are, therefore, useful for the making of shaped articles or coatings on substrates, for example, insulation on an electrical conductor, which are capable of withstanding exposure to high temperatures.

3,415,781

TITANIUM PHOSPHINATE POLYMERS

Burton Peter Block, Chester County, and Gerd Helmut Dahl, King of Prussia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 6, 1966, Ser. No. 563,038
11 Claims. (Cl. 260—47)

A new titanium phosphinate polymer is prepared by reacting a phosphinic acid having the formula $R_1R_2P(O)OH$ where R_1 and R_2 are selected from the group consisting of alkyl and halogeno-substitued alkyl radicals having 1 to 10 carbon atoms and phenyl and substituted phenyl radicals, with a titanium chelate compound of the formula $(RO)_2TiZ$ where R is an alkyl group having from 1 to 4 carbon atoms and Z is a bidentate ligand.

3,415,782

FORMATION OF POLYPYROMELLITIMIDE FILAMENTS

Robert Samuel Irwin, Newark, and Charles Edgar Smullen, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 355,943, Mar. 30, 1964. This application Nov. 21, 1967, Ser. No. 691,089
13 Claims. (Cl. 260—47)

Polypyromellitimide filaments having high strength in both straight and transverse directions are obtained by dry-spinning a solution of a polyamide-acid of pyromellitic dianhydride and bis(4-aminophenyl)ether or bis(4-aminophenyl)sulfide, then converting the polyamide-acid to the polyimide and drawing. The dry-spun filaments may be drawn partially before and partially after the conversion step.

3,415,783

PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT POLYOXYMETHYLENES

Silvio Bezzi and Luigi Mortillaro, Padova, and Alberto Bandel, Venice, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Jan. 30, 1964, Ser. No. 342,334
Claims priority, application Italy, Jan. 31, 1963, 1,929/63
14 Claims. (Cl. 260—67)

1. A process for synthesizing high molecular weight polyoxymethylenes having an orthorhombic-crystalline structure which comprises polymerizing said polyoxymethylenes from an aqueous solution of formaldehyde by topochemical reaction on an effective amount of polyoxymethylene as the solid phase at a temperature ranging from about 0° C. to 60° C.; said aqueous solution of formaldehyde containing at least one inorganic acid metal salt wherein the metal of the salt is selected from Groups I and II of Mendeléeff's Periodic Table, said inorganic salt being present in the aqueous solution at a concentration of at least 6% by weight; said aqueous solution having a pH between 9 and 12 and a formaldehyde concentration ranging from the equilibrium concentration to the saturation concentration; said polymerization taking place while maintaining the pH and the concentration of formaldehyde and inorganic acid salt substantially constant.

3,415,784

TRIOXANE-TRIOXASPIRO COMPOUND COPOLYMERS AND PROCESS FOR PRODUCTION THEREOF

Yoshizo Tsuda, Masana Yanagi, and Muneyoshi Minami, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed Aug. 24, 1964, Ser. No. 391,774
12 Claims. (Cl. 260—67)

Novel trioxane-trioxaspiro compound copolymers having high thermal stability and a process for preparing said copolymers.

3,415,785

COPOLYMERIZATION OF TRIOXANE AND NORBORNADIENE WITH A PREPOLYMER CATALYST

Michael R. Tirpak, Mentor, Irving Rosen, Painesville, Richard M. Wilhjelm, Chagrin Falls, Ohio, and Jerry T. Reed, Houston, Tex., and Kornel D. Kiss, University Heights, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed June 7, 1965, Ser. No. 462,087

14 Claims. (Cl. 260—67)

Copolymers of trioxane and norbornadiene or a monoalkyl-substituted norbornadiene are prepared employing as the polymerization catalyst, a liquid oligomer of either norbornadiene or norbornadiene and trioxane in combination, which oligomer is formed by contacting the norbornadiene or the norbornadiene-trioxane mixture with a liquid coordination complex of a metal halide with an organic compound wherein oxygen, nitrogen or sulfur is the donor atom.

3,415,786

COPOLYMERIZATION OF TRIOXANE AND NORBORNADIENE IN A TWO-STAGE PROCESS

Kornel D. Kiss, University Heights, Ohio, and Jerry T. Reed, Houston, Tex., assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed June 7, 1965, Ser. No. 462,090

6 Claims. (Cl. 260—67)

Thermally stable, high molecular weight oxymethylene copolymers are prepared in pulverulent form by reacting a mixture containing a major amount of trioxane, a minor amount of norbornadiene and a cationically-active polymerization catalyst in a reaction vessel fitted with a high-speed stirrer until copolymerization is about 20% complete. The reaction mixture is then transferred to a reactor adapted to impart high shear thereto and the reaction is continued under high-shear conditions until copolymerization is at least 90% complete.

3,415,787

ORGANO-ANTIMONY OXIDES AND SULFIDES AS POLYCONDENSATION CATALYSTS

Otto K. Carlson, Marcus Hook, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,342

9 Claims. (Cl. 260—75)

Process for preparing polyethylene terephthalate comprising carrying out an ester-interchange reaction between ethylene glycol and dimethyl terephthalate or carrying out a direct esterification reaction between ethylene glycol and terephthalic acid and polycondensing the reaction product thereof in the presence of a polycondensation catalyst having the formula



in which X represents an oxygen atom or a sulfur atom and R_1, R_2, and R_3 represent radicals selected from the group consisting of lower alkyl, aryl, alkaryl, and aralkyl.

3,415,788

PHOSPHORUS-CONTAINING COMPOSITIONS SUITABLE FOR APPLICATION TO METAL SURFACES

Woodrow W. Jedlicka, Euclid, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 301,588, Aug. 12, 1963. This application Dec. 9, 1966, Ser. No. 600,352

20 Claims. (Cl. 260—75)

A composition of matter, suitable for application to metal surfaces, is prepared by the reaction of a benzene tricarboxylic compound, a polyhydric alcohol or phenol, and phosphorus pentoxide, phosphoric acid or mixtures thereof.

3,415,789

POLYMERS FROM PHOSPHONITRILIC HALIDES AND TETRAALKYL DIFUNCTIONAL CYCLOBUTANES

Harry W. Coover, Jr., and Richard L. McConnell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of abandoned application Ser. No. 337,748, Jan. 15, 1964. This application Feb. 8, 1967, Ser. No. 614,545

11 Claims. (Cl. 260—77.5)

Polymers which may be formed into films or protective coatings and which are extremely tough and flame resistant and which are quite stable even when heated to very high temperatures may be prepared from phosphonitrilic halides (preferably the cyclic trimer or cyclic tetramer) and tetraalkyl difunctional cyclobutanes in an organic solvent which is a solvent for the reaction product. Modified polymers are obtained by treatment of the polymers with difunctional molecules such as diisocyanates, dianhydrides, and diepoxides to effect the insolubilization.

3,415,790

REMOVING UNREACTED DIISOCYANATES FROM MACRODIISOCYANATES AND POLYMERIZING TO FORM SEGMENTED POLYURETHANE COPOLYMERS

Burns Davis and Roger M. Schulken, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 29, 1964, Ser. No. 378,711

16 Claims. (Cl. 260—77.5)

1. A solution capable of being spun to form elastomeric fibers of segmented polyurethane copolymers, said segmented copolymers having polymer melt temperatures above 150° C. and an inherent viscosity of at least 2.0 when dissolved in a mixture consisting of 60% phenol and 40% tetrachloroethane, said copolymers containing from about 2% to about 40%, by weight of said segmented copolymers, of urea segments, essentially all of which are connected to polymeric glycol residues through urethane linkages, said urea segments containing at least one repeating unit of a polyurea having a melting point of at least 200° C. in the fiber forming molecular weight range of above about 10,000, said repeating unit being selected from the group consisting of:

(a) —A—NH—CO—NH—D—NH—CO—NH—, and

(b) mixtures of (a) and —A—NH—CO—NH—, with the proviso that at least 50% of the mixture comprises said (a),

wherein —A— is the bivalent organic radical of an organic diisocyanate having the formula: OCN—A—NCO, and

wherein —D— is (i) a nitrogen to nitrogen bond or (ii) the bivalent hydrocarbon radical of a hydrocarbon diamine having the formula: $H_2N—D—NH_2$,

essentially all of said urea segments being connected to said polymeric glycol residues by urethane linkages of the formula:

—NH—CO—O—

wherein the

—NH—

of said urethane linkage is attached to the terminal radical —A— of said urea segment and the

—CO—O—

of said urethane linkage is attached to residues remaining after the removal of the terminal hydroxyl groups of a

linear polymeric glycol (I) having a melting point below about 60° C., (II) having a molecular weight in the range of from about 600 to about 12,000, and (III) consisting essentially of at least one member selected from the group consisting of:

(A) polyethers,

(B) polyesters,

(C) poly(ester-ethers), and

(D) oligomers of said (A), (B), or (C)

connected by from 1 to 10 intralinear linkages having the formula: —O—CO—NH—A—NH—CO—O—, wherein —A— is defined above, said solution being that which is formed by a process comprising the following steps:

(1) forming a macrodiisocyanate by reacting at least 1.3 moles of a diisocyanate, as defined above, with 1.0 mole of a linear polymeric glycol, as defined above,

(2) treating said macrodiisocyanate by subjecting same to solvent extraction or distillation to remove at least 40% by weight of the unreacted diisocyanate present in step (1), and

(3) reacting, in the presence of a solvent for said copolymer about to be formed, the product of step (2) with a member selected from the group consisting of (a) a diamine, as defined above, (b) water, and (c) mixtures of said diamines and water, in such proportions that the ratio of active hydrogen atoms in said diamine, water, or mixtures thereof which react with free isocyanate groups in the product of step (2) is between about 0.7:1.0 to about 1.0:1.0 reacted active hydrogen to reacted free isocyanate.

3,415,791

COPOLYAMIDE OF 6-AMINO-CAPROIC ACID AND 11-AMINO-UNDECANOIC ACID AND FIBERS THEREFROM

Lawrence W. Crovatt, Jr., Raleigh, and Richard D. Chapman, Durham, N.C., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 11, 1965, Ser. No. 425,119

3 Claims. (Cl. 260—78)

Copolyamides from 11-aminoundecanoic acid and 6-aminocaproic acid exhibit surprisingly improved dye absorption characteristics since 11-aminoundedamide alone exhibits very poor absorption characteristics. In some cases the absorption value of the copolyamide is higher than that of nylon 6 alone. These copolyamides are particularly useful in the production of fibers.

3,415,792

ANIONIC POLYMERIZATION OF LACTAMS WITH (1) ANIONIC CATALYST, (2) PROMOTER AND (3) PHENOLIC COMPOUND

Jan Šebenda, Prague, Czechoslovakia, assignor to Ceskoslovenska Akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia

No Drawing. Filed June 18, 1965, Ser. No. 465,193

Claims priority, application Czechoslovakia, July 3, 1964, 3,850/64

9 Claims. (Cl. 260—78)

Polymerization of lactams is carried out by forming a mixture consisting essentially of (a) a solution in molten lactam of a lactam salt of a substance selected from the group consisting of alkali metals, alkaline earth metals and ammonia, (b) a free phenolic compound and (c) a polymerization activator; and maintaining said mixture at polymerization temperature.

3,415,793

FILM FORMING POLYCARBONAMIDES FROM HEXACHLOROBICYCLOHEPTENYL CARBOCYCLIC AROMATIC DIACIDS

Emil F. Jason and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Application July 13, 1962, Ser. No. 209,747, now Patent No. 3,318,933, dated May 9, 1967, which is a continuation-in-part of application Ser. No. 795,891, Feb. 27, 1959. Divided and this application Dec. 13, 1965, Ser. No. 525,790

2 Claims. (Cl. 260—78)

Film forming carbonamides of hexachlorobicycloheptenyl carbocyclic aromatic acids having less than 3 aromatic rings and having 1 aromatic ring atom joined to hexachlorobicycloheptenyl radical prepared by reacting diamines with the hexachlorobicycloheptenyl carbocyclic aromatic acids.

3,415,794

POLYMERS CONTAINING OXETANE GROUPS

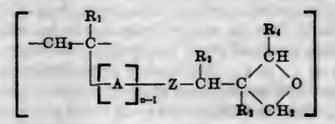
Hans Orth, Binningen, Paul Zappinger, Ariesheim, Hans Gempeler, Muttenz, and Paul Schaefer, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland

No Drawing. Filed Mar. 28, 1966, Ser. No. 544,338

Claims priority, application Switzerland, Apr. 1, 1965, 4,504/65

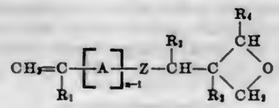
12 Claims. (Cl. 260—78.5)

1. An essentially linear polymer which contains, arranged along the polymer chain, units of structural formula



in which R_1 represents a member selected from the group consisting of hydrogen atom and lower alkyl group of 1 to 4 carbon atoms, R_2 represents a lower alkyl group of 1 to 4 carbon atoms, R_3 and R_4 each represent members selected from the group consisting of hydrogen atom and the methyl group, Z is a member selected from the group consisting of oxygen atom and sulphur atom, A is a member selected from the group consisting of bivalent aliphatic, cycloaliphatic, araliphatic and aromatic hydrocarbon residue and *n* represents a whole number of at least 1 and at the most 2.

8. An ethylenically unsaturated polymerizable monomer containing oxetane groups, of formula



in which R_1 represents a member selected from the group consisting of hydrogen atom and lower alkyl group of 1 to 4 carbon atoms, R_2 represents a lower alkyl group of 1 to 4 carbon atoms, R_3 and R_4 each represent a member selected from the group consisting of hydrogen atom and the methyl group, Z is selected from the group consisting of oxygen atom and sulphur atom, A is a member selected from the group consisting of bivalent aliphatic, cycloaliphatic, araliphatic and aromatic hydrocarbon residue, and *n* is a whole number of at least 1 and the most 2.

3,415,795

ANIONIC POLYMERIZATION OF CERTAIN VINYL MONOMERS WITH A METHYLSULFINYLCARBANION CATALYST IN A DIMETHYLSULFOXIDE SOLVENT

Gunther E. Molau, Midland, and Jerry E. Mason, Mount Pleasant, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,700
8 Claims. (Cl. 260—79.3)

A method for the anionic polymerization of vinyl monomers in the presence of a catalyst-initiator comprising methylsulfinylcarbanion containing a sufficient quantity of triphenylmethyl anion to impart a deep red indicator color to the catalyst solution, sufficient catalyst being added such that the red indicator persists, said polymerization occuring in a dimethylsulfoxide solvent.

This invention relates to a method for the anionic polymerization of certain vinyl monomers.

3,415,796

EXTRUDED MATTE FINISH ACRYLIC FILM

Louis Charles Souder, Levittown, Pa., John Alexander Powell, Willingboro, N.J., and Fred Andrew Hajduk, Lansdale, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 24, 1966, Ser. No. 537,000
9 Claims. (Cl. 260—86.1)

1. In the method of forming flattened, tubular thermoplastic film wherein heated and softened thermoplastic resin is extruded through an orifice in the form of tubing, a fluid medium is introduced therein to expand the same, and said expanded tubing is collapsed to form the flattened product, the improvement which comprises forming said thermoplastic film in matte finish form by extruding an acrylic resin selected from the group consisting of homopolymers of C_2 to C_4 alkyl esters of methacrylic acid and copolymers of a lower alkyl ester of methacrylic acid with a C_1 to C_8 alkyl acrylate, said resin having a melt index of 0.1 to 3 and a glass transition temperature of 30° to 80° C.

3,415,797

PROCESS FOR POLYMERIZATION OF VINYL MONOMERS

Giancarlo Borsini and Francesco Visani, Milan, and Guidobaldo Cevidalli, Seveso, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Dec. 1, 1965, Ser. No. 528,321
Claims priority, application Italy, Dec. 3, 1964, 25,998/64
12 Claims. (Cl. 260—92.8)

Low-temperature mass polymerization of vinyl chloride and monomer copolymerizable therewith which is carried out in the presence of a halogenated saturated hydrocarbon fluidifier (between 5 and 50% by weight of the monomer component) and 0.0001 to 0.5 part by weight (to 100 parts by weight of the monomer component) of butadiene, pentadiene, cyclopentadiene and like polyunsaturated hydrocarbons which limit the range distribution of the precipitating-polymer particle size, the reaction being carried out at −60° C. to +20° C.

3,415,798

PRODUCTION OF TERPENE RESINS

Henry G. Sellers, Jr. and Henry E. McLaughlin, Pensacola, Fla., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Original application Oct. 3, 1963, Ser. No. 313,416, now Patent No. 3,297,673. Divided and this application Nov. 1, 1966, Ser. No. 620,567
6 Claims. (Cl. 260—93.3)

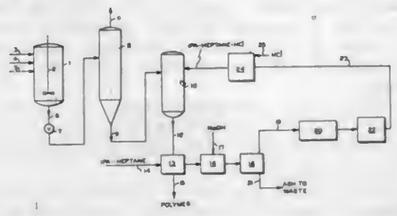
1. The process of producing polyterpene resins comprising the steps of polymerizing substantially peroxide-free terpene in a solvent medium in the presence of a phenolic antioxidant and a metal halide polymerization catalyst, and thereafter recovering the polyterpene resin.

3,415,799

POLYPROPYLENE PURIFICATION

Charles D. Helm, Annapolis, Md., assignor, by mesne assignments, to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 15, 1963, Ser. No. 302,401
4 Claims. (Cl. 260—93.7)



1. In a process for producing polypropylene wherein propylene is polymerized in the presence of a catalytic amount of a titanium chloride activated with an aluminum alkyl polymerization catalyst to produce a suspension of polypropylene in liquid propylene, the polypropylene is separated from the liquid propylene by flashing in a cyclone separator to leave a substantially dry polypropylene product consisting essentially of crystalline and atactic portions, and the polypropylene product is subsequently purified, the improvement for obtaining a purified polypropylene product containing less than 10 parts per million of titanium, less than 30 parts per million of aluminum and less than 50 parts per million of chloride residues which consists essentially in:

(a) upgrading and purifying the polypropylene by extracting the soluble atactic polypropylene and catalyst residues from the polypropylene product with an azeotropic mixture of isoprpyl alcohol-heptane containing approximately from 0.1 to 0.5 weight percent HCl based on the isopropyl alcohol-heptane azeotrope by refluxing near the boiling point said polypropylene and azeotropic mixture,

(b) separating the purified polypropylene from said azeotropic mixture,

(c) washing said polypropylene with anhydrous, acid-free isopropyl alcohol-heptane,

(d) separating and recovering the polypropylene from the wash liquor,

(e) processing said azeotropic mixture to remove said soluble atactic polypropylene, catalyst residues and chloride residues, and

(f) recycling the resulting processed azeotropic mixture to said extraction step.

3,415,800

PURIFICATION OF POLYOLEFINS

Abraham Kutner, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,788
7 Claims. (Cl. 260—93.7)

In the process where olefins are polymerized by means of transition metal catalysts and the catalyst residues are deactivated by treatment of the polymer slurry with low molecular weight alkanols, addition of a small amount of a mono- or dialkyl orthophosphate to the treated slurry reduces the sensitivity of the slurry to air and moisture, permitting the remainder of the working procedure to be accomplished without nitrogen blanketing.

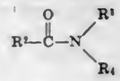
3,415,801

THREE-COMPONENT MONOSUBSTITUTED ALUMINUM DIHALIDE CATALYSTS FOR OLEFIN POLYMERIZATION

Harry W. Coover, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

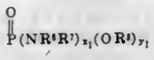
No Drawing. Continuation of application Ser. No. 273,546, Apr. 17, 1963. This application Sept. 19, 1966, Ser. No. 580,503
15 Claims. (Cl. 260—93.7)

A novel catalyst for the polymerization of olefinic hydrocarbons to solid crystalline polymers which catalyst comprises a catalytic mixture containing an alkyl aluminum dihalide, an alkoxide of a transition metal and a component selected from the amides having the formulas:



$$P(NR^8R^7)_x(OR^8)_y$$

and



3,415,802

POLYMERIZATION

Ralph C. Farrar, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 18, 1965, Ser. No. 440,942
3 Claims. (Cl. 260—94.3)

Butadiene is polymerized to form polymers having substantially cis-1,4-addition by carrying out the polymerization in the presence of a catalyst system formed on mixing (1) an organoaluminum compound of the formula R_2AlX, (2) titanium tetraiodide or mixture thereof with titanium tetrachloride, and (3) an N,N-dialkyl fatty acid amide.

3,415,803

HEXA- AND HEPTAPEPTIDES RELATED TO THE C-TERMINAL SEQUENCE OF ELEDOISIN

Klaus Lübke, Eberhard Schröder, Reinhard Hempel, and Ralph Schmiechen, Berlin, Germany, assignors to Schering Aktiengesellschaft, Berlin, Germany

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,950
Claims priority, application Germany, Mar. 1, 1963, Sch 32,860; Oct. 31, 1963, Sch 34,086; Jan. 4, 1964, Sch 34,464
13 Claims. (Cl. 260—112.5)

1. Polypeptide of the formula:

R-L-alanyl-L-phenylalanyl-L-leucyl-glycyl-L-leucyl-L-methioninamide

wherein R is selected from the group consisting of hydrogen and natural L-α-amino acid radicals selected from the group consisting of radicals of glycine, alanine, valine, leucine, isoleucine, asparagine, glutamine, serine, threonine, cysteine, methionine, phenylanalanine, tyrosine, proline, oxyproline, lysine, histidine, arginine, ornithine, norleucine, norvaline, α-aminobutyric acid, α,γ-diaminobutyric acid, pyroglutamic acid, sarcosine, N-methylvaline, N-methylleucine, and tryptophane.

2. Polypeptide of the formula:

R-L-alanyl-L-phenylalanyl-L-valyl-glycyl-L-leucyl-L-methioniamide

wherein R is selected from the group consisting of hydrogen and natural L-α-amino acid radicals selected from the group consisting of the radicals of glycine, alanine, valine, leucine, isoleucine, asparagine, glutamine, serine, threonine, cysteine, methionine, phenylanalanine, tyrosine, proline, oxyproline, lysine, histidine, arginine, ornithine, norleucine, norvaline, α-aminobutyric acid, α,γ-diaminobutyric acid, pyroglutamic acid, sarcosine, N-methylvaline, N-methylleucine and tryptophane.

13. L-lysyl-L-alanyl-L-phenylalanyl - L - isoleucyl-glycyl-L-leucyl-methioninamide.

3,415,804

FRACTIONATION OF MIXTURES OF PROTEINACEOUS SUBSTANCES USING POLYETHYLENE GLYCOL

Alfred Polson, Milnerton, Republic of South Africa, assignor to South African Inventions Development Corporation, Pretoria, Transvaal, Republic of South Africa, a corporation of the Republic of South Africa

No Drawing. Continuation-in-part of application Ser. No. 246,000, Dec. 20, 1962. This application Mar. 31, 1967, Ser. No. 627,308
Claims priority, application Republic of South Africa, Jan. 1, 1962, 34/62
13 Claims. (Cl. 260—112)

Mixtures of proteinaceous substances such as plasma proteins, toxins, antitoxins, enzymes, desoxyribonuclease and viruses are fractionated in aqueous medium with polyethylene glycol used as a dispersibility depressant resulting in a single liquid phase containing one fraction in dispersion and a solid phase fraction of a composition different from that of the original mixture.

3,415,805

O-ALKYL-TYROSINE^2-LYSINE^8-VASOPRESSINS

Walter Siedel, Bad Soden, Taunus, and Karl Sturm and Rudolf Geiger, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 113,613, May 31, 1961. This application Aug. 17, 1965, Ser. No. 480,512
Claims priority, application Germany, June 2, 1960, F 31,364
2 Claims. (Cl. 260—112.5)

O-alkyl-tyrosine^2-lysine^8-vasopressins in which the alkyl group has from 1 to 4 carbon atoms, e.g. O-methyl-tyrosine^2-lysine^8-vasopressin.

3,415,806

PERINONE PIGMENTS

Xaver Pfister, Riehen, Basel, and Karl Ulrich Steiner, Binningen, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,120
Claims priority, application Switzerland, Mar. 11, 1965, 3,422/65
6 Claims. (Cl. 260—157)

Perinone pigments, wherein two perinone dye radicals are bridged by an arylene amido function, are valuable for the mass coloration of plastics and synthetic fibers.

3,415,807

CATIONIC MONOAZO DYESTUFFS CONTAINING A DICARBOXIMIDO RADICAL

John G. Fisher and James M. Straley, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,253
7 Claims. (Cl. 260—158)

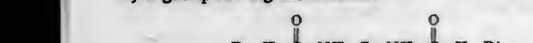
Quaternary thiazolyl- and benzothiazolyl-azo-indole compounds having a dicarboximidoalkyl group attached to the indole nitrogen atom which are useful as dyes for acrylic and modacrylic textile materials.

3,415,808
AZO-DYESTUFFS CONTAINING 2-ARYL-ARYLENETHIAZOLE GROUPS
Kurt Weber, Basel, and Erwin Ingold, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,057
Claims priority, application Switzerland, Sept. 25, 1964, 12,505/64; Aug. 26, 1965, 12,018/65
7 Claims. (Cl. 260—158)

Mono- and polyazo dyestuffs of the benzthiazoleazo series which are free from vattable polycyclic quinones, nitro groups, ureido groups, amino groups and acid hydroxyl groups; useful for dyeing cotton in the presence of reducing agents.

3,415,809
CATIONIC HETEROCYCLIC DISAZO DYES
John G. Fisher and Clarence A. Coates, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,427
9 Claims. (Cl. 260—158)

Azo compounds containing two thiazoly-, benzothiazolyl-, thiadiazolyl-, triazolyl-, or benzimidazolyl-azoaniline groups, the two aniline nitrogen atoms being joined by a group having the formula



in which R_3 and R'_3 each is alkylene, X is —O— or —NH—, and Z is alkylene, phenylene, bis(phenylene) methylene, bis(methylene)phenylene, biphenylene or naphthylene, are useful as dyes for polyacrylonitrile textile materials.

3,415,810
MONOAZO DYES FOR TEXTILE FIBERS
James M. Straley, John I. Dale, and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed July 12, 1965, Ser. No. 471,382
14 Claims. (Cl. 260—205)

Monazo compounds prepared by diazotizing an aniline compound and coupling the resulting diazonium salt with an N-vinylsulfonylethylaniline compound are useful as dyes for hydrophobic fibers.

3,415,811
ANTIBIOTIC LINCOMYCIN K AND PROCESS FOR THE PRODUCTION THEREOF
Alexander D. Argoudelis and Donald J. Mason, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 387,776, Aug. 5, 1964. This application Sept. 28, 1964, Ser. No. 399,802
16 Claims. (Cl. 260—210)

Antibiotic lincomycin K produced by a lincomycin-producing actinomycete when ethyl thiolincosaminide is added to a lincomycin fermentation. Lincomycin K is a basic compound and has the same antibacterial spectrum as lincomycin.

3,415,812
PARTIALLY ACETYLATED SUCROSE-PROPYLENE OXIDE POLYETHER POLYOLS
John Michael Turner, Swansea, Wales, assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 8, 1966, Ser. No. 526,001
Claims priority, application Great Britain, Feb. 20, 1965, 7,443/65
4 Claims. (Cl. 260—234)

Sucrose-propylene oxide polyether polyols having an average of from about 1 to about 2 combined oxypropylene units per each hydroxy group in the original sucrose molecule which have been acetylated to provide a percentage of acetylated hydroxy groups in relation to the total number of hydroxy groups originally present in the polyether polyol molecule that ranges from about 5 to about 40% and the use thereof in a direct one-step procedure for producing rigid polyurethane foams.

3,415,813
PURIFICATION OF MUSK
Paul D. Thomas, Groton, and Charles R. Stephens, Jr., East Lyme, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 12, 1966, Ser. No. 573,134
4 Claims. (Cl. 260—236.5)

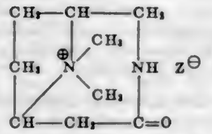
1. A process for purifying musk which comprises treating impure musk in liquid form with a minor amount of Raney nickel at an elevated temperature below the boiling point of said musk.

3,415,814
4-(CYCLOPROPYLMETHYL)-3H-1,4-BENZODIAZEPINE-2,5(1H,4H)-DIONE
Philip M. Carabateas, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Application Sept. 28, 1966, Ser. No. 582,529, which is a continuation-in-part of application Ser. No. 312,303, Sept. 30, 1963. Divided and this application Mar. 9, 1967, Ser. No. 621,750
1 Claim. (Cl. 260—239.3)

1 - R_1 - 3 - R_3 - 4 - R_4 - 1H - 2,3,4,5 - tetrahydro - 1,4 - benzodiazepines, where R_1 is hydrogen, lower-alkanoyl, lower-alkanesulfonyl, or benzoyl, R_3 is hydrogen or lower-alkyl, and R_4 is lower-alkenyl, halo-(lower-alkenyl), phenyl - (lower - alkyl), lower - cycloalkyl - (lower - alkyl) or lower - carbalkoxy - (lower - alkyl), analgesic antagonists, are prepared by reducing the corresponding 3 - R_3 - 4 - R_4 - 3H - 1,4 - benzodiazepine - 2,5(1H,4H) - diones to prepare said compounds where R_1 is hydrogen and acylating the latter to obtain said compounds where R_1 is lower-alkanoyl, lower-alkanesulfonyl or benzoyl. Intermediate 4 - (cycloalkylalkyl) - 3H - 1,4 - benzodiazepine - 2,5(1H,4H) - diones also have psychomotor depressant activity.

3,415,815
PROCESS FOR PREPARING 9,9-DIMETHYL-4-OXO-3-AZA-9-AZONIABICYCLO[4.2.1]-NONANE SALTS
Leo A. Paquette, Columbus, Ohio, assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Application July 16, 1964, Ser. No. 383,238, now Patent No. 3,320,238, dated May 16, 1967, which is a continuation-in-part of application Ser. No. 307,370, Sept. 9, 1963. Divided and this application Jan. 20, 1967, Ser. No. 624,109
1 Claim. (Cl. 260—239.3)

This invention is drawn to a process for producing a compound of the formula:



wherein $Z^{\ominus}$ is an anion corresponding to an acid with a dissociation constant at least 10^{-2} at 25° C., which comprises reacting 7-dimethylamino-5,6,7,8-tetrahydro

—2(1H)—

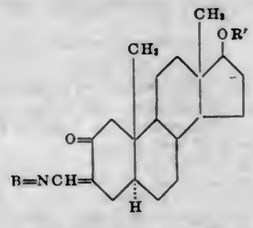
azocinone with said acid. This compound is useful as an intermediate to prepare compounds having a variety of

uses, such as germicides, catalysts, pickling inhibitors, and others.

3,415,816
PREPARATION OF 2-OXO STEROIDS AND NOVEL DERIVATIVES THEREOF
Robert L. Clarke, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 12, 1963, Ser. No. 264,661
25 Claims. (Cl. 260—239.5)

3. Androstan-17β-ol-2-one.

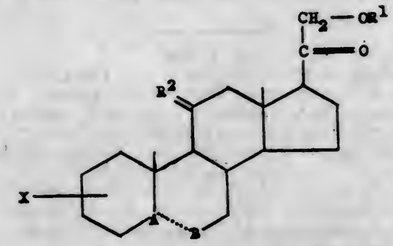
20. A compound of the formula



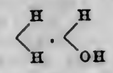
wherein R' is a member of the group consisting of hydrogen and lower-carboxylic acyl, and B=N is a member of the group consisting of di-lower-alkylamino, 1-piperidyl, lower-alkylated 1-piperidyl, 1-pyrrolidyl, lower-alkylated 1-pyrrolidyl, 4-morpholinyl, lower-alkylated 4-morpholinyl, 1-piperazinyl and lower - alkylated 1-piperazinyl.

3,415,817
BACTERIA-INHIBITING STEROIDS AND METHOD OF MAKING THE SAME
Rainer Philippson, Lippe, Gerhard Hempel, Lunen, Emanuel Kaspar, Kamen, and Armin Karl Wilhelm Kutzsche, Darmstadt, Germany, assignors to Scherling Aktiengesellschaft, Berlin, Germany
No Drawing. Filed Mar. 2, 1965, Ser. No. 436,646
30 Claims. (Cl. 260—239.5)

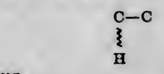
A compound of the pregnane series having the general formula



wherein R^1 is a member selected from the group consisting of hydrogen and a —CO—$(CH_2)_n$—Y radical, *n* herein being a number from 1 to 6 and Y being hydrogen, chlorine or aliphatic or heterocyclic amine, and wherein R^3 is a member selected from the group consisting of



and =O, and wherein X represents one or two carbon-to-carbon double bonds and A . . . . . B is a



or C=C group.

An example of the compounds of the invention is Δ^3-5β-pregnene-21-ol-20-one-21-hemisuccinate.

The compounds have a strong bacteria-inhibiting action.

3,415,818
DIOXIMIDOANDROSTANES AND CYCLIZED N-OXIDES DERIVED THEREFROM
Robert G. Christiansen, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 8, 1965, Ser. No. 470,570
9 Claims. (Cl. 260—239.55)

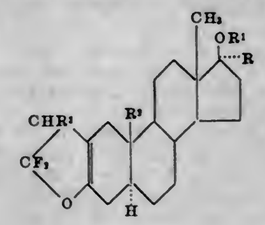
The invention pertains to dioximidoandrostanes and cyclized N-oxides derived therefrom, having pituitary inhibiting activity, estrogenic activity, androgenic activity and anabolic activity.

3,415,819
PROCESS FOR 17α-(3'-HYDROXYPROPYL)-5-ANDROSTENE-3β,17β-DIOL AND THE DI-TETRAHYDROPYRANYL ETHER THEREOF
George Gal, Summit, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 21, 1966, Ser. No. 544,119
7 Claims. (Cl. 260—239.55)

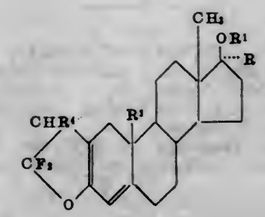
1. A process for the preparation of 17α-(3'-hydroxypropyl)-5-androstene-3β,17β-diol which comprises the steps of reacting a solution of dehydroepiandrosterone tetrahydropyranyl ether in an inert organic solvent with 3-lithiopropanyl-1,2'-tetrahydropyranyl ether to provide 17α-(3'-hydroxypropyl-5-androstene-3β,17β-diol di-tetrahydropyranyl ether and heating a solution of the latter compound in an inert organic solvent with para-toluenesulfonic acid.

3,415,820
2',2'-DIFLUORO-2',3'-DIHYDROFURAN DERIVATIVES OF THE ANDROSTANE AND 19-NOR-ANDROSTANE SERIES
John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Aug. 5, 1966, Ser. No. 570,422
23 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of:



and



wherein R is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl and lower alkynyl, R^1 is selected from the group consisting of hydrogen, a carboxylic acyl group of less than 12 carbon atoms, tetrahydrofuran-2-yl and tetrahydropyran-2-yl, R^3 is selected from the group consisting of hydrogen and methyl, R^3 is selected from the group consisting of lower alkoxy and a carboxylic acyloxy group of less than 12 carbon atoms, and R^4 is selected from the group consisting of hydrogen, lower alkoxy and a carboxylic acyloxy group of less than 12 carbon atoms.

3,415,821
1-(5-SUBSTITUTED)FURFURYLIDENEAMINO HYDANTOINS AND IMIDAZOLIDINONES

Charles Stewert Davis and Harry Raymond Snyder, Jr., Norwich, N.Y., assignors to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,566
9 Claims. (Cl. 260—240)

New 1-(5-substitued)furfurylideneamino hydantoins and imidazolidinones: useful as a muscle relaxant.

3,415,822
PRODUCTION OF CYANURIC ACID

Dale E. Elliott, Chester, George A. Elliott, Petersburg, and William P. Moore, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 9, 1965, Ser. No. 507,061
4 Claims. (Cl. 260—248)

In an improved process for producing cyanuric acid and a gaseous ammonia mixture containing volatilized urea, the improvement which comprises passing said ammonia gaseous mixture through a zone in which solid particles of cyanuric acid having a temperature range within 20° to 175° C. showers said ammonia gaseous mixture thereby condensing the volatilized urea on the surface of the cyanuric acid particles to purify the ammonia, the weight ratio of cyanuric acid particles to volatilized urea in the zone being at least about 10:1.

3,415,823
CHLORINATED ISOCYANURIC ACID PRODUCTION

William P. Moore, Chester and Rob R. MacGregor, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 21, 1965, Ser. No. 449,765
11 Claims. (Cl. 260—248)

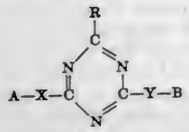
A nonmechanical agitating process for the continuous production of chlorinated isocyanuric acid which is useful in the production of herbicides, pharmaceuticals, dyestuffs, etc., said process including the combining of cyanuric acid and alkali metal carbonate. The resultant mixture and gaseous chlorine are pumped into a reactor column having a series of perforated plates positioned therein. As a result of the pumping coupled with the chlorine feed, there is a vigorous gas agitation of the mixture and carbon dioxide dissolved therein as it flows upwardly through the perforated plates, the latter preventing back-mixing. A slurry containing precipitated chlorinated isocyanuric acid and essentially free of nitrogen trichloride is recovered from the top of the reactor.

3,415,824
ARYL-1,3,5-TRIAZINE DERIVATIVES

Hans Rudolf Biland, Basel, Christian Luethi, Munchenstein, and Max Duennenberger, Frenkendorf, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,058
Claims priority, application Switzerland, Apr. 20, 1965, 5,439/65
10 Claims. (Cl. 260—248)

New aryl-triazines are provided which may be represented by the formula



where R represents an unsubstituted or substituted six-membered aromatic cyclic system containing a hydroxyl group in ortho-position to the bond with the triazine ring, which may be fused with a further five-membered or six-membered aromatic ring system and is bound through a carbon atom with the triazine ring; X and Y are different divalent hetero atom groupings such as —O—, —S— or —NQ— (in which Q represents a hydrogen atom or a lower aliphatic residue bound with nitrogen through a carbon atom), and A and B each represents one of the following groups containing up to 20 carbon atoms: alkyl, alkenyl, cycloalkyl, aralkyl, phenyl or naphthyl, which groups may be substituted.

The compounds of the present invention are especially useful as antioxidants for high molecular weight organic materials which are subject to oxidative degradation.

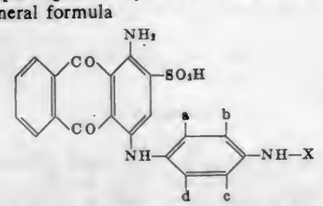
3,415,825
ANTHRAQUINONE DYESTUFFS

Arthur Buehler, Rheinfelden, and Gerd Hoelzle, Liestal, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed July 5, 1966, Ser. No. 562,504
Claims priority, application Switzerland, July 7, 1965, 9,559/65
2 Claims. (Cl. 260—249)

Anthraquinone dyestuffs which contain at least two groups imparting solubility in water and which correspond to the general formula

(1)



in which *a*, *b*, *c* and *d* each represents a low molecular alkyl residue, preferably a methyl residue, and X represents a 2-amino-4-halogeno-1,3,5-triazine residue which is bound to the NH-group by the ring carbon atom in the 6-position, and in which the 2-amino group contains a grouping imparting solubility in water provide dyeings and prints of outstanding purity of shade, light fastness and wet fastness.

3,415,826
TRIS-2-ETHYLAZIRIDINYL-s-TRIAZINE

Joseph Adrian Hoffman, Bridgewater Township, Somerset County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,293
1 Claim. (Cl. 260—249.6)

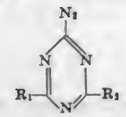
This invention relates to tris-2-ethylaziridinyl-s-triazine, a compound which has use as a curing agent for fuels composed of carboxy-terminated polybutadiene rubbery copolymers.

3,415,827
PESTICIDAL TRIAZINYL AZIDES

Erwin Nikles, Allschwil, and Ludwig Ebner, Stein, Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss Company

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,296
Claims priority, application Switzerland, Nov. 26, 1963, 14,458/63; June 4, 1964, 7,326/64
7 Claims. (Cl. 260—249.8)

Compounds of the general formula



(1)

wherein R_1 represents a hydrogen atom, a halogen atom, the azide radical, an aliphatic radical containing up to 18 carbon atoms, the group —CN, —SCN or —ZX (wherein Z stands for oxygen or sulfur and X for an unsubstituted aliphatic radical containing up to 18 carbon atoms, or a 5-membered to 7-membered, preferably a 6-membered cycloaliphatic radical), R_2 has the same meaning as R_1 or the group



(wherein A_1 stands for an unsubstituted or substituted aliphatic radical containing up to 18 carbon atoms, a cycloaliphatic radical made up from 3 to 12 members, a lower alkoxyalkyl, hydroxyalkyl, cyanoalkyl, or alkylthioalkyl radical and A_2 stands for a hydrogen atom or has the same meaning as A_1, or A_1+A_2 together with the nitrogen atom represent a 5-membered to 7- membered, preferably a 5-membered heterocyclic radical) are pesticidally active, particularly as herbicides and microbicides.

3,415,828
2-QUINOXALINE PSEUDOUREAS

Klaus Sasse, Engelbert Kuhle, and Ludwig Eue, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original application Aug. 1, 1963, Ser. No. 299,174, now Patent No. 3,260,726, dated July 12, 1966. Divided and this application Nov. 15, 1965, Ser. No. 525,781
Claims priority, application Germany, Sept. 5, 1962, F 37,752
6 Claims. (Cl. 260—250)

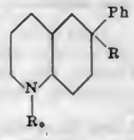
The invention concerns 1-phenyl-3-dimethylpseudoureas substituted in the 2 position by various heterocyclic substituents including quinoxaline. The compounds are useful as herbicides.

3,415,829
6-PHENYL DECAHYDROQUINOLINES

Raymond Bernasconi, Oberwil, Basel-Land, and Karl Schenker, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 14, 1965, Ser. No. 487,296
Claims priority, application Switzerland, Sept. 18, 1965, 12,180/64
21 Claims. (Cl. 260—286)

Compounds, such as 6-cyano-6-phenyl-decahydroquinoline, of the formula



in which Ph is an optionally-substituted phenyl radical, R is a —C≡N, esterified carboxyl or acyl radical, and R_o is a hydrogen or an optionally-substituted hydrocarbon radical. The compounds are useful as antitussives and analgesics.

3,415,830
PROCESS FOR PREPARING INTERMEDIATES OF GARRYA ALKALOIDS

Wataru Nagata, Nishinomiya-shi, Masayuki Narisada, Kyoto-shi, Toshio Wakabayashi, Nishinomiya-shi, and Tsutomu Sugasawa, Kobe-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka-shi, Japan

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,932
Claims priority, application Japan, Jan. 27, 1964, 39/3,892
19 Claims. (Cl. 260—287)

The total synthesis of Garrya alkaloids starts from compounds of the Formula I, infra, and proceeds through a series of steps involving dehydration, hydroborating, selective esterification, solvolysis or base-catalyzed elimination with simultaneous rearrangement (or dehydration, epoxidation treatment with a Lewis acid, oxidation and Wolff-Kishner reduction), followed by carrying out Wittig's reaction or a Grignard reaction, halogenation, epoxidation, reduction, and reaction with ethylene halohydrin and ethylene oxide. A series of novel intermediates are thus prepared.

3,415,831
2-ISOQUINOLINYL(AND CARBOLINYL) ALKYL-OCTAHYDROINDOLO [2,3-A]-QUINOLIZINES

Jerry A. Weisbach, Cherry Hill, N.J., assignor to Smith, Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 461,542, June 4, 1965. This application July 16, 1965, Ser. No. 472,669
8 Claims. (Cl. 260—288)

2-isoquinolinyl (and carbolinyl)alkyloctahydroindolo-[2,3-a]quinolizines, having analgesic and hypotensive activity, are prepared by reacting an octahydroindolo[2,3-a]quinolizine-2-lower alkanoic acid ester with a phenethylamine or an aminoethylindole and treating the resulting N-substituted-octahydroindolo[2,3-a]quinolizine-2-lower alkanoic acid amide with a dehydrating agent. The 2α,3α,12b-α isomers of the octahydro[2,3-a]quinolizine-2-lower alkanoic acid ester intermediates are prepared by converting a 2-lower alkoxycarbonylmethyleneoctahydro[2,3-a]quinolizine to the corresponding 2-alkoxycarbonylmethyl-1,4-dihydro compound, oxidizing to give the indolo[2,3-a]quinolizinium salt and hydrogenating or, alternatively, oxidizing a 2-lower alkoxycarbonylmethyleneoctahydro[2,3-a]quinolizine and hydrogenating the resulting indolo[2,3-a]quinolizinium salt.

3,415,832
PROCESS FOR THE MANUFACTURE OF POLY-CHLORO-4-PYRIDYL SULFONES

Charles D. Crawford, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 23, 1966, Ser. No. 559,748
6 Claims. (Cl. 260—294.8)

A method for the manufacture of 2,3,5-trichloro-4-(loweralkyl) sulfones and 2,3,5,6-tetrachloro-4-(loweralkyl) sulfones which involves contacting an aqueous slurry of 2,3,5-trichloro-4-(loweralkyl)-sulfoxides or 2,3,5,6-tetrachloro-4-(loweralkyl)-sulfoxides with chorine gas at a temperature less that the softening point of the solid phase. The sulfones of this invention are useful as pesticides for the control of various bacterial and fungal pests.

3,415,833
PYRIDYL-DICARBOXYLIC ACID CYCLOBUTANE DERIVATIVES

Eric T. Fossel, New Haven, Conn., assignor to Unimed, Inc., Morristown, N.J.

No Drawing. Continuation-in-part of application Ser. No. 360,446, Apr. 16, 1964. This application Feb. 7, 1966, Ser. No. 525,322
10 Claims. (Cl. 260—295)

The invention relates to new pyridyl-dicarboxylic acid-cyclobutane derivatives such as 1-(2′-pyridyl)-2,3-dicarboxylic acid cyclobutane, and to the production of these compounds, which compounds have the effect of rapidly and markedly causing a rise in blood pressure.

3,415,834

DERIVATIVES OF 2-ANILINO-NICOTINIC ACID AND PROCESS FOR THEIR PREPARATION

Charles Hoffmann, Enghien-les-Bains, and Andrée Faure, Paris, France, assignors to Societe anonyme dite: Laboratoires U.P.S.A., Gennevilliers, France, a French company

No Drawing. Filed Dec. 15, 1964, Ser. No. 418,539
Claims priority, application Great Britain, Dec. 19, 1963, 50,274/63; Mar. 25, 1964, 12,723/64
11 Claims. (Cl. 260—295.5)

Analgesic and anti-inflammatory compounds are described which are substituted amino- and anilino-nicotinic acids and salts. Typical compounds are xylylamino-nicotinic acid, p-lower alkoxyanilino-nicotinic acids, and o-hydroxyanilino- and o-methyl-p-chloro-anilino-nicotinic acids which are cyclized when the phenyl nucleus contains an o-carboxy group.

3,415,835

2-LOWER-ALKANOYL-AMIDO-NICOTINIC ACID AND DERIVATIVES THEREOF

Arthur Stempel, Teaneck, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 21, 1966, Ser. No. 559,110
4 Claims. (Cl. 260—295.5)

Novel acetamidonicotinic acid derivatives are prepared by treating aminopyridinecarboxylic acid with an acid anhydride. The products are chemotherapeutically useful against Encephalo myocarditis virus and Herpes virus.

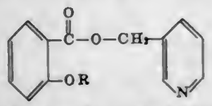
3,415,836

SALICYLIC ACID ESTERS OF β-PYRIDYL CARBINOL

Bo Thuresson Af Ekenstam, Molndal, and Carl Göran Claeson, Goteborg, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden

No Drawing. Filed June 22, 1966, Ser. No. 559,401
Claims priority, application Sweden, June 28, 1965, 8,482/65
2 Claims. (Cl. 260—295.5)

Esters of salicylic acid and β-pyridyl carbinol of the formula



wherein R is hydrogen, benzoyl, acetyl, propionyl, or butyryl are prepared in the conventional manner from salicylic acid derivatives and β-pyridyl carbinol. The esters have both analgesic and vasodilating activities.

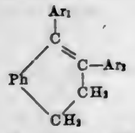
3,415,837

1,-DIHYDRO-NAPHTHALENE DERIVATIVES

William Laszlo Bencze, New Providence, and Charles Ferdinand Huebner, Chatham, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 222,621, Sept. 9, 1962. This application Apr. 1, 1964, Ser. No. 356,669
15 Claims. (Cl. 260—297)

1. A member selected from the group consisting of a compound having the formula



in which Ph is a 1,2-phenylene radical, one of the groups Ar_1 and Ar_2 stands for a member selected from the group consisting of (hydroxy)-phenyl and (lower alkoxy)-phenyl, and the other stands for a member selected from the group consisting of phenyl, (lower alkyl-phenyl, (hydroxy)-phenyl, (lower alkoxy)-phenyl, (halogeno)-phenyl and pyridyl, and an alkali metal, salt alkaline earth metal salt or a therapeutically acceptable acid addition salt thereof.

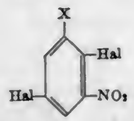
3,415,838

NITROGEN-CONTAINING DERIVATIVES OF 2,5-DICHLORO-3-NITROBENZOIC ACID

Nathan N. Crounse and Robert J. Schumacher, Cincinnati, Ohio, assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 244,864, Dec. 17, 1962. This application May 20, 1965, Ser. No. 457,500
10 Claims. (Cl. 260—306.8)

1. A compound of the formula



wherein X is a member selected from the group consisting of CONHR, CONRR', CONHNHCOR, CONHNRR', and CONHOH, and Hal is halogen, wherein R and R' are members selected from the group consisting of lower-alkyl, lower-alkenyl, phenyl, benzyl, pyridyl, thienyl, thiazolyl, pyrazolyl, oxazolyl, and furyl.

3,415,839

1,2-DISUBSTITUTED BENZIMIDAZOLE 3-OXIDES

John W. Schulenberg, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 404,952, Oct. 19, 1964. This application Oct. 21, 1966, Ser. No. 588,339
3 Claims. (Cl. 260—309.2)

1-R-2-R'-benzimidazole 3-oxides, where R and R' are lower-alkyl or phenyl, at least one of R and R' being phenyl, having hyperglycemic and tranquillizing activities, are prepared by hydrogenating the appropriate 2-nitroanilines substituted on nitrogen by the groups R and COR'', where R'' is lower-alkyl, phenyl, 1-chloro-lower-alkyl or 1,1-dichloro-lower-alkyl.

3,415,840

PYRAZOLE-1-ETHANOL DERIVATIVES

Milton Wolf, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,643
9 Claims. (Cl. 260—310)

The invention involves the preparation of new carbamate and carbamate esters of pyrazole-1-ethanol possessing useful pharmacological effects as hypoglycemic agents and anti-convulsant agents.

3,415,841

6-AMINO-CHLORO-INDAZOLES AND N-ACYLATED DERIVATIVES THEREOF

Joseph Nordmann, Paris, and Henri Blaise Swierkot, Bondy, Seine-St-Denis, France, assignors to Etablissements Kuhlmann, Paris, France

No Drawing. Filed May 18, 1966, Ser. No. 550,920
Claims priority, application France, June 12, 1965, 20,589
1 Claim. (Cl. 260—310)

The compounds are 6-amino-chloro-indazoles and N-acylated derivatives thereof with anti-inflammatory and anti-rheumatic properties. Exemplary compounds are N_1-acetyl-6-acetylamino-3-chloro-indazole and N_2-acetyl-6-acetylamino-3-chloro-indazole.

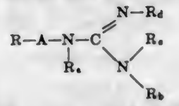
3,415,842

N-GUANIDINO-LOWER ALKYL-ISOINDOLES

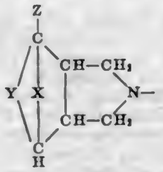
Renat Herbert Mizzoni, Long Valley, and Robert Paul Mull, Florham Park, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 17, 1962, Ser. No. 166,927
15 Claims. (Cl. 260—326.1)

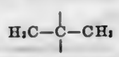
Compounds of the formula



in which R stands for a group of the formula



in which X stands for a methylene group —CH_2, a 2,2-propylene group



an oxy group —O— or a thio group —S—, Y stands for 1,2-ethylene—CH_2—CH_2— or 1,2-ethylene—CH=CH—, and Z is hydrogen or methyl, A is lower alkylene, each of the groups R_a and R_b stands primarily for hydrogen, as well as lower alkyl, and each of the groups R_c and R_d is primarily hydrogen, as well as lower alkyl or acyl, or acid addition salts thereof, as well as process for the preparation of these compounds. The compounds of the invention are useful for the treatment of hypertension.

3,415,843

CYCLIC PYRROLE KETONES

Irwin J. Pachter, Woodbury, N.Y., and Werner Herz, Tallahasee, Fla., assignors to Endo Laboratories Inc., Garden City, N.Y., a corporation of New York

Filed Nov. 22, 1966, Ser. No. 596,243
8 Claims. (Cl. 260—326.1)

This invention relates to certain novel pyrrole ketones and the processes for the preparation thereof. These compounds are useful pharmacologically because of their sedative, tranquilizing and antiinflammatory properties.

3,415,844

DERIVATIVES OF 1-PHENYL-2,2-DIALKYL-1,3-DIHYDROXYPROPANES AND 1-SUBSTITUTED PHENYL-2,2-DIALKYL-1,3-DIHYDROXYPROPANES

Kurt Kulka, New York, N.Y., assignor to Fritzsche Brothers, Inc., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 282,549, May 23, 1963, Ser. No. 284,331, May 31, 1963. This application Jan. 4, 1965, Ser. No. 423,327
7 Claims. (Cl. 260—340.5)

The compounds disclosed embrace monocarbamates, N-substituted monocarbamates, monoalkyl carbonates, cyclic carbonates, monochloroformates, carboxylic acid monoesters, monochloroformate-carboxylic acid monoesters, mono lower alkyl carbonate-carboxylic acid monoesters and mono aryl carbonate-carboxylic acid monoesters of mono substituted-2,2-dialkyl-1,3-dihydroxypropane. The monocarbamates manifest tranquilizing effects in animals. When administered to animals, they produce narcosis that emphasizes relaxation. The compounds other than the monocarbamates are employed as intermediates for the production of such monocarbamates.

3,415,845

19-NOR-A-HOMO-PREGNANE DERIVATIVES

Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,469
8 Claims. (Cl. 260—340.5)

Novel 3-keto-$\Delta^{1,4(4a),5(10)}$-19-nor-A-homo-pregnatriene derivatives having progestational, anti-inflammatory, antigonadotrophic, anti-estrogenic, anti-androgenic, thymolytic and glycogenic properties.

3,415,846

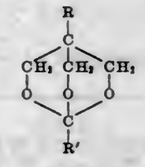
PREPARATION OF TRIOXABICYCLO OCTANES

George Kesslin, Teaneck, N.J., and Robert Wesley Handy, Stony Point, N.Y., assignors to Kay-Fries Chemicals, Inc., West Haverstraw, N.Y., a corporation of New York

No Drawing. Filed May 21, 1964, Ser. No. 369,275
7 Claims. (Cl. 260—340.7)

1. A process for producing 2,6,7-trioxabicyclo (2,2,2) octanes having the formula

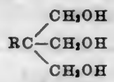
I



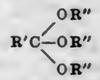
where R' is selected from the group consisting of H, CH_3 and C_2H_5 and R is selected from the group consisting of CH_3 and C_2H_5 which comprises:

(1) introducing and mixing into a reaction zone a reaction mass containing

(a) a trihydric alcohol of the formula



(b) a lower alkyl ortho ester of the formula



wherein R'' contains 1–8 carbon atoms,

(c) an amount of an inert solvent for (a) and (b) having a higher boiling point than R''OH selected from the group consisting of cyclohexane, benzene, toluene, trichloroethane, dichloropropane, thiophene, 1–4-dioxane tetrahydrofurane and dialkyl esters in an amount sufficient to dissolve (a) and (b), and

(d) a catalytic amount of a Lewis acid selected from the group consisting of boron trifluoride, boron trifluoride etherate, tin tetrachloride, zinc chloride and sulfuric acid;

(2) reacting (a) and (b) to form I by heating the reaction mass of (1) at a temperature which drives off R''OH and part of (c);

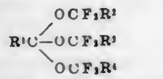
(3) neutralizing the Lewis acid of (d) with an alkaline reacting compound;

(4) separating the neutralized Lewis acid from the reaction mass; and

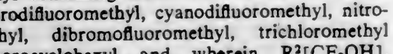
(5) heating the resulting reaction mass to drive off the remainder of (c) thereby recovering (I).

3,415,847
FLUOROCARBON ORTHOESTERS
Richard L. Talbott, Ramsey, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Oct. 18, 1965, Ser. No. 500,488
2 Claims. (Cl. 260—340.7)

1. An orthoester represented by the formula



wherein R^1 is selected from the group consisting of fluorine, perfluoroalkoxy containing 1 to 8 carbon atoms; perfluoroalkyl containing from one to fourteen carbon atoms, chlorodifluoromethyl, cyanodifluoromethyl, nitrodifluoromethyl, dibromofluoromethyl, trichloromethyl and perfluorocyclohexyl and wherein $R^2[CF_2OH]$, $R^3[CF_2OH]$ and $R^4[CF_2OH]$ individually are perfluoroalkyl containing from one to eight carbon atoms or fluorine, wherein any two together are a simple bond in a five-membered ring and wherein R^2, R^3 and R^4 all taken together are a trivalent group selected from the group of:



2. 1,4-bis(trifluoromethyl)-2,6,7 - trioxaperfluorobicyclo[2.2.2]octane.

3,415,848
ERYTHRONOLIDE B ESTERS
Thomas J. Perun, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
No Drawing. Filed Aug. 26, 1965, Ser. No. 482,906
5 Claims. (Cl. 260—343)

Alkyl-, aryl-, nitrofuroyl and substituted arylesters of erythronolide B which exhibit antischistosoma properties. At least the 3- and 5-hydroxy groups of the erythronolide B are esterified and optionally, the 11-hydroxy group is also esterified.

3,415,849
CATALYTIC OXIDATION OF NITROSOPHENOLS TO BENZOQUINONES
Calvin J. Worrel, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 24, 1964, Ser. No. 399,076
11 Claims. (Cl. 260—396)

Nitrosophenols in the presence of oxygen are catalytically oxidized to benzoquinones. For example, 2,6-di-tert-butyl-4-nitrosophenol is converted to 2,6-di-tert-butyl-p-benzoquinone by contacting oxygen in the presence of a catalytic metal compound. The benzoquinones are readily reduced to hydroquinones.

3,415,850
PREPARATION OF BENZOQUINONES AND HYDROQUINONES
Calvin J. Worrel, Detroit, Mich., and Robert L. McLean, West Chicago, Ill., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 24, 1964, Ser. No. 399,077
13 Claims. (Cl. 260—396)

Otho-alkyl benzoquinones are prepared by oxidizing an ortho-alkyl nitrosophenol with a chemical oxidant having an oxidation potential below −0.40. The benzoquinones can be reduced to hydroquinones which are useful antioxidants.

3,415,851
METHOD FOR THE MANUFACTURE OF STEROIDAL DELTA-1,4-DIENEONES AND NEW PRODUCT OBTAINED THEREBY
Eugene P. Oliveto, Bloomfield, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 29, 1956, Ser. No. 574,608
11 Claims. (Cl. 260—397.45)

1. The process for the manufacture of 3-keto-1,4-pregnadienes which comprises heating a steroid of the group consisting of 3-ketopregnanes, 3-ketoallopregnanes, 3-keto-1-pregnenes and 3-keto-4-pregnenes in an inert solvent with a member of the group consisting of selenium dioxide and selenious acid to effect dehydrogenation of the A-ring.

3,415,852
METHOD OF PREPARING 3-ALKOXY-2-FORMYL-Δ^2-STEROIDS AND NEW PRODUCTS RESULTING THEREFROM
John Paul Dusza, Nanuet, N.Y., Joseph Peter Joseph, Cliffside Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 20, 1965. Ser. No. 481,383
5 Claims. (Cl. 260—397.2)

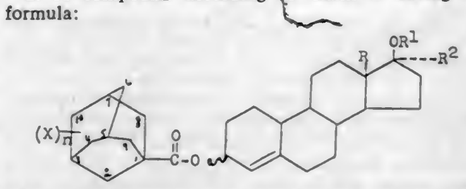
A method of preparing 3-alkoxy-2-formyl-Δ^2-steroids from the corresponding 2-unsubstituted steroids by reaction with a tri(lower)alkylorthoformate in the presence of a strong acid. The products of the process are physiologically active in warm-blooded animals as central nervous system depressants.

3,415,853
PROCESS FOR THE PREPARATION OF $\Delta^{1,3,5(10)}$-3,17-DIHYDROXY STEROIDS
Pieter Modderman, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,814
Claims priority, application Netherlands, Apr. 28, 1965, 6505397
4 Claims. (Cl. 260—397.4)

$\Delta^{1,3,5(10)}$-3,17-dihydroxy steroids are prepared by treatment of a $\Delta^{1,4}$-3-keto-10-methyl-17β-hydroxy steroid with an alkali metal in presence of a polycyclic aromatic compound and an ethereal solvent, followed by acid conversion of the alkali metal salt of the corresponding steroid, including the step of converting the 17β-hydroxy group to a mixed acetal and ketal. The process enables the preparation of $\Delta^{1,4}$-3-keto-17β-hydroxy-androstadiene having an ether structure at the 17-position.

3,415,854
ADAMANTOATE ESTERS OF 13β-ALKYLGON-4-EN-3-OLS
Joseph Tokolics, King of Prussia, Gordon A. Hughes, Haverford, Herschel Smith, Wayne, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawings. Filed Oct. 12, 1966, Ser. No. 586,016
9 Claims. (Cl. 260—397.5)

2. A compound according to claim 1 having the formula:



wherein X represents a substituent in the 1, 3, 5, or 7 positions of the adamantane ring which is selected from the

group consisting of hydrogen, lower alkyl, hydroxy, lower acyloxy, phenyl and halo; R is an alkyl group of less than 5 carbon atoms; R^1 is selected from the group consisting of hydrogen and acyl; R^2 is selected from the group consisting of lower alkyl, lower alkenyl, lower alkynyl, halo substituted lower alkenyl, halo substituted lower alkylnyl, trifluoromethyl substituted lower alkenyl and trifluoromethyl susbtituted lower alkynyl; and n is an integer less than 4.

3,415,855
TRICHLORO PREGNADIENES AND ESTERS THEREOF
Elliot L. Shapiro, Cedar Grove, and Emanuel B. Hershberg, West Orange, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed May 27, 1966, Ser. No. 566,699
9 Claims. (Cl. 260—397.45)

This invention relates to 9α,11β,16α-trichloro-1,4-pregnadiene-17α,21-diol-3,20-dione, to C–17 and/or C–21 esters thereof and to methods for preparing the same; said compounds being useful as anti-inflammatory agents.

3,415,856
PROCESS FOR PRODUCING CARBOXYLIC ACIDS AND NITROGEN CONTAINING INTERMEDIATES FROM OLEFINS
Donald R. Lachowicz, Todd S. Simmons and Kenneth L. Kreuz, Fishkill, N.Y., assignors to Texaco, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 24, 1965, Ser. No. 466,816
3 Claims. (Cl. 260—413)

Process for preparing nitroperoxy, nitroketone, alkanoic and alkandioic compounds from alkenes and alkenoic acids comprising contacting an alkene with a mixture of dinitrogen tetroxide and oxygen to form the nitroperoxy intermediate, contacting the nitroperoxy intermediate with a denitrating agent to form the nitroketone intermediate and acidifying the nitroketone intermediate under aqueous conditions to form the alkenoic and alkandioic acid.

3,415,857
PRODUCTION OF ORGANOTIN HALIDES
Peter Albert Theodore Hoye, Kinver, Stourbridge, England, assignor to Albright & Wilson Limited, Birmingham, England, a British company
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,245
Claims priority, application Great Britain, Sept. 18, 1964, 38,241/64
10 Claims. (Cl. 260—429.7)

1. A process for producing aliphatic tin halides which comprises reacting at 50° C.–250° C. metallic tin with an aliphatic halide having less than 20 carbon atoms in which the halide moiety is selected from the group consisting of chloride and bromide, in the presence of (1) a catalyst consisting essentially of an 'onium compound containing covalently bonded organic groups, said 'onium compound being selected from the group consisting of quaternary ammonium and quaternary phosphonium chloride and bromides, (2) 0–0.1 mole per mole of metallic tin of a member selected from the group consisting of metallic magnesium, zinc, cadmium, mercury, copper, cobalt, nickel, aluminum, titanium, manganese, iron, calcium, chromium, a salt of the foregoing metals, an alkoxide of the foregoing metals, and a mercaptide of the foregoing metals, and (3) 0.1–0.6 mole per mole of metallic tin of a preformed tin halide selected from the group consisting of stannous chloride, stannous bromide, organotin chlorides and organotin bromides; and separating aliphatic tin halide thereby produced from said catalyst.

3,415,858
PERFLUOROALKYLESTER MERCURIC BROMIDES
Yung Ki Kim, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Oct. 24, 1966, Ser. No. 588,751
2 Claims. (Cl. 260—431)

Compounds of the formula $BrHgR_fCOOR^1$ in which R_f is a perfluoroalkylene radical of from 2 to 10 carbon atoms and R^1 is an alkyl radical of from 1 to 6 carbon atoms are made by heating BrR_fCOOR^1 with Hg. The termediates for the preparation of perfluorodiesters of the formula $R^1OOC(R_f)_2COOR^1$.

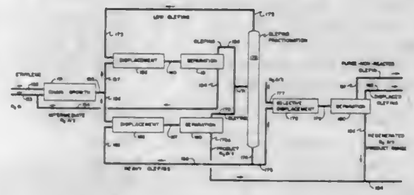
3,415,859
UNSYMMETRICAL FERROCENE α-DIOLS
John T. Suh, Mequon, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 7, 1965, Ser. No. 493,871
6 Claims. (Cl. 260—439)

The compounds are unsymmetrical ferrocene diols useful as intermediates in the preparation of the corresponding unsymmetrical ferrocene cyclic ethers which are hematinic agents. Among the compounds disclosed are 1-(α-hydroxyethyl)-1′-(α′-hydroxypropyl)ferrocene and 1-(α-hydroxyethyl)-1′-(α′-hydroxybenzyl)ferrocene.

3,415,860
PREPARATION OF ANTIMONY TRIACETATE
Robert R. Thomas, Cary, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 18, 1966, Ser. No. 535,331
4 Claims. (Cl. 260—446)

1. A process for the preparation of antimony triacetate which comprises reacting antimony trioxide and acetic anhydride in an anhydrous inert solvent for the antimony triacetate and at a temperature sufficient to cause the reaction between the antimony trioxide and the acetic anhydride.

3,415,861
ORGANOALUMINUM COMPOUND PRODUCTION
Wayne T. Davis and Charles L. Kingrea, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Mar. 31, 1964, Ser. No. 356,148
16 Claims. (Cl. 260—448)



Molecular weight peaking of organoaluminum compounds is obtained with a twin displacement process wherein typically a chain growth aluminum alkyl mixture is reacted with olefins to release heavy olefins from the high alkyl groups contained on the growth product, the resulting aluminum alkyl mixture subjected to further growth to increase the content of heavy alkyl groups and this product reacted with heavy olefins to further increase the content of desired heavy alkyl groups. The olefins are preferably from a "bank" system wherein olefins are recovered after the reactions with the aluminum alkyl mixture and split into fractions for recycle to the reactions. The particular improvement herein resides in increased reaction rates despite the accompanying tend-

ency toward increased formation of vinylidene structures. Vinyl purity of olefins and alkyls is maintained through elimination of nonvinyl materials from the olefins. Additionally is provided unique and simplified replacement for the eliminated materials by generating olefins through coordinated growth and displacement operations which avoid certain difficult distillation separations of olefins and aluminum alkyls.

3,415,862

PROCESS FOR RECOVERING HIGHER ALUMINUM ALKYLS FROM COMPLEXES CONTAINING SAME

William C. Ziegenhain, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed July 24, 1964, Ser. No. 385,049

8 Claims. (Cl. 260—448)

A stable complex of an aluminum alkyl wherein the alkyl moiety is composed essentially of two different alkyl groups is reacted with an aluminum trialkyl having alkyl groups corresponding to the lower alkyl group of said complex to effect selective displacement of the higher alkyl group present therein in the form of an uncomplexed aluminum alkyl.

3,415,863

SILICON-NITROGEN-PHOSPHORUS SYSTEMS

Kazimiera J. L. Paciorek and Reinhold H. Kratzer, Costa Mesa, Calif., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Feb. 25, 1966, Ser. No. 531,645

3 Claims. (Cl. 260—448.2)

1. The compound

$$(C_6H_5)_3Si—NH—P(C_6H_5)_2{=}N—Si(C_6H_5)_3$$

2. The compound $(C_6H_5)_3Si—NH—P(C_6H_5)_2$.
3. The process for preparing the compounds

$$(C_6H_5)_3Si—NH—P(C_6H_5)_2{=}N—Si(C_6H_5)_3$$

and $(C_6H_5)_3Si—NH—P(C_6H_5)_2$ comprising:

(a) reacting equal molar quantities of $(C_6H_5)_3SiN_3$ and $(C_6H_5)_2PH$ in refluxing ether in a nitrogen atmosphere for approximately 18 hours,

(b) removing the ether in vacuo and further heating the solid residue at 100° C. for several days,

(c) cooling the residue and crystallizing reaction mixture from heptane to yield

$$(C_6H_5)_3Si—NH—P(C_6H_5)_2{=}N—Si(C_6H_5)_3$$

having a melting point of 156–157° C.

(d) concentrating the remaining heptane solution to yield $(C_6H_5)_3Si—NH—P(C_6H_5)_2$ which is purified by sublimation and recrystallization from heptane to yield $(C_6H_5)_3Si—NH—P(C_6H_5)_2$ having a melting point of 148–149° C.

3,415,864

BIS-(TRIMETHYLSILYL)TRIFLUOROACETAMIDE

Charles W. Gehrke and David L. Stalling, Columbia, Mo., assignors to Research Corporation, New York, N.Y.

No Drawing. Filed Sept. 11, 1967, Ser. No. 666,975

1 Claim. (Cl. 260—448.2)

Bis-(trimethylsilyl)trifluoroacetamide, a reagent for making trimethylsilyl derivatives of amino acid for analysis by gas-liquid chromatography.

3,415,865

PERFLUOROALKYL POLYFLUOROXY COMPOUNDS

Julianne H. Prager, Arden Hills, and Phillip G. Thompson, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 172,063, Feb. 7, 1962. This application Jan. 21, 1965, Ser. No. 428,016

9 Claims. (Cl. 260—453)

1. Compounds of the formula:

$$R_f(OF)_n$$

wherein R_f represents a member of the group consisting of perfluoroalkyl radicals having from 1 to 18 carbon atoms, and n is an integer from 2 to 12.

3,415,866

α-ALKYLIDENE-3,4-DISUBSTITUTED-PHENYLACETONITRILES

John T. Suh, Mequon, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,826

4 Claims. (Cl. 260—465)

The compounds are α-alkylidene-3,4-disubstituted-phenylacetonitriles which are useful as intermediates in the synthesis of known aromatic hydroxylase inhibitors. A species disclosed is α-iso-propylidene-3,4-dimethoxy-phenylacetonitrile.

3,415,867

PROCESS FOR THE PREPARATION OF DINITROACETONITRILE AND SALTS

Charles O. Parker, Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 6, 1956, Ser. No. 569,943

11 Claims. (Cl. 260—465.1)

1. A process for the preparation of dinitroacetonitrile and salts thereof which comprises reacting between −10° and about 50° C. an ester of the formula:

$$NCC(NO_2)_2COOR$$

where R is a member of the class consisting of alkyl, nitratoalkyl, nitroalkyl, and haloalkyl groups of not over four carbon atoms, cycloalkyl, nitrobenzyl, and cyanobenzyl groups and a nucleophilic reagent from the class consisting of water, lower alkanols, primary and secondary amines, ammonium hydroxide, quaternary ammonium hydroxides, aqueous and alcoholic solutions of metal salts and hydroxides, and aqueous and alcoholic suspensions of reactive metal salts and metal hydroxides.

3,415,868

NITRATION OF HYDROCARBON IN THE PRESENCE OF TRIFLUOROACETIC ACID

Richard D. Smetana, Beacon, and Harry Chafetz, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1967, Ser. No. 644,784

4 Claims. (Cl. 260—466)

A method of nitrating alkanes and saturated alicyclic hydrocarbons of between 2 and 50 carbons to produce nitration products comprising contacting said alkanes and alicyclic hydrocarbons in the presence of CF_3COOH with a nitrating agent selected from the group consisting of N_2O_5 and a P_2O_5-HNO_3-H_2O combination. The trifluoroacetic acid functions in a catalytic like manner and as a nitration director favoring the production of nitrate derivatives. Further, trifluoroacetate by-products are formed. By standard hydrogenation procedures, the nitrates formed in the resultant nitration product can be converted to their corresponding alkanol and cyclic alcohols and the nitro products therein can be converted to their corresponding alkyl and cyclic amines. The trifluoroacetates can be hydrolyzed to their corresponding alcohols.

3,415,869

DIBENZOYL ESTERS OF N-(METHYL OR ETHYL)-N-[N'-(METHYL OR ETHYL)-N'-(α-ETHYL-β-HYDROXYETHYL) - β - AMINOETHYL] - β - ETHYL-β-AMINOETHANOL

Raymond George Wilkinson, Montvale, and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Jan. 23, 1962, Ser. No. 168,241, now Patent No. 3,176,040, dated Mar. 30, 1965. Divided and this application Feb. 12, 1965, Ser. No. 432,420

Claims priority, application Great Britain, Feb. 7, 1961, 4,517/61

2 Claims. (Cl. 260—477)

This disclosure describes compounds of the class of dibenzoyl esters of N-(methyl or ethyl)-N-[N'-(methyl or ethyl)-N'-(α-ethyl-β-hydroxyethyl)-β-aminoethyl] - β-ethyl-β-aminoethanol which possess activity against experimental human strain tuberculosis in mice.

3,415,870

PURIFICATION OF ETHYLENICALLY UNSATURATED SULFONATED MONOMERS

Donald A. Kangas and David P. Sheetz, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 3, 1965, Ser. No. 436,779

7 Claims. (Cl. 260—486)

Polymerizable ethylenically unsaturated sulfonated monomers which contain as an impurity polymers of the monomer are purified by treating an aqueous solution of the polymer monomer mixture with a cationic adsorbent having a plurality of cationic groups, causing a separate phase of the adsorbent and polymer to form, followed by recovering the aqueous solution of monomer.

3,415,871

PREPARATION OF β-ACYLOXY-CARBOXYLIC ACIDS AND α,β-UNSATURATED CARBOXYLIC ACIDS BY OXIDATIVE CARBONYLATION

Kenneth L. Olivier, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,426

8 Claims. (Cl. 260—497)

Ethylenically unsaturated hydrocarbon olefins are reacted under oxidative carbonylation conditions to produce α,β-ethylenically unsaturated carboxylic acids and β-acyloxy carboxylic acids wherein the carboxylic acid portion has one more carbon than the olefin, by contacting the olefin, oxygen and carbon monoxide with an anhydrous reaction medium containing a Group VIII noble metal and, as the redox agent therefor, a ferric salt soluble in the reaction medium and a soluble halide. In a specific embodiment, ethylene is converted to acrylic and β-acetoxy propionic acid by oxidative carbonylation wherein ethylene, oxygen and carbon monoxide are introduced into contact with an acetic acid containing reaction medium which also contains about 0.2 weight percent palladium chloride, 0.2 weight percent lithium chloride, 0.2 weight percent ferric chloride and 0.2 weight percent lithium acetate. The oxidative carbonylation proceeds without the necessity for incorporating a dehydrating agent in the reaction medium as is required with previous oxidative carbonylations.

3,415,872

METHOD OF MANUFACTURING VINYL ACETATE MONOMER

George B. Karnofsky, Pittsburgh, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 19, 1962, Ser. No. 238,525

6 Claims (Cl. 260—498)

1. In the process of manufacturing vinyl acetate monomer from the reaction of acetylene and acetic acid in a reactor where vinyl acetate, unreacted acetic acid and acetylene comprise the major products from the reaction and crotonaldehyde, acetic anhydride and ethylidene diacetate comprise minor reaction products and wherein unreacted acetic acid is rectified for re-use, the steps of effecting the separation of the acetic acid and vinyl acetate free of crotonaldehyde and other side reaction products comprising initially separating the crude products by distillation in a distillation column into acetic acid, vinyl acetate and crotonaldehyde as overhead product, and acetic acid with minor reaction products less volatile than acetic acid as still bottoms, distilling the overhead from the first distillation in another distillation column to recover vinyl acetate as overhead and acetic acid with crotonaldehyde as bottoms, distilling said last-named bottoms in a third last column to remove the crotonaldehyde as overhead and rectified acetic acid as bottoms, and recycling said acetic acid so obtained as bottoms to the reactor.

3,415,873

1-AMINO-3-INDANYLOXY- AND TETRAHYDRONAPHTHOXY-2-PROPANOLS AND THE SALTS THEREOF

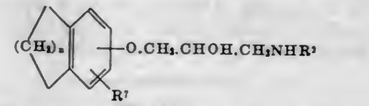
Marcus Andrew Stevens, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,545

Claims priority, application Great Britain, Dec. 17, 1962, 47,455/62

5 Claims. (Cl. 260—501.18)

1. A homocyclic compound selected from compounds of the formula:



wherein R^2 is selected from hydrogen, alkyl of 2 to 10 carbon atoms, hydroxyalkyl of up to 4 carbon atoms, alkoxyalkyl of up to 5 carbon atoms, cyclohexyl, allyl and benzyl; n is 1 or 2; and R^7 is selected from hydrogen, halogen, hydroxy, alkyl of up to 5 carbon atoms and alkoxy of up to 5 carbon atoms; and the pharmaceutically-acceptable, acid addition salts thereof.

3,415,874

PROCESS OF REACTING SULPHUR TRIOXIDE

John F. Lynch, Chester, and Alfred T. Wysocki, Chadds Ford, Pa., assignors to Marco Development Company, Inc., Wilmington, Del., a corporation of Delaware

Filed Sept. 18, 1964, Ser. No. 397,509

3 Claims. (Cl. 260—505)

The present invention relates to a process of reacting sulphur trioxide in liquid form with an organic compound in liquid form using a continuous reactor which has mixing impellers acting adjacent to heat transfer surfaces. The organic compound passes continuously through the reactor in contact with at least four and preferably at least nine sets of impellers and heat transfer surfaces. In order to prevent backfiring, liquid sulphur trioxide is projected into the organic compound at at least four impellers at a speed of at least 0.35 feet per second and at a point not in excess of 0.5 inch from a heat transfer surface. Within a time of not less than 0.5 second from

introduction of the liquid sulphur trioxide the mixture of organic compound and liquid sulphur trioxide is subjected to liquid shear against a heat transfer surface. In a preferred embodiment the amount of sulphur trioxide projected at the later impellers is increased with respect to that projected at the earlier impellers at geometrical progression.

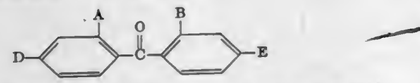
3,415,875

HYDROXYBENZOPHENONES CONTAINING SULFONIC ACID GROUPS

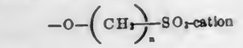
Christian Luethi, Munchenstein, Hans Rudolf Biland, Basel, and Max Duennenberger, Frenkendorf, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed May 31, 1966, Ser. No. 553,654
Claims priority, application Switzerland, June 4, 1965, 7,877/65
5 Claims. (Cl. 260—511)

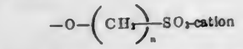
New hydroxybenzophenone compounds having sulfonic acid groups are provided. The compounds of this invention are represented by the formula



in which A and B are hydrogen atoms or hydroxyl groups and at least one of them is a hydroxyl group, D and E represent hydrogen atoms, halogen atoms, alkyl, phenyl or alkoxy groups or



at least one of the two symbols representing



where $n=3$ or 4. The cation is preferably hydrogen, sodium, potassium, barium, calcium, tin, lead, cobalt, nickel, zinc, cadmium, manganese or copper, or the ammonium group.

The compounds of this invention are especially useful as stabilizers to protect organic materials against the harmful effects of heat and ultraviolet radiation.

3,415,876

PROCESS FOR NITRATING AROMATIC COMPOUNDS IN LIQUID SULFUR DIOXIDE

Harm J. Boonstra and Johan T. Semeyns de Vries van Doesburgh, Geleen, Johannes J. M. Deumens, Nuth, and Hubertus J. A. Delahaye, Voerendaal, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Feb. 3, 1967, Ser. No. 613,732
Claims priority, application Netherlands, Feb. 3, 1966, 6601366
8 Claims. (Cl. 260—515)

A process for nitrating aromatic compounds is described wherein the reaction is carried out in liquid sulfur dioxide.

3,415,877

PROCESS FOR PREPARING 2-ETHYL-3-METHYL PENTANOIC ACID

Phillip Adams, Murray Hill, Benedict R. Juliano, Elizabeth, Howard Feilich, Plainfield, and Frank Baron, Elizabeth, N.J., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,104
1 Claim. (Cl. 260—530)

2-ethyl-3-methyl pentanoic acid is prepared by treating 2-ethyl-3-methyl-pentanal, in the form of an aqueous dispersion, non-catalytically with an oxygen-containing gas at a temperature from —20 to 60° C. and a pressure of 0 to 500 p.s.i.

3,415,878

PROCESS FOR THE PRODUCTION OF ALKALI METAL SALTS OF NITRILO TRIACETIC ACID

John A. Gaunt, McIntosh, Ala., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 222,617, Sept. 10, 1962. This application Aug. 18, 1965, Ser. No. 480,801
8 Claims. (Cl. 260—534)

The process is one which produces an alkali metal salt of NTA and involves the following steps: adding at a constant rate for from about 2 to 4 hours an aqueous mineral acid stabilized, substantially equimolar mixture of hydrogen cyanide and formaldehyde to an aqueous solution of an alkali metal hydroxide and ammonia, said solution containing an excess of about 5% of the alkali metal hydroxide and being maintained at a temperature ranging from about —5 to 5° C., raising the temperature during said addition gradually to about 100° C., boiling the reaction mixture for about 15 minutes and recovering the desired reaction product.

3,415,879

N-ACYL DERIVATIVES OF DICHLOROTHIOBENZAMIDES

Sidney E. Callander, Sittingbourne, and John Yates, Chestfield, Whitstable, Kent, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,829
Claims priority, application Great Britain, Dec. 16, 1963, 49,553/63
11 Claims. (Cl. 260—558)

Certain N,N-bis-acyl and N-acyl derivatives of dichlorothiobenzamides wherein the acyl is derived from certain monocarboxylic acids or from certain di-carboxylic acids, useful as herbicides.

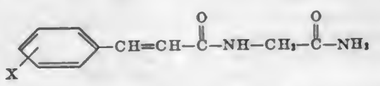
3,415,880

HALOCINNAMOYLAMINOACETAMIDES

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,828
4 Claims. (Cl. 260—558)

1. A chemical compound of the structural formula:



in which X is chloro, bromo, fluoro or trifluoromethyl.

3,415,881

METHOD OF PRODUCTION OF MONOCYCLOHEXYLAMINE

Andrew P. Dunlop, Riverside, Donald G. Manly, Barrington, and Fred J. Rice, Jr., Carpentersville, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 390,222, Aug. 17, 1964. This application Dec. 18, 1967, Ser. No. 691,649
5 Claims. (Cl. 260—563)

Monocyclohexylamine is produced by reacting cyclohexanone with ammonia and hydrogen in an ammonia-hydrogen gas mixture and in the presence of a hydrogenation catalyst and dicyclohexylamine.

3,415,882

PROCESS FOR PREPARING AZINES

Trevor Jenkins, Brian John Needham, and Michael Arthur Smith, Loughborough, England, assignors to Whiffen & Sons Limited, Loughborough, England

No Drawing. Filed Dec. 21, 1965, Ser. No. 515,481
Claims priority, application Great Britain, Dec. 22, 1964, 52,150/64
7 Claims. (Cl. 260—566)

Azines are prepared in high yield from ammonia and chlorine in the presence of a strong base and a carbonyl compound wherein the ratio of chlorine and strong base is between 1:1.5 and 1:4 and wherein the chlorine and the strong base are fed at the same time to the reaction. The process of this invention results in the formation of substantially no isohydrazone.

3,415,883

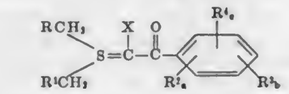
α-HALOSULFONIUM YLIDS AND α-HALOSULFONIUM SALTS

Kenneth Wayne Ratts, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Missouri, a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,162
15 Claims. (Cl. 260—592)

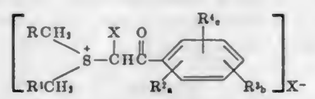
The α-halosulfonium compounds of this invention are represented by a formula selected from the group consisting of

(a)



and

(b)



wherein R and R^1 are each selected from the group consisting of hydrogen, alkyl of not more than 12 carbon atoms and haloalkyl of not more than 12 carbon atoms containing 1, 2 or 3 halogen atoms, X is halogen (Cl, Br and I), R^2 is selected from the group consisting of halogen (Cl, Br, F and I) and alkyl of not more than 4 carbon atoms, R^3 is selected from the group consisting of NO_2 and alkoxy of not more than 4 carbon atoms, R^4 is phenyl, a is an integer from 0 to 5 inclusive, b is an integer from 0 to 2 inclusive and c is an integer from 0 to 1.

3,415,884

PROCESS FOR MANUFACTURING CYCLAMEN ALDEHYDE AND ITS DERIVATIVES

Tsutomu Kuwata, Tokyo, Tadashi Yasukawa, Zushi-shi, and Shozo Abe, Tokyo, Japan, assignors to Soda Koryo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Feb. 15, 1965, Ser. No. 432,552
Claims priority, application Japan, Apr. 22, 1964, 39/22,396
2 Claims. (Cl. 260—599)

A process for manufacturing cyclamen aldehyde and derivatives thereof by reacting in the vapor phase at least one aromatic aldehyde having carbon-carbon double bond in the side chain thereof with at least one compound selected from saturated primary and secondary alcohols and hydrogen in the presence of a hydogenation or dehydrogenation catalyst. The reaction is conducted at a temperature of about 150° to 500° C. under a reduced pressure to effect the hydrogenation of the double bond of the side chain only. By this process it is possible to produce the cyclamen aldehyde and its derivatives in high yield and without unwanted impurities which can not be tolerated in the product useful as a perfume.

3,415,885

OXIDATION PROCESS

George Wallace Hooper, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 288,455, June 17, 1963. This application Jan. 26, 1966, Ser. No. 523,024
Claims priority, application Great Britain, Feb. 3, 1965, 4,686/65
8 Claims. (Cl. 260—603)

There is provided a process for the oxidation of compounds having a grouping



to form the corresponding compounds having the grouping



wherein the compounds to be oxidized are reacted with oxygen in the presence in hydrogen, transition metal ions such iron ions, an aliphatic alcohol, a solid catalyst of Groups I*b* and VIII. The reaction is carried out at up to 30° C. and with a partial pressure of hydrogen of at least 2 atmospheres.

3,415,886

HEAT TREATED BISMUTH MOLYBDATE ON SILICA CATALYSTS

William R. McClellan, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 614,419, Feb. 7, 1967. This application Jan. 31, 1968, Ser. No. 701,850
14 Claims. (Cl. 260—603)

A bismuth molybdate or bismuth phosphomolybdate-on-silica catalyst is made by mixing a silica sol with compounds to give an aqueous slurry which produces, after drying and calcining, bismuth oxide, molybdenum oxide and optionally, but preferably, phosphorus oxide, in the desired proportions. A preferred method of preparing the catalyst is to add, prior to drying, ammonium carbonate, or aqueous ammonia, to the slurry until the pH is in the range of 5–7.5. Subsequently, the catalyst is dried and calcined at 450° C. and then further heated to temperatures of 750 to 850° C. The resulting catalyst has the formula:

$$Bi_aP_bMo_{12}Si_cO_d$$

where a is equal to or greater than 4, b is 0 to 2, c is 24 to 160, and d is $1.5a+2.5b+36+2c$. The catalyst is further characterized in that the bismuth molybdates present are substantially amorphous as determined by X-ray diffractometer examination.

3,415,887

PROCESS FOR THE PREPARATION OF 4,4'-DICHLORODIPHENYL SULFONE

Michael J. Keogh, Piscataway, and Arthur K. Ingberman, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 10, 1966, Ser. No. 556,539
5 Claims. (Cl. 260—607)

1. Process for preparing 4,4'-dichlorodiphenyl sulfone which comprises reacting sulfur trioxide and at least about 100 percent molar excess of diethyl sulfate at a temperature not greater than about 10° C. to form a reaction mass of diethyl sulfate and the reaction product of sulfur trioxide and diethyl sulfate, thereafter reacting said reaction mass with chlorobenzene and sulfur trioxide at a

temperature not greater than about 15° C., and recovering 4,4'-dichlorodiphenylsulfone.

3,415,888
POLYSULFIDES AND PROCESS FOR THE PREPARATION OF SAME

Friedrich K. Lautenschlaeger, Toronto, Ontario, Canada, assignor to The Dunlop Company Limited, London, England, a British company

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,309
Claims priority, application Great Britain, Mar. 14, 1964, 10,887/64; May 1, 1964, 18,119/64
12 Claims. (Cl. 260—608)

Chloropolysulphides produced by reacting a hydrocarbon olefin with a sulphur chloride compound having a mole ratio of sulphur to chlorine greater than 1:1. The mole ratio of the sulphur chloride, when based on its average molecular weight, to the hydrocarbon olefin in the reaction mixture is between 1:1 and 1:5. The principal utility for the chloropolysulphides resides in their ability to be reduced to form episulphides which can then be polymerized to yield useful polymers.

3,415,889
PRODUCTION OF THIOL COMPOUNDS

Rector P. Louthan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 14, 1964, Ser. No. 396,424
13 Claims. (Cl. 260—609)

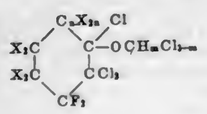
1. A method for the preparation of a thiol comprising contacting at a temperature of at least 250° C. and in the presence of a polar organic solvent selected from the group consisting of cyclic and acyclic carboxylic acid amides having from 3 to 6 carbon atoms per molecule an alkali metal monosulfide and at least one material selected from the group consisting of a polyhalo aromatic compound, a polyhalo heterocyclic compound, a polymer resulting from the reaction of an excess of a polyhalo aromatic compound with an alkali metal monosulfide, a polymer resulting from the reaction of an excess of a polyhalo heterocyclic compound with an alkali metal monosulfide, a diaryl sulfide and a di(alkaryl)sulfide, the mol ratio of alkali metal monosulfide to the above polyhalo aromatic and polyhalo heterocyclic compounds being from about 2/1 to about 5/1 and the ratio of alkali metal monosulfide to the above polymers, to the diaryl sulfide and to the di(alkaryl)sulfide being such as to provide from about 1/1 to about 5/1 gram mols of alkali metal monosulfide per gram atom of sulfur present in the polymers, diaryl sulfide or di(alkaryl)sulfide to produce a product, and acidifying said product with a mineral acid thereby producing the desired thiol, the total halogen atoms in said polyhalo compounds not exceeding 4.

3,415,890
NOVEL HALOGENATED CYCLOALKYLETHER COMPOSITIONS

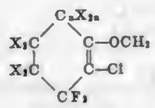
Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,391
20 Claims. (Cl. 260—611)

Halogenated cycloalkyl ethers having the formula



wherein X may be F or Cl, *n* may be 0 or 1 and *m* may be 1–3 are prepared by chlorinating, at low temperatures, corresponding methoxy-perhalogenated cycloalkenes having the formula



wherein X and *n* are the same as above, in the presence of actinic radiation. These compounds have utility as solvents for polymers, terpolymers and copolymers of trifluorochloroethylene and as sealing adjuvants for films of such polymers.

3,415,891
STABILIZATION OF POLYOXYALKYLENE POLYOLS WITH ASCORBIC ACID TYPE STABILIZER

Takesi Turumaru, Takarazuka, Masaru Yotsuzuka, Nishinomiya, and Katsuhiko Ogino, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,923
3 Claims. (Cl. 260—611.5)

A method is provided for the stabilization of polyoxyalkylene polyols which comprises admixing the polyoxyalkylene polyol with a stabilizer which is from the group consisting of ascorbic acid, isoascorbic acid and alkali metal and alkaline earth metal salts of said acid, alkanoic and alkenoic acid esters of the acid, as well as mixtures of said acids, salts and esters. The previously-mentioned stabilizers may be employed alone or in conjunction with known stabilizers as for example those of the phenol type. The invention also provides the stabilized polyoxyalkylene polyol compositions which compositions are useful as emulsifiers, synthetic lubricants, detergents, starting materials for the preparation of polyurethane plastics and the like.

3,415,892
FLUORINATED CYCLIC ALCOHOLS

Ogden R. Pierce, George A. Grindahl, and Anthony J. Butler, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Original application Feb. 7, 1964, Ser. No. 343,201, now Patent No. 3,249,596, dated May 3, 1966. Divided and this application June 24, 1965, Ser. No. 466,830
5 Claims. (Cl. 260—617)

1. A composition of the formula



where R is selected from the group consisting of fluorine, hydrogen, and perfluoroalkyl radicals, R' and R'' are each selected from the group consisting of hydrogen and lower alkyl radicals, and *n* is an integer of 1 through 3.

3,415,893
PRODUCTION OF SYNTHETIC PINE OIL

Henry G. Sellers, Jr., Pensacola, and William C. Doyle, Jr., Gulf Breeze, Fla., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,206
8 Claims. (Cl. 260—631.5)

1. The process of producing terpene alcohols from α-pinene comprising agitating a mixture essentially consisting of a volume of terpene material containing α-pinene with from 1.5 to 0.75 volumes of aqueous sulfuric acid containing from 37% to 45% by weight of sulfuric acid and from 0.1 to 0.5% by weight of a nonionic emulsifying agent soluble in the aqueous sulfuric acid and substantially insoluble in the organic phase and at a temperature of from 37° to 43° C., thereby forming a reaction mixture substantially free of terpin hydrate and containing terpene alcohols.

3,415,894
PROCESS FOR PREPARING HALOGENATED PROPANOLS

Harry L. Yale, New Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 27, 1967, Ser. No. 625,971
4 Claims. (Cl. 260—633)

This invention relates to a new process for preparing halogenated propanols, particularly 2,2,3,3,3-pentafluoropropanol. The pentafluoropropanol is prepared by first interacting tetrafluoroethylene with an alkali metal or alkaline earth metal fluoride, followed by reaction with formaldehyde to give $CF_3CF_2CH_2O(Metal)$ and the metal alcoholate is then hydrolyzed with water.

3,415,895
PERFLUORODICYCLOPENT - 1,1' - ENYL AND METHOD FOR MANUFACTURE THEREOF

Maurice Stacey, Robert Stephens, and John Colin Tatlow, Edgbaston, Birmingham, England, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 5, 1966, Ser. No. 547,756
6 Claims. (Cl. 260—648)

Perfluorodicyclopent-1,1'enyl is made by the reaction of 1-bromoheptafluorocyclopentene with copper bronze at an elevated temperature, such as one within the range of about 200 degrees to about 300 degrees centigrade.

3,415,896
PREPARATION OF BIPHENYLS BY CATALYTIC TRANSFER HYDROGENOLYSIS AND NOVEL PRODUCTS SO PRODUCED

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed June 23, 1967, Ser. No. 648,236
9 Claims. (Cl. 260—668)

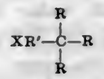
Biphenyls having at least one hydroxy, methoxy, phenoxy or amino substituent, acting as hydrogen acceptors, have been found to undergo catalytic transfer hydrogenolysis with cyclohexyl-substituted benzenes or cyclohexyl-substituted biphenyls, acting as hydrogen donors, with both reactants producing biphenyls. The reaction permits the preparation of novel substituted biphenyls. The biphenyl products of this reaction are useful as stable, high-temperature heat-transfer fluids.

3,415,897
DEHYDROHALOGENATION OF QUATERNARY CARBON ATOM-CONTAINING HALOGENATED HYDROCARBONS

Gary L. Gehrman, Homewood, and Byron W. Turnquest, Chicago, Ill., assignors to Sinclair Research Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 3, 1966, Ser. No. 569,811
10 Claims. (Cl. 260—677)

Quaternary carbon atom-containing halogenated hydrocarbons of the formula:

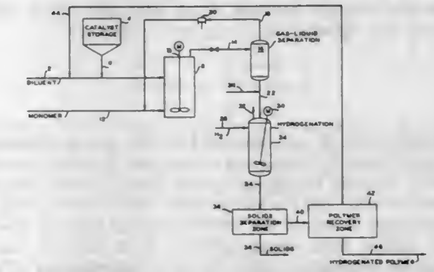


wherein R is an alkyl radical of up to 8 carbon atoms, the total carbon atoms in the three R groups being up to 18, R' is a divalent hydrocarbon radical of 2 to 8 carbon atoms, and X is a halogen having an atomic weight of 35 to 127 (e.g. neohexyl chloride) are thermally dehydrohalogenated to the corresponding mono-olefins by first forming an intermediate complex of the halogenated hydrocarbon with collidine, followed by decomposing the intermediate complex to yield the corresponding quaternary carbon atom-containing mono-olefin. At least equimolar amounts of collidine are used, based on the amount of halogenated hydrocarbon feed.

3,415,898
POLYOLEFIN HYDROGENATION PROCESS

Darrell W. Walker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 9, 1967, Ser. No. 614,900
6 Claims. (Cl. 260—683.9)

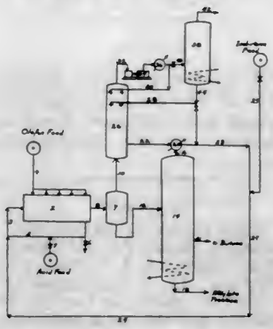


The total effluent, including supported chromium oxide-containing catalyst, from an olefin polymerization zone is combined with a nickelocene hydrogenation catalyst; this mixture is then hydrogenated in a hydrogenation zone; and the two catalysts are thereafter removed simultaneously from the effluent from the hydrogenation zone by a single filtration operation.

3,415,899
ALKYLATION PROCESS

Christiaan P. van Dijk, Westfield, N.J., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed July 15, 1966, Ser. No. 565,471
8 Claims. (Cl. 260—683.62)



The present invention relates to a method of concentrating materials boiling below the alkylatable hydrocarbons in the vaporous phase formed in an alkylation zone during liquid phase reaction. The process comprises contacting the vaporous phase, preferably in countercurrent manner, with a liquid alkylatable hydrocarbon stream which is rich in lower boiling materials to extract the lower boiling materials from the liquid stream in a concentrating zone; withdrawing, compressing and cooling vaporous phase enriched lower boiling material from the concentrating zone to form a condensate rich in lower boiling materials and passing said condensate to the concentrating zone as the liquid alkylatable hydrocarbon stream.

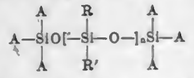
3,415,900
CROSS LINKING HYDROFLUORINATED OLEFIN POLYMERS AND SILICONE RUBBERS AND RESULTANT CROSS LINKED COMPOSITIONS

Lester E. Robb, Wayne, Pa., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 757,109, Aug. 25, 1958, which is a continuation-in-part of application Ser. No. 609,518, Sept. 13, 1956. This application Jan. 10, 1964, Ser. No. 336,858

20 Claims. (Cl. 260—827)

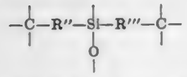
1. An elastomeric material comprising from about 5 to about 90 parts by weight of (1) a silicone rubber having a tensile strength between about 400 and about 1000 pounds per square inch gauge, and a formula



wherein R and R' are selected from the group consisting of alkyl radicals having not more than 5 carbon atoms, alkenyl radicals having not more than 5 carbon atoms, phenyl radicals and the halogenated derivatives thereof, A is hydrogen or one of the aforementioned radicals, and *n* is an integer from about 1,000 to about 200,000, cross-linked to from about 10 to 95 parts by weight of (2) a linear normally solid, fluorinated copolymer having both hydrogen and halogen substituents, at least half of said substituents being halogen atoms selected from the group consisting of chlorine and fluorine, said copolymer being either a copolymer of perfluoropropene and vinylidene fluoride or a copolymer having the formula:



wherein A, B, D, E and Z are selected from the group consisting of chlorine and fluorine, at least two of A, B, D and E being fluorine, X and Y are selected from the group consisting of hydrogen, chlorine and fluorine, and *m* and *n* being integers from 1 to 10,000, said cross-linkage having the formula



where R'' and R''' are selected from the group consisting of alkylene radicals with not more than 5 carbon atoms, alkenylene radicals having not more than 5 carbon atoms, phenylene radicals, and the halogenated derivatives thereof.

3,415,901
EPOXYOXAZOLIDINONES

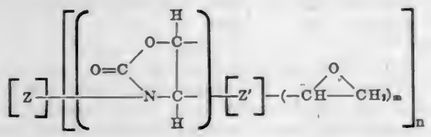
Charles H. Schramm, Easton, Pa., and Claude J. Schmidle, Hudson, Ohio, assignors to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey

No Drawing. Original application Dec. 20, 1965, Ser. No. 515,149. Divided and this application Sept. 20, 1967, Ser. No. 679,276

10 Claims. (Cl. 260—830)

Polymerizable and polymerized compositions of:

(A) an epoxyoxazolidinone of the formula



wherein Z is the organic residue of an organic polyisocyanate; Z' is the organic residue of a poly(halohydrin); *m* is an integer of 1 to 5 and *n* is an integer of 2 to 10; and

(B) a polymerization catalyst or epoxy reactive comonomer.

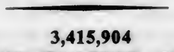
3,415,902
RESIN-PROVIDING COMPOSITIONS COMPRISING A REACTION PRODUCT OF AN EPIHALOHYDRIN POLYMER AND A MERCAPTO-ALKANOL

Richard A. Hickner and Hugh A. Farber, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 407,578, Oct. 29, 1964. This application July 12, 1967, Ser. No. 652,732

11 Claims. (Cl. 260—849)

A resinous material is produced by reacting in an inert diluent a mercapto-alkanol with epihalohydrin polymers such as epihalohydrin homopolymers or epihalohydrin copolymers with an alkylene oxide in the presence of an alkali metal hydoxide wherein the mercapto-alkanol has the structure



at least one hydroxyl group being present on R_1 or R_3. The products of the reaction are useful as resin intermediates. The epichlorohydrin copolymer-mercapto alkanol products are useful as protective colloids for water soluble resins. They can be reacted with melamine to produce termoset resins and they can be reacted with polyisocyanates to produce polyurethane resins and toams.

3,415,903
ELECTRICAL CONDUCTORS PREPARED FROM POLYESTERS CONTAINING TRIS-(2-HYDROXYETHYL)-ISOCYANURATE OR TRIS-(2-CARBOXYETHYL)-ISOCYANURATE REACTED WITH POLYESTERAMIDES

Heinz Bottger, Hettenhain, Taunus, Germany, assignor to Cella-Lackfabrik Dr. C. Schleussner G.m.b.H., Wiesbaden-Beibrich, Germany

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,608

15 Claims. (Cl. 260—857)

A resin and its method of preparation in which a polyester is reacted with a condensation product, the polyester being the reaction product of terephthalic acid, at least one polyvalent alcohol and at least one isocyanurate derivative selected from the group consisting of tris-(2-hydroxyethyl)-isocyanurate and tris-(2-carboxyethyl)-isocyanurate, the condensation product being the reaction product of trimellitic acid, triethylene glycol and an aromatic diamine. The molar ratio of terephthalic acid to isocyanurate is about 1:0.5 and the proportion by weight of the polyster to condensation product is about 1:1.

3,415,904
POLYOLEFIN COMPOSITION COMPRISING AN AMINE TREATED ETHYLENE/ACRYLIC ESTER COPOLYMER AND A POLY-ALPHA-OLEFIN

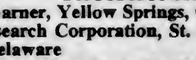
Isoji Taniguchi, Ken-Ichi Maemoto, and Takeshi Simamura, Nilhama, and Yoshio Kobayashi, Tomohide Yasumura, and Reizo Yamadera, Shiga-gun, Shiga-ken, Japan, assignors to Sumitomo Chemical Co., Ltd., and Toyobo Co., Ltd., Osaka, Japan

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,697

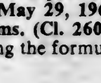
Claims priority, application Japan, Aug. 13, 1964, 39/46,670

7 Claims. (Cl. 260—897)

The present disclosure provides for a process for producing a moldable poly-alpha-olefin composition, which comprises admixing poly-alpha-olefin with a modified copolymer obtainable by treating a copolymer of ethylene and an acrylic acid ester compound having the following general formula:



wherein R_1 is hydrogen or a methyl radical, and R_2 alkayl, cycloalkyl, aralkyl, or aryl radical, each having 1 to 18 carbon atoms, with an amine compound having the following general formula:



wherein R_3 and R_4 each are hydrogen, alkyl, cycloalkyl, aralkyl or aryl radical, each having 1 to 18 carbon atoms, the hydrogen atoms of the above radical may be replaced by hydroxyl or dialkylamino radicals, heterocyclic radicals, dialkylamino and diarylamino radicals, and R_3 and R_4 may be combined together through the intermediary carbon, nitrogen or oxygen atom, until the major portion of the acrylate monomer is converted into the corresponding amide, said copolymer being added in an amount of 0.1 to 30% by weight, based on said polypropylene. The present invention also provides for compositions produced by the above process.

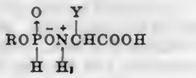
3,415,905
(CARBOXYMETHYL)AMMONIUM PHOSPHONATES

Albert Y. Garner, Yellow Springs, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,848

9 Claims. (Cl. 260—924)

(Carboxymethyl)ammonium phosphonates and their esters of the general formula



wherein R and Y are hydrogen or alkyl; useful as defoliants.

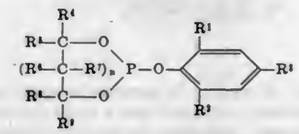
3,415,906
PHOSPHITE PHOSPHOLANE AND PHOSPHORINANE COMPOUNDS

Alvin F. Shepard and Bobby F. Dannels, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 29, 1964, Ser. No. 371,179

3 Claims. (Cl. 260—937)

1. A phosphite having the formula:



wherein R^1 and R^2 are selected from the group consisting of alkyl having from 3 to about 12 carbons, aralkyl having from 7 to about 15 carbons, R^3 is selected from the group consisting of hydrogen, alkyl, aralkyl, halogen and dialkyl tertiary amino, R^4, R^5, R^6, R^7, R^8, and R^9 are selected from the group consisting of hydrogen, alkyl, hydroxyalkyl, polyhydroxyalkyl and *n* is 0 to 1.

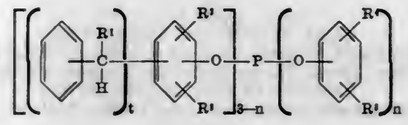
3,415,907
MIXED TRIARYL PHOSPHITES WHEREIN ONE OR TWO OF THE ARYL RADICALS CONTAINS A BENZYL OR α-ALKYLBENZYL SUBSTITUENT

James S. Sconce, Lewiston, James J. Hodan, Williamsville, and William L. Schall, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 24, 1965, Ser. No. 458,473

15 Claims. (Cl. 260—967)

1. A mixed organic phosphite of the formula



wherein R^1 is selected from the group consisting of hydrogen and alkyl, R^2, R^3, R^4 and R^5 are independently selected from the group consisting of hydrogen, alkyl, chlorine and bromine *n* is from 1 to 2, and *t* is from 1 to 3.

3,415,908
METHOD OF PREPARING TRIALKYL PHOSPHATES

Nickolai Kirillovich Bliznjuk, Alexei Filippovich Kolomiets, Semen Ljvovich Varshavsky, Anatoly Alexandrovich Skladnev, Lev Petrovich Kofman, and Galina Vasiljevna Tkachenko, Moscow, and Boris Jakovlevich Libman and German Andreevich Novokrechshenov, Volgograd, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Institute Fitopatologii, U.S.S.R.

No Drawing. Filed May 7, 1964, Ser. No. 365,786

10 Claims. (Cl. 260—971)

A process for preparing trialkyl phosphates of the formula $(RO)_3PO$, wherein R is an alkyl group of 1 to 12 carbon atoms. Phosphorous, either red or white, is suspended in the corresponding alcohol in a molar ratio of 1:2–100 and the suspension is chlorinated with chlorine gas at a temperature of 10°–100° C. The reaction may be conducted in an inert solvent.

3,415,909
PROCESS OF PREPARING N-(β-DIALKYLDITHIOPHOSPHORYL) ARYL OR ALKYL SULFONAMIDES

Raymond A. Simone, Walnut Creek, and Roy C. Tulee, San Francisco, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 403,383, Oct. 12, 1964. This application Aug. 15, 1967, Ser. No. 660,585

8 Claims. (Cl. 260—979)

Process for preparing N-(β-dialkyldithiophosphoryl) aryl or alkyl sulfonamides by the reaction of an aryl or alkyl sulfonamidethyl halide with a dialkyldithiophosphate salt, the improvement maintaining a pH of at least about 9.5 during the reaction, and thereafter isolating the N-(β-dialkyldithiophosphoryl) aryl or alkyl sulfonamide. The N-(β-dialkyldithiophosphoryl) aryl or alkyl sulfonamides are herbicides.

3,415,910
CALCINED GYPSUM AND A METHOD FOR ITS PREPARATION

William A. Kinkade, Lisle, and Robert E. McCleary, Geneva, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Delaware

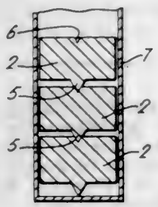
No Drawing. Filed Jan. 11, 1967, Ser. No. 608,483

16 Claims. (Cl. 263—53)

A process for producing a calcined gypsum which comprises treating a mass of hot calcined gypsum by adding

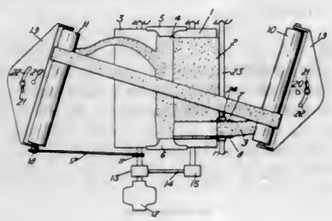
thereto, with agitation, liquid water in an amount sufficient to reduce a portion of the mass to a temperature below the boiling point of water and thereafter supplying heat to the temperature reduced portion to raise the temperature thereof to above about 215° F. The process also contemplates calcination of gypsum rock followed by the aforesaid treatment. The invention also includes a novel stabilized calcined gypsum which may be further characterized as having a stacking order index above 8 and a density above 2.60 grams per milliliter at 25° C.

3,415,911
FUEL ELEMENT FABRICATION
Henry Lloyd, Wantage, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Oct. 18, 1965, Ser. No. 497,469
Claims priority, application Great Britain, Nov. 16, 1964, 46,672/64
10 Claims. (Cl. 264—.5)



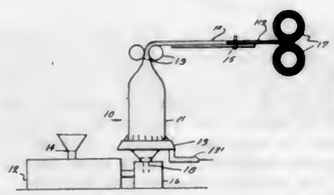
A method of fabricating nuclear fuel elements comprises the steps of loading bodies of ceramic nuclear fuel into a sheath and subsequently fracturing or cracking said bodies within said sheath. Preferably the fuel bodies are cylindrical and dimensioned to easily enter the sheath, the bodies being fractured or cracked by mechanical means, ultrasonic vibration or thermal shock.

3,415,912
METHOD FOR DISPERSING ADDITIVES IN RUBBERS
Guy Edmond Bohin, Bron, France, assignor to Rhone-Poulenc S.A., Paris, France, a corporation of France
Filed Mar. 7, 1966, Ser. No. 532,415
Claims priority, application France, Mar. 10, 1965, 8,647
6 Claims. (Cl. 264—37)



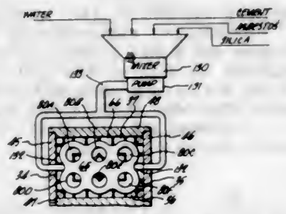
The invention relates to a method of dispersing additives in rubber in which the rubber is fed batchwise together with an additive to the nip defined between a pair of closely spaced rolls mounted on parallel axes. A hide is thus formed by the rubber and additive on one of the rolls and the invention relates to the improvement of removing a thin strip which constitutes a small fraction of the width of the rolls and feeding this strip from one axial position to another axial position of the rolls where it is mixed with the remainder of the material located in the nip.

3,415,913
PROCESS FOR MAKING A SEWABLE POLYETHYLENE UPHOLSTERY MATERIAL
John H. Lux, Wilmington, Del., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,860
8 Claims. (Cl. 264—48)



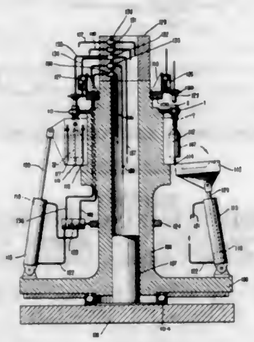
A process for producing a sewable, skinned, foamed sheet with the appearance of leather is disclosed, wherein a foamable mono-olefin polymer composition is extruded and a stream of air, which is at a temperature well below the extrusion temperature, is directed upon at least one surface of the extrudate before the extrudate has completely foamed, to produce an impervious skin on the extrudate surface, and thereafter the skinned, foamed sheet produced is crumpled and uncrumpled.

3,415,914
METHOD OF CASTING MULTI-DUCT CONCRETE CONDUITS
Larry D. Walker, Riverside, Calif., and Clarence H. Jorgensen, Jr., Stamford, Conn., assignors to American Cement Corporation, Los Angeles, Calif., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,322
7 Claims. (Cl. 264—86)



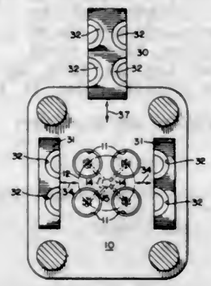
A method of casting a concrete conduit in which a slurry of concrete is pumped into a mold chamber around an elongate core extending through the chamber. After sufficient uncombined water is expressed from the slurry to form a partially dried self-supporting casting, the dimensions of the mold chamber are increased transversely of the core, but not along the length of the core, by an amount which is less than that productive of separation of the boundaries of the chamber from the partially dried casting, thereby permitting the core to be withdrawn from the chamber without damage to the casting.

3,415,915
CONTINUOUS METHOD AND MEANS FOR THE MANUFACTURE OF HOLLOW OBJECTS
Edouard Lecluyse, Dampierre en Crot, Aubigny, Cher, and Antoine Beranger, Charenton, Seine, France, assignors to Tuboplast-France, S.A., Paris, France
Filed Sept. 10, 1965, Ser. No. 486,302
Claims priority, application France, Sept. 10, 1964, 987,706
15 Claims. (Cl. 264—94)



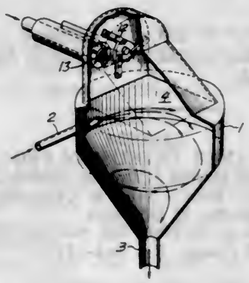
1. A method of continuously forming hollow objects which comprises mounting a series of preforms upon a continuously moving chain conveyor, passing the chain conveyor and the supported preforms through an oven heated to the softening point of the preforms, passing the chain and preforms in synchronism into operative contact with a respective one of a series of molds, introducing each preform thereon, sequentially into a mold, closing the mold over the preform, blowing the preform to the shape of the mold, opening the mold, and removing the molded shape from the moving chain.

3,415,916
METHOD AND APPARATUS FOR MAKING HOLLOW ARTICLES OF ORGANIC PLASTIC MATERIAL
Emery I. Valyi, 5200 Sycamore Ave., Riverdale, Bronx, N.Y. 10471
Filed Apr. 27, 1966, Ser. No. 545,682
6 Claims. (Cl. 264—97)



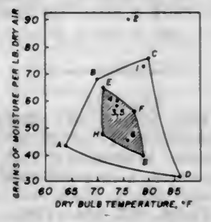
Blow molding apparatus including a parison die, blow cores and a blow mold, in which the die and mold have a plurality of cavities and in which the blow cores are shiftable in a first path between the parison die and the blow mold station. The blow mold is composed of a central part and a pair of opposed outer parts in which the mold cavities are formed. The outer parts are retractable out of the path of the blow cores along a second path normal to the first path leaving blown articles in the central part, and the central part is retractable out of the path of the blow cores to a discharge station along a third path normal to the first and second paths.

3,415,917
PROCESS FOR FORMING AND COOLING THERMOPLASTIC RESIN PELLETS
Takuro Watanabe and Kazuro Toyama, both of Goi Kaigan, Ichihara-shi, Chiba Prefecture, Japan
Filed June 11, 1965, Ser. No. 463,231
Claims priority, application Japan, June 18, 1964, 39/34,562
7 Claims. (Cl. 264—142)



A process for extending and cutting a heated thermoplas.ic resin to form highly viscous pellets which are then introduced into a whirlstream of cooling water to cool the pellets to a non-sticky state.

3,415,918
MANUFACTURE OF NOVELTY NUB YARNS
James R. Holton, English Cove Apartments, C–19, 201 Pensacola Beach Road, Gulf Breeze, Fla. 32561; Wesley A. Parker, 2210 S. Rayburn Court, Pasadena, Tex. 77502; and James G. Sims, 501 N. 17th Ave., P.O. Box 2304, Pensacola, Fla. 32501
Continuation-in-part of abandoned application Ser. No. 374,434, June 11, 1964. This application Apr. 8, 1965, Ser. No. 446,558
8 Claims. (Cl. 264—167)

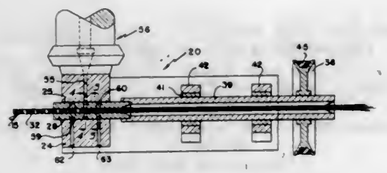


A particular process for the production of nubby continuous filament yarn is disclosed. This is accomplished by stretching unoriented synthetic thermoplastic yarn having a moisture concentration of less than about 4.0% at less than the natural draw ratio thereof while maintaining the ambient air at drawing within a particular temperature and relative humidity relationship.

3,415,919
METHOD AND APPARATUS FOR MAKING TWINE
James A. Kippan, West Vancouver, British Columbia, Canada, assignor, by mesne assignments, to Delta Rope & Twine Limited, Nassau, Bahamas, a corporation of the Bahamas
Filed July 2, 1965, Ser. No. 469,299
9 Claims. (Cl. 264—167)

Method of and apparatus for making twine from thermoplastic material by drawing a bundle of untwisted

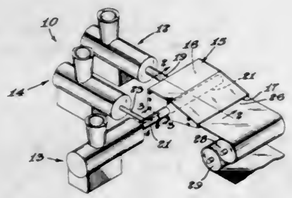
substantially parallel synthetic monofilaments along a path, and directing a stream of compatible molten synthetic material on to the outer filaments only of the moving bundle and around said bundle to form a spiral band therearound.



3,415,920
MULTILAYER EXTRUSION PROCESS

Robert E. Lee and Harold J. Donald, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 19, 1965, Ser. No. 481,016
4 Claims. (Cl. 264—171)



Corrosive polymers such as vinylidene chloride polymers are extruded in a multilayer structure by encapsulating the corrosive material within a stream of noncorrosive material and subsequently shaping the stream to a film or sheet. Only a relatively small part of the extrusion equipment need be made from corrosion resistant materials.

3,415,921
PROCESS FOR SPINNING FIBERS OF POLY(4-METHYL-1-PENTENE)

Gerald A. McFarren, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,270
1 Claim. (Cl. 264—176)

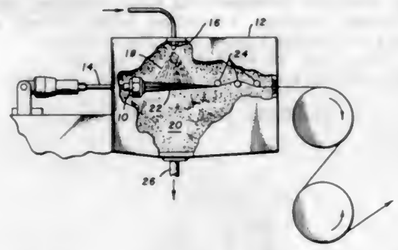
A process for spinning fibers of high molecular weight poly(4-methyl-1-pentene) comprising charging a polymer crumb wet with diluent to an extruder, adding diluent downstream of the feed point and extruding the resultant solution at high temperature.

3,415,922
MIST SPINNING

Ernest P. Carter, Durham, and Paul R. Cox, Jr., Cary, N.C., and William E. Lanier, Hartselle, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed July 2, 1965, Ser. No. 469,103
6 Claims. (Cl. 264—176)

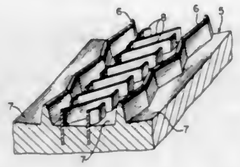
A process for removing solvent from a solution of filament-forming material and solvent and for collecting the removed solvent includes the contacting of the solution while in an extruded filament-form with an atomized liquid which condenses on the filament-forms to diffuse the solvent therefrom, the stripping of the condensate from the filament-forms and collecting of the stripped condensate.



3,415,923
METHOD OF MAKING TIRE MOLDS

John D. Petersen, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed May 9, 1966, Ser. No. 548,604
3 Claims. (Cl. 264—221)

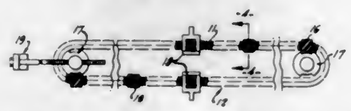


Method of making tire molds comprising forming a core construction in the shape of a tire tread with thin metal blades embedded therein with a portion of said blades extending above the surface of the core element, pouring a rigid casting material against said core embedding the extended portion of the blades, removing the core from the mold and retaining said blade elements in said casting and removing said blades, machining said casting and returning said blades to the casting with a portion of each blade extending above the casting surface.

3,415,924
METHOD OF MANUFACTURING EXTENSIBLE CONVEYOR BELTS

Antonio Lawrence Girardi, 758 W. Acacia St., Salinas, Calif. 93901

Original application Aug. 24, 1960, Ser. No. 51,718. Divided and this application Dec. 21, 1966, Ser. No. 603,630
3 Claims. (Cl. 264—229)



This application relates to the manufacture of extensible conveyor belts comprising a plurality of endless coil spring loops bonded together in proximate side-by-side relationship wherein the loops are formed by intermeshing end portions of appropriate lengths of coil spring, passing the springs through molding mechanism and actuating the molding mechanism to mold cross members of rubber like material at intervals along the length of the springs for bonding the springs in said relationship as a unitary assembly, the intermeshed ends of each spring loop being embedded in a molded cross member.

3,415,925
PROCESS FOR PREPARING PERMEABLE POLYETHYLENE FILM

Nelson S. Marans, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 314,612, Oct. 8, 1963. This application Aug. 1, 1967, Ser. No. 657,533
5 Claims. (Cl. 264—331)

This invention is directed to a process for preparing polyethylene film which is permeable to gas; said process comprises blending polyethylene with a minor amount of C_{18} to C_{40} paraffin, and subsequently pressing the blend to form a continuous film. The pressed film can be cooled to 15–50° C. and then heated at a temperature of at least 60° C. for a period of 1 to 60 minutes to further increase the gas permeability of said film, all as recited hereinafter.

3,415,926
EQUINE ENCEPHALOMYELITIS VACCINE

Merlin B. Hays and James C. Trace, Fort Dodge, Iowa, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 9, 1966, Ser. No. 532,851
10 Claims. (Cl. 424—89)

1. A method of producing a seed virus suitable for use in production of a killed tissue-culture origin virus vaccine capable of stimulating production in a mammal of immunizing anti-bodies protective against a virulent virus of the group consisting of Eastern and Western types of equine encephalomyelitis which comprises subjecting an egg-adapted strain of virulent virus from the group consisting of Eastern and Western types of equine encephalomyelitis to at least one intracerebrally inoculated guinea pig brain passage and at least three embryonated egg passages, each guinea pig brain passage preceding and following an embryonated egg passage, and thereafter passing the so-conditioned virus through at least one in vitro tissue cultured culture of cells derived from chick embryos, and thereafter recovering a suspension of seed virus.

3,415,927
HEAT MODIFIED DISPERSIBLE GUAR GUM

Irwin Samuel Butensky, Spring Valley, Harold Linwood Smith, Pearl River, N.Y., and George Peter Chrekian, Wanaque, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed June 9, 1965, Ser. No. 462,510
8 Claims. (Cl. 424—180)

The novel process herein disclosed relates to a process of decreasing the rate of hydration of guar gum, which comprises heating the gum for a period of 3 to 30 hours at temperatures of from about 100 to 150° C. Furthermore, novel compositions of matter incorporating guar gum prepared in the above manner are also disclosed.

3,415,928
PROCESS FOR PRODUCING ANTIBIOTIC, ANTIFUNGAL AND ANTIFOULANT SUBSTANCES BY SOLVENT EXTRACTION OF *SARGASSUM NATANS, CHONDRIA LITTORALIS* AND *CYMPOLIA BARBATA*, AND THE RESULTING PRODUCTS

Noemi G. Martinez Nadal, Mayaguez, Puerto Rico, assignor to the people of Puerto Rico

Filed July 24, 1964, Ser. No. 385,016
6 Claims. (Cl. 424—195)

A crude extract is obtained by extracting with ethyl ether a dried or fresh alga of the class of *Sargassum natans, Chondria littoralis* and *Cympolia barbata*. The crude extract contains substances identified as sarganin complex, sarganan and sarganol having antibacterial, antifungal and antifoulant properties.

3,415,929
OPHTHALMIC SOLUTION CONTAINING POLY-1,3-BETA-GLUCOSIDE

Leon Lachman, Millburn, and Pravin Sheth, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 14, 1965, Ser. No. 472,012
11 Claims. (Cl. 424—229)

1. A solution comprising (a) about 0.05 to 5% of the linear poly-1,3-β-glucoside, containing on every third glucose moiety of the chain a 1,6-β-glucosido group and of which an 1% aqueous solution shows at 24° C. and in the pH range between 6.8 and 7.5 a final viscosity of about 2400 to 3000 centipoises, and (b) a pharmaceutically acceptable aqueous ophthalmic carrier solution.

3,415,930
CERTAIN PARENTERALLY ACTIVE ANTHELMINTIC TETRAHYDROPYRIMIDINES

William G. Huber, Urbana, Ill., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 8, 1964, Ser. No. 358,379
2 Claims. (Cl. 424—251)

The control of helminthiasis in domestic animals by the parenteral administration of a series of 2-(2-thenylmercapto) - Δ^2-imidazolines, 2 - (2 - thenylmercapto)-Δ^2-tetrahydropyrimidines, their N-methyl derivatives, and the non-toxic water-soluble acid addition salts thereof.

3,415,931
PHARMACEUTICAL COMPOSITION CONTAINING THEOPHYLLINYL-7-n-PROPANE - ω - SULFONIC ACID OR ITS SALTS AND A METHOD OF TREATMENT

Pierre J. Guiroy, Paris, France, assignor to Les Laboratoires Bruneau et Cie, Paris, France, a company of France

No Drawing. Original application Oct. 1, 1964, Ser. No. 400,923, now Patent No. 3,352,864, dated Nov. 14, 1967. Divided and this application Mar. 16, 1967, Ser. No. 632,488
Claims priority, application France, Oct. 8, 1963, 949,882; Jan. 7, 1964, 959,572
5 Claims. (Cl. 424—253)

This invention is directed to a pharmaceutical composition in dosage unit form comprising a pharmaceutical carrier of at least one compound selected from the class consisting of theophyllinyl-7-n-propane-ω-sulfonic acid, and its therapeutically acceptable salts. These compositions may be used as spasmolytic agents and vasodilators of the coronary and brain arteries.

3,415,932
7 - CHLORO - 4 - [4-(2-HYDROXYETHYLAMINO)-1-METHYLBUTYLAMINO]QUINOLINE; ANTI-INFLAMMATORY COMPOSITIONS AND METHOD USING SAME

Emery W. Dennis, Albany, Evan W. McChesney, Bethlehem, and Alexander R. Surrey, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1965, Ser. No. 456,810
4 Claims. (Cl. 424—258)

2. A method for suppressing inflammation which comprises administering to an animal host a therapeutic amount of 7-chloro-4-[4-(2-hydroxyethylamino)-1-methylbutylamino]quinoline.

3,415,933

INSECTICIDAL METHOD AND COMPOSITIONS COMPRISING HETEROCYCLIC CARBAMIC ACID ESTERS

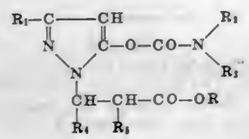
Kurt Gubler, Riehen, Switzerland, assignor, by mesne assignments, to H. A. Whitten & Co., New York, N.Y., a partnership

No Drawing. Original application Mar. 19, 1964, Ser. No. 353,268, now Patent No. 3,342,832, dated Sept. 9, 1967. Divided and this application Jan. 31, 1967, Ser. No. 627,580

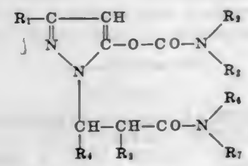
Claims priority, application Switzerland, Mar. 22, 1963, 3,664/63

8 Claims. (Cl. 424—273)

Insecticidal compositions which comprise as active agents a compound of the formula



or a compound of the formula



wherein

R_1 is H or lower alkyl,
R_2 and R_3 each is lower alkyl or alkenyl,
R_4 and R_5 each is H, lower alkyl, Cl, Br or F,
R_6 is H, lower alkyl, substituted lower alkyl, cyclohexyl, subst. cyclohexyl, phenyl, or subst. phenyl,
R_7 is H, lower alkyl, or subst. lower akyl,
R_6 and R_7 can be piperidino, morpholino, lower alkyl-piperidino or lower alkyl-morpholino,
R_8 is lower alkyl, lower alkenyl, phenyl, substituted phenyl, phenyl-lower alkyl, etc.,

are suitable for combatting various insects and their larvae, especially *Planococcus citri* and larvae of *Lucilia cuprina*, which are resistant to known pyrazolyl-carbamates.

3,415,934

METHODS FOR THE TREATMENT OF EMESIS

Michel Leon Thominet, Paris, France, assignor to Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France, Paris, France

No Drawing. Continuation-in-part of application Ser. No. 210,555, July 17, 1962. This application Sept. 20, 1967, Ser. No. 669,297

Claims priority, application France, July 25, 1961, 869,013, 869,014

6 Claims. (Cl. 424—274)

Emesis in mammals is significantly decreased or substantially removed by the administration of certain substituted indoles and indolines. Treatment may be given orally or parenterally.

3,415,935

HIDE CURING COMPOSITION CONTAINING AN ORGANIC TIN COMPOUND, REDUCING AGENT AND HEXAMETHYLENE-TETRAMINE

Hans-Helmut Friker, Rheinberg, Rhineland, Karl Altrogge, Dusseldorf, and Otto Heuse, Solingen-Ohligs, Germany, assignors to Deutsche Solvay-Werke Gesellschaft mit beschrankter Haftung, Solingen-Ohligs, Germany

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,284

Claims priority, application Germany, Dec. 14, 1963, D 43,177

10 Claims. (Cl. 424—288)

Applicant cures hides, skins and pelts with a sodium chloride mixture containing up to 10% of an organo-tin compound, up to 1% of a reducing agent such as SO_2, sodium nitrite, sodium bisulphites, benzene sulfinic acid or ascorbic acid, and up to 30% of hexamethylenetetramine. The reducing agent stabilizes the tin compounds, of which the following were expressly enumerated: tri-n-butyltin-acetate, -benzoate, and -salicylate, dibutyltin-succinate, triethyltin-laurate, bis-(tributyltin)-oxide, bis-(triethyltin)-sulphide, octyltin-trihexoate, tribenzylphenyltin, triethyltin-phenoxide and triisopropyltin-pentachlorophenolate. Polyglycol type emulsifiers and alkali can be added to the mixture. Pieces of calfskin, 100 x 100 mm., were treated with these mixtures and rolled up, tied up with rubber rings or kept in screw-top jaws. Skins, spotted and stained by mineral stains due to poor preservation were also tested. The latter skins were sometimes decolorized while all skins were adequately preserved. A mixture of .01% tri-n-butyltin-acetate, .5% $NaNO_2$, 5% hexamethylenetetramine and 7.4% SO_2 was particularly good as a preservative.

3,415,936

BACTERICIDE FOR BRINE INJECTION

Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,201

3 Claims. (Cl. 424—319)

A bactericidal composition comprising a mixture of a halonitroalkanol and a composition selected from the group consisting of water dispersible and water soluble alkylphenoxypoly(ethyleneoxy)ethanols, alkyl quaternary ammonium salts, N-alkylated β-aminopropionic acid, and salts of said acid, polyphenols, aliphatic polyphenols, salts of said phenols, and halogenated derivatives of said phenols and salts, aliphatic amines, and salts of aliphatic amines.

3,415,937

THE SUPPRESSION OF APPETITE WITH 1-(O-CHLOROPHENYL)-2-METHYL-2-PROPYLAMINE AND ACID-ADDITION SALTS THEREOF

Dom Vincent Finocchio, Summit, and Charles Ferdinand Huebner, Chatham, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 393,360, Aug. 31, 1964. This application Dec. 1, 1966, Ser. No. 598,162

7 Claims. (Cl. 424—330)

Novel anoretic compositions comprising essentially a pharmacologically effective amount of 1 - (o - chlorophenyl)-2-methyl-2-propylamine or a pharmaceutically acceptable acid-addition salt thereof as the active anoretic ingredient, and a pharmaceutically acceptable carrier.

3,415,938

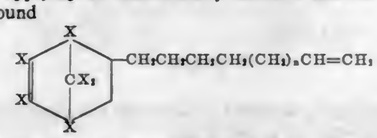
METHOD OF CONTROLLING INSECTS WITH ADDUCTS OF HEXAHALOCYCLOPENTADIENE WITH ALKADIENES

Edward D. Weil, Lewiston, N.Y., and John F. Porter, Morristown, N.J., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Feb. 17, 1964, Ser. No. 345,066. Divided and this application Nov. 30, 1966, Ser. No. 615,872

2 Claims. (Cl. 424—351)

1. A method for the control of insects which comprises applying an insecticidally effective amount of the compound



to the insects to be treated wherein X is a halogen atom chosen from the group consisting of bromine, chrorine and fluorine and *n* is a number from zero to 12.

3,415,939

MATTE COSMETIC CREAM COMPOSITION

Abraham Minton, Rego Park, N.Y., assignor to David Roberts, New York, N.Y.

No Drawing. Continuation-in-part of application Ser. No. 385,768, July 28, 1964. This application June 22, 1965, Ser. No. 466,054

2 Claims. (Cl. 424—357)

1. A cosmetic preparation in the form of a non-flowable cream which when applied to the skin provides thereon a thin, durable, adherent matte film, said preparation comprising from about 30 to about 55% of an alcohol selected from the group consisting of ethyl, propyl and isopropyl alcohols, from about 0.5 to about 6% of a higher fatty alcohol having from 14 to 22 carbon atoms per molecule, from about 0.1 to about 2% of a compound selected from the group consisting of non-toxic alkali and alkaline earth metal salts of n-alkyl sulfates having from 12 to 22 carbon atoms per molecule, from about 2% to about 6% of a hydrophilic colloidal hydrous complex magnesium aluminum silicate containing adsorbed tris(hydroxyethyl) methyl ammonium cation and water.

ELECTRICAL

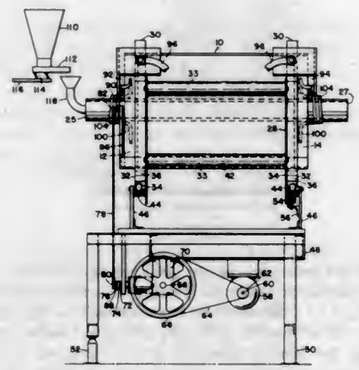
3,415,940

ROCKING ELECTRIC TUBE FURNACE

John C. McMullen, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Mar. 16, 1967, Ser. No. 623,661

15 Claims. (Cl. 13—21)



An electric tube furnace for heat treating granular materials having means for tilting a resistance tube heater downwardly towards the discharge outlet of the resistance tube and a crank drive mechanism for rocking the resistance tube about its longitudinal axis to continuously advance the granular material through the resistance tube toward the discharge outlet. Flexible electrical conductor cables are employed to deliver a high amperage current to the resistance tube.

3,415,941

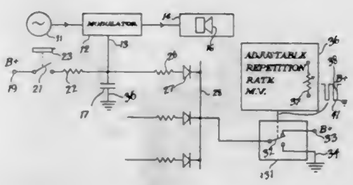
ORGAN CIRCUIT

John R. Brand, Northridge, Calif., assignor to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,198

12 Claims. (Cl. 84—1.26)

The tone envelope of a musical instrument is controlled by a storage capacitor. The attack of the envelope is determined by the charging resistance of the capacitor circuit. The decay or sustain of the envelope is determined by the discharge resistance. Either or both resistances are in effect adjusted by the present invention by rapidly and alternately blocking and passing current through the resistance at a controlled and adjustable duty cycle. When the duty cycle is high, so that the circuit is



closed during a high percentage of the time, the current flow is high and the resistance appears low. When the duty cycle is adjusted to be low, the current is correspondingly low and the apparent resistance is high. Thus, the apparent value of the resistance in the RC circuit is readily and adjustably controlled. The invention has the unique ability of requiring only one duty cycle control, preferably in the form of an adjustable multivibrator, for a large number of discharge (or charge) resistors.

3,415,942

CORROSION-RESISTANT CONDUIT CONNECTOR

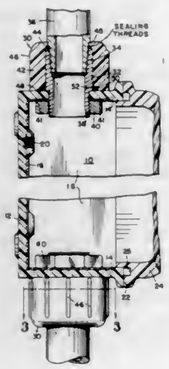
Maurice G. Knoy, Lafayette, Ind., assignor to Rostone Corporation, Lafayette, Ind., a corporation of Indiana

Filed Dec. 27, 1966, Ser. No. 604,669

11 Claims. (Cl. 174—51)

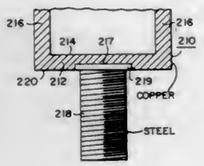
A corrosion-resistant connector for connecting electrical conduit to a corrosion-resistant housing, and meeting U.L. standards, has a molded plastic body sealed to both the conduit and the housing, and contains a reinforcing insert, as of metal, surrounding its internally

threaded section, to sustain bursting stress. The metal insert may have conduit-engaging threads and provide an



electrical grounding connection therefrom through a nipple to the interior of the housing.

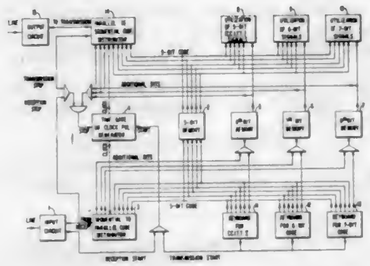
3,415,943
STUD TYPE BASE DESIGN FOR HIGH POWER SEMICONDUCTORS
Alfred Meyerhoff, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1966, Ser. No. 569,723
3 Claims. (Cl. 174—52)



This invention relates to a bimetallic stud-type base to which a semiconductor device can be joined. The base has a flat portion of a first-metal to which the device is joined and a stud portion of a second metal. The stud portion is integrally joined to the base portion.

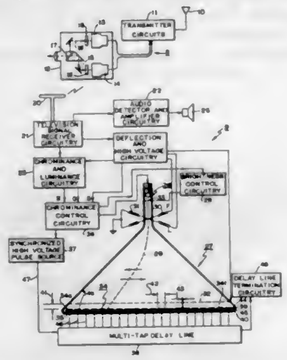
3,415,944
AUTOMATIC MULTIPLE-CODE SYSTEM FOR LONG DISTANCE INFORMATION
Lorenzo Vlesi, Rome, Italy, assignor to Sintelco Societa a resp. Limitata, Rome, Italy, a firm
Filed Feb. 19, 1964, Ser. No. 345,898
Claims priority, application Italy, Feb. 28, 1963, 4,008/63
2 Claims. (Cl. 178—3)

An automatic electronic system for the reception and transmission of information coded according to any of a number of different standards (multiple code information) of code is compatible with the standard CCITT No. 2 code. That known code operates on five units or bits and therefore permits only 32 combinations. The present invention, however, adds another 32 combinations by introducing one negative bit, the sixth, between the five significant bits and the positive stop. A third group of 32 combinations is obtained by inserting two negative bits



(the sixth and a seventh) between the five significant bits and the positive stop, and so on.

3,415,945
DELAY-LINE CONTROLLED COLOR TELEVISION
Dexter P. Cooper, Jr., Lexington, and Sholly Kagan, Natick, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,491
16 Claims. (Cl. 178—5.4)

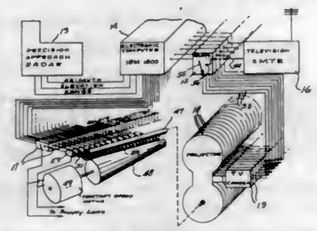


The target assembly in the cathode ray tube of a color television receiver includes phosphors selectively excited to emit light of different colors as a result of the impingement thereon of electrons having different kinetic energies. To change the kinetic energies of the electrons impinging on the target assembly, a plurality of vertically arranged and electrically conductive parallel strips is disposed adjacent the target assembly extending at right angles to the direction of the horizontally scanning electron beam. The different strips are connected to different portions of a multi-tab delay line which is supplied with a pulse of an accelerating voltage at the beginning of a line scan to cause a pulse of accelerating potentials to sweep across the target assembly synchronously with the scanning of the target assembly by the electrons.

3,415,946
SIMULATED VISUAL INSTRUMENT-APPROACH SYSTEM
James R. Bedford, Jr., 1714 W. Jackman, Lancaster, Calif. 93534
Filed Aug. 13, 1965, Ser. No. 479,367
18 Claims. (Cl. 178—6.8)

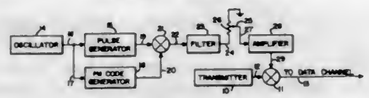
Simulated visual instrument-approach system for an airfield. Pictures of the airfield taken from various sectors of the approach zone are provided. A particular picture

is selected in accordance with the radar-detected range, azimuth and elevation information from an approaching aircraft. The selected pictures are exposed to video cameras and the cameras furnish video signals corresponding



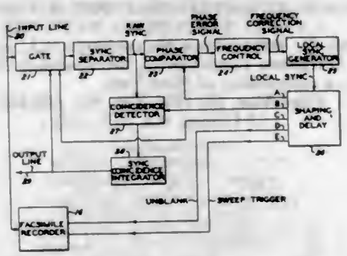
to the pictures to a transmitter. The selected video signals are received by a television receiver on an aircraft approaching the airfield and provide views of the airfield in accordance with the zonal positions of the aircraft.

3,415,947
DATA CHANNEL MONITOR
Charles R. Abbey and Harry H. Pursel, Seattle, Wash., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,844
11 Claims. (Cl. 178—69)



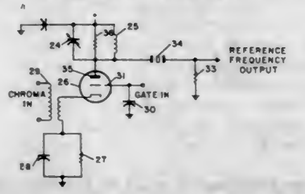
A characterizing means produces a plurality of characterized low level signals which are combined with the data signal and transmitted over a data link to a receiver. In the receiver, detection means are utilized to separate the characterized signals of different frequencies from each other and from the transmitted data. These signals are then decharacterized and compared to project an indication of the data link characteristics.

3,415,948
FACSIMILE SYNCHRONIZING SYSTEM
Stephen E. Townsend, Rochester, and John L. Wheeler Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 26, 1964, Ser. No. 406,455
7 Claims. (Cl. 178—69.5)



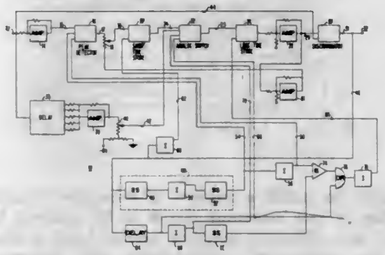
A synchronizing system for use in synchronizing a facsimile receiver with a facsimile transmitter. There is included a gate circuit to pass signals to a sync detector during a predetermined window only, means for centering the window about a transmitted sync burst, means to hold the gate circuit open when the sync signal is lost, and a phase lock loop for synchronizing the receiver sync signal with that of the transmitted sync signal.

3,415,949
FREQUENCY BURST SYNCHRONIZATION CIRCUIT
Richard E. Williams, Fairfax, Va., assignor to Dimension, Incorporated, Chantilly, Va., a corporation of Maryland
Filed Nov. 16, 1964, Ser. No. 411,221
2 Claims. (Cl. 178—69.5)



A burst responsive ringing circuit utilizing a gated vacuum tube driver having a parallel resonant tank circuit and a piezo-electric ringing circuit coupled to the tank circuit. The ringing circuit has a parallel resonant frequency equal to the frequency of the burst while the tank circuit has a resonant frequency detuned from the frequency of the burst.

3,415,950
VIDEO QUANTIZING SYSTEM
Maurice R. Bartz, Roger E. Olson, and Norman S. Stockdale, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,227
10 Claims. (Cl. 178—7.1)

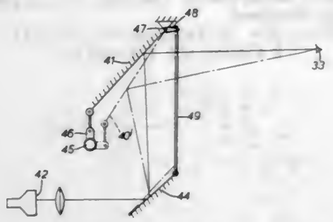


1. In a quantizing system,
a multi-clipping level discriminator circuit having a plurality of inputs and an output,
a peak detector circuit having an input and an output,
a tapped delay line having an input and an output,
circuit means for applying a video signal to one input each of the discriminator circuit, the peak detector circuit, and the tapped delay line, and
switch means selectively operable to connect the outputs of the delay line and the peak detector to another input of the discriminator circuit to vary the clipping level of the discriminator from one level to another.

3,415,951
DISPLAY APPARATUS UTILIZING PARTIALLY REFLECTING ADJUSTABLE MIRROR TO SUPERIMPOSE TWO IMAGES
Fritz P. Heller, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Mar. 15, 1965, Ser. No. 439,827
Claims priority, application Great Britain, Mar. 20, 1964, 11,862/64
14 Claims. (Cl. 178—7.88)

In head-up display apparatus a distant scene is viewed through a partial reflector which also acts to superimpose data displayed on a cathode ray tube screen so that both

the distant scene and the data can be viewed simultaneously by an observer. If it is desired to shift the reflector laterally so that the data is displayed on another portion



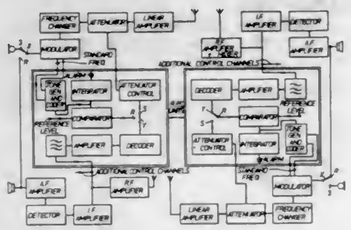
of the scene provision is made in the form of a linkage or other control means for simultaneously angularly moving the partial reflector so that substantially the same portion of the data display is viewed by the observer.

3,415,952

AUTOMATIC POWER LEVEL CONTROL FOR RADIOTELEPHONY COMMUNICATION SYSTEMS INCLUDING A REPEATER STATION

Peter Alan Blackburn, Fareham, Henry Robert Chesters, Emsworth, and Eric Charles Seeley, Rowlands Castle, England, assignors to Plessey-UK Limited, Essex, England, a British company

Filed Dec. 4, 1964, Ser. No. 416,686
12 Claims. (Cl. 179—15)



In order to enable a number of subscriber transmitters operating on one common carrier to be received by and relayed on a different common carrier from a relay station, the subscriber transmitters are automatically attenuation-controlled from the relay station to equalise their reception levels at the relay and thus minimise cross-talk in plural-channel transmission. Each communication channel from the relay to a subscriber has a control channel allocated to it in one of the channel separation gaps of its carrier while each subscriber transmitter sends on its carrier a pilot tone, which is of predetermined volume subject to the action of the transmitter attenuator, in a pilot-tone channel whose relation to the communication channel of the subscriber transmitter is similar to that of the control-tone channel to the associated communication channel from the relay to the subscriber.

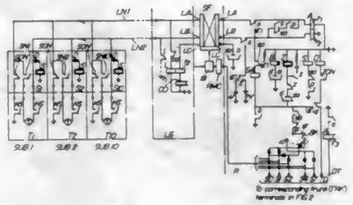
3,415,953

CALLING-PARTY IDENTIFICATION SYSTEM FOR PARTY-LINE TELEPHONE EXCHANGES

Chikai Ii, Hidetaka Yamashita, Motosuke Kuwabara, and Riichiro Sugie, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Oct. 21, 1965, Ser. No. 499,410
Claims priority, application Japan, Jan. 20, 1965, 40/2,580
2 Claims. (Cl. 179—17)

A party-line subscriber identification system. Each party-line subscriber has a rotary counter at his subset. When one subscriber of the party-line goes off-hook the rotary pulse generator at the central location is actuated to send pulses to all the subscribers in the party-line circuit. All the pulse-counters at the subset start counting the pulses being sent out. Each party-line subscriber is assigned a unique number. When the off-hook subset has



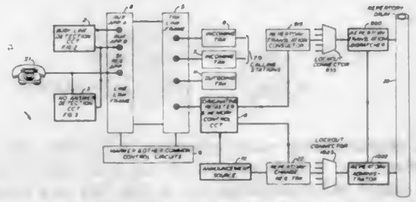
counted the number of pulses assigned as its identification it actuates the pulse generator to stop sending pulses. The number of pulses sent out identifies the party-line subscriber requesting service.

3,415,954

TELEPHONE SYSTEM

Samuel Kandel, Columbus, and Carl C. Nielson, Granville, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 21, 1965, Ser. No. 426,748
20 Claims. (Cl. 179—18)



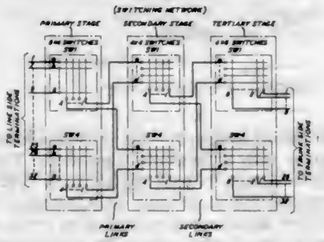
A telephone switching system is arranged with common memory equipment accessible to a plurality of auxiliary line appearances each of which is associated with a privileged line and to which calling connections are terminated during the unvailable state of the privileged line. The memory equipment is responsive to each reception of a fixed code from a privileged line for causing the completion of a connection to each one of a plurality of lines as determined by information stored in the memory by each such line during a prior attempt to call the privileged line.

3,415,955

CONTROL ARRANGEMENT FOR A COMMUNICATION SWITCHING NETWORK

Frederick L. Singer, New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 16, 1965, Ser. No. 440,264
13 Claims. (Cl. 179—18)



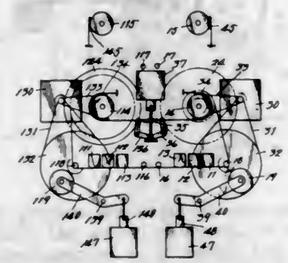
A control arrangement is disclosed for selecting an idle path between two defined terminals of a three-stage switching network. Transfluxors are coupled to the output links of the first two stages of the switching network so that the transfluxors are set to a busy state when a connection is established over the corresponding output link and reset to an idle state by signals on the transmission path of the associated output link.

3,415,956

REVERSIBLE MAGNETIC TAPE RECORDER WITH INDEPENDENT HEAD AND DRIVE MEANS FOR SELECTIVE USE WITH ONE OR TWO TAPES

Goji Uchikoshi, 582–33 Gakuen Higashi-machi, Kodaira, Tokyo, Japan

Filed Mar. 23, 1965, Ser. No. 441,986
Claims priority, application Japan, Mar. 26, 1964, 39/23,184
1 Claim. (Cl. 179—100.2)



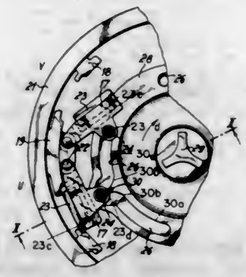
A multipurpose tape recorder which has two head mechanisms each of which can function independently of the other to play back, record or erase signals on a magnetic tape thereby facilitating dubbing signals from a first tape on a second tape without recourse to using a second tape recorder unit. The tape recorder also can be used as a conventional reversible magnetic tape recorder. Each head mechanism is provided with its own drive means which can be operated independently of or simultaneously with the drive means of other other head mechanism.

3,415,957

TRANSFER SWITCH FOR TAP-CHANGING REGULATING TRANSFORMERS HAVING CURRENT-CARRYING CONTACTS AND OPERATING MEANS THEREFOR ACHIEVING HIGH INITIAL SPEEDS OF CONTACT SEPARATION

Alexander Bleibtreu and Johann Schaller, Regensburg, Germany, assignors to Maschinenfabrik Reinhausen, Gebruder Scheubeck K.G., Regensburg, Germany

Filed Oct. 19, 1965, Ser. No. 497,828
Claims priority, application Germany, Nov. 14, 1964, M 63,127
14 Claims. (Cl. 200—8)



1. A transfer switch for tap-changing regulating transformers comprising in combination:

(a) a plurality of cooperating pairs of arcing contacts including two pairs of cooperating main arcing contacts and additional pairs of cooperating auxiliary arcing contacts;

(b) operating means including an operating shaft for said plurality of pairs of arcing contacts for selectively operating said plurality of pairs of arcing contacts in a predetermined sequence and the reverse of said sequence;

(c) two pairs of current-carrying contacts each having an open position and a closed position for selectively shunting one of said two pairs of main arcing contacts, each pair of said two pairs of current-carrying contacts including a fixed current-carrying contact and a movable current-carrying contact pivotable about a pivot parallel to said operating shaft relative to said fixed current-carrying contact and having a cam-follower for operation thereof; and

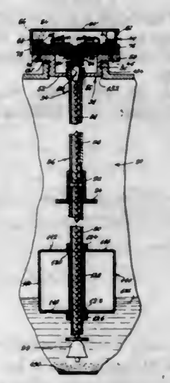
(d) a pair of cams operated by said operating shaft each operatively engaging said cam-follower of a movable current-carrying contact, and each including a contact-guiding portion and an abutment portion for selectively maintaining said movable current-carrying contact of one of said two pairs of current-carrying contacts in said closed position thereof.

3,415,958

AUTOMATIC LOW OIL CUTOFF DEVICE FOR OIL BURNER TANKS

William B. Mauro, 172 Lawrence Ave., Brooklyn, N.Y. 11230

Filed July 11, 1966, Ser. No. 564,414
1 Claim. (Cl. 200—84)



A float-actuated electrical switch mechanism for use in an oil tank to operate at a predetermined level of oil. Said switch mechanism utilizing a two part cylindrical body having an electrical contact and diaphragm assembly tightly sealed between the two seections. The assembly includes a support plate and a flexible diaphragm overlying one another and having wafer-thin contacts engaging each other. Means is provided for moving the diaphragm from the support plate when the oil reaches a predetermined level.

3,415,959

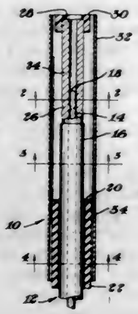
ELECTRICAL SWITCHING DEVICE

William C. Thomison, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 5, 1966, Ser. No. 598,987
6 Claims. (Cl. 200—61.08)

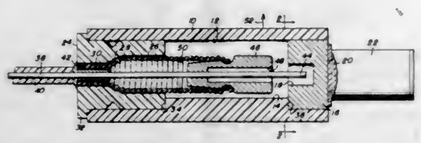
This invention relates to a device to be used as a means for triggering instruments recording phenomena associated with detonations triggered by a blasting cap, for example. The device consists of a metal case surrounding

and insulated from a metal sleeve. The metal case is connected to the ground lead of a length of coaxial cable. The metal sleeve is connected to the center lead of the same length of cable. In use, the ground lead of the cable is connected to one terminal of a D.C. voltage source and



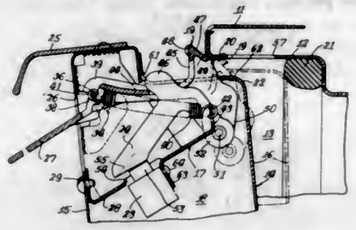
the center lead connected to the opposite terminal of the same source. When the blasting cap detonates next to the contactor, it forces the metal case inward to make contact with the metal sleeve. This contact makes a complete electrical circuit. The resulting complete circuit can then be utilized to trigger recording instruments.

3,415,960
TREMBLER SWITCH
Herman R. Kollmeyer, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed July 30, 1957, Ser. No. 675,233
2 Claims. (Cl. 200—61.49)



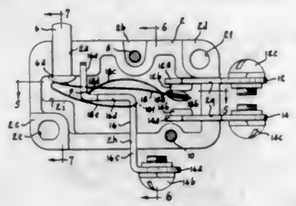
1. A trembler switch which closes for a sustained period of time in response to forces which act on said switch only for a short period of time, said switch comprising: an insulative cylinder having first and second open ends; an insulative plug disposed in the first end; a conductive plug disposed in the second end, said conductive plug having a cylindrical bore therein; a round resilient filament in said cylinder, one end of said filament fixed in said insulative plug, the other end of said filament being free, said filament being capable of bending in all directions, the longitudinal axes of said filament, cylinder and cylindrical bore being substantially coaxial, the extremity of the free end of said filament extending into said cylindrical bore, said extremity being spaced from the walls of said bore when said longitudinal axis of said filament is substantially coaxial with the longitudinal axes of said cylinder; a weight positioned within, and spaced from the inner walls of said cylinder; said weight positioned intermediate the fixed and free ends of said filament; a coaxial bore through the longitudinal axis of said weight, said bore also being coaxial to said longitudinal axis of said filament and serving to fix said weight to said filament intermediate said fixed and free ends thereof, said weight pressing said extremity of said filament into contact with said bore when said weight is forced towards and against said inner walls of said cylinder in response to forces acting in any direction on said switch, said weight thereupon bending said filament substantially intermediate said fixed and free ends, causing said extremity to remain in contact with said bore for a period of time before and after said weight element contacts said inner walls of said cylinder.

3,415,961
LATCH MECHANISM
Walter C. Barnard, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,030
11 Claims. (Cl. 200—61.64)



1. In a structure having means defining an opening and a closure for selectively closing said opening, means for latching said closure in an opening-closing position wherein the closure closes said opening, comprising:
means defining an edge portion means of said opening;
a latch movably carried on said closure having a latching portion;
means for moving said latching portion into latching engagement with said edge portion means when said closure is disposed in said opening-closing position;
a switch on said closure; and
an actuator movably carried on said latch arranged to engage said edge portion means and be moved thereby to operate said switch as an incident of disposition of said closure in said opening-closing position and the movement of said latch into latching engagement with said edge portion means.

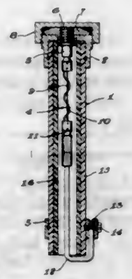
3,415,962
MINIATURE PRECISION SNAP ACTION SWITCH WITH ONE-PIECE STRESSED BLADE CONSTRUCTION
Alvin W. Krieger, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,609
8 Claims. (Cl. 200—67)



A miniature precision snap-action switch having a one-piece snap-action contactor blade removably mounted on a terminal strip support within an insulating housing and including first and second compression force spring strips integral therewith, the first compression force spring strip extending from a point near the contact element which is at one end to a pivot point on said support

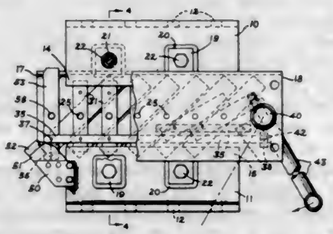
to apply a force in one direction, and the other compression force spring strip extending with a reentrant bend from the extreme other end thereof to another pivot point on said support for free pivoting thereon, the bent end being movable by a plunger to cause switching action.

3,415,963
ETHYL CELLULOSE COMPOSITION FOR USE IN ARC EXTINGUISHING APPARATUS
Charles L. Stacy, Jr., and Garth H. Beaver, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,926
11 Claims. (Cl. 200—144)



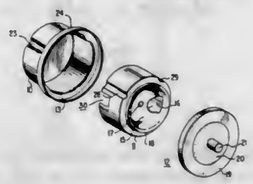
1. A thermally stable, oxidation resistant composition consisting essentially of (1) ethyl cellulose, (2) from about 0.1 to about 15 percent by weight of molybdenum disulfide, and (3) from 0.01 to 5 percent by weight of an amine antioxidant both of (2) and (3) being based on the weight of ethyl cellulose.

3,415,964
ELECTRICAL SWITCH
Arthur Myron Stevens, Middletown, Ohio, assignor, by mesne assignments, to Square D Company, a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 501,491
5 Claims. (Cl. 200—146)



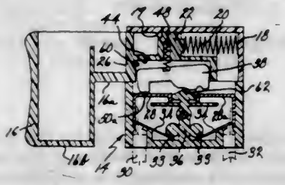
A low-voltage, high-current switch having a row of centrally pivoted pairs of contact bars which are rockable in unison so that their opposite ends selectively engage with and disengage from spaced terminal plates. A pivoted pair of arcing contact bars at one end of the row rocks with the other contact bars and, when the other contact bars are in engagement with the plates, engages an arcing contact on one of the plates but is disengaged from the other plate. The arcing contact bars are so proportioned and positioned that, during disengagement of the other contact bars, the pair of arcing contact bars engages the one plate and then disengages from the arcing contact after the other pairs of contact bars have disengaged from the terminal plates.

3,415,965
MERCURY BUTTON SWITCH
Edward R. Coutant, Warwick, R.I., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 537,345, Mar. 25, 1966, which is a continuation-in-part of application Ser. No. 303,787, Aug. 22, 1963. This application Apr. 17, 1967, Ser. No. 657,431
2 Claims. (Cl. 200—152)



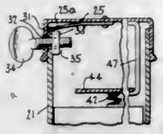
A mercury switch is provided having a small amount of mercury in a steel shell container which also serves as one switch contact,
a glass closure for the shell supports a second metal switch contact in insulated relation to the steel shell,
a ceramic liner for the container is shaped to permit electrical connection of the two contacts through the contained mercury, and also permits separation of the mercury into electrically separate pools responsive to the special orientation of the container.
The liner configuration permits inverted use of the switch. Power rating of the switch is higher although contained mercury is lower.

3,415,966
ELECTRICAL SWITCH WITH IMPROVED BRIDGE CONTACTOR
Benjamin H. Matthews, Peninsula, Ohio, assignor to Lucerne Products, Inc., Hudson, Ohio, a corporation of Ohio
Filed May 8, 1967, Ser. No. 636,721
6 Claims. (Cl. 200—153)



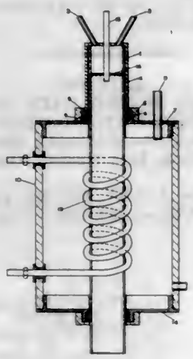
An electrical switch having a movable bridging contact which is adapted to slide relative to a pair of spaced stationary switch contacts in order to make and break a circuit. A projection cams one end of the bridging contact upwardly in one position of the latter, above the adjacent stationary contact to open the switch circuit. Upon rearward movement of the bridging contact with respect to the aforementioned projection, the bridging contact moves downwardly off the projection to engage the underlying stationary contact to thereby bridge the stationary contacts and close the switch circuit. The contact face of the upwardly movable end of the bridging contact has a slot or groove formed therein, which slot is adapted to prevent accumulation on the contact face, of material having electrical resistance properties, with such slot materially increasing the life of the switch as well as increasing the current carrying capacity of the switch.

3,415,967
VIBRATION RESISTANT SWITCH MEANS FOR BATTERY CONTAINER
Julian A. McDermott, 1639 Stephen St., Brooklyn, N.Y. 11227
Filed Oct. 24, 1965, Ser. No. 504,936
7 Claims. (Cl. 200—158)



The present invention has reference to a battery container which is so constructed that it will not become inoperative due to vibration.

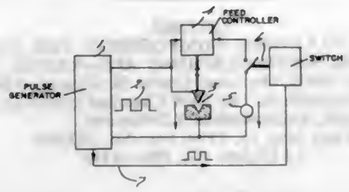
3,415,968
GAS HEATING APPARATUS
William Stanley Watson, Stockton-on-Tees, England, assignor to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
Filed May 26, 1966, Ser. No. 553,182
Claims priority, application Great Britain, June 2, 1965, 23,449/65
12 Claims. (Cl. 219—10.65)



An improvement in an apparatus for the production of gaseous plasmas by induction heating is disclosed. A baffle having peripherally positioned, angularly disposed apertures, is positioned between the gas-feeding means and the induction heating zone to provide streams of gas flowing in a helical path.

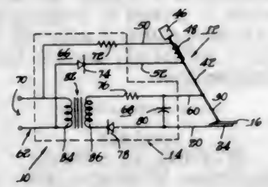
3,415,969
GAP WIDTH CONTROL METHOD AND APPARATUS FOR SPARK EROSION MACHINES
Hans Schierholt, Iserlohn, Germany, assignor to Ingersoll Milling Machine Company, Rockford, Ill., a corporation of Illinois
Filed Aug. 12, 1965, Ser. No. 479,151
Claims priority, application Germany, Aug. 14, 1964, A 46,852
9 Claims. (Cl. 219—69)

For a spark erosion machine, a method and apparatus for maintaining a predetermined spacing or gap width between the electrode and workpiece with a fixed reference voltage over a range of operating conditions, including changes in the frequency and duty ratio of the working pulses applied across the electrode and workpiece to provide discharges through the gap. The reference voltage is selected to have a magnitude substantially equal to the voltage of the discharges when the gap is of the predetermined width. To maintain this gap



width, pulses of the reference voltages are supplied in synchronism with the working pulses, the voltage of the discharges is compared to the voltage of the reference pulses, and the gap width is adjusted to eliminate any difference between the two.

3,415,970
HAND-HELD DEVICE FOR METAL WORKING USING A VIBRATING ELECTRODE
Robert W. Cline, New Paris, Ind., assignor to Goshen Rubber Co., Inc., Goshen, Ind., a corporation of Indiana
Filed June 23, 1965, Ser. No. 466,338
6 Claims. (Cl. 219—70)

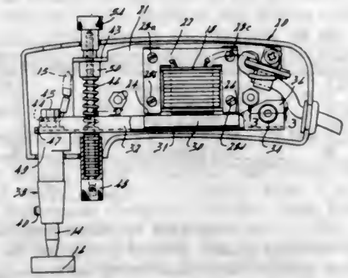


Apparatus for either disintegrating or impregnating a metal surface by means of a pulsating electric arc including a vibratile tool comprising an electromagnetic arrangement and an electrode that is coupled to the electromagnetic arrangement for vibration. Electric circuit means are provided for energizing both the electrode and the electromagnetic arrangement; and this electric circuit includes a tap circuit that is connectable to a source of power, a first energizing circuit for the electromagnetic arrangement, and second energizing circuit for the electrode. Each of the energizing circuits is arranged to deliver pulsating direct current power, and the energizing circuits are arranged to carry such power in opposite phases. In addition, a current limiting arrangement is provided in the circuit to control the line current to the electrode.

3,415,971
HAND VIBRATOR FOR SPARK DISCHARGE METAL DEPOSITING
William B. Shaffer, Grosse Pointe Woods, Mich., assignor to Elox Corporation, Troy, Mich., a corporation of Michigan
Filed Dec. 31, 1964, Ser. No. 422,845
2 Claims. (Cl. 219—76)

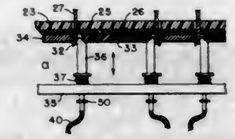
A spark discharge apparatus includes a vibrator in a hand held housing. The vibrator motor has a spring biased channel shaped lever with an armature mounted in and insulated from the lever to prevent eddy current flow therethrough. The lever is pivoted from a raised shoulder at one end and an erodable electrode is connected to the

opposite end of the lever and projects outside the housing. A capacitive discharge circuit connects the electromagnet and the electrode with a D.C. source such that



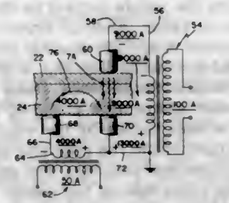
the circuit acts as a relaxation oscillator for vibrating the electrode and depositing metal on the workpiece as the arc discharges.

3,415,972
MULTIPLE POINT AUTOMATIC WELDER
Ormon E. Bassett and George Bruck, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,665
2 Claims. (Cl. 219—78)



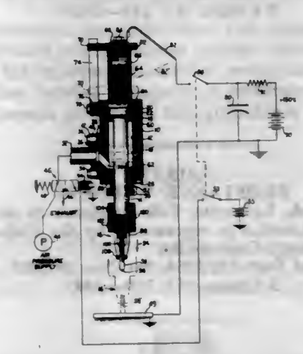
An apparatus for gang welding a plurality of connection elements to a conductive terminal pattern includes a template for receiving welding electrodes and the parts to be welded. The template comprises insulative portions and electric return circuit portions arranged so that the connection elements and projections of the conductive pattern are received in apertures formed between the adjacent portions. Welding electrodes are aligned with the apertures to be brought into electrical contact with the parts to be welded. Beveled edges on the insulative portions serve to direct the electrodes to compress the parts to be welded against the return circuit portions and a sequential pulsing circuit serves to provide current to the plural electrodes.

3,415,973
METHOD OF WELDING SHEET MATERIAL
John T. Verbeck, Glenside, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1966, Ser. No. 525,966
5 Claims. (Cl. 219—91)



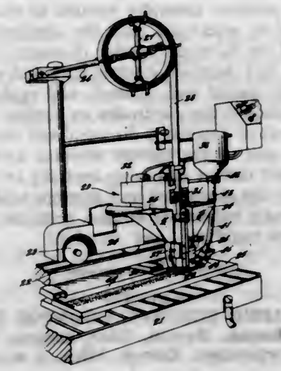
A welding system is provided for welding together two dissimilar sheets. A pair of transformers provide currents of two different levels to electrodes disposed on the sheets. Excess current not used to weld is shunted through one of the sheets.

3,415,974
GRAVITY DROP STUD WELDER
Harold J. Graham, Sharon, Mass., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Aug. 21, 1964, Ser. No. 391,157
10 Claims. (Cl. 219—95)



A stud welding apparatus and method are described in which a stud having a tip portion of reduced cross section is moved downward into contact with another workpiece entirely by the force of gravity and welded thereto by an electrical arc produced in part by vaporizing the tip portion. Shock absorber means, such as loose shot carried by the stud hoider, is employed to prevent rebound of the stud away from the workpiece and to provide an adjustable weight which enables the impact force to be varied.

3,415,975
PARTICLE FEEDING MECHANISM FOR AN ELECTRICAL WELDING DEVICE
Wallace C. Johnson, St. Davids, Pa., assignor to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 8, 1965, Ser. No. 506,642
2 Claims. (Cl. 219—125)



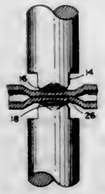
Mechanism for feeding particles to work for electric welding including a chute having forwardly and rearwardly downwardly sloping surfaces, a chute bottom at the upper part of the rearward end having a downwardly

tapering wall adjoining a discharge opening, an adjustable edge gate extending down approximately to the work secured to the chute bottom and an adjustable thickness gate also secured to the chute bottom and in one position extending below the chute bottom.

3,415,976
ARC WELDING ELECTRODE
De Witt C. Smith, Greendale, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed July 27, 1966, Ser. No. 568,707
3 Claims. (Cl. 219—146)

A self-shielded, flux cored electrode containing aluminum, magnesium, calcium, silicon, calcium fluoride, rutile, electrolytic manganese, calcium carbonate, nickel and iron in certain proportions, to produce a finished weld with a minimum of deoxidizing and denitriding elements.

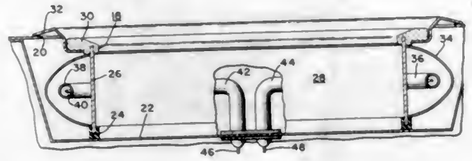
3,415,977
RESISTANCE WELDING
Stuart A. Bush, Lafayette, Colo., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 23, 1966, Ser. No. 582,209
3 Claims. (Cl. 219—149)



1. The method of joining together oppositely disposed wall portions of a tubular member and effecting a hermetic seal in a tubular member by resistance welding comprising the steps of, positioning a tubular member to be welded with its longitudinal tubular axis generally parallel to the forging length of and intermediate a pair of resistance welding electrodes, applying a force to at least one of the electrodes to squeeze together between them and flatten and at least partially join together said wall portions of the tubular member and simultanously with said squeezing applying an electric current between the electrodes and through said tubular member, rotating the tubular member so as to position said flattened and forged wall portions generally parallel to and intermediate said pair of electrodes with the electrodes spanning the width of the flattened interior diameter of said tubular member at a location intermediate and spaced from longitudinally spaced ends thereof, and applying a force to at least one of the electrodes to further squeeze together portions of oppositely disposed wall portions of the preflattened area of the tubular member and simultaneously with said further squeezing applying an electric current between the electrodes and through said portion of flattened tubular member to effect a hermetic welded seal in said tubular member.

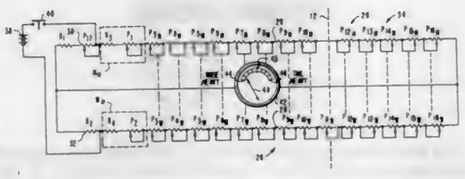
3,415,978
INFRARED SURFACE COOKING UNIT
Robert S. Hanson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 17, 1965, Ser. No. 514,487
2 Claims. (Cl. 219—415)

A heating unit for association with the cooking top of a range includes a frangible annular infrared transmissive member forming a utensil receiving well. An annular reflector surrounds the member in spaced relation therewith. An annular electric infrared heating unit is located in the space between the reflector and member for emitting radiant heat inwardly of the well. The frangible member



and the reflector are supported by shock absorbing and thermally isolating means, thereby protecting the frangible member against mechanical shock and reducing direct conductive heat transfer from the frangible member and reflector to the remainder of the heating unit structure.

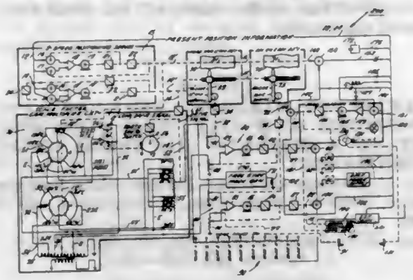
3,415,979
ANALOG TRIM COMPUTER
Bertram Bussell, Westwood Village, and Jack A. Elfenbein, 2601 Summit Ridge Drive, Beverly Hills, Calif. 90210; said Bussell assignor to said Elfenbein
Filed June 5, 1964, Ser. No. 372,795
14 Claims. (Cl. 235—150.2)



An analog computer for preplanning the loading of an aircraft without requiring the presence of the aircraft. It consists of an electrical network having switching means for selectively forming a plurality of simple Wheatstone bridge circuits for determining the following: First, whether for any theoretical loading configuration, the center of gravity of a planned load falls within the predetermined limits along the mean aerodynamic chord of the airplane; second, whether for a planned load the shear limits of the airplane's fuselage have been exceeded; and, third, whether for the planned load the gross weight of the airplane is below the maximum take off limit.

To increase the sensitivity of the part of the bridge circuit concerned with determining the location of the center of gravity, the datum is selected intermediate the nose and tail of the airplane. However, to maintain circuit simplicity the bridge circuit must be constructed as follows: One branch of the bridge circuit constitutes the weight arm and simulates the weight carried by the various compartments of the airplane. Another branch of the circuit constitutes a moment arm. The moment arm is composed of resistances and potentiometers and is divided into two groups. The potentiometers in one group are wound in reverse of the other group. One group of potentiometers simulates the moments caused by the weight on one side of the datum (intermediate the nose and tail). The other group of potentiometers simulates the moments caused by weight on the other side of the datum. The selection of the datum and the choice of the groups are selected so a resistance characteristic of the particular airplane and proportional to the minimum empty weight moment of the airplane in one group is greater than or equal to the summation of the maximum resistances of the potentiometers in the other group, and the datum is selected so regardless of the loading configuration of the airplane, the empty weight moment of the airplane will always remain with one group. This prevents the moment of the airplane from changing sign and provides for circuit simplicity.

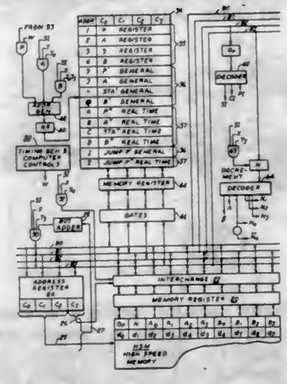
3,415,980
WORLD WIDE MAGNETIC VARIATION COMPUTER
Vincent Maieli, North Bellmore, and Robert Hardigan, Bronx, N.Y., assignors to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,726
9 Claims. (Cl. 235—150.271)



1. A storage apparatus for generating an output signal predeterminedly responsive to a plurality of dependent variables, comprising a three-dimensional cam having a predetermined surface configuration; said cam being rotatable about its longitudinal axis responsive to a first dependent variable; a cam follower positionable along the length of said cam responsive to a second dependent variable, whereby the location of said cam follower on said cam surface is combinedly related to said first and second dependent variables to provide a cam follower signal; a scale factor generator; means for actuating said scale factor generator responsive to at least one of said dependent variables, said scale factor generator including means for generating a scale factor signal predeterminedly related to at least said one dependent variable simultaneously with said cam follower signal and operatively dependent on the cam follower location; said cam follower signal and scale factor signal being combinedly presented to means for generating said output signal whereby said output signal is responsive to both said cam follower location and scale factor signal; said cam surface having a first region in which the gradient of cam surface change substantially corresponds to the gradient of said output signal, and a second region whereby the gradient of cam surface change is appreciably less than the gradient of said output signal, said scale factor signal having a greater value at said second region, thereby reducing the required cam surface gradient for the desired output signal gradient.

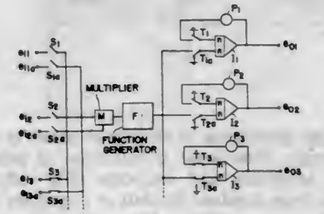
3,415,981
ELECTRONIC COMPUTER WITH PROGRAM DEBUGGING FACILITY
Richard D. Smith, Moorestown, and James F. Callahan, Willingboro, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 329,638, Dec. 11, 1963. This application Oct. 10, 1967, Ser. No. 674,350
2 Claims. (Cl. 235—153)

A computer with an interrupt facility including means for testing a program to find errors in the program. The interrupt facility is constructed to permit the programmer to insert a "program test" instruction in the normal-mode program to cause a setting of a program test indicator. Execution of the normal-mode program is then inter-



rupted after each instruction therein, at which time the computer does a programmed subroutine designed to detect an error or errors in the normal-mode program.

3,415,982
TIME-SHARED ANALOG COMPUTER
Takeo Miura, Kitatama-gun Tokyo-to, and Junzo Iwata, Kodaira-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, and Hitachi Denshi Kabushiki, Kaisha, Kodaira-shi, Japan, both joint-stock companies of Japan
Filed May 13, 1964, Ser. No. 366,954
Claims priority, application Japan, May 15, 1963, 38/24,163
1 Claim. (Cl. 235—184)

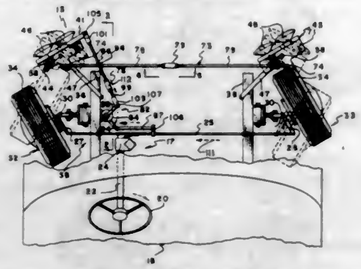


A time-shared analog computer having a plurality of integrators, so constructed that each integrator is caused to accomplish computation with foreshortened time axis and to maintain a "hold" state at times other than its computation time without any hold circuit.

3,415,983
HEADLIGHT ARRANGEMENT FOR VEHICLES
Donald E. McGee, P.O. Box 3133, Midland, Tex. 79701
Filed Oct. 17, 1966, Ser. No. 587,307
4 Claims. (Cl. 240—8.25)

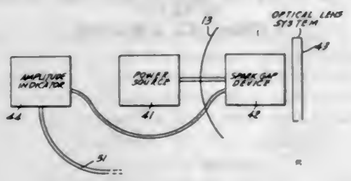
This device relates to a headlight arrangement for vehicles, and, more particularly, to a headlight arrangement operably connected to the steering mechanism of the vehicle for illuminating the proposed path of travel including support brackets operable to support headlight members thereon connectible to a frame portion of the vehicle, linkage means interconnecting the brackets for conjoint movement thereof, and means connecting one of the brackets to the connector rod of the vehicle whereupon the brackets and headlight members are moved in

relation to direction of vehicle travel. Still, more specifically, this device relates to a headlight arrangement operably connected to the steering and front wheel assembly of an automobile operable to maintain headlight members and the front wheels pointed in the same direction at all times. Additionally, this device relates



to a hydraulically operated headlight arrangement connected to the power steering mechanism on a vehicle operable to transform turning movement through hydraulic fluid pressure and piston cylinder assemblies to move interconnected headlight members in response to turning movement of the vehicle.

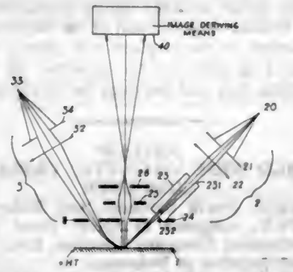
3,415,984
INCIPIENT FOG DETECTING SYSTEM AND METHOD
Frank Früngel, Herwigredder 105a, Hamburg-Rissen, Germany
Filed Feb. 25, 1965, Ser. No. 435,301
Claims priority, application Germany, Feb. 29, 1964, F 42,161
13 Claims. (Cl. 250—43.5)



Spark gap generation of ultraviolet pulses in the microsecond range. Directional transmission of pulses of determined amplitude and reception after reflection and refraction from moisture droplets or impurities in air. The greater the concentration of impurities the greater the amplitude of received pulse. Comparison of transmitted and received pulse used as indication of moisture concentration. Alarm means if moisture concentration exceeds predetermined amount. Sounding of alarm prevented in case temperature or humidity not conducive to fog formation.

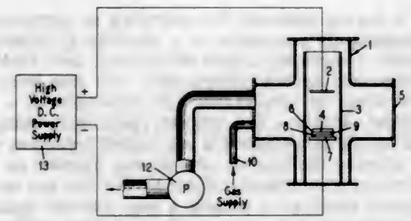
3,415,985
IONIC MICROANALYZER WHEREIN SECONDARY IONS ARE EMITTED FROM A SAMPLE SURFACE UPON BOMBARDMENT BY NEUTRAL ATOMS
Raymond Castaing and Georges Slodzian, Paris, France, assignors to Centre National de la Recherche Scientifique and CFS—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Continuation of application Ser. No. 326,565, Nov. 27, 1963. This application Nov. 23, 1966, Ser. No. 596,731
3 Claims. (Cl. 250—49.5)

In an ionic microanalyser, i.e., a device for forming images of the distribution of atoms of various kinds over the surface of a sample, by means of secondary ions of a predetermined sign emitted by said surface in response to a bombardment, neutral atoms are used for this bombardment. Preferably an auxiliary ion beam is used for creat-



ing a layer of particles, whose charge is of the same predetermined sign, in the vicinity of, and parallel to, the surface of the sample.

3,415,986
PROCESS FOR MASKING A PARA-XYLYLENE POLYMER AND SELECTIVELY ETCHING IT BY A GASEOUS ELECTRICAL GLOW DISCHARGE
Robert L. Shepard, Cleveland Heights, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed June 25, 1965, Ser. No. 467,072
14 Claims. (Cl. 250—49.5)

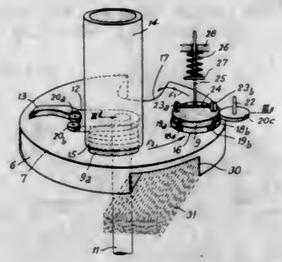


1. A process for removing at least a portion of the thickness of a selected area of a thin film of paraxylylene polymer which has been deposited on a substrate comprising the steps of:
   (a) masking the surface of a thin film of paraxylylene polymer by depositing on portions of the polymer film a coating of a material more resistant to glow discharge etching than the polymer film such that only a selected area of the thin film is exposed to a gaseous electrical glow discharge; and then
   (b) removing at least a portion of the thickness of the selected area by subjecting the exposed film to the gaseous electrical glow discharge.

3,415,987
SPECIMEN CHANGER FOR AN X-RAY FLUORESCENCE SPECTROMETER
Jean Sahores, Pau, France, assignor to Société Nationale des Pétroles d'Aquitaine, Paris, France
Filed Sept. 7, 1965, Ser. No. 485,212
Claims priority, application France, Sept. 28, 1964, 989,619
6 Claims. (Cl. 250—51.5)

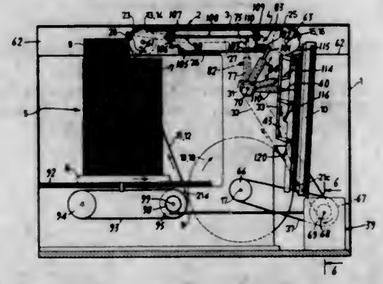
X-ray fluorescence spectrometer apparatus having a horizontal support plate with an analysis window, a cylindrical specimen holder magazine holding a plurality of specimen holders, and a rotary holder-transferring element having its axis of rotation at the center of the support plate. The transferring element automatically transferring, one at a time, the plurality of specimen

holders from the holder to the analysis window where means for positioning and maintaining the specimen holder hold the specimen over the window during an



analysis operation and then to a discharge recess formed in the support plate on the same path of rotation as the magazine and analysis window.

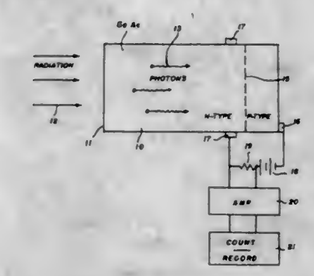
3,415,988
X-RAY FILM SHEET CHANGER HAVING CONVEYOR MEANS FOR SUPPLYING AND REMOVING FILM SHEETS AT AN EXPOSURE STATION
Åke Samuel Gidlund, Lokevagen 13B, Djursholm, Sweden
Filed Oct. 8, 1965, Ser. No. 494,141
Claims priority, application Sweden, Oct. 9, 1964, 12,122/64
10 Claims. (Cl. 250—66)



An apparatus for X-ray photography having a storage cassette for unexposed film sheets, a storage cassette for exposed film sheets, and an exposure station between the two cassettes is provided with synchronous conveyor belts for transferring the film sheets from the unexposed film cassette to the exposure station and thence to the exposed film cassette. Intermittent drive means is provided to advance the conveyor belts. Means are also provided to mount the unexposed sheets on the conveyor belts and to remove the exposed sheets therefrom and insert them into the exposed film storage caisette. Registering projections on the conveyor belt cooperate with openings in the film sheets to hold the sheets on the belt.

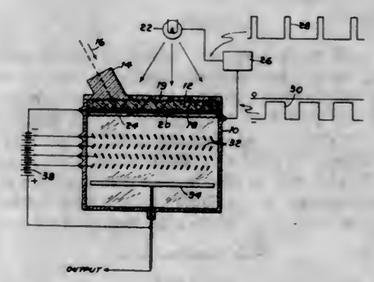
3,415,989
SCINTILLATION DETECTOR USING A SINGLE CRYSTAL OF GALLIUM ARSENIDE
Edwin A. Leventhal, Tarrytown, Gertrude F. Neumark, Hartsdale, and Edmund S. Rittner, White Plains, N.Y., assignors to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,951
9 Claims. (Cl. 250—71.5)

An improved scintillation detector for X-ray and nuclear radiations exhibiting improved energy resolution. In the preferred form, the detector comprises a single crystal of gallium arsenide. One end of the gallium arsenide crystal is used as a scintillator to convert the incident radiation into photons. The opposite end of the crystal is provided with an internal p-n junction acting as a photodetector for the photons generated within the first end. The two regions of the crystal are given compositions



to insure that the photons generated at the scintillating end are transmitted whereas the same photons are strongly absorbed in the photodetecting end. These results are achieved, for example, by changing the bandgap or by appropriate doping with impurities.

3,415,990
INVISIBLE LIGHT SENSOR TUBE AND FACEPLATE MATERIAL
Robert T. Watson, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 535,842
11 Claims. (Cl. 250—71.5)

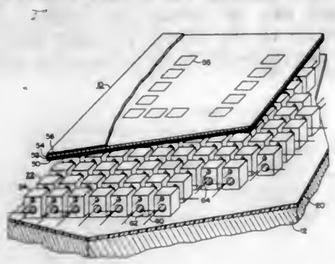


Invisible light radiation sensitivity is increased by a tube faceplate having an internal layer of material responsive to two different light sources. An ultraviolet pump source raises and stores electrons at an intermediate energy level and an infrared source stimulates the electrons into a conduction level to emit light. A photo-cathode generates photoelectrons which pass through a control mesh and electron multiplier to the tube output electrode.

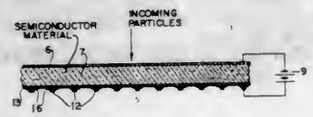
3,415,991
DISPLAY DEVICE UTILIZING MAGNETIC MEMORY ELEMENTS FOR DISTRIBUTING A THERMAL PATTERN ON A HEAT SENSITIVE SCREEN
Juris A. Asars, Monroeville, Pa., assignor to Westinghouse Electric Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,946
7 Claims. (Cl. 250—83)

This invention relates to a display device which incorporates a heat sensitive screen in which the optical properties are modified in response to heat applied thereto. A heat distribution panel is provided adjacent to the heat

sensitive screen which consists of a plurality of magnetic memory devices responsive to electrical control for varying the heat generating properties of each of the elements in response to suitable control signals.

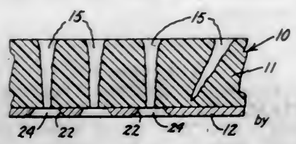


3,415,992
EXTENDED AREA SEMICONDUCTOR RADIATION DETECTORS AND A NOVEL READOUT ARRANGEMENT
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Karl Reinitz, 75 Sheridan Road, Arnold, Md. 21012
Filed Dec. 28, 1965, Ser. No. 517,158
4 Claims. (Cl. 250—83)



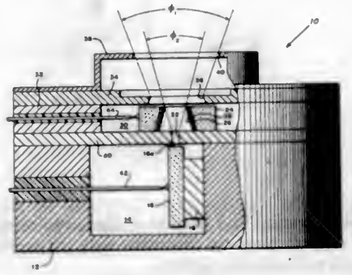
A mosaic particle sensor having increased sensitivity including means for obtaining higher accuracy position readout with improved ruggedness and reliability. The sensor is comprised of a composite surface barrier diode having a matrix on its insensitive side formed by overlapping elongated contacts. Thus, if a signal is detected on a particular row or column of the matrix, the position of the particle can be conveniently determined to a degree of accuracy depending on the line density of the contacts.

3,415,993
RADIATION DETECTION SHEET MATERIAL HAVING METAL COATING TO FACILITATE READ-OUT
Robert L. Fleischer and Paul B. Price, Schenectady, N.Y., and Robert M. Walker, St. Louis, Mo., assignors to General Electric Company, a corporation of New York
Filed Nov. 7, 1966, Ser. No. 592,492
3 Claims. (Cl. 250—83)



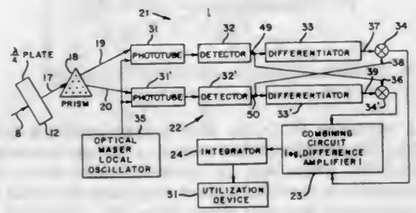
A sheet of light-transmitting material is provided on one side with a coating of aluminum so that capillary-size openings through the sheet can be made more easily visible by filling these openings with a caustic soda solution and thereby forming enlarged openings through the aluminum coating.

3,415,994
DUAL ELEMENT INFRARED DETECTOR
Nicholas S. Fitti, Jr., Perkasie, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 28, 1966, Ser. No. 591,054
14 Claims. (Cl. 250—83.3)



An axial arrangement for a large area and a small area infrared detector is described which provides an infrared system with both high resolution and high sensitivity. The field of view for the small area detector is provided by an aperture in the large area detector and by virtue of the unobstructed axial alignment, the respective detector sensitivities are unaffected by the presence of the other. Both detectors are housed in an integrated assembly which is positioned at the focal point of an optical system for detecting the radiation of a distant source.

3,415,995
POLARIZATION MODULATION OPTICAL COMMUNICATION SYSTEM
James Richard Kerr, Tigard, Oreg., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 600,910
7 Claims. (Cl. 250—199)

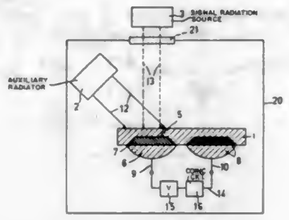


The received components of a polarization modulated signal that vary sinusoidally and cosinusoidally as a function of the modulation signal are processed in associated channels wherein the derivative of the signal in each channel is multiplied by the signal in the other channel. The difference signal between the product outputs of the channels is integrated to reproduce the modulation signal.

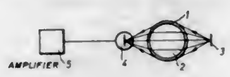
3,415,996
PHOTOSENSITIVE SEMICONDUCTOR WITH TWO RADIATION SOURCES FOR PRODUCING TWO TRANSITION STEPS
Hermann Georg Grimmeiss, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 433,259
10 Claims. (Cl. 250—217)

A detector for radiation comprising a photosensitive semiconductor having a deep lying impurity level in its forbidden gap forming two transition steps for electrons

from the valence to the conduction band. The semiconductor is exposed to the radiation to be detected which is capable of causing one of the transition steps while simultaneously being irradiated with an auxiliary radiation capable of producing the other transition step in order to move the electrons into the conduction band in two steps to thereby cause a change in current in an output circuit indicative of the intensity of the incident radiation to be detected. Among the advantages are a sensitivity to long wavelength radiation and larger electrical outputs.



3,415,997
RADIATION SENSITIVE AMPOULE TESTING APPARATUS AND METHOD
Bernhard Vinzelberg, Leverkusen, and Konrad Bunge, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed May 28, 1965, Ser. No. 459,680
Claims priority, application Germany, June 4, 1964, F 43,059
7 Claims. (Cl. 250—218)



Method and apparatus for testing ampoules for the presence of foreign matter therein including a holder for the ampoule and means to rotate the ampoule; a photoelectric means adapted to receive light rays emanating from the source transmitted through the ampoule near the base thereof and an amplifier recorder or other similar device associated with the photocell to inform and/or record the results of the light testing.

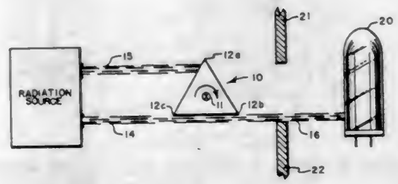
3,415,998
RADIATION CHOPPER ELEMENT PROVIDING TWO ALTERNATE RADIATION PATHS
David L. Crockett, Minneapolis, and Roger L. Sperling, St. Paul, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 569,933
9 Claims. (Cl. 250—233)

1. A radiation chopper, adapted to be used in combination with an apparatus wherein radiation is alternately required in two discrete paths at separate times, comprising:

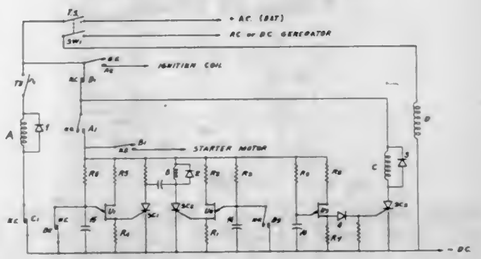
a chopper element rotatable about an axis for alternately establishing the two radiation paths by blocking the passage of radiation impinging upon a portion of said element in at least one of the paths;

support means rotatably mounting and positioning said element in a predetermined relationship with respect to the impinging radiation;

said element having at least three, annularly-spaced projections extending radially from said axis, said projections being constructed and arranged so that, sequentially during the rotation of said element, a first of said projections blocks radiation from the first path while a first pair of said projections establish the second path and subsequently one of said first pair of projections blocks radiation from the second path while a second pair of said projections establish the first path.



3,415,999
AUTOMATIC STARTER FOR INTERNAL COMBUSTION ENGINES
Roger P. Noury, 8927 Tolhurst St., Montreal, Quebec, Canada
Filed Dec. 1, 1965, Ser. No. 510,849
25 Claims. (Cl. 290—38)

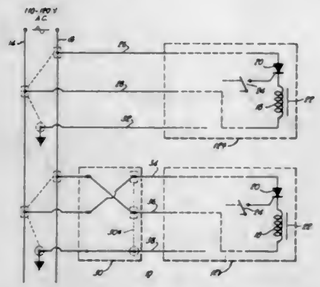


An automatic starter for motors having an ignition coil energized by a DC-power supply and operated by a low frequency bi-stable trigger circuit comprising two time delay switches which via a power transistor and for a given period of time conduct current to a starter motor after which period and upon failure to start the motor, a third time delay switch deenergizes the first two time delay switches and arranged so that in case the motor is started a switch responsive to the motor is actuated and deenergizes the ignition coil and the third delay switch.

3,416,000
ELECTRICAL SYSTEM FOR A PLURALITY OF APPLIANCES OPERATED AT RANDOM TIMES
Joseph S. Naber, Wheeling, Ill., assignor to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois
Filed June 7, 1965, Ser. No. 461,703
2 Claims. (Cl. 307—11)

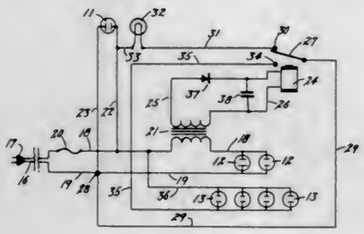
An electrical system including a common source of A.C. potential and a plurality of electrically powered appliances, each including a circuit comprising a unidirectional conducting device in series with a load and switch means operable at random times with respect to said A.C. source for rendering said device conductive; first polarized

conductor means are provided for connecting the circuits of a first group of said appliances to said A.C. source for conduction through the load thereof only during half cycles of alternating current of one polarity and second



polarized connector means are provided for connecting the circuits of a second group of said appliances to said A.C. source for conduction through the loads thereof only during half cycles of alternating current of an opposite polarity.

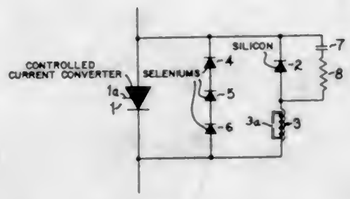
3,416,001
ADDITIONAL EQUIPMENT CONTROLS FOR RECORD PLAYERS
David N. Fistell, 1001 Bannock St., Denver, Colo. 80204
Filed Sept. 1, 1967, Ser. No. 664,999
7 Claims. (Cl. 307—38)



A first group of electrical plug-receptacles to receive the supply plugs of record players, tape-recorders, and similar low amperage equipment, and a second group of similar receptacles to receive the supply plugs of heavier amperage equipment such as A-F amplifiers and the like. The first group of receptacles are individually in series with the primary of a transformer, the secondary of which energizes a solenoid to close a high amperage secondary circuit, the second group of receptacles being individually in series with said secondary circuit.

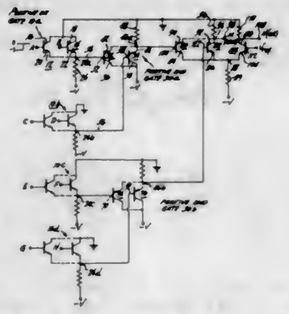
3,416,002
CURRENT CONVERTER CIRCUIT WITH CONTROLLED RECTIFIER ELEMENT
Werner Faust, Wettingen, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Dec. 13, 1965, Ser. No. 513,269
Claims priority, application Switzerland, Dec. 31, 1964, 16,879/64
7 Claims. (Cl. 307—202)

A current converter circuit comprises a main current rectifying element of the controlled type and a series circuit arrangement of a silicon type semi-conductor diode and a saturable inductance coil is connected in inverse-parallel with the main rectifying element. A series circuit arrangement of a resistance and capacitance is con-



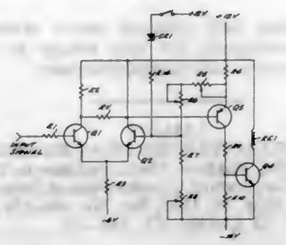
nected in parallel with the silicon diode, and a selenium type diode is connected in inverse-parallel with the main rectifying element.

3,416,003
NON-SATURATING EMITTER-COUPLED MULTI-LEVEL RTL-CIRCUIT LOGIC CIRCUIT
Bertram Walker, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,478
10 Claims. (Cl. 307—207)



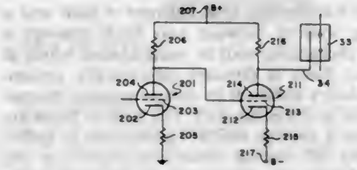
1. The combination comprising:
a first emitter follower logic gate including a plurality of transistors having their emitter-collector paths connected in parallel;
a second emitter follower logic gate including a plurality of transistors having their emitter-collector paths connected in parallel;
means coupling the output of the first logic gate to the input of one of the transistors of the second logic gate;
separate means for applying input signals to the inputs of the other transistors in the second logic gate;
an emitter coupled current steering logic gate including at least first and second transistors having their emitters connected together;
a resistor connected in the common emitter circuit of said first and second transistors;
means for applying a fixed potential at the base of the first transistor in the current steering logic gate;
means connecting the base of the second transistor to the output of the second logic gate; and
output means connected at the collector of one of the first and second transistors.

3,416,004
TEMPERATURE STABLE TRIGGER CIRCUIT HAVING ADJUSTABLE ELECTRICAL HYSTERESIS PROPERTIES
Elmer N. Taylor, Escondido, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,912
2 Claims. (Cl. 307—235)



A two-stage trigger circuit having a differential input stage for compensating temperature response and having an amplifier stage including a voltage divider network, part of which is coupled in the amplifier stage and is used to control the electrical hysteresis of the trigger circuit.

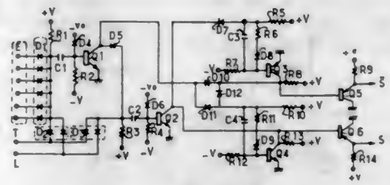
3,416,005
ISOLATION CIRCUITS FOR CODE CONVERTERS
Marvin Reich, 11741 College View Drive, Silver Spring, Md. 20902
Original application Jan. 20, 1964, Ser. No. 339,036, now Patent No. 3,327,301, dated June 20, 1967. Divided and this application June 28, 1966, Ser. No. 561,241
6 Claims. (Cl. 307—237)



The invention relates to circuits for coupling analog signals to the control electrodes of transistors which are utilized to control the operation of multivibrators.

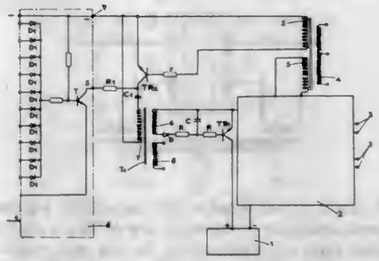
3,416,006
DIGITAL DATA PROCESSING SYSTEM
Max Bruno Peltier, Courbevoie, Hauts-de-Seine, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, Hauts-de-Seine, France
Continuation of application Ser. No. 369,471, May 22, 1964. This application Nov. 27, 1967, Ser. No. 685,979
Claims priority, application France, May 24, 1963, 935,903
4 Claims. (Cl. 307—238)

A binary data processing circuit is disclosed by the herein specification. It generally comprises an input circuit adapted to perform a logical operation with a plurality of input signals. A bistable one digit store is controlled by the output of said input circuit, and is connected to output means for deriving two complementary signals from said store. The processing circuit is further provided with at least one terminal whereby a function conditioning signal is applied to the circuit such that the cir-



cuit operates as processing circuit or as a store in dependence on the conditioning signal.

3,416,007
ELECTRONIC BLOCKING DEVICE FOR SIGNALS FROM A SIGNAL GENERATOR
Robert Chauprade, Puteaux, Hauts-de-Seine, France, assignor to Le Materiel Electrique S.W., Paris, France, a company of France
Filed Feb. 8, 1965, Ser. No. 430,881
Claims priority, application France, Feb. 7, 1964, 963,037
2 Claims. (Cl. 307—252)

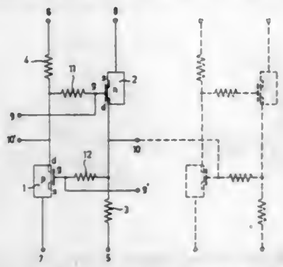


Firing signals applied to the gates in the grid circuits of controlled rectifiers are blocked by a logic circuit. The firing circuit is connected to the collector of a transistor whose emitter is connected to a multiplier circuit for the firing control signals and the base and the emitter are connected to a secondary winding of a transformer. The primary winding of the transformer is connected between the collector and emitter of a second transistor whose base and emitter are connected to a secondary winding of a second transformer connected to a high frequency wave generator. The logic circuit is connected between the emitter and collector of the second transformer.

3,416,008
STORAGE CIRCUIT EMPLOYING CROSS-CONNECTED OPPOSITE CONDUCTIVITY TYPE INSULATED-GATE FIELD-EFFECT TRANSISTORS
Oscar Willem Memelink and Johannes Meyer Cluwen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,155
Claims priority, application Netherlands, Oct. 1, 1963, 298,671
3 Claims. (Cl. 307—279)

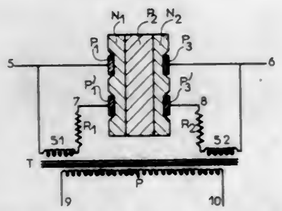
A storage circuit is constructed with two cross coupled field effect transistors having their control electrodes connected through high resistivity resistors to the terminals of a supply source. The polarity of the source biases the control electrodes in the cut-off direction. The source

electrodes are connected to voltage points having a potential difference less than the supply source voltage.



The output is derived from one of the cross coupled connections.

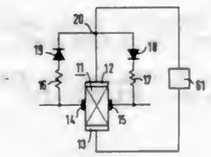
3,416,009
STATIC CIRCUIT BREAKER HAVING A SEMICONDUCTOR COMPONENT
Jean-Pierre Biet, Saulx-les-Chartreux, France, assignor to Compagnie Generale d'Electricite, Paris, France
Filed Dec. 4, 1964, Ser. No. 416,051
Claims priority, application France, Dec. 12, 1963, 956,990; Mar. 11, 1964, 966,972
8 Claims. (Cl. 307—299)



1. A static circuit breaker for controlling a circuit having a semiconductor component comprising a central layer of a first type of conductivity having two major faces, two intermediate layers of a second type of conductivity each contiguous with one of said major faces and forming a P-N junction therewith, first and second exterior layers of the first type of conductivity on each of said intermediate layers spaced from said central layer and forming P-N junctions with said intermediate layers, means varying the doping concentration adjacent the junction formed by said first exterior layers to effect backward diode characteristics and further means for varying the doping concentration adjacent the junction formed by said second exterior layers to effect a normal diode characteristic and electrode means connected to said exterior layers.

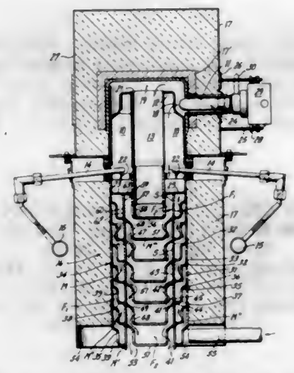
3,416,010
ZERO VOLTAGE COMPENSATING CIRCUITS FOR A HALL GENERATOR
Hans Kuhnlein and Ingeborg Pfreimbter, Nurnberg, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Sept. 21, 1965, Ser. No. 488,910
Claims priority, application Germany, Sept. 26, 1964, S 93,392
13 Claims. (Cl. 307—309)

1. A circuit for compensating for zero voltage between the Hall electrodes of a Hall generator having a Hall plate, a pair of Hall electrodes in electrical contact with selected opposite edges of said Hall plate and a pair of control electrodes in electrical contact with the other opposite edges of said Hall plate substantially perpendicular to said selected opposite edges, said Hall generator including means for providing a control current in said control electrodes, said circuit comprising electrical resistance means connected between one of said Hall electrodes and one of said control electrodes for each direction of current in said



control electrodes, said resistance means having values sufficient to compensate for zero voltage in both directions of current in said control electrodes.

3,416,011
THERMIONIC CONVERTER HEAT EXCHANGERS
Felix J. Lyczko, Boxford, Mass., assignor to Thermo Electron Corporation, a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 446,476
12 Claims. (Cl. 310—4)

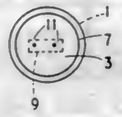


A system for transferring heat between a fluid and a heat exchanging wall or between two fluids through a separating heat exchanging wall or walls against which at least one of the fluids is directed substantially perpendicularly at a velocity sufficient to disrupt stagnant boundary layers formed adjacent the wall. The fluid or fluids are caused to traverse a passage which is intersected by baffles forming a group of plenum chambers. Apertures are formed in the plenum chambers to cause multiple jetting actions of the fluid substantially perpendicularly upon the heat exchanging wall. The design of the system is such that the various chambers are formed from a plurality of substantially identical members and may be used to preheat the air employed to support combustion of fuel by heat exchange with the combustion gases which may directly heat high-temperature operating devices such as thermionic converters.

3,416,012
DYNAMIC STRAIN TRANSDUCERS
Ronald Stephen Jackson, Worsley, Manchester, and Charles Richardson Maguire, Sale, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Oct. 26, 1966, Ser. No. 589,653
Claims priority, application Great Britain, Nov. 29, 1965, 50,593/65
10 Claims. (Cl. 310—8.5)

1. A dynamic strain transducer suitable for being held manually against a workpiece body and comprising:
(a) a body of a material having mechanical/electrical transducer properties;

(b) a first probe extending from this body and terminating in a first workpiece-engaging tip;
(c) a second probe extending from the body and terminating in a second workpiece-engaging tip;
(d) electrical connections to the body so as to provide a measure of the electrical properties of the body;
(e) supporting means by which the body can conveniently be handled;



(f) resilient means carried by the supporting means and arranged to press the two workpiece-engaging tips outwardly in a resilient manner; and
(g) the first and second workpiece-engaging tips lying on a straight line which passes so close to the centre of mass of the body that the transducer is relatively insensitive to vibrational strains arising from the inertia of the body.

3,416,013
COMPOSITE STRUCTURE ELECTRODE AND PROCESS FOR MANUFACTURING SUCH ELECTRODE
Jacques Poncelet, Le Vesinet, Yvelines, and Louis Bochirol and Pierre Blum, Grenoble, and Claude Moreau, Seyssinet, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed June 22, 1965, Ser. No. 466,519
Claims priority, application France, July 3, 1964, 980,636
14 Claims. (Cl. 310—11)



The composite structure electrode formed from zirconia, has a current-receiving side to be exposed to the flow of hot fluids which is substantially nonporous. The other side, which is engaged by the electrical output conductors, is porous and the pores are filled with pyrocarbon. The pyrocarbon filling the pores is provided by impregnating the porous side with a carbonaceous substance which is converted to pyrocarbon by pyrolysis treatment.

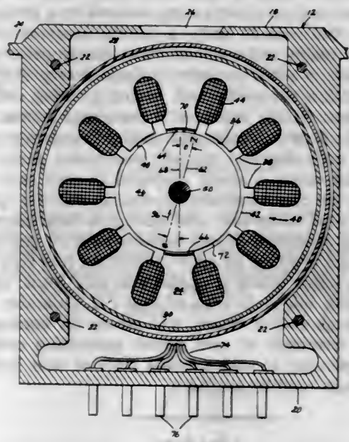
3,416,014
UNIDIRECTIONAL STARTING MECHANISM FOR SYNCHRONOUS A.C. SELF-STARTING MOTORS
John C. Kuzara, New Britain, Conn., assignor to The Sessions Clock Co., Forestville, Conn., a corporation of Connecticut
Filed May 16, 1966, Ser. No. 550,337
9 Claims. (Cl. 310—41)

1. A unidirectional rotational control mechanism for a motor having a rotor capable of revolving in either direction, said motor comprising a stator having a plurality of stator poles, said mechanism comprising: a rotating member attached to said rotor to revolve therewith and having an odd number of lobes; a cam having an internal cam surface adjacent to said rotating member to be engaged by said lobes, said cam surface being divided into first and second symmetrical parts about a center, each of said parts comprising a sloping ramp which begins at a radial distance from said center greater than the maximum radius of any of said lobes and terminates closer to said center than the radius of said lobes, said first part having an abutment edge joining the terminating end of said first part to the other end of said second part and said second part having a second abutment edge joining



the terminating end of said second part with the other end of said first part; and means to limit the motion of said cam to a direction substantially perpendicular to the axis of said rotating member whereby said cam may be moved back and forth as said lobes alternately press against said first and second ramps when said rotor revolves in the proper direction.

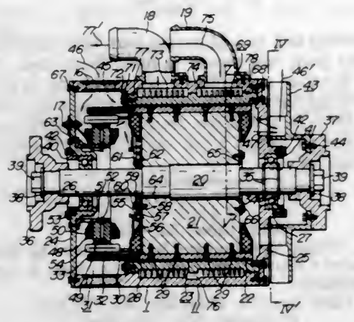
3,416,015
STEPPING MOTOR
Arthur F. Ordas, Huntertown, Ind., assignor to Bowmar Instrument Corporation, Fort Wayne, Ind., a corporation of Indiana
Filed Apr. 29, 1965, Ser. No. 451,812
11 Claims. (Cl. 310—49)



A stepping motor, which may be used as an electromagnetic indicator device, having a stator core member with a central bore and a plurality of equally spaced winding slots extending radially outwardly therefrom and mutually defining a plurality of discrete poles each having a pole face, and windings positioned in the slots for selectively energizing the pole faces. A permanent magnet rotor member is positioned in the bore, the rotor member having a peripheral surface which defines first radial air gaps with the stator pole faces, the rotor member being diametrically polarized on a first axis. The rotor member has a pair of diametrically opposite polar projections formed thereon which project radially outwardly from its peripheral surface and which define pole faces, the rotor pole faces being disposed on a second axis which is angularly displaced from the first axis. The rotor pole faces respectively define second radial air gaps with the stator pole faces which are narrower than the first air gaps so that the first rotor member axis is aligned with

the respective stator pole face when a particular winding is energized and the second axis is aligned with the respective stator pole face when all of the windings are de-energized thus permitting 180° rotation of the rotor member in a single step.

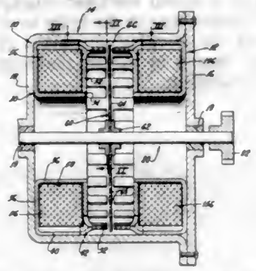
3,416,016
SPEED REDUCTION APPARATUS FOR AUTOMOTIVE VEHICLES
Tadao Murakami, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Jan. 4, 1966, Ser. No. 518,602
Claims priority, application Japan, Jan. 11, 1965, 40 /978
4 Claims. (Cl. 310—93)



1. A speed reduction apparatus for automotive vehicles comprising an outer casing secured to a stationary portion of the vehicle body, a rotary shaft extending through said casing and connected with the propeller shaft of the vehicle, a rotor mounted on said rotary shaft for unitary rotation therewith and having exciting coils of braking means fixedly mounted thereon and power generating coils of an AC generator, said AC generator having its field coils disposed opposite said power generating coils on said rotor, a stator disposed in said casing in a manner to be concentrically opposed in suitably spaced relation by said rotor and said casing so that magnetomotive force generated in said exciting coils of said braking means can produce an eddy current on that face portion of said stator which is opposite to said rotor, means for connecting said field coils of said AC generator to a battery through switch means, and means for connecting the output terminals of said power generating coils of said AC generator to said exciting coils of said braking means through rectifier means.

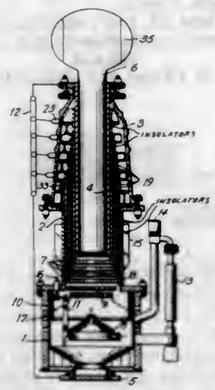
3,416,017
SELF-STARTING SYNCHRONOUS MOTOR
William H. Krug, Van Nuys, Calif.
(1221 Jerome Ave., Janesville, Wis. 53545)
Filed Apr. 18, 1966, Ser. No. 543,317
6 Claims. (Cl. 310—164)

1. An electric motor comprising:
a pair of axially spaced, annular flux generating assemblies, each including an annular winding and a generally toroidal core of magnetic material substantially surrounding the winding, the core including circumferentially spaced polepieces terminating in equally angularly spaced polefaces disposed in an annulus in a plane normal to said axis, successive polefaces being of opposite magnetic polarity when the winding is energized and being spaced apart by equal arcuate intervals, the polepieces of each assembly extending concentrically toward the other and the polefaces of one being aligned with the arcuate intervals of the other;
a disk including an annular rotor of high retentivity mounted for rotation between said poleface annuli and in airgap relation therein;



and means for energizing said windings with currents in 90° phase relation.

3,416,018
HIGH-VOLTAGE MERCURY-ARC RECTIFIER
Filipp Ivanovich Butaev, Krasnokazarmennaya ulitsa 19, kv. 43; Nikolai Semenovich Klimov, Krasnokazarmennaya ulitsa 19, kv. 94; Alexei Alexandrovich Pertsev, Krasnokazarmennaya ulitsa 19, kv. 136; Nikolai Paviovich Stepanov, Sadovo-Sukharevskaya ulitsa 2/34, kv. 6; Alexandr Mikhailovich Shemaev, Metrostroevskaya ulitsa 9, kv. 3; and Ilya Dmitrievich Shkolin, B. Spasskaya ulitsa 7, kv. 15, all of Moscow, U.S.S.R.
Filed Aug. 3, 1965, Ser. No. 476,823
6 Claims. (Cl. 313—30)

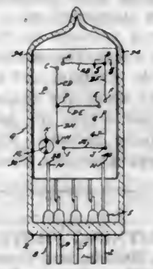


A high-voltage mercury-arc rectifier having intermediate electrodes, located at the lower end of the anode chamber between the anode and cathode, and formed as a plurality of spaced truncated cones interfastened by a refractory metal bar. The intermediate electrodes are connected to a voltage divider by terminals which are constructed as hollow bodies containing hollow bolts with slidable rods therein acted on by springs and carrying contact ferrules on one end thereof.

3,416,019
ZINC SILICATE PHOSPHOR OF IMPROVED MAINTENANCE
Edward E. Kaduk, Lyndhurst, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 14, 1964, Ser. No. 418,229
9 Claims. (Cl. 313—109)

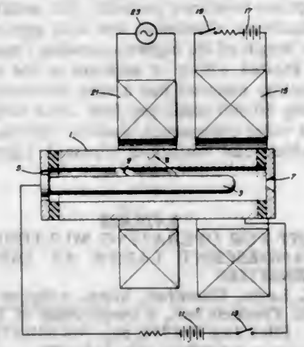
A green zinc silicate phosphor which is white bodied and improved particularly with respect to maintenance under high loading. It comprises the usual zinc silicate phosphor ingredients, namely, ZnO, SiO_2, and MnO for the activator plus a minor addition of MgF_2. The stoichiometric base/acid ratio of 2:1 is observed and in determining the base/acid ratio, all basic elements are included, that is mole fractions of manganese and magnesium are included with those of zinc in determining total moles of base. Preferably the phosphor is prepared by firing the recited ingredients in the temperature range of 1250 to 1350° C., milling and refiring in the same temperature range with a small addition of NH_4Cl.

3,416,020
FILAMENT DISPLAY DEVICE INCLUDING A RIGID, LIGHT-ABSORBING, SUPPORT PANEL
James A. Carley, Rolling Hills, Calif., assignor to Los Angeles Miniature Products, Inc., Gardena, Calif., a corporation
Filed Feb. 14, 1966, Ser. No. 527,373
7 Claims. (Cl. 313—109.5)



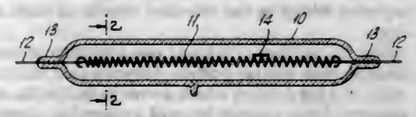
An electrically operated display device that includes a plurality of filaments which may be selectively and electrically energized in various combinations to produce any one of a predetermined number of high intensity lighted symbols that are viewed against a dark light-absorbing background, and as a result, are sharply defined when seen in either darkness or daylight.

3,416,021
ARC APPARATUS EMPLOYING THREE DIMENSIONAL ARC MOTION AND DYNAMIC BALANCING
Spencer D. Raezer, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 11, 1966, Ser. No. 550,087
6 Claims. (Cl. 313—161)



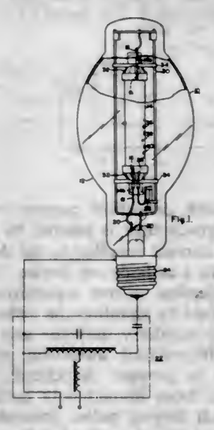
The present invention relates to arc heater apparatus comprising a pair of concentric, cylindrical electrodes which support a D.C. arc therebetween for the purpose of heating input gas applied to the arc chamber. A D.C. coil encircles the electrodes and creates a magnetic field which causes the arc to rotate between the concentric electrodes at a position along the length of the electrodes where the arc is stabilized or dynamically balanced with the drag force encountered in operation. An A.C. field coil is also provided and alternately weakens and strengthens the D.C. field in such a manner that the arc will move up and down the length of the electrodes, while it rotates, thus utilizing a greater portion of the electrode surface and thereby reducing the so-called arc root heat flux at any fixed point on the electrode surface. At the same time, the drag force will always be balanced by the resultant magnetic field and the tendency of the arc to blow out is minimized.

3,416,022
TUNGSTEN FILAMENT IODINE CYCLE INCANDESCENT LAMP WITH ALKALI METAL GETTER
Donald W. Mayer, New Market, N.J., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 434,901
7 Claims. (Cl. 313—178)



A small quantity of an alkali metal iodide, e.g. sodium iodide, is placed within the envelope of a tungsten filament lamp during manufacture of the lamp. When the filament is first heated by passage of electric current therethrough, the alkali metal iodide is vaporized to provide iodine gas for maintaining the tungsten-iodine regenerative cycle and free alkali metal as a getter for water vapor, oxygen, and like impurities in the lamp.

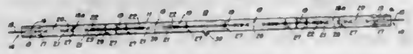
3,416,023
MERCURY VAPOR SUNLIGHT LAMP
Robert A. Eckel, East Orange, and Rudolph Nagy, Upper Montclair, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 18, 1966, Ser. No. 535,470
9 Claims. (Cl. 313—225)



An artificial light source for inducing pigment darkening in human skin and which employs, in a high pressure mercury vapor type arc lamp, a discharge sustaining filling which includes predetermined quantities of mercury,

mercuric iodide and cobalt chloride and which produces a strong energy continuum from between 3400 and 4500 angstrom units.

3,416,024
DIFFERENTIAL OUTPUT INCANDESCENT LAMP
Warren D. Young, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 31, 1966, Ser. No. 553,975
9 Claims. (Cl. 313—273)



1. A differential output tubular incandescent lamp comprising

an elongated tubular envelope of radiation-transmissive material, and

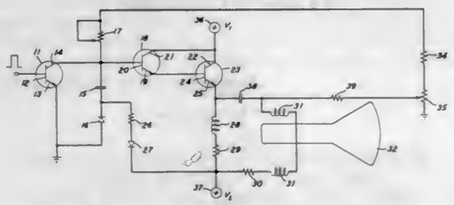
a filament assembly extending longitudinally of said envelope and comprising a plurality of helically coiled incandescible filament sections longitudinally spaced apart and an electrically conducting but non-incandescible rod-like supporting connector between said filament sections,

said filament sections each comprising an active coiled segment which is the effective source of radiant energy,

a coiled leg portion at least at one end thereof, and an intermediate barrier portion between said active segment and leg portion which serves to isolate the active segment from contact by said supporting connector,

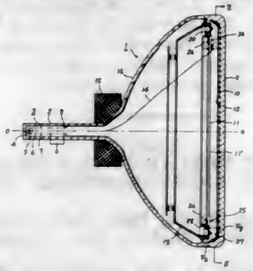
said supporting connector having its ends electrically connected to and frictionally engaging the full length of respective said leg portions to be in abutting engagement with respective said intermediate barrier portions so that the turns of said leg portions are short-circuited and nonincandescible.

3,416,025
ELECTROMAGNETIC DEFLECTION SYSTEM
Alan M. Gordon, Matawan Township, Monmouth, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 14, 1965, Ser. No. 448,146
4 Claims. (Cl. 315—27)



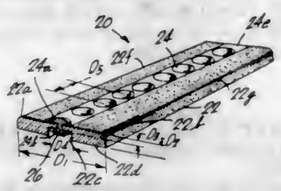
A linear sawtooth deflection current waveform with extremely short flyback time is assured by enhancing the rate of change of current supplied to the deflection windings associated with a cathode ray device. Selective modification of the deflection current waveform at prescribed times is accomplished by shunting the deflection windings of a CRT with an auxiliary inductor and by energizing the system with trapezoidal waveform pulses. This arrangement serves to prevent the circuit supplying the deflection currents from immediately cutting off at the termination of each driving pulse. Extension of the ON time results in the application of a brief negative pulse to the deflection windings during a retrace interval which increases the rate of change of current in the windings and speeds up beam retrace.

3,416,026
CATHODE RAY TUBE
Isamu Niwa, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Sept. 21, 1964, Ser. No. 397,783
12 Claims. (Cl. 315—31)



In a post-deflecting and focusing cathode ray tube, wherein the grid is supported on a frame, an auxiliary electrode is mounted adjacent to the frame at an edge portion of the grid wires. The auxiliary electrode is provided with a suitable potential and is properly spaced in relation to the grid wires for cancelling a gradient of potential which exists across the grid wires due to the presence of the frame potential which undesirably influences the grid equi-potential lines.

3,416,027
RADOME LIGHTNING PROTECTION MEANS
Myron P. Amason, Reseda, and George J. Cassell, Huntington Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Mar. 10, 1967, Ser. No. 622,141
12 Claims. (Cl. 315—36)

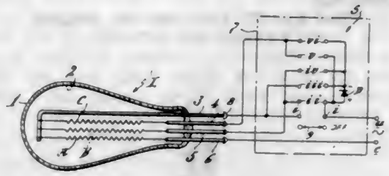


A number of lightning protection strip assemblies are installed in a selected configuration on a radome for protection thereof from lightning strokes. Each strip assembly includes a series of spaced metallic segments connected by appropriate resistance material. The metallic segments have a maximum dimension less than approximately ⅛ of a wave length of the highest operating frequency of the antennas located within or adjacent to the radome, and the connecting material has a strip resistance above approximately 80,000 ohms per foot. Such strip assemblies produce a radar transparent, radome lightning protection system which can withstand repeated lightning strikes thereon.

3,416,028
CIRCUIT FOR OPERATING MULTIFILAMENT INCANDESCENT LAMPS AT DIFFERENT INTENSITIES
Robert E. Levin, Hamilton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,172
4 Claims. (Cl. 315—50)

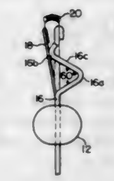
A multiple intensity fluorescent lamp having within one envelope three filaments, two in parallel and a third connectable alone or in series with one of the first two

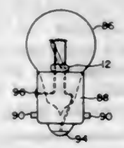
filaments, and a diode and multi-contact switch for connecting the filaments directly to power-terminals in at least three combinations and through the diode in at least two additional combinations. The filaments have different



wattages and operate at different color temperatures, so that the lamp emits a 25 to 1 range of flux intensity steps which appear physiologically continuous to the human eye, and which change to a pleasing red color at the lowest intensity.

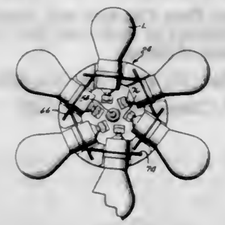
3,416,029
FLASHING INCANDESCENT LAMP
Dewey M. Griffith, Menlo Park, Charles W. Hawkey, Caldwell, and Victor K. Boughton, Pompton Plains, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 29, 1966, Ser. No. 538,252
7 Claims. (Cl. 315—72)





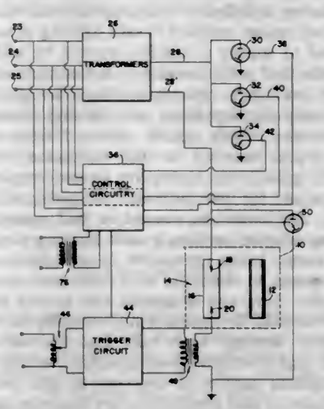
A flashing incandescent lamp in which the filament is mounted between a first lead-in conductor and a thermostatic element. A second V-shaped lead-in conductor contacts the thermostatic element and applies sufficient pressure to that element to maintain a predetermined deflection of the thermostatic element when the lamp is cold.

3,416,030
NAVIGATIONAL LANTERN SYSTEM AND LAMP CHANGER
William Collins Conkling, Essex Fells, Eugene Leroy Rebucci, Union City, Edward William Wittke, Jr., Westfield, and George Arthur Campbell, Pompton Plains, N.J., assignors to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware
Filed June 16, 1966, Ser. No. 557,997
19 Claims. (Cl. 315—89)



A navigational lantern system including a lamp changer comprising a pair of symmetrically enclosed component housing sections having a gabled and feathered geometry in the region of the lamp turret axis to insure against housing shadows cast upon the lantern lens by an energized lamp. The housing sections each has a plane face and the faces are arranged in spaced, confronting relation to each other to provide room between them for mounting and rotating a multi-lamp turret. The lamp turret has a shaft by which it is removably mounted for rotation in one of the housing face plates. The turret is adapted to receive lamps having a relatively large base flange and yet maintains the smallest possible turret turning radius by an interlocked or overlapped arrangement of flange receiving slots. The face of the other housing section has a motor-driven spring spider in contact with the lamp turret whereby the turret is driven from one lamp position to the next upon failure of the filament in operative position.

3,416,031
FLASH LAMP OPERATING MEANS
Harry E. Franks, Newton, and Arnold J. Aronson, Brookline, Mass., assignors to Maser Optics, Inc., Boston, Mass., a corporation of Massachusetts
Filed Apr. 16, 1965, Ser. No. 448,589
17 Claims. (Cl. 315—119)



An AC power supply for a laser pumping lamp passes current through the lamp only when the supply voltage

for the lamp is above the lasing threshold voltage and maintains the lamp in the off condition when the supply voltage is below this level. This prolongs the life of the lamp by confining its operation to those intervals in which a useful light output is obtained.

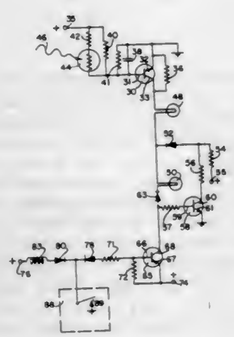
3,416,032

LAMP DIMMING CIRCUIT

Kenneth V. Jahns, West Chicago, and Arnold S. Brenner, Skokie, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 23, 1966, Ser. No. 536,709

8 Claims. (Cl. 315—149)



1. A circuit for automatically varying the brightness of a pilot lamp to produce a substantially constant brightness contrast between the pilot lamp and the ambient light, including in combination, a transistor having a first electrode coupled to a reference potential, a second electrode and a control electrode, control circuit means coupled to said control electrode for supplying a control current thereto, said control circuit means including light sensitive resistance means positioned to receive the ambient light and being responsive thereto to vary the magnitude of said control current directly as the magnitude of the ambient light varies, lighting circuit means including first and second pilot lamps coupled to said second electrode, current supply circuit means coupled to said lighting circuit means and adapted to supply a lighting current to said lighting circuit means and said transistor, said current supply circuit means including resistance means coupled to said first pilot lamp for supplying said lighting current thereto, said current supply circuit means further including switching means coupled to said resistance means and said second pilot lamp, operating means coupled to said switching means for intermittently energizing said switching means, said switching means in said energized condition being adapted to supply said lighting current, said switching means being responsive to energization by said operating means to decouple said resistance means from said first pilot lamp and to couple said second pilot lamp in series with said first pilot lamp, whereby said lighting current flows through both said first and second pilot lamps and said transistor, said transistor acting to regulate said lighting current in response to said variation in the magnitude of said control current whereby the brightness of said first and second pilot lamps is varied to maintain a substantially constant brightness contrast between said first and second pilot lamps and the ambient light.

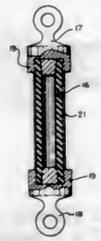
3,416,033

TENSION LINK FOR USE WITH ELECTROSTATICALLY CHARGED OBJECTS

William G. Hoover, Los Altos Hills, and Kendric A. Moore, Millbrae, Calif., assignors to Granger Associates, Palo Alto, Calif., a corporation of California

Filed Apr. 22, 1966, Ser. No. 544,554

4 Claims. (Cl. 317—2)



A tension link for connection in series with aircraft hoist cables to provide a series electrical resistance for dissipating electrical charge from the aircraft to thereby minimize damage or injury to equipment or personnel associated with the cable.

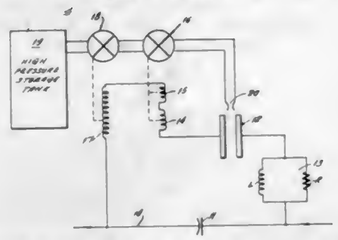
3,416,034

CAPACITOR PROTECTION SYSTEM INCLUDING A PLURALITY OF SERIALLY CONNECTED VALVES IN THE AIR BLAST DEVICE

William A. Carter, Devon, and Otto Jensen, Malvern, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 14, 1966, Ser. No. 542,655

9 Claims. (Cl. 317—12)



A valve structure for a capacitor protection system for admitting a blast of air between a pair of arcing electrodes in order to deionize the arc until the arc current exceeds a particular value. Two valve structures are used in series with one another, where one valve is normally closed and opens and is held open responsive to the flow of current in a spark gap circuit. The second valve is a high speed valve in series with the first and is normally open, but is closed responsive to the flow of arc current in the spark gap circuit until the arc current has a sufficiently low magnitude such that the capacitor can be returned to the circuit and the arc in the spark gap can be extinguished. Thus, flow of arc extinguished air will occur until the spark gap is to be finally removed from parallel connection with respect to a capacitor being protected.

3,416,035

RECLOSER STATIC CONTROL CIRCUIT

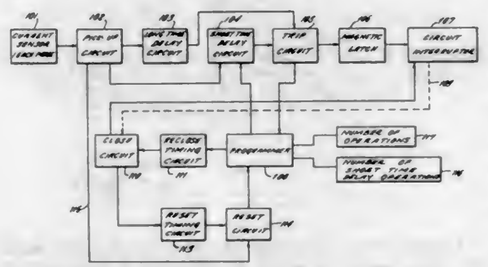
James W. Lipnitz, Cherry Hill, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 21, 1966, Ser. No. 522,185

11 Claims. (Cl. 317—22)

A recloser static control circuit controlling the operation of an interrupter capable of tripping after time delays inversely proportional to the current magnitude in the

circuit being protected. Current magnitude in the circuit being protected is sensed and converted to a D.C. level. The D.C. level is applied to a pair of timing circuit of differing time delays coupled between the current sensing portion and a tripping device. Under normal operation the timing circuit which times out fastness controls the tripping operation. Automatic programming means are provided for keeping a count of the number of trip and automatic reclosing operations performed in order to disable the fast time delay circuit and place the tripping operation under control of the slower timing circuit. A pick-up circuit is provided for initially disabling both timing circuits until a predetermined minimum critical current magnitude is achieved to prevent the timing circuits from timing out under normal current conditions. The static control circuitry is further provided with adjustable time delay means for controlling the time delay between a tripping operation and a subsequent reclosing operation.



The programming means automatically controls the recloser timing circuit to modify the time delay before reclosure in accordance with the number of tripping operations which have already been performed. Manually operable means are provided for controlling the time at which the programming circuit disables the fast timing circuit in the trip circuitry section as well as for controlling the adjustment of the time delay in the reclosing timing circuit. Adjustable means are provided for causing the interrupter to go to lock-out after any predetermined number of trip operations, depending upon the setting of the programming means. Further means are provided for automatically resetting the programmer to its initial state after a fault has been cleared and remains cleared for a predetermined time interval. Overriding circuit means are provided for preventing the reset of the programming means to its initial state if, after a reclosure operation, there is an indication that a critical current condition still exists in the circuit being monitored.

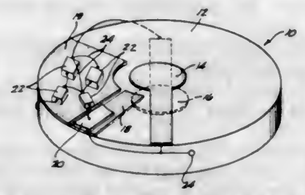
3,416,036

INTEGRATED CRYSTAL CIRCUITS AND THE METHOD OF MAKING THEREOF

Er-Chun Ho, Newport, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 13, 1967, Ser. No. 609,048

5 Claims. (Cl. 317—101)



A cut quartz crystal resonator having integrated microminiature electric circuits and components either deposited or bonded thereon.

3,416,037

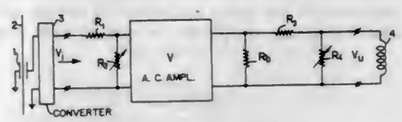
DEVICE FOR CHECKING DEVIATIONS IN THE THICKNESS OR MASS OF TEXTILE THREADS

Johannes Libbe Leistra, Enschede, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 24, 1965, Ser. No. 442,297

Claims priority, application Netherlands, Mar. 25, 1964, 6403165

10 Claims. (Cl. 317—123)



A yarn testing system that includes an amplifier having a radiant energy emitting element in its output circuit and a voltage divider in its input circuit. The voltage divider includes an impedance element that responds to the energy emitting element. These elements are arranged to operate with a time delay so that the amplifier output voltage remains constant for slow variations of the input signal produced by gradual variations in the yarn size, moisture content, or the like. A rapid variation in the input signal produced by a slub produces a large change in the output voltage, which can be used to perform a yarn control function.

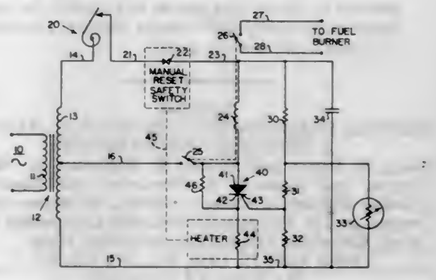
3,416,038

BIASED SILICON CONTROL RECTIFIER CONTROL APPARATUS

Robert E. Mierendorf, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Jan. 24, 1966, Ser. No. 522,586

5 Claims. (Cl. 317—132)



A silicon controlled rectifier control apparatus energized from an alternating current supply and having a control means in the form of a relay energized through the silicon controlled rectifier. A bias network including the control means and a resistance network so that a back bias or reverse bias is present in the gate and cathode circuit of the silicon controlled rectifier. A forward or positive bias applied to the gate of the silicon controlled rectifier and responsive to a condition to be sensed.

3,416,039

TEMPERATURE-RESPONSIVE CONTROL CIRCUIT

Walter E. Breneman, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

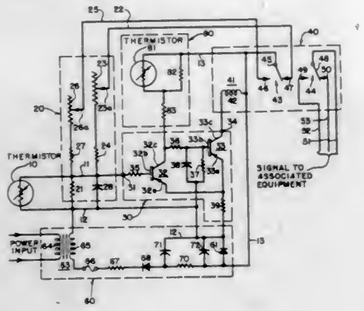
Filed June 15, 1966, Ser. No. 557,780

6 Claims. (Cl. 317—132)

1. A temperature-responsive control circuit comprising: a switching stage having input and output connections; a bias stage including a voltage divider arrangement having a reference component coupled between said

input connection of the switching stage and a first energizing conductor, a first leg coupled between a first control conductor and said input connection of the switching stage, and a second leg coupled between a second control conductor and said input connection of the switching stage;

a control stage including switching means having a control portion coupled between said output connection of the switching stage and a second energizing conductor, and first and second contact sets, said first contact set being connected to couple said second energizing conductor to one of said first and

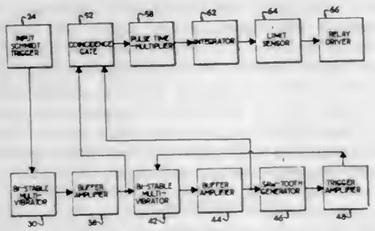


second control conductors, and said second contact set being connected to pass control signals to associated equipment;

a power supply connected to pass energy over said first and second energizing conductors; and

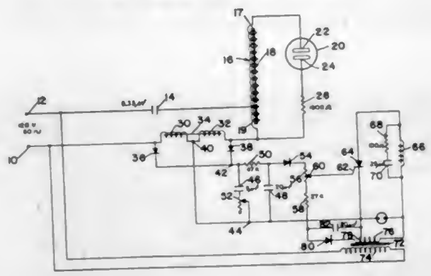
sensing means, coupled between said input connection of the switching stage and said first energizing conductor, operative responsive to a change in ambient temperature to provide a related change in the resistance of the sensing means and modify the voltage distribution along said voltage divider arrangement to operate said switching stage.

3,416,040
DIGITAL FREQUENCY COMPARATOR HAVING A TRIGGERED REFERENCE
George B. Foster and Richard K. Patterson, Jr., Worthington, and Kenneth A. Ostrander and Eugene R. Lucka, Columbus, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 25, 1965, Ser. No. 442,596
30 Claims. (Cl. 317—147)



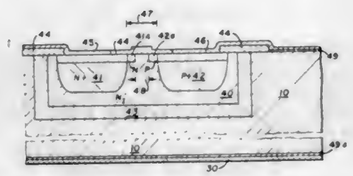
A frequency comparator adapted to respond to the frequency of an input waveform. The input waveform triggers a timebase circuit including a bistable multivibrator, a saw tooth generator and a triggering amplifier to generate a reference pulse of fixed duration. This is compared with the input waveform period and a period difference signal is generated. The difference signal is further processed to convert it into a signal whose amplitude is representative of the period difference by a pulse stretcher and an integrator. A limit indication is obtained by comparing the integrator output amplitude with a reference amplitude.

3,416,041
FLAME SENSOR QUENCH CIRCUITS FOR COMBUSTION CONTROL SYSTEMS
Philip Giuffrida, North Andover, and John Pratt, Braintree, Mass., assignors to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 260,126, Feb. 21, 1963. This application Sept. 2, 1965, Ser. No. 484,656
14 Claims. (Cl. 317—148.5)



A combustion supervision circuit employs a UV sensitive flame sensor to which is connected a resonant circuit including a capacitor connected in series with the sensor, an inductor connected in series with the sensor, and the secondary winding of a transformer. The inductor has two taps and a filter and integrating network is connected between one tap and one terminal of the inductor. The other terminal of the inductor is connected directly to the flame sensor. An R.F. bypass capacitor is connected between the latter terminal and the other inductor tap. The filter and integrating network operates an SCR switch which controls a flame relay.

3,416,042
MICROWAVE INTEGRATED CIRCUIT MIXER
Philip R. Thomas and Tom M. Hyltin, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,480
13 Claims. (Cl. 317—234)



1. A mixer for modulating radar-frequency signals which comprises:

(a) a substantially intrinsic semiconductor wafer having opposite surfaces,

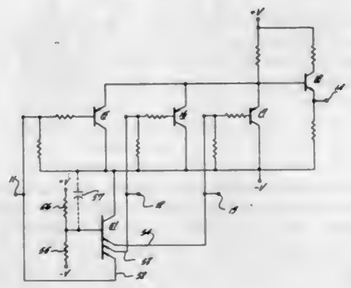
(b) a continuous metallic layer adjacent one of said opposite surfaces to provide a conductive ground plane layer,

(c) a plurality of thin metallic films providing conductive striplines deposited on the other surface of the wafer and forming a coupler including a pair of input portions for receiving a pair of input signals and a pair of output portions,

(d) a pair of surface-oriented diodes in said wafer, each diode comprised of a first zone of one conductivity type and a second zone of opposite conductivity type, said first and second zones being laterally spaced from one another along and extending solely to said other surface, a pair of junctions formed by the intersection of each of said zones with said wafer extending solely to said other surface with intrinsic semiconductor material of said wafer separating said pair of junctions, the coupler output portions being respectively electrically connected with the first zone of each of the said diodes at said other surface, and

(e) a pair of thin metallic films providing conductive striplines respectively electrically connected with the second zone of each of the said diodes at said other surface and forming a pair of output portions for the mixer.

3,416,043
INTEGRATED ANTI-RINGING CLAMPED LOGIC CIRCUITS
Arnold J. Jorgensen, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 447,426
16 Claims. (Cl. 317—234)

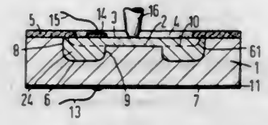


An integrated circuit having a logic circuit formed on a single wafer of semiconductor material and having a clamping circuit formed on the same wafer and connected to each input terminal of the logic circuit. The clamping circuit prevents input signals applied to the terminals from exceeding a predetermined value of potential and thereby substantially reduces the problem of "ringing" which otherwise occurs during high speed operation of the logic circuit.

3,416,044
OPTO-ELECTRONIC DEVICE HAVING A TRANSPARENT ELECTRODE THEREON AND METHOD OF MAKING SAME
Bertrand Alain Dreyfus, Sevres, and Jean Tavernier, Draveil, France, assignors to Societe d'Electronique et d'Automatisme, Courbevoie, Hauts-de-Seine, France
Filed July 22, 1965, Ser. No. 474,023
Claims priority, application France, July 23, 1964, 982,750
11 Claims. (Cl. 317—234)

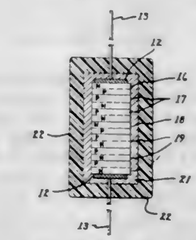
A high transparency ohmic contact low resistance film electrode is coated on a face of a body of semi-conductor material at a location which is near to an impurity obtained junction within the body near said face. The film electrode is made of a semi-conductor material which is distinct from that of the body and such electrode is doped with impurities identical to the ones in the region of the junction in the body. The method of deposition of the electrode on the body is such that the doping impurities diffuse from the film to the junction zone or conversely from the junction zone to the film.

3,416,045
SEMICONDUCTOR DEVICE, PARTICULARLY FOR RESPONSE TO VARIABLE PRESSURE
Manfred Zerbst, Karl-Heinz Zschauer, and Wolfgang Touchy, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany
Filed Oct. 21, 1965, Ser. No. 499,610
Claims priority, application Germany, Oct. 22, 1964, S 93,833
2 Claims. (Cl. 317—234)



The invention provides a semiconductor body of one conductivity-type with a zone of the other conductivity-type forming a p-n junction in one surface. The lateral ends of the zone penetrate more deeply assuring uniformity in the more shallow central portion on which mechanical pressure means for transmitting a signal engages.

3,416,046
ENCASED ZENER DIODE ASSEMBLY AND METHOD OF PRODUCING SAME
Donald C. Dickson, Jr., and Dalton L. Knauss, Scottsdale, Ariz., assignors to Dickson Electronics Corporation, a corporation of Arizona
Continuation-in-part of application Ser. No. 197,628, May 25, 1962. This application Dec. 13, 1965, Ser. No. 517,880
3 Claims. (Cl. 317—234)

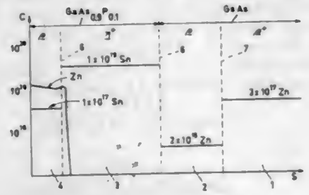


An encapsulated Zener diode structure incorporating a plurality of Zener diodes temperature compensated by direct contact with forward biased diodes; the diodes are encapsulated in an imperforate shell of high dielectric plastic material including an epoxy resin containing a proportion of pyromallitic dianhydride and finely divided silica.

3,416,047
OPTO-PN JUNCTION SEMICONDUCTOR HAVING GREATER RECOMBINATION IN P-TYPE REGION
Julian Robert Anthony Beale, Reigate, and Andrew Francis Beer and Peter Colin Newman, Crawley, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 521,842
Claims priority, application Great Britain, Jan. 21, 1965, 2,693/65
15 Claims. (Cl. 317—234)

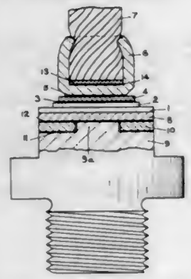
A monocrystalline semiconductor radiation body has a substrate comprising an epitaxial deposited surface layer. The body has a p-n junction formed within the surface layer between n-type material on the substrate side and p-type material on the side adjacent the surface. The concentration of donors in the n-type material is greater than the concentration of acceptors in the p-type material, resulting in a proportionately greater injection of charge

carriers, upon application of forward bias, from the n-type material into the p-type material for producing a



larger proportion of recombination of carriers in the p-type material.

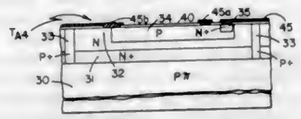
3,416,048
SEMI-CONDUCTOR CONSTRUCTION
Dieter Spickenreuther, Baden, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed May 6, 1966, Ser. No. 548,221
Claims priority, application Switzerland, June 24, 1965, 8,897/65
2 Claims. (Cl. 317—234)



1. In a semi-conductor arrangement, a cylindrical support base, said base having a central part of reduced diameter at one end thereof, an annular disc having an internal diameter substantially the same as that of said reduced part of said support base and which is fitted upon said reduced part, the length of said reduced part and the thickness of said annular disc being the same so that their upper surfaces are co-planar, a hard solder layer joining the lower annular surface of said disc to the adjacent surface of said support base which surrounds said reduced part, a circular carrier plate of substantially the same diameter as the external diameter of said annular disc, a soft solder layer joining the upper co-planar surfaces of said reduced part of said base and of said annular disc to the under surface of said carrier plate, and a semiconductor disc supported upon the upper surface of said carrier plate, said carrier plate and annular discs being constituted from a material having substantially the same coefficient of expansion and which is different from the expansion coefficient of the material from which said support base is made.

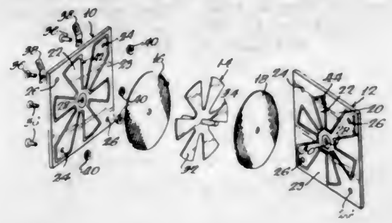
3,416,049
INTEGRATED BIAS RESISTORS FOR MICRO-LOGIC CIRCUITRY
Richard E. Bohn, North Reading, and Richard C. Sirrine, Winchester, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application May 17, 1963, Ser. No. 281,183, now Patent No. 3,229,119, dated Jan. 11, 1966. Divided and this application June 30, 1965, Ser. No. 468,415
2 Claims. (Cl. 317—235)

Transistor circuit element of the double-diffused type having an elongated base region. A first ohmic contact is made to the emitter region, a second ohmic contact is made to the base region closely adjacent the base-emitter junction, and a third ohmic contact is made to both the collector and base regions at a distance from the



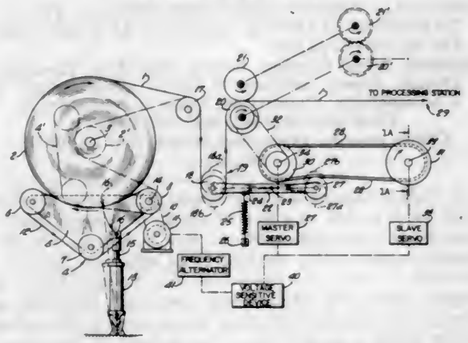
second contact. The portion of the base region between the second and third contacts serves as a resistance between the collector and base of the transistor.

3,416,050
VARIABLE CAPACITOR
Lyman J. Haviland, Port St. Lucie, Fla., assignor to Hammond Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 9, 1967, Ser. No. 673,558
5 Claims. (Cl. 317—255)



An organ swell control mechanism that is essentially a double variable capacitor which is adapted to be rotated to proportion the capacitative coupling between one circuit and two other circuits on the basis of a relatively small degree of arcuate movement between its coupling limits, such that it can be mechanically connected to the swell shoe of an organ by very simple linkage which need not include motion multiplying means. The capacitor includes multiple stator and rotor or scanner elements which are evenly arcuately displaced and a solid dielectric so as to achieve close and fixed interplate spacing.

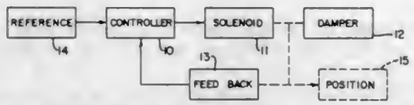
3,416,051
WEB TENSION CONTROL SYSTEM
Albert A. Pinto, White Plains, N.Y., and Kenneth L. Dew, Fair Lawn, N.J., assignors to National Biscuit Company, a corporation of New Jersey
Filed Feb. 4, 1966, Ser. No. 537,584
3 Claims. (Cl. 318—6)



An apparatus in which a web of material being moved through various steps for coating, lamination, perforation,

or other treatment is automatically kept at suitable constant tension to prevent wrinkling, breaking or undue stress by utilizing a servomechanism system or feedback control means. The latter detects the difference between a reference signal and some function of a controlled variable signal to provide an "actuating error signal" which is fed back to a suitable control element which instantly responds to correct the variation in the tension of the moving web without necessitating contact with the material of the web in carrying out the correction.

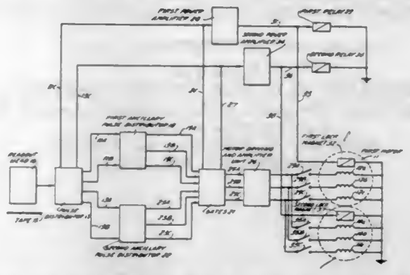
3,416,052
PULSE WIDTH MODULATED POSITION CONTROL CIRCUIT
George K. Russell, Denver, and Robert E. Burks, Golden, Colo., assignors to Sundstrand Corporation, a corporation of Illinois
Filed June 21, 1965, Ser. No. 465,518
2 Claims. (Cl. 318—18)



An electromechanical position control circuit including a pulse width modulation electronic control circuit comprising oscillator circuit means, comparative circuit means, trigger and switch circuit means, solenoid means, transducer circuit means, differential amplifier circuit means, constant current amplifier circuit means, and control reference circuit means. The oscillator circuit means produces a reference signal. The comparator circuit means is coupled to the oscillator circuit means for receiving the reference signal from the oscillator circuit means and a feedback signal from a control loop and for comparing these signals and generating an error signal. The trigger and switch circuit means is coupled to the comparator circuit means for using the error signal to vary the duty cycle of the output from the comparator circuit means. The solenoid means is coupled to the trigger and switch circuit means for receiving the pulse width modulated output of the trigger and switch circuit means for selective actuation of the solenoid means. The transducer circuit means is coupled to the solenoid means for converting output signals from the solenoid means into resistance variations. The differential amplifier circuit means is coupled to the transducer circuit means for amplifying any incremental resistance change in the output resistance of the transducer circuit means from that of a control reference. A constant current amplifier circuit means is coupled to the differential amplifier circuit means for converting the amplified incremental resistance change into a constant current signal and for feeding the constant current signal from the control loop back to the comparator circuit means for generating the error signal. The control reference circuit means is coupled to the transducer circuit means for selectively setting operative thresholds for the control circuit.

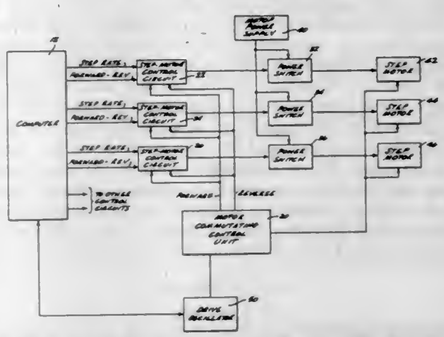
3,416,053
SWITCHING CIRCUIT FOR A PLURALITY OF MOTORS HAVING LOCKING MEANS
Seiuemon Inaba, Norito Yoshitake, and Kengo Kobayashi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Mar. 18, 1966, Ser. No. 535,500
Claims priority, application Japan, Mar. 25, 1965, 40/17,368
2 Claims. (Cl. 318—103)

A pulse distributor coupled to a source of instructions provides a series of pulses in accordance with instructions and a control signal for operating one of a plurality of pulse motors. A plurality of ancillary pulse distributors connected to the pulse distributor distribute a series of pulses from the pulse distributor and provide pulses for driving corresponding ones of the motors. Gates are connected between the ancillary pulse distributors and a single amplifier connected in common to the motors. The gates selectively connect one of the ancillary pulse distributors to the single amplifier under the control of pulses



from the pulse distributor. A plurality of locks each includes an electromagnet positioned in operative proximity with a corresponding one of the motors. A circuit supplies the control signal provided by the pulse distributor to the electromagnet of each lock to energize each such electromagnet. A plurality of relays connect a selected one of the motors to the single amplifier in accordance with signals from the pulse distributor and the others of the motors are maintained disconnected and locked in position.

3,416,054
MOTOR CONTROL APPARATUS INCLUDING SEQUENTIAL INTERVAL GENERATING MEANS FOR ALTERNATELY ENABLING MOTOR ROTATION IN FORWARD AND REVERSE DIRECTIONS
Charles E. Galles, Inglewood, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 10, 1966, Ser. No. 549,069
7 Claims. (Cl. 318—138)



1. In a process control system of the type wherein a transducer generates a signal which is a function of a condition upon which control of the process is based, a motor rotatable in forward and reverse directions for controlling said condition, and a computer including means for converting the transducer signal to control signals representing direction and rate of rotation of said motor required to control said condition, an improved motor control system comprising:

a source of clock pulses;

means responsive to said clock pulses for generating interval defining signals to define a sequence of alternating odd and even intervals;

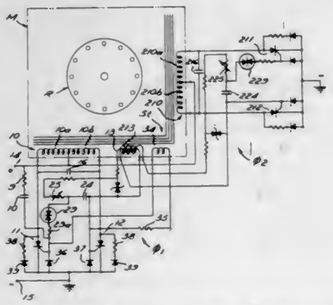
motor means coupled to said motor for controlling the direction of rotation of said motor to be in a forward direction during each odd interval and in a reverse direction during each even interal; and

means including a source of power and motor control means responsive to the control signals from said computer for selectively energizing said motor with power from said source as a function of said control signals representing the required direction and rate of rotation of said motor to control said condition.

3,416,055
BRUSHLESS ELECTRIC MOTOR CIRCUITRY

J. Roger Toth, Macedonia, Ohio, assignor to Ametek, Inc., a corporation of Delaware

Filed May 31, 1966, Ser. No. 559,646
16 Claims. (Cl. 318—138)



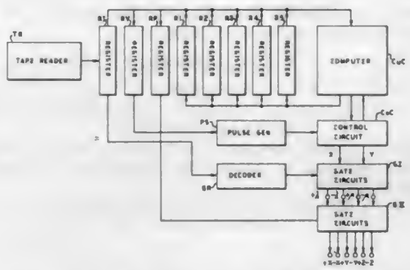
1. In a brushless direct current motor comprising a stator having a main winding divided in two halves wound generally parallel on the stator core, an induction motor type rotor, each half of the main winding similarly connected in series with the anode and cathode of a respective silicon controlled rectifier across direct current input leads of the motor with the cathodes toward the negative lead, commutating capacitor means between the anodes, and gating circuitry including a feedback winding on the stator core associated with the main winding providing pulses for application alternately to the gates of said silicon controlled rectifiers, an improved said circuitry comprising: a resistor-capacitor timing branch connected across said feedback winding to provide timed pulses as an input to a switching circuit; the last said circuit including a solid state bilateral trigger switch and output leads connected to the gate of a respective one of the silicon controlled rectifiers and through a diode to the cathode of the other silicon controlled rectifier, the diode anodes and said cathods commonly connected, whereby successive pulses of alternating polarity from said feedback winding result in sharply peaked successive gating pulses alternately applied to said silicon controlled rectifiers.

3,416,056
PROGRAMMED DIGITAL MOTOR CONTROL FOR A MACHINE TOOL USING A PULSE DISTRIBUTION TECHNIQUE

Tohru Motooka and Kusuo Yamaguchi, Tokyo, and Norito Yoshitake and Kengo Kobayashi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 114,267, June 1, 1961. This application Aug. 18, 1967, Ser. No. 661,684
Claims priority, application Japan, June 4, 1960, 35/26,867
6 Claims. (Cl. 318—162)

A machine tool is controlled in movement by a motor which in turn is controlled by pulses which move it in accordance with Cartesian coordinates. The absolute values of the start and end point coordinates of the path to be followed by the machine tool, in which of the quadrants formed by the Cartesian coordinates the path is located, and the direction of movement of the tool along the path are provided by command. The values of the

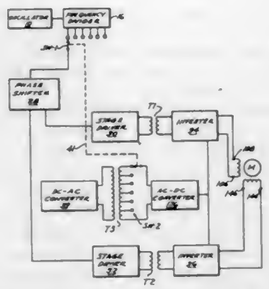


coordinates of the start point and the end point are replaced with new coordinate values. Pulse distribution is provided with regard to the path formed by the new coordinate values and the distributed pulses are supplied to the motor in accordance with the quadrant of location of the path to be followed and the direction along the path and accordingly move the machine tool.

3,416,057
A.C. MOTOR SPEED CONTROL SYSTEM USING SELECTED VOLTAGE LEVELS INVERTED AT SELECTED FREQUENCIES AND METHOD

Stanley G. Froyd, South Pasadena, and Keith L. Stiles, Pasadena, Calif., assignors to Gaylord-Rives Company, Pasadena, Calif., a corporation of California

Filed Apr. 6, 1966, Ser. No. 540,569
15 Claims. (Cl. 318—227)



This disclosure relates to a method and apparatus for controlling the speed of an A.C. motor.

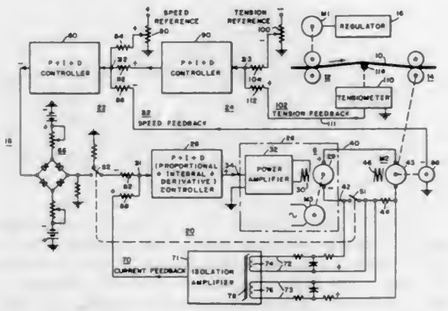
A control system according to the present disclosure includes a source of potential having a plurality of levels of potential and a source of variable frequency pulsating current, each frequency being respective to an individual level of the source of potential. Selection means is provided for concurrently selecting one of the levels of potential and a respective frequency of pulsating current. Inverter means is provided to invert the selected level of potential at a frequency dependent upon the selected frequency of the source of pulsating current. The inverter means is adapted to be connected to the windings of an A.C. motor.

According to the method of the present disclosure, a level of potential is selected from a plurality of different levels of potential and a frequency is selected from one of a plurality of different frequencies. The selected level of potential is inverted at a frequency dependent upon the selected frequency to obtain a resultant signal, and the resultant signal is impressed upon the winding of an A.C. motor.

3,416,058
APPARATUS FOR CONTROLLING A VARIABLE OF MOVING ELONGATE MATERIAL

Earl R. Hill, Plum Boro, and Woodward C. Carter II, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Apr. 30, 1964, Ser. No. 363,825. Divided and this application Oct. 5, 1966, Ser. No. 600,292
4 Claims. (Cl. 318—310)

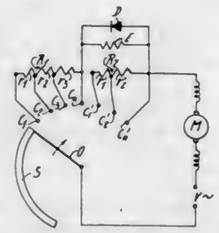


There is shown a motor regulating circuit wherein in response to a common control, which opens a series switch in the armature circuit, an armature current regulator changes functions to regulate armature circuit voltage to zero to prevent flash-over when the series switch is closed. This is accomplished by reducing to zero the normal reference signal applied to the current regulator and supplying thereto a feedback signal proportional to the voltage across the open switch.

3,416,059
ADJUSTABLE SYSTEM FEEDING AN ELECTRIC MOTOR THROUGH A RESISTANCE OF A VARIABLE VALUE

Jean-Claude Lagier, Onex-Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland

Filed Feb. 16, 1966, Ser. No. 527,693
Claims priority, application Switzerland, Mar. 19, 1965, 3,884/65
1 Claim. (Cl. 318—348)

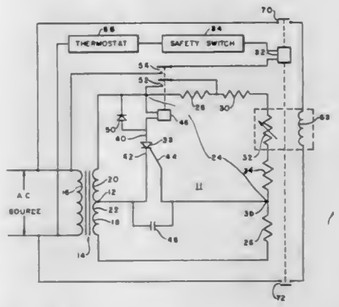


An adjustable system for feeding alternating current into an electric motor including a pair of variable resistances one of which is in series with a diode while the diode is shunted by the other resistance. A control member initially successively short-circuits the first resistance to provide a lower range of powers and thereafter successively short-circuits the second resistance to provide a higher range of powers.

3,416,060
THERMALLY RESPONSIVE CONTROL CIRCUIT WITH AUTOMATIC RESET

Egils H. Evalds, Ardmore, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,996
25 Claims. (Cl. 318—473)

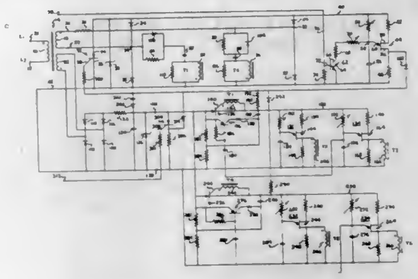


An alternating current bridge circuit output signal which varies in accordance with a temperature responsive resistance directly controls the operation of a SCR. The SCR controls the operation of a relay which in turn operates to connect and remove resistance from the bridge circuit to determine the set point and reset point temperatures for the bridge circuit. The resistance change introduced is selected to place the reset point temperature within the range of temperature the bridge circuit will sense to provide automatic resetting of the bridge circuit.

3,416,061
POLYPHASE PULSE GENERATION CIRCUIT WITH VARIABLE PHASE SHIFT CONTROLLABLE TWICE PER CYCLE

George M. Rosenberry, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 30, 1967, Ser. No. 612,603
22 Claims. (Cl. 321—5)



A pulse generation circuit having a master time-delay generator energized twice per cycle to provide timing pulses occurring an electronically variable time after energization. The timing pulses alternately energize two separate outputs, each having a pair of separate sequentially operable slave time-delay generators. The circuit

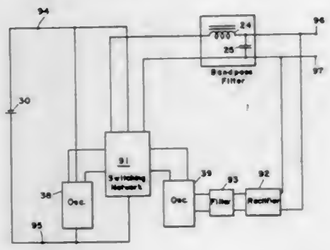
can be totally disabled, within 20 microseconds, by triggerable semiconductive devices shunting the pulse generator power supplies.

3,416,062

DEVICE FOR THE CONVERSION OF A DIRECT CURRENT INTO A SINUSOIDAL ALTERNATING CURRENT

Bo Birger Bernhard, Solna, and Gunnar Axel Kihlberg, Sollentuna, Sweden, assignors to Svenska Ackumulator Aktiebolaget Junger, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 9, 1964, Ser. No. 409,715
Claims priority, application Sweden, Nov. 12, 1963, 12,439/63
6 Claims. (Cl. 321—16)



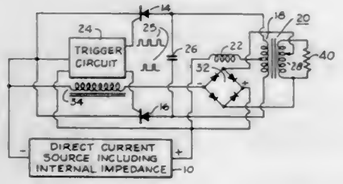
A DC to AC converter utilizing a transistor switching network controlled by two oscillators whose frequency is proportional to their input voltage, which control the transistor network in a manner to produce a two-step stair step output, the fundamental frequency of which is derived from a bypass filter and provided as the input to one of the oscillators to regulate the relative phase displacement between the oscillators in a manner to cause the output voltage to resist change. The converter further includes current control means to bias a given transistor off in the event of reverse current through that transistor, which control means is further rendered ineffective through gate means under control of the oscillators. The converter further includes differentiating means in circuit between the transistors to maintain the relative phase displacement in the network between two preset limits.

3,416,063

STABILIZED SINE WAVE INVERTER

Walter B. Guggi, Niederglatt, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,700
11 Claims. (Cl. 321—16)



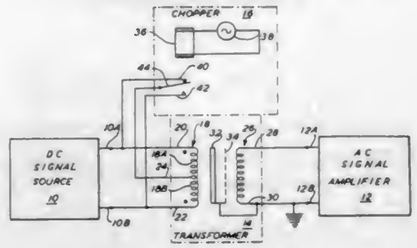
Known parallel inverters, which include current valves having thyratron-like characteristics, provide an output which may vary in voltage with change of the load on the inverter. A feedback circuit is provided to stabilize the output voltage of such an inverter, wherein some of the alternating current present in the output device is fed back by means of a feedback winding of a transformer to which the output is applied, and this fed back current is rectified and is applied in voltage parallel connection with the direct current source.

3,416,064

LOW NOISE DC TO AC SIGNAL CONVERTER

William E. Engelhard, Apalachin, N.Y., assignor to Pyro-Serv Instruments, Inc., North Arlington, N.J., a corporation of New Jersey

Filed Jan. 3, 1967, Ser. No. 606,966
2 Claims. (Cl. 321—49)



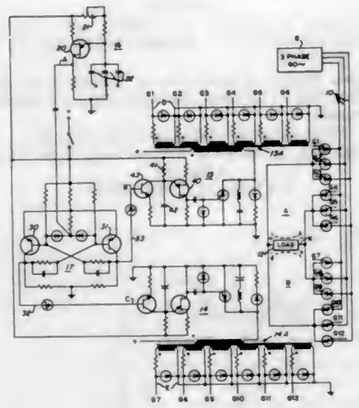
A DC to AC converter of the vibrator type wherein the DC supply is directly across the primary of a transformer and the vibrator reed is connected in between a mid tap on the transformer and contacts leading to opposite ends of the primary coil to alternately short circuit opposite halves of the coil.

3,416,065

VARIABLE FREQUENCY OSCILLATOR FOR ALTERNATELY SWITCHING ON HF GENERATORS IN A POWER SYSTEM

John T. Redfern, La Jolla, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 31, 1966, Ser. No. 591,385
2 Claims. (Cl. 321—61)



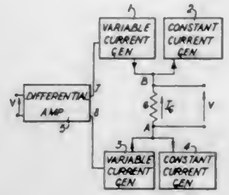
Two sets of rectifiers each convert primary AC power to DC. The two DC's are both applied to the load, but in opposite directions, and are alternately switched on. A variable frequency oscillator drives a flip flop, which alternately enables one of two HF generators. The generators enable, respectively, the two sets of rectifiers. Because of the high frequency of the two generators, no phase control nor synchronization is required.

3,416,066

CIRCUIT FOR GENERATING A FLOATING REFERENCE OUTPUT VOLTAGE

Georges Roger Bourreau, Paris, and Jean-Marie Henri Colin, Sceaux, Hauts-de-Seine, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed May 5, 1966, Ser. No. 547,950
Claims priority, application France, May 24, 1965, 18,080
6 Claims. (Cl. 323—16)



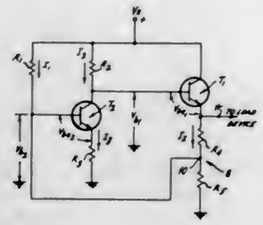
A circuit provides a floating output voltage which is proportional to the input voltage. The circuit comprises an output resistor connected to four current generators, two on each side, one of them providing a constant current and the other providing a variable current which is proportional to the input voltage, the two variable current generators being controlled for phase opposition. When the input voltage is at a null no current flows in the output resistor, however, when the input voltage is not at null, a current flows in the output resistor which is proportional to the input voltage. The variation in phase opposition can be obtained by a differential amplifier which receives the input voltage and provides two output voltages controlling the two same current generators.

3,416,067

CONSTANT VOLTAGE REGULATOR DEPENDENT ON RESISTOR RATIOS

Leander H. Hoke, Jr., Southampton, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,122
5 Claims. (Cl. 323—17)



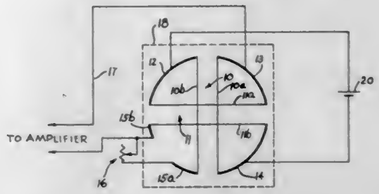
5. A voltage regulated power supply circuit comprising only: a voltage source, a first transistor and first and second resistors connected in a first series circuit across said voltage source, a second transistor and third and fourth resistors connected in a second series circuit across said voltage source, a direct connection from the control electrode of said first transistor to an intermediate point on said second series circuit, a direct connection from the control electrode of said second transistor to an intermediate point on said first series circuit, and a fifth resistor connected between one of said control electrodes and one terminal of said voltage source.

3,416,068

APPARATUS FOR DETECTING POWER RADIATED IN THE MICROWAVE-TO-OPTICAL FREQUENCY SPECTRUM

Michael D. Petroff, Los Angeles, and Stanley F. Swiadek, Pasadena, Calif., assignors to National Engineering Science Company, Pasadena, Calif., a corporation of California

Filed Apr. 18, 1966, Ser. No. 543,101
9 Claims. (Cl. 323—75)



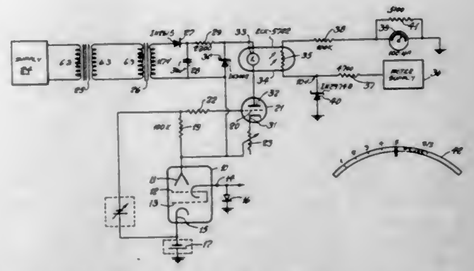
A bolometer type of device for detecting and measuring power radiated, in a waveguide or otherwise, at frequencies ranging from microwave to optical, and wherein four wires are arranged to form a Wheatstone bridge circuit, two of the bridge wires being perpendicular to and insulated from the other two wires. This crossed arrangement of the wires makes the bridge insensitive to unpolarized light and thermal radiation, but extremely sensitive to polarized millimeter and microwave radiation.

3,416,069

MEASUREMENT OF KLYSTRON REFLECTOR CURRENT

Louis Mandel, Levittown, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 21, 1966, Ser. No. 531,014
7 Claims. (Cl. 324—24)



A device for measuring the reflector current of a velocity modulated tube which includes a resistor in series with the reflector electrode and connected to the grid of a triode. The output of the triode is applied to the input of an opto-electronic means for providing an output proportional to the low amplitude reflector current and decoupled therefrom.

3,416,070

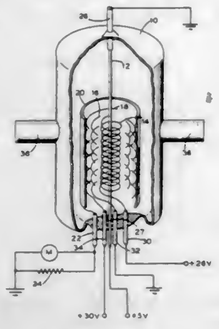
METHOD AND APPARATUS FOR SENSING GASES

James William McGowan, Jr., 810 Crest Road, Del Mar, Calif. 92014

Continuation of application Ser. No. 372,984, June 5, 1964. This application Mar. 8, 1968, Ser. No. 711,811
30 Claims. (Cl. 324—33)

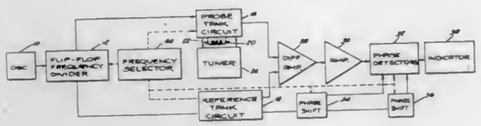
Apparatus for detecting leaks in a vacuum system; the operation thereof being based on the fact that some

gases, e.g. helium, rapidly pass through small leaks in a vacuum system and that these gases can be effectively excited by electron impact to a specific metastable state; the thus excited atom, which is unaffected by electric



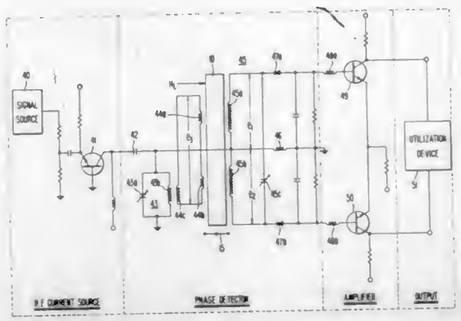
fields, can then drift to a collector for detection. However, ions and electrons which exist in the apparatus in large numbers, are effectively eliminated by electric fields. Such apparatus with collectors of different materials, permits identification of certain gases.

3,416,071
ELECTRONIC TUNER FOR INDUCTIVE PROBE TESTING APPARATUS
William C. Wiers, Ann Arbor, Mich., assignor to Automation-Forster, Inc., a corporation of Michigan
Filed Apr. 19, 1965, Ser. No. 448,925
6 Claims. (Cl. 324—40)



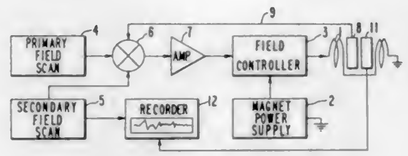
1. In a multi-frequency apparatus for use in eddy current testing a source of drive signals having a first frequency selected within a range of test frequencies, means for changing the frequency of said drive signals to a second frequency within said range, a fixed inductance probe arranged and adapted to be excited by said drive signals and loaded by a specimen, said probe having an output representing the impedance of the said probe, means providing a standard impedance output for comparison with said probe output when said probe is loaded by said specimen, variable transformer means coupled to said probe for maintaining a substantially constant impedance of said probe and said transformer means at said first and said second frequencies in the absence of a specimen, tuner means coupled to said probe for varying an inductance of said probe apparent to said transformer when said probe is loaded by a standard specimen to adjust the phase of said probe output relative to said standard impedance output, means for comparing said standard impedance output with said probe output to provide a difference signal when said probe is loaded by a test specimen, and means responsive to said difference signal for indicating characteristics of said specimen.

3,416,072
THIN FILM MAGNETOMETER EMPLOYING PHASE SHIFT DISCRIMINATION
Richard L. Fussell, Chester Springs, and Clifford J. Bader, West Chester, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 19, 1965, Ser. No. 449,183
6 Claims. (Cl. 324—43)



The present disclosure describes a thin magnetic film magnetometer in which the thin film field-dependent inductance is exploited as a reactive component in a tuned resonant circuit. Actual operative embodiments of the magnetometer employing the thin film transducer in a fixed frequency, phase variation mode of operation are also described in detail.

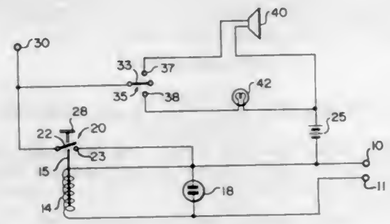
3,416,073
PRECISION MAGNETIC FIELD INTENSITY SCANNER AND MASS SPECTROMETER USING SAME
Russell S. Gutow, Jr., Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 18, 1966, Ser. No. 528,650
3 Claims. (Cl. 324—45)



A precision magnetic field intensity scanner and mass spectrometers using same are disclosed. The magnetic field intensity scanner includes a source of A.C. potential which is connected across the input terminals of a decade transformer. The decade transformer serves as a precision potential divider network to derive a multitude of discrete incremental voltages which may be selected according to the settings of the decade transformer, such selected output voltage having a precisely predetermined linearity and serving as a primary scan reference signal. A Hall effect transducer is disposed in the magnetic field to be scanned to derive a signal having an amplitude serving as a measure of the magnetic field intensity. An error detector compares the amplitude of the primary scan reference signal with the amplitude of the signal derived from the Hall effect transducer to obtain an error signal

corresponding to the difference in the amplitude of the two signals. The error signal is fed to a magnetic field controller for causing the intensity of the magnetic field to track the amplitude of the primary scan reference signal to produce a null balance condition in the output of the error detector, whereby the magnetic field intensity is caused to be scanned in accordance with the selected settings of the decade transformer. When the scanned magnetic field is the ion focusing field of a mass spectrometer, the Hall effect transducer preferably comprises a tandem connection of two such transducers to derive a magnetic field measuring signal for comparison in the error detector that varies linearly according to the second power of the magnetic field, whereby the scanned output of the mass spectrometer is linear with respect to charge-to-mass ratio.

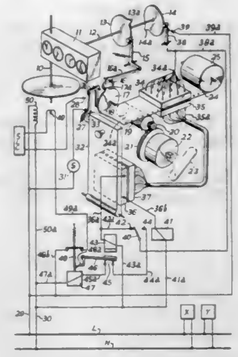
3,416,074
MULTI-UTILITY ELECTRICAL CIRCUIT TESTER INCLUDING A SOLENOID WITH ARMATURE INDICATING MEANS
Russell D. Schoonover, 2117 SW. 19th Ave., Fort Lauderdale, Fla. 33315
Filed Dec. 20, 1966, Ser. No. 603,192
8 Claims. (Cl. 324—51)



An electrical circuit tester comprising a solenoid having: a coil adapted for connection across a voltage to be monitored; and an armature which is displaced as a function of the voltage across said coil. The armature has a pointer secured thereto which translates relative to a scale from which the level of said voltage can be observed. The armature additionally provides closure of a switch when the voltage across said coil exceeds a predetermined level whereby a circuit comprising a battery and an alarm is completed. Switch means are provided for selectively including either a visual or audible alarm in said circuit. Additionally, said armature is manually actuatable to be operative in conjunction with said switch means to maintain said visual alarm energized independent of the voltage across said coil, said visual alarm thereby serving as a light source.

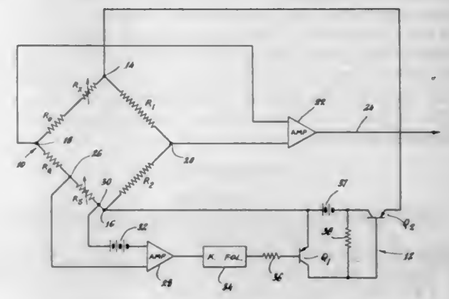
3,416,075
FIXED QUANTITY APPARATUS FOR METERING THE CONSUMPTION BY A CONSUMER OF ELECTRICITY OR THE LIKE SUPPLIED OVER A COMMON SUPPLY NETWORK AND FOR PROCESSING THE DATA REPRESENTING SUCH CONSUMPTION
Abraham Rutenberg, Haifa, Israel, assignor to Electrometre, S.A., Zug, Switzerland, a corporation of Switzerland
Continuation-in-part of application Ser. No. 8,398, Feb. 12, 1960. This application Mar. 17, 1965, Ser. No. 440,419
Claims priority, application Great Britain, Mar. 11, 1959, 8,434/59; May 28, 1959, 18,255/59
22 Claims. (Cl. 324—157)

A system and process for metering commodity consumption of electric power and like commodities and for billing for such consumption, wherein the billing is based upon issuance of a fixed-sum bill each time a predetermined quantity of the commodity is consumed. The



customer bill can be issued either locally or by transmitting signals to a remote central point from which the bill is issued.

3,416,076
VOLTAGE REGULATING MEANS FOR IMPEDANCE BRIDGE MEASURING CIRCUITS
Henry H. Clinton, Ridgewood, Clinton, Conn., assignor to The Whitney Blake Company, New Haven, Conn.
Filed June 1, 1966, Ser. No. 554,470
11 Claims. (Cl. 324—57)



1. Apparatus for determining an unknown electrical parameter of an electrical component, said apparatus comprising, in combination,

(A) a bridge network with the electrical component whose electrical parameter is to be determined connected in one arm thereof, said bridge network including
  (1) a pair of input terminals,
  (2) a pair of output terminals, and
  (3) a standard bridge circuit element connected in another arm thereof;

(B) means connected to said bridge input terminals for energizing said bridge network; and

(C) means responsive to the voltage directly across said standard bridge circuit element for controlling said energizing means so as to regulate the magnitude of said voltage across said standard bridge circuit element;

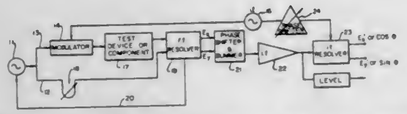
(D) whereby the magnitude of a bridge output signal developed across said bridge output terminals bears a linear relationship to the unknown parameter of the electrical component.

3,416,077

MULTIFUNCTION HIGH FREQUENCY TESTING APPARATUS IN WHICH R.F. SIGNALS ARE CONVERTED TO INTERMEDIATE FREQUENCIES AND PROCESSED BY COMMON ELECTRONIC CIRCUITS

Peter D. Lacy, Palo Alto, Calif., assignor to Wiltron Company, Palo Alto, Calif., a corporation of California

Filed Sept. 22, 1965, Ser. No. 489,113
19 Claims. (Cl. 324—58)



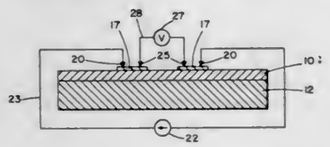
A multifunction testing apparatus for testing either the impedance, phase, or amplitude characteristics of microwave components. An R.F. signal source is swept and in one signal path is modulated by an I.F. signal, coupled into a test component, and then to an R.F. resolver. A second input to the R.F. resolver is the R.F. signal which has been delayed a predetermined time. The resolver serves as a phase coherent mixer that provides information in the form of orthogonal components as to the amplitude and phase of the complex R.F. test signal as compared to the reference path signal. The resolver produces a pair of I.F. signals whose amplitude is proportional to the $E \cos \theta$ and $E \sin \theta$ components of the test signal. The two I.F. signals are shifted in phase from each other by 90°, recombined to form a complex I.F. signal, and selectively processed in one of a pair of amplifier channels which may be linear or of a constant level due to A.G.C. The A.G.C. channel produces logarithmic amplitude and phase information. Alternatively, the linear amplifier channel provides linear amplitude information and feeds synchronous sine and cosine detectors to produce a pair of outputs suitable for plotting on a Smith impedance chart.

3,416,078

METHOD OF DETERMINING RESISTIVITY OF A THIN LAYER

Richard J. Boncuk, Scottsdale, and Albert E. Ozias, Jr., Tempe, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed July 8, 1965, Ser. No. 470,377
11 Claims. (Cl. 324—64)



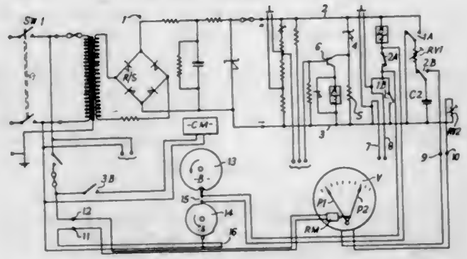
A method of determining the resistivity of a thin layer of electrically conductive material which includes applying a wide area ohmic contact directly to the thin area and in physical contact therewith. Next, a conductive circuit including the thin layer and the contact is completed in order to apply a current of known value to the contact. By measuring the induced voltage drop across the thin layer, the resistivity thereof can be determined.

3,416,079

GOLF PRACTICE DEVICES

Germain Burger, London, England, assignor to Easyserve Limited, Liverpool, England

Filed July 5, 1966, Ser. No. 562,606
Claims priority, application Great Britain, July 7, 1965, 28,866/65
7 Claims. (Cl. 324—68)



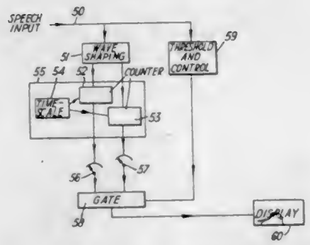
A golf practice device of the kind having a tee, and a screen onto which golf balls are driven from the tee. A timing device comprising a resistance capacitance discharge network is coupled with switches actuated by the golf ball at the tee and at the screen and is connected by suitable automatic switching at the appropriate time to an indicator which registers the charge on the capacitor in terms of the distance the drive would have carried.

3,416,080

APPARATUS FOR THE ANALYSIS OF WAVEFORMS

Esmond Philip Goodwin Wright and Wincenty Bezdel, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 2, 1965, Ser. No. 437,349
Claims priority, application Great Britain, Mar. 6, 1964, 9,638/64
5 Claims. (Cl. 324—77)



In a zero-crossing type pitch detector, the time interval between zero-crossings is measured on a non-linear time scale by counting pulses that occur within the interval, the pulses being of successively longer duration.

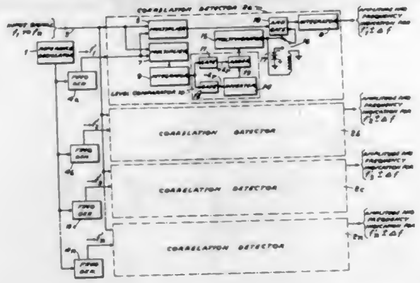
3,416,081

FREQUENCY SPECTRUM ANALYZER UTILIZING CORRELATION DETECTORS WHEREIN THE OUTPUT IS SUPPRESSED UNTIL A PARTICULAR RESPONSE IS OBTAINED

Frank S. Gutleber, Wayne, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Sept. 8, 1965, Ser. No. 485,865
9 Claims. (Cl. 324—77)

A plurality of correlation detectors each including a multiplier responding to an incoming signal to be frequency analyzed and a particular different reference frequency for each detector, a narrow band filter or integrator to provide an output when the incoming signal includes the reference frequency, and a circuit responding to the incoming frequency and the reference frequency to control the application of input signal to the filter from



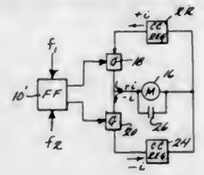
the multiplier so as to cut off the output signal from the filter abruptly at the upper and lower limits of a predetermined band of frequencies around the reference frequency.

3,416,082

RATIO COMPUTER

Milton C. Clerc, Worthington, Ohio, assignor to The Industrial Nucleonics Corporation, a corporation of Ohio

Filed July 17, 1964, Ser. No. 383,307
3 Claims. (Cl. 324—79)



1. A ratio computer for determining the pulse frequency ratio of first and second trains of pulses, comprising:

electronic switch means having two mutually exclusive stable states, two outputs for respectively signalling the condition of said states and two inputs for respectively receiving said pulse trains to effect said states by pulses respectively from said two trains,

constant amplitude source means for effecting a first source signal of one polarity at one end of the source means and a second source signal of opposite polarity at its opposite end,

said source means having a central common reference point for said first and second source signals,

first gate means having an output and having two inputs respectively coupled to said one end of said source means and to one of said two switch means outputs for gating said first source signal to said gate means output only when said switch means is in one of said two states,

second gate means having an output and having two inputs respectively coupled to said opposite end of said source means and to the other of said two switch means outputs for gating said second source signal to said second gate means output only when said switch means is in the other of said two states, and

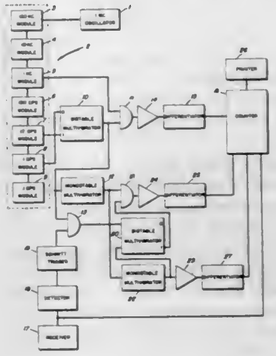
signal averaging and indicating means having two inputs, one of which is coupled to said common reference point and the other of which is coupled to both of said gate means outputs, for indicating the average of the said gated first and second source signals and thereby the pulse frequency ratio of said pulse trains.

3,416,083

PHASE COMPARATOR UTILIZING LOGIC CIRCUITRY

William E. Ray, Sykesville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 23, 1964, Ser. No. 339,823
13 Claims. (Cl. 324—83)



1. In a phase comparison network the combination comprising,

a first source of oscillations of fixed frequency and phase,

a second source of oscillations of variable phase,

means connected to said first source of oscillations for providing output pulses of a desired frequency for a desired time interval,

means connected to receive signals from said pulse producing means and said second source of oscillations for repetitively producing a cyclical signal in response to pulses from said pulse producing means, terminating production of such cyclical signal in response to said second source of oscillations, and counting the average number of cycles of said cyclical signal occurring in a predetermined time interval, and

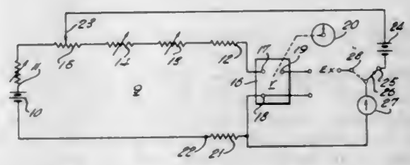
means for reading out totals from said counting means.

3,416,084

PRECISION POTENTIOMETER CIRCUIT AND METHOD FOR ESTABLISHING SAME

Loebe Julie, Riverdale, N.Y., assignor to Julie Research Laboratories, Inc., New York, N.Y., a corporation of New York

Filed Sept. 12, 1963, Ser. No. 308,492
10 Claims. (Cl. 324—98)



1. A voltage measuring circuit comprising a battery cell of voltage E_s, a variable standardized resistance R_s; a voltage divider having input and output circuits and means for adjusting the voltage across the output circuit as a function of the voltage across the input

circuit, said input circuit having a constant input impedance R_{in}; said battery cell, variable resistance and voltage divider input circuit being connected in a series circuit;

wherein the voltage V_d, across said divider input circuit is a function of the voltage E_s and a ratio of resistances, with said voltage across said divider input being equal to

$$E_s \frac{R_{in}}{R_s + R_{in}}$$

and

$$R_s < R_{in}$$

so that the ratio

$$\frac{R_s}{R_{in}} \times 100$$

is less than about 2%;

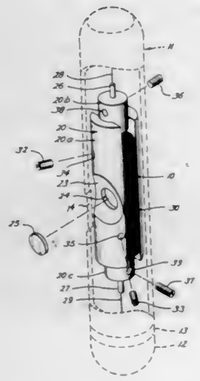
a null meter; a standard voltage source; said null meter and said standard voltage source being connectable in series across R_s and the input circuit of said voltage divider for calibration, and means connected to said voltage divider output and connectable to said null meter and a voltage to be measured for enabling the voltage appearing across said voltage divider output circuit to be used in determining said voltage to be measured.

3,416,085

GALVANOMETER SUSPENSION ASSEMBLY HAVING A SIMPLIFIED CENTER OF GRAVITY, BUOYANCY AND CENTERLINE ADJUSTMENT

Jean-Louis Gabriel Mack, Bourg-la-Reine, France, assignor to Societe de Prospection Electrique Schlumberger, S.A., Paris, France, a corporation of France

Filed June 29, 1964, Ser. No. 378,770
Claims priority, application France, July 3, 1963, 940,182
6 Claims. (Cl. 324—154)



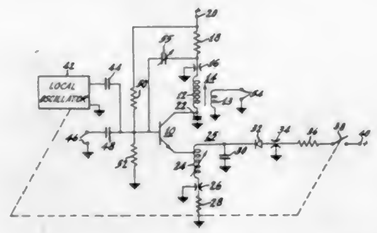
One embodiment of the invention provides two pairs of adjustable screws seated in a rotatable galvanometer body member to enable the centers of gravity and buoyancy to be aligned with the body centerline. The density of one set of screws is greater than the average density of the immersing fluid. These screws are adjusted to align the centers of buoyancy and gravity. The density of the other pair of screws is equal to the immersing fluid as well as the density of the body and enables the centers of buoyancy and gravity to be aligned with the body centerline.

3,416,086

TELEVISION SIGNAL CONVERTER CIRCUIT

David John Carlson, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,684
13 Claims. (Cl. 325—436)



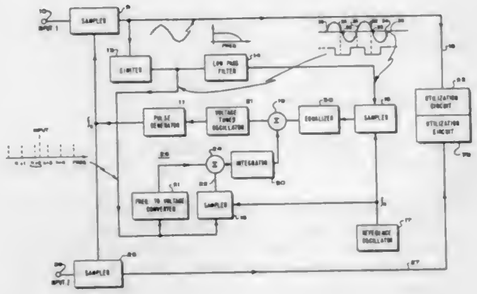
A television signal converter includes a trap circuit connected in series therewith so as to decrease the gain of the converter at undesirable beat frequencies generated during the conversion action.

3,416,087

PHASE-LOCKED SIGNAL SAMPLING CIRCUIT WITH ADAPTIVE SEARCH CIRCUIT

Giacomo Vargiu, Redwood City, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Dec. 28, 1965, Ser. No. 516,978
5 Claims. (Cl. 328—151)



1. A signal circuit comprising:

a source of sampling signal;

a sampler connected to receive an applied signal and sampling signal from said source for producing a sample pulse having an amplitude related to the amplitude of the applied signal at the occurrence of a sampling signal;

a source of reference frequency;

means connected to receive the reference frequency and the sample pulses from said sampler for producing a first control signal related to the phase relationship between the reference frequency and a selected signal component of variations in the amplitude of said sample pulses;

circuit means responsive to a selected signal component of the variations in the amplitude of said sample pulses for producing a second control signal related to the frequency of the selected signal component; and

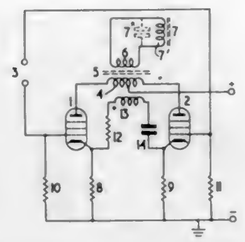
means for applying the combination of said first and second control signals to said source of sampling signals for altering the repetition frequency thereof.

3,416,088

ELECTRICAL SIGNAL AMPLIFIER

John Lewis Edwin Baldwin, Croydon, England, assignor to Rank-Bush Murphy Limited

Filed Oct. 27, 1964, Ser. No. 406,687
Claims priority, application Great Britain, Oct. 29,1963, 42,622/63
6 Claims. (Cl. 330—3)



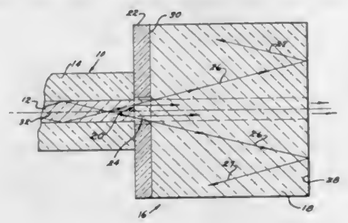
There is disclosed an amplifier for producing in an inductive load a current linearly related to a controlling signal applied to the amplifier, and more particularly, to an amplifier for supplying drive currents to a magnetic transducer head as used in magnetic tape recording apparatus. The amplifier comprises a push-pull output stage including thermionic tubes or transistors controlled by anti-phased control voltages. Changes in the voltage applied between a input electrode and a common electrode produce corresponding changes in current between the common electrode and an output electrode.

3,416,089

LASER AMPLIFIER CONSTRUCTION

Charles J. Koester, South Woodstock, Conn., and Noble S. Williams, Sturbridge, Mass., assignors, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware

Filed Apr. 3, 1964, Ser. No. 357,194
13 Claims. (Cl. 330—4.3)



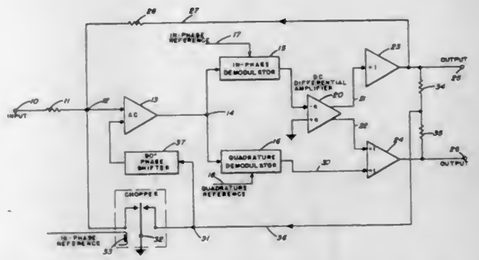
1. A laser amplifier construction for use in providing a high gain to optical signals being transmitted therethrough, said construction comprising a relatively thin elongated member having an elongated core formed of a laser material having a predetermined refractive index and including an active laser ingredient therein, and a cladding of transparent material of a lesser refractive index disposed in surrounding contacting relation with side wall portions of said elongated core, and an end extension disposed adjacent an end of said member, said extension comprising a transparent central part, an opaque part in surrounding relation to said central part, and a transparent block of appreciable length and width disposed adjacent thereto, said central part having at least as great a transverse dimension as that of said core and being aligned therewith, and said opaque part having a transverse dimension at least as great as that of said cladding, said central part and said transparent block being formed of a material of substantially the same refractive index as that of said core, and being secured together and to said core in such a manner as to remove at least to a high degree the effects of any optical interface therebetween, said transparent block being of an appreciable dimension considered in the longitudinal direction thereof so as to allow optical energy which is travelling in directions other than substantially parallel to the longitudinal direction of said core to diverge upon being emitted from the end of said core and before impinging upon an end wall of said block, and said block being of such transverse dimensions as to allow any of such divergent optical energy which is internally reflected at said end wall to spread out an even greater amount before impinging upon and being absorbed by said opaque part.

3,416,090

CHOPPER STABILIZED DIRECT CURRENT AMPLIFIER WITH PRECISION PLUS AND MINUS OUTPUT

William H. Harrison, Chatsworth, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Oct. 21, 1965, Ser. No. 500,455
7 Claims. (Cl. 330—10)



A high level DC amplifier which provides a normal inverted output and a noninverted output of approximately the same magnitudes. The inverted output is fed back in a normal manner to stabilizer the amplifier. The noninverted output is stabilized by a feedback signal comprising the sum of the two individual outputs. This sum signal is chopped, shifted 90° in phase and summed with the original error signal at the input of the high gain AC amplifier.

3,416,091

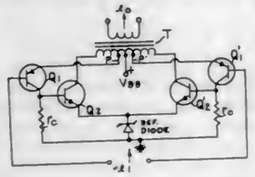
AMPLIFIER CIRCUIT HAVING FEEDBACK CONNECTION FOR REDUCING DISTORTION CAUSED BY THE NON-LINEAR CHARACTERISTIC OF ITS OUTPUT TRANSFORMER

Gilles Jozias Overtveld, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Mar. 5, 1965, Ser. No. 437,508
10 Claims. (Cl. 330—15)

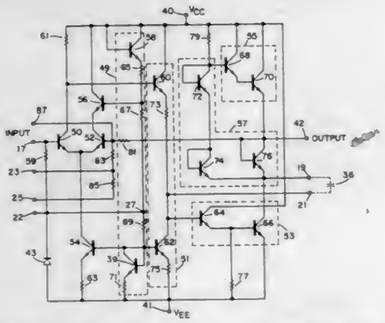
This invention relates to feedback pair amplifiers which require the use of an output transformer for connecting the amplifiers to load circuits. Because such amplifiers have very low distortion, they are much affected by the distortion caused by the output transformer which is normally used to couple such transformer to the load circuit. In accordance with the present invention, the distortion caused by the non-linear characteristic of the transformer itself is lowered by inserting the transformer in

the feedback loop of the amplifier. More particularly, the primary winding of the output transformer is provided



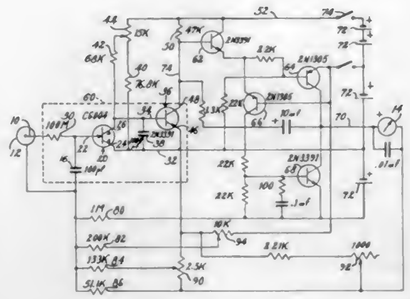
with taps and such taps are connected in the feedback loop of the amplifier to compensate for the distortion caused by the transformer.

3,416,092
MONOLITHIC POWER AMPLIFIER
Thomas M. Frederiksen, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 24, 1966, Ser. No. 589,115
17 Claims. (Cl. 330—19)



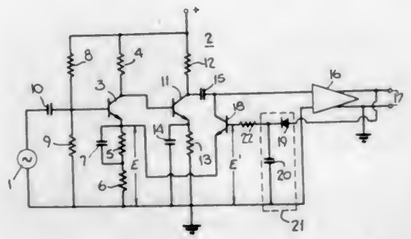
17. An electronic amplifier including, in combination;
(a) a pair of differentially connected input transistors, one of which is adapted to receive a signal to be amplified, and a first current sink connected to a common current output point of the pair of differentially connected transistors for sinking the sum of the currents which flow differentially in the pair of input transistors,
(b) a load impedance connected between one of the input transistors in said pair and a voltage supply terminal for developing a variable voltage thereat in response to changes in the level of the input signal,
(c) DC level shifting means connected to said load impedance means for providing a DC level shift from the DC voltage level appearing at said load impedance means,
(d) a first output transistor circuit portion connected between said DC level shifting means and an output terminal and responsive to changes in voltage at said DC level shifting means to produce a corresponding change in the voltage at said output terminal,
(e) a second output transistor circuit portion connected between said voltage supply terminal and said output terminal and conductively controlled by the voltage level at said DC level shifting means, said first and second output transistor circuit portions being alternately driven into conduction on each successive half cycle of the input signal, and
(f) a negative feedback means connected between said output terminal and the other of said differentially connected input transistor.

3,416,093
HIGH PERFORMANCE DC AMPLIFIER CIRCUIT HAVING INHERENTLY LOW OFFSET CURRENT
David E. Blackmer, Weston, Mass., assignor to Instrumentation Laboratory, Inc., Watertown, Mass., a corporation of Massachusetts
Filed Feb. 2, 1966, Ser. No. 524,533
9 Claims. (Cl. 330—23)



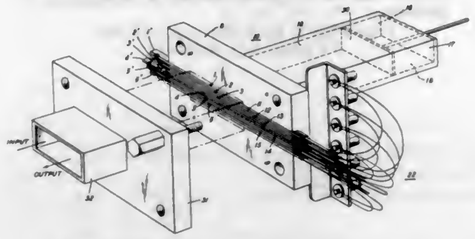
A high performance DC amplifier has an input stage that includes an N channel junction field effect transistor. Connected across the source drain channel is the emitter base junction of an NPN transistor and an adjusting network of two resistors and a potentiometer. The output of the input stage is supplied to a bilateral class B amplifier. Potentiometric feedback is employed and a forward biased condition of the gate electrode of the field effect transistor is established to maintain the gate electrode at its floating potential. The circuitry exhibits a zero current offset characteristic with a typical temperature coefficient of 10^{-14} ampere per ° C.

3,416,094
AUTOMATIC GAIN CONTROL SYSTEM
Shoichi Nakamura, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Feb. 21, 1966, Ser. No. 528,993
Claims priority, application Japan, Feb. 24, 1965, 40/10,532
6 Claims. (Cl. 330—28)



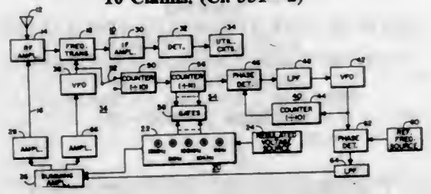
An automatic gain control system is provided which accomplishes the automatic gain control function by simultaneously controlling at least both the impedance for shunting the signal and the negative feedback so that the range of signal control is wide and signal distortion is unlikely to occur, whereby the said automatic gain control system is especially well suited for use in recording amplifiers of tape recorders inasmuch as no volume control is required.

3,416,095
MICROWAVE AMPLIFIER AND OSCILLATOR
Herbert E. Earl, Jr., Monroe Township, Middlesex County, N.J., and Kenneth E. Woo, South Pasadena, Calif., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 19, 1966, Ser. No. 543,626
6 Claims. (Cl. 330—56)



1. In combination:
a section of conductively bounded waveguide supportive of electromagnetic wave energy;
a plurality of two terminal solid-state devices;
each of said devices being separately mounted and supported within individual holders;
means for stacking said holders across said waveguide in a common plane perpendicular to the direction of wave propagation;
each of said holders including means for independently applying bias to the device mounted therein;
and each of said holders being capable of transverse movement across said waveguide.

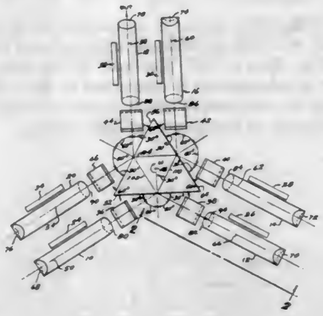
3,416,096
FREQUENCY SYNTHESIZER SYSTEMS FOR GENERATING ACCURATE RADIO FREQUENCY SIGNALS OF SELECTED FREQUENCIES
Kap S. Kim, Fairport, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 613,307
10 Claims. (Cl. 331—2)



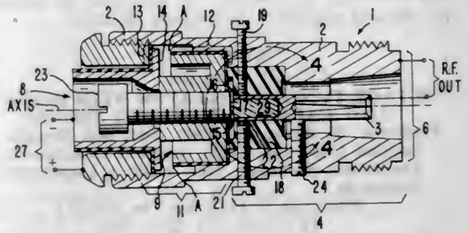
A frequency synthesizer is described which is suitable as a signal generator or for providing an injection signal to a frequency translator of a radio system. Phase locked loop techniques are used wherein a first phase locked loop is used to drive a second loop. The driven loop includes a frequency divider and synthesizes frequencies which are adapted to be phase compared with a precision reference frequency or with signals from the driving phase locked loop. Both loops operate conjointly to synthesize signals over a wide frequency range.

3,416,097
Q-SWITCHED LASER SYSTEM
George R. Simpson, South Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,520
5 Claims. (Cl. 331—94.5)

A laser system comprised of a multiplicity of elongated laser components, means for pumping the components to an inverted energy state and means for intermittently coupling the components in optically interconnected series relationship with each other as a single resonant cavity with simultaneous Q-switching at each occurrence of coupling.



3,416,098
BULK-EFFECT NEGATIVE-RESISTANCE MICROWAVE APPARATUS EMPLOYING A COAXIAL MICROWAVE CIRCUIT STRUCTURE
Arthur B. Vane, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 26, 1967, Ser. No. 641,556
8 Claims. (Cl. 331—107)



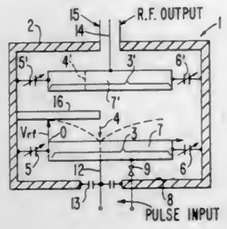
A bulk-effect negative-resistance semiconductor microwave oscillator is disclosed. The microwave circuit includes an *rf* output section of coaxial line which is closed at one end for microwaves by a DC insulated and microwave choked conductive plug disposed across the outer conductor. The center conductor of the section of coaxial line terminates near the inner face of the plug. A pair of conductive posts are disposed in the coaxial line adjacent the plug to form a lumped constant resonant microwave circuit. One post is conductively connected between the inner and outer conductors and is predominately inductive while the other post is predominately capacitive and may be made movable for tuning the microwave circuit.

3,416,099
BULK-EFFECT NEGATIVE-RESISTANCE MICROWAVE DEVICE EMPLOYING A HALF WAVE OPEN CIRCUIT RESONATOR STRUCTURE
Arthur B. Vane, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 26, 1967, Ser. No. 641,536
9 Claims. (Cl. 331—107)

A bulk-effect negative-resistance microwave device is disclosed. The bulk-effect device is coupled to the fields of a half wave resonator structure for producing output

microwave power at or near the frequency of the resonator. The resonator structure is open circuited at its ends to provide a microwave voltage null near the center thereof.

The bulk-effect device is connected in shunt with the resonator at a low microwave voltage point near its central region. Also a D.C. bias lead having high series impedance to microwaves is connected to the half wave resonator at the microwave voltage null to minimize microwave coupling to the source of bias voltage.

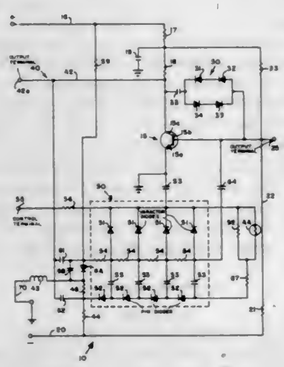


A second similar half wave resonator is inductively coupled to the first resonator for coupling output microwave energy to a load. The two resonators are contained in a housing and in one embodiment an inductive coupling is provided therebetween. Relatively high microwave impedance capacitors are connected across the open circuited ends of the half wave resonators for physically shortening the resonator structure, for lowering the surge impedance $\sqrt{L/C}$, for holding off the D.C. bias voltage and for tuning. In addition, the capacitors are employed for physical support of the resonant structure.

3,416,100
VOLTAGE TUNED OSCILLATOR WITH RESISTIVE AND CAPACITIVE TUNING DIODES

Frederick W. Kruse, Jr., Palo Alto, and Douglas L. Baskins, Cupertino, Calif., assignors to Kruse-Storke Electronics, Mountain View, Calif., a corporation of California

Filed Apr. 7, 1967, Ser. No. 629,163
17 Claims. (Cl. 331—108)

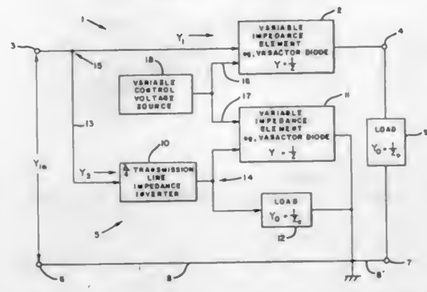


An oscillator including an amplifier with a feedback loop containing a voltage controlled phase shift circuit. The phase shift circuit comprises variable capacitance diodes in the form of varactors and variable resistance diodes in the form of PIN diodes. By controlling the voltage applied to the variable capacitance diodes and by controlling the current flow through the variable resistance diodes, the phase shift of the phase shift circuit is adjusted for selecting the oscillating frequency of the voltage tuned oscillator.

3,416,101
VARIABLE ATTENUATOR

Johannes Van Sandwyk, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,794
7 Claims. (Cl. 333—9)

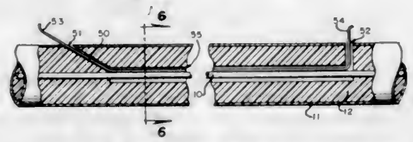


This network has a constant input impedance Z_0 for attenuating an input signal having a predetermined frequency. The network includes a first variable impedance element having an impedance Z connected between input and output terminals, a load connected between the output and ground and having an impedance Z_0, and a by-pass circuit connected between the input terminal and ground. The by-pass circuit comprises an impedance inverter having a characteristic impedance Z_0 and the parallel combination of a second variable impedance element also having an impedance Z and a load having an impedance Z_0 connected between the inverter and ground. The impedance Z is varied to change the attenuation of the network.

3,416,102
METHOD AND APPARATUS FOR TAPPING A COAXIAL CABLE

Philip D. Hamlin, 12611 Standring Lane SW., Seattle, Wash. 98146

Filed July 7, 1966, Ser. No. 566,706
17 Claims. (Cl. 333—10)



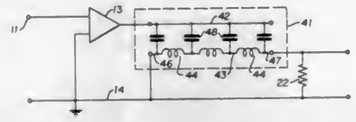
9. A tap for a coaxial cable comprising a branch conductor, a section of outer conductor, and a piece of dielectric connecting the branch conductor to the section of outer conductor; the branch conductor, the section of outer conductor, and the dielectric forming an insert adapted to be positioned in a cavity in the coaxial cable.

3,416,103
ELECTRONIC PULSE LINE FOR PRODUCING SYMMETRICAL SQUARE-TOPPED PULSES

William W. Goldsworthy, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 5, 1966, Ser. No. 540,421
5 Claims. (Cl. 333—20)

An electronic pulse line for producing a symmetrical square-topped output signal from a step pulse input signal. The input pulses are applied to the shield or common side of a pulse delay line while output signals are taken from an inner conductor capacitively coupled to the shield. With the input end of the inner conductor grounded

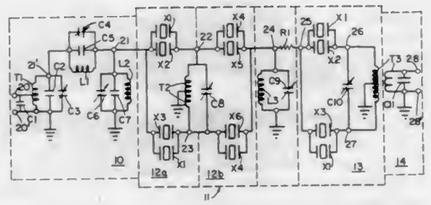


and the output side terminated in the characteristic impedance of the pulse line, the various pulses and reflected pulses combine at the output to provide the desired waveform.

3,416,104
BAND-PASS CRYSTAL FILTERS

Evangelos Argoudelis, Chicago, Ill., assignor to Filtech Corporation, Franklin Park, Ill., a corporation of Illinois

Filed May 5, 1965, Ser. No. 453,443
11 Claims. (Cl. 333—72)

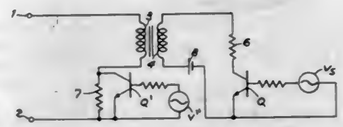


1. A piezoelectric crystal filter arrangement for passing a narrow frequency band of electrical signals from a source having a relatively wide frequency band of electrical signals comprising:
- an input circuit for receiving said wide band of signals;
- an output circuit for receiving said narrow band of signals;
- at least one unsymmetrical half section interposed between said input and output circuit to pass said narrow frequency band and to substantially attenuate the remainder of said wide band, said half section comprising a first leg coupled to a second leg;
- a first piezoelectric crystal element included in said first leg, said first crystal element resonating at a high frequency near the high frequency side of said narrow frequency band;
- a second piezoelectric crystal element included in said second leg, said second crystal element resonating at a low frequency near the low frequency side of said narrow frequency band, the coacting of said first and second crystal elements essentially forming the frequency band-pass of said half section;
- a third piezoelectric crystal element coupled to said first leg; and
- a fourth piezoelectric crystal element coupled to said second leg, said third and fourth crystal elements resonating at frequencies near one side of said narrow band to provide substantially greater selectivity on said one side than on the other side of said half section band-pass.

3,416,105
VARIABLE REACTANCE ELEMENT

Lucio M. Vallese, Glen Ridge, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed Apr. 21, 1966, Ser. No. 544,199
7 Claims. (Cl. 333—80)

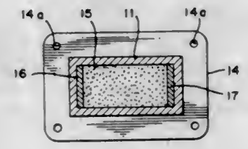


This is a nonlinear reactance element having a variable resistance element in series with the secondary of a transformer whereby variations in the resistance element produces variations of inductive reactance at the primary terminals of the transformer. Negative resistance means are electrically coupled to the primary winding in order to reduce the effective reflected resistance from the secondary to the primary terminals.

3,416,106
BROADBAND MICROWAVE WAVEGUIDE WINDOW

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Charles T. Stelzried and Donald L. Mullen, both of La Crescenta, Calif.

Filed Dec. 27, 1966, Ser. No. 605,094
5 Claims. (Cl. 333—98)



1. In a waveguide section defining a waveguide channel having a predetermined height and width which are controlling the bandwidth of frequencies of a selected range of frequencies of microwaves which can propagate through said section, the improvement comprising:
- a pair of electrically conductive strips positioned in said channels near two opposite sides thereof in electrical contact with said sides, to decrease the width of said channel, the height of each strip being equal to the height of said channel; and
- a material with preselected dielectric constant filling said channel, the thickness of said strips being directly related to the dielectric constant of said material, said strips by reducing the width of said channel, substantially compensating for the effect of said material in said channel on the bandwidth of the frequencies which are to propagate through said channel.

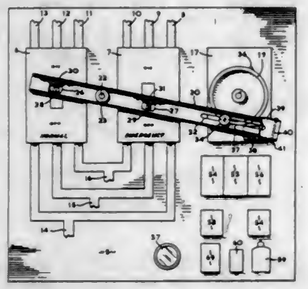
3,416,107
TRANSFER DEVICE

Robert G. Anderson, Streetsville, Ontario, and William M. Donald, Toronto, Ontario, Canada, assignors to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada

Filed Jan. 12, 1966, Ser. No. 520,108
Claims priority, application Canada, Sept. 23, 1965, 941,208
16 Claims. (Cl. 335—11)

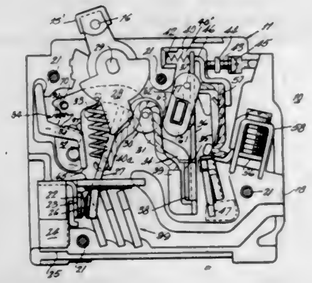
A transfer device comprises a pair of circuit interrupters supported in a side-by-side relationship, an actuating mem-

ber supported for pivotal movement and a motor mechanism operable to pivot the actuating member to operate



the circuit interrupters in order to transfer from one power supply to another power supply.

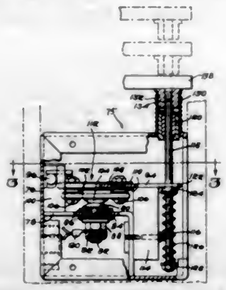
3,416,108
AUTOMATIC RELATCHING CIRCUIT BREAKERS
Felix E. Myers, Haddon Heights, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 18, 1966, Ser. No. 535,435
5 Claims. (Cl. 335—37)



An automatic relatching circuit breaker including a small biasing spring arranged to return the cradle of an over-center spring mechanism from its "tripped" to its "off" or reset position in response to a tripping operation caused by the occurrence of a fault. Because the main spring of the over-center mechanism is only slightly extended when the cradle thereof is moved from its "tripped" back to its latched or reset position, the biasing spring for accomplishing such movement of the cradle may be made relatively small. Furthermore, once the cradle is moved by the biasing spring from the "tripped" to the reset position, the latch of the circuit breaker is positioned in blocking relationship with respect to any possible movement of the cradle such that it is the latch which maintains the cradle in its latched or reset position against the bias of the now slightly extended main spring of the over-center mechanism.

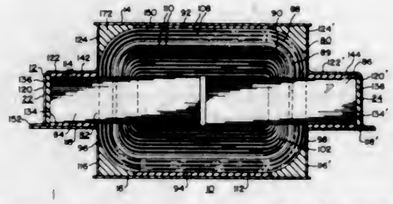
3,416,109
DELAYED ACTION SWITCHING DEVICE
Peter F. Gandolfo, Wellesley, and Gerald F. Russes, Watertown, Mass., asisgnors to Lewis Shepard Company, Watertown, Mass., a corporation of Massachusetts
Filed Dec. 8, 1965, Ser. No. 512,487
3 Claims. (Cl. 335—59)

A switch having an electrically conductive armature held in a normally closed position against a plurality of contacts by a magnetic holding force. The armature is moved to an open position spaced from the contacts by overcoming the magnetic holding force with an opposite



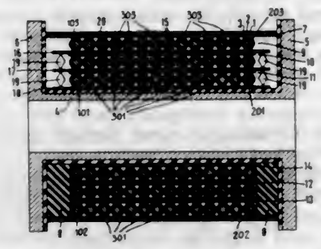
gradually increasing opening force exerted by a spring loaded operating lever connected to the armature.

3,416,110
FLUID COOLED TRANSFORMER HAVING CASING SUPPORTED COILS AND CORE
Robert D. Morris and Robert H. Hollister, Sharon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1967, Ser. No. 630,877
12 Claims. (Cl. 336—57)



An electrical transformer having a form-fit casing and a magnetic core-winding assembly disposed therein. The sidewall portions of the casing support and maintain the integrity of the magnetic core, and the top and bottom portions of the casing support the electrical winding assembly and restrain it against movement during short circuit stresses. The casing is completely filled with a fluid dielectric, which is force circulated through the winding assembly and external heat exchanger means.

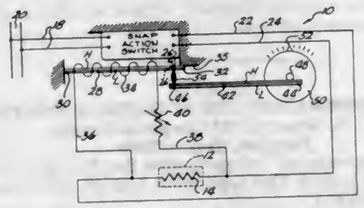
3,416,111
SUPERCONDUCTIVE SPOOL WITH REFRIGERANT-HOLDING SPOOL CARRIER
Gunther Bogner, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Sept. 9, 1966, Ser. No. 578,393
Claims priority, application Germany, Sept. 11, 1965, S 99,383
18 Claims. (Cl. 336—60)



Superconductive spool includes several winding layers coextensively wound on a spool carrier adjacent each

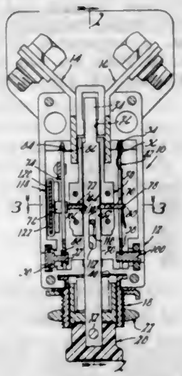
other, each having a pair of opposed outer windings and several intermediate windings. The spool carrier has a pair of opposed outer walls facing the outer windings, at least one of which is spaced therefrom by several spacer bodies in turn spaced circumferentially from one another. A heat-conducting foil is located between adjacent winding layers in heat-conductive contact with at least one of the layers and has tabs extending into the space between the spacers for engagement with a refrigerant received therein.

3,416,112
ELECTRIC HEATER CONTROL APPARATUS UTILIZING TEMPERATURE RESPONSIVE LEVER
Charles C. Perry, Ann Arbor, Mich., assignor to W. M. Chace Company, Detroit, Mich., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,785
7 Claims. (Cl. 337—40)



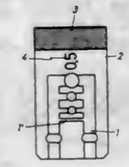
Electric space heater control apparatus in which a thermostatic bimetal element and a temperature responsive lever coact to control an "on-off" switch for the heater so as to sense the heat loss rate from the space and produce an equal generation rate. The temperature responsive lever is adjustably mounted and deflects, when it cools, in a direction to close the heater switch. When the heater switch is closed, an electric resistance heater for the bimetal element is energized to heat the element resulting in deflection of the element in a direction resulting in opening of the space heater switch.

3,416,113
CIRCUIT BREAKER
John MacDonald, Edward J. Eden, and Franklin D. Myers, Jackson, Mich., assignors to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,163
2 Claims. (Cl. 337—74)



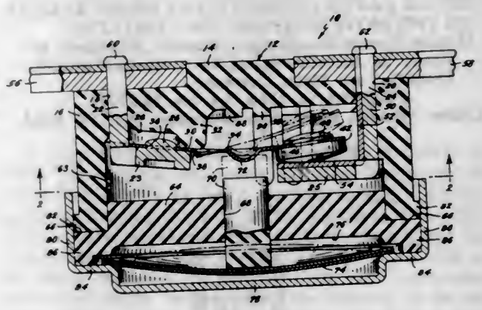
A push-pull type aircraft circuit breaker in which a push-pull manual operator supports a slidable contact carrier. The contact carrier is positioned relative to a fixed contact by a laterally extending cross slide which is engaged with a current responsive bimetal and a latch element. The bimetal and latch extend generally parallel to the manual operator.

3,416,114
PLUG-IN TYPE FLAT FUSE
Johannes Bernutz, Ludwigsburg-Hoheneck, and Elmar Schlögl, Munich, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,717
Claims priority, application Germany, Apr. 23, 1965, St 23,729
1 Claim. (Cl. 337—293)



A multi-valued plug-in fuse in which parallel conductors are provided on a plug body of insulating material between which a plurality of fusible leads of different cross-sections are connected. A spark gap is arranged at the ends of the parallel conductors in parallel with the fuse leads.

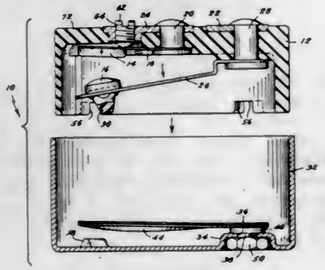
3,416,115
THERMOSTATIC SWITCH WITH IMPROVED CAPACITY AND AUTOMATIC CALIBRATION
John O. Moorhead, Lexington, and John T. Hancock, Versailles, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,606
9 Claims. (Cl. 337—343)



An automatic reset switch having especially high electrical rating for a given minimal size is disclosed, in which improved contact supports (movable and stationary) are provided which cooperate with reference surfaces of the housing to determine a given contact pressure without further calibration of the device. The supports and contacts are relatively massive to also serve as heat sinks to conduct the electrically generated heat away from the switching area. The stationary contact is elliptical in shape and conforms closely to the inside cylindrical side wall of the switch to maximize arc absorption and quenching. The contacts are also relatively massive to facilitate arc absorption and dissipation. A thermal element is mounted in an electrically separated section of the switch and is operatively connected to a flat, spring

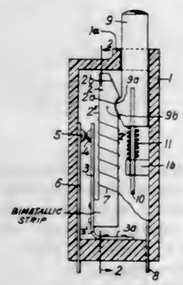
arm mounting the movable contact by means of a transfer pin which is adapted to contact a dimple portion of the spring arm resulting in pivotal movement of the arm with respect to the pin. The spring arm is of a particular configuration to give minimal electrical resistance and spring rate with concomitant maximal flexing life and volume. Arc shadow means is provided in the switch chamber to prevent conductive tracking of the vaporized contact material.

3,416,116
THERMOSTATIC SWITCHES
Leo Marcoux, Pawtucket, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Dec. 19, 1960, Ser. No. 76,590, now Patent No. 3,240,908. Divided and this application Jan. 24, 1966, Ser. No. 545,180
5 Claims. (Cl. 337—347)



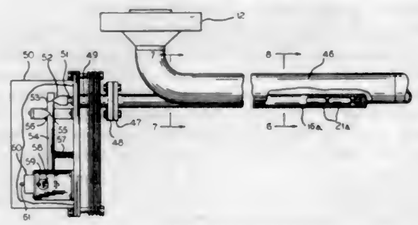
A thermostatic switch for opening or closing an electrical circuit on temperature rise including means for effecting calibration of the switch externally of its housing and including spring mounting of the contacts to provide vibration resistance and better contact engagement.

3,416,117
THERMALLY RESPONSIVE SWITCH WITH A BIMETAL LATCH OPERATING AT RIGHT ANGLES TO THE MOVEMENT OF THE CONTACTS
Helmut Grosse-Brauckmann, Hameln, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 14, 1966, Ser. No. 586,722
Claims priority, application Germany, Oct. 15, 1965, L 51,910
9 Claims. (Cl. 337—358)



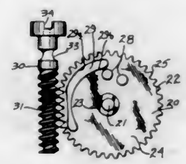
1. A switch comprising, in combination:
(a) a housing;
(b) a stationary contact arranged in said housing;
(c) a leaf spring having one end secured to said housing and carrying, at a point spaced from said one end, a movable contact which, with said leaf spring, is movable into and out of engagement with said stationary contact;
(d) a bimetallic strip lying generally in a plane parallel to the direction in which said leaf spring moves, said bimetallic strip, under the influence of heat, flexing in a direction at right angles to the direction in which said leaf spring moves, one end of said bimetallic strip being secured to said leaf spring, the other end of said bimetallic strip being a free end;
(e) an actuating element carried by said housing and mounted for movement to engage an edge of said free end of said bimetallic strip to move the same and with it said leaf spring and said movable contact from open to closed position upon actuation of said actuating element, said free end of said bimetallic strip, when the latter is flexed under the influence of heat, moving out of the sphere of influence of said actuating element; and
(f) means for interlocking said actuating element and said bimetallic strip while the switch is in its closed position and said bimetallic strip is not flexed under the influence of heat.

3,416,118
STEAM GENERATOR COIL OVERHEAT CONTROL
J. D. Kimmel, 1531 Imperial Crown, Houston, Tex. 77043
Continuation-in-part of application Ser. No. 507,277, Nov. 12, 1965. This application Aug. 30, 1967, Ser. No. 665,673
6 Claims. (Cl. 337—382)



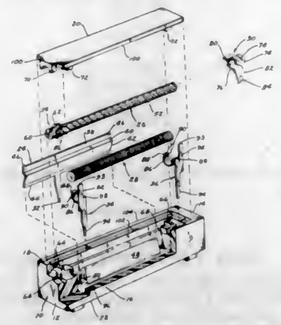
Coil overheat control for steam generators including a differential expansion device for operating a switch means and being integral with the coil of the steam generator.

3,416,119
VARIABLE RESISTANCE CONTROL WITH CLUTCH MECHANISM
John D. Van Benthuysen, Elkhart, Ind., and Donald L. Kleykamp, Portage, Mich., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed Apr. 20, 1966, Ser. No. 543,939
11 Claims. (Cl. 338—174)



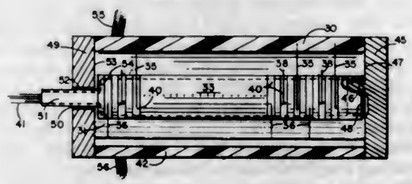
Lead screw type variable resistance control having a slip clutch mechanism to prevent overdriving of a contact relative to a resistance element. Clutching action is obtained by using a driven member having a rim movable in a radial direction away from a driving member. Clutching action occurs when the driven member has reached its limits of travel.

3,416,120
POTENTIOMETER
Robert F. Klug and Larry B. Lindquist, Columbus, Nebr., assignors to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed Nov. 4, 1966, Ser. No. 592,077
16 Claims. (Cl. 338—183)



A potentiometer device having a housing having a closure cover plate and a resistance coil, lead screw and collector member extending the length of the housing. A wiper arm is carried upon said lead screw and extends between the resistance coil and the collector member. Integral terminals for the resistance coil are provided which extend through the housing and are in supporting engagement with the resistance coil at its opposite ends. The collector member is positioned along one side wall of the housing and is yieldably held in position by an upstanding wall in the housing and the cover or closure member.

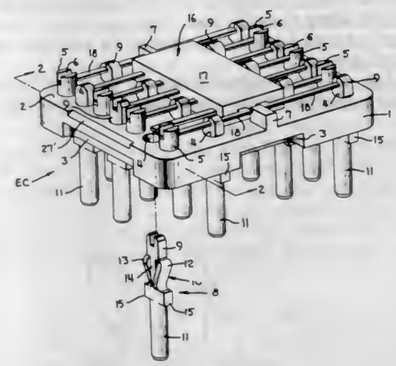
3,416,121
BEARINGLESS SLIP RING ASSEMBLY
Edward W. Nealon and Leo D. Yeutter, Orange, Dick B. Cahoon, Brea, Thomas F. Brasher, Diamond Bar, and John P. Moore, Laguna Beach, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,221
14 Claims. (Cl. 339—8)



A combination slip ring and bearing assembly for rotary shafts in which three rotor-brush block sections are located at 120° intervals around the rotary shaft. Each brush block section includes at least one pair of wiper wires which contact the rotary shaft on opposite sides thereof. In this manner there are wiper contact points at 60° intervals and the need for a conventional bearing is eliminated.

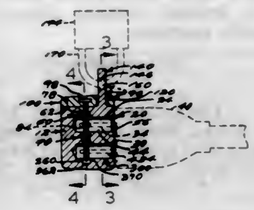
3,416,122
ELECTRICAL CONNECTORS FOR TERMINATING LEADS OF MICRO-MODULAR COMPONENTS OR THE LIKE
Robert John Kinkaid, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 21, 1966, Ser. No. 535,939
14 Claims. (Cl. 339—17)

A connector construction comprises a carrier member for carrying a micro-modular component having a series of leads extending outwardly therefrom with pin members disposed in the carrier member including crimping members for receiving the leads and in which the leads are



crimped to provide a carrier assembly unitable to a board or mounting means for interconnection with other circuitry thereon.

3,416,123
PLUG BLOCK
James L. Husebo, 5132 Evans St., Omaha, Nebr. 68104
Filed Feb. 28, 1966, Ser. No. 530,443
4 Claims. (Cl. 339—37)

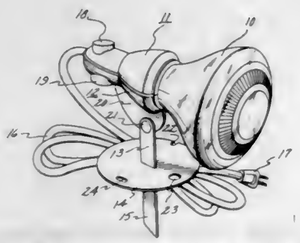


A plug block electrical cord and plug assembly in which the plug has two prongs extending into prong recesses in a side of the body, the body having a retainer opening extending through another side thereof, an elongated retainer disposed in the retainer opening and extending through the small prong openings in the ends of the prongs to retain the prongs in the block, releasable preventing means for preventing the removal of the retainer from its prong-retaining position, the body having a hasp opening therethrough, a padlock having its hasp extending through said hasp opening, the position of said hasp opening being such that said hasp opening and said padlock form parts of said releasable preventing means.

3,416,124
LAMP HOLDER
Stuart Irvine, Toronto, Ontario, Canada, assignor to Canadian General Electric Company Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Mar. 22, 1961, Ser. No. 97,670
1 Claim. (Cl. 339—117)

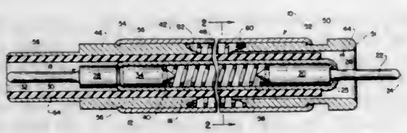
1. A combination lampholder and outlet for outdoor floodlight units comprising
a casing split longitudinally to provide a complementary,

apertured base, and
aperture-free cover member,
said casing being divided by a laterally extending wall into a closed end electrical connection compartment, and
an open ended lamp receiving compartment,
said wall having electrodes extending therethrough generally along the split line of said cover and base for contact with a lamp base received in said open ended compartment,
the base of said casing having at least one moisture drain aperture in the open ended compartment,



said casing having fin means depending from the external base wall of said open ended compartment,
said casing having plug receptacle apertures through the base wall of said closed end compartment,
electrical power supply cord extending through the wall of said closed end compartment at the split line of said cover and base
said cord being electrically connected to said electrodes and to terminal contacts aligned with said plug receptacle apertures.

3,416,125
CO-AXIAL CONNECTOR
Charles R. Theve, Barrington, R.I., assignor to Ostby & Barton Co., a corporation of Rhode Island
Filed Oct. 20, 1966, Ser. No. 588,689
5 Claims. (Cl. 339—177)



Co-axial connectors extending through a movable panel, and arranged in a pattern to contact corresponding junctions on a second panel at one end, and to be joined at the other end by mating connection means. The connectors have inner and outer sleeves which contain spring-projected butt contacts.

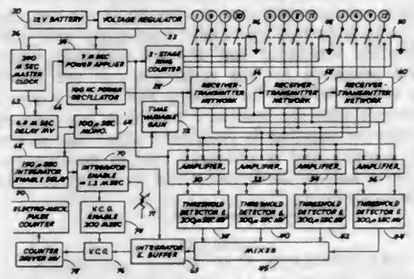
3,416,126
CONTACT PIN AND MANUFACTURE THEREOF
George J. Calevich, Cleveland, and George A. Goerss, Jr., Cleveland Heights, Ohio, assignors to General Electric Company, a corporation of New York
Filed Apr. 18, 1966, Ser. No. 543,294
3 Claims. (Cl. 339—275)

An electrical contact pin and a welded leading-in wire including the pin. The pin has a generally tapering surface at one end and a transverse V-shaped notch at the opposite end accommodating the weld knot of the lead-



ing-in wire. A wire cutter mechanism for forming the pin is included.

3,416,127
FISH COUNTING DEVICE
Albert S. Menin, Lakeview Terrace, and Reginald J. Cyr, Woodland Hills, Calif., assignors to The Bendix Corporation, a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,240
8 Claims. (Cl. 340—3)

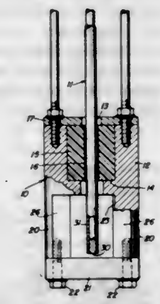


A system for counting migrating fish in a stream using a series of acoustic transducers arranged on a structure extending out into the water perpendicular to the shore such that the fish swim across the structure, the transducers being electrically connected in groups to a counting circuit such that adjacent transducers will not count the same fish. The battery-powered counting circuit includes a master clock producing regular pulses which initiate the timing cycle for each group of transducers in rotation. During each cycle the power to the receiver and transmitter is turned on for a short period sufficient to enable return pulses to be received from the expected range and then turned off to conserve power. The received pulses are of varying amplitude due to the varying target strength of the fish as its aspect changes when passing through the sonar beam. Any received echoes exceeding a certain predetermined threshold trigger a monostable multivibrator to provide equal strength pulses which are then stored on a capacitor, and the capacitor voltage, which varies with the number of pulses, effectively controls the frequency output of a voltage-controlled oscillator whose output, in turn, operates an electromechanical impulse counter.

3,416,128
ELECTRODE FOR ELECTROHYDRAULIC SYSTEMS
Merton Allen, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1966, Ser. No. 586,861
2 Claims. (Cl. 340—12)

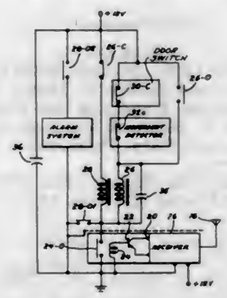
An electrode construction adapted for use in an electrohydraulic system in which shock waves in a substantially incompressible dielectric liquid are produced by

arc discharges between terminals of the electrode which are submerged in the liquid. The electrode is characterized by a rod-like, axially movable high voltage rod having an insulating outer coating, and a rod-like ground po-



tential arcing member resiliently and rotatably mounted with its axis lying in a plane containing the axis of the high voltage rod, the two axes being substantially perpendicular to each other, both members being supported by a ground potential body.

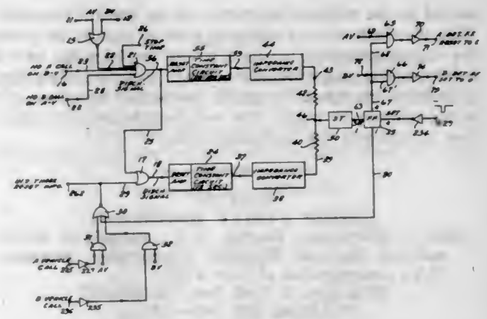
3,416,129
VEHICLE ALARM SYSTEM
Arthur L. Dean, Stoney Creek, Ontario, Canada, assignor to Syntron (Canada) Limited, Stoney Creek, Ontario, Canada
Filed Sept. 7, 1965, Ser. No. 485,184
Claims priority, application Canada, Nov. 12, 1964, 916,224
6 Claims. (Cl. 340—32)



1. A motor vehicle warning system comprising: means designed and constructed, when energized, to emit a sensible alarm apparent on the inside of said vehicle, a circuit constructed and designed to energize said means when closed, means energizable by the receipt of a transmitted signal to close said circuit to energize said alarm, means independent of signals originating exterior to said vehicle designed to provide a response conditional on the movement of the vehicle at lower than a predetermined speed for opening said circuit and terminating said sensible indication.

3,416,130
TRAFFIC ACTUATED CONTROL SYSTEM
Peter Clinton Brockett, Milford, Conn., assignor to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 505,874
10 Claims. (Cl. 340—37)

An improved traffic actuated control system for the timing of a variable time extension increment or limiting time "gap" between vehicle actuations in prolonging the green or right of way period of a traffic signal cycle. The system employs solid state switching, gating and RC timing circuits. The voltage output from a "gap reduction timer" is additively coupled through a voltage divider circuit to the voltage output from a "gap timer," the gap timer normally having a considerably shorter time constant and being resettable by vehicle actuation on the traffic phase having the right of way, to so extend the right of way period. The relatively slowly increasing voltage of the gap reduction timer progressively reduces the voltage level required to be reached by the progressively increasing voltage of the gap timer between resetting vehicle actuations, for the combined voltage to operate a trigger circuit, thus reducing such limiting time gap. The trigger circuit is coupled to substantially a mid-point on the voltage divider circuit to receive the combined voltage as an average of the respective voltage outputs. High impedance buffer circuits couple the respective voltages of the two timers to the voltage divider circuit.



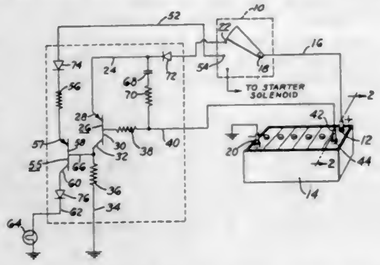
Gating circuits, controlled by vehicle actuation input circuits for respective traffic phases and by respective steps of a step-by-step switching circuit providing a control cycle corresponding to right of way periods for the respective traffic phases, serve to control initiation of timing of the two timing circuits on the phase having right of way, in response to vehicle actuation on the other phase, and to control reset for such gap time extension by vehicle actuation on the phase having right of way, in selected steps.

Operation of the trigger circuit by the combined voltage reaching a triggering level, initiates transfer of right of way from one phase to another by switching a flip-flop circuit which acts through further gating circuits and a third timing circuit to time a brief continuation of the right-of-way period and thereupon to advance the step switching circuit for transfer of right of way.

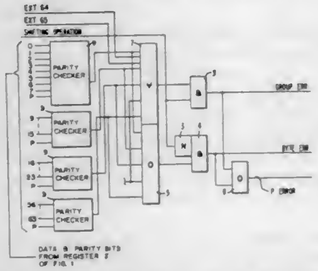
3,416,131
TRANSISTORIZED ELECTROLYTE LEVEL INDICATOR
Robert P. MacKenzie, Muncie, and William D. Worrell, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 13, 1965, Ser. No. 425,153
6 Claims. (Cl. 340—59)

A transistorized electrolyte level indicator for indicating that the electrolyte of a wet cell battery has fallen below an acceptable minimum. The un-grounded battery terminal is connected to the power terminal of a switch having a movable contact engageable with associated accessory and ignition terminals in one position and only the ignition terminal in another position. The emitter-collector electrodes of a control transistor are connected across the accessory terminal and ground and the base

electrode thereof is connected to an electrical probe extending through one battery cap with the tip located a distance above the battery plates equal to the minimum acceptable electrolyte level. The emitter-collector electrodes of a switching transistor and the filament of an electric indicating lamp are connected in series across the ignition terminal and ground and the base thereof is connected to the collector electrode of the control transistor. With the electrolyte of sufficient level to engage the probe, the control transistor is conductive to maintain the switching transistor non-conductive. When the electrolyte level falls below the tip of the probe, the control transistor goes nonconductive to trigger the switching transistor conductive to energize the indicating lamp.



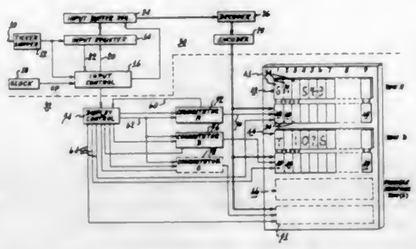
3,416,132
GROUP PARITY HANDLING
Olin L. MacSorley, Beacon, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 5, 1965, Ser. No. 445,317
6 Claims. (Cl. 340—146.1)



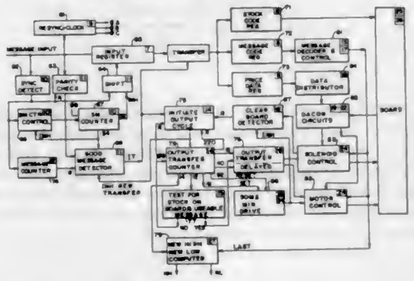
Apparatus for checking the parity of groups of data bits which have been transferred in an offset manner between registers. The offset transfer will cause some bits to cross byte boundaries and some bits to be lost in the transfer. This may cause changes in the parity of individual bytes and/or in the entire word. In the event that the bits lost during the transfer of data are of even parity, the apparatus will cause a group parity error signal to be generated only if parity has changed in an odd number of bytes of data. If the lost bits are of odd parity, then an even number (or no) byte parity changes will produce an error signal.

3,416,133
SHIFT REGISTER CONTROLLED MARKET TICKER INFORMATION DISPLAY
Stanley H. Hunkins, Merchantville, and George W. Hernan, Haddonfield, N.J., and Peter W. Beresin, Philadelphia, Pa., assignors to Ultronic Systems Corp.
Filed Jan. 7, 1963, Ser. No. 249,623
9 Claims. (Cl. 340—154)

1. In combination with a market quotation ticker line, an electronic display system comprising a plurality of character displays and associated circuits, each of said character displays being formed of a plurality of display segments that are combinatorially energized to form different characters, means including a shift register for registering successive serial signal bits from said ticker line and forming coded signal characters therefrom, said means further including means responsive to certain signals from said ticker line for developing shift pulses for said shift register, means for counting said shift pulses and developing a first control signal upon reaching a predetermined count in accordance with the number of bits in a complete market quotation character and means responsive to said first control signal and to a combination of the first and last bits established in said register for developing a second control signal upon each successive character being established in said register, means for changing said coded signal characters to signal combinations for combinatorially energizing the display segments of each of said display characters, and commutator means responsive to said second control signals for enabling successively the character display circuits to display the successive characters of each market quotation.



3,416,134
QUOTATION BOARD SYSTEM
Eugene I. Gertler and George H. Huber, Cinnaminson, Walter A. Richman, Woodcrest, and John A. Clarrocchi and Dennis W. Habgood, Magnolia, N.J., assignors to Ultronic Systems Corp., Pennsauken, N.J., a corporation of Delaware
Filed Apr. 12, 1966, Ser. No. 542,057
8 Claims. (Cl. 340—154)



8. A stock quotation board system for stocks, commodities and the like which comprises

(a) means for receiving quotation messages including a coded stock identification and a coded price section,

(b) a quotation board having a plurality of stock sections for displaying the stock identification characters of selected stocks and associated price sections for displaying the respective prices,

(c) said messages including Last prices and said quotation board including High, Low, and Last price sections,

(d) coding means for each stock section for producing a coded combination corresponding to the stock displayed thereat,

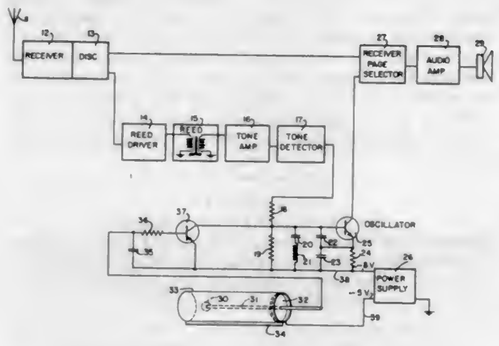
(e) means for determining coincidence of the message stock identifications with the coded combinations of the displayed stocks,

(f) means responsive to said coincidence for displaying message Last prices in the board Last price section of the corresponding stock,

(g) means responsive to a message Last price and to the then-existing High and Low prices on the board for determining whether a Last price is a new High or new Low price,

(h) and means responsive to said determining for controlling the entry of a said Last price in said High or Low board price sections.

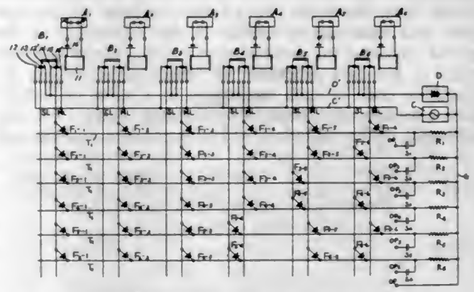
3,416,135
FALSE SIGNAL PREVENTION SYSTEM INCLUDING MECHANICAL MEMBER PHYSICALLY DISPLACEABLE BY VIBRATION AND SHOCK
James E. Treatch, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 9, 1965, Ser. No. 486,165
5 Claims. (Cl. 340—156)



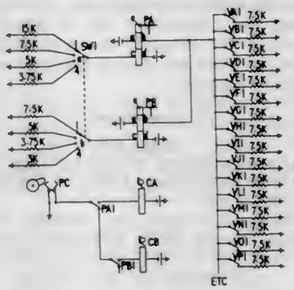
System for inhibiting false operation of electronic equipment having mechanically resonant frequency responsive device with false output being inhibited by mechanical device having resilient portion which is physically displaced in response to mechanical vibrations and shock. The mechanical device includes electro-mechanical unit for producing an inhibit signal which is applied to a circuit which inhibits the output of the electrical equipment. An inhibit circuit including a transistor responds to the signal to disable the output of the electrical equipment.

3,416,136
SIGNAL SELECTION SYSTEM
Masusaburo Takagi, No. 147–20, Hiro-machi, Nakano-ku, Tokyo, and Shigeo Kubota, No. 51–206 Kodanjutaku Maehara Danchi, Maehara, Funabashi-shi, Chiba-ken, Japan
Filed Oct. 12, 1964, Ser. No. 403,250
Claims priority, application Japan, June 17, 1964, 39/33,999
8 Claims. (Cl. 340—172)

A signal selection system is provided for use in code translating apparatus or facsimile equipment of the type employed in telex and teleprinting communications. The system is in network or matrix form, comprising switching means operating according to the coded input, a plurality of circuits each consisting essentially of diodes and an output element, and two sources of signal, AC and DC, for selectively energizing the circuits in such a manner that an AC output signal is made available from an output element determined by the preset translating schedule, thus translating the coded input into an output signal for printing out letters to spell out the information which have been coded in the input.



3,416,137
ELECTRICAL TRAFFIC ANALYSERS
Leslie John Robson, Sutton, Surrey, England, assignor to Automatic Switching Limited, London, England, a British company
Filed Nov. 27, 1964, Ser. No. 414,349
Claims priority, application Great Britain, Nov. 29, 1963, 47,281/63
3 Claims. (Cl. 340—172)

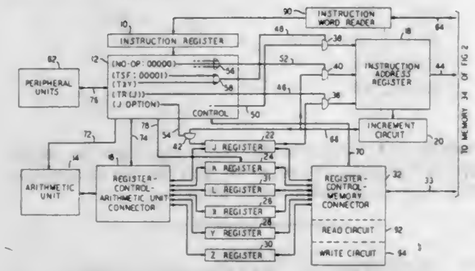


An electrical traffic analyser circuit comprising a pair of polarized relays each having a pair of differentially connected coils and contacts connected to act consecutively to energize separate pulse counters under predetermined load conditions. The load conditions to which the polarized relays respond are selectively predetermined by a pair of ganged switches for inserting predetermined resistances in series with one of the coils of the differential coils on each relay, the resistance to be inserted corresponding to a predetermined load connected to the energizing circuit of the second coil of the relay. The simultaneously connected ganged resistances being a predetermined different value for each of the two relays so that only one will respond to one load condition. The counters thereby provide an indication of the time a predetermined load is on the system.

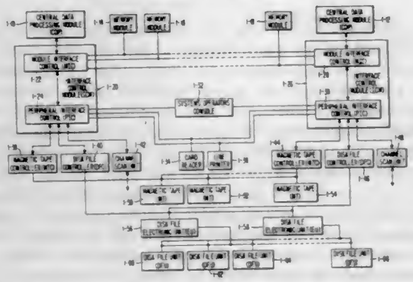
3,416,138
DATA PROCESSOR AND METHOD FOR OPERATION THEREOF
Robert L. Brass, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 25, 1965, Ser. No. 482,564
7 Claims. (Cl. 340—172.5)

A stored program data processor having a memory unit for storing data words and instructions is disclosed. In

the operation of the data processor it is from time to time necessary to store groups of data words in various locations in the memory and periodically to process such stored data. However, not all the locations will always have had data stored therein at the beginning of the period allocated for processing such data. Means are provided in the data processor for selectively changing the operation code of each instruction in a series of instructions consequently stored in the memory unit of the data processor. Each such instruction includes a transfer address designating a particular location allocated to the storage of data. When data is initially entered in such location the operation code of its corresponding instruction in the consecutive list is made into a transfer code. When all of the data in any of the locations has been completely processed, its corresponding operation code in the consecutive list is changed into a no-operation code. This permits the consecutive list of instructions to be rapidly scanned for allocated locations having data required to be processed and assures that only such locations will actually be accessed.

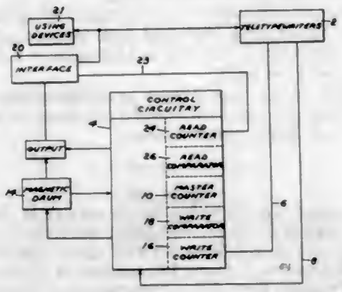


3,416,139
INTERFACE CONTROL MODULE FOR MODULAR COMPUTER SYSTEM AND PLURAL PERIPHERAL DEVICES
Hans B. Marx, Broomall, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 14, 1966, Ser. No. 527,350
19 Claims. (Cl. 340—172.5)



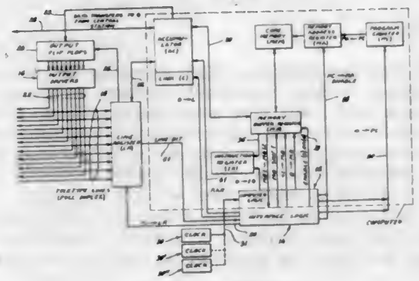
A modular data processing system having pluralities of different functional module types, one of which modules is an interface control module capable of interfacing the computer module(s) of the system not only with a variety of different input/output peripheral devices, but with a variety of memory modules as well. Thus it provides a separate module type to provide interface throughout the system. This interface control module is divided into a first interface means which accomplishes intermodular control and communication within the system and a second interface means which accomplishes control and communication between the system and its input/output peripheral devices.

3,416,140
MAGNETIC RECORDER TRANSMITTER DISTRIBUTOR
Francis T. Cassidy, Jr. and Dominick A. Intartaglia, Brooklyn, N.Y., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,893
8 Claims. (Cl. 340—172.5)



This invention teaches the use of apparatus for recording teleprinter characters in a parallel manner on magnetic drums. In this manner information is sequentially recorded in successive drum segments and read from the drum so that the first recorded message is always the first message that is read from the drum. In this manner information may be recorded at one speed and read at a different speed, the record and read speeds not being wholly dependent upon the rotative velocity of the magnetic drum.

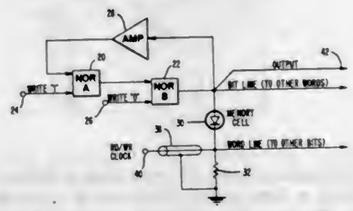
3,416,141
DATA HANDLING SYSTEM
Edson D. de Castro, Newton Highlands, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.
Filed June 7, 1966, Ser. No. 555,754
9 Claims. (Cl. 340—172.5)



1. A system for assembling character bits of data characters randomly transmitted in serial bit format over plural input lines, said system comprising, in combination:
(A) a clock periodically generating clock pulses, the interval between said clock pulses being substantially less than the duration of a character signal bit transmitted over an input line;
(B) means responsive to each said clock pulse to sample each of the input lines in sequence for incoming character bits;
(C) a memory storing
(1) a character assembly word associated with each input line, and
(2) a count word associated with each input line for timing a character transmission thereover;
(D) a register;

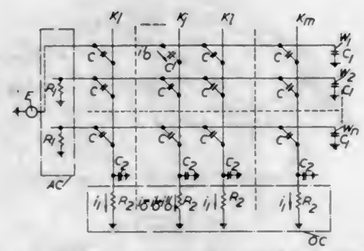
(E) means operating in conjunction with said sampling means and responding to said count words in corresponding sequence so as to transfer associated character assembly words from said memory into said register at selected times during character transmission over associated input lines; and
(F) assembly means operating in conjunction with said sampling means to
(1) connect said register to receive from the input line associated with the character assembly word contained therein the bit on said line and thereby assemble said bit into said character assembly word, one character bit being assembled at each said selected time, and
(2) return said character assembly word to said memory for storage during the intervals between said selected times.

3,416,142
STORAGE DIODE MEMORY DEVICE UTILIZING TUNNEL DIODE DRIVE MEANS
Brian E. Sear, Baltimore, Md., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,376
12 Claims. (Cl. 340—173)



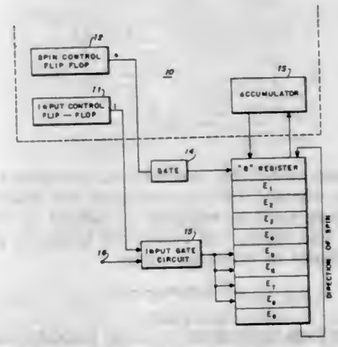
1. In combination, a recirculating network comprising a pair of NOR logic circuits, a storage diode connected to an output of said recirculating network, a source for supplying bipolar signals to said storage diode at a regular frequency, and a pair of sources for selectively supplying control signals to said NOR logic circuits.

3,416,143
READ-ONLY MEMORY SYSTEM
Jan Van Goethem and René De Smedt, Antwerp, and André Ernest Antoon Lauwers, Muizen, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 19, 1965, Ser. No. 426,585
Claims priority, application Netherlands, Jan. 24, 1964, 6400537
6 Claims. (Cl. 340—173)



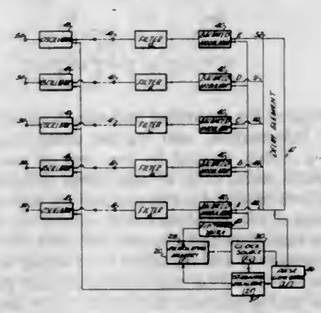
The present disclosure relates to a read-only memory system including a two co-ordinate arrangement of reactive cross-point couplings, each being connected between a particular pair of electrical conductors, one conductor out of a first set of *n* conductors and the other conductor out of a second set of *m* conductors, input circuits via which an input or linearly increasing interrogation signal may be applied to an electrical conductor out of said first set, the output information corresponding to the interrogation of this conductor appearing in output circuits which are coupled to the electrical conductors of said second set.

3,416,144
EFFICIENT BUFFER STORAGE
Joseph Abruzzo, Severna Park, Andrew Paul Cox, Jr., Lutherville, and Robert H. Sapp, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 30, 1965, Ser. No. 452,421
1 Claim. (Cl. 340—173)



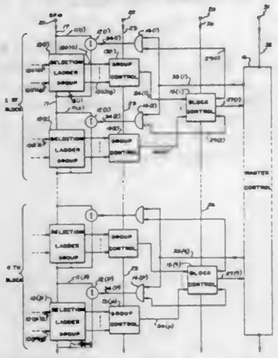
A buffer store for a digital computer which may be used to store inputs from outside the computer and also as temporary scratch-pad storage registers for holding computed values.

3,416,145
READ-OUT SYSTEM FOR RECIRCULATING MEMORY
William A. Edson, Los Altos Hills, Calif., assignor to General Electric Company, a corporation of New York
Original application Feb. 24, 1961, Ser. No. 91,518, now Patent No. 3,185,978, dated May 25, 1965. Divided and this application Jan. 18, 1965, Ser. No. 432,930
8 Claims. (Cl. 340—173)



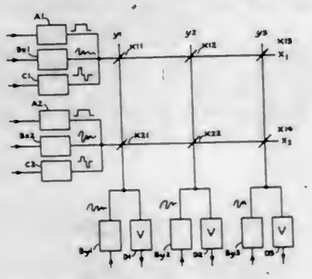
A recirculating type memory in which digital information may be represented by a phasal relationship is provided with means for reading data signals into and out of the recirculating memory.

3,416,146
CONTENT ADDRESSED MEMORY SYSTEM HAVING A GROUPED SELECTION CIRCUIT
John W. Bremer, Sunnyvale, Calif., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,876
13 Claims. (Cl. 340—173.1)



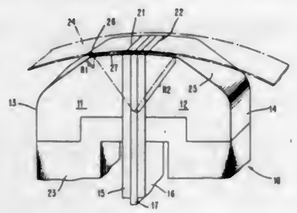
A selection circuit for use with an associative memory system whereby the time required for selection of each matching word in sequence is reduced by dividing the system into blocks and testing the blocks in parallel for the presence of matching words.

3,416,147
REGISTER FOR RECORDING AND NON-DESTRUCTIVE READING OF BINARY INFORMATION
Jöns Kurt Alvar Olsson, Sundbyberg, and Sven Arne Olsson, Hagersten, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a Swedish corporation
Original application July 10, 1958, Ser. No. 747,733, now Patent No. 3,157,861, dated Nov. 17, 1964. Divided and this aplication Oct. 1, 1964, Ser. No. 400,815
Claims priority, application Sweden, July 19, 1957, 6,788/57
1 Claim. (Cl. 340—174)



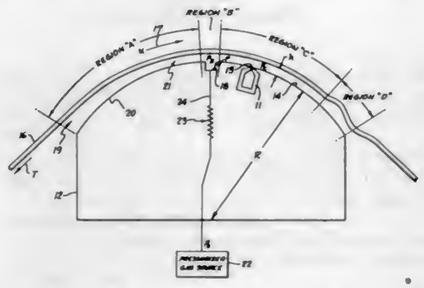
1. A register for recording and non-destructive reading of binary information, said register comprising, in combination, a matrix formed by two sets of rows of cores crossing each other, each of said cores including a magnetic ring core made of a material having high remanence and saturation characteristics and supporting a read-out winding, a high impedance means for each row in one set of rows connected and arranged for feeding to the cores in said one set of rows a magnetizing current pulse having a duration and amplitude such that the respective cores are magnetized to a state of remanence with a saturation characteristic significant for reading pulses, recording and reading means for each row in both sets of rows for feeding simultaneously two coincident signals for changing the magnetization of each core at the crossing point of two rows to a state of magnetization having no saturation characteristic significant for reading pulses, one of said coincident signals comprising continuous reading pulses and the other of said coincident signals comprising a damped sinusoidal wave, said recording and reading means being also connected and arranged for feeding to the rows of cores in said one set of rows two successive reading pulses having different polarities and low amplitudes, said reading pulses leaving unchanged the state of remanence of the cores in said one set of rows due to the low amplitudes of said reading pulses, an indicating means for each row in the other set of rows connected to the cores in said other set, and indicating voltage pulses in the windings of cores at the crossing points between each two rows.

3,416,148
COMPOUND RADIUS TRANSDUCER HEAD
Donald G. Berghaus and Albert N. Garthwaite, Poughkeepsie, and Hui-Li Tiao, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,602
9 Claims. (Cl. 340—174.1)



A transducer capable of generating a fluid bearing for supporting a tape moved thereover at a predetermined spacing h^* from the operating surface. The operating surface has a compound radius of curvature including a small radius entry region for establishing a bearing of the desired thickness and a larger radius portion which includes the processing zone of the transducer for maintaining the bearing stability without necessitating large wrap angles.

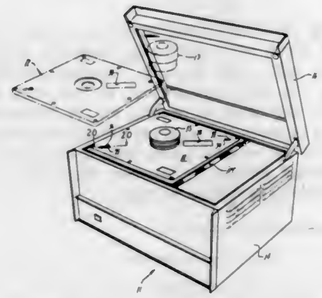
3,416,149
FLUID LUBRICATED MAGNETIC TAPE TRANSDUCER
Alfred F. Stahler, San Jose, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 26, 1965, Ser. No. 442,859
11 Claims. (Cl. 340—174.1)



An air bearing is provided for magnetic tape moving across a magnetic transducing head that has a curved bearing surface. Air is supplied to the bearing from a transverse recess in the bearing surface upstream from the magnetic head gap, the recess being coupled to a pressure source that is variable to adjust the head-to-tape spacing. The pressure in the recess is maintained at a value equal to or less than the pressure beneath the tape at the head gap, to provide stability in the bearing. Furthermore, the range of spacing over which the bearing remains stable is controlled by controlling the radius of curvature of the downstream edge of the recess.

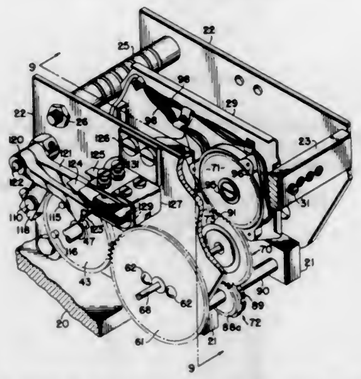
This invention relates to fluid lubricated magnetic tape transducers and particularly to such transducers providing a fluid film of controllable thickness.

3,416,150
MAGNETIC RECORDING DISC CARTRIDGE
Charles A. Lindberg, Jr., Menlo Park, Calif., assignor to Data Disc Incorporated, Palo Alto, Calif., a corporation of California
Filed Aug. 2, 1965, Ser. No. 476,618
16 Claims. (Cl. 340—174.1)



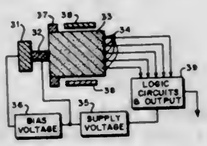
A magnetic recording cartridge employing a rotatable magnetic recording disc normally held stationary within the cartridge until disposed in playing position upon playing apparatus. Dust seals and movable shutters seal the interior of the cartridge enclosure and are released upon lodging the cartridge in playing position. Protection against inadvertent recording is included by means of a readily removable token carried by the cartridge housing. A filtered air stream, maintained to flow through the interior of the cartridge, carries contaminates therefrom.

3,416,151
INDICATING APPARATUS
Clarence E. Adler, Toledo, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio
Filed Dec. 7, 1964, Ser. No. 416,526
19 Claims. (Cl. 340—347)



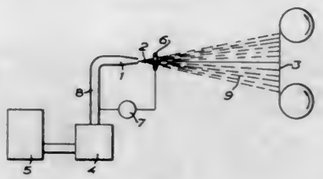
18. A readout device comprising, in combination, a rotatable element to be positioned according to information in an electrical circuit, a plurality of rotatable teeth operatively connected to the element, slip clutch means for rotating the teeth and thus the element, stopping means engageable with any one of the teeth for stopping the element in the position corresponding to the information, commutator means having a part rotatable with the teeth for operating the stopping means as the element approaches the position corresponding to the information, and selectively unlocked blocking means for preventing disengagement of the stopping means from a tooth, whereby operation of the slip clutch means does not rotate the teeth.

3,416,152
ANALOG-TO-DIGITAL CONVERTER
Theodore R. Trilling, 15 Hunt Road, Levittown, Pa. 19056
Filed Apr. 22, 1964, Ser. No. 361,916
11 Claims. (Cl. 340—347)



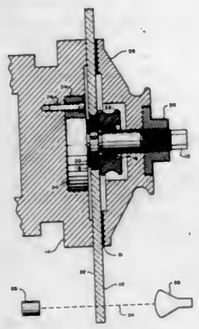
A cathode ray tube or solid state device is utilized in conjunction with any of a plurality of matrices on which a beam of carriers is impinged to thereby convert an analog signal to a series of digital outputs expressive of that analog signal depending upon the particular configuration of the matrix and the control circuitry utilized to deflect the beam of carriers.

3,416,153
INK JET RECORDER
Carl Hellmuth Hertz, Skolbanksvagen 8, and Sven-Inge Simonsson, Lund, Sweden, said Simonsson assignor to said Hertz
Filed Oct. 6, 1966, Ser. No. 584,900
Claims priority, application Sweden, Oct. 8, 1965, 13,057/65, 13,058/65
9 Claims. (Cl. 346—75)



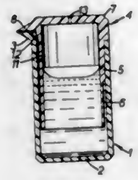
In a device for converting electric signals from a signal source into markings on a record receiving surface by means of a liquid jet projected along a jet axis from a nozzle against said surface, while relatively moving the nozzle and said surface, the signal source is connected between the nozzle and a control electrode provided laterally of the jet axis between the nozzle and said surface, for generating between the nozzle and the electrode an electric field extending substantially along the jet axis so as to charge the liquid jet according to the electric signals and thereby to diffuse to a greater or lesser extent the liquid jet under the action of said signals into small drops departing from the jet axis.

3,416,154
DATA DISK STRUCTURE AND ROTATABLE MOUNTING THEREFOR
Stanley Heller, Philadelphia, Pa., and William F. Anderson, Peekskill, and Robert B. Berlin, Yorktown Heights, N.Y., assignors to Itek Corporation, a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,741
12 Claims. (Cl. 346—137)



In particular there is disclosed a design and method of assembly for a glass disk having a metal sleeve attached to a centrally mounted resin insert.

3,416,155
RECORDING PEN
Michael Harold Jones, Cheltenham, England, assignor to Walker Crosweller & Company Limited, Clyde Crescent, Cheltenham, England
Filed May 10, 1966, Ser. No. 548,916
Claims priority, application Great Britain, May 29, 1965, 22,936/65
6 Claims. (Cl. 346—140)



A recording pen comprising upper and lower hollow parts each of which has a projecting beak-like portion at its upper end, with both portions together providing a writing point. The parts are formed so that they fit one partially within the other to provide an ink reservoir and to define a gap between the portions which provides an ink feed channel to the writing point, with an internal capillary feed channel extending between the reservoir and the gap between the beak-like portions.

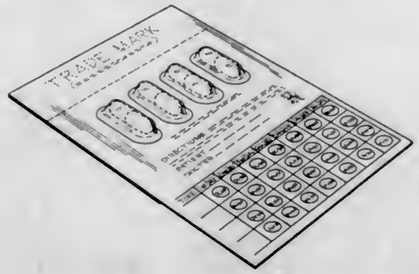
DESIGNS

DECEMBER 10, 1968

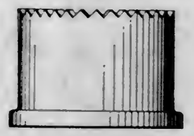
212,871
BOTTLE
John J. Anderson, Kenosha, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Dec. 11, 1967, Ser. No. 9,715
Term of patent 14 years
(Cl. D9—97)



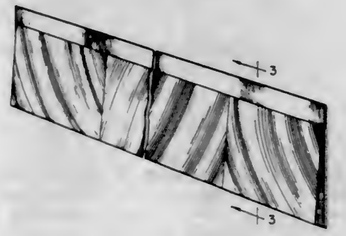
212,872
STARTER DOSAGE CARD
William B. MacLachlan, John A. Aherne, and Richard E. Morgan, Fayetteville, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 10,371
Term of patent 14 years
(Cl. D9—187)



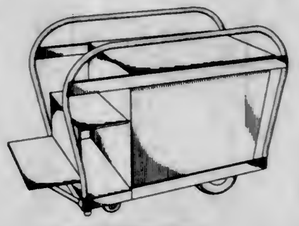
212,873
CAP FOR AN AEROSOL PACKAGE
William G. White, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 21, 1966, Ser. No. 2,756
Term of patent 14 years
(Cl. D9—258)



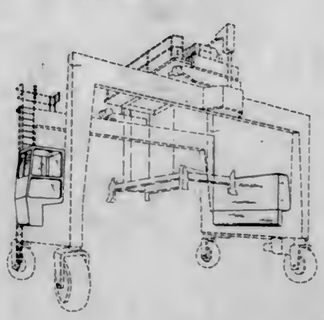
212,874
BUILDING STRIP
Anthony Salvo, Tiverton, Albert Cayer, Smithfield, R.I., and Justine Serejczyk, Fall River, Mass., assignors to Dura-Last Shingle Corp., Fall River, Mass., a corporation of Massachusetts
Filed Nov. 7, 1966, Ser. No. 4,574
Term of patent 14 years
(Cl. D13—1)



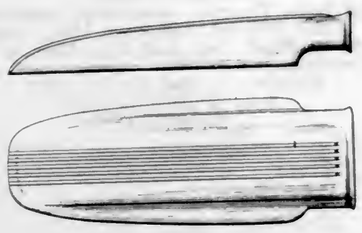
212,875
COMBINATION STEP LADDER AND CART
Robert J. Ziskal, 8501 W. Higgins Road, Chicago, Ill. 60631
Filed Apr. 2, 1968, Ser. No. 11,256
Term of patent 14 years
(Cl. D14—3)



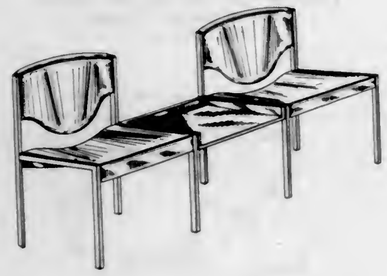
212,876
MOBILE CARGO CONTAINER HANDLER
Charles D. Ramsden, Alameda, Charles H. Zweifel and Anthony J. De Stasi, Oakland, and Arnold Wolf, Berkeley, Calif., assignors to Pacific Coast Engineering Company, a corporation of California
Filed June 12, 1967, Ser. No. 7,442
Term of patent 14 years
(Cl. D14—3)



212,877
AIR SCOOP
Alex Kraus, Los Angeles, Calif., assignor to California Custom Accessories Manufacturing Company, Gardena, Calif.
Filed Mar. 18, 1968, Ser. No. 11,012
Term of patent 14 years
(Cl. D14—6)



212,878
COMBINED TABLE AND SEATING UNIT
Walter Muller, Feldbach, and Franz Hero and Karl Oldermatt, Uerikon, Switzerland, assignors to Lubke K.G., Rheda, Westphalia, Germany, a corporation of Germany
Filed Nov. 24, 1967, Ser. No. 9,543
Term of patent 14 years
(Cl. D15—1)



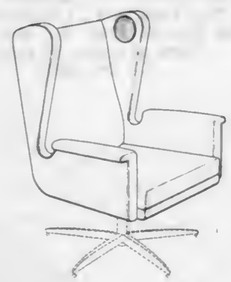
212,879
CHAIR
Robert E. Kjer Jakobsen, Compton, Calif., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed Dec. 28, 1967, Ser. No. 9,948
Term of patent 14 years
(Cl. D15—1)



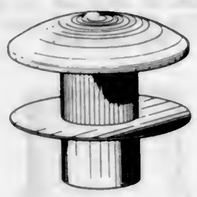
212,880
PORTABLE SEAT
Ricardo Victorero, 6406 W. Flagler St., Miami, Fla. 33144
Filed Jan. 18, 1967, Ser. No. 5,475
Term of patent 14 years
(Cl. D15—8)



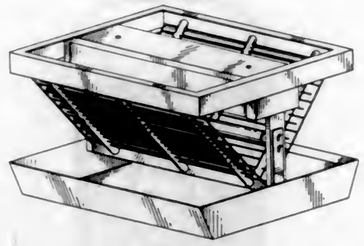
212,881
COMBINED LOUNGE CHAIR AND DUAL LOUDSPEAKER UNIT
Gordon L. Duern, Elmira, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada
Filed Jan. 2, 1968, Ser. No. 10,029
Term of patent 14 years
(Cl. D15—11)



212,882
ULTRA-CLEAN AIR ENVIRONMENT WORK STATION
Philip R. Austin, Livonia, Mich., assignor to Atoms-Tech Corporation, Riverton, N.J., a corporation of New Jersey
Filed Sept. 22, 1967, Ser. No. 8,686
Term of patent 14 years
(Cl. D16—2)



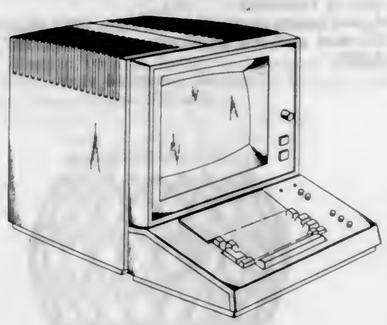
212,883
ELECTRIC INSECT CONTROL UNIT
Frank L. Giordano, Stone Mountain, Ga., assignor to The National Ideal Company, Stone Mountain, Ga., a corporation of Ohio
Filed Nov. 28, 1967, Ser. No. 9,567
Term of patent 14 years
(Cl. D22—19)



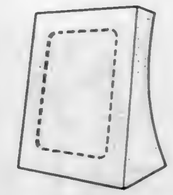
212,884
ELECTRIC CRAYON HOLDER
Harry Disko, Park Ridge, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Aug. 17, 1967, Ser. No. 8,301
Term of patent 14 years
(Cl. D25—1)



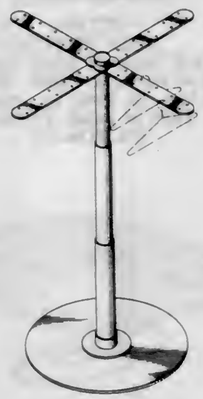
212,885
DISPLAY TERMINAL FOR A COMPUTER OR THE LIKE
Seton Cottier, Woodstock, and John D. March, Newburgh, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 10,031
Term of patent 14 years
(Cl. D26—5)



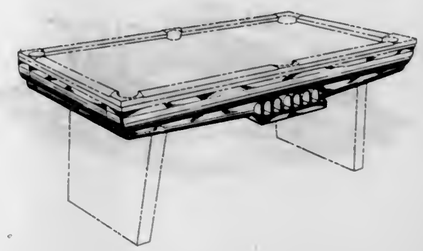
212,886
PICTURE FRAME OR SIMILAR ARTICLE
Edwin W. Gordon, 116 Rochester, Ave., Toronto 12, Ontario, Canada
Filed Feb. 5, 1968, Ser. No. 10,450
Claims priority, application Canada Dec. 30, 1967
Term of patent 14 years
(Cl. D29—20)



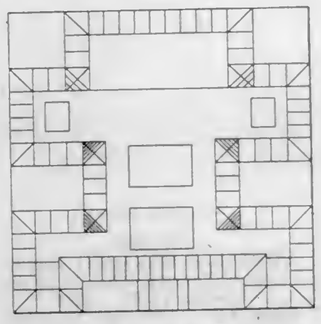
212,887
PORTABLE GARMENT RACK
Mary A. Toombs, 480½ N. Olive, Orange, Calif. 92666
Filed Mar. 3, 1967, Ser. No. 6,049
Term of patent 14 years
(Cl. D33—3)



212,888
POCKET BILLIARD TABLE OR SIMILAR ARTICLE
Otto S. Nielsen, 4875 Sorrell Ave. N., Minneapolis, Minn. 55422
Continuation-in-part of design application Ser. No. 7,752, July 10, 1967. This application Jan. 18, 1968, Ser. No. 10,212
Term of patent 14 years
(Cl. D34—3)



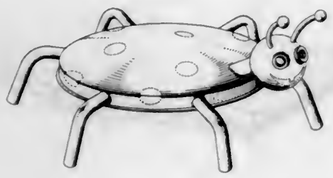
212,889
GAME BOARD
Edwin I. Scharf, Floyd Knobs, Ind., assignor of one-third each to Chester B. Stem and Historic New Albany, Inc., both of New Albany, Ind., and both corporations of Indiana
Filed Jan. 2, 1968, Ser. No. 10,022
Term of patent 14 years
(Cl. (D34—5)



212,890
GOLF PUTTER
Patrick J. Rose, 25 Royal Oak Drive, West Hartford, Conn. 06107
Filed Mar. 28, 1968, Ser. No. 11,183
Term of patent 14 years
(Cl. D34—5)



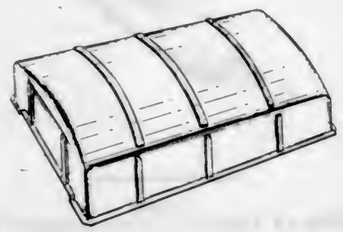
212,891
PLAYGROUND CLIMBING DEVICE OR SIMILAR ARTICLE
Morris R. Rudy, Burnham, Pa., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 11, 1967, Ser. No. 9,735
Term of patent 14 years
(Cl. D34—5)



212,892
TOY RADIO
Ralph W. Crawford, East Aurora, N.Y., assignor to Fisher-Price Toys, Inc., East Aurora, N.Y., a corporation of New York
Filed Feb. 28, 1967, Ser. No. 5,995
Term of patent 14 years
(Cl. D34—15)



212,893
GERMINATION COVER FOR SEED BEDS AND THE LIKE
William H. Rand, Rte. 1, Box 195, Battleground, Wash. 98604
Filed Oct. 5, 1967, Ser. No. 8,879
Term of patent 14 years
(Cl. D35—1)



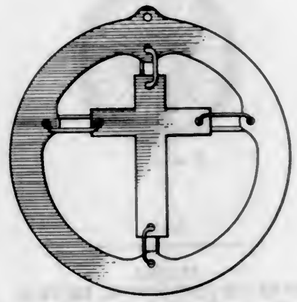
212,894
BOWL OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application May 26, 1967, Ser. No. 7,274. Divided and this application Dec. 14, 1967, Ser. No. 9,780
Term of patent 14 years
(Cl. D36—2)



212,895
GOBLET OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application May 26, 1967, Ser. No. 7,274. Divided and this application Dec. 14, 1967, Ser. No. 9,779
Term of patent 14 years
(Cl. D36—8)



212,896
PENDANT OR OTHER ARTICLE OF JEWELRY
Albert J. Roth, 1901 Main St., Newington, Conn. 06111
Filed Nov. 29, 1967, Ser. No. 9,584
Term of patent 14 years
(Cl. D45—17)



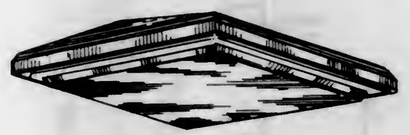
212,897
COMBINED MINIATURE LAMP AND REFLECTOR THEREFOR
Robert G. Morgan, Ipswich, Mass., and Richard E. Smith, Scotch Plains, N.J., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 87,868
Term of patent 14 years
(Cl. D48—16)



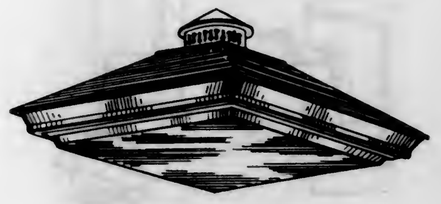
212,898
CIGARETTE LIGHTER
Frank H. Stephens, Jr., 5442 Mt. Vernon Way, Dunwoody, Ga. 30043
Filed Mar. 25, 1968, Ser. No. 11,120
Term of patent 14 years
(Cl. D48—27)



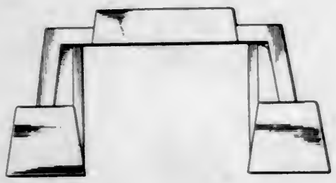
212,899
OUTDOOR LIGHTING FIXTURE
Donald V. Vesely, Hillside, and David R. Dalpiaz, Elmhurst, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois
Original design application Oct. 12, 1967, Ser. No. 8,966. Divided and this application May 3, 1968, Ser. No. 11,774
Term of patent 14 years
(Cl. D48—31)



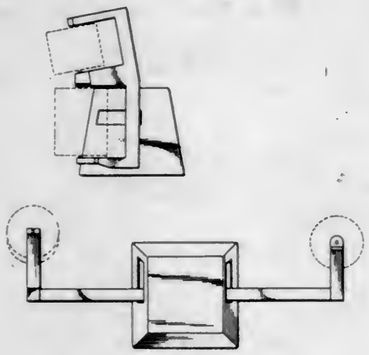
212,900
OUTDOOR LIGHTING FIXTURE
Donald V. Vesely, Hillside, and David R. Dalpiaz, Elmhurst, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois
Original design application Oct. 12, 1967, Ser. No. 8,967. Divided and this application May 3, 1968, Ser. No. 11,777
Term of patent 14 years
(Cl. D48—31)



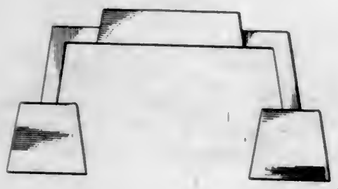
212,901
VEHICLE DRYER ARCH
Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz. 85251, and Dale R. Oldham, 7028 N. 11th St., Phoenix, Ariz. 85034
Filed Dec. 18, 1967, Ser. No. 9,819
Term of patent 14 years
(Cl. D49—12)



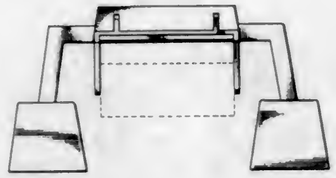
212,902
VEHICLE SIDE BRUSH MOUNT
Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz. 85251
Filed Dec. 18, 1967, Ser. No. 9,826
Term of patent 14 years
(Cl. D49—12)



212,903
VEHICLE CLEANING ARCH
Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz. 85251
Filed Dec. 18, 1967, Ser. No. 9,831
Term of patent 14 years
(Cl. D49—12)



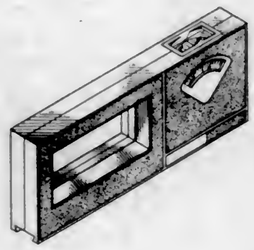
212,904
VEHICLE CLEANING BRUSH MOUNT
Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz. 85251
Filed Dec. 18, 1967, Ser. No. 9,830
Term of patent 14 years
(Cl. D49—12)



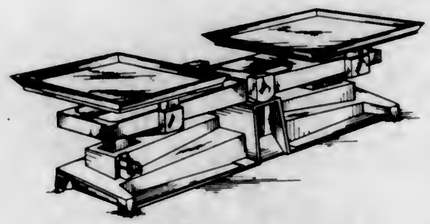
212,905
ESCUTCHEON PLATE
La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Feb. 23, 1968, Ser. No. 10,693
Term of patent 14 years
(Cl. D50—6)



212,906
LEVEL DETERMINING DEVICE
Mitchell Bobrick, Pacific Palisades, Calif., assignor to Mitchell Bobrick, Inc., Beverly Hills, Calif., a corporation of California
Filed Jan. 16, 1968, Ser. No. 10,181
Term of patent 14 years
(Cl. D52—6)



212,907
BEAM BALANCE WEIGHING SCALE
Samuel S. Leotta, Hatboro, Pa., assignor to Ohaus Scale Corporation, Union, N.J., a corporation of New Jersey
Filed May 24, 1967, Ser. No. 7,248
Term of patent 14 years
(Cl. D52—10)



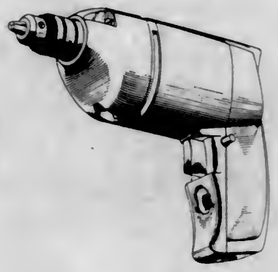
212,908
FORK OR SIMILAR ARTICLE OF FLATWARE
Siro R. Toffolon, Meriden, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Nov. 13, 1967, Ser. No. 9,364
Term of patent 14 years
(Cl. D54—12)



212,909
HOG RING PLIER TOOL
William A. Douglass, 5251 Pattison Ave., St. Louis, Mo. 63110
Filed Oct. 23, 1967, Ser. No. 9,110
Term of patent 14 years
(Cl. D54—13)



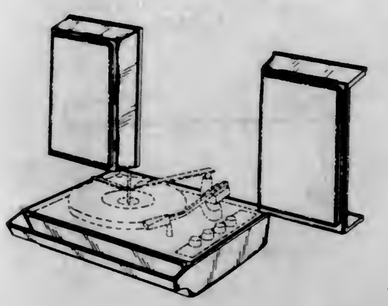
212,910
PORTABLE ELECTRIC DRILL
Edmund C. Dudek, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1967, Ser. No. 9,618
Term of patent 14 years
(Cl. D54—14)



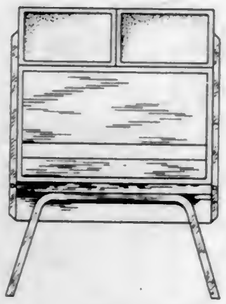
212,911
PORTABLE ELECTRIC DRILL
Edmund C. Dudek, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 2, 1967, Ser. No. 9,260
Term of patent 14 years
(Cl. D54—14)



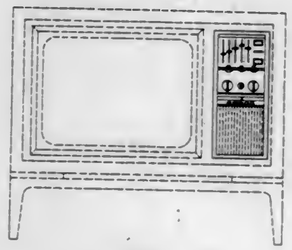
212,912
PORTABLE RECORD PLAYER OR THE LIKE
Donald F. Kaminski, Downers Grove, Ill., assignor to Warwick Electronics, Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 10,397
Term of patent 14 years
(Cl. D56—4)



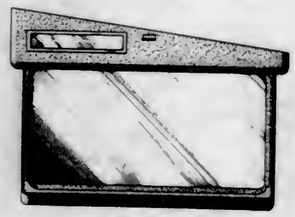
212,913
ENCLOSURE FOR A STEREOPHONIC RECORD PLAYER
Arthur K. Tateishi, 40 Belvia Road, Toronto, Ontario, Canada
Filed Mar. 20, 1968, Ser. No. 11,069
Term of patent 14 years
(Cl. D56—4)



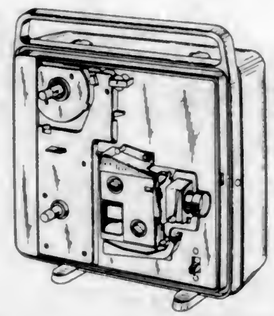
212,914
CONTROL PANEL FOR A TELEVISION RECEIVER OR SIMILAR ARTICLE
Wayne L. Aderman, Rochester, Minn., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 6, 1967, Ser. No. 9,277
Term of patent 14 years
(Cl. D56—4)



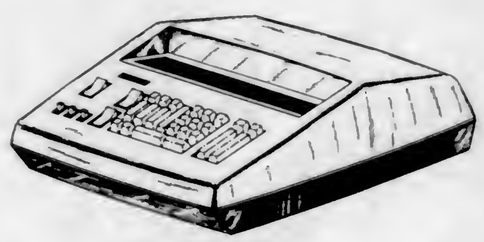
212,915
REAR PROJECTION FILM VIEWER FOR AIRCRAFT OR SIMILAR VEHICLES
Holland H. Freeman, Sierra Madre, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Jan. 30, 1967, Ser. No. 5,606
Term of patent 14 years
(Cl. D61—1)



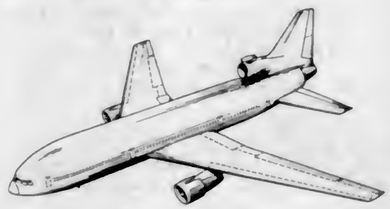
212,916
COMBINED MOTION PICTURE PROJECTOR AND CARRYING CASE
Dianne B. Ainslie and Andrew V. McClare, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 29, 1967, Ser. No. 7,294
Term of patent 14 years
(Cl. D61—1)



212,917
CALCULATOR
Henry Dreyfuss, 500 Columbia St., South Pasadena, Calif. 91030
Filed Nov. 29, 1967, Ser. No. 9,579
Term of patent 3½ years
(Cl. D64—11)



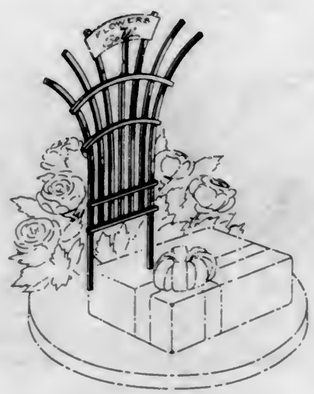
212,918
AIRPLANE
Edward M. Davis, Northridge, and William M. Hannan, North Hollywood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Sept. 11, 1967, Ser. No. 8,558
Term of patent 14 years
(Cl. D71—1)



212,919
BALL-POINT PEN OR SIMILAR ARTICLE
Howard W. Conley, Rte. 4, Detroit Lakes, Minn. 56501
Filed Oct. 23, 1967, Ser. No. 9,120
Term of patent 14 years
(Cl. D74—17)



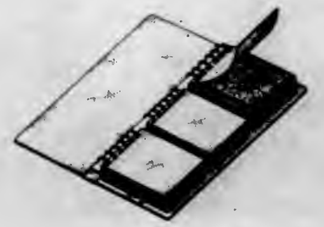
212,920
COMBINED FLORAL DISPLAY TRELLIS AND SIGN HOLDER
Saul Klayman, Mattapan, Mass., assignor to Kandy-Pak, Inc., Roslindale, Mass.
Filed Jan. 22, 1968, Ser. No. 10,245
Term of patent 14 years
(Cl. D80—9)



212,921
COMBINATION BABY BOTTLE AND TOY
Carl M. Bloomberg, 4 Holly Drive, East Northport, N.Y. 11731
Filed Mar. 7, 1968, Ser. No. 10,883
Term of patent 14 years
(Cl. D83—8)



212,922
PHOTOGRAPH ALBUM
James E. Klosterman, Kettering, Ohio, assignor, by direct and mesne assignments, of one-half each to J. E. Klosterman Company and Tru-Foto, Inc., both of Dayton, Ohio, both corporations of Ohio
Filed Apr. 18, 1967, Ser. No. 6,746
Term of patent 14 years
(Cl. D87—3)



212,923
PILLOWCASE OR SIMILAR ARTICLE OF BED LINEN
Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Oct. 20, 1967, Ser. No. 9,077
Term of patent 14 years
(Cl. D92—26)



212,924
BED SHEET OR SIMILAR ARTICLE
OF BED LINEN
Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed July 17, 1967, Ser. No. 7,823
Term of patent 14 years
(Cl. D92—26)



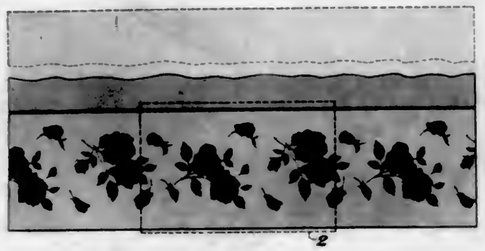
212,925
BED SHEET OR SIMILAR ARTICLE
OF BED LINEN
Emeric Kanitz, Paris, France, assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Nov. 13, 1967, Ser. No. 9,375
Term of patent 14 years
(Cl. D92—26)



212,926
PILLOWCASE OR SIMILAR ARTICLE
OF BED LINEN
Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Oct. 30, 1967, Ser. No. 9,218
Term of patent 14 years
(Cl. D92—26)



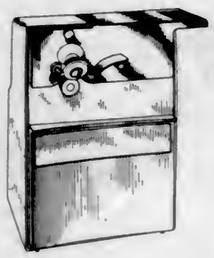
212,927
PILLOWCASE OR SIMILAR ARTICLE
OF BED LINEN
Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Oct. 30, 1967, Ser. No. 9,219
Term of patent 14 years
(Cl. D92—26)



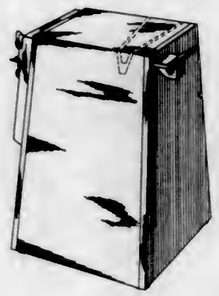
212,928
PILLOWCASE OR SIMILAR ARTICLE
OF BED LINEN
Nancy Ann Scherer, Plainfield, N.J., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Oct. 20, 1967, Ser. No. 9,078
Term of patent 14 years
(Cl. D92—26)



212,929
ELECTRIC CAN OPENER
Daniel E. McCue, Huntington Beach, Calif., assignor to Rival Manufacturing Company, a corporation of Missouri
Filed Jan. 22, 1968, Ser. No. 10,242
Term of patent 14 years
(Cl. D95—2)



212,930
COMBINED CAN OPENER AND KNIFE
SHARPENER OR SIMILAR ARTICLE
John C. Shalvoy, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1967, Ser. No. 6,651
Term of patent 7 years
(Cl. D95—2)



212,931
BARBER POLE SIGN
Alvin B. Adams, 203 S. 2nd St., P.O. Box 533, Patterson, Calif. 92369
Filed Dec. 26, 1967, Ser. No. 9,925
Term of patent 14 years
(Cl. D96—12)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Douros, John D., Jr., to Esso Research and Engineering Co. Process for producing a high protein composition by cultivating microorganisms on an N-aliphatic hydrocarbon feed. Re. 26,502, 12–10–68, Cl. 195—28.

Esso Research and Engineering Co.: *See*—
Douros, John D., Jr., Re. 26,502.

Evans Products Co.: *See*—
Moorhead, John P., and Shock. Re. 26,500.

Fyrk, C. O. F.: *See*—
Quandt, Philip L., and Fyrk. Re. 26,504.

Himmelstein, S., and Co.: *See*—
Himmelstein, Sydney, Knaack, and Tveter. Re. 26,501.

Himmelstein, Sydney, H. S. Knaack, and R. S. Tveter, to S. Himmelstein and Co. Multi-channel rotary transformer. Re. 26,501, 12–10–68, Cl. 336—120.

Ingersoll-Rand Co.: *See*—
Race, Hugh A. Re. 26,503.

Knaack, Howard S.: *See*—
Himmelstein, Sydney, Knaack, and Tveter. Re. 26,501.

Moorhead, John P., and J. A. Shock, to Evans Products Co. Freight bracing apparatus. Re. 26,500, 12–10–68, Cl. 105—369.

Quandt, Philip L., and C. O. F. Fyrk. Automatic hitch couplers. Re. 26,504, 12–10–68, Cl. 280—475.

Race, Hugh A., to Ingersoll-Rand Co. Volume adjusting apparatus for compressor cylinder clearance pockets. Re. 26,503, 12–10–68, Cl. 92—59.

Shock, Jackson A.: *See*—
Moorhead, John P., and Shock. Re. 26,500.

Tveter, Richard S.: *See*—
Himmelstein, Sydney, Knaack, and Tveter. Re. 26,501.

LIST OF DESIGN PATENTEES

Adams, Alvin B. Barber pole sign. 212,931, 12–10–68, Cl. D96—12.

Aderman, Wayne L., to Motorola, Inc. Control panel for a television receiver or similar article. 212,914, 12–10–68, Cl. D56—4.

Aherne, John A.: *See*—
MacLachlan, William B., Aherne, and Morgan. 212,872.

Ainslie, Dianne B., and A. V. McClare, to Eastman Kodak Co. Combined motion picture projector. 212,916, 12–10–68, Cl. D61—1.

Amerock Corp.: *See*—
Clayton, La Verne E. 212,905.

Anchor Hocking Glass Corp.: *See*—
Benes, Frank J. 212,894.
Benes, Frank J. 212,895.

Anderson, John J., to S. C. Johnson & Sons, Inc. Bottle. 212,871, 12–10–68, Cl. D9—97.

Atoms-Tech Corp.: *See*—
Austin, Philip R. 212,882.

Austin, Philip R., to Atoms-Tech Corp. Ultra-clean air environment work station. 212,882, 12–10–68, Cl. D16—2.

Benes, Frank J., to Anchor Hocking Glass Corp. Bowl or similar article. 212,894, 12–10–68, Cl. D36—2.

Benes, Frank J., to Anchor Hocking Glass Corp. Goblet or similar article. 212,895, 12–10–68, Cl. D36—8.

Bloomberg, Carl M. Combination baby bottle and toy. 212,921, 12–10–68, Cl. D83—8.

Bobrick, Mitchell, to Mitchell Bobrick, Inc. Level determining device. 212,906, 12–10–68, Cl. D52—6.

Bobrick, Mitchell, Inc.: *See*—
Bobrick, Mitchell. 212,906.

Bristol-Myers Co.: *See*—
MacLachlan, William B., Aherne, and Morgan. 212,872.

California Custom Accessories Mfg. Co.: *See*—
Kraus, Alex. 212,877.

Cannon Mills Co.: *See*—
Clementi, Leonard C. 212,926.
Clementi, Leonard C. 212,927.
Kanitz, Emeric. 212,925.
Scherer, Nancy A. 212,928.
Willoughby, Connie C. 212,923.
Willoughby, Connie C. 212,924.

Cayer, Albert: *See*—
Salvo, Anthony, Cayer, and Serejczyk. 212,874.

Clayton, La Verne E., to Amerock Corp. Escutcheon plate. 212,905, 12–10–68, Cl. D50—6.

Clementi, Leonard C., to Cannon Mills Co. Pillowcase or similar article of bed linen. 212,926, 12–10–68, Cl. D92—26.

Clementi, Leonard C., to Cannon Mills Co. Pillowcase or similar article of bed linen. 212,927, 12–10–68, Cl. D92—26.

Conley, Howard W. Ball-point pen or similar article. 212,919, 12–10–68, Cl. D74—17.

Consolidated Electrodynamics Corp.: *See*—
Freeman, Holland H. 212,915.

Crawford, Ralph W., to Fisher-Price Toys, Inc. Toy radio. 212,892, 12–10–68, Cl. D34—15.

Dalpiaz, David R.: *See*—
Vesely, Donald V., and Dalpiaz. 212,899.
Vesely, Donald V., and Dalpiaz. 212,900.

Davis, Edward M., and W. M. Hannan, to Lockheed Aircraft Corp. Airplane. 212,918, 12–10–68, Cl. D71—1.

De Stasi, Anthony J.: *See*—
Ramsden, Charles D., Zweifel, De Stasi, and Wolf. 212,876.

Disko, Harry, to Marvin Glass & Associates. Electric crayon holder. 212,884, 12–10–68, Cl. D25—1.

Douglass, William A. Hog ring plier tool. 212,909, 12–10–68, Cl. D54—13.

Dreyfuss, Henry. Calculator. 212,917, 12–10–68, Cl. D64—11.

Dudek, Edmund C., to The Singer Co. Portable electric drill. 212,910, 12–10–68. Cl. D54—14.

Dudek, Edmund C., to The Singer Co. Portable electric drill. 212,911, 12–10–68, Cl. D54—14.

Duern, Gordon L., to Electrohome Ltd. Combined lounge chair and dual loudspeaker unit. 212,881, 12–10–68, Cl. D15—11.

Du Pont de Nemours, E. I., and Co.: *See*—
White, William G. 212,873.

Dura-Last Shingle Corp.: *See*—
Salvo, Anthony, Cayer, and Serejczyk. 212,874.

Eastman Kodak Co.: *See*—
Ainslie, Dianne B., and McClare. 212,916.

Electrohome Ltd.: *See*—
Duern, Gordon L. 212,881.

Fisher-Price Toys, Inc.: *See*—
Crawford, Ralph W. 212,892.

Freeman, Holland H., to Consolidated Electrodynamics Corp. Rear projection film viewer for aircraft or similar vehicles. 212,915, 12–10–68, Cl. D61—1.

General Electric Co.: *See*—
Shalvoy, John C. 212,930.

Giordano, Frank L., to The National Ideal Co. Electric insect control unit. 212,883, 12–10–68, Cl. D22—19.

Gordon, Edwin W. Picture frame or similar article. 212,886, 12–10–68, Cl. D29—20.

Cottier, Seton, and J. D. March, to International Business Machines Corp. Display terminal for a computer or the like. 212,885, 12–10–68, Cl. D26—5.

Guardian Light Co.: *See*—
Vesely, Donald V., and Dalpiaz. 212,899.
Vesely, Donald V., and Dalpiaz. 212,900.

Hannan, William M.: *See*—
Davis, Edward M., and Hannan. 212,918.

Hero, Franz: *See*—
Muller, Walter, Hero, and Odermatt. 212,878.

Historic New Albany, Inc.: *See*—
Scharf, Edwin I. 212,889.

International Business Machines Corp.: *See*—
Cottier, Seton, and March. 212,885.

International Silver Co., The: *See*—
Toffolon, Siro R. 212,908.

Jakobsen, Robert E. K., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 212,879, 12–10–68, Cl. D15—1.

Johnson, S. C., & Sons, Inc.: *See*—
Anderson, John J. 212,871.

Kaminski, Donald F., to Warwick Electronics, Inc. Portable record player or the like. 212,912, 12–10–68, Cl. D56—4.

Kandy-Pak, Inc.: *See*—
Klayman, Saul. 212,920.

Kanitz, Emeric, to Cannon Mills Co. Bedsheet or similar article of bed linen. 212,925, 12–10–68, Cl. D92—26.

Klayman, Saul, to Kandy-Pak, Inc. Combined floral display trellis and sign holder. 212,920, 12–10–68, Cl. D80—9.

Klosterman, J. E., Co.: *See*—
Klosterman, James E. 212,922.

Klosterman, James E., ½ to J. E. Klosterman Co., and ½ to Tru-Foto, Inc. 212,922, 12–10–68, D87—3.

Kraus, Alex, to California Custom Accessories Mfg. Co. Air scoop. 212,877, 12–10–68, Cl. D14—6.

Leottta, Samuel S., to Ohaus Scale Corp. Beam balance weighing scale. 212,907, 12–10–68, Cl. D52—10.

Lockheed Aircraft Corp.: *See*—
Davis, Edward M., and Hannan. 212,918.

Lubke K.G.: *See*—
Muller, Walter, Hero, and Odermatt. 212,878.

MacLachlan, William B., J. A. Aherne, and R. E. Morgan, to Bristol-Myers Co. Starter dosage card. 212,872, 12–10–68, Cl. D9—187.

March, John D.: *See*—
Cottier, Seton, and March. 212,885.

Marvin Glass & Associates: *See*—
Disko, Harry. 212,884.

McClare, Andrew V.: *See*—
Ainslie, Dianne B., and McClare. 212,916.

McCue, Daniel E., to Rival Mfg. Co. Electric can opener. 212,929, 12–10–68, Cl. D95—2.

LIST OF DESIGN PATENTEES

Mitchell Bobrick, Inc.: *See*—
Bobrick, Mitchell. 212,906.

Pacific Coast Engineering Co.: *See*—
Ramsden, Charles D., Zweifel, De Stasi, and Wolf. 212,876.

Morgan, Richard E.: *See*—
MacLachlan, William B., Aherne, and Morgan. 212,872.

Morgan, Robert G., and R. E. Smith, to Sylvania Electric Products, Inc. Combined miniature lamp and reflector therefor. 212,897, 12–10–68, Cl. D48—16.

Motorola, Inc.: *See*—
Aderman, Wayne L. 212,914.

Muller, Walter, F. Hero, and K. Odermatt, to Lubke K.G. Combined table and seating unit. 212,878, 12–10–68, Cl. D15—1.

National Ideal Co., The: *See*—
Giordano, Frank L. 212,883.

Nielsen, Otto S. Pocket billiard table or similar article. 212,888, 12–10–68, Cl. D34—3.

Odermatt, Karl: *See*—
Muller, Walter, Hero, and Odermatt. 212,878.

Ohaus Scale Corp.: *See*—
Leotta, Samuel S. 212,907.

Oldham, Dale R.: *See*—
Smith, Earl D., and Oldham. 212,901.

Ramsden, Charles D., C. H. Zweifel, A. J. DeStasi, and A. Wolf, to Mobile cargo container handler. 212,876, 12–10–68, Cl. D14—3.

Rand, William H. Germination cover for seed beds and the like. 212,983, 12–10–68, Cl. D35—1.

Rival Mfg. Co.: *See*—
McCue, Daniel E. 212,929.

Rose, Patrick J. Golf putter. 212,890, 12–10–68, Cl. D34—5.

Roth, Albert J. Pendant or other article of jewelry. 212,896, 12–10–68, Cl. D45—17.

Rudy, Morris R., to The Singer Co. Playground climbing device or similar article. 212,891, 12–10–68, Cl. D34—5.

Salvo, Anthony, A. Cayer, and J. Serejczyk, to Dura-Last Shingle Corp. Building strip. 212,874, 12–10–68, Cl. D13—1.

Scharf, Edwin I., ⅓ to C. B. Stem, and ⅓ to Historic New Albany, Inc. Game board. 212,889, 12–10–68, Cl. D34—5.

Scherer, Nancy A., to Cannon Mills Co. Pillowcase or similar article of bed linen. 212,928, 12–10–68, Cl. D92—26.

Schlumberger Ltd. (Schlumberger N.V.): *See*—
Jakobsen, Robert E. K. 212,879.

Serejczyk, Justine: *See*—
Salvo, Anthony, Cayer, and Serejczyk. 212,874.

Shalvoy, John C., to General Electric Co. Combined can opener and knife sharpener or similar article. 212,930, 12–10–68, Cl. D95—2.

Singer Co., The: *See*—
Dudek, Edmund C. 212,910.
Dudek, Edmund C. 212,911.
Rudy, Morris R. 212,891.

Smith, Earl D. Venicle side brush mount. 212,902, 12–10–68, Cl. D49—12.

Smith, Earl D. Vehicle cleaning arch. 212,903, 12–10–68, Cl. D49—12.

Smith, Earl D. Vehicle cleaning brush mount. 212,904, 12–10–68, Cl. D49—12.

Smith, Earl D., and D. R. Oldham. Vehicle dryer arch. 212,901, 12–10–68, Cl. D49—12.

Smith, Richard E.: *See*—
Morgan, Robert G., and Smith. 212,897.

Stem, Chester B., Inc., and Historic New Albany, Inc.: *See*—
Scharf, Edwin I. 212,889.

Stephens, Frank H., Jr. Cigarette lighter. 212,898, 12–10–68, Cl. D48—27.

Sylvania Electric Products, Inc.: *See*—
Morgan, Robert G., and Smith. 212,897.

Tateishi, Arthur K. Enclosure for a stereophonic record player. 212,913, 12–10–68, Cl. D56—4.

Toffolon, Siro R., to The International Silver Co. Fork or similar article of flatware. 212,908, 12–10–68, Cl. D54—12.

Toombs, Mary A. Portable garment rack. 212,887, 12–10–68, Cl. D33—3.

Tru-Foto, Inc.: *See*—
Klosterman, James E. 212,922.

Vesely, Donald V., and D. R. Dalpiaz, to Guardian Light Co. Outdoor lighting fixture. 212,899, 12–10–68, Cl. D48—31.

Vesely, Donald V., and D. R. Dalpiaz, to Guardian Light Co. 212,900, 12–10–68, Cl. D48—31.

Victorero, Ricardo. Portable seat. 212,880, 12–10–68, Cl. D15—8.

Warwick Electronics, Inc.: *See*—
Kaminski, Donald F. 212,912.

White, William G., to E. I. du Pont de Nemours and Company. Cap for an aerosol package. 212,873, 12–10–68, Cl. D9—258.

Willoughby, Connie C., to Cannon Mills Co. Pillowcase or similar article of bed linen. 212,923, 12–10–68, Cl. D92—26.

Willoughby, Connie C., to Cannon Mills Co. Bed sheet or similar article of bed linen. 212,924, 12–10–68, Cl. D92—26.

Wolf, Arnold: *See*—
Ramsden, Charles D., Zweifel, De Stasi, and Wolf. 212,876.

Ziskal, Robert J. Combination step ladder and cart. 212,875, 12–10–68, Cl. D14—3.

Zweifel, Charles H.: *See*—
Ramsden, Charles D., Zweifel, De Stasi, and Wolf. 212,876.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 10TH DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Vavra Hydrauliteknik: *See*—
Marlind, Goran. 3,415,329.

AVI Alpenlaendische Veredelungs-Industrie Gesellschaft m.b.H.: *See*—
Ritter, Josef, and Boyer. 3,415,031.

Abbey, Charles R., and H. H. Pursel, to Honeywell Inc. Data channel monitor. 3,415,947, 12–10–68, Cl. 178—69.

Abbott Laboratories: *See*—
Perun, Thomas J. 3,415,848.

Abe, Akira, J. Takahashi, and S. Morita. System for producing speed reduction signals for an elevator car. 3,415,344, 12–10–68, Cl. 187—29.

Abe, Shozo: *See*—
Kuwata, Tsutomu, Yasukawa, and Abe. 3,415,884.

Abel, Oscar W.: *See*—
Riddell, Edwin O., and Abel. 3,415,155.

Abramowitz, Herbert, and E. L. Sachs. X-ray film developing rack holder and drip stand. 3,415,177, 12–10–68, Cl. 95—100.

Abruzzo, Joseph, A. P. Cox, Jr., and R. H. Sapp, to United States of America, Navy. Efficient buffer storage. 3,416,144, 12–10–68, Cl. 340—173.

Adams, Ernest C., Jr.: *See*—
Chamblin, Keith W., Weiss, Loughman, Adams, and Beeny. 3,415,361.

Adams, Phillip, B. R. Juliano, H. Feilich, and F. Baron, to Millmaster Onyx Corp. Process for preparing 2-ethyl-3-methyl pentanoic acid. 3,415,877, 12–10–68, Cl. 260—530.

Adiletta, Joseph G., and D. Higgins, to Pall Corp. Ironing board cover. 3,414,995, 12–10–68, Cl. 38—140.

Adler, Bertram. Optical display device. 3,415,590, 12–10–68, Cl. 350—158.

Adler, Clarence E., to The Reliance Electric and Engineering Co. Indicating apparatus. 3,416,151, 12–10–68, Cl. 340—347.

Adler, George F. W., to The English Electric Co. Ltd. Rotary abutment hydraulic pumps and motors. 3,415,196, 12–10–68, Cl. 103—125.

Af Ekenstam Bo T., and C. G. Claeson, to Aktiebolaget Bofors. Salicylic acid esters of β-pyridyl carbinol. 3,415,836, 12–10–68, Cl. 260—295.5.

Agers, Donnell W., and R. R. Swanson, to General Mills, Inc. Extraction of vanadium and molybdenum with a phenolic oxime. 3,415,616, 12–10–68, Cl. 23—22.

Agfa Aktiengesellschaft: *See*—
Hellmig, Ehrhard, and Kleist. 3,415,698.
Von Konig, Anita, Mader, and Weyde. 3,415,651.

Agfa-Gevaert AG: *See*—
Winkler, Alfred, and Bammesberger. 3,415,599.

Ahrens, Warren S., and D. A. Viera, to The Bridgeport Metal Goods Mfg. Co. Cosmetic applicator. 3,415,604, 12–10–68, Cl. 401—122.

Ajay Golf Products, Inc.: *See*—
Zagwyn, Anthony T. 3,415,572.

Ajinomoto Co., Inc.: *See*—
Hino, Tetsuo, Hayashi, and Iizuka. 3,415,655.

Ajovalasit, Pietro. Method and apparatus for spontaneous fire extinction in tanks of combustible or inflammable liquids. 3,415,323, 12–10–68, Cl. 169—1.

Akimoto, Sakae: *See*—
Nagai, Satoshi, Furumoto, Moriya, and Akimoto. 3,415,666.

Akin, Cavit, to Falstaff Brewing Corp. Yeast removal from vessels by fluidity increase. 3,415,657, 12–10–68, Cl. 99—96.

Akita, Yoshio, T. Fujii, and M. Sasagawa, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Shield segment for covering the inner wall of the tunnel made of composite shell units. 3,415,063, 12–10–68, Cl. 61—45.

Aktiebolaget Bofors: *See*—
Af Ekenstam, Bo T., and Claeson. 3,415,836.

Aktiengesellschaft Brown, Boveri & Cie: *See*—
Faust, Werner. 3,416,002.
Spickenreuther, Dieter. 3,416,048.

Albemarle Paper Mfg. Co.: *See*—
Watters, Charles K. 3,415,440.

Albright & Wilson Ltd.: *See*—
Hoye, Peter A. T. 3,415,857.

Alburger, James R. Water-free penetrant inspection process and materials. 3,415,112, 12–10–68, Cl. 73—104.

Alden, Charles L., and D. F. Berkey, to Minnesota Mining & Mfg. Co. Container. 3,415,407, 12–10–68, Cl. 220—4.

Alexander, John M., and B. Lengyel. Extrusion method and apparatus. 3,415,088, 12–10–68, Cl. 72—54.

Alexeff, Alexander V., to Alexeff-Snyder Enterprises, Inc. Adjustable web spreading and guiding apparatus. 3,414,954, 12–10–68, Cl. 26—67.

Alexeff-Snyder Enterprises, Inc.: *See*—
Alexeff, Alexander V. 3,414,954.

Alimak-Verken AB: *See*—
Svensson, Torbjorn. 3,415,343.

Allen, Alan A. Method and means for applying liquid to form a coating on glass and for recovering excess liquid. 3,415,675, 12–10–68, Cl. 117—102.

Allen, Merton, to General Electric Co. Electrode for electrohydraulic systems. 3,416,128, 12–10–68, Cl. 340—12.

Allied Chemical Corp.: *See*—
Anello, Louis G., and Sweeney. 3,415,890.
Cunningham, William J., and Yodis. 3,415,729.
Elliott, Dale E. and G. A., and Moore. 3,415,822.
Moore, William P., and MacGregor. 3,415,823.
Yodis, Anthony W., and Schnoor. 3,415,618.

Altamura, Joseph A., to Atlas Chemical Industries, Inc. Electrode assembly jig and method thereof. 3,414,962, 12–10–68, Cl. 29—428.

Altrogge, Karl: *See*—
Friker, Hans-Helmut, Altrogge, and Heuse. 3,415,935.

Aluminum Co. of America: *See*—
Heaton, Edwin L., and Porter. 3,415,724.

Amason, Myron P., and G. J. Cassell, to McDonnell Douglas Corp. Radome lightning protection means. 3,416,027, 12–10–68, Cl. 315—36.

Amemiya, Hideo: *See*—
Yamaguchi, Terumoto, Kawamoto, and Amemiya. 3,414,970.

American Can Co.: *See*—
Kuehl, Donald R., and Peters. 3,415,362.

American Cement Corp.: *See*—
Walker, Larry D., and Jorgensen. 3,415,914.

American Cyanamid Co.: *See*—
Butensky, Irwin S., Smith, and Chrekian. 3,415,927.
Chirgwin, Lester D., Jr. 3,414,939.
Duesa, John P., Joseph, and Bernstein. 3,415,852.
Hoffman, Joseph A. 3,415,826.
Levesque, Raymond A., and Newton. 3,415,051.
Wilkinson, Raymond G., and Shepherd. 3,415,869.

American Home Products Corp.: *See*—
Hays, Merlin B., and Trace. 3,415,926.
Wolf, Milton. 3,415,840.

American Hospital Supply Corp.: *See*—
Hinman, Frank Jr., Folkman, and Arcarese. 3,415,299.

American Machine & Foundry Co.: *See*—
Berggren, Harold A. 3,415,275.

American Mfg. Co., Inc.: *See*—
Stanton, Robert L. 3,415,052.

American Meter Co., Inc.: *See*—
Douglas, Robert R. 3,415,121.

American Optical Co.: *See*—
Koester, Charles J., and Williams. 3,416,089.
Simpson, George R. 3,416,097.

American Optical Corp.: *See*—
Carmichael, Walter C. 3,415,596.
Upton, Lee O. 3,415,636.

American Saint Gobain Corp.: *See*—
Glynn, Theodore W. 3,415,637.

American Seating Co.: *See*—
Barecki, Chester J., and Nordmark. 3,415,462.

Ametek, Inc.: *See*—
Henry, Frank B. 3,414,997.
Toth, J. Roger. 3,416,055.

Ammann, Frank W.: *See*—
Reid, Gilbert R., and Ammann. 3,414,972.

Ammons, Walter D. Roof-type air conditioning system. 3,415,073, 12–10–68, Cl. 62—259.

Ampex Corp.: *See*—
Stahler, Alfred F. 3,416,149.

Amsted Industries Inc.: *See*—
Schulze, Herbert C. 3,414,951.

Andersen, Melvin A. Integral soffit and fascia unit of synthetic plastic. 3,415,019, 12–10–68, Cl. 52—94.

Anderson, Carroll R., to Munsingwear, Inc. Machine for knitting non-torque fabric. 3,415,081, 12–10–68, Cl. 66—151.

Anderson, Cecil L. Turbine vane assembly repairing apparatus. 3,414,958, 12–10–68, Cl. 29—200.

Anderson, Robert G., and W. M. Donald, to Canadian Westinghouse Co., Ltd. Transfer device. 3,416,107, 12–10–68, Cl. 335—11.

Anderson, Robert P.: *See*—
Gaines, George L., Jr., Herrick, and Anderson. 3,415,682.

Anderson, William F.: *See*—
Heller, Stanley, Anderson, and Berlin. 3,416,154.

Andrews, Hugh H., to Scovill Mfg. Co. Snap fastener with removable ornamental button. 3,414,949, 12–10–68, Cl. 24—208.

Anello, Louis G., and R. F. Sweeney, to Allied Chemical Corp. Novel halogenated cycloalkylether compositions. 3,415,890, 12–10–68, Cl. 260—611.

Anthony, Benjamin F.: *See*—
Charman, Walter M., Jr., and Anthony. 3,415,483.

Anthony Mfg. Corp.: *See*—
Costa, Robert B. 3,415,453.

Anthony, Steve S., ½ to E. J. Berwick. Gas conversion means and method. 3,415,633, 12–10–68, Cl. 48—196.

Anzenberger, Joseph F., to Monsanto Co. Imidazolines having polyalkenylsuccinimido-containing substituents. 3,415,750, 12–10–68, Cl. 252—51.5.

Applied Power Industries, Inc.: *See*—
Stein, Gary, and Halwas. 3,415,160.

Arcarese, Joseph J.: *See*—
Hinman, Frank Jr., Folkman, and Arcarese. 3,415,299.

Arcos Corp.: *See*—
Johnson, Wallace C. 3,415,975.
Argoudelis, Alexander D., and D. J. Mason, to The Upjohn Co. Antibiotic lincomycin K and process for the production thereof. 3,415,811, 12–10–68, Cl. 260—210.
Argoudelis, Evangelos, to Filtech Corp. Band-pass crystal filters. 3,416,104, 12–10–68, Cl. 333—72.
Arhex, Jean, R. Blanchet, B. Lebas, and A. Mical, to Commissariat a L'Energie Atomique. Multiple compartment fume cabinet including an evacuation chamber. 3,415,180, 12–10–68, Cl. 98—115.
Armadillo Mfg. Co.: *See*—
Walz, Frank C., Jr. Pickup, and Kratochvil. 3,415,025.
Armentano, Joseph A., to Combustion Engineering, Inc. Method of passivating metal surfaces. 3,415,692, 12–10–68, Cl. 148—6.14.
Armstrong Cork Co.: *See*—
Phillips, George T. 3,415,030.
Arnold Cellophane Corp.: *See*—
Arnold, Julian R., and Turner. 3,415,286.
Arnold, Julian R., and G. W. Turner, to Arnold Cellophane Corp. Tube-like structure and package made therefrom. 3,415,286, 12–10–68, Cl. 138—128.
Arnold, Philip M., to Phillips Petroleum Co. Biaxially oriented plastic film laminate and method for forming same. 3,415,710, 12–10–68, Cl. 161—55.
Aronson, Arnold J.: *See*—
Franks, Harry E., and Aronson. 3,416,031.
Arthur, James C., and R. L. Placek, to Arvin Industries, Inc. Resonator and method of making it. 3,415,336, 12–10–68, Cl. 181—48.
Arvin Industries, Inc.: *See*—
Arthur, James C., and Placek. 3,415,336.
McMillan, Robert H. 3,415,338.
Asahi Breweries Co. Ltd.: *See*—
Kato, Shoji, and Kanda. 3,415,452.
Asahi Dow Ltd.: *See*—
Nagai, Satoshi, Furumoto, Moriya, and Akimoto. 3,415,666.
Asahi Kiko Hanbai Kabushiki Kaisha: *See*—
Takamori, Shigeru. 3,415,145.
Asars, Juris A., to Westinghouse Electric Co. Display device utilizing magnetic memory elements for distributing a thermal pattern on a heat sensitive screen. 3,415,991, 12–10–68, Cl. 250—83.
Ash, Bernard H., to Litton Industries, Inc. Flow feeder with involute blades. 3,415,355, 12–10–68, Cl. 198—209.
Ashbrook, Richard L.: *See*—
Freche, John C., Ashbrook, Sandrock, and Dreshfield. 3,415,643.
Ashland Oil Refining Co.: *See*—
Egan, Richard R., and Sheeran. 3,415,614.
Ashley, Robert E., to Educational Data Systems, Inc. Teaching apparatus. 3,414,985, 12–10–68, Cl. 35—8.
Ashworth, Brian: *See*—
Haldane, John, and Ashworth. 3,415,701.
Associated Electrical Industries Ltd.: *See*—
Jackson, Ronald S., and Maguire. 3,416,012.
Atco Ceramics Corp.: *See*—
Friedman, Mitchell. 3,415,390.
Atlantic Licensing Corp.: *See*—
Crampton, Gale W., and Fremont. 3,415,114.
Atlas Chemical Industries, Inc.: *See*—
Altamura, Joseph A. 3,414,962.
Ball, Thomas Z. 3,415,188.
Trevorrow, William D. 3,415,189.
Aulhorn, Elfriede. Projection type sight testing apparatus with adjustable light intensity control means for vision test character. 3,415,594, 12–10–68, Cl. 351—30.
Ault, Neil N., and W. M. Wheildon, Jr., to Norton Co. Protective coated article. 3,415,631, 12–10–68, Cl. 29—195.
Austin, Robert D., Jr., to Lockheed Aircraft Corp. Micrometer pitch link. 3,415,324, 12–10–68, Cl. 170—160.22.
Autelca A.G.: *See*—
Meloni, Mario. 3,415,256.
Automatic Switching Ltd.: *See*—
Robson, Leslie J. 3,416,137.
Automation-Forster, Inc.: *See*—
Wiers, William C. 3,416,071.
Automation Industries, Inc.: *See*—
Cowan, Gerald De G. 3,415,110.
Automobiles Berliet, M.: *See*—
Gamard, Roland. 3,415,535.
Autopack Ltd.: *See*—
Steel, Henry J. 3,415,417.
Avakian, Souren, to Denver Chemical Mfg. Co. Bacteriuria test papers. 3,415,717, 12–10–68, Cl. 195—100.
Avco Corp.: *See*—
Bassett, Ormon E., and Bruck. 3,415,972.
Sheldon, Zachary D. 3,415,243.
B & B Engineering Co.: *See*—
Broersma, Robert J., Boomgaard, Droppers, and Wilson. 3,415,416.
BTU Engineering Corp.: *See*—
Beck, Jacob H. 3,415,503.
Babl, Albert, and H. Geng, to Lonza-Werke G.m.b.H. Preparation of hexagonal boron nitride. 3,415,625, 12–10–68, Cl. 23—204.
Bachman, Walter H.: *See*—
Korngold, Leon, and Bachman. 3,414,932.
Bader, Clifford J.: *See*—
Fussell, Richard L., and Bader. 3,416,072.
Bailey, Burton P., and A. E. Gomsi, to The Mead Corp. Lithographic plate and method for manufacturing same. 3,415,187, 12–10–68, Cl. 101—463.
Baker, J. T., Chemical Co.: *See*—
Schramm, Charles H., and Schmidle. 3,415,901.
Baldwin, John L. E., to Rank-Bush Murphy Ltd. Electrical signal amplifier. 3,416,088, 12–10–68, Cl. 330—3.
Ball, Donald, and R. Gurney, to ILG Industries Inc. Ventilating system and device. 3,415,178, 12–10–68, Cl. 98—33.
Ball, Thomas Z., to Atlas Chemical Industries, Inc. Sea water destructible booster assembly. 3,415,188, 12–10–68, Cl. 102—24.
Bammesberger, Karl: *See*—
Winkler, Alfred, and Bammesberger. 3,415,599.
Bandel, Alberto: *See*—
Bezzi, Silvio, Mortillaro, and Bandel. 3,415,783.
Bardell, Ralph V., to Bennett Industries, Inc. Closure apparatus. 3,415,403, 12–10–68, Cl. 215—42.
Bardwell, Paul: *See*—
O'Banion, John D. 3,415,397.
Barecki, Chester J., and W. E. Nordmark, to American Seating Co. Vehicle safety reel. 3,415,462, 12–10–68, Cl. 242—107.4.
Barker, Robert E., Jr., to General Electric Co. Bimaterial thermosensitive element. 3,415,712, 12–10–68, Cl. 161—183.
Barlow, Edward A.: *See*—
Daniels, Franklin W., and Barlow. 3,415,098.
Barmatic Machines, Inc.: *See*—
Korecky, Allan J., and Tesmer. 3,415,551.
Barnard, Walter C., to Whirlpool Corp. Latch mechanism. 3,415,961, 12–10–68, Cl. 200—61.64.
Barnes, Derek, to MacMillan, Bloedel and Powell River Ltd. Sheet lay-up apparatus. 3,415,707, 12–10–68, Cl. 156—557.
Baron, Frank: *See*—
Adams, Phillip, Juliano, Feilich, and Baron. 3,415,877.
Barringer, Joseph A. Retrievable rocket with folded wings. 3,415,467, 12–10–68, Cl. 244—3.29.
Barz, Maurice R., R. E. Olson, and N. S. Stockdale, to International Business Machines Corp. Video quantizing system. 3,415,950, 12–10–68, Cl. 178—7.1.
Baskins, Douglas L.: *See*—
Kruse, Frederick W., Jr., and Baskins. 3,416,100.
Bassett, Ormon E., and G. Bruck, to Avco Corp. Multiple point automatic welder. 3,415,972, 12–10–68, Cl. 219—78.
Bate, Fred, to Rotostar S.p.A. Heat sealing of plastic film. 3,415,704, 12–10–68, Cl. 156—515.
Bates, Robert L., and P. L. Fondy. Mixing device. 3,415,493, 12–10–68, Cl. 259—7.
Bauder, Ulrich, to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Method for introducing into packages of all types, binding agents for undesired substances which detrimentally influence the packed material. 3,415,702, 12–10–68, Cl. 156—276.
Bauer, William. Field game with tire goals. 3,415,522, 12–10–68, Cl. 273—126.
Baugh, Charles W., to Huck Mfg. Co. Joint construction. 3,415,553, 12–10–68, Cl. 287—189.36.
Baumann, Erwin, and G. Beham, to Etablissement Dentaire Ivoclar. Receptacle for dental preparations. 3,415,360, 12–10–68, Cl. 206—47.
Baumann, Horst: *See*—
Stein, Werner, Umbach, and Baumann. 3,415,753.
Bausch & Lomb, Inc.: *See*—
Letter, Eugene C. 3,415,591.
Beale, Julian R. A., A. F. Beer, and P. C. Newman, to North American Philips Co. Opto-PN junction semiconductor having greater recombination in P-type region. 3,416,047, 12–10–68, Cl. 317—234.
Bear, Fred B., to Victor Comptometer Corp. Takedown archery bow. 3,415,240, 12–10–68, Cl. 124—23.
Bear, Fred B., to Victor Comptometer Corp. Handgrip adapter for archery bow. 3,415,241, 12–10–68, Cl. 124—24.
Beaton, Joseph R. Water safety collar. 3,414,920, 12–10–68, Cl. 9—316.
Beaver, Garth H.: *See*—
Stacy, Charles L., Jr., and Beaver. 3,415,963.
Beck, Jacob H., to BTU Engineering Corp. Conditioned atmosphere furnace emuffle. 3,415,503. 12–10–68 Cl. 263—8.
Beck, Josiah D. Captive fastener assembly. 3,415,302, 12–10–68, Cl. 151—69.
Beckers, Hans, to Hamac-Hansella Aktiengesellschaft. Packaging installation including container forming and container closing means, and transfer device therebetween. 3,415,036, 12–10–68, Cl. 53—184.
Beckman Instruments, Inc.: *See*—
Carter, Norman W. 3,415,731.
Bedford, Alan, to Hawker Siddeley Dynamics Ltd. Missile control system with a remote display of missile and target for obtaining control signals. 3,415,465, 12–10–68, Cl. 244—3.14.
Bedford, James R., Jr. Simulated visual instrument-approach system. 3,415,946 12–10–68, Cl. 178—6.8.
Bedi, Ram D., and G. Dubpernell, to M & T Chemicals Inc. Method of stop-off of cathode pieces in chromium plating baths. 3,415,723, 12–10–68, Cl. 204—15.
Beeny, James G., Jr.: *See*—
Chambliss, Keith W., Weiss, Loughman, Adams, and Beeny. 3,415,361.
Beer, Andrew F.: *See*—
Beale, Julian R. A., Beer, and Newman. 3,416,047.
Beham, Gerhard: *See*—
Baumann, Erwin, and Beham. 3,415,360.
Belart, Juan, and G. Schrader, to Alfred Teves Maschinenund Armaturenfabrik K.G. Tandem brake master cylinder. 3,415,060, 12–10–68, Cl. 60—54.6.
Bell, Edward R.: *See*—
Blytas, George C., and Bell. 3,415,615.
Bell Telephone Laboratories, Inc.: *See*—
Berreman, Dwight W. 3,415,588.
Brass, Robert L. 3,416,138.
Earl, Herbert E., Jr., and Woo. 3,416,095.
Gordon, Alan M. 3,416,025.
Kandel, Samuel, and Nielson. 3,415,954.
Singer, Frederick L. 3,415,955.
Belleau, B. R., Ltd.: *See*—
Belleau, Bernard R. 3,415,725.

Belleau, Bernard R., to B. R. Belleau, Ltd. Electrolytic preparation of trialkoxyalkanes and tetraalkoxyalkanes. 3,415,725, 12–10–68, Cl. 204—79.
Beloit Corp.: *See*—
Hornbostel, Lloyd, Jr. 3,415,011.
Oas, David C. 3,414,982.
Belz, Franklin D. Toy parachute apparatus. 3,415,010, 12–10–68, Cl. 46—241.
Benatar, Victor, and R. T. Wilcox, to The Mead Corp. Feeder mechanism. 3,415,354, 12–10–68, Cl. 198—173.
Bencze, William L., and C. F. Huebner, to Ciba Corp. 1-dinyuro-naphthalene-derivatives. 3,415,837, 12–10–68, Cl. 260—297.
Benuer, Hans: *See*—
Bolkow, Ludwig, and Bender. 3,415,464.
Bendix Corp., The: *See*—
Kasten, Walter. 3,415,384.
Menin, Albert S., and Cyr. 3,418,127.
Bendler, Hellmut: *See*—
Stadler, Hans, Gawlick, and Bendler. 3,415,192.
Beneke Corp.: *See*—
Enlow, Dillard T. 3,414,911.
Benham, Alvin L., to Maratnon Oil Co. Aromatic extraction with a mixture of dimethylformamide and water. 3,415,743, 12–10–68, Cl. 208—330.
Bennett Industries, Inc.: *See*—
Bardell, Ralph V. 3,415,403.
Bennett, Milton C., to J. I. Case Co. Eccentric sensing mechanism. 3,415,325, 12–10–68, Cl. 172—7.
Beranger, Antoine: *See*—
Lecluyse, Edouard, and Beranger. 3,415,915.
Beresin, Peter W.: *See*—
Hunkins, Stanley H., Hernan, and Beresin. 3,416,133.
Berger, Julius, R. W. Kierstead, R. A. Lemahieu, and B. Tabenkin, to Hoffmann-La Roche, Inc. Preparation of hydroxycyclopentenones. 3,415,716, 12–10–68, Cl. 195—51.
Berger, Louis. Counterfeitproof, encapsulated identification card. 3,414,998, 12–10–68, Cl. 40—2.2.
Bergeron, Alfred L., and W. S. Sterling, to Pneumatic Scale Corp. Closure feeding and transferring device. 3,415,037, 12–10–68, Cl. 53—308.
Berggren, Harold A., to American Machine & Foundry Co. Spool shaped diaphragm element for plural seatings. 3,415,275, 12–10–68, Cl. 137—556.
Berghaus, Donald G., A. N. Garthwaite, and H.-L. Tiao, to International Business Machines Corp. Compound radius transducer head. 3,416,148, 12–10–68, Cl. 340—174.1.
Berkey, David F.: *See*—
Alden, Charles L., and Berkey. 3,415,407.
Berlin, Robert B.: *See*—
Heller, Stanley, Anderson, and Berlin. 3,416,154.
Bernasconi, Raymond, and K. Schenker, to Ciba Corp. 6-phenyl decahydroquinolines. 3,415,829, 12–10–68, Cl. 260—286.
Berndt, Karl-Heinz: *See*—
Koch, Hans-Joachim, Berndt, and Dölle. 3,415,733.
Bernhard, Bo B., and G. A. Kihlberg, to Svenska Ackumulator Aktiebolaget Jungner. Device for the conversion of a direct current into a sinusoidal alternating current. 3,416,062, 12–10–68, Cl. 321—16.
Bernstein, Seymour: *See*—
Dusza, John P., Joseph, and Bernstein. 3,415,852.
Bernutz, Johannes, and E. Schlogl, to International Standard Electric Corp. Plug-in type flat fuse. 3,416,114, 12–10–68, Cl. 337—295.
Berreman, Dwight W., to Bell Telephone Laboratories, Inc. Light transmission system utilizing transverse temperature gradients in a transparent gas. 3,415,588, 12–10–68, Cl. 350—96.
Bertram, Ernst and Wilhelm: *See*—
Bertram, Wilhelm, Jr. 3,415,175.
Bertram, Wilhelm, Jr., to E. and W. Bertram. Differential control apparatus, especially for the adjustment of aperture openings in photographic cameras. 3,415,175, 12–10–68, Cl. 95—64.
Berwick, Earl J.: *See*—
Anthony, Steve S. 3,415,633.
Besnyo, George F.: *See*—
Courtney, Maurice H., and Besnyo. 3,414,955.
Bethlehem Steel Corp.: *See*—
Kovalski, Leonard E. 3,415,748.
Perkey, Preston R., Sr. 3,414,924.
Bevis, Jeffrey M., to Chalco Engineering Corp. Capstan. 3,415,435, 12–10–68, Cl. 226—102.
Bezdel, Wincenty: *See*—
Wright, Esmond P. G., and Bezdel. 3,416,080.
Bezzi, Silvio, L. Mortillaro, and A. Bandel, to Montecatini Edison S.p.A. Process for preparing high molecular weight polyoxymethylenes. 3,415,783, 12–10–68, Cl. 260—67.
Bialobrzeski, Walter C.: *See*—
Jewett, Warren R., Petree, and Bialobrzeski. 3,415,419.
Bidwell, Howard. Methods and apparatus for dry defibering of fibrous materials. 3,415,456, 12–10–68, Cl. 241—21.
Bie, Norman, Jr. Katabatic water purification apparatus. 3,415,721, 12–10–68, Cl. 202—187.
Bien, Alfred A., and A. J. Lavich, to Chrysler Corp. Sliding joint member and structure. 3,415,140, 12–10–68, Cl. 74—492.
Biet, Jean P., to Compagnie Generale d'Electricite. Static circuit breaker having a semiconductor component. 3,416,009, 12–10–68, Cl. 307—299.
Biginelli, Oreste. Extractor for drawing presses. 3,415,099, 12–10–68, Cl. 72—290.
Biland, Hans R., C. Luethi, and M. Duennenberger, to Ciba Ltd. Aryl-1,3,5-triazine derivatives. 3,415,824, 12–10–68, Cl. 260—248.
Biland, Hans R.: *See*—
Luethi, Christian, Biland, and Duennenberger. 3,415,875.
Bishman, Walter A. Powered truck loading platform apparatus. 3,415,395, 12–10–68, Cl. 214—75.
Bisnop, Leonard J., K. Karlstrom, and P. Klamp, to Mechanical Handling Systems, Inc. Tow truck conveyor system. 3,415,200, 12–10–68, Cl. 104—172.
Bjalme, Bengt G., to Reed Mfg. Co. Telescoping pipe joint tool. 3,414,961, 12–10–68, Cl. 29—237.
Blackburn, Peter A., H. R. Chesters, and E. C. Seeley, to Plessey-UK Ltd. Automatic power level control for radiotelephony communication systems including a repeater station. 3,415,952, 12–10–68, Cl. 179—15.
Blackhawk, Edward A., and D. E. Moore. Check valve. 3,415,272. 12–10–68, Cl. 137—516.13.
Blackman, Calvin C. Coil spacer. 3,415,506, 12–10–68, Cl. 263—47.
Blackmer, David E., to Instrumentation Laboratory, Inc. High performance DC amplifier circuit having inherently low offset current. 3,416,093, 12–10–68, Cl. 330—23.
Blair, William W.: *See*—
Ott, Richard R., and Blair. 3,415,001.
Blaisdell, Homer J. Container sealing device. 3,415,409, 12–10–68, Cl. 220—40.
Blanchard, Floyd W. Self-pressurizing retractable ballpoint pen. 3,415,603, 12–10–68, Cl. 401—101.
Blanchet, Rene: *See*—
Arhex, Jean, Blanchet, Lebas, and Mical. 3,415,180.
Blaw-Knox Co.: *See*—
Karnofsky, George B. 3,415,872.
Blecke, Willard. Mower blade. 3,415,047, 12–10–68, Cl. 56—295.
Bleibtreu, Alexander, and J. Schaller, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Transfer switch for tap-changing regulating transformers having current-carrying contacts and operating means therefor achieving high initial speeds of contact separation. 3,415,957, 12–10–68, Cl. 200—8.
Bletcher, Pearl: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bletcher, Ralph E.: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bletcher, Richard H.: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bliss E. W., Co.: *See*—
Brown, George W., and Boxall. 3,415,105.
Bliss, Max D., Jr., ½ to S. A. Bliss. Sulky. 3,415,533, 12–10–68, Cl. 280—43.
Bliss, Shirley A.: *See*—
Bliss, Max D., Jr. 3,415,533.
Blizniuk, Nickolai K., A. F. Kolomiets, S. L. Varshavsky, A. A. Skladnev, L. P. Kofman, G. V. Tkachenko, B. J. Libman, and G. A. Novokrechshenov, to Vsesojuzny Nauchno-Issledovatelsky Institute. Method of preparing trialkyl phosphates. 3,415,908, 12–10–68, Cl. 260—971.
Block, Alvin L. Hand restraining device. 3,415,244, 12–10–68, Cl. 128—133.
Block, Burton P., and G. H. Dahl, to Pennsalt Chemicals Corp. Titanium chelate compound and titanium phosphinate polymer prepared therefrom. 3,415,762, 12–10–68, Cl. 260—2.
Block, Burton P., and G. H. Dahl, to Pennsalt Chemicals Corp. Titanium phosphinate polymers. 3,415,781, 12–10–68, Cl. 260—47.
Bloom, Meyer. Pipe cleaner. 3,414,926, 12–10–68, Cl. 15—104.3.
Blum, Joseph M., and M. Genser, to Solitron Devices Inc. Connection arrangement for three-element component to a micro-electronics circuit. 3,414,969, 12–10–68, Cl. 29—577.
Blum, Pierre: *See*—
Poncelet, Jacques, Bochirol, Blum, and Moreau. 3,416,013.
Blytas, George C., and E. R. Bell, to Shell Oil Co. Recovery of carbon monoxide by means of cuprous chloride in propionitrile. 3,415,615, 12–10–68, Cl. 23—3.
Bochirol, Louis: *See*—
Poncelet, Jacques, Bochirol, Blum, and Moreau. 3,416,013.
Boehme, Robert M., to Honeywell Inc. Method of fabricating read-after-write heads. 3,414,971, 12–10–68, Cl. 29—603.
Boeskool, Irvin L., and R. Grau, to Conductron Corp. Starting clutch for engines. 3,415,346, 12–10–68, Cl. 192—21.5.
Bogner, Gunther, to Siemens Aktiengesellschaft. Superconductive spool with refrigerant-holding spool carrier. 3,416,111. 12–10–68, Cl. 336—60.
Bohin, Guy E., to Rnone-Poulenc S.A. Method for dispersing additives in rubbers. 3,415,912, 12–10–68, Cl. 264—37.
Bohn, Richard E., and R. C. Sirrine, to Sylvania Electric Products, Inc. Integrated bias resistors for micro-logic circuitry. 3,416,049, 12–10–68, Cl. 317—235.
Boldt, Alvin M. Golfer's training device. 3,415,523, 12–10–68, Cl. 273—186.
Bolick, Fred C., Jr., to Lanier Electronics Laboratory, Inc. Tape control device. 3,415,434, 12–10–68, Cl. 226—25.
Bolkow Gesellschaft mit beschrankter Haftung: *See*—
Bolkow, Ludwig, and Bender. 3,415,464.
Bolkow, Ludwig, and H. Bender, to Bolkow Gesellschaft mit beschrankter Haftung. Aiming and guiding command set. 3,415,464, 12–10–68, Cl. 244—3.11.
Bollen, Hans: *See*—
Rijnsdorp, Johannes E., Van Kampen, and Bollen. 3,415,720.

Boncuk, Richard J., and A. E. Ozias, Jr., to Motorola, Inc. Method of determining resistivity of a thin layer. 3,416,078, 12–10–68, Cl. 324—64.

Bonk, Chaim, and S. Rafowitz. Cap. 3,414,906, 12–10–68, Cl. 2—172.

Boomgaard, Peter F.: *See*—
Broersma, Robert J., Boomgaard, Droppers, and Wilson, 3,415,416.

Boonstra, Harm J., J. T. Semeyns de Vries van Doesburgh, J. J. M. Deumens, and H. J. A. Delahaye, to Stamicarbon N.V. Process for nitrating aromatic compounds in liquid sulfur dioxide. 3,415,876, 12–10–68, Cl. 260—515.

Booth, Frederick C.: *See*—
Radke, Donald G., and Booth. 3,415,538.

Borg-Warner Corp.: *See*—
Breneman, Walter E. 3,416,039.
Donaldson, Desmond M., and Comer. 3,415,315.
Rodak, Edward. 3,415,076.
Underwood, Herbert N., and Haas. 3,415,058.

Borsini, Giancarlo, F. Visani, and G. Cevidalli, to Montecatini Edison S.p.A. Process for polymerization of vinyl monomers. 3,415,797, 12–10–68, Cl. 260—92.8.

Bostick, Edgar E., to General Electric Co. Photopolymerization of cyclotrisiloxanes. 3,415,728, 12–10–68, Cl. 204—159.13.

Bottger, Heinz, to Dr. C. Cella-Lackfarbrik Schleussner, G.m.b.H. Electrical conductors prepared from polyesters containing tris-(2-hydroxyethyl)-isocyanurate or tris-(2-carboxyethyl)-isocyanurate reacted with polyesteramides. 3,415,903, 12–10–68, Cl. 260—857.

Boughton, Victor K.: *See*—
Griffith, Dewey M., Hawkey and Boughton. 3,416,029.

Bourns, Inc.: *See*—
Tweed, Donald G. 3,415,268.

Bourrean, George R., and J. H. Colin, to International Standard Electric Corp. Circuit for generating a floating reference output voltage. 3,416,066, 12–10–68, Cl. 323—16.

Bouyoucos, John V., to General Dynamics Corp. Hydroacoustic apparatus. 3,415,330, 12–10–68, Cl. 175—56.

Bowen, Kenneth E.: *See*—
Chattaway, Maurice D., and Bowen. 3,415,111.

Bower, Arnold B., Jr., to General Electric Co. Drill bit. 3,415,332, 12–10–68, Cl. 175—410.

Bowmar Instrument Corp.: *See*—
Ordas, Arthur F. 3,416,015.

Bowser, Donald G., to United States Steel Corp. Flow control device for hoppers. 3,415,423, 12–10–68, Cl. 222—244.

Boxall, Clarence W.: *See*—
Brown, George W., and Boxall. 3,415,105.

Boyer, Wilhelm: *See*—
Ritter, Josef, and Boyer. 3,415 031.

Bradford Dyers' Association Ltd., The: *See*—
Wilford, Ernest, Hanson, and Whalley. 3,415,084.

Bradford Novelty Co., Inc.: *See*—
Burnbaum, Jack. 3,415,512.
Burnbaum, Jack. 3,415,513.

Bradley, James E.: *See*—
Snyder, Marvin K., Bradley, and Cowie. 3,415,027.

Brady, Charles E., and C. Nuss, to Chrysler Corp. Power steering flow control device. 3,415,266, 12–10–68, Cl. 137—117.

Brand, John R., to Warwick Electronics Inc. Organ circuit. 3,415,941, 12–10–68, Cl. 84—1.26.

Brass, Robert L., to Bell Telephone Laboratories, Inc. Data processor and method for operation thereof. 3,416,138, 12–10–68, Cl. 340—172.5.

Brearley Co., The: *See*—
Provi, Mike A., and Guinter. 3,414,909.
Provi, Mike A., and Guinter. 3,414,910.

Brechner, Stanley, and K. De Vito, to Warner-Lambert Pharmaceutical Co. Hair dye composition containing 2-hydroxy-1,4-naphthoquinone. 3,415,607. 12–10–68, Cl. 8—10.2.

Bredzs, Nikolajs, and W. Rostoker, to Reynolds Metals Co. Method and composition for exothermic fluxless brazing of aluminum and aluminum base alloys. 3,415,697, 12–10–68, Cl. 149—109.

Bremer, John W., to General Electric Co. Content addressed memory system having a grouped selection circuit. 3,416,146, 12–10–68, Cl. 340—173.1.

Breneman, Walter E., to Borg-Warner Corp. Temperature-responsive control circuit. 3,416,039, 12–10–68, Cl. 317—132.

Brenner, Arnold S.: *See*—
Jahns, Kenneth V., and Brenner. 3,416,032.

Bridgeport Metal Goods Mfg. Co., The: *See*—
Ahrens, Warren S., and Viera. 3,415,604.

Bridger, Robert F., to Mobil Oil Corp. Arylenedioxytin compounds and oxidation inhibited compositions containing same. 3,415,749, 12–10–68, Cl. 252—42.7.

Briggs & Stratton Corp.: *See*—
Harkness, Joseph R. 3,415,237.
Reichenbach, Joseph V., and Thompson. 3,415,236.

Bril, Alfred: *See*—
Wanmaker, Willem L., and Bril. 3,415,757.

Bringewald, August R., to Bringewald Process Corp. Process and apparatus for producing metal plates with integral stiffeners. 3,415,095, 12–10–68, Cl. 72—192.

Bringewald Process Corp.: *See*—
Bringewald, August R. 3,415,095.

Britcher, Harry H., Jr., to United States Steel Corp. Material pot with controlled dumping mechanism. 3,415,421, 12–10–68, Cl. 222—166.

British Titan Products Co. Ltd.: *See*—
Watson, William S. 3,415,968.

Britts, Frank J., 50% to J. B. Hazelrig. Hand tool. 3,415,100, 12–10–68, Cl. 72—317.

Brock, William H. J., and W. G. Turriff, to George E. Taylor & Co. Ltd. Hair curlers. 3,415,254, 12–10–68, Cl. 132—33.

Brockett, Peter C., to Laboratory for Electronics, Inc. Traffic actuated control system. 3,416,130, 12–10–68, Cl. 340—37.

Brodum, Hazel: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.

Broersma, Robert J., P. F. Boomgaard, P. E. Droppers, and D. M. Wilson, to B & B Engineering Co. Pot dispenser with multiple, simultaneously acting and circumposed discharge assistants. 3,415,416, 12–10–68, Cl. 221—221.

Brondum, Hazel: *See*—
Bucknell, Ernest H., Baug and Ward. 3,415,454.

Broughton, Vernon P. Mud pressure gauge protective device for oil drilling rig. 3,415,123, 12–10–68, Cl. 73—395.

Brown, George W., and C. H. Boxall, to E. W. Bliss Co. Apparatus for forming sheet metal containers. 3,415,105, 12–10–68, Cl. 72—402.

Brown, Robert F., and H. J. Hall, to Research-Cottrell, Inc. Apparatus for removing contaminants from high-resistivity fluids. 3,415,735, 12–10–68, Cl. 204—302.

Brown, Silas A., to Buckbee-Mears Co. Production of etched patterns in a continuously moving metal strip. 3,415,699, 12–10–68, Cl. 156—13.

Brown, Stanley G., and M. A. H. Walford, to Plenty and Son Ltd. Blenders for blending two or more liquids. 3,415,264, 12–10–68, Cl. 137—92.

Browne, William R.: *See*—
Coffman, John A., and Browne. 3,415,683.

Browning, Hugh R., and P. Carter, to Lever Brothers Co. Detergent compositions. 3,415,752, 12–10–68, Cl. 252—96.

Bruck, George: *See*—
Bassett, Ormon E., and Bruck. 3,415,972.

Bryson, H. Knox, A. B. Castle, and M. A. Juten, said A. B. Castle and said H. K. Bryson assors. to L. A. Bryson, Door holders and stops. 3,415,561, 12–10–68, Cl. 292—341.19.

Bryson, Lavona A.: *See*—
Bryson, H. Knox, Castle, and Juten. 3,415,561.

Buckbee-Mears Co.: *See*—
Brown, Silas A. 3,415,699.

Buckeye Molding Co.: *See*—
Robinson, William H., and Shiffer. 3,415,412.

Bucknell, Ernest H.: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.

Bucknell, Ernest H., and I. A. Ward, 10% to estate of R. E. Bletcher, deceased, and 5% to F. Robertson, 5% to G. Robertson, 10% to L. Bucknell, 10% to R. H. Bletcher, 10% to D. G. Liston, 5% to D. G. Liston as trustee for D. E. Liston, 5% to D. G. Liston as trustee for C. A. Liston, 5% to J. H. Liston, 10% to H. Brodum, 10% to P. Bletcher, 5% to M. Liston, and 10% to E. H. Bucknell. Coaxial control valve. 3,415,279, 12–10–68, Cl. 137—625.17.

Bucknell, Ernest H., and I. A. Ward, 10% to estate of R. E. Bletcher, deceased, 5% to F. Robertson, 5% to G. Robertson, 10% to L. Bucknell, 10% to R. H. Bletcher, 10% to D. G. Liston, 5% to D. G. Liston as trustee for D. E. Liston, 5% to C. A. Liston, 5% to J. H. Liston, 10% to H. Brondum, 10% to P. Bletcher, 5% to M. Liston, and 10% to E. H. Bucknell. Control valve. 3,415,280, 12–10–68, Cl. 137—625.17.

Bucknell, Ernest H., J. K. Rauh, and I. A. Ward, 10% to estate of R. E. Bletcher, deceased, 5% to F. Robertson, 5% to G. Robertson, 10% to L. Bucknell, 10% to R. J. Bletcher, 10% to D. G. Liston, 5% to D. G. Liston as trustee for C. A. Liston, 5% to J. H. Liston, 10% to H. Brondum, 10% to P. Bletcher, 5% to M. Liston, 10% to E. H. Bucknell, and 5% to D. G. Liston as trustee for D. E. Liston. Spray valve. 3,415,454, 12–10–68, Cl. 239—562.

Bucknell, Lenora: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.

Budd Co., The: *See*—
Dean, Albert G. 3,415,168.
Dean, Walter B., and Russell-French. 3,415,092.
Verbeck, John T. 3,415,973.

Buehler, Alois A., and E. H. Kurt, to Ingersoll-Rand Co. Hydraulic-pneumatic impact device. 3,415,328, 12–10–68, Cl. 173—105.

Buehler, Arthur, and G. Hoelzle, to Ciba Ltd. Anthraquinone dyestuffs. 3,415,825, 12–10–68, Cl. 260—249.

Buetow, Ralph W., ½ to K. Schoff. Solvent extraction method for removing salt from water. 3,415,744, 12–10–68, Cl. 210—22.

Buetow, Ralph W., ½ to K. Schoff. Method for extracting salt from sea water. 3,415,746. 12–10–68, Cl. 210—59.

Bulgin, Douglas, to The Dunlop Co. Ltd. Process for drying cellular compositions. 3,414,983, 12–10–68, Cl. 34—36.

Bunge, Konrad: *See*—
Vinzelberg, Bernhard, and Bunge. 3,415,997.

Burcham, Terry W., to United States of America, National Aeronautics and Space Administration. Controlled release device. 3,415,156, 12–10–68 Cl. 89—1.806.

Burger, Germain, to Easyserve Ltd. Golf practice devices. 3,416,079, 12–10–68, Cl. 324—68.

Burgess, Charles D., to Giffen-Burgess Corp. Process for face-seaming carpeting. 3,415,703, 12–10–68, Cl. 156—304.

Burgess, James F., to General Electric Co. Thermoplastic film recording media. 3,415,681, 12–10–68, Cl. 117—217.

Burks, Robert E.: *See*—
Russell, George K., and Burks. 3,416,052.

Burnbaum, Jack, to Bradford Novelty Co., Inc. Apparatus causing artificial snowfall. 3,415,512, 12–10–68, Cl. 272—15.

Burnbaum, Jack, to Bradford Novelty Co., Inc. Apparatus to cause artificial snowfall. 3,415,513, 12–10–68, Cl. 272—15.

Burne, Frederick A., and E. I. Valyi, to Olin Mathieson Chemical Corp. Modular units and use thereof in heat exchangers. 3,415,316, 12–10–68, Cl. 165—164.

Burroughs Corp.: *See*——
Fussell, Richard L., and Bader. 3,416,072.
Green, Milton. 3,415,601.
Jorgensen, Arnold J. 3,416,043.
Kondur, Nicholas, Jr. 3,415,477.
Marx, Hans B. 3,416,139.

Burzynski, Alfred J., and R. E. Martin, to Owens-Illinois, Inc. Modified organopolysiloxanes and preparation thereof. 3,415,778, 12–10–68, Cl. 260—46.5.

Bush, Stuart A., to United States of America, Atomic Energy Commission. Resistance welding. 3,415,977, 12–10–68, Cl. 219—149.

Bussell, Bertram, and J. A. Elfenbein, said Bussell assor. to said Elfenbein. Analog trim computer. 3,415,979, 12–10–68, Cl. 235—150.2.

Butaev, Filipp I., N. S. Klimov, A. A. Pertsev, N. P. Stepanov, A. M. Shemaev, and I. D. Shkolin. High-voltage mercury-arc rectifier. 3,416,018, 12–10–68, Cl. 313—30.

Butensky, Irwin S., H. L. Smith, and G. P. Chrekian, to American Cyanamid Co. Heat modified dispersible guar gum. 3,415,927, 12–10–68, Cl. 424—180.

Butler, Anthony J.: *See*—
Pierce, Ogden R., Grindahl, and Butler. 3,415,892.

Butler Mfg. Co.: *See*—
Snyder, Marvin K., Bradley, and Cowie. 3,415,027.

Buttke, Richard A.: *See*—
Sabatino, Anthony, Buttke, and Lowe. 3,415,220.

Bykasov, Viktor I.: *See*—
Kirpichnikov, Felix P., Bykasov, Reshetov, and Miljutin. 3,415,090.

CFS-Compagnie General de Telegraphie Sans Fil: *See*—
Castaing, Raymond, and Slodzian. 3,415,985.

CTS Corp.: *See*—
Van Benthuysen, John D., and Kleykamp. 3 416,119.

Cadiou, Jean G., to Societe Anonyme Andre Citreen. Torque-converter with clutch engaged and released by different pressures. 3,415,345, 12–10–68, Cl. 192—3.33.

Cafferty, Michael P., and D. E. Jewell, to J. I. Case Co. Chisel plow resetting means. 3,415,326, 12–10–68, Cl. 172—269.

Cahoon, Dick B.: *See*—
Nealon, Edward W., Yeutter, Cahoon, and Moore. 3,416,-121.

Cailliot, Serge L. L. Device for recording and reading of a helicoidal support tape. 3,415,525, 12–10–68, Cl. 274—4.

Calder, William J., and L. F. Jarvis, to Ilford Ltd. Photographic processing apparatus. 3,415,176. 12–10–68. Cl. 95—94.

Calevich, George J., and G. A. Goerss, Jr., to General Electric Co. Contact pin and manufacture thereof. 3,416,126, 12–10–68, Cl. 339—275.

Califoam Corp. of America: *See*—
Marshack, Irving L. 3,415,288.

Callahan, Andrew J., R. E. Harder, and R. B. Hurley, to The Dow Chemical Co. Method of improving heat stability of acrylonitrile polymer fibers. 3,415,611, 12–10–68, Cl. 8—137.5.

Callahan, James F.: *See*—
Smith, Richard D., and Callahan. 3,415,981.

Callander, Sidney E., and J. Yates, to Shell Oil Co. N-acyl derivatives of dichlorothiobenzamides. 3,415,879, 12–10–68, Cl. 260—558.

Campagnuolo, Carl J.: *See*—
Warren, Raymond W. Sieracki, and Campagnuolo. 3,415,-263.

Campagnuolo, Carl J., and R. W. Warren, to United States of America, Army. Flueric screamer. 3,415,193, 12–10–68, Cl. 102—92.4.

Canadian General Electric Co. Ltd.: *See*—
Irvine, Stuart. 3,416,124.

Canadian Westinghouse Co., Ltd.: *See*—
Anderson, Robert G., and Donald. 3,416,107.

Cannon, Donald R.: *See*—
Ware, Walter S., and Cannon. 3,415,351.

Carbabateas, Philip M., to Sterling Drug Inc. 4-(cyclopropylmethyl) - 3H - 1,4-benzodiazepine-2,5(1H,4H)-dione. 3,415,-814, 12–10–68, Cl. 260—239.3.

Carborundum Co., The: *See*—
McMullen, John C. 3,415,940.

Carley, James A., to Los Angeles Miniature Products, Inc. Filament display device including a rigid, light-absorbing, support panel. 3,416,020, 12–10–68, Cl. 313—109.5.

Carlson, David J., to Radio Corp. of America. Television signal converter circuit. 3,416,086, 12–10–68, Cl. 325—436.

Carlson, Otto K., and J. A. Price, to FMC Corp. Organo-antimony oxides and sulfides as polycondensation catalysts. 3,415,787, 12–10–68, Cl. 260—75.

Carmichael, Walter C., to American Optical Corp. Spectacle bridge structure with integral nose grip and rearwardly disposed recesses. 3,415,596, 12–10–68, Cl. 351—131.

Carroll, Robert L., and R. R. Irani, to Monsanto Co. Process for preparing condensed phosphorous acid. 3,416,623, 12–10–68, Cl. 23—165.

Carson, Robert C. Distance governor. 3,415,144, 12–10–68, Cl. 74—640.

Carson, William N., Jr., and R. N. King, to General Electric Co. Fluorocarbon bonded spinel oxygen electrode. 3,415,689, 12–10–68, Cl. 136—120.

Carter, Ernest P., P. R. Cox, Jr., and W. E. Lanier, to Monsanto Co. Mist spinning. 3,415,922, 12–10–68, Cl. 264—176.

Carter, Norman W., to Beckman Instruments, Inc. Glass electrodes and method for producing the same. 3,415,731, 12–10–68, Cl. 204—195.

Carter, Peter: *See*—
Browning, Hugh R., and Carter. 3,415,752.

Carter, William A., and O. Jensen, to I-T-E Circuit Breaker Co. Capacitor protection system including a plurality of serially connected valves in the air blast device. 3,416,034, 12–10–68, Cl. 317—12.

Carter Woodward C.: *See*—
Hill, Earl R., and Carter. 3,416,058.

Casale, Ernest R. Timing means. 3,415,137, 12–10–68, Cl. 74—395.

Case, J. I., Co.: *See*—
Bennett, Milton C. 3,415,325.
Cafferty, Michael P., and Jewell. 3,415,326.
Omon, Gene L. 3,415,053.

Case, Sam R., Jr., and W. L. Eddleman, Sr. Submarine device. 3,415,068, 12–10–68, Cl. 61—69.

Cassell, George J.: *See*—
Amason, Myron P., and Cassell. 3,416,027.

Cassidy, Francis T., Jr., and D. A. Intartaglia, to International Telephone and Telegraph Corp. Magnetic recorder transmitter distributor. 3,416,140, 12–10–68, Cl. 344—172.5.

Castaing, Raymond, and G. Slodzian, to Centre National de la Richerche Scientifigue and CFS-Compagnie General de Telegraphie Sans Fil. Ionic microanalyzer wherein secondary ions are emitted from a sample surface upon bombardment by neutral atoms. 3,415,985, 12–10–68, Cl. 250—49.5.

Castle, Alfred B.: *See*—
Bryson, H. Knox, Castle, and Juten. 3,415,561.

Caterpillar Tractor Co.: *See*—
Cheng, Chin J. 3,414,963.

Cathey, Wade T., Jr., to North American Rockwell Corp. Local reference beam generation for holography. 3,415,587, 12–10–68, Cl. 350—3.5.

Catterson, Robert K., to Walbro Corp. Magnetic drive pump. 3,415,195. 12–10–68, Cl. 103—118.

Caves, Thomas J. Clothes hanger. 3,415,482, 12–10–68, Cl. 223—96.

Caviglia, Enzo, to Hoosier Crown Corp. Plastic processing system. 3,414,938, 12–10–68, Cl. 18—5.

Cayo, Edmund J. Dental articulator. 3,414,977, 12–10–68, Cl. 32—32.

Celanese Corp.: *See*—
Courtney, Maurice H., and Besnyo. 3,414,955.

Cella-Lackfabrik Schleussner, Dr. C., G.m.b.H.: *See*—
Bottger, Heinz. 3,415,903.

Centre National de la Richerche Scientifigue: *See*—
Castaing, Raymond, and Slodzian. 3,415,985.

Certa, Anthony J., to Philco-Ford Corp. PVA etch masking process. 3,415,648, 12–10–68, Cl. 96—36.

Ceskoslouenska Akademie ved prague: *See*—
Sebenda, Jan. 3,415,792.

Cevidalli, Guidobaldo: *See*—
Borsini, Giancarlo, Visani, and Cevidalli. 3,415,797.

Chace, W. M., Co.: *See*—
Perry, Charles C. 3,416,112.

Chafetz, Harry: *See*—
Smetana, Richard D., and Chafetz. 3,415,868.

Chalco Engineering Corp.: *See*—
Bevis, Jeffrey M. 3,415,435.

Chambers, Robert W., to United States of America, Navy. Variable amplitude drive. 3,415,133, 12–10–68, Cl. 74—53.

Chambliss, Keith W., M. R. Weiss, B. E. Loughman, E. C. Adams, Jr., and J. G. Beeny, Jr., to Miles Laboratories, Inc. Test device and container therefor. 3,415,361, 12–10–68, Cl. 206—47.

Champagne, Whitney J. Locking cylinder. 3,415,167, 12–10–68, Cl. 92—26.

Chandler Evans Inc.: *See*—
Poole, Harmon A., Jr. 3,415,466.

Chapman, Richard D.: *See*—
Crovatt, Lawrence W., Jr., and Chapman. 3,415,791.

Charman, Walter M., Jr., and B. F. Anthony, to Oglebay Norton Co. Hot top structure. 3,415,483, 12–10–68, Cl. 249—201.

Charuhas, James J.: *See*—
Meek, James M., Charuhas, and Foure. 3,415,191.

Chatham, Newton L. Cable housing anchoring unit. 3,415,-549, 12–10–68, Cl. 287—20.

Chatman, William C., to Foster Wheeler Corp. Aspiration elimination for diverting valves. 3,415,262, 12–10–68, Cl. 137—81.5.

Chattaway, Maurice D., and K. E. Bowen, to S. T. D. Services Ltd. Apparatus for testing tubes or rods by ultrasonics. 3,415,111, 12–10–68, Cl. 73—67.8.

Chauprade, Robert, to Le Materiel Electrique S.W. Electronic blocking device for signals from a signal generator. 3,416,-007, 12–10–68, Cl. 307—252.

Chavannes, Marc A., to Sealed Air Corp. Cushioning and insulating material. 3,415,711, 12–10–68, Cl. 161—68.

Chemcut Corp.: *See*—
Smith, Stanley B. 3,415,389.

Chemical and Industrial Corp., The: *See*—
Pelitti, Enrico. 3,415,629.

Chemical Separations Corp.: *See*—
Higgins, Irwin R. 3,415,377.

Cheng, Chin J., to Caterpillar Tractor Co. Friction welding ceramic to metal. 3,414,963, 12–10–68, Cl. 29—470.3.

Chesters, Henry R.: *See*—
Blackburn, Peter A., Chesters, and Seeley. 3,415,952.

Cheung, Alan L. Bird feeder. 3,415,226, 12–10–68, Cl. 119—18.

Chevron Research Co.: *See*—
Elste Edward G., Jr. 3,415,669.
Kluksdahl, Harris E. 3,415,737.

Chiffoleau, Robert R.: *See*—
Tillisch, Paul W., Meyer Chiffoleau and Papalia. 3,415,-026.

Childers, Carroll D., to United States of America, Navy. Drum hoisting beam. 3,415,564, 12–10–68, Cl. 294—103.

Chirgwin, Lester D., Jr., to American Cyanamid Co. Apparatus for quenching melt spun fibers. 3,414,939, 12–10–68, Cl. 18—8.

Chore-Time Equipment, Inc.: *See*—
Myers, Lawrence A. 3,415,228.
Myers, Lawrence A. 3,415,229.
Chrekian, George P.: *See*—
Butensky, Irwin S., Smith, and Chrekian. 3,415,927.
Christiansen, Catheryen J.: *See*—
Christiansen, Rulon L., and C. J. 3,415,252.
Christiansen, Robert G., to Sterling Drug Inc. Dioximidoandrostanes and cyclized N-oxides derived therefrom. 3,415,818, 12–10–68, Cl. 260—239.55.
Christiansen, Rulon L., and C. J. Cigarette improvement. 3,415,252, 12–10–68, Cl. 131—10.7.
Chrysler Corp.: *See*—
Bien, Alfred A., and Lavich. 3,415,140.
Brady, Charles E., and Nuss. 3,415,266.
Riddell, Edwin O., and Abel. 3,415,155.
Chuss, John T., to Western Electric Co., Inc. Metallization of selected regions of surfaces and products so formed. 3,415,679, 12–10–68, Cl. 117—212.
Chwastyk, Adolph M., to United States of America, Navy. Optical phase shifter. 3,415,593, 12–10–68, Cl. 350—285.
Ciampa, Frederick A., A. Serafini, and L. Mazzarella, to Standard Box Spring Co. Bottom construction for box springs. 3,414,915, 12–10–68, Cl. 5—351.
Ciarrocchi, John A.: *See*—
Gertler, Eugene I., Huber, Richman, Ciarrocchi, and Habgood. 3,416,134.
Ciba Corp.: *See*—
Bencze, William Laszlo, and Huebner. 3,415,837.
Bernasconi, Raymond, and Schenker. 3,415,829.
Finocchio, Dom V., and Huebner. 3,415,937.
Lachman, Leon, and Sheth. 3,415,929.
Mizzoni, Renat Herbert, and Mull. 3,415,842.
Biland, Hans R., Luethi, and Duennenberger. 3,415,824.
Buehler, Arthur, and Hoelzle. 3,415,825.
Daendliker, Gustav, Jacob, and Scheller. 3,415,639.
Luethi, Christian, Biland, and Duennenberger. 3,415,875.
Nikles, Erwin, and Ebner. 3,415,827.
Orth, Hans, Zuppinger, Gempeler, and Schaefer. 3,415,794.
Preininger, Erich, and Ott. 3,415,779.
Scheller, Walter, Korinek, and Daendliker. 3,415,722.
Weber, Kurt, and Ingold. 3,415,808.
Ciric, Julius, to Mobil Oil Corp. Lithium-containing crystalline aluminosilicate. 3,415,736, 12–10–68, Cl. 208—111.
Claeson, Carl G.: *See*—
Af Ekenstam, Bo T., and Claeson. 3,415,836.
Clark Equipment Co.: *See*—
Mindrum, Kenneth H. 3,415,161.
Clarke, Robert L., to Sterling Drug Inc. Preparation of 2-oxo steroids and novel derivatives thereof. 3,415,816, 12–10–68, Cl. 260—239.5.
Clay, Murray G.: *See*—
Holmes, Frank C., and Clay. 3,415,117.
Clayton Mfg. Co.: *See*—
Cline, Edwin L. 3,415,113.
Clemco Clementina Ltd.: *See*—
Van Tuyl, David H. 3,415,418.
Cleminshaw, William T., and P. E. Robinson, to Parker-Hannifin Corp. Directional control valve with priority flow divider. 3,415,265, 12–10–68, Cl. 137—117.
Clerc, Milton C., to The Industrial Nucleonics Corp. Ratio computer. 3,416,082, 12–10–68, Cl. 324—79.
Cline, Edwin L., to Clayton Mfg. Co. Vehicle exhaust handling system. 3,415,113, 12–10–68, Cl. 73—117.
Cline, Robert W., to Goshen Rubber Co., Inc. Hand-held device for metal working using a vibrating electrode. 3,415,970, 12–10–68, Cl. 219—70.
Clinton, Henry H., to The Whitney Blake Co. Voltage regulating means for impedance bridge measuring circuits. 3,416,076, 12–10–68, Cl. 324—57.
Clock, Gerald E., to The Dow Chemical Co. Coated glass article and process for making same. 3,415,673, 12–10–68, Cl. 117—72.
Cluwen, Johannes M.: *See*—
Memelink, Oscar W., and Cluwen. 3,416,008.
Coast Metals Inc.: *See*—
Hawk, Elwin A., Sr. 3,415,449.
Hawk, Elwin A., Sr. 3,415,450.
Coates, Clarence A., Jr.: *See*—
Fisher, John G., and Coates. 3,415,809.
Coca-Cola Bottling Co.: *See*—
McChesney, Jack. 3,415,567.
Coffman, John A., and W. R. Browne, to General Electric Co. Corona discharge coating processes. 3,415,683, 12–10–68 Cl. 117—230.
Coletta, Daniel F. Roofing material. 3,415,029, 12–10–68, Cl. 52—419.
Colgate-Palmolive Co.: *See*—
Suh, John T. 3,415,859.
Suh, John T. 3,415,866.
Colin, Jean-Marie H.: *See*—
Bourreau, Georges R., and Colin. 3,416,066.
Collier, Byron L., to Farmland Industries, Inc. Artificial roughage for ruminants. 3,415,225, 12–10–68, Cl. 119—1.
Collins, James D., and J. F. Corwin, to Industrial Research and Mfg. Inc. Cementitious compositions. 3,415,773, 12–10–68, Cl. 260—38.
Collins, Sampel C., to 500 Inc. Method and apparatus for continuously supplying refrigeration below 4.2° K. 3,415,077, 12–10–68, Cl. 62—467.
Collins, William J. Device for sampling molten metal. 3,415,124 12–10–68, Cl. 73—425.4.
Collins, William J. Device for sampling molten metal. 3,415,125, 12–10–68, Cl. 73—425.4.
Colonial Broach & Machine Co.: *See*—
Crawford, Charles H., and Gotberg. 3,415,103.
Colston, Charles, Ltd.: *See*—
Gilson, Robert J. 3,415,258.
Columbus McKinnon Corp.: *See*—
Royer, William W., Molnar, Kaye, and Robinson. 3,415,135.
Combined Industries, Inc.: *See*—
Levy, Michael J. 3,415,584.
Combustion Engineering, Inc.: *See*—
Armentano, Joseph A., 3,415,692.
Garrett, Carlos J., Jr., and Hottenstine. 3,415,232.
Comer, Peter M.: *See*—
Donaldson, Desmond M., and Comer. 3,415,315.
Commissariat a L'Energie Atomique: *See*—
Arbex, Jean, Blanchet, Lebas, and Mical. 3,415,180.
Devin, Bernard, Durand, and Schley. 3,414,966.
Poncelet, Jacques, Bochirol, Blum, and Moreau. 3,416,013.
Compagnie Generale d'Electricite: *See*—
Biet, Jean P. 3,416,009.
Fouery, Jean. 3,415,688.
Conductron Corp.: *See*—
Boeskool, Irvin L., and Grau. 3,415,346.
Conklin, John B., Jr. Cable bender. 3,415,104, 12–10–68, Cl. 72—400.
Connelly, Lavern R., to Eaton Yale & Towne, Inc. Pump. 3,415,194, 12–10–68, Cl. 103—41.
Conti, John D., to FMC Corp. Wrapping machine sheet selector. 3,415,508, 12–10–68, Cl. 271—9.
Continental Oil Co.: *See*—
Ziegenhain, William C. 3,415,862.
Cook, Arnold M., to Norton Co. Method and apparatus for heating formed products. 3,415,505, 12–10–68, Cl. 263—36.
Cooper, Dester P., Jr., and S. Kagan, to Polaroid Corp. Delay-line controlled color television. 3,415,945, 12–10–68, Cl. 178—5.4.
Cooper Industries, Inc.: *See*—
Zelnick, Charles. 3,415,461.
Coover, Harry W., Jr., and R. L. McConnell, to Eastman Kodak Co. Polymers from phosphonitrilic halides and tetraalkyl difunctional cyclobutanes. 3,415,789, 12–10–68, Cl. 260—77.5.
Coover, Harry W., Jr., to Hercules Inc. Three-component monosubstituted aluminum dihalide catalysts for olefin polymerization. 3,415,801, 12–10–68, Cl. 260—93.7.
Cordes, Rudolf: *See*—
Haas, Karl, and Cordes. 3,415,727.
Corneau, George E.: *See*—
Roberts, Kenneth E., and Corneau. 3,415,222.
Cornell Aeronautical Laboratory, Inc.: *See*—
Stoddard, Frank J., Hall, and Hertzberg. 3,415,442.
Corwin, John F.: *See*—
Collins, James D., and Corwin. 3,415,773.
Cory Corp.: *See*—
Karlen, Harvey R. Herbsthofer, and Martin. 3,415,267.
Costa, Robert B., to Anthony Mfg. Corp. Swirl device for sprinkler heads. 3,415,453, 12–10–68, Cl. 139—465.
Coulson, Leonard W., and H. L. Thies, to La Belle Industries, Inc. Stripper member for pinch rollers. 3,415,437, 12–10–68, Cl. 226—187.
Courtney, Maurice H., and G. F. Besnyo, to Celanese Corp. Process and apparatus for stripping bobbins. 3,414,955, 12–10–68, Cl. 28—19.
Coutant, Edward R., to General Electric Co. Mercury button switch. 3,415,965, 12–10–68, Cl. 200—152.
Cowan, Gerald De G., to Automation Industries, Inc. Ultrasonic inspection. 3,415,110, 12–10–68, Cl. 73—67.8.
Cowie, Raymond L.: *See*—
Snyder, Marvin K., Bradley, and Cowie. 3,415,027.
Cox, Andrew P., Jr.: *See*—
Abruzzo, Joseph, Cox, and Sapp. 3,416,144.
Cox, Paul R., Jr.: *See*—
Carter, Ernest P., Cox, and Lanier. 3,415,922.
Crampton, Gale W., and H. J. Fremont, to Atlantic Licensing Corp. Dynamic engine analyzer. 3,415,114, 12–10–68, Cl. 73—117.2.
Crane, Gene: *See*—
O'Banion, John D. 3,415,397.
Crawford, Charles D., to The Dow Chemical Co. Process for the manufacture of polychloro-4-pyridyl sulfones. 3,415,832, 12–10–68, Cl. 260—294.8.
Crawford, Charles H., and H. H. Gotberg, to Colonial Broach & Machine Co. Straightening apparatus and method. 3,415,103, 12–10–68, Cl. 72—389.
Cremer, Joseph, U. Thummler, F. Schulte, and H. Harnisch, to Knapsack Aktiengesellschaft. Process and apparatus for the manufacture of phosphorous acid. 3,415,624, 12–10–68, Cl. 23—165.
Crockett, David L., and R. L. Sperling, to Honeywell Inc. Radiation chopper element providing two alternate radiation paths. 3,415,998, 12–10–68, Cl. 250—233.
Crosby, Stephen A. Tying implement and method. 3,415,557, 12–10–68, Cl. 289—1.5.
Crossley, Ernest E., to Ditchburn Vending Machines Ltd. Means for dispensing predetermined quantities of powdered or granulated materials. 3,415,424, 12–10–68, Cl. 222—311.
Crounse, Nathan N., and R. J. Schumacher, to Sterling Drug, Inc. Nitrogen-containing derivatives of 2,5-dichloro-3-nitrobenzoic acid. 3,415,838, 12–10–68, Cl. 260—306.8.
Crovatt, Lawrence W., Jr., and R. D. Chapman, to Monsanto Co. Copolyamide of 6-amino-caproic acid and 11-amino-undecanoic acid and fibers therefrom. 3,415,791, 12–10–68, Cl. 260—78.
Cubb-Pac Corp.: *See*—
Lugiewicz, Robert C. 3,414,936.
Cuckson, Eric E., and A. L. Jones, to Scovill Mfg. Co. Thermoplastic strips for sliding clasp fasteners. 3,414,948, 12–10–68, Cl. 24—205.13.
Cummings, John L., Sr., deceased, by M. G. Cummings, executrix. Lining material for oxygen blowing basic steel making vessels. 3,415,667, 12–10–68, Cl. 106—38.

Cummings, Marjorie G.: *See*—
Cummings, John L., Sr., and M. G. 3,415,667.
Cunningham, Robert G., R. D. Dobson, L. H. Going, and E. R. Purves, to The Procter & Gamble Co. Storage-stable cooking and salad oils having antispattering properties. 3,415,658, 12–10–68, Cl. 99—163.
Cunningham, William J., to Rohm and Haas Co. Polyvinyl chloride plasticized with mixed alkyl terpene dibasic acid esters. 3,415,770, 12–10–68, Cl. 260—29.8.
Cunningham, William J., and A. W. Yodis, to Allied Chemical Corp. Preparation of tetrafluoro-1,2-diiodoethane. 3,415,729, 12–10–68, Cl. 204—163.
Cutler-Hammer, Inc.: *See*—
Krieger, Alvin W. 3,415,962.
Cyr, Reginald J.: *See*—
Menin, Albert S., and Cyr. 3,418,127.
Czarnecki, Adolph, to Standard Alliance Industries, Inc. Power-and-free conveyor system. 3,415,201, 12–10–68, Cl. 104—178.
Dachtler, Emil. Power operated clothes press. 3,414,992, 12–10–68, Cl. 38—41.
Dadson, Albert J. S.: *See*—
Waggott, John B., and Dadson. 3,414,908.
Daendliker, Gustav: *See*—
Scheller, Walter, Korinek, and Daendliker. 3,415,722.
Daendliker, Gustav, A. Jacob, and W. Scheller, to Ciba Ltd. Method for the manufacture of tantalum and/or niobium powder. 3,415,639, 12–10–68, Cl. 75—.5.
Dahl, Gerd H.: *See*—
Block, Burton P., and Dahl. 3,415,762.
Block, Burton P., and Dahl. 3,415,781.
Dahlqvist, Arne L.: *See*—
Forkman, Anders C. G., and Dahlqvist. 3,415,718.
Dale Electronics, Inc.: *See*—
Klug, Robert F., and Lindquist. 3,416,120.
Dale, John I.: *See*—
Straley, James M., Dale, and Weaver. 3,415,810.
Dammann, Wilbur A. Electronic ignition system. 3,415,234, 12–10–68, Cl. 123—148.
Daniels, Franklin W., and E. A. Barlow, to General Electric Co. Method of extruding capacitor cases. 3,415,098, 12–10–68, Cl. 72—267.
Dannels, Bobby F.: *See*—
Shepard, Alvin F., and Dannels. 3,415,906.
Data Disc, Inc.: *See*—
Lindberg, Charles A., Jr. 3,416,150.
Davies, David J.: *See*—
Priese, Werner K., and Davies. 3,415,488.
Davis, Billy E.: *See*—
Schaefer, William A., Schmidt and Davis. 3,415,022.
Davis, Burns, and R. M. Schulken, Jr., to Eastman Kodak Co. Removing unreacted diisocyanates from macrodiisocyanates and polymerizing to form segmented polyurethane copolymers. 3,415,790, 12–10–68, Cl. 260—77.5.
Davis, Charles S., and H. R. Snyder, Jr., to The Norwich Pharmacal Co. 1-(5-Substituted) furfurylideneamino hydantoins and imidazolidinones. 3,415,821, 12–10–68, Cl. 260—240.
Davis, Nathan E., Jr.: *See*—
Earle, Roger T., Jr., and Davis. 3,415,383.
Davis, Ronnie D.: *See*—
Hobbach, Dale J., and Davis. 3,415,668.
Davis, Wayne T., and C. L. Kingrea, to Ethyl Corp. Organoaluminum compound production. 3,415,861, 12–10–68, Cl. 260—448.
Davis, Wilbern F.: *See*—
Schaller, Frank H., Davis, and Masterson. 3,415,511.
Dean, Albert G., to The Budd Co. Disk brake apparatus. 3,415,168, 12–10–68, Cl. 92—30.
Dean, Arthur L., to Syntron (Canada) Ltd. Vehicle alarm system. 3,416,129, 12–10–68, Cl. 340—32.
Dean, Douglas R.: *See*—
Jackson, Harold E., and Dean. 3,415,814.
Dean, Walter B., and H. M. Russell-French, to The Budd Co. Apparatus for forming tubing into helical configuration including a rotatable mandrel having track guide means. 3,415,092, 12–10–68, Cl. 72—144.
De Caro, Charles J., to United Shoe Machinery Corp. Devices for preventing drop-fire. 3,415,488, 12–10–68, Cl. 227—10.
De Castro, Edson D., to Digital Equipment Corp. Data handling system. 3,416,141, 12–10–68, Cl. 340—172.5.
Deere & Co.: *See*—
Hanser, Paul E. 3,415,327.
De Frees, Anne S.: *See*—
De Frees, Joseph H. 3,415,486.
De Frees, Joseph H., to A. S. De Frees. Spring biased tank outlet valve. 3,415,486, 12–10–68, Cl. 251—63.6.
Dehne, Clarence A., to Jervis B. Webb Co. Conveyor construction. 3,415,202, 12–10–68, Cl. 104—242.
Delahaye, Hubertus J. A.: *See*—
Boonstra, Harm J., Semeyns de Vries Van Doesburgh, Deumens, and Delahaye. 3,415,876.
De Leo, Richard V., and F. W. Hagen, to Rosemount Engineering Co. Dual static tube. 3,415,120, 12–10–68, Cl. 73—212.
De Lozier, Albert D.: *See*—
Martin, James A., and De Lozier. 3,414,916.
Delta Rope & Twine Ltd.: *See*—
Kippan, James A. 3,415,919.
Dennis, Emery W., E. W. McChesney, and A. R. Surrey, to Sterling Drug, Inc. 7-chloro-4-[4-(2-hydroxyethylamino)-1-methylbutylamino]quinoline; anti-inflammatory compositions and method using same. 3,415,932, 12–10–68, Cl. 424—258.
Dennison Mfg. Co.: *See*—
Dudley, John S. 3,415,183.
White, Kenneth J. 3,415,182.
Dent, Frederick J., and G. Percival, to The Gas Council. Treatment of hydrocarbon containing oils. 3,415,634, 12–10–68, Cl. 48—213.
Denver Chemical Mfg. Co.: *See*—
Avakian, Souren. 3,415,717.
De Smedt, Rene: *See*—
Van Goethem, Jan, De Smedt, and Lauwers. 3,416,143.
Deumens, Johannes J. M.: *See*—
Boonstra, Harm J., Semeyns de Vries van Doesburgh, Deumens, and Delahaye. 3,415,876.
Deutsche Rhodiaceta A.G.: *See*—
Welbers, Anton. 3,415,048.
Deutsche Solvay-Werke Gesellschaft mit beschrankter Haftung: *See*—
Friker, Hans-Helmut, Altrogge, and Heuse. 3,415,935.
Devin, Bernard, J.-P. Durand, and R. Schley, to Commissariat a l'Energie Atomique. Process for joining dissimilar metals. 3,414,966, 12–10–68, Cl. 29—528.
De Vito, Kathleen: *See*—
Brechner, Stanley, and De Vito. 3,416,607.
Dew, Kenneth L.: *See*—
Pinto, Albert A., and Dew. 3,416,051.
Dewey, Ronald D.: *See*—
Stanley, John F., and Dewey. 3,414,913.
Dexter, Theodore H., A. O. Minklei, and T. C. Thorstensen, to Hooker Chemical Corp. Reaction product of alkali metal sulfide and phosphorous sulfide in an 8:1 or higher ratio, depilatories therefrom and depilation therewith. 3,415,610, 12–10–68, Cl. 9—94.16.
Diamond Shamrock Corp.: *See*—
Kiss, Kornel D., and Reed. 3,415,786.
Tirpak, Michael R., Rosen, Wilhjelm, Reed, and Kiss. 3,415,785.
Dickson, Donald C., Jr., and D. L. Knauss, to Dickson Electronics Corp. Encased Zener diode assembly and method of producing same. 3,416,046, 12–10–68, Cl. 317—234.
Dickson Electronics Corp.: *See*—
Dickson, Donald C., Jr., and Knauss. 3,416,046.
Diebold, Anthony L., to Great Lakes Express Co. Portable partition. 3,415,303, 12–10–68, Cl. 160—229.
Dieterich, Dieter, W. Keberle, and E. Muller, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethanes prepared from chain-extenders having N-alkoxy methyl groups. 3,415,768, 12–10–68, Cl. 260—29.2.
Dietrick, Myron I.: *See*—
Hood, Richard T., and Dietrick. 3,415,774.
Digital Equipment Corp.: *See*—
De Castro, Edson D. 3,416,141.
Digital Sensors Inc.: *See*—
Griswold, Lee M. 3,415,096.
Dimension, Inc.: *See*—
Williams, Richard E. 3,415,949.
Distillers Co., Ltd., The: *See*—
Hadley, David J., and Jenkins. 3,415,760.
Ditchburn Vending Machines Ltd.: *See*—
Crossley, Ernest E. 3,415,424.
Dobson, Harmon: *See*—
O'Banion, John D. 3,415,397.
Dobson, Robert D.: *See*—
Cunningham, Robert G., Dobson, Going, and Purves. 3,415,658.
Purves, Edward R., Going, and Dobson. 3,415,660.
Dölle, Volker: *See*—
Koch, Hans-Joachim, Berndt, and Dölle. 3,415,733.
Domhan, Gerold: *See*—
Hörnlein, Roland, and Domhan. 3,415,388.
Donald, Harold J.: *See*—
Lee, Robert E., and Donald. 3,415,920.
Donald, William M.: *See*—
Anderson, Robert G., and Donald. 3,416,107.
Donaldson, Desmond M., and P. M. Comer, to Borg-Warner Corp. Heat exchange. 3,415,315, 12–10–68, Cl. 165—148.
Donnelly, Alfred F.: *See*—
McQueen, Malcolm M., and Donnelly. 3,415,118.
Douglas, Howard N. Concrete pipe vibrator. 3,414,952, 12–10–68, Cl. 25—30.
Douglas, Robert R., to American Meter Co., Inc. Gas meter. 3,415,121, 12–10–68, Cl. 73—264.
Dow Chemical Co., The: *See*—
Callahan, Andrew J., Harder, and Hurley. 3,415,611.
Clock, Gerald E. 3,415,673.
Crawford, Charles D. 3,415,832.
Frevel, Ludo K. 3,415,754.
Gibson, Daniel L. 3,415,319.
Glew, David N. 3,415,747.
Hickner, Richard A., and Farber. 3,415,902.
Kangas, Donald A., and Sheetz. 3,415,870.
Lee, Robert E., and Donald. 3,415,920.
Luck, Herbert O. 3,415,755.
Molau, Gunther E., and Mason. 3,415,795.
Schrieber, Charles F., and Newport. 3,415,305.
Sonnabend, Lawrence F. 3,415,763.
Stacy, Charles L., Jr., and Beaver. 3,415,963.
Thomison, William C. 3,415,959.
Thompson, Ivan M., and Maskal. 3,415,617.
Waack, Richard. 3,415,622.
Young, David M. 3,415,619.
Dow Corning Corp.: *See*—
Kim, Yung K. 3,415,858.
Pierce, Ogden R., Grindahl, and Butler. 3,415,892.
Doyle, William C., Jr.: *See*—
Sellers, Henry G., Jr., and Doyle. 3,415,893.
Drace, Lawrence V. Soiled laundry classifier. 3,415,372, 12–10–68, Cl. 209—124.
Dreshfield, Robert L.: *See*—
Freche, John C., Ashbrook, Sandrock, and Dreshfield. 3,415,642.
Dresser Industries, Inc.: *See*—
Venghiattis, Alexis A. 3,415,321.

Dreyfus, Bertrand A., and J. Tavernier, to Societe d'Electronique et d'Automatisme. Opto-electronic device having a transparent electrode thereon and method of making same. 3,416,044, 12–10–68, Cl. 317—234.

Drivet, Jean A. P., to Societe Auxiliaire des Producteurs de Potrole Flopetrol. Equipment for wire-lining operations in submarine well drillings. 3,415,317, 12–10–68, Cl. 166—.6.

Droppers, Paul E.: *See*—
Broersma, Robert J., Boomgaard, Droppers, and Wilson. 3,415,416.

Druseikis, Frederick, to General Motors Corp. Windshield wiper drive mechanism. 3,415,132, 12–10–68, Cl. 74—42.

Dryden, Hugh L., Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Leonard Reed, to Varian Associates. Ceramic-to-metal seal and method of making same. 3,415,556, 12–10–68, Cl. 287—189.365.

Drysdale, William R. Vacuum flow control for crankcase ventilation. 3,415,233, 12–10–68, Cl. 123—119.

Dubpernell, George: *See*—
Bedi, Ram D., and Dubpernell. 3,415,723.

Ducanis, Paul. Device for feeding stock in a screw machine. 3,415,436, 12–10–68, Cl. 226—167.

Dudley, John S., to Dennison Mfg. Co. Bed and platen duplicate ticket printing machine. 3,415,183, 12–10–68, Cl. 101—68.

Duennenberger, Max: *See*—
Biland, Hans R., Luethi, and Duennenberger. 3,415,824.
Luethi, Christian, Biland, and Duennenberger. 3,415,875.

Dunlop, Andrew P., D. G. Manly, and F. J. Rice, Jr., to The Quaker Oats Co. Method of production of monocyclohexylamine. 3,415,881, 12–10–68, Cl. 260—563.

Dunlop Co. Ltd., The: *See*—
Bulgin, Douglas. 3,414,983.
Lautenschlaeger, Friedrich K. 3,415,888.

Du Pont de Nemours, E. I., and Co.: *See*—
Irwin, Robert S., and Smullen. 3,415,782.
Woodruff, Robert W. 3,415,771.

Durand, Jean-Paul: *See*—
Devin, Bernard, Durand, and Schley. 3,414,966.

Dusey, Albert P., Jr.: *See*—
Dusey, Albert P., Sr., and Jr. 3,414,912.

Dusey, Albert P., Sr., and Jr. Furniture with interchangeable components. 3,414,912, 12–10–68, Cl. 5—52.

Dusza, John P., J. P. Joseph, and S. Bernstein, to American Cyanamid Co. Method of preparing 3-alkoxy-2-formyl-Δ^2-steroids and new products resulting therefrom. 3,415,852, 12–10–68, Cl. 260—397.2.

Dyer, Howard A., Jr.: *See*—
Perry, John H., and Dyer. 3,415,033.

Dynamit Nobel Aktiengesellschaft: *See*—
Hass, Karl, and Cordes. 3,415,727.
Klaiss, Hans-Dieter. 3,415,484.
Stadler, Hans, Gawlick, and Bendler. 3,415,192.

Ealing Corp., The: *See*—
Williams, Thomas W., III. 3,415,478.

Earl, Herbert E., Jr., and K. E. Woo, to Bell Telephone Laboratories, Inc. Microwave amplifier and oscillator. 3,416,095. 12–10–68, Cl. 330—56.

Earle, Roger T., Jr., and N. E. Davis, Jr., to General Electric Co. Centrifugal separator. 3,415,383, 12–10–68, Cl. 210—377.

Eastman Kodak Co.: *See*—
Coover, Harry W., Jr., and McConnell. 3,415,789.
Davis, Burns, and Schulken. 3,415,790.
Fisher, John G., and Straley. 3,415,807.
Fisher, John G., and Coates. 3,415,809.
Frame, Gordon F., and Johnson. 3,415,650.
Langstaff, Witt L., and Shealy. 3,414,957.
Porter, Ralph F. 3,415,652.
Price, William H. 3,415,592.
Smith, Donald A., and Perry. 3,415,653.
Straley, James M., Dale, and Weaver. 3,415,810.
Wyand, Edwin B., and Tarkington. 3,415,647.

Easyserve Ltd.: *See*—
Burger, Germain. 3,416,079.

Eaton Yale & Towne, Inc.: *See*—
Connelly, Lavern R. 3,415,194.
Kleveland, Nels B. 3,415,426.

Ebert, Glenn W., to McKenzie Sand & Gravel Co. Asphalt preparing and delivering system. 3,415,499, 12–10–68, Cl. 259—171.

Eble, George, Jr. Lock for truck trailer. 3,415,085, 12–10–68, Cl. 70—232.

Ebner, Ludwig: *See*—
Nikles, Erwin, and Ebner. 3,415,827.

Echols, Samuel T., Jr. Ice shaver. 3,415,457, 12–10–68, Cl. 241—92.

Eckel, Robert A., and R. Nagy, to Westinghouse Electric Corp. Mercury vapor sunlight lamp. 3,416,023, 12–10–68, Cl. 313—225.

Eckert, John F., and J. C. Sims, Jr., to Mohawk Data Science Corp. Zigzag paper stacker. 3,415,507, 12–10–68, Cl. 270—61.

Eddleman, William L., Sr.: *See*—
Casey, Sam R., Jr., and Eddleman. 3,415,068.

Eden, Edward J.: *See*—
MacDonald, John, Eden, and Myers. 3,416,113.

Edson, William A., to General Electric Co. Read-out system for recirculating memory. 3,416,145, 12–10–68, Cl. 340—173.

Educational Data Systems, Inc.: *See*—
Ashley, Robert E. 3,414,985.

Edwards, Joe E., Jr.: *See*—
Elliott, James K., and Edwards. 3,415,199.

Egan, Richard R., and S. R. Sheeran, to Ashland Oil Refining Co. Process and composition for retarding water evaporation. 3,415,614, 12–10–68, Cl. 21—60.5.

Eickmann, Karl. Guiding device for the vane assemblies of a fluid handling device. 3,415,197, 12–10–68, Cl. 103—136.

Eisenlohr, Karl-Heinz, and E. Muller, to Metallgesellschaft Aktiengesellschaft. Recovery of aromatics by extraction or extractive distillation with solvent mixtures of N-methyl pyrrolidone and diglycol amine. 3,415,739, 12–10–68, Cl. 208—323.

Eisenlohr, Karl-Heinz, and E. Muller, to Metallagesellschaft Aktiengesellschaft. Recovery of aromatics by extraction with a solvent mixture of butyrolactone and glycerol. 3,415,740, 12–10–68, Cl. 208—323.

Eisenlohr, Karl-Heinz, and E. Muller, to Metallgesellschaft Aktiengesellschaft. Recovery of aromatics by extraction with solvent mixture of N-methyl pyrrolidone and monoethanolamine. 3,415,741, 12–10–68, Cl. 208—323.

Eisenlohr, Karl-Heinz, and E. Muller, to Metallgesellschaft Aktiengesellschaft. Recovery of aromatics by extraction with solvent mixture of N-methyl-pyrrolidone and glycerol. 3,415,742, 12–10–68, Cl. 208—323.

Elbogen, James S., to Parker-Hannifin Corp. Vent valve. 3,415,273, 12–10–68, Cl. 137—522.

Electrical & Mechanical Service Co.: *See*—
Gliewski, Joseph F., and Teter. 3,415,164.

Electrometre, S.A.: *See*—
Rutenberg, Abraham. 3,416,075.

Electronics Corp. of America: *See*—
Giuffrida, Philip, and Pratt. 3,416,041.

Elfenbein, Jack A.: *See*—
Bussell, Bertram, and Elfenbein. 3,415,979.

Elliott Brothers (London) Ltd.: *See*—
Heller, Fritz P. 3,415,951.

Elliott, Dale E., and G. A., and W. P. Moore, to Allied Chemical Corp. Production of cyanuric acid. 3,415,822, 12–10–68, Cl. 260—248.

Elliott George A.: *See*—
Elliott, Dale E. and G. A., and Moore. 3,415,822.

Elliott, James K., and J. E. Edwards, Jr., to Macco Oil Tool Co., Inc. Automatic downhole gas lift apparatus. 3,415,199, 12–10–68, Cl. 103—248.

Elliott, Richard M. to United Shoe Machinery Corp. Tools for setting blind rivets. 3,415,102, 12–10–68, Cl. 72—931.

Ellis, John H., to University of Kentucky Research Foundation. Sample preparation apparatus and unitary filter-pipette for use therein. 3,415,380, 12–10–68, Cl. 210—202.

Ellison, Ronald, and J. Pritchard, to Ellison Tufting Machinery Ltd. Machine for making tufted carpets and like fabrics. 3,415,209, 12–10–68, Cl. 112—79.

Ellison Tufting Machinery Ltd.: *See*—
Ellison, Ronald, and Pritchard. 3,415,209.

Elox Corp.: *See*—
Shaffer, William B. 3,415,971.

Elste, Edward G., Jr., to Chevron Research Co. Bitumen composition as mold coatings. 3,415,669, 12–10–68, Cl. 117—5.1.

Emeis, Reimer, J. Haus, A. Herlet, H. Nagorsen, and H. Martin, to Siemens Aktiengesellschaft. Method for the production of a soldered joint. 3,414,964, 12–10–68, Cl. 29—473.1.

Endo Laboratories, Inc.: *See*—
Pachter, Irwin J., and Herz. 3,415,843.

Engelhard, William E., to Owego Heat Treat, Inc. Method of and apparatus for treating parts. 3,415,694, 12–10–68, Cl. 148—13.

Engelhard, William E., to Pyro-Serv Instruments, Inc. Low noise DC to AC signal converter. 3,416,064, 12–10–68, Cl. 321—49.

Engler, Nicolas: *See*—
Jaccard, Jean-Paul, and Engler. 3,414,994.

English Electric Co. Ltd., The: *See*—
Adler, George F. W. 3,415,196.

Engstrom, Vincent C., to A. and E. M. Looff. Game with score recording mechanism. 3,415,521, 12–10–68, Cl. 273—124.

Enlow, Dillard T., to Beneke Corp. Self-raising water closet seat. 3,414,911, 12–10–68, Cl. 4—241.

Erickson, John G., to Minnesota Mining and Mfg. Co. Reticulate polymeric structure. 3,415,764, 12–10–68, Cl. 260—2.5.

Ericson, Gene S., to Westinghouse Electric Corp. Coil winding and transfer apparatus for dynamoelectric machine core members. 3,415,292, 12–10–68, Cl. 140—92.1.

Erikson, Carl F., to Sundstrand Corp. Tool changer. 3,414,967, 12–10–68, Cl. 29—568.

Esso Production Research Co.: *See*—
Horeth, John M., Langenheim, and Howard. 3,415,363.
Schaefer, William A., Schmidt, and Davis. 3,415,022.

Esso Research and Engineering Co.: *See*—
Shropshire, Joseph A., and B. L. Tarmy. 3,415,686.

Etablissement Dentaire Ivoclar: *See*—
Baumann, Erwin, and Beham. 3,415,360.

Etablissements Kuhlmann: *See*—
Swierkot, Henri B. 3,415,841.

Ethyl Corp.: *See*—
Davis, Wayne T., and Kingrea. 3,415,861.
Worrel, Calvin J. 3,415,849.
Worrel, Calvin J., and McLean. 3,415,850.

Ettre, Kitty S., to Vitta Corp. Machines for tape transfer. 3,415,705, 12–10–68, Cl. 156—540.

Ettre, Kitty S., to Vitta Corp. Machines for tape transfer. 3,415,706, 12–10–68, Cl. 156—540.

Euclid, Inc.: *See*—
Naddell, Manuel. 3,415,169.

Eue, Ludwig: *See*—
Sasse, Klaus, Kuhle, and Eue. 3,415,828.

Evalds, Egils H., to Robertshaw Controls Co. Thermally responsive control circuit with automatic reset. 3,416,060, 12–10–68, Cl. 318—473.

Evans, John S., Jr., to Mandrel Industries, Inc. Sorting machine. 3,415,496, 12–10–68, Cl. 259—85.

Evans Products Co.: *See*—
Rolfe, Herbert E., Jr. 3,415,015.

Everhart, John J.: *See*—
Moser, Frank, and Everhart. 3,415,677.

FMC Corp.: *See*—
Carlson, Otto K., and Price. 3,415,787.
Conti, John D. 3,415,508.
Murphy, Hugh W. 3,415,350.
Pelmulder, John P., and Thuse. 3,415,075.
Putch, Sam W. 3,415,322.
Schultz, Dennis R. 3,415,371.
Stilwell, Robert E. 3,415,270.

Fafnir Bearing Co., The: *See*—
Pethis, James J. 3,415,500.

Faller, Rudolph A., to Hoerner Waldorf Corp. Bottle packages. 3,415,358, 12–10–68, Cl. 206—46.

Falstaff Brewing Corp.: *See*—
Akin, Cavit. 3,415,657.
Zinn, Robert E. 3,415,654.

Fansteel Metallurgical Corp.: *See*—
Lambert, John B. 3,415,640.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Dieterich, Dieter, Keberle, and Muller. 3,415,768.
Gugelot, Hans, Hoppe, Reichl, and Weinbrenner. 3,415,568.
Sasse, Klaus, Kuhle, and Eue. 3,415,828.
Sucker, Christain, Meskat, and Heusch. 3,415,109.
Vinzelbarg, Bernhard, and Bunge. 3,415,997.

Farber, Hugh A.: *See*—
Hickner, Richard A., and Farber. 3,415,902.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Siedel, Walter, Sturm, and Geiger. 3,415,805.

Farmland Industries, Inc.: *See*—
Collier, Byron L. 3,415,225.

Farrar, Ralph C., to Phillips Petroleum Co. Polymerization. 3,415,802, 12–10–68, Cl. 260—94.3.

Farrell, John. Air purification unit. 3,415,056, 12–10–68, Cl. 60—30.

Farrington Electronics, Inc.: *See*—
Tyburski, Robert M., and Springer. 3,415,509.

Fastener Corp.: *See*—
Naber, Joseph S. 3,416,000.

Faulkner, Thomas G. Wax coated disc-protecting and storage device. 3,415,365, 12–10–68, Cl. 206—62.

Faure, Andree: *See*—
Hoffmann, Charles, and Faure. 3,415,834.

Faust, Werner, to Aktiengesellschaft Brown, Boveri & Cie. Current converter circuit with controlled rectifier element. 3,416,002, 12–10–68, Cl. 307—202.

Federal-Mogue Corp.: *See*—
Haller, John. 3,415,555.

Federighi, George J.: *See*—
Noren, Tore H., and Federighi. 3,415,259.

Fellich, Howard: *See*—
Adams, Phillip, Juliano, Fellich, and Baron. 3 415,877.

Fend, Fred A., to Xerox Corp. Duplicating system. 3,415,186, 12–10–68, Cl. 101—468.

Ferchland, Harold W., to General Motors Corp. Hydrostatic continuous forming mill. 3,415,089, 12–10–68, Cl. 72—60.

Ferguson, Harry, Research Ltd.: *See*—
Walker, Frederick J. 3,415,577.
Walker, Frederick J. 3,415,578.

Ferris, Robert G., to Starline, Inc. Flail type material spreader. 3,415,455, 12–10–68, Cl. 239—658.

Fetterly, Lloyd C.: *See*—
Gilderson, Peter W., Newman, and Fetterly. 3,415,621.

Fiat Societá per Azioni: *See*—
Franchini, Enzo. 3,415,410.

Fiberwoven Corp., The: *See*—
Smith, Alexander M., II. 3,415,713.

Fichter, Ludwig J., to Oak Electro/Netics Corp. Automatic shift drive for a multiband tuner. 3,415,130, 12–10–68, Cl. 74—10.45.

Fiedler, George H., A. R. Passarello, and W. E. Taggart, to Johnson Corp. Control for combined heating-cooling air conditioning unit. 3,415,309, 12–10–68, Cl. 165—26.

Field, John C.: *See*—
Raschke, Robert M., and Field. 3,415,663.

Fields, Ellis K.: *See*—
Jason, Emil F., and Fields. 3,415,793.

Filtech Corp.: *See*—
Argoudelis, Evangelos. 3 416,104.

Fingerut, Boris M., and A. E. May, Jr. Merchandising carrier. 3,415,532, 12–10–68, Cl. 280—34.

Finocchio, Dom V., and C. F. Huebner, to Ciba Corp. Suppression of appetite with 1-(0-chlorophenyl)-2-methyl-2-propylamine and acid-addition salts thereof. 3,415,937, 12–10–68, Cl. 424—330.

Firma Woma-Apparatebau Wolfgang Maasberg & Co. G.m.b.H.: *See*—
Maasberg, Wolfgang, and Heinrich. 3,415,271.

Firth, Donald: *See*—
Foster, Keith, and Firth. 3,415,059.

Fischer, Artur. Toy building kit. 3,415,008, 12–10–68, Cl. 46—26.

Fisher, Chester D., R. L. Stroup, and W. Zerkel, to Sprout Waldron & Co., Inc. Liquid addition mixer. 3,415,494, 12–10–68, Cl. 259—8.

Fisher, John G., and J. M. Straley, to Eastman Kodak Co. Cationic monoazo dyestuffs containing a dicarboximido radical. 3,415,807, 12–10–68, Cl. 260—158.

Fisher, John G., and C. A. Coates, Jr., to Eastman Kodak Co. Cationic heterocyclic disazo dyes. 3,415,809, 12–10–68, Cl. 260—158.

Fishman, Bernard: *See*—
Mitchell, William H., Fishman, and Sage. 3,415,277.

Fisons Fertilizers Ltd.: *See*—
Hemsley, John D. C., and Janikowski. 3,415,638.

Fistell, David N. Additional equipment controls for record players. 3,416,001, 12–10–68, Cl. 307—38.

Fitti, Nocholas S., Jr., to United States of America, Navy. Dual element infrared detector. 3,415,994, 12–10–68, Cl. 250—83.3.

500 Inc.: *See*—
Collins, Samuel C. 3,415,077.

Flame, Lowell, to Maidenform, Inc. Method of making a garment waist band. 3,414,907, 12–10–68, Cl. 2—221.

Fleco Corp.: *See*—
Frankenberg, Edward V., and Griffith. 3,415,296.

Fleischer, Robert L., P. B. Price and R. M. Walker, to General Electric Co. Radiation detection sheet material having metal coating to facilitate read-out. 3,415,993, 12–10–68, Cl. 250—83.

Folkman, Bern D.: *See*—
Hinman, Frank, Jr., Folkman, and Arcarese. 3,415,299.

Fondy, Philip L.: *See*—
Bates, Robert L., and Fondy. 3,415,493.

Forkman, Anders C. G., and A. L. Dahlqvist. Composition and process for detecting bacteria in urine. 3,415,718, 12–10–68, Cl. 195—103.5.

Foseco International Ltd.: *See*—
Vyas, Ramesh. 3,415,691.

Fossel, Eric T., to Unimed, Inc. Pyridyl-dicarboxylic acid cyclobutane derivatives. 3,415,833, 12–10–68, Cl. 260—295.

Foster, George B., R. K. Patterson, Jr., K. A. Ostrander, and E. R. Lucka, to The Reliance Electric and Engineering Co. Digital frequency comparator having a triggered reference. 3,416,040, 12–10–68, Cl. 317—147.

Foster, Keith, and D. Firth, to National Research Development Corp. Apparatus for generating fluid pulses. 3,415,059, 12–10–68, Cl. 60—54.6.

Foster Wheeler Corp.: *See*—
Chatman, William C. 3,415,262.

Fostoria-Fannon, Inc.: *See*—
Williams, Ray E., and Nye. 3,415,448.

Foucry, Jean, to Compagnie Generale d Electricite. Aluminum cell. 3,415,688, 12–10–68, Cl. 136—100.

Foure, Harvey A.: *See*—
Meek, James M., Charuhas, and Foure. 3,415,191.

Fox, John B.: *See*—
Rossello, Anthony M., and Fox. 3,415,385.

Frame, Gordon F., and B. A. Johnson, to Eastman Kodak Co. Method of making fine, uniform silver halide grains. 3,415,650. 12–10–68, Cl. 96—94.

Franchini, Enzo, to Fiat Societá per Azioni. Fuel tank filler cap. 3,415,410, 12–10–68, Cl. 220—44.

Franke, John L.: *See*—
Miner, Carroll R., and Franke. 3,415,127.

Frankenberg, Edward V., and N. N. Griffith, to Fleco Corp. Land clearing device. 3,415,296. 12–10–68, Cl. 144—34.

Franks, Harry E., and A. J. Aronson, to Maser Optics, Inc. Flash lamp operating means. 3,416,031, 12–10–68, Cl. 315—119.

Fraser, John P., to Shell Oil Co. Method of sulfur recovery from sulfur-containing hydrogen sulfide rich formations. 3,415,573, 12–10–68, Cl. 299—4.

Fraum, David, Inc.: *See*—
Mishkin, Sidney. 3,415,428.

Freche, John C., R. L. Ashbrook, G. D. Sandrock, and R. L. Dreshfield, to United States of America, National Aeronautics and Space Administration. High temperature ferromagnet cobalt-base alloy. 3,415,643. 12–10–68, Cl. 75—170.

Frederiksen, Thomas M., to Motorola, Inc. Monolithic power amplifier. 3,416,092, 12–10–68, Cl. 330—19.

Frei, Josef H.: *See*—
Holmberg, Göte E. Y., and Frei. 3,414,947.

Fremont, Howard J.: *See*—
Crampton, Gale W., and Fremont. 3,415,114.

Frenzel, Manfred, and H. Kiebel, to Goetzewerke Friedrich Goetze AG. Oil seal for rotary piston internal-combustion engines. 3,415,444. 12–10–68, Cl. 230—145.

Freund, Mihály, Z. Nagy, and L. Szepesy, to Magyar Asvanyolaj es Foldgaz Kiserleti Intezet. Apparatus for the thermal decomposition of saturated hydrocarbons to produce unsaturated hydrocarbons. 3,415,628, 12–10–68, Cl. 23—277.

Frevel, Ludo K., to The Dow Chemical Co. Corrosion inhibitors. 3,415,754, 12–10–68, Cl. 252—147.

Frey, John A., and G. F. Wald, to United States Steel Corp. Terminal for armored hose. 3,415,545, 12–10–68, Cl. 285—149.

Fr. Hesser Maschinenfabrik-Aktiengesellschaft: *See*—
Bauder, Ulrich. 3,415,702.

Fried, John H., to Synter Corp. 2′,2′-difluoro-2′,3′-dihydrofuran derivatives of the androstane and 19-nor-androstane series. 3,415,820, 12–10–68, Cl. 260—239.55.

Friedman, Mitchell, to Atco Ceramics Corp. Tilesetter loading device. 3,415,390, 12–10–68, Cl. 214—16.4.

Friker, Hans-Helmut, K. Altrogge, and O. Heuse, to Deutsche Solvay-Werke Gesellschaft mit beschrankter Haftung. Hide curing composition containing an organic tin compound, reducing agent and hexamethylenetetramine. 3,415,935, 12–10–68, Cl. 424—288.

Fritzmeier, Georg, KG: *See*—
Grill, Frita, and Holmer. 3,415,529.

Fritzsche Bros., Inc.: *See*—
Kulka, Kurt. 3,415,844.

Froyd, Stanley G., and K. L. Stiles, to Gaylord-River Co. A.C. motor speed ccutrol system using selected voltage levels inverted at selected frequencies and method. 3,416,057, 12–10–68, Cl. 318—227.

Frungel, Frank. Incipient fog detecting system and method. 3,415,984, 12–10–68, Cl. 250—43.5.

Frydryk, John T., to Johnson & Johnson. Bag cutter. 3,415,147, 12–10–68, Cl. 83—171.

Fuentevilla, Manuel E., and A. J. Saraceno, to Pennsalt Chemicals Corp. Industrial process and apparatus. 3,415,445, 12–10–68, Cl. 230—207.

Fuji Shashin Film Kabushiki Kaisha: *See*—
Nishio, Fumihiko, Hayakawa, and Kawano. 3,415,649.

Fujii, Tokio: *See*—
Akita, Yoshio. Fujii, and Sasagawa. 3,415,063.
Fujitsu Ltd.: *See*—
Inaba, Seiuemon, and Shirafuji. 3,415,163.
Inaba, Seiuemon, Yoshitake, and Kobayashi. 3,416,053.
Motooka, Tohru, Yamaguchi, Yoshitake, and Kobayashi. 3,416,056.
Fukuda, Fukuichi. Sewage treatment system. 3,415,378, 12–10–68, Cl. 210—152.
Furst, Stefan, to W. Reiners. Creel assembly. 3,415,463, 12–10–68, Cl. 242—131.
Furumoto, Koji: *See*—
Nagai, Satoshi, Furumoto, Moriya, and Akimoto. 3,415,666.
Fussell, Richard L., and C. J. Bader, to Burroughs Corp. Thin film magnetometer employing phase shift discrimination. 3,416,072, 12–10–68, Cl. 324—43.
Gaines, George L., Jr., C. S. Herrick, and R. P. Anderson, to General Electric Co. Transport structure for deformable medium in a liquid light valve projection apparatus. 3,415,682, 12–10–68, Cl. 117—218.
Gal, George, and M. Sletzinger, to Merck & Co., Inc. Process for 17α-(3'-hydroxypropyl)-5-androstene-3β,17β-diol and the di-tetrahydropyranyl ether thereof. 3,415,819, 12–10–68, Cl. 260—239.55.
Galbraith, Donald D. Interlocking-type border building unit. 3,415,013, 12–10–68, Cl. 47—37.
Galles, Charles E., to Hughes Aircraft Co. Motor control apparatus including sequential interval generating means for alternately enabling motor rotation in forward and reverse directions. 3,416,054, 12–10–68, Cl. 318—138.
Gamard, Roland, to Automobiles M. Berliet. Devices for controlling en equipment of wheeled vehicle as a function of variations in the condition of the suspension system of the vehicle. 3,415,535, 12–10–68, Cl. 280—124.
Gandolfo, Peter F., and G. F. Russes, to Lewis Shepard Co. Delayed action switching device. 3,416,109, 12–10–68, Cl. 335—59.
Gantzel, Peter K.: *See*—
Merten, Ulrich, and Gantzel. 3,415,038.
Gar Wood Industries, Inc.: *See*—
Splsak, Edward G. 3,415,575.
Garner, Albert Y., to Monsanto Research Corp. (Carboxymethyl)ammonium phosphonates. 3,415,905, 12–10–68, Cl. 260—924.
Garrett, Carlos J., Jr., and R. D. Hottenstine, to Combustion Engineering, Inc. Safety system for steam generator. 3,415,232, 12–10–68. Cl. 122—448.
Garthwaite, Albert N.: *See*—
Berghaus, Donald G., Garthwaite, and Tiao. 3,416,148.
Gas Council, The: *See*—
Dent, Frederick J., and Percival. 3,415,634.
Gaunt, John A., to Geigy Chemical Corp. Process for the production of alkali metal salts of nitrilo triacetic acid. 3,415,878, 12–10–68, Cl. 260—534.
Gawlick, Heinz: *See*—
Stadler, Hans, Gawlick, and Bendler. 3,415,192.
Gaylord-River Co.: *See*—
Froyd, Stanley G., and Stiles. 3,416,057.
Gehrke, Charles W., and D. L. Stalling, to Research Corp. Bis-(trimethylsilyl) trifluoroacetamide. 3,415,864, 12–10–68, Cl. 260—448.2.
Gehrman, Gary L., and B. W. Turnquest, to Sinclair Research, Inc. Dehydrohalogenation of quaternary carbon atom-containing halogenated hydrocarbons. 3,415,897, 12–10–68, Cl. 260—877.
Geiger, Rudolf: *See*—
Siedel, Walter, Sturm, and Geiger. 3,415,805.
Geigy Chemical Corp.: *See*—
Gaunt, John A. 3,415,878.
Rousselot, Felix. 3,415,422.
Gempeler, Hans: *See*—
Orth, Hans, Zuppinger, Gempeler, and Schaefer. 3,415,794.
Gems Co., Inc., The: *See*—
Moore, Edward H. 3,415,119.
General Bag & Burlap Co.: *See*—
Korngold, Leon, and Bachman. 3,414,932.
General Dynamics Corp.: *See*—
Bouyoucos, John V. 3,415,230.
Kim, Kap S. 3,416,096.
Liston, Novell D. 3,415,078.
General Electric Co.: *See*—
Allen, Merton. 3,416,128.
Barker, Robert E., Jr. 3,415,712.
Bostick, Edgar E. 3,415,728.
Bower, Arnold B., Jr. 3,415,332.
Bremer, John W. 3,416,146.
Burgess, James F. 3,415,681.
Carson, William N., Jr., and King. 3,415,689.
Coffman, John A., and Browne. 3,415,683.
Coutant, Edward R. 3,415,965.
Daniels, Franklin W., and Barlow. 3,415,098.
Earle, Roger T., Jr., and Davis. 3,415,383.
Edson, William A. 3,416,145.
Fleischer, Robert L., Price, and Walker. 3,415,993.
Gaines, George L., Jr., Herrick, and Anderson. 3,415,682.
Galevich, George J., and Goerss. 3,416,126.
Hay, Allan S. 3,415,896.
Holub, Fred F. 3,415,780.
Kaduk, Edward F. 3,416,019.
Karaslevich, Julian J. 3,415,337.
Korol, Peter, and Wallis. 3,415,218.
Kouvel, James S. 3,415,695.
Levinstein, Moses A., and Grenier. 3,415,672.
Rosenberry, George M., Jr. 3,416,061.
Ross, Earl W. 3,415,641.
Young, Warren D. 3,416,024.
General Instrument Corp.: *See*—
Miner, Carroll R., and Franke. 3,415,127.
Smart, Sidney K. 3,415,128.
Stamm, Russell D. 3,415,129.
General Mills, Inc.: *See*—
Agers, Donnell W., and Swanson. 3,415,616.
General Motors Corp.: *See*—
Druseikis, Frederick. 3,415,132.
Perchland, Harold W. 3,415,089.
Hanson, Robert S. 3,415,978.
Kimberlin, Dan R., and Mahalak. 3,415,189.
Komjathy, Joseph S. 3,415,732.
Lystad, Leonard A. 3,415,016.
MacKenzie, Robert P., and Worrell. 3,416,131.
Geng, Heinz: *See*—
Babl, Albert, and Geng. 3,415,625.
Genser, Milton: *See*—
Blum, Joseph M., and Genser. 3,414,969.
Genser, Milton, and P. C. Smith, to Solitron Devices, Inc. Method of assembly of power transistors. 3,414,968, 12–10–68, Cl. 29—577.
Genson, Samuel R., to Johns-Manville Corp. Method and apparatus for winding plural strands. 3,414,956, 12–10–68, Cl. 28—59.
Gerisch, Rudolph F. Transporting system and method. 3,415,352, 12–10–68, Cl. 198—38.
Gertler, Eugene L., G. H. Huber, W. A. Richman, J. A. Ciarrocchi, and D. W. Habgood, to Ultronic Systems Corp. Quotation board system. 3,418,134, 12–10–68, Cl. 340—154.
Gewerkschaft Eisenhutte Westfalia: *See*—
Helder, Alfons. 3,415,065.
Gibson, Daniel L., to The Dow Chemical Co. Fluid loss control of acidic solutions. 3,415,319, 12–10–68, Cl. 166—33.
Gidlund, Ake S. X-ray film sheet changer having conveyor means for supplying and removing film sheets at an exposure station. 3,415,988, 12–10–68, Cl. 250—66.
Giffen-Burgess Corp.: *See*—
Burgess, Charles D. 3 415,703.
Gilbaugh, John W. Self-setting, repeating animal trap. 3,415,006, 12–10–68, Cl. 43—67.
Gilderson, Peter W., S. F. Newman, and L. C. Fetterly, to Shell Oil Co. Crystalline metaboric acid by hydrolysis of secondary alkyl borate ester. 3,415,621, 12–10–68, Cl. 23—149.
Gilewski, Joseph F., and R. E. Teter, to Electrical & Mechanical Service Co. Compensating valve. 3,415,164, 12–10–68, Cl. 91—412.
Gilham, Robert B. Water soluble casting weight and method for dispensing same. 3,415,005, 12–10–68, Cl. 43—43.12.
Gilson, Robert J., to Charles Colston, Ltd. Dishwasher with rotatable spray member speed control means. 3,415,258, 12–10–68, Cl. 134—112.
Gimigliano, Joseph P., to Jones & Laughlin Steel Corp. Process of producing silicon steel laminations having a very large grain size after final anneal. 3,415,696, 12–10–68, Cl. 148—110.
Ginther, Russell J., to United States of America, Atomic Energy Commission. Cage for compressing packing members. 3,415,527, 12–10–68, Cl. 277—62.
Girardi, Antonio L. Method of manufacturing extensible conveyor belts. 3,415,924, 12–10–68, Cl. 264—229.
Giuffrida, Philip, and J. Pratt, to Electronics Corp. of America. Flame sensor quench circuits for combustion control systems. 3,416,041, 12–10–68, Cl. 317—148.5.
Glassman, Aaron, to Pennsylvania Sewing Research Corp. Attachment for sewing machines. 3,415,210, 12–10–68, Cl. 112—114.
Glew, David N., to The Dow Chemical Co. Solution treatment. 3,415,747, 12–10–68. Cl. 210—59.
Globe-Union Inc.: *See*—
Sabatino, Anthony, Buttke, and Lowe. 3,415,220.
Gluckaman, Dov Z., to The Torrington Mfg. Co. Transverse flow blower with high velocity discharge. 3,415,443, 12–10–68, Cl. 230—125.
Glynn, Theodore W., to American Saint Gobain Corp. Strengthening glass sheets by ion exchange. 3,415,637, 12–10–68, Cl. 65—30.
Goerss, George A., Jr.: *See*—
Calevich, George J., and Goerss. 3,416,126.
Goetzewerke Friedrich Goetze AG: *See*—
Frenzel, Manfred, and Klebel. 3,415,444.
Goggings, Franklin, to True Cor Value, Inc. Antiskid apparatus for a vehicle. 3,415,537, 12–10–68, Cl. 280—150.
Going, Louis H.: *See*—
Cunningham, Robert G., Dobson, Going, and Purves. 3,415,658.
Purves, Edward R., Going, and Dobson. 3,415,660.
Golden, Harry, to Ideal for Auto and Bike Specialties, Inc. Vehicle steering assembly. 3,415,550, 12–10–68, Cl. 287—53.
Goldman, Jerome L. Shipboard cargo stowage construction. 3,415,214, 12–10–68, Cl. 114—72.
Goldsworthy, William W., to United States Atomic Energy Commission. Electronic pulse line for producing symmetrical square-topped pulses. 3,416,103, 12–10–68, Cl. 333—20.
Gollwitz, Karl, and H. K. Lotz, to Messer Griesheim G.m.b.H. Process for separating workpieces. 3,415,693, 12–10–68, Cl. 148—9.
Gomsi, Arne E.: *See*—
Bailey, Burton P., and Gomsi. 3,415,187.
Gonzalez, Richardo, to Omark Industries, Inc. Cupped welding stud. 3,415,414, 12–10–68, Cl. 220—91.
Goodman, John E., and A. Grange, to Ultrasonics Ltd. Transducer mounting. 3,415,548, 12–10–68, Cl. 287—20.
Goodman, Robert R. Weighted base. 3,415,475, 12–10–68, Cl. 248—158.
Goodyear Tire & Rubber Co., The: *See*—
Petersen, John D. 3,415,923.

Gordon, Alan M., to Bell Telephone Laboratories, Inc. Electromagnetic deflection system. 3,416,025, 12–10–68, Cl. 315—27.
Goshen Rubber Co., Inc.: *See*—
Cline, Robert W. 3,415,970.
Gotberg, Harry H.: *See*—
Crawford, Charles H., and Gotberg. 3,415,103.
Grace, W. R., & Co.: *See*—
Kelly, Andrew J. 3,415,767.
Marans, Nelson S. 3,415,925.
Graham, Harold J., to Omark Industries, Inc. Gravity drop stud welder. 3,415,974, 12–10–68, Cl. 219—95.
Gramins, Robert. Litter and method for making the same. 3,414,914, 12–10–68, Cl. 5—82.
Granco Equipment, Inc.: *See*—
Scanlon, Robert M. 3,415,393.
Grange, Arthur: *See*—
Goodman, John E., and Grange. 3,415,548.
Granger Associates: *See*—
Hoover, William G., and Moore. 3,416,033.
Grau, Richard: *See*—
Boeskool, Irvin L., and Grau. 3,415,346.
Gray Co. Inc.: *See*—
Kiefer, Leo A., and Lehrke. 3,415,274.
Gray, Donald L., to M & J Valve Co. Valve body construction. 3,415,489, 12–10–68, Cl. 251—329.
Great Lakes Express Co.: *See*—
Diebold, Anthony L. 3,415,803.
Green, Milton, to Burroughs Corp. Magneto-carrier pressure motive force motor. 3,415,601, 12–10–68, Cl. 356—225.
Greenfield, Alec, to The Greenfield Co. Rear view mirror attachment. 3,415,481, 12–10–68, Cl. 248—486.
Greenfield Co., The: *See*—
Greenfield, Alec. 3,415,481.
Grenier, John W.: *See*—
Levinstein, Moses A., and Grenier. 3,415,672.
Greischeim G.m.b.H.: *See*—
Gollwitz, Karl, and Lotz. 3,415,693.
Grimth, Dewey M., C. W. Hawkey, and V. K. Boughton, to Westinghouse Electric Corp. Flashing incandescent lamp. 3,416,029, 12–10–68, Cl. 315—72.
Griffith, Norman N.: *See*—
Frankenberg, Edward V., and Griffith. 3,415,296.
Grigorenko, Vladimir D.: *See*—
Zilberman, Boris Z., Grigorenko, and Zilbershtein. 3,415,149.
Grill, Frita, and S. Holmer, to Georg Fritzmeier, KG. Laminated ski having multiple core elements with individual glass fiber wrappings. 3,415,529, 12–10–68, Cl. 280—11.13.
Grimmeiss, Hermann G. to North American Philips Co., Inc. Photosensitive semiconductor with two radiation sources for producing two transition steps. 3,415,996, 12–10–68, Cl. 250—217.
Grindahl, George A.: *See*—
Pierce, Ogden R., Grindahl, and Butler. 3,415,892.
Griswold, Lee M., to Digital Sensors Inc. Apparatus for producing shielded ribbon-type cables. 3,415,096, 12–10–68, Cl. 72—196.
Grob, Burkhart, and H. Schulz, to Ernst Grob Werkzeug- und Maschinenfabrik. Process for rolling of threads or thread-like profiles together with apparatus for carrying out the process. 3,415,091, 12–10–68, Cl. 72—104.
Grob, Ernst, Werkzeug- und Maschinenfabrik: *See*—
Grob, Burkhart, and Schultz. 3,415,091.
Gronbach, Wilhelm. Hinge with spring for counter-balance of flaps. 3,414,933, 12–10–68, Cl. 16—180.
Gross, Friedrich: *See*—
Hinrichs, Horst, and Gross. 3,415,166.
Grosse-Brauckmann, Helmut, to Licentia Patent-Verwaltungs-G.m.b.H. Thermally responsive switch with a bimetal latch operating at right angles to the movement of the contacts. 3,416,117, 12–10–68, Cl. 337—358.
Grotewohl, John W., to Rex Chain Belt Inc. Safety device. 3,415,165, 12–10–68, Cl. 91—425.
Grubelic, Nicholas. Apparatus for shaking paint cans. 3,415,495, 12–10–68, Cl. 259—75.
Guarnaschelli, Vincent, to Mutual Industries, Inc. Exhaust burners for internal combustion engines. 3,415,055, 12–10–68, Cl. 60—29.
Gubler, Kurt, to H. A. Whitten & Co. Insecticidal method and composotions comprising heterocyclic carbamic acid esters. 3,415,933, 12–10–68, Cl. 424—273.
Gugelot-Chuard, Marie-Helene: *See*—
Gugelot, Hans, Hoppe, Reichl, and Weinbrenner. 3,415,568.
Gugelot, Hans, deceased (M. Gugelot-Chuard, heir), F. Hoppe, E. Reichl, and E. Weinbrenner, to Farbenfabriken Bayer Aktiengesellschaft. Vehicle underbody of sandwich construction. 3,415,568, 12–10–68, Cl. 296—31.
Guggi, Walter B., to Radio Corp. of America. Stabilized sine wave inverter. 3,416,063, 12–10–68, Cl. 321—16.
Gugliotta, Emanuele: *See*—
Scarfi, Alberta, and Gugliotta. 3,415,620.
Guinter, S. R.: *See*—
Provi, Mike A., and Guinter. 3,414,909.
Provi, Mike A., and Guinter. 3,414,910.
Guiroy, Pierre J., to Les Laboratoires Bruneau et Cie. Pharmaceutical composition containing theophyllinyl-7-n-propane-ω-sulfonic acid or its salts and a method of treatment. 3,415,931, 12–10–68, Cl. 424—253.
Gulf General Atomic Inc.: *See*—
Marten, Ulrich, and Gantzel. 3,415,038.
Gullickson, Cecil F. Music teaching aid. 3,415,152, 12–10–68, Cl. 84—478.
Gurney, Robert: *See*—
Ball, Donald, and Gurney. 3,415,178.
Gust, George A. Watercraft. 3,414,919, 12–10–68, Cl. 9—310.
Gutierrez, William A., and H. L. Wilson, to Melpar, Inc. Process for producing thin film rectifying junctions with graded CdSe-ZnSe film. 3,415,678, 12–10–68, Cl. 117—200.
Gutleber, Frank S., to International Telephone and Telegraph Corp. Frequency spectrum analyser utilising correlation detectors wherein the output is suppressed until a particular response is obtained. 3,416,081, 12–10–68, Cl. 324—77.
Gutow, Russell S., Jr., to Varian Associates. Precision magnetic field intensity scanner and mass spectrometer using same. 3,416,073, 12–10–68, Cl. 324—45.
Gutridge, Jack E., to Pullman Inc. Mounting arrangement for demountable containers on railway cars. 3,415,205, 12–10–68, Cl. 105—366.
Haas, Ronald H.: *See*—
Underwood, Herbert N., and Haas. 3,415,058.
Habgood, Dennis W.: *See*—
Gertler, Eugene L., Huber, Richman, Ciarrocchi, and Habgood. 3,416,134.
Habgood, Robert P., Jr., and J. N. Ianuszi, to Plexowood, Inc. Corner joint structure for rectilinear containers. 3,415,406, 12–10–68, Cl. 217—65.
Haddad, Ihsan A., to Instrumentation Laboratory, Inc. Flexible electrode assembly. 3,415,730, 12–10–68, Cl. 204—195.
Hadley, David J., and R. H. Jenkins, to The Distillers Co., Ltd. Two stage heat treatment of cobalt molybdate catalysts. 3,415,760, 12–10–68, Cl. 252—470.
Haehnel, Herbert E., to Textile Machine Works. Pattern means for knitting machines. 3,415,082, 12–10–68, Cl. 66—155.
Hagen, Floyd W.: *See*—
De Leo, Richard V., and Hagen. 3,415,120.
Hajduk, Fred A.: *See*—
Souder, Louis C., Powell, and Hajduk. 3,415,796.
Haldane, John, and B. Ashworth, to Uniroyal, Ltd. Method for glazing a metal frame. 3,415,701, 12–10–68, Cl. 156—244.
Hall, George E. Twist drill point gauge. 3,414,979, 12–10–68, Cl. 33—201.
Hall, Herbert J.: *See*—
Brown, Robert F., and Hall. 3,415,735.
Hall, John G.: *See*—
Stoddard, Frank J., Hall, and Hertzberg. 3,415,442.
Hall, Raymond L. Extensible canopy structure. 3,415,260, 12–10–68, Cl. 135—1.
Haller, John, to Federal-Mogue Corp. Composite sintered powdered material workpiece. 3,415,555, 12–10–68, Cl. 287—189.36.
Hallewell, Raymond T., to Toolmaster Ltd. Method of making a grinding member. 3,415,635, 12–10–68, Cl. 51—293.
Halliburton Co.: *See*—
Young, Bill M. 3,415,320.
Hallonquist, Earland G., J. M. Jaworsky, and V. G. Kassay, to McMillan, Bloedel Ltd. Fire resistant particle board containing monobasic ammonium phosphate and/or ammonium sulphate. 3,415,765, 12–10–68, Cl. 260—17.3.
Halm Instrument Co., Inc.: *See*—
Konazewski, Clement R., and Lyon. 3,414,959.
Halwas, Larry E.: *See*—
Stein, Gary, and Halwas. 3,415,160.
Hamac-Hansella Aktiengesellschaft: *See*—
Beckers, Hans. 3,415,036.
Hamberg Edwin S.: *See*—
Yamamoto, Yujiro, and Hamberg. 3,415,245.
Hamilton, Wallace, to McDowell-Wellman Engineering Co. Hatch cover system. 3,415,014, 12–10–68, Cl. 49—120.
Hamlin, Philip D. Method and apparatus for tapping a coaxial cable. 3,416,102, 12–10–68, Cl. 333—10.
Hammond Corp.: *See*—
Haviland, Lyman J. 3,416,050.
Hammond, James F. Cabinet shelf elevator and control. 3,415,586, 12–10–68, Cl. 312—312.
Hampton, Banswell H. Aquatic propulsion assembly for swimmers. 3,415,211, 12–10–68, Cl. 114—16.
Hancock, John T.: *See*—
Moorhead, John O., and Hancock. 3,416,115.
Hand, Gene W. Portable target holder. 3,415,519, 12–10–68, Cl. 273—102.
Handy, Robert W.: *See*—
Kesslin, George, and Handy. 3,415,846.
Hanke, Friedrich, to Maschinenfabrik Buckau R. Wolf. Spark ignition for otto engines. 3,415,235, 12–10–68, Cl. 123—149.
Hannes Marker: *See*—
Scheib, Hermann. 3,415,530.
Hansen, Robert E., to Union Carbide Corp. Gas-depolarizable galvanic cell. 3,415,685, 12–10–68, Cl. 136—83.
Hanser, Paul E., to Deere & Co. Hydraulic coupling. 3,415,327, 12–10–68, Cl. 172—793.
Hanson, John K.: *See*—
Wilford, Ernest, Hanson, and Whalley. 3,415,084.
Hanson, Robert S., to General Motors Corp. Infrared surface cooking unit. 3,415,978, 12–10–68, Cl. 219—415.
Hanssen, Wilhelm J., to Stamicarbon N.V. Process for determining the free-oxygen content of a gas or dust mixture. 3,415,626, 12–10–68, Cl. 23—232.
Harder, Richard E.: *See*—
Callahan, Andrew J., Harder, and Hurley. 3,415,611.
Hardigan, Robert: *See*—
Maieli, Vincent, and Hardigan. 3,415,980.
Harischfeger Corp.: *See*—
Smith, De Witt C. 3,415,976.
Harkness, Joseph R., to Briggs & Stratton Corp. Internal combustion engine and balancing means therefor. 3,415,237, 12–10–68, Cl. 123—192.
Harman, Willard J. Corneal contact lens with offset concave surface portions. 3,415,597, 12–10–68, Cl. 351—160.
Harnisch, Heins: *See*—
Cremer, Joseph, Thummler, Schulte, and Harnisch. 3,415,624.

Harrick, Nicolas J., to North American Philips Co., Inc. Internal reflection element for micro-sample analysis. 3,415,602, 12–10–68, Cl. 356—256.

Harrington, Edgar W. Boat trailer with retractable wheels. 3,414,917, 12–10–68, Cl. 9—1.

Harrison, William H., to United States of America, Navy. Chopper stabilized direct current amplifier with precision plus and minus output. 3,416,090, 12–10–68, Cl. 330—10.

Hart, Otho E., and L. W. Imm, to United States of America, Navy. Anti-disturbance fuse. 3,415,190, 12–10–68, Cl. 102—70.2.

Hart, Warren. Deep fat filter apparatus. 3,415,181, 12–10–68, Cl. 99—408.

Haskon, Inc.: *See*—
Kelly, Norman A. 3,415,294.

Hass, Karl, and R. Cordes, to Dynamit Nobel Aktiengesellschaft. Process for the purification of salt-depleted solutions of the alkali metal chloride electrolysis employing a mercury cathode. 3,415,727, 12–10–68, Cl. 204—128.

Hattori, Kenji. Buckle for strapping parcel with tape. 3,414,943, 12–10–68, Cl. 24—74.

Haus, Joachim: *See*—
Emeis, Reimer, Haus, Herlet, Nagorsen, and Martin. 3,414,964.

Hauser, John A., to United States of America, National Aeronautics and Space Administration. High pressure helium purifier. 3,415,069, 12–10–68, Cl. 62—40.

Hausotter, Siegfried: *See*—
Rabner, Erwin, and Hausotter. 3,415,546.

Haveg Industries, Inc.: *See*—
Lux, John H. 3,415,913.

Haviland, Lyman J., to Hammond Corp. Variable capacitor. 3,416,050, 12–10–68, Cl. 317—255.

Hawk, Elwin A., Sr., to Coast Metals Inc. Powder spray torch with explosion-proof hopper construction. 3,415,449, 12–10–68, Cl. 239—85.

Hawk, Elwin A., Sr., to Coast Metals, Inc. Powder supply construction for spray torch. 3,415,450, 12–10–68, Cl. 239—85.

Hawker Siddeley Dynamics Ltd.: *See*—
Bedford, Alan. 3,415,465.

Hawkey, Charles W.: *See*—
Griffith, Dewey M., Hawkey, and Boughton. 3,416,029.

Hawkins, Donald B. Lock for sliding windows. 3,415,580, 12–10–68, Cl. 292—252.

Hawley Mfg. Corp.: *See*—
Scheel, John R. 3,415,179.

Hay, Allan S., to General Electric Co. Preparation of biphenyls by catalytic transfer hydrogenolysis and novel products so produced. 3,415,896, 12–10–68, Cl. 260—668.

Hayawaka, Yoshihide: *See*—
Nishio, Fumihiko, Hayakawa, and Kawano. 3,415,649.

Hayashi, Koichi: *See*—
Hino, Tetsuo, Hayashi, and Iizuki. 3,415,655.

Hays, Merlin B., and J. C. Trace, to American Home Products Corp. Equine encephalomyelitis vaccine. 3,415,926, 12–10–68, Cl. 424—89.

Hayunga, Carl P., to International Business Machines Corp. Method of preconditioning digital magnetic tape. 3,415,684, 12–10–68, Cl. 134—15.

Hazelrig, J. B.: *See*—
Britts, Frank J. 3,415,100.

Heaton, Edwin L., and W. Porter, Jr., to Aluminum Co. of America. Production of aluminum. 3,415,724, 12–10–68, Cl. 204—67.

Heider, Alfons, to Gewerkschaft Eisenhutte Westfalia. Advanceable mining prop arrangement containing stabilizer means. 3,415,066, 12–10–68, Cl. 61—45.

Heimert, Albert E., III. Dental treatment assistance arrangement. 3,415,571, 12–10–68, Cl. 297—188.

Heinrich, Willy: *See*—
Maasberg, Wolfgang, and Heinrich. 3,415,271.

Heller, Fritz P., to Elliott Brothers (London) Ltd. Display apparatus utilizing partially reflecting adjustable mirror to superimpose two images. 3,415,951, 12–10–68, Cl. 178—7.88.

Heller, Stanley, W. F. Anderson, and R. B. Berlin, to Itek Corp. Data disk structure and rotatable mounting therefor. 3,416,154, 12–10–68, Cl. 346—137.

Hellmig, Ehrhard, and W. Kleist, to Agfa Aktiengesellschaft. Engraving foil with a light-absorbing layer for electronic engraving. 3,415,698, 12–10–68, Cl. 156—1.

Helm, Charles D., to Rexall Drug and Chemical Co. Polypropylene purification. 3,415,799, 12–10–68, Cl. 260—93.7.

Hempel, Gerhard: *See*—
Philippson, Rainer, Hempel, Kaspar, and Kutzsche. 3,415,817.

Hemsley, John D. C., and S. M. Janikowski, to Fisons Fertilizers Ltd. Process for preparing ammonium phosphate. 3,415,638, 12–10–68, Cl. 71—36.

Henderson, Richard E.: *See*—
Smith, Mahlon J., and Henderson. 3,415,376.

Henkel & Cie, GmbH: *See*—
Stein, Werner, Umbach, and Baumann. 3,415,753.

Hennessy, Robert: *See*—
Marchisio, Robert G., and Hennessy. 3,415,157.

Hennig, Irving. Floating drydock. 3,415,212, 12–10–68, Cl. 114—45.

Hennig, Roy K., to Richard-Merrell, Inc. Short fill detector and rejector. 3,415,369, 12–10–68, Cl. 209—88.

Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Braking systems of articulated vehicles. 3,415,576, 12–10–68, Cl. 303—7.

Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Hydraulic-control brake systems of vehicles. 3,415,579, 12–10–68, Cl. 303—22.

Henry, Frank B., to Ametek, Inc. Suction box feeder for a flatwork ironer. 3,414,997, 12–10–68, Cl. 38—143.

Herbsthofer, Franz L.: *See*—
Karlen, Harvey R., Herbsthofer, and Martin. 3,415,267.

Hercules Inc.: *See*—
Coover, Harry W., Jr. 3,415,801.
Kutner, Abraham. 3,415,800.
McFarren, Gerald A. 3,415,921.
Vandenberg, Edwin J. 3,415,761.

Herlet, Adolf: *See*—
Emeis, Reimer, Haus, Herlet, Nagorsen and Martin. 3,414,964.

Hernan, George W.: *See*—
Hunkins, Stanley H., Hernan, and Beresin. 3,416,133.

Herold, Karl. Ice skate. 3,415,528, 12–10–68, Cl. 280—11.12.

Herrick, Carlyle S.: *See*—
Gaines, George L., Jr., Herrick, and Anderson. 3,415,682.

Hershberg, Emanuel B.: *See*—
Shapiro, Elliot L., and Hershberg. 3,415,855.

Hertz, Carl H., and S. I. Simonsson, said Simonsson assor. to said Hertz. Ink jet recorder. 3,416,153, 12–10–68, Cl. 346—75.

Hertzberg, Abraham: *See*—
Stoddard, Frank J., Hall, and Hertzberg. 3,415,442.

Herz, Werner: *See*—
Pachter, Irwin J., and Herz. 3,415,843.

Heslop, William R., V. L. Lanza, and E. C. Stivers, to Raychem Corp. Protective covering and article. 3,415,287, 12–10–68, Cl.138—141.

Heusch, Rudolf: *See*—
Sucker, Christain, Meskat and Heusch. 3,415,109.

Heuse, Otto: *See*—
Friker, Hans-Helmut, Altrogge and Heuse. 3,415,935.

Heyer, Arno. Computing machine. 3,415,447, 12–10–68, Cl. 235—60.

Hewlett-Packard Co.: *See*—
Vargiu, Giacomo. 3,416,087.

Hibbard, Schuyler M. Harvesting apparatus and method. 3,415,045, 12–10–68, Cl. 56—153.

Hickner, Richard A., and H. A. Farber, to The Dow Chemical Co. Resin-providing compositions comprising a reaction product of epihalohydrin polymer and a mercapto-alkanol. 3,415,902, 12–10–68, Cl. 260—849.

Hider, Shibley A., to Owens-Illinois, Inc. Foam-paper-composition board laminate. 3,415,714, 12–10–68, Cl. 161—161.

Higgins, David: *See*—
Adletta, Joseph G., and Higgins. 3,419,995.

Higgins, Irwin R., to Chemical Separations Corp. Apparatus for the treatment of milk. 3,415,377, 12–10–68, Cl. 210—96.

Hill, Earl R., and W. C. Carter, II, to Westinghouse Electric Corp. Apparatus for controlling a variable of moving elongate material. 3,416,058, 12–10–68, Cl. 318—310.

Hill, George M., to Sigma Sales Corp. Ear fittings. 3,415,246, 12–10–68, Cl. 128—152.

Hills-McCanna Co.: *See*—
Priese, Werner K., and Davies. 3,415,488.

Hims, Inc.: *See*—
Millington, Robert G. 3,415,563.

Hinman, Frank, Jr., B. D. Folkman, and J. J. Arcarese, to American Hospital Supply Corp. Bottom emptying urine collection container. 3,415,299, 12–10–68, Cl. 150—8.

Hino, Tetsuo, K. Hayashi, and N. Iizuka, to Ajinomoto Co., Inc. Milk product containing free amino acids and method of preparing the same. 3,415,655, 12–10–68, Cl. 99—54.

Hinrichs, Horst, and F. Gross, to Westinghouse Bremsen- und Apparatebau G.m.b.H. Automatically operative position holding arrangement for directional control valve device. 3,415,166, 12–10–68, Cl. 91—426.

Hirota, Etichi, and Y. Neichi, to Matsushita Electric Industrial Co., Ltd. Manganese-zinc ferrites. 3,415,751, 12–10–68, Cl. 252—62.59.

Hirs, Gene, and A. C. Schouw, to Hydromation Engineering Co. Aspirated valve for handling particulate material. 3,415,485, 12–10–68, Cl. 251—5.

Hitachi Denshi Kabushiki Kaisha: *See*—
Miura, Takeo, and Iwata. 3,415,982.

Hitachi, Ltd.: *See*—
Ii, Chikai, Yamashita, Kuwabara, and Sugie. 3,415,953.
Murakami, Tadao. 3,416,016.

Hitzman, Donald O., to Phillips Petroleum Co. Bactericide for brine injection. 3,415,936, 12–10–68, Cl. 424—319.

Ho, Er-Chun, to Hughes Aircraft Co. Integrated crystal circuits and the method of making thereof. 3,416,036, 12–10–68, Cl. 317—101.

Hodan, James J.: *See*—
Sconce, James S., Hodan, and Schall. 3,415,907.

Hoelzle, Gerd: *See*—
Buehler, Arthur, and Hoelzle. 3,415,825.

Hoerbiger Ventilwerke Aktiengesellschaft: *See*—
Kehler, Theodor K. 3,415,441.

Hoerner Waldrof Corp.: *See*—
Faller, Rudolph A. 3,415,358.

Hoffman, Joseph A., to American Cyanamid Co. Tris-2-ethylaziridinyl-s-triazine. 3,415,826, 12–10–68. Cl. 260—249.6.

Hoffmann, Charles, and A. Faure, to Societe anonyme dite: Laboratoires U.P.S.A. Derivatives of 2-anilino-nicotinic acid and process for their preparation. 3,415,834, 12–10–68, Cl. 260—295.5.

Hoffmann-La Roche, Inc.: *See*—
Stempel, Arthur, and Sternbach. 3,415,835.
Berger, Julius, Kierstead, Lemahieu, and Tabenkin. 3,415,716.

Hohbach, Dale J., and R. D. Davis, to Pacific Adhesives Co., Inc. Making chromated blood products for use in alkaline blood glues of high viscosity. 3,415,668, 12–10–68, Cl. 106—146.

Hoke, Leander H., Jr., to Philco Ford Corp. Constant voltage regulator dependent on resistor ratios. 3,416,067, 12–10–68, Cl. 323—17.

Hollister, Robert H.: *See*—
Morris, Robert D., and Hollister. 3,416,110.

Holmberg, Göte E. Y., and J. H. Frei. Strap fasteners. 3,414,947. 12–10–68, Cl. 24—196.

Holmer, Siegfried: *See*—
Grill, Frita, and Holmer. 3,415,529.

Holmes, Frank C., and M. G. Clay, to The U.S. Baird Corp. Spring tester. 3,415,117, 12–10–68, Cl. 73—161.

Holstein & Kappaet Maschinenfabrik "Phonix" G.m.b.H.: *See*—
Wolf, Hermann. 3,415,295.

Holton, James R., W. A. Parker, and J. G. Sims. Manufacture of novelty nub yarns. 3,415,918, 12–10–68, Cl. 264—167.

Holub, Fred F., to General Electric Co. Polyamide esters prepared from N,N'-diaryl arylene diamines diphenols and aromatic diacyl halides. 3,415,780, 12–10–68, Cl. 260—47.

Holzknecht, Walter J., to Pangafin Societe Anonyme Holding. Method and apparatus for manufacturing a pile fabric. 3,415,568, 12–10–68, Cl. 289—1.5.

Honeywell Inc.: *See*—
Abbey, Charles R., and Pursel. 3,415,947.
Boehme, Robert M. 3,414,971.
Crockett, David L. and Sperling. 3,415,998.
Kompelien, Arlon D. 3,415,071.
Methle, George J., II. 3,415,687.
Mierendorf, Robert E. 3,416,038.
Schaller, Frank H., Davis, and Masterson. 3,415,511.

Hood, Richard T., and M. I. Dietrick, to Industrial Research and Mfg., Inc. Portland cement compositions. 3,415,774, 12–10–68, Cl. 260—38.

Hooker Chemical Corp.: *See*—
Dexter, Theodore H., Minklei, and Thorstensen. 3,415,610.
Sconce, James S., Hodan, and Schall. 3,415,907.
Shepard, Alvin F., and Dannels. 3,415,906.
Stacey, Maurice, Stephens, and Tatlow. 3,415,895.
Weil, Edward D., and Porter. 3,415,938.

Hooper, George W., to Imperial Chemical Industries Ltd. Oxidation process. 3,415,885, 12–10–68, Cl. 260—603.

Hoosier Crown Corp.: *See*—
Caviglia, Enzo. 3,414,938.

Hoover, William G., and K. A. Moore, to Granger Associates. Tension link for use with electrostatically charged objects. 3,416,033, 12–10–68, Cl. 317—2.

Hoppe, Peter: *See*—
Gugelot, Hans, Hoppe, Reichl, and Weinbrenner. 3,415,568.

Horeth, John M., R. H. Langenheim, and W. D. Howard, to Esso Production Research Co. Automatic mud sampler and packager. 3,415,363, 12–10–68, Cl. 206—56.

Hornbostel, Lloyd, Jr., to Beloit Corp. Flanged plant container. 3,415,011, 12–10–68, Cl. 47—34.

Hornlein, Reinhard, and O. Racke, to Reinhard Hornlein K.G. Fluid-operated extendable and contractable arrangement. 3,415,159, 12–10–68, Cl. 91—6.

Hornlein, Reinhard K.G.: *See*—
Hornlein, Reinhard, and Racke. 3,415,159.

Hornlein, Roland, and G. Domhan, to Walter Hornlein Metallwarenfabrik KG. Device for transferring preformed foils from stacks into moulds. 3,415,388, 12–10–68, Cl. 214—8.5.

Hornlein, Walter, Metallwarenfabrik KG: *See*—
Hornlein, Roland, and Domhan. 3,415,388.

Horton, John P., and R. E. Sollmann, said Sollmann assor. to Ski-Mor, Inc. Ski mat. 3,415,172, 12–10–68, Cl. 94—3.

Hostetler, Ernest R. Emergency fire escape. 3,415,341, 12–10–68, Cl. 182—198.

Hott, Ion V. K., to The Joyce-Cridland Co. Vehicle lifting apparatus. 3,415,342, 12–10–68, Cl. 187—8.41.

Hottenstine, Richard D.: *See*—
Garrett, Carlos J., Jr., and Hottenstine. 3,415,232.

Howard, William W.: *See*—
Horeth, John M., Langenheim, and Howard. 3,415,363.

Howe, August-Wilhelm. Toy building set. 3,415,007, 12–10–68, Cl. 46—19.

Howlett, George H., to Howlett Machine Works. Splicing metallic reinforcing rods with a threaded coupling sleeve. 3,415,552, 12–10–68, Cl. 287—117.

Howlett Machine Works: *See*—
Howlett, George H. 3,415,552.

Hoye, Peter A. T., to Albright & Wilson Ltd. Production of organotin halide. 3,415,857, 12–10–68, Cl. 260—429.7.

Huber, George H.: *See*—
Gertler, Eugene I., Huber, Richman, Ciarrocchi, and Habgood, 3,418,184.

Huber, Ludwig K., to Pennsalt Chemicals Corp. Boron-nitrogen compound. 3,415,630, 12–10–68, Cl. 23—358.

Huber, William G., to Chas. Pfizer & Co., Inc. Certain parenterally active anthelmintic tetrahydropyrimidines. 3,415,930, 12–10–68, Cl. 424—251.

Hübner, Rolf. Portable gas analyzer with remote-indicating facility. 3,415 108, 12–10–68, Cl. 73—23.

Huck Mfg. Co.: *See*—
Baugh, Charles W. 3,415,553.

Hucks, Robert Tyler, Jr., to Johns-Manville Corp. Pipe coupling. 3,415,544. 12–10–68, Cl. 285—55.

Hudeley, Victor. Tension absorber for fishing line. 3,415,003, 12–10–68, Cl. 43—42.72.

Hudson, Frederick W., to Xerox Corp. Magnetic cascade development apparatus. 3,415,224, 12–10–68, Cl. 118—637.

Huebner, Charles F.: *See*—
Bencze, William L., and Huebner. 3,415,837.
Finocchio, Dom V., and Huebner. 3,415,937.

Hughes Aircraft Co.: *See*—
Galles, Charles E. 3,416,054.
Ho, Er-Chun. 3,416,036.
Taylor, Elmer N. 3,416,004.

Hughes, Frank W., and S. A. Schwam, to said Hughes assor. to said Schwam. Dampening means between the chassis and truck of a railroad car. 3,415,203, 12–10–68, Cl. 105—199.

Hunkins, Stanley H., G. W. Hernan, and P. W. Beresin, to Ultronic Systems Corp. Shift register controlled market ticker information display. 3,416,133, 12–10–68. Cl. 344—154.

Hurley, Rupert B.: *See*—
Callanan, Andrew J., Harder, and Hurley. 3,415,611.

Husebo, James L. Plug block. 3,416,123, 12–10–68, Cl. 339—87.

Husome, Robert G., to San Marino Electronic Corp. Empty bottle bottom and neck inspection machine using radiation sensitive means. 3,415,370, 12–10–68, Cl. 209—111.7.

Hussmann, Peter, to Uta-Patentverwaltungsgesellschaft m.b.H. Process of dehydrating food and heat-sensitive products. 3,415,665, 12–10–68, Cl. 99—199.

Hydromation Engineering Co.: *See*—
Hira, Gene, and A. C. Schouw. 3,415,485.

Hyltin, Tom M.: *See*—
Thomas, Philip R., and Hyltin. 3,416,042.

ILG Industries Inc.: *See*—
Ball, Donald, and Gurney. 3,415,178.

I-T-E Circuit Breaker Co.: *See*—
Carter, William A., and Jensen. 3,416,034.
Lipnitz, James W. 3,416,035.
Myers, Felix E. 3,416,108.

Ianuzzi, Joseph N.: *See*—
Habgood, Robert P., Jr., and Ianuzzi. 3,415,406.

Ichikawa Seisakusho Co., Ltd.: *See*—
Kodama, Mitsuru. 3,414,930.
Kodama, Mitsuru. 3,414,931.

Ideal for Auto and Bike Specialties, Inc.: *See*—
Golden, Harry. 3,415,550.

Ignell, Rolf Lennart, to Sobrefina SA. Apparatus for press forming a container structure from plastic sheet material and container structure made thereby. 3,414,941, 12–10–68, Cl. 18—19.

Ignell, Rolf L.: *See*—
Rausing, Anders R., and Ignell. 3,415,405.

Ii, Chikai, H. Yamashita, M. Kuwabara, and R. Sugie, to Hitachi, Ltd. Calling-party identification system for party-line telephone exchanges. 3,415,953, 12–10–68, Cl. 179—17.

Iizuka, Noriko: *See*—
Hino, Tetsuo, Hayashi, and Iizuka. 3,415,655.

Ikeda, Shojiro: *See*—
Nishi, Sunao, and Ikeda. 3,415,676.

Ilford Ltd.: *See*—
Calder, William J., and Jarvis. 3,415,176.

Imm, Lewis W.: *See*—
Hart, Otho E., and Imm. 3,415,190.

Imperial Chemical Industries Ltd.: *See*—
Hooper, George W. 3,415,885.
Stevens, Marcus A. 3,415,873.

Inaba, Seiuemon, and R. Shirafuji, to Fujitsu Ltd. Hydraulic torque amplifier system with variable preamplifier duct orifice cross section. 3,415,163, 12–10–68, Cl. 91—363.

Inaba, Seiuemon, N. Yoshitake, and K. Kobayashi, to Fijitsu Ltd. Switching circuit for a plurality of motors having locking means. 3,416,053, 12–10–68, Cl. 318—103.

Industrial Air Products Co.: *See*—
Kuhlmann, Kurt. 3,415,510.

Industrial Nucleonics Corp., The: *See*—
Clerc, Milton C. 3,416,082.

Industrial Research and Mfg. Inc.: *See*—
Collins, James D., and Corwin. 3,415,773.
Hood, Richard T., and Dietrick. 3,415,774.

Ingberman, Arthur K.: *See*—
Keogh, Michael J., and Ingberman. 3,415,887.

Ingersoll Milling Machine Co., The: *See*—
Rumbarger, John H., and Shapiro. 3,415,138.
Schierholt, Hans. 3,415,969.

Ingersoll-Rand Co.: *See*—
Buehler, Alois A., and Kurt. 3,415,328.

Ingold, Erwin: *See*—
Weber, Kurt, and Ingold. 3,415,808.

Instrumentation Laboratory, Inc.: *See*—
Blackmer, David E. 3,416,093.
Haddad, Ihsan A. 3,415,730.

Intartaglia, Domanick A.: *See*—
Cassidy, Francis T., Jr., and Intartaglia. 3,416,140.

International Business Machines Corp.: *See*—
Barz, Maurice R., Olson, and Stockdale. 3,415,950.
Berghaus, Donald G., Garthwaite, and Tiao. 3,416,148.
Hayunga, Carl P. 3,415,684.
MacSorley, Olin L. 3,416,132.
Perri, John A., and Riseman. 3,415,680.

International Harvester Co.: *See*—
Olsson, Nils O. 3,415,401.
Pool, Stuart D., and Zimmerman. 3,415,040.

International Standard Electric Corp.: *See*—
Bernutz, Johannes, and Schlogl. 3,416,114.
Bourreau, Georges R., and Colin. 3,416,066.
Van Goethem, Jan, De Smedt, and Lauwers. 3,416,143.
Wright, Esmond P. G., and Bezdel. 3,416,080.

International Telephone and Telegraph Corp.: *See*—
Cassidy, Francis T., Jr., and Intartaglia. 3,416,140.
Gutleber, Frank S. 3,416,081.
Vallese, Lucio M. 3,416,105.
Watson, Robert T. 3,415,990.

Irani, Riyad R.: *See*—
Carroll, Robert L., and Irani. 3,415,623.

Irvine, Stuart, to Canadian General Electric Co. Ltd. Lamp holder. 3,416,124, 12–10–68, Cl. 339—117.

Irwin, Robert S., and C. E. Smullen, to E. I. du Pont de Nemours and Co. Formation of polypyromellitimide filaments. 3,415,782, 12–10–68, Cl. 260—47.

Isaacson, Henry V., and D. W. Young, to Sinclair Research, Inc. Method of flocculating a water-borne oil slick. 3,415,745 12–10–68, Cl. 210—54.

Ishibashi, Masaru, to Toyo Seikan Kabushiki Kaisha (also known as Toyo Seikan Kaisha-Ltd.). Machine for automatically sectioning citrus fruits. 3,415,298, 12–10–68, Cl. 146—8.

Ishikawa, Shoichi, to United Shoe Machinery Corp. Deviated deflection harmonic drive. 3,415,143, 12–10–68, Cl. 74—640.

Ishikawajima-Harima Jukogyo Kabushiki Kaisha: *See*—
Akita, Yoshio, Fujii, and Sasagawa, 3,415,063.

Ishimaru, Joyu: *See*—
Okazaki, Narukazu, and Ishimaru. 3,415,083.

Itek Corp.: *See*—
Heller, Stanley, Anderson, and Berlin. 3,416,154.
Marchisio, Robert G., and Hennessy. 3,415,157.

Iwata, Junzo: *See*—
Miura, Takeo, and Iwata. 3,415,982.

Jaccard, Jean-Paul, and N. Engler. Apparatus for fitting a taut screen to a frame. 3,414,994, 12–10–68, Cl. 38—102.91.

Jackson, Harold E., and D. R. Dean, to Petrol Injection Ltd. Fan assisted heaters. 3,415,314, 12–10–68, Cl. 165—122.

Jackson, Ronald S., and C. R. Maguire, to Associated Electrical Industries Ltd. Dynamic strain transducers. 3,416,012, 12–10–68, Cl. 310—8.5.

Jacob, Alex: *See*—
Daendliker, Gustav, Jacob, and Scheller. 3,415,639.

Jahns, Kenneth V., and A. S. Brenner, to Motorola, Inc. Lamp dimming circuit. 3,416,032, 12–10–68, Cl. 315—149.

James, Justin M., Jr., to Polaroid Corp. Method for improving visibility of a moving object by circular polarized light. 3,415,589, 12–10–68, Cl. 350—156.

Janikowski, Stanislaw M.: *See*—
Hemsley, John D. C., and Janikowski. 3,415,638.

Jansson, Sven A., to Seasafe Transport AB. Tensioning device for chains or the like. 3,414,942, 12–10–68, Cl. 24—69.

Jarvis, Leonard F.: *See*—
Calder, William J., and Jarvis. 3,415,176.

Jason, Emil F., and E. K. Fields, to Standard Oil Co. Film forming polycarbonamides from hexachlorobicycloheptenyl carbocyclic aromatic diacids. 3,415,793, 12–10–68, Cl. 260—78.

Jaworsky, John M.: *See*—
Hallonquist, Earland G., Jaworsky, and Kassay. 3,415,765.

Jeavons, Philip S., to Wilmot-Breeden Ltd. Door latches. 3,415,559, 12–10–68, Cl. 292—216.

Jeddeloh Bros. Sweed Mills, Inc.: *See*—
Larson, Charles L. 3,415,391.

Jedlicka Woodrow W., to The Lubrizol Corp. Coating compositions comprising in combination a siccative organic coating composition and a phosphorus-containing composition 3,415,766, 12–10–68, Cl. 260—22.

Jedlicka, Woodrow W., to The Lubrizol Corp. Phosphorus-containing compositions suitable for application to metal surfaces. 3,415,788, 12–10–68, Cl. 260—75.

Jenkins, Rowland H.: *See*—
Hadley, David J., and Jenkins. 3,415,760.

Jenkins, Trevor, B. J. Needham, and M. A. Smith, to Whiffen & Sons Ltd. Process for preparing azines. 3,415,882, 12–10–68, Cl. 160—566.

Jensen Otto: *See*—
Carter, William A., and Jensen. 3,416,034.

Jewell, Donald E.: *See*—
Cafferty, Michael P., and Jewell. 3,415,326.

Jewett Warren R., F. L. Petree, and W. C. Bialobrzeski, said Petree and said Bialobrzeski assors said Jewett. Fluid administering system. 3,415,419, 12–10–68, Cl. 222—76.

Joerns Furniture Co.: *See*—
Stanley, John F., and Dewey. 3,414,913.

Johns-Manville Corp.: *See*—
Genson, Samuel R. 3,414,956.
Hucks, Robert T., Jr. 3,415,544.

Johnson, Benjamin A.: *See*—
Frame, Gordon F., and Johnson. 3,415,650.

Johnson, Clarence J., to Scovill Mfg. Co. Combined blender and spatula. 3,415,497, 12–10–68, Cl. 259—118.

Johnson Corp.: *See*—
Fiedler, George H., Passarello, and Taggart. 3,415,309.

Johnson & Johnson: *See*—
Frydryk, John T. 3,415,147.
Knight, Francis J., and Mack. 3,415,425.
Santangelo, Francis J. 3,415,709.

Johnson, Lane, Jr., to United Engineering and Foundry Co. Workpiece positioning device. 3,415,392, 12–10–68, Cl. 214—23.

Johnson, Oliver, to Shell Oil Co. Preparation of hydrogenation catalysts. 3,415,759, 12–10–68, Cl. 252—455.

Johnson, Wallace C., to Arcos Corp. Particle feeding mechanism for an electrical welding device. 3,415,975, 12–10–68, Cl. 219—125.

Jones, Arthur L.: *See*—
Cuckson, Eric E., and Jones. 3,414,948.

Jones & Laughlin Steel Corp.: *See*—
Gimigliano, Joseph P. 3,415,696.

Jones, Michael H., to Walker Crosweller & Co. Ltd. Recording pen. 3,416,155, 12–10–68, Cl. 346—140.

Jorgensen, Arnold J., to Burroughs Corp. Integrated anti-ringing clamped logic circuits. 3,416,043, 12–10–68, Cl. 317—234.

Jorgensen, Clarence H., Jr.: *See*—
Walker, Larry D., and Jorgensen. 3,415,914.

Joseph, Joseph P.: *See*—
Dusza, John P., Joseph, and Bernstein. 3,415,852.

Joyce-Crid'and Co., The: *See*—
Hott, Ion V. K. 3,415,342.

Juliano, Benedict R.: *See*—
Adams, Phillip, Juliano, Feilich, and Baron. 3,415,877.

Julie, Loebe, to Julie Research Laboratories, Inc. Precision potentiometer circuit and method for establishing same. 3,416,084, 12–10–68, Cl. 324—98.

Julie Research Laboratories, Inc.: *See*—
Julie, Loebe. 3,416,084.

Juten, Milford A.: *See*—
Bryson, H. Knox, Castle, and Juten. 3,415,561.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
Miuro, Takeo, and Iwata. 3,415,982.

Kaduk, Edward E., to General Electric Co. Zinc silicate phosphor of improved maintenance. 3,416,019, 12–10–68, Cl. 313—109.

Kagan, Sholly: *See*—
Cooper, Dester P., Jr., and Kagan. 3,415,945.

Kaiser Gypsum Co., Inc.: *See*—
Tillisch, Paul W., Meyer, Chiffoleau, and Papalia. 3,415,-026.

Kalhammer, Fritz R., to Mobil Oil Corp. Electrode and method of producing same. 3,415,734, 12–10–68, Cl. 204—284.

Kaltenegger, Benno. Tandem-type road roller. 3,415,174, 12–10–68, Cl. 94—50.

Kanda, Choji: *See*—
Kato, Shoji, and Kanda. 3,415,452.

Kandel, Samuel, and C. C. Nielson, to Bell Telephone Laboratories, Inc. Telephone system. 3,415,954, 12–10–68, Cl. 178—18.

Kangas, Donald A., and D. P. Sheetz, to The Dow Chemical Co. Purification of ethylenically unsaturated sulfonated monomers. 3,415,870, 12–10–68, Cl. 260—486.

Karaslevich, Julian J., to General Electric Co. Air injector device for air-cooled noise suppressors. 3,415,337, 12–10–68, Cl. 181—51.

Karlbom, Ingenjorsfirma G., AB: *See*—
Torp, Egil O. S. 3,415,285.

Karlen, Harvey R., F. L. Herbsthofer, and L. W. Martin, to Cory Corp. Liquid supply apparatus. 3,415,267, 12–10–68, Cl. 137—132.

Karlstrom, Karl: *See*—
Bishop, Leonard J., Karlstrom, and Klamp. 3,415,200.

Karmann, Thomas R. Traveling irrigation sprinkler apparatus. 3,415,451, 12–10–68, Cl. 239—191.

Karnofsky, George B., to Blaw-Knox Co. Method of manufacturing vinyl acetate monomer. 3,415,872, 12–10–68, Cl. 260—498.

Kaspar, Emanuel: *See*—
Philippson, Rainer, Hempel, Kaspar, and Kutzsche. 3,415,-817.

Kassay, Victor G.: *See*—
Hallonquist, Earland G., Jaworsky, and Kassay. 3,415,-765.

Kasten, Walter, to The Bendix Corp. Elements for removing contaminants from liquid. 3,415,384, 12–10–68, Cl. 210—484.

Kato, Shoji, and C. Kanda, to Asahi Breweries Co. Ltd. Liquid spray device. 3,415,452, 12–10–68, Cl. 239—257.

Kaufmann, Erich: *See*—
Kramasz, Joseph G., Jr., and Kaufmann. 3,415,087.

Kawamoto, Kisuo: *See*—
Yamaguchi, Terumoto, Kawamoto, and Amemiya. 3,414,-970.

Kawano, Hideo: *See*—
Nishio, Fumihiko, Hayakawa, and Kawano. 3,415,649.

Kay-Fries Chemicals, Inc.: *See*—
Kesslin, George, and Handy. 3,415,846.

Kaye, Russell F.: *See*—
Royer, William W., Molnar, Kaye, and Robinson. 3,415,-135.

Keating, Henry M. Coupling frame. 3,415,543, 12–10–68, Cl. 285—24.

Keberle, Wolfgang: *See*—
Dieterich, Dieter, Keberle, and Muller. 3,415,768.

Kehler, Theodor K., to Hoerbiger Ventilwerke Aktiengesellschaft. Method and device for the infinitely variable capacity control of piston-type compressors. 3,415,441, 12–10–68, Cl. 230—22.

Kelly, Andrew J., to W. R. Grace & Co. Plasticizer compositions for neoprene films. 3,415,767, 12–10–68, Cl. 260—27.

Kelly, Norman A., to Haskon, Inc. Method and apparatus for antifoam filling a container. 3,415,294, 12–10–68, Cl. 141—1.

Keogh, Michael J., and A. K. Ingberman, to Union Carbide Corp. Process for the preparation of 4,4'-dichlorodiphenyl sulfone. 3,415,887, 12–10–68, Cl. 260—607.

Keough, William R., 45% to Multifastener Co. Method and apparatus for treating objects with gas. 3,414,981, 12–10–68, Cl. 34—22.

Kerr, James R., to Sylvania Electric Products Inc. Polarization modulation optical communication system. 3,415,995, 12–10–68, Cl. 250—199.

Kerrigan, William H. Streamlining apparatus for cargo carrying vehicles. 3,415,566, 12–10–68, Cl. 296—1.

Kerr-McGee Corp.: *See*—
Wolff, Paul A. 3,415,067.

Kessler, Marvin D. Resilient plastic shoe heel protector. 3,414,-990, 12–10–68, Cl. 36—78.

Kesslin, George and R. W. Handy, to Kay-Fries Chemicals, Inc. Preparation of trioxabicyclo octanes. 3,415,846, 12–10–68, Cl. 260—340.7.

Kiebel, Herbert: *See*—
Frenzel, Manfred, and Kiebel. 3,415,444.

Kiefer, Leo A., and K. E. Lehrke, to Gray Co. Inc. Control apparatus for fluid distribution system. 3,415,274, 12–10–68, Cl. 137—551.

Kiel, Louise A. Rocking wheel chair. 3,415,531, 12–10–68, Cl. 280—80.

Kierstead, Richard W: *See*—
Berger, Julius, Kierstead, Lemahieu, and Tabenkin. 3,415,-716.

Kihlberg, Gunnar A.: *See*—
Bernhard, Bo B., and Kihlberg. 3,416,062.

Kim, Kap S., to General Dynamics Corp. Frequency synthesizer systems for generating accurate radio frequency signals of selected frequencies. 3,416,096, 12–10–68, Cl. 331—2.

Kim, Yung K., to Dow Corning Corp. Perfluoroalkylester mercuric bromides. 3,415,858, 12–10–68, Cl. 260—431.

Kimberlin, Dan R., and L. J. Mahalak, to General Motors Corp. Vehicle steering column assembly including molded spacer means. 3,415,139, 12–10–68, Cl. 74—492.

Kimmel, J. D. Steam generator coil overheat control. 3,416,-118, 12–10–68. Cl. 337—382.

Kindelan, James J., to Overmyer Mould Co. of Pennsylvania. Mold blank centering and clamping device. 3,415,158, 12–10–68, Cl. 90—13.1.

Kindorf, Orlan C. Hanger for insulated pipe. 3,415,474, 12–10–68, Cl. 248—62.

King, Randall N.: *See*—
Carson, William N., Jr., and King. 3,415,689.

Kingrea, Charles L.: *See*—
Davis, Wayne T., and Kingrea. 3,415,861.

Kinkade, Jerald H., to Mfg. Patents Associates. Safety sling for workmen. 3,415,340, 12–10–68, Cl. 182—7.

Kinkade, William A., and R. E. McCleary, to United States Gypsum Co. Calcined gypsum and a method for its preparation. 3,415,910, 12–10–68, Cl. 263—53.

Kinkaid, Robert J. Electrical connectors for terminating leads of micro-modular components or the like. 3,416,122, 12–10–68, Cl. 339—17.

Kippan, James A., to Delta Rope & Twine Ltd. Method and apparatus for making twine. 3,415,919, 12–10–68, Cl. 264—167.

Kirpichnikov, Felix P., V. I. Bykasov, L. N. Reshetov, and S. P. Miljutin. Stand for helical rolling. 3,415,090, 12–10–68, Cl. 72—100.

Kiss, Kornel D., and J. T. Reed, to Diamond Shamrock Corp. Copolymerization of trioxane and norbornadiene in a two-stage process. 3,415,786, 12–10–68, Cl. 260—67.

Kiss, Kornel D.: *See*—
Tirpak, Michael R., Rosen, Wilhjelm, Reed and Kiss. 3,415 785.

Klaiss, Hans-Dieter, to Dynamit Nobel Aktiengesellschaft. Bracing and spacing device for concrete wall forms. 3,415,-484, 12–10–68. Cl. 249—216.

Klamp, Paul: *See*—
Bishop, Leonard J., Karlstrom, and Klamp. 3,415,200.

Kleinman, George: *See*—
Rushton, William E., and Kleinman. 3,415,039.

Kleist, Walter: *See*—
Hellmig, Ehrhard, and Kleist. 3.415,698.

Kleveland, Nels B., to Eaton Yale & Towne, Inc. Dispensing valve. 3,415,426. 12–10–68, Cl. 222—402.11.

Kleykamp, Donald L.: *See*—
Van Bentnuysen, John D., and Kleykamp. 3,416,119.

Kliklok Corp.: *See*—
Stenger, Richard C. 3,415,221.

Klimov, Nikolai S.: *See*—
Butaev, Filipp I., Klimov, Pertsev, Stepanov, Shemaev, and Shkolin. 3,416,018.

Klug, Robert F., and L. B. Lindquist, to Dale Electronics, Inc. Potentiometer. 3,416,120, 12–10–68, Cl. 338—183.

Klukasdahl, Harris E., to Chevron Research Co. Reforming a sulfur-free naphtha with a platinum-rhenium catalyst. 3 415,737. 12–10–68, Cl. 208—139.

Knapp, Milton J., E. Pleasants, and J. Szekeres, Jr. Mucosatome. 3,415,251, 12–10–68, Cl. 128—305.

Knapsack Aktiengesellschaft: *See*—
Cremer, Joseph, Thummler, Schulte, and Harnisch. 3,415,624.

Knauf, Karl O. Ice cream stick and whistle. 3,415,009, 12–10–68, Cl. 46—175.

Knauss, Dalton L.: *See*—
Dickson. Donald C., Jr., and Knauss. 3,416,046.

Knechtel, Earl D., to United States of America, National Aeronautics and Space Administration. Floating two-force-component measuring device. 3,415,116, 12–10–68, Cl. 73—141.

Knight, Francis J., and F. J. Mack, to Johnson & Johnson. Aerosol dispenser. 3 415,425. 12–10–68, Cl. 222—386.5.

Knox, Lawrence H., to Syntex Corp. 19-nor-n-homo pregnane derivatives. 3,415,845. 12–10–68, Cl. 260—340.5.

Knoy, Maurice G., to Rostone Corp. Corrosion-resistant conduit connector. 3,415,942. 12–10–68, Cl. 174—51.

Kobayashi, Kengo: *See*—
Inaba, Seluemon, Yoshitake, and Kobayashi. 3,416,053.

Kobayashi, Yoshio: *See*—
Taniguchi, Isoji, Maemoto, Ken-Ichi, Simamura, Kobayashi, Yasumura, and Yamadera. 3,415,904.

Koch, Hans-Joachim, K.-H. Berndt, and Dölle, to VEB Elektrochemisches Kombinat Bitterfeld. Frames for electrodes for the electrolytic decomposition of hydrochloric acid and method for making such frames. 3,415,733. 12–10–68, Cl. 204—279.

Kodama, Mitsuru, to Ichikawa Seisakusho Co., Ltd. Wiper blade construction. 3,414,930. 12–10–68. Cl. 15—250.36.

Kodama, Mitsuru, to Ichikawa Seisakusho Co., Ltd. Wiper blade. 3,414,931 12–10–68, Cl. 15—250.42.

Koester, Charles J., and N. S. Williams, to American Optical Co. Laser amplifier construction. 3,416,089, 12–10–68, Cl. 330—4.3.

Kofman, Lev P.: *See*—
Bliznjuk, Nicholai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.

Koger, Dorothy G.: *See*—
Koger, Edward B. and D. G. 3,415,662.

Koger, Edward B. and D. G. Laminate material. 3,415,662, 12–10–68. Cl. 99—171.

Kollmeyer, Herman R. Trembler switch. 3,415,960, 12–10–68, Cl. 200—61.49.

Kolomiets, Alexei F.: *See*—
Bliznjuk, Nicholai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.

Komjathy, Joseph S., to General Motors Corp. Open channel flow high speed plating. 3,415,732, 12–10–68, Cl. 204—237.

Kompelien, Arlon D., to Honeywell Inc. Refrigeration condenser fan speed control system. 3,415,071, 12–10–68, Cl. 62—158.

Konarewski, Clement R., and F. A. Lyon, to Halm Instrument Co., Inc. Capping means using vacuum. 3,414,959, 12–10–68, Cl. 29—203.

Kondur, Nicholas, Jr., to Burroughs Corp. Readily releasable self-locking clamp. 3,415,477, 12–10–68, Cl. 248—225.

Korecky, Allan J., and H. A. Teamer, to Barmatic Machines, Inc. Ball joint assembly. 3,415,551, 12–10–68, Cl. 287—90.

Korinek, George: *See*—
Scheller, Walter, Korinek, and Daendliker. 3,415,722.

Korngold, Leon, and W. H. Bachman, to General Bag & Burlap Co. Mail retrieving device. 3,414,932, 12–10–68, Cl. 15—304.

Korol, Peter, and R. J. Wallis, to General Electric Co.

Korol, Peter, and R. J. Wallis, to General Electric Co. Channel indicator for television receiver. 3,415,218, 12–10–68, Cl. 116—124.4.

Kotlarz, Joseph C. Glazing panel supporting framework with heating and cooling system. 3,415,024, 12–10–68, Cl. 52—220.

Koucky, Frantisek: *See*—
Koucky, Josef and F. 3,415,000.

Koucky, Josef and F., to Zavody Jana Svermy, narodni podnik. Magazine catch means including a trigger safety. 3,415,000, 12–10–68, Cl. 42—70.

Kouvel, James S., to General Electric Co. Process for producing iron-rhodium alloys having improved magnetic transition properties. 3,415,695, 12–10–68, Cl. 148—101.

Kovalski, Leonard E., to Bethlehem Steel Corp. Sulfuric acid pickling bath. 3,415,748, 12–10–68, Cl. 252—79.4.

Kraissl, Frederick, Jr. Oil separators. 3,415,041, 12–10–68, Cl. 55—342.

Kramasz, Joseph G., Jr., and E. Kaufmann. Electromechanical lock. 3,415,087, 12–10–68, Cl. 70—277.

Kratochvil, Clyde A.: *See*—
Walz, Frank C., Jr., Pickup, and Kratochvil. 3,415,025.

Kratzer, Reinhold H.: *See*—
Paciorek, Kazimiera J. L., and Kratzer. 3,415,863.

Kreus, Kenneth L.: *See*—
Lachowicz, Donald R., Simmons, and Kreus. 3,415,856.

Krieger, Alvin W., to Cutler-Hammer, Inc. Miniature precision snap action switch with one-piece stressed blade construction. 3,415,962, 12–10–68, Cl. 200—67.

Krist, Henry K. Automatic impact indicator system for tennis. 3,415,517. 12–10–68, Cl. 273—31.

Krueger, Glenn N., to United States Steel Corp. Traveling saw. 3,415,150, 12–10–68, Cl. 83—319.

Krug, William H. Self-starting synchronous motor. 3,416,017, 12–10–68, Cl. 310—164.

Kruimink, Rudolf M.: *See*—
Van Der Tas, Johannes C., Westerveld, and Kruimink. 3,415,605.

Kruse, Frederick W., Jr., and D. L. Baskins, to Kruse-Storke Electronics. Voltage tuned oscillator with resistive and capacitive tuning diodes. 3,416,100, 12–10–68, Cl. 331—108.

Kruse-Storke Electronics: *See*—
Kruse, Frederick W., Jr., and Baskins. 3,416,100.

Kubota, Shigeo: *See*—
Takagi, Masusaburo, and Kubota. 3,418,136.

Kuehl, Donald R., and C. G. Peters, to American Can Co. Multi-product carton with product-retaining feature. 3,415,-362, 12–10–68, Cl. 206—47.

Kuhle, Engelbert: *See*—
Sasse, Klaus, Kuble, and Eue. 3,415,828.

Kuhlmann, Kurt, to Industrial Air Products Co. Apparatus for controlling the temperature and oxygen concentration in a compartment. 3,415,310, 12–10–68, Cl. 165—27.

Kuhnlein, Hans, and I. Pfreimbter, to Siemens Aktiengesellschaft. Zero voltage compensating circuits for a hall generator. 3,416,010, 12–10–68, Cl. 307—309.

Kulka, Kurt, to Fritzsche Brothers, Inc. Derivatives of 1-phenyl-2,2-dialkyl-1,3-dihydroxypropanes and 1-substituted phenyl-2,2-dialkyl-1,3-dihydroxypropanes. 3,415,844, 12–10–68, Cl. 260—340.5.

Kurt, Ewald H.: *See*—
Buehler, Alois A., and Kurt. 3,415,328.

Kutner, Abraham, to Hercules Inc. Purification of polyolefins. 3,415,800, 12–10–68, Cl. 260—93.7.

Kutzsche, Armin K. W.: *See*—
Philippson, Rainer, Hempel, Kaspar, and Kutzsche. 3,415,-817.

Kuwabara, Motosuke: *See*—
Ii, Chikai, Yamashita, Kuwabara, and Sugie. 3,415,953.

Kuwata, Tsutomu, T. Yasukawa, and S. Abe, to Soda Koryo Kabushiki Kaisha. Process for manufacturing cyclamen aldehyde and its derivatives. 3,415,884, 12–10–68, Cl. 260—599.

Kuzara, John C., to The Sessions Clock Co. Unidirectional starting mechanism for synchronous A.C. self-starting motors. 3,416,014, 12–10–68, Cl. 310—41.

La Belle Industries, Inc.: *See*—
Coulson, Leonard W., and Thies. 3,415,437.

Labombarde, Philip D. Aircraft. 3,415,468, 12–10–68, Cl. 244—13.

Laboratory for Electronics, Inc.: *See*—
Brockett, Peter C. 3,416,130.

Lacey, Philip P., and W. L. Pridgen, to Nemo Engineering Co. Textile loom picker stick. 3,415,289, 12–10–68, Cl. 139—157.

Lacey, Philip P., and W. L. Pridgen, to Nemo Engineering Co. Integrally formed textile loom picker stick and picker head. 3,415,290, 12–10–68, Cl. 139—159.

Lachman. Leon. and P. Sheth, to Ciba Corp. Ophthalmic solution containing poly-1,3-beta-glucoside. 3,415,929, 12–10–68, Cl. 167—59.

Lachowicz, Donald R., T. S. Simmons, and K. L. Kreuz, to Texaco, Inc. Process for producing carboxylic acids and nitrogen containing intermediates from olefins. 3,415,856, 12–10–68, Cl. 260—413.

Lacoste, Michel: *See*—
Louvel, Bernard, and Lacoste. 3,415,247.

Lacy, Peter D., to Wiltron Co. Multifunction high frequency testing apparatus in which R.F. signals are converted to intermediate frequencies and processed by common electronic circuits. 3,416,077, 12–10–68, Cl. 324—58.

Lagier, Jean-Claude, to Mefina S.A. Adjustable system feeding an electric motor through a resistance of a variable value. 3,416,059, 12–10–68, Cl. 318—348.

La Heij, Gerardus E., and J. A. Waterman, to Shell Oil Co. Process for the preparation of polymer solutions from polymer latices. 3,415,772, 12–10–68, Cl. 260—33.6.

Lake, Irving Y.: *See*—
Willis, Grant N., and Lake. 3,415,162.

Lambert, John B., to Fansteel Metallurgical Corp. Process for making dispersions of particulate oxides in metals. 3,415,640, 12–10–68, Cl. 75—.5.

Land, Edwin H., to Polaroid Corp. Novel photographic products and processes. 3,415,644, 12–10–68, Cl. 96—3.

Land, Edwin H., to Polaroid Corp. Opaque permeable polymeric layer in photo-sensitive element. 3,415,645, 12–10–68, Cl. 96—3.

Land, Edwin H., to Polaroid Corp. Novel photographic products and processes. 3,415,646, 12–10–68, Cl. 96—3.

Langenheim, Richard H.: *See*—
Horeth, John M., Langenheim, and Howard. 3,415,363.

Langford, Melvin O.: *See*—
Leydig, Clyde O., and Langford. 3,415,046.

Langstaff, Witt I., and T. L. Shealy, Jr., to Eastman Kodak Co. Process for dyeing textile fibers and preparing high-bulk fabrics. 3,414,957, 12–10–68, Cl. 28—74.

Lanier Electronics Laboratory, Inc.: *See*—
Bolick, Fred C., Jr. 3,415,434.

Lanier, William E.: *See*—
Carter, Ernest P., Cox, and Lanier. 3,415,922.

Lanza, Vincent L.: *See*—
Heslop, William R., Lanza, and Stivers. 3,415,287.

Lappo, George J. Pump. 3,415,198, 12–10–68, Cl. 103—150.

Larson, Charles L., to Jeddeloh Bros. Sweed Mills, Inc. Adjustable cam control system for a sheet-handling apparatus. 3,415,391, 12–10–68, Cl. 214—16.4.

Lauber, Ernst, to Maschinenfabrik Habegger AG. Tunnel driving machine steering system. 3,415,574, 12–10–68, Cl. 299—31.

Lauener, Wilhelm F., to Prolizenz AG. Continuous band forging machine. 3,415,106, 12–10–68, Cl. 72—408.

Lautenschlaeger, Friedrich K., to The Dunlop Co., Ltd. Polysulfides and process for the preparation of same. 3,415,888, 12–10–68, Cl. 260—608.

Lauwers, Andre E. A.: *See*—
Van Goethem, Jan, De Smedt, and Lauwers. 3,416,143.

Lavich, Adam J.: *See*—
Bien, Alfred A., and Lavich. 3,415,140.

Lebas, Bernard: *See*—
Arhex, Jean, Blanchet, Lebas, and Mical. 3,415,180.

Lebreton, Jean. Prefabricated buildings and panels utilizable in constructing same. 3,415,023, 12–10–68. Cl. 52—213.

Lecluyse, Edouard, and A. Beranger, to Tuboplast-France, S.A. Continuous method and means for the manufacture of hollow objects. 3,415,915, 12–10–68, Cl. 264—94.

Lee, Robert E., and H. J. Donald, to The Dow Chemical Co. Multilayer extrusion process. 3,415,920, 12–10–68, Cl. 264—171.

Leevo, Voldemar. Sun visor attachment. 3,415,569, 12–10–68, Cl. 296—97.

Leger, Adrien. Emergency starting device and handling mechanism for automobiles. 3,415,394, 12–10–68, Cl. 214—75.

Lehrke, Kenneth E.: *See*—
Kiefer, Leo A., and Lehrke. 3,415,274.

Leistra, Johannes Libbe, to North American Philips Co., Inc. Device for checking deviations in the thickness or mass of textile threads. 3,416,037, 12–10–68, Cl. 317—123.

Lemahieu, Ronald A.: *See*—
Berger, Julius, Klerstead, Lemahieu, and Tabenkin. 3,415,716.

Le Materiel Electrique S.W.: *See*—
Chauprade, Robert. 3,416,007.

Lemelson, Jerome H. Combination sponge and scourer. 3,414,928, 12–10–68, Cl. 15—118.

Lengyel, Bela: *See*—
Alexander, John M., and Lengyel. 3,415,088.

Les Laboratoires Bruneau et Cie: *See*—
Guiroy, Pierre J. 3,415,931.

Letter, Eugene C., to Bausch & Lomb, Inc. High speed optical shutter. 3,415,591, 12–10–68, Cl. 350—160.

Leventhal, Edwin A., G. F. Neumark, and E. S. Rittner, to North American Philips Co., Inc. Scintillation detector using a single crystal of gallium arsenide. 3,415,989, 12–10–68, Cl. 250—71.5.

Lever Brothers Co.: *See*—
Browning, Hugh R., and Carter. 3,415,752.

Levesque, Raymond A., and R. C. Newton, to American Cyanamid Co. Piece-dyeable carpet and yarns therefor. 3,415,051, 12–10–68, Cl. 57—140.

Levin, Robert E., to Sylvania Electric Products, Inc. Circuit for operating multifilament incandescent lamps at different intensities. 3,416,028, 12–10–68, Cl. 315—50.

Levinstein, Moses A., and J. W. Grenier, to General Electric Co. Method of co-depositing titanium and aluminum on surfaces of nickel, iron and cobalt. 3,415,672, 12–10–68, Cl. 117—71.

Levy, Felix. Method and means for preventing the deposit or vapor and rime on windows and windshields. 3,415,308, 12–10–68, Cl. 165—2.

Levy, Michael J., to Combined Industries, Inc. Knockdown cabinet construction. 3,415,584, 12–10–68, Cl. 312—257.

Leybold Holding A.G.: *See*—
Schulze, Harald. 3,415,054.

Leydig, Clyde O., and M. O. Langford. Tree topper with double main boom and double clean-up boom. 3,415,046, 12–10–68, Cl. 56—235.

Libman, Boris J.: *See*—
Blizinjuk, Nickolai K., Kolomiets, Varshavsky, Skadnev, Kotman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.

Licentia Patent-Verwaltungs-G.m.b.H.: *See*—
Grosse-Brauckmann, Helmux. 3,416,117.

Liebmann, Henry J.: *See*—
Smith, William D., and Liebmann. 3,415,504.

Lillis, Kenneth H., to The Mead Corp. Packaging containers. 3,415,366, 12–10–68, Cl. 206—65.

Lind, Wallace E., W. G. Winkler, and W. G. Peyer, to Whirlpool Corp. Fluid control system. 3,415,276, 12–10–68, Cl. 137—563.

Lindberg, Charles A., Jr., to Data Disc, Inc. Magnetic recording disc cartridge. 3,416,150, 12–10–68, Cl. 340—174.1.

Linde Aktiengesellschaft: *See*—
Rubner, Erwin, and Hausotter. 3,415,546.

Lindenauer, Geoffrey G. Visual display device. 3,414,987, 12–10–68, Cl. 35—60.

Lindquist, Larry B.: *See*—
Klug, Robert F., and Lindquist. 3,416,120.

Lipnitz, James W., to I-T-E Circuit Breaker Co. Recloser static control circuit. 3,416,035, 12–10–68, Cl. 317—22.

Liston, Carol A.: *See*—
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.

Liston, Dan G.: *See*—
Bucknell, Ernest H., Rauh and Ward. 3,415,454.
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.

Liston, Daniel E.: *See*—
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.

Liston, James H.: *See*—
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.

Liston, Marcia: *See*—
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.

Liston, Novell D., to General Dynamics Corp. Infrared detector cooler. 3,415,078, 12–10–68, Cl. 62—514.

Little, Edward A., to Risdon Mfg. Co. Locking type safety pin. 3,414,946, 12–10–68, Cl. 24—158.

Litton Business Systems, Inc.: *See*—
White, Roy A. 3,415,776.

Litton Industries, Inc.: *See*—
Ash, Bernard H. 3,415,355.

Livermore, H. F., Corp.: *See*—
Urquhart, Lloyd G. 3,415,291.

Lloyd, Henry, to United Kingdom Atomic. Fuel element fabrication. 3,415,911, 12–10–68, Cl. 264—.5.

Lockheed Aircraft Corp.: *See*—
Austin, Robert D., Jr. 3,415,324.

Loev, Bernard, to Smith Kline & French Laboratories. Halocinnamoylaminoacetamides. 3,415,880, 12–10–68, Cl. 260—558.

Loftus, Thomas J., to Lord Corp. Gimbal structure. 3,415,479, 12–10–68, Cl. 248—358.

Lohr, Raymond J., to Louis Marx & Co., Inc. Steering wheel with horn, for toy vehicles. 3,415,219, 12–10–68, Cl. 116—139.

Lok-Products Co.: *See*—
Sutter, Ormand S. 3,415,018.

Long, Olan L., to Westinghouse Electric Corp. Dishwasher control. 3,415,261, 12–10–68, Cl. 137—2.

Lonza-Werke G.m.b.H.: *See*—
Babl, Albert, and Geng. 3,415,625.

Looff, Arthur: *See*—
Engstrom, Vincent C. 3,415,521.

Looff, Etta M.: *See*—
Engstrom, Vincent C. 3,415,221.

Lopata, Ira L. Apparatus and method for making looped ribbon ornaments. 3,415,429, 12–10–68, Cl. 223—46.

Lord Corp.: *See*—
Woodford, Philip R., Straneva, and John. 3,415,470.
Loftus, Thomas J. 3,415,479.

Los Angeles Miniature Products, Inc.: *See*—
Carley, James A. 3,416,020.

Lotz, Horst K.: *See*—
Gollwitz, Karl, and Lotz. 3,415,693.

Loughman, Barbara E.: *See*—
Chambliss, Keith W., Weiss, Loughman, Adams, and Beeny. 3,415,361.

Louthan, Rector P., to Phillips Petroleum Co. Production of thiol compounds. 3,415,889, 12–10–68, Cl. 260—609.

Louvel, Bernard, and M. Lacoste, to Societe Nationale des Petrole d' Aquitaine. Sequential programmers for automatic decompression. 3,415,247, 12–10–68, Cl. 128—204.

Lowe, Harold M. Portable clothes drier. 3,415,387, 12–10–68, Cl. 211—119.15.

Lowe Paper Co.: *See*—
Rice, John C. 3,415,671.

Lowe, Paul V.: *See*—
Sabatino, Anthony, Buttke and Lowe. 3,415,220.

Lowenstein Dyes & Cosmetics, Inc.: *See*—
Tucker, Harold H. 3,415,608.

Lubrizol Corp., The: *See*—
Jedlicka, Woodrow W. 3,415,766.
Jedlicka, Woodrow W. 3,415,788.

Lucerne Products, Inc.: *See*—
Matthews, Benjamin H. 3,415,966.

Lucifer S.A.: *See*—
Stampdi, Harold. 3,415,284.

Luck, Herbert O., to The Dow Chemical Co. Thickened paint strippers. 3,415,765, 12–10–68, Cl. 252—171.

Lucka, Eugene R.: *See*—
Foster, George B., Patterson, Ostrander and Lucka. 3,416,040.

Luethi, Christian: *See*—
Biland, Hans R., Luethi, and Duennenberger. 3,415,824.

Luethi, Christian, H. R. Biland, and M. Duennenberger, to Ciba Ltd. Hydroxybensophenones containing sulfonic acid groups. 3,415,875, 12–10–68, Cl. 260—511.

Lugiewicz, Robert C., to Cubb-Pac Corp. Methods and apparatus for processing meat or the like. 3,414,936, 12–10–68, Cl. 17—40.

Lundgren, Philip L. Compressible infusion bag. 3,416,656, 12–10–68, Cl. 99—77.1.

Lux, John H., to Haveg Industries, Inc. Process for making a sewable polyethylene upholstery material. 3,415,913, 12–10–68, Cl. 264—48.

Lycsko, Felix J., to Thermo Electron Corp. Thermionic converter heat exchangers. 3,416,011, 12–10–68, Cl. 310—4.

Lynch, John F., and A. T. Wysocki, to Marco Development Co., Inc. Process of reacting sulphur trioxide. 3,415,874, 12–10–68, Cl. 260—505.

Lynch, William A., to H. H. Robertson Co. Self-sustaining package of building panel units. 3,415,367, 12–10–68, Cl. 206—65.

Lyon, Floyyd A.: *See*—
Konazewski, Clement R., and Lyon. 3,414,959.

Lystad, Leonard A., to General Motors Corp. Closure operator. 3,415,016, 12–10–68, Cl. 49—227.

M & J Valve Co.: *See*—
Gray, Donald L. 3,415,489.

M & T Chemicals Inc.: *See*—
Bedi, Ram D., and Dubpernell. 3,415,723.

Maasberg, Wolfgang, and W. Heinrich, to Firma Woma-Apparatebau Wolfgang Maasberg & Co. GmbH. Valve assembly for reciprocating pumps and the like. 3,415,271, 12–10–68, Cl. 137—512.

Macco Oil Tool Co., Inc.: *See*—
Elliott, James K., and Edwards. 3,415,199.

MacDonald, John, E. J. Eden, and F. D. Myers, to Mechanical Products, Inc. Circuit breaker. 3,416,113, 12–10–68, Cl. 337—74.

MacGregor, Rob R.: *See*—
Moore, William P., and MacGregor. 3,415,823.

Mack, Frank J.: *See*—
Knight, Francis J., and Mack. 3,415,425.

Mack, Jean-Louis G., to Societe de Prospection Electrique Schlumberger, S.A. Galvanometer suspension assembly having a simplified center of gravity, buoyancy and centerline adjustment. 3,416,085, 12–10–68, Cl. 324—154.

MacKenzie, Robert P., and W. D. Worrell, to General Motors Corp. Transistorized electrolyte level indicator. 3,416,131, 12–10–68, Cl. 340—59.

Macknick, Albert J., to United States Steel Corp. Take-up block arrangement. 3,415,460, 12–10–68, Cl. 242—84.

MacMillan, Bloedel and Powell River Ltd.: *See*—
Barnes, Derek. 3,415,707.

MacSorley, Olin L., to International Business Machines Corp. Group parity handling. 3,416,132, 12–10–68, Cl. 340—146.1.

Mader, Helmut: *See*—
Von Konig, Anita, Mader, and Weyde. 3,415,651.

Maemoto, Ken-ichi: *See*—
Taniguchi, Isoji, Maemoto, Simamura, Kobayashi, Yasumura, and Yamadera. 3,415,904.

Maguire, Charles R.: *See*—
Jackson, Ronald S., and Maguire. 3,416,012.

Magyar Asvanyolaj es Foldgaz Kiserleti Intezet: *See*—
Freund Mihaly, Nagy, and Szepesy. 3,415,628.

Mahalak, Lawrence J.: *See*—
Kimberlin, Dan R., and Mahalak. 3,415,139.

Maidenform, Inc.: *See*—
Flame, Lowell. 3,414,907.

Maieli, Vincent, and R. Hardigan, to Sperry Rand Corp., Ford Instrument Co. Division. World wide magnetic variation computer. 3,415,980, 12–10–68, Cl. 235—150.271.

Malanco, Inc.: *See*—
Malmgren, George V. 3,414,937.

Malisio, Andrew B.: *See*—
Schuh, Arthur E., Rice and Malisio. 3,415,307.

Malmgren, George V., to Malanco, Inc. Produce tray perforating machine. 3,414,937, 12–10–68, Cl. 18—1.

Malmsten, Robert O., to Skill-Di, Inc. Shaft with deformable end portion. 3,415,580, 12–10–68, Cl. 308—15.

Maltenfort, Martin S. Hosiery boarding form. 3,415,431, 12–10–68, Cl. 223—75.

Mandel, Carl H.: *See*—
Thomason, Herman E., and Mandel. 3,415,126.

Mandel, Louis, to United States of America, Navy. Measurement of klystron reflector current. 3,416,069, 12–10–68, Cl. 324—24.

Mandrel Industries, Inc.: *See*—
Evans, John S., Jr. 3,415,496.

Manig, Heinz O.: *See*—
Oelkers, Heinrich, and Manig. 3,414,991.

Manly, Donald G.: *See*—
Dunlop, Andrew P., Manly, and Rice. 3,415,881.

Manufactures Engineering and Equipment Corp.: *See*—
Ungerman, Warren J. 3,415,141.

Manufacturing Patents Associates: *See*—
Kinkade, Jerald H. 3,415,340.

Marans, Nelson S., to W. R. Grace & Co. Process for preparing permeable polyethylene film. 3,415,925, 12–10–68, Cl. 264—331.

Marathon Oil Co.: *See*—
Benham, Alvin L. 3,415,743.

Marchisio, Robert G., and R. Hennessy, to Itek Corp. Alignment control apparatus. 3,415,157, 12–10–68, Cl. 89—41.

Marco Development Co., Inc.: *See*—
Lynch, John F., and Wysocki. 3,415,874.

Marcoux, Leo, to Texas Instruments, Inc. Thermostatic switches. 3,416,116, 12–10–68, Cl. 337—347.

Maremont Corp.: *See*—
Page, John D. 3,415,050.

Marlind, Goran, to AB Vavra Hydraulteknik. Method and an apparatus for installing underground pipes. 3,415,329, 12–10–68, Cl. 175—19.

Marshack, Irving L., to Califoam Corp. of America. Heat insulated conduit and method of making same. 3,415,288, 12–10–68, Cl. 138—141.

Martin, Heinz: *See*—
Emeis, Reimer, Haus, Herlet, Nagorsen, and Martin. 3,414,964.

Martin, Jack L. Tree shaking device. 3,415,565, 12–10–68, Cl. 294—103.

Martin, James A., and A. D. De Lozier. Amphibious camper apparatus. 3,414,916, 12–10–68, Cl. 9—1.

Martin, John E. Filter utilizing glass balls for filtering fluids. 3,415,382, 12–10–68, Cl. 210—282.

Martin, Lewis W.: *See*—
Karlen, Harvey B., Herbsthofer, and Martin. 3,415,267.

Martin-Marietta Corp.: *See*—
Weston, Charles D. 3,415,609.

Marbill Co.: *See*—
Mattos, Anthony A. 3,414,988.

Martin, Robert E.: *See*—
Bursynski, Alfred J., and Martin. 3,415,778.

Marx, Hans B., to Burroughs Corp. Interface control module for modular computer system and plural peripheral devices. 3,416,139, 12–10–68, Cl. 340—172.5.

Marx, Louis, & Co., Inc.: *See*—
Lohr, Raymond J. 3,415,219.

Maschinenfabrik Buckau R. Wolf: *See*—
Hanke, Friedrich. 3,415,235.

Maschinenfabrik Habegger AG.: *See*—
Lauber, Ernst. 3,415,574.

Maschinenfabrik Reinhausen Gebruder Scheubeck K.G.: *See*—
Bielbtreu, Alexander, and Schaller. 3,415,957.

Maser Optics, Inc.: *See*—
Franks, Harry E., and Aronson. 3,416,081.

Maskal, John: *See*—
Thompson, Ivan M., and Maskal. 3,415,617.

Mason, Donald J.: *See*—
Argoudelis, Alexander D., and Mason. 3,415,811.

Mason, Jerry E.: *See*—
Molau, Gunther E., and Mason. 3,415,795.

Mason, Leonard. Illuminated sign. 3,414,999, 12–10–68, Cl. 40—132.

Masterson, Earl E.: *See*—
Schaller, Frank H., Davis, and Masterson. 3,415,511.

Matson, Carl G. Vibrator mounting means. 3,415,471, 12–10–68, Cl. 248—14.

Matsumoto, Hirrshi, to Tokyo Kakin Kogyo Co., Ltd. Additive for production of spheroidal graphite cast iron consisting mostly of calcium-silicon. 3,415,642, 12–10–68, Cl. 75—130.

Matsushita Electric Industrial Co., Ltd.: *See*—
Hirota, Eiichi, and Neichi. 3,415,751.

Matsuura, Yoshimi: *See*—
Warner, Frederick P., and Matsuura. 3,414,929.

Matthews, Benjamin H., to Lucerne Products, Inc. Electrical switch with improved bridge contactor. 3,415,966, Cl. 200—153.

Mattingly, Charles D. Diving boards. 3,415,516, 12–10–68, Cl. 272—66.

Mattos, Anthony A., to Marbill Co. Shoe having a cushioned insole. 3,414,988, 12–10–68, Cl. 36—2.5.

Mauro, William B. Automatic low oil cutoff device for oil burner tanks. 3,415,958, 12–10–68, Cl. 200—84.

May, Arthur E., Jr.: *See*—
Fingerut, Boris M., and May. 3,415,532.

Mayer, Donald W., to Wagner Electric Corp. Tungsten filament iodine cycle incandescent lamp with alkali metal getter. 3,416,022, 12–10–68, Cl. 313—178.

Mazzarella, Louis: *See*—
Ciampa, Frederick A., Serafini, and Mazzarella. 3,414,915.

McChesney, Evan W.: *See*—
Dennis, Emery W., McChesney, and Surrey. 3,415,932.

McChesney, Jack, to Coca-Cola Bottling Co. Truck body. 3,415,567, 12–10–68, Cl. 296—3.

McCleary, Robert E.: *See*—
Kinkade, William A., and McCleary. 3,415,910.

McClellan, William R. Heat treated bismuth molybdate on silica catalysts. 3,415,886, 12–10–68, Cl. 260—603.

McConnell, Richard L.: *See*—
Coover, Harry W., Jr., and McConnell. 3,415,789.

McDavid, William D.: *See*—
Todd, David M., and McDavid. 3,415,769.

McDermott, J. Ray, & Co., Inc.: *See*—
Petrie, Warren A., and Smith. 3,414,918.

McDermott, Julian A. Collapsible stand for a lighting device. 3,415,476, 12–10–68, Cl. 248—166.

McDermott, Julian A. Vibration resistant switch means for battery container. 3,415,967, 12–10–68, Cl. 200—158.

McDonald, Charles D. Method and composition for surface finishing photographs or the like. 3,415,670, 12–10–68, Cl. 117—10.

McDonnell Douglas Corp.: *See*—
Amason, Myron P., and Cassell. 3,416,027.
Sertich, John J. 3,415,480.

McDowell-Wellman Engineering Co.: *See*—
Hamilton, Wallace. 3,415,014.

McFarren, Gerald A., to Hercules, Inc. Process for spinning fibers of poly(4-methyl-1-pentene). 3,415,921, 12–10–68, Cl. 264—176.

McGee, Donald E. Headlight arrangement for vehicles. 3,415,-933, 12–10–68, Cl. 240—8.25.
McGowan, James W., Jr. Method and apparatus for sensing gases. 3,416,070, 12–10–68, Cl. 324—33.
McGrath, Paul H. Angular turn indicator. 3,415,217, 12–10–68, Cl. 116—115.
McKenzie Sand & Gravel Co.: *See*—
Ebert, Glenn W. 3,415,499.
McLaughlin, Henry E.: *See*—
Sellers, Henry G., Jr., and McLaughlin. 3,415,798.
McLean, Robert L.: *See*—
Worrel, Calvin J., and McLean. 3,415,850.
McMillan, Bloedel Ltd.: *See*—
Hallonquist, Earland G., Jaworsky, and Kassay. 3,415,-765.
McMillan, Jerry N. Machine for finishing trousers. 3,415,430, 12–10–68, Cl. 223—73.
McMillan, Robert H., to Arvin Industries, Inc. Anti-whistle pipe connection. 3,415,338, 12–10–68, Cl. 181—59.
McMullen, John C., to The Carborundum Co. Rocking electric tube furnace. 3,415,940, 12–10–68, Cl. 13—21.
McQueen, Malcolm M., and A. F. Donnelly, to Whittaker Corp. Fluid gauging system. 3,415,118, 12–10–68, Cl. 73—199.
Mead Corp., The: *See*—
Bailey, Burton P., and Gomsi. 3,415,187.
Benatar, Victor, and Wilcox. 3,415,354.
Perry, John H., and Dyer. 3,415,033.
Lillis, Kenneth H. 3,415,366.
Mechanical Handling Systems, Inc.: *See*—
Bishop, Leonard J., Karlstrom, and Klamp. 3,415,200.
Mechanical Products, Inc.: *See*—
MacDonald, John, Eden, and Myers. 3,416,113.
Meek, James M., J. J. Charuhas, and H. A. Foure, to United States of America, Army. Safety and arming mechanism. 3,415,191, 12–10–68, Cl. 102—78.
Mefina S.A.: *See*—
Lagier, Jean-Claude. 3,416,059.
Meijs, Franciscus H., to Shell Oil Co. Method of curing loss of circulation of a fluid used in drilling a hole in an underground formation. 3,415,318, 12–10–68, Cl. 166—29.
Melanson, Charles G., to Prime Mfg. Co. Rib applying and cutting machine. 3,414,922, 12–10–68, Cl. 12—20.
Meloni, Mario, to Auteica A.G. Coin changer for an automatic vending machine with automatic refilling of the coin magazine. 3,415,256, 12–10–68, Cl. 133—2.
Melpar, Inc.: *See*—
Gutierrez, William A., and Wilson. 3,415,678.
Telkes, Maria. 3,415,719.
Memelink, Oscar W., and J. M. Cluwen, to North American Philips Co., Inc. Storage circuit employing cross-connected opposite conductivity type insulated-gate field-effect transistors. 3,416,008, 12–10–68, Cl. 307—279.
Menin, Albert S., and R. J. Cyr, to The Bendix Corp. Fish counting device. 3,418,127, 12–10–68, Cl. 340—3.
Merck & Co., Inc.: *See*—
Gal, George, and Sletzinger. 3,415,819.
Merritt, Henry B.: *See*—
Michels, Donald G., and Merritt. 3,415,253.
Merten, Ulrich, and P. K. Gantzel, to Gulf General Atomic Inc. Method and apparatus for gas separation by diffusion. 3,415,038, 12–10–68, Cl. 55—16.
Meskat, Walter: *See*—
Sucker, Christain, Meskat, and Heusch. 3,415,109.
Messerly, Gary A., to Read Corp. Level plane oven loader. 3,415,207, 12–10–68, Cl. 107—57.
Metallgesellschaft Aktiengesellschaft: *See*—
Eisenlohr, Karl-Heinz, and Muller. 3,415,739.
Eisenlohr, Karl-Heinz, and Muller. 3,415,740.
Eisenlohr, Karl-Heinz, and Muller. 3,415,741.
Eisenlohr, Karl-Heinz, and Muller. 3,415,742.
Metcalfe, Frederick S., to Westinghouse Electric Corp. Window mount room air conditioner. 3,415,074, 12–10–68, Cl. 62—262.
Methlie, George J., II, to Honeywell, Inc. Electric current producing cell. 3,415,687, 12–10–68, Cl. 136—100.
Meyer, George E.: *See*—
Tillisch, Paul W., Meyer, Chiffoleau, and Papalia. 3,415,-026.
Meyer, William H.: *See*—
Trbovich, Nicholas D., and Meyer. 3,415,283.
Meyerhoff, Alfred, to Westinghouse Electric Corp. Stud type base design for high power semiconductors. 3,415,943, 12–10–68, Cl. 174—52.
Mical, Andre: *See*—
Arhex, Jean, Blanchet, Lebas, and Mical. 3,415,180.
Michael, Rayboun D. Device for separating electronic module assembly. 3,414,960, 12–10–68, Cl. 29—203.
Michels, Donald G., and H. B. Merritt, to Philip Morris Inc. Process for manufacturing reconstituted tobacco sheet material in a substantially closed system. 3,415,253, 12–10–68, Cl. 131—140.
Mierendorf, Robert E., to Honeywell, Inc. Biased silicon control rectifier control apparatus. 3,416,038, 12–10–68, Cl. 317—132.
Miles Laboratories, Inc.: *See*—
Chambliss, Keith W., Weiss, Loughman, Adams, and Beeny. 3,415,361.
Mileski, Raymond P., to Xerox Corp. Auxiliary sheet feeder. 3,415,510, 12–10–68, Cl. 271—61.
Miljutin, Serafim P.: *See*—
Kirpichnikov, Felix P., Bykasov, Rshetov, and Miljutin. 3,415,090.
Millington, Robert G., to Hims, Inc. Safety tool. 3,415,563, 12–10–68, Cl. 294—25.
Millmaster Onyx Corp.: *See*—
Adams, Phillip, Juliano, Fellich, and Baron. 3,415,877.
Minami, Muneyoshi: *See*—
Tsuda, Yoshizo, Yanagi, and Minami. 3,415,784.
Mindrum, Kenneth H., to Clark Equipment Co. Piston stroke limit means. 3,415,161, 12–10–68, Cl. 91—19.
Miner, Carroll R., and J. L. Franke, to General Instrument Corp. Turret tuner for UHF television and other purposes. 3,415,127, 12–10–68, Cl. 74—10.6.
Ministerul Petrolului: *See*—
Nicodimescu, Cornellu. 3,415,738.
Minkiel, Alfred O.: *See*—
Dexter, Theodore H., Minkiel, and Thorstensen. 3,415,-610.
Minnesota Mining & Mfg. Co.: *See*—
Alden, Charles L., and Berkey. 3,415,407.
Erickson, John G. 3,415,764.
Prager, Julianne H., and Thompson. 3,415,865.
Robo, Lester E. 3,415,900.
Talbott, Richard L. 3,415,847.
Minton, Abraham, to D. Roberts, Matte cosmetic cream composition. 3,415,939, 12–10–68, Cl. 424—357.
Mishkin, Sidney, to David Fraum, Inc. Device to facilitate pinning a paper pattern to fabric. 3,415,428, 12–10–68, Cl. 223—1.
Mitchell, William H., B. Fishman, and C. G. Sage, to Thiokol Chemical Corp. Ullage control. 3,415,277, 12–10–68, Cl. 137—593.
Mitsumoto, Heihachi, Hygroscopic hair curler. 3,415,255, 12–10–68, Cl. 132—39.
Miura, Takeo, and J. Iwata, to Kabushiki Kaisha Hitachi Seisakusho and Hitachi Denshi Kabushiki Kaisha. Time-shared analog computer. 3,415,982, 12–10–68, Cl. 235—184.
Mizsoni, Renat H., and R. P. Mull, to Ciba Corp. N-guanidino-lower alkyl-isoindoles. 3,415,842, 12–10–68, Cl. 260—326.1.
Mobile Aerial Towers, Inc.: *See*—
Myers, Lester L. 3,415,021.
Mobil Oil Corp.: *See*—
Bridger, Robert F. 3,415,749.
Ciric, Julius. 3,415,736.
Kalhammer, Fritz R. 3,415,734.
Modderman, Pieter, to Organon, Inc. Process for the preparation of Δ1,3,5(10)-3,17-dihydroxy steroids. 3,415,853, 12–10–68, Cl. 260—397.4.
Mohawk Data Science Corp.: *See*—
Eckert, John F., and Sims. 3,415,507.
Mojonnier, Oliver W. Link chain. 3,415,136, 12–10–68, Cl. 74—249.
Molau, Gunther E., and J. E. Mason, to The Dow Chemical Co. Anionic polymerization of certain vinyl monomers with a methylsulfinylcarbanion catalyst in a dimethylsulfoxide solvent. 3,415,795, 12–10–68, Cl. 260—79.3.
Molnar, Dennis: *See*—
Royer, William W., Molnar, Kaye, and Robinson. 3,415,-135.
Monsanto Co.: *See*—
Anzenberger, Joseph F. 3,415,750.
Carroll, Robert L., and Irani. 3,415,623.
Carter, Ernest P., Cox, and Lanier. 3,415,922.
Crovatt, Lawrence W., Jr., and Chapman. 3,415,791.
Paterson, James G. T., Smith, and Thrasher. 3,415,185.
Ratts, Kenneth W. 3,415,883.
Sincock, Thomas F. 3,415,661.
Solsten, Richard T. 3,415,775.
Thomas, Robert R. 3,415,860.
Monsanto Research Corp.: *See*—
Garner, Albert Y. 3,415,905.
Montecatini Edison S.p.A.: *See*—
Bezzi, Silvio, Mortillaro, and Bandel. 3,415,783.
Borsini, Giancarlo, Visani, and Cevidalli. 3,415,797.
Montgomery, Frederick D., to F. D. Montgomery, a/k/a D. F. Montgomery. Method of preparing a frozen food package. 3,415,664, 12–10–68, Cl. 99—192.
Moore, Drew E.: *See*—
Blackhawk, Edward A., and Moore. 3,415,272.
Moore, Edward H., to The Gems Co., Inc. Visual flow indicator. 3,415,119, 12–10–68, Cl. 73—208.
Moore, John P.: *See*—
Nealon, Edward W., Yeutter, Cahoon, and Moore. 3,416,-121.
Moore, Kendric A.: *See*—
Hoover, William G., and Moore. 3,416,033.
Moore, William P.: *See*—
Elliott, Dale E., Elliot, G. A., and Moore. 3,415,822.
Moore, William P., and R. R. MacGregor, to Allied Chemical Corp. Chlorinated isocyanuric acid production. 3,415,823, 12–10–68, Cl. 260—248.
Moorhead, John O., and J. T. Hancock, to Texas Instruments, Inc. Thermostatic switch with improved capacity and automatic calibration. 3,416,115, 12–10–68, Cl. 337—343.
Moreau, Claude: *See*—
Poncelet, Jacques, Bochirol, Blum, and Moreau. 3,416,-013.
Morita, Shosuke: *See*—
Abe, Akira, Takahashi, and Morita. 3,415,344.
Moriya, Hisae: *See*—
Nagai, Satoshi, Furumoto, Moriya, and Akimoto. 3,415,-666.
Morley, William E., to Union Carbide Corp. Containers and method of making same. 3,415,413, 12–10–68, Cl. 220—67.
Morris, Nelson J., to Weyerhaeuser Co. Storage container. 3,415,585, 12–10–68, Cl. 312—261.
Morris, Philip Inc.: *See*—
Michels, Donald G., and Merritt. 3,415,253.
Morris, Robert D., and R. H. Hollister, to Westinghouse Electric Corp. Fluid cooled transformer having casing supported coils and cone. 3,416,110, 12–10–68, Cl. 336—57.
Mortillaro, Luigi: *See*—
Bezzi, Silvio, Mortillaro, and Bandel. 3,415,783.
Moser, Frank, and J. J. Everhart, to PPG Industries, Inc. Treatment of glass surfaces. 3,415,677, 12–10–68, Cl. 117—124.

Motooka, Tobru, K. Yamaguchi, N. Yoshitake, and K. Kobayashi, to Fujitsu Ltd. Programmed digital motor control for a machine tool using a pulse distribution technique. 3,416,056, 12–10–68, Cl. 318—162.
Motorola, Inc.: *See*—
Boncuk, Richard J., and Ozias. 3,416,078.
Frederiksen, Thomas M. 3,416,092.
Janns, Kenneth V., and Brenner. 3,416,032.
Treatch, James E. 3,416,135.
Mull, Robert P.: *See*—
Mizzoni, Renat H., and Mull. 3,415,842.
Muller, Eckart: *See*—
Eisenlohr, Karl-Heinz, and Muller. 3,415,739.
Eisenlohr, Karl-Heinz, and Muller. 3,415,740.
Eisenlohr, Karl-Heinz, and Muller. 3,415,741.
Eisenlohr, Karl-Heinz, and Muller. 3,415,742.
Muller, Erwin: *See*—
Dieterich, Dieter, Keberle, and Muller. 3,415,768.
Multifastener Co.: *See*—
Keough, William R. 3,414,981.
Munsingwear, Inc.: *See*—
Anderson, Carroll R. 3,415,081.
Munson, Joseph J. Cane gathering system for sugar cane harvesters. 3,415,044, 12–10–68, Cl. 56—119.
Munters, Carl G. Liquid and gas contact body. 3,415,502, 12–10–68. Cl. 261—112.
Murakami, Tadao, to Hitachi, Ltd. Speed reduction apparatus for automotive vehicles. 3,416,016, 12–10–68, Cl. 310—93.
Murphy, Hugh W., to FMC Corp. Article orienting apparatus. 3,415,350, 12–10–68, Cl. 198—33.
Murray, Ernest E., to Zech-Murray Corp. Apparatus for finishing workpieces under controlled pressures. 3,415,017, 12–10–68. Cl. 51—135.
Mutual Industries, Inc.: *See*—
Guarnaschelli, Vincent. 3,415,055.
Myers, Felix E., to I-T-E Circuit Breaker Co. Automatic relatching circuit breakers. 3,416,108, 12–10–68, Cl. 335—37.
Myers, Franklin D.: *See*—
MacDonald, John, Eden, and Myers. 3,416,113.
Myers, Lawrence A., to Chore-Time Equipment, Inc. Feed control apparatus. 3,415,228, 12–10–68, Cl. 119—51.11.
Myers, Lawrence A., to Chore-Time Equipment, Inc. Poultry water fountain. 3,415,229, 12–10–68, Cl. 119—80.
Myers, Lester L., to Mobile Aerial Towers, Inc. Fluid control system for aerial tower. 3,415,021, 12–10–68, Cl. 52—115.
Naber, Joseph S., to Fastener Corp. Electrical system for a plurality of appliances operated at random times. 3,416,000, 12–10–68, Cl. 307—11.
Nadal, Noemi G. M., to the people of Puerto Rico. Process for producing antibiotic, antifungal and antifoulant substances by solvent extraction of *Sargassum natans*, *Chondria littoralis* and *Cympolia barbata*, and the resulting products. 3,415,928, 12–10–68, Cl. 424—195.
Naddell, Manuel, to Euclid, Inc. Hydraulic cylinder. 3,415,-169, 12–10–68, Cl. 92—85.
Nagai, Satoshi, K. Furumoto, H. Moriya, and S. Akimoto, to Asahi Dow Ltd. Electroless copper plating bath. 3,415,666, 12–10–68, Cl. 106—1.
Nagata, Wataru, M. Narisada, T. Wakabayashi, and T. Sugasawa, to Shionogi & Co., Ltd. Process for preparing intermediates of garrya alkaloids. 3,415,830, 12–10–68, Cl. 260—287.
Nagorsen, Hans: *See*—
Emels, Reimer, Haus, Herlet, Nagorsen, and Martin. 3,414,964.
Nagy, Robert H. Plank-cutting saw. 3,415,242, 12–10–68, Cl. 125—13.
Nagy, Rudolph: *See*—
Eckel, Robert A., and Nagy. 3,416,023.
Nagy, Zoltán: *See*—
Freund, Mihály, Nagy, and Szepesy. 3,415,628.
Nakamura, Shoichi, to Sony Corp. Automatic gain control system. 3,416,094, 12–10–68, Cl. 330—28.
Nakanishi Metal Works Co., Ltd.: *See*—
Wakabayashi, Takao. 3,415,356.
Naomoto, Kiyoshi. Steam iron having suction drain means. 3,414,993, 12–10–68, Cl. 38—77.
Narisada, Masayuki: *See*—
Nagata, Wataru, Narisada, Wakabayashi, and Sugasawa. 3,415,830.
National Aeronautics and Space Administration: *See*—
Dryden, Hugh L. 3,415,556.
Webb, James E. 3,415,992.
National Biscuit Co.: *See*—
Pinto, Albert A., and Dew. 3,416,051.
National Cash Register Co., The: *See*—
Powell, Thomas C., Steinle, and Yoncoskie. 3,415,758.
National Dairy Products Corp.: *See*—
Nezbed, Robert L. 3,414,980.
National Engineering Science Co.: *See*—
Petroff, Michael D., and Swiadek. 3,416,068.
National Gypsum Co.: *See*—
Voisinet, Walter E. 3,415,674.
National Research Development Corp.: *See*—
Foster, Keith, and Firth. 3,415,059.
National Steel Corp.: *See*—
Saunders, William T. 3,415,411.
Nealon, Edward W., L. D. Yeutter, D. B. Cahoon, and J. P. Moore, to North American Rockwell Corp. Bearingless slip ring assembly. 3,416,121, 12–10–68, Cl. 339—8.
Neasham, Robert S. Stereo viewing apparatus. 3,415,598, 12–10–68, Cl. 352—63.
Needham, Brian J.: *See*—
Jenkins, Trevor, Needham, and Smith. 3,415,882.
Neichi, Yutaka: *See*—
Hirota, Eiichi, and Neichi. 3,415,751.
Nemetz, Robert V. Boat hulls. 3,415,213, 12–10–68, Cl. 114—56.
Nemo Engineering Co.: *See*—
Lacey, Philip P., and Pridgen. 3,415,289.
Lacey, Philip P., and Pridgen. 3,415,290.
Nerem, Marvin E., to Winnebago Industries, Inc. Panel joint structure. 3,415,028, 12–10–68, Cl. 52—281.
Neumark, Gertrude F.: *See*—
Leventhal Edwin A., Neumark, and Rittner. 3,415,989.
Neuschotz, Robert. Self aligning threaded elements. 3,415,301, 12–10–68. Cl. 151—23.
Newell Associates, Inc.: *See*—
Newell, Chester W. 3,415,458.
Newell, Chester W., to Newell Associates, Inc. Tape reel construction. 3,415,458, 12–10–68, Cl. 242—71.8.
Newell, George K., to Westinghouse Air Brake Co. Cotter pin spreading device. 3,415,093, 12–10–68, Cl. 72—166.
Newell, George K., to Westinghouse Air Brake Co. Railway brake shoe with brake force measuring means. 3,415,115, 12–10–68, Cl. 73—121.
Newman, Peter C.: *See*—
Beale, Julian R. A., Beer, and Newman. 3,416,047.
Newman, Stanley F.: *See*—
Gilderson, Peter W., Newman, and Fetterly. 3,415,621.
Newport, John J., III: *See*—
Schrieber, Charles F., and Newport. 3,415,305.
Newton, Richard C.: *See*—
Levesque, Raymond A., and Newton. 3,415,051.
Nezbed, Robert L., to National Dairy Products Corp. Method of spray drying. 3,414,980, 12–10–68, Cl. 34—9.
Niagara Blower Co.: *See*—
Olstad, Martin H. 3,415,313.
Nicodimescu, Cornellu, to Ministerul Petrolului. Method for crude oil purification. 3,415,738, 12–10–68, Cl. 208—187.
Nielson, Carl C.: *See*—
Kandel, Samuel, and Nielson. 3,415,954.
Nikles, Erwin, and L. Ebner, to Ciba Ltd. Pesticidal triazinyl azides. 3,415,827, 12–10–68, Cl. 260—249.8.
Nile Corp.: *See*—
Perlman, Milton. 3,415,281.
Nimtz, Klaus, to Palitex Project-Co. G.m.b.H. Double twist spindle. 3,415,049, 12–10–68, Cl. 57—58.49.
Nippon Denso Kabushiki Kaisha: *See*—
Yamaguchi, Terumoto, Kawamoto, and Amemiya. 3,414,-970.
Nippon Gakki Seizo Kabushiki Kaisha: *See*—
Noda, Haruhisa. 3,415,151.
Nishi, Sunao, and S. Ikeda, to Shinto Kogyo Kabushiki Kaisha. Aluminum cementation process. 3,415,676, 12–10–68, Cl. 117—107.2.
Nishio, Fumihiko. Y. Hayakawa, and H. Kawano, to Fuji Shashin Film Kabushiki Kaisha. Process for the production of light-sensitive material containing coating aids. 3,415,-649, 12–10–68, Cl. 96—94.
Nittka, Karl. Stepless torque converter. 3,415,134, 12–10–68, Cl. 74—117.
Niwa, Isamu, to Sony Corp. Cathode ray tube. 3,416,026, 12–10–68, Cl. 315—31.
Noda, Haruhisa, to Nippon Gakki Seizo Kabushiki Kaisha. Grand piano construction. 3,415,151, 12–10–68, Cl. 84—186.
Nordmann, Joseph, and H. B. Swierkot, to Etablissements Kuhlmann. 6-amino-chloro-indazoles and N-acylated derivatives thereof. 3,415,841, 12–10–68, Cl. 260—310.
Nordmark, Walter E.: *See*—
Barecki, Chester J., and Nordmark. 3,415,462.
Noren, Tore H., and G. J. Federighi. Removable water spray manifold for dishwasher. 3,415,259, 12–10–68, Cl. 134—180.
North American Philips Co., Inc.: *See*—
Beale, Julian R. A., Beer, and Newman. 3,416,047.
Grimmeiss, Hermann G. 3,415,996.
Harrick, Nicholas J. 3,415,602.
Leistra, Johannes L. 3,416,037.
Leventhal, Edwin A., Neumark, and Rittner. 3,415,989.
Memelink, Oscar W., and Cluwen. 3,416,008.
Van Der Tas, Johannes C., Westerveld, and Kruimink. 3,415,605.
Wanmaker, Willem L., and Bril. 3,415,757.
North American Plastics: *See*—
Robarge, Robert E. 3,415,487.
North American Rockwell Corp.: *See*—
Cathey, Wade T., Jr. 3,415,587.
Nealon, Edward W., Yeutter, Cahoon, and Moore. 3,416,-121.
Seitz, Thomas H. 3,415,408.
Northern Electric Co. Ltd.: *See*—
Overtveld, Gilles J. 3,418,091.
Norton Co.: *See*—
Ault, Neil N., and Wheildon. 3,415,631.
Cook, Arnold M. 3,415,505.
Norwich Pharmacal Co., The: *See*—
Davis, Charles S., and Snyder. 3,415,821.
Noury, Roger P. Automatic starter for internal combustion engines. 3,415,999, 12–10–68, Cl. 290—38.
Novokrechshenov, German A.: *See*—
Bliznjuk, Nickolai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.
Nunes, John F., Jr. Pallet carrier vehicle for mobilized loading of same. 3,415,399, 12–10–68, Cl. 214—390.
Nuss, Christopher: *See*—
Brady, Charles E., and Nuss. 3,415,266.
Nye, Harold C.: *See*—
Williams, Ray E., and Nye. 3,415,448.
Oak Electro/Netics Corp.: *See*—
Fichter, Ludwig J. 3,415,130.
Oas, David C., to Beloit Corp. Food dehydrator. 3,414,982, 12–10–68, Cl. 34—31.
Oba, Harutaro: *See*—
Sato, Tetsuo, and Oba. 3,415,349.

O'Banion, John D., 30% to Paul Bardwell, 30% to Gene Crane, and 10% to Harmon Dobson. Vehicle towing device. 3,415,397, 12–10–68, Cl. 214—86.

O'Brien, Jeremiah W., to United Engineering and Foundry Co. Scrap cutting shear and improved knifehead. 3,415,148. 12–10–68, Cl. 83—302.

O'Brien, Jeremiah W., to United Engineering and Foundry Co. Coil uncoiling arrangement. 3,415,459, 12–10–68, Cl. 242—79.

Odermatt, Alois. Footwear. 3,414,989. 12–10–68, Cl. 36—14.

Oelkers, Heinrich, and H. O. Manig; said Manig assor. to said Oelkers. Textile processing and handling apparatus. 3,414,991, 12–10–68, Cl. 38—2.

Oertle, Lawrence C., Jr., to H. G. Weber and Co., Inc. Apparatus for simultaneously elevating and lowering packaging articles. 3,415,353, 12–10–68, Cl. 198—156.

Ogilvie, George. Clothes drying devices. 3,415,386, 12–10–68, Cl. 211—118.

Ogino, Katsuhiko: *See*—
Turumaru, Takesi, Yotsuzuka, and Ogino. 3,415,891.

Oglebay Norton Co.: *See*—
Charman, Walter M., Jr., and Anthony. 3,415,483.

Okazaki, Narukazu, and J. Ishimaru, ½ to Wakayama Iron Works Ltd. Apparatus for treating sheetlike material under sub- or superatmospheric pressure. 3,415,083, 12–10–68, Cl. 68—5.

Olin Matieson Chemical Corp.: *See*—
Burne, Frederick A., and Valyi. 3,415,316.

Olin, Ray L. Haystack mover. 3,415,400, 12–10–68, Cl. 214—505.

Olinkraft, Inc.: *See*—
Ware, Walter S., and Cannon. 3,415,351.

Oliveto, Eugene P., to Schering Corp. Method for the manufacture of steroidal delta-1,4-dieneones and new product obtained thereby. 3,415,851, 12–10–68, Cl. 260—397.45.

Olivetti, Ing. C., & C., S.p.A.: *See*—
Perucca, Vincenzo. 3,415,184.

Olivier, Kenneth L., to Union Oil Co. of California. Preparation of β-acyloxy-carboxylic acids and α,β-unsaturated carboxylic acids by oxidative carbonylation. 3,415,871, 12–10–68, Cl. 260—497.

Ollen, Reginald I. Pipe hanger. 3,415,473, 12–10–68, Cl. 248—59.

Olson, Roger E.: *See*—
Barz, Maurice R., Olson, and Stockdale. 3,415,950.

Olsson, Erik A. Method of continuous casting without applying tension to the strand. 3,415,306, 12–10–68, Cl. 164—83.

Olsson, Jöns K. A., and S. A. to Telefonaktiebolaget Ericsson, LM. Register for recording and non-destructive reading of binary information. 3,416,147, 12–10–68, Cl. 340—174.

Olsson, Nils O., to International Harvester Co. Implement transport attachment. 3,415,401, 12–10–68, Cl. 214—506.

Olsson, Sven A.: *See*—
Olsson, Jöns K. A., and S. A. 3,416,147.

Olstad, Martin H., to Niagara Blower Co. Apparatus for producing air at widely different temperatures and relative humidities. 3,415,313, 12–10–68, Cl. 165—60.

Olympic Screw & Rivet Corp.: *See*—
Stau, Elvert H., and Stebol. 3,414,965.

Omark Industries, Inc.: *See*—
Gonzalez, Richardo. 3 415,414.
Graham, Harold J. 3,415,974.

Omon, Gene L., to J. I. Case Co. Hydraulic method and apparatus. 3,415,053, 12–10–68, Cl. 60—14.

Ordas, Arthur F., to Bowmar Instrument Corp. Stepping motor. 3,416,015, 12–10–68, Cl. 310—49.

Organon, Inc.: *See*—
Modderman, Pieter. 3,415,853.

Orth Hans, P. Zuppinger, H. Gempeler, and P. Schaefer, to Ciba Ltd. Polymers containing oxetane groups. 3,415,794, 12–10–68, Cl. 260—78.5.

Ostby & Barton Co.: *See*—
Theve, Charles R. 3,416,125.

Ostrander, Kenneth A.: *See*—
Foster, George B. Patterson, Ostrander, and Lucka. 3,416 040.

Ott, Gustav: *See*—
Preininger, Erich, and Ott. 3,415,779.

Ott, Richard R., and W. W. Blair, to Westinghouse Electric Corp. Electrode array. 3,415,001, 12–10–68, Cl. 43—17.1.

Otto, Jan H. Rubber cord skipping rope and exerciser. 3,415,515, 12–10–68, Cl. 272—75.

Outboard Marine Corp.: *See*—
Watkins, Lucius D. 3,414,921.

Overmyer Mould Co. of Pennsylvania: *See*—
Kindelan, James J. 3 415,158.

Overtveld, Gilles J., to Northern Electric Co. Ltd. Amplifier circuit, having feedback connection for reducing distortion caused by the non-linear characteristic of its output transformer. 3,418,091, 12–10–68, Cl. 330—15.

Owego Heat Treat. Inc.: *See*—
Engelhard, William E. 3,415,694.

Owens-Illinois. Inc.: *See*—
Burzynski, Alfred J., and Martin. 3,415,778.
Hider, Shibley A. 3,415,714.

Ozias, Albert E., Jr.: *See*—
Boncuk, Richard J., and Ozias. 3,416,078.

PPG Industries, Inc.: *See*—
Moser, Frank, and Everhart. 3,415,677.
Shaw, Hugh E., Jr. 3,415,433.
Smith, William D., and Liebmann. 3,415,504.

Pachter, Irwin J., and W. Herz, to Endo Laboratories, Inc. Cyclic pyrole ketones. 3,415,843, 12–10–68, Cl. 260—326.1.

Pacific Adhesives Co., Inc.: *See*—
Hohbach, Dale J., and Davis. 3,415 668.

Paciorek, Kazimiera J. L., and R. H. Kratzer, to United States of America, Navy. Silicon-nitrogen-phosphorus systems. 3,415,863, 12–10–68, Cl. 260—448.2.

Page, John D., to Maremont Corp. Spindle drive and stop mechanism. 3,415,050, 12–10–68, Cl. 57—88.

Palltex Project-Co, G.m.b.H.: *See*—
Nimtz, Klaus. 3,415,049.

Pall Corp.: *See*—
Adiletta, Joseph G., and Higgins. 3,414,995.

Pangafin Societe Anonyme Holding: *See*—
Holzknecht, Walter J. 3,415,558.

Papalia, Rocco: *See*—
Tillisch, Paul W., Meyer, Chiffoleau, and Papalia. 3 415,026.

Papayoti, Hristo V., to Unistrut Corp. Structural joint assembly and connectors therefor. 3,415,554, 12–10–68, Cl. 287—189.36.

Paquette, Leo A., to The Upjohn Co. Process for preparing 9,9-diemethyl-4-oxo-3 aza-9 azoniabicyclo/4.2.1/-nonane salts. 3,415,815, 12–10–68, Cl. 260—239.3.

Parker, Charles O., to Rohm & Haas Co. Process for the preparation of dinitroacetonitrile and salts. 3,415,867, 12–10–68, Cl. 260—465.1.

Parker, Wesley A.: *See*—
Holton, James R., Parker, and Sims. 3,415,918.

Parker-Hannifin Corp.: *See*—
Cleminshaw, William T., and Robinson. 3,415,265.
Elbogen, James S. 3,415,273.

Parker-Kalon Corp.: *See*—
Skierski, Edwin J. 3,415,154.

Pase Hugh H. Hopper gate sealing means. 3,415,204, 12–10–68, Cl. 105—282.

Passarello, Anthony R.: *See*—
Fiedler, George H., Passarello, and Taggart. 3,415,309.

Paterson, James G. T., A. P. Smith, and B. R. Thrasher, to Monsanto Co. Method of penetration printing a fabric utilizing impact forces. 3,415 185, 12–10–68, Cl. 101—211.

Patterson, Richard K., Jr.: *See*—
Foster, George B., Patterson, Ostrander, and Lucka. 3,416,040.

Paul, John M., to Rogers Construction, Inc. Extension attachment for a paving machine. 3,415,173, 12–10–68, Cl. 94—45.

Pelitti, Enrico, to The Chemical and Industrial Corp. Apparatus for the production of phosphoric acid. 3,415,629, 12–10–68, Cl. 23—285.

Pelmulder, John P., and E. Thuse, to FMC Corp. Immersion freezing. 3,415,075, 12–10–68 Cl. 62—381.

Peltier, Max B., to Societe d'Electronique Ek d'Automatisme. Digital data processing system. 3,416,006, 12–10–68, Cl. 307—238.

Pennsalt Chemicals Corp.: *See*—
Block, Burton P., and Dahl. 3,415 762.
Block, Barton P., and Dahl. 3,415,781.
Fuentevilla, Manuel E., and Saraceno. 3,415,445.
Huber, Ludwig K. 3 415,630.

Pennsylvania Sewing Research Corp.: *See*—
Glassman, Aaron. 3,415,210.

Pentrouix, Inc.: *See*—
Vinson, Paul. 3,414,940.
Vinson, Paul. 3,415,142.

Percival, George: *See*—
Dent Frederick J., and Percival. 3,415,634.

Perkey, Preston R., Sr., to Bethlehem Steel Corp. Bridge suspender collar. 3,414,924, 12–10–68, Cl. 14—22.

Perlman, Milton, to Nile Corp. Valves. 3,415,281, 12–10–68, Cl. 137—625.4.

Perlman, Morris. Semiautomatic wire fed top stop machine. 3,415,293, 12–10–68, Cl. 140—93.

Perri, John A., and J. Riseman to International Business Machines Corp. Objects provided with protective coverings. 3,415,680, 12–10–68, Cl. 117—212.

Perry, Charles C., to W. M. Chace Co. Electric heater control apparatus utilizing temperature responsive lever. 3,416,112, 12–10–68, Cl. 337—40.

Perry, Ernest J.: *See*—
Smith, Donald A., and Perry. 3,415,653.

Perry, John H., and H. A. Dyer, Jr., to Mead Corp. Packaging machine and method. 3,415,033, 12–10–68, Cl. 53—32.

Pertsev, Alexei A.: *See*—
Butaev, Filipp I., Klimov, Pertsev, Stepanov, Shemaev, and Shkolin. 3,416,018.

Perucca, Vincenzo, to Ing. C. and C. Olivetti, S.p.A. High speed serial printing device for teleprinters, accounting machines and data processing equipments. 3,415,184, 12–10–68, Cl. 101—93.

Perun, Thomas J., to Abbott Laboratories. Erythronolide B esters. 3,415,848, 12–10–68, Cl. 260—343.

Peters, Clifford G.: *See*—
Kuehl, Donald R., and Peters. 3,415,362.

Petersen, Byron H. Magnetic hold-open device. 3,415,562, 12–10–68, Cl. 292—273.

Petersen, John D., to The Goodyear Tire & Rubber Co. Method of making tire molds. 3,415,923, 12–10–68, Cl. 264—221.

Peterson, Edwin H., to Vibrator Mfg. Co., Inc. Suspended vibrator. 3,415,396, 12–10–68, Cl. 214—83.3.

Peterson, Roy L. Emergency tracheotomy kit. 3,415,250, 12–10–68, Cl. 128—305.

Pethis, James J., to The Fafnir Bearing Co. Combined seal and shock mount for a bearing. 3,415,500, 12–10–68, Cl. 308—184.

Petree, Frank L.: *See*—
Jewett, Warren R., Petree, and Bialobrzeski. 3,415,419.

Petrie, Warren A., and G. R. Smith, to J. Ray McDermott & Co., Inc. Apparatus for transferring fluent materials. 3,414,918, 12–10–68, Cl. 9—8.

Petroff, Michael D., and S. F. Swiadek, to National Engineering Science Co. Apparatus for detecting power radiated in the microwave-to-optical frequency spectrum. 3,416,068, 12–10–68, Cl. 323—75.

Petrol Injection Ltd.: *See*—
Jackson, Harold E., and Dean. 3,415,314.

Petterson, Adolf H. Feed beam for a mangle. 3,414,996, 12–10–68, Cl. 38—143.

Peyer, Wilbur G.: *See*—
Lind, Wallace E., Winkler and Peyer. 3,415,276.

Pfister, Xaver, and K. U. Steiner, to Sandoz Ltd., a/k/a Sandox A.G. Perinone pigments. 3,415,806, 12–10–68, Cl. 260—157.

Pfizer, Chas., & Co., Inc.: *See*—
Huber, William G. 3,415,930.
Thomas, Paul D., and Stephens. 3,415,813.
Turner, John M. 3,415,812.

Pfreimbter, Ingeborg: *See*—
Kuhnlein, Hans, and Pfreimbter. 8,416,010.

Phariss, Leon F. Eccentric pipe welding clamp. 3,414,950, 12–10–68, Cl. 24—280.

Phenix Mfg. Co., Inc.: *See*—
Sawyer, Eugene H. 3,415,804.

Philco-Ford Corp.: *See*—
Certa, Anthony J. 3,415,648.
Hoke, Leander H., Jr. 3,416,067.

Philippson, Rainer, G. Hempel, E. Kaspar, and A. K. W. Kutzsche, to Scherling Aktiengesellschaft. Bacteria-inhibiting steroids and method of making the same. 3,415,817, 12–10–68, Cl. 260—239.5.

Phillips Mfg. Co.: *See*—
Tomchin, Ronald E. 3,415,079.

Phillips, George T., to Armstrong Cork Co. Tile support apparatus. 3,415,030, 12–10–68, Cl. 52—493.

Phillips Petroleum Co.: *See*—
Arnold, Philip M. 3,415,710.
Farrar, Ralph C. 3,415,802.
Hitzman, Donald O. 3,415,936.
Louthan, Rector P. 3,415,889.
Walker, Darrell W. 3,415,898.

Pickup, Stacey F.: *See*—
Walz, Frank C., Jr., Pickup, and Kratochvil. 3,415,025.

Pierce, Ogden R., G. A. Grindahl, and A. J. Butler, to Dow Corning Corp. Fluorinated cyclic alcohols. 3,415,892, 12–10–68, Cl. 260—617.

Pilo, Claes-Wilhelm, to Svenska Rotor Maskiner Aktiebolag. Centrifugal contact-apparatus. 3,415,501, 12–10–68, Cl. 261—89.

Pines Engineering Co., Inc.: *See*—
Ruscitti, Oronzo J. 3,415,107.

Pink, Peter, and W. Schlitter. Particle size classification method and apparatus. 3,415,373, 12–10–68, Cl. 209—137.

Pinto, Albert A., and K. L. Dew, to National Biscuit Co. Web tension control system. 3,416,051, 12–10–68, Cl. 318—6.

Pitney-Bowes, Inc.: *See*—
Zweig, Gilbert. 3,415,223.

Placek, Raymond L.: *See*—
Arthur, James C., and Placek. 3,415,886.

Plackett, Anthony G.: *See*—
Sheppard, Raymond E. G., and Plackett. 3,415,311.

Pleasants, John E.: *See*—
Knapp, Milton J., Pleasants, and Szekeres. 3,415,251.

Plenty and Son Ltd.: *See*—
Brown, Stanley G., and Walford. 3,415,264.

Plessey-Uk Ltd.: *See*—
Blackburn, Peter A., Chesters, and Seeley. 3,415,952.

Plexowood, Inc.: *See*—
Habgood, Robert P., Jr., and Ianuzzi. 3,415,406.
Rondum, Svend B. 3,415,708.

Plym, Oscar V. Arrangement in masts for sailing-boats. 3,415,215, 12–10–68, Cl. 114—90.

Pneumatic Scale Corp.: *See*—
Bergeron, Alfred L., and Sterling. 3,415,037.

Polaroid Corp.: *See*—
Cooper, Deater P., Jr., and Kagan. 3,415,945.
James, Justin M., Jr. 3,415,589.
Land, Edwin H. 3,415,644.
Land, Edwin H. 3 415,645.
Land, Edwin H. 3,415,646.

Polson, Alfred, to South African Inventions Development Corp. Fractionation of mixtures of proteinaceous substances using polyethyleneglycol. 3,415,804, 12–10–68, Cl. 260—112.

Poncelet, Jacques, L. Bochirol, P. Blum, and C. Moreau, to Commissariat a l'Energie Atomique. Composite structure electrode and process for manufacturing such electrode. 3,416,013, 12–10–68, Cl. 310—11.

Pool, Stuart D., and A. Zimmerman, to International Harvester Co. Control for cleaning air screen. 3,415,040, 12–10–68, Cl. 55—283.

Poole Foundry & Machine Co.: *See*—
Swanson, Arthur. 3,415,080.

Poole, Harmon A., Jr., to Chandler Evans Inc. Time response matching process and product. 3,415,466, 12–10–68, Cl. 244—3.21.

Porter, H. K., Co., Inc.: *See*—
Webster, Earle F. 3,415,700.

Porter, John F.: *See*—
Well, Edward D., and Porter. 3,415,938.

Porter. Ralph F., to Eastman Kodak Co. Silver halide color photographic elements utilizing alpha-sulfonyloxy substituted two equivalent yellow-forming couplers. 3,415,652, 12–10–68 Cl. 96—100.

Porter, Waldo. Jr.: *See*—
Heaton. Edwin L., and Porter. 3 415,724.

Portnoff, Lawrence A. Occupant-propelled play vehicle. 3,415,540, 12–10–68, Cl. 280—221.

Pow R Matic Inc.: *See*—
Stamm, Arthur. 3,415,812.

Powell, John A.: *See*—
Souder, Louis C., Powell, and Hajduk. 3,415,796.

Powell, Thomas C., M. E. Steinle, and R. A. Yoncoskie, to The National Cash Register Co. Process of forming minute capsules en masse. 3,415,758, 12–10–68, Cl. 252—316.

Prager, Julianne H., and P. G. Thompson, to Minnesota Mining and Mfg. Co. Perfluoroalkyl polyfluoroxy compounds. 3,415,865, 12–10–68, Cl. 260—453.

Pratt, Jonn: *See*—
Giuffrida, Philip, and Pratt. 3,416,041.

Preininger, Erich, and G. Ott, to Ciba Ltd. Thermocurable precondensates from polyepoxy compounds and aromatic amines and process for their manufacture. 3,415,779, 12–10–68, Cl. 260—47.

Price, John A.: *See*—
Carlson, Otto K., and Price. 3,415,787.

Price, Paul B.: *See*—
Fleischer, Robert L., Price, and Walker. 3,415,993.

Price, William H., to Eastman Kodak Co. Linear motion zoom objective. 3,415,592, 12–10–68, Cl. 350—184.

Pridgen, Wilbur L.: *See*—
Lacey, Philip P., and Pridgen. 3,415,289.
Lacey, Philip P., and Pridgen. 3,415,290.

Priese, Werner K., and D. J. Davies, to Hills-McCanna Co. Ball valve. 3,415,488, 12–10–68, Cl. 251—315.

Prime Mfg. Co.: *See*—
Melanson, Charles G. 3,414,922.

Pritchard, John: *See*—
Ellison, Ronald, and Pritchard. 3,415,209.

Procter & Gamble Co., The: *See*—
Cunningham, Robert G., Dobson, Going, and Purves. 3,415,658.
Purves, Edward R. 3,415,659.
Purves, Edward R., Going, and Dobson. 3,415,660.

Prolizenz AG.: *See*—
Lauener, Wilhelm F. 3,415,106.

Provi, Mike A., and S. R. Guinter, to The Brearley Co. Clamp-on grab bar or rail for bathtubs or the like. 3,414,909, 12–10–68, Cl. 4—185.

Provi, Mike A., and S. R. Guinter, to The Brearley Co. Clamp-on grab rail for bathtubs or the like. 3,414,910, 12–10–68, Cl. 4—185.

Prow, Robert M. Scaling apparatus. 3,414,978, 12–10–68, Cl. 33—143.

People of Puerto Rico, The: *See*—
Nadal, Noemi G. M. 3,415,928.

Pullman Inc.: *See*—
Gutridge, Jack E. 3,415,205.
Van Dijk, Christiaan P. 3,415,899.

Pursel, Harry H.: *See*—
Abbey, Charles R., and Pursel. 3,415,947.

Purves, Edward R., to The Procter & Gamble Co. Cooking and salad oil having antispattering properties. 3,415,659, 12–10–68, Cl. 99—163.

Purves, Edward R.: *See*—
Cunningham, Robert G., Dobson, Going, and Purves. 3,415,658.

Purves, Edward R., L. H. Going, and R. D. Dobson, to The Procter & Gamble Co. Clear cooking and salad oils having antispattering properties. 3,415,660, 12–10–68, Cl. 99—163.

Putch, Sam W., to FMC Corp. Expandable bushing for well casing hangers. 3,415,322, 12–10–68, Cl. 166—217.

Pyles Industries, Inc.: *See*—
Schneider, Marvin. 3,415,364.

Pyro-Serv Instruments, Inc.: *See*—
Engelhard, William E. 3,416,064.

Quaker Oats Co., The: *See*—
Dunlop, Andrew P., Manly, and Rice. 3,415,881.

Rabinowitz, Mildred P. Apparatus for matching paired socks and stockings. 3,414,944, 12–10–68, Cl. 24—81.

Racke, Otto: *See*—
Hornlein, Reinhard, and Racke. 3,415,159.

Radio Corp. of America: *See*—
Carlson, David J. 3,416,086.
Guggi, Walter B. 3,416,063.
Smith, Richard D., and Callahan. 3,415,981.
Vodinh, Hien. 3,415,472.
Walker, Bertram. 3,416,003.

Radke, Donald G., and F. C. Booth, to Jim Robbins Seat Belt Co. Safety seat belt with buckle storage means. 3,415,538, 12–10–68, Cl. 280—150.

Raezer, Spencer D., to United States of America, Navy. Arc apparatus employing three dimensional arc motion and dynamic balancing. 3,416,021, 12–10–68, Cl. 313—161.

Rafowitz, Samuel: *See*—
Bonk, Chaim, and Rafowitz. 3,414,906.

Rait, Joseph M. Chemical testing apparatus. 3,415,627, 12–10–68, Cl. 23—253.

Ramsey Engineering Co., The: *See*—
Vosika, Eugene A. 3,415,368.

Randebrock, Rudolf E. Method of dyeing human hair with reactive dyes. 3,415,606, 12–10–68, Cl. 8—10.1.

Range, Clyde M. Fork lift attachment. 3,415,339, 12–10–68, Cl. 182—2.

Rank-Bush Murpty Ltd.: *See*—
Baldwin, John L. E. 3,416,088.

Raschke, Robert M., and J. C. Field. Package for square and round sliced products. 3,415,663, 12–10–68, Cl. 99—174.

Ratts, Kenneth W., to Monsanto Co. α-Halosulfonium ylids and α-halosulfonium salts. 3,415,883, 12–10–68, Cl. 260—592.

Rauh, Jack K.: *See*—
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.

Rausing, Anders R., and R. L. Ignell, to Sobrefina SA. Cap. 3,415,405, 12–10–68, Cl. 215—48.

Ray, William E., to United States of America, Navy. Phase comparator utilizing logic circuitry. 3,416,083, 12–10–68, Cl. 324—83.

Raychem Corp.: *See*—
Heslop, William R., Lanza, and Stivers. 3,415,287.

Read Corp.: *See*—
Messerly, Gary A. 3,415,207.

Reale, Joseph. Method for removing soot from boiler tubes and apparatus therefor. 3,415,230, 12–10–68, Cl. 122—379.

Reale, Joseph. Method for removing soot from boiler tubes and apparatus therefor. 3,415,231, 12–10–68, Cl. 122—379.

Rebucci, Eugene L.: *See*—
Conkling, William C., Rebucci, and Wittke.

Rechberger, Alois, to Shell Oil Co. Fuel oil compositions. 3,415,632, 12–10–68, Cl. 44—74.

Red Owl Stores Inc.: *See*—
Weum, Dale A. 3,415,070.

Redfern, John T., to United States of America, Navy. Variable frequency oscillator for alternately switching on HF generators in a power system. 3,416,065, 12–10–68, Cl. 321—61.

Reed, Jerry T.: *See*—
Kiss, Kornel D., and Reed. 3,415,786.

Reed Mfg. Co.: *See*—
Bjalme, Bengt G. 3,414,961.

Reed, Jerry T.: *See*—
Tirpak, Michael R., Rosen, Wilhjelm, Reed, and Kiss. 3,415,785.

Reed, Leonard: *See*—
Dryden, Hugh L. 3,415,556.

Reich, Marvin. Isolation circuits for code converters. 3,416,005, 12–10–68, Cl. 307—237.

Reichenbach, Joseph V., and R. G. Thompson, to Briggs & Stratton Corp. Primer for small internal combustion engines. 3,415,236, 12–10–68, Cl. 123—187.5.

Reichl, Ernst: *See*—
Gugelot, Hans, Hoppe, Reichl, and Weinbrenner. 3,415,568.

Reid, Gilbert R., and F. W. Ammann, to Sperry Rand Corp. Method for making a memory device. 3,414,972, 12–10–68, Cl. 29—604.

Reincke, Adolf. Weldless metal bonding device. 3,415,101. 12–10–68, Cl. 72—333.

Reiners, Walter: *See*—
Furst, Stefan. 3,415,463.

Reinitz, Karl: *See*—
Webb, James E. 3,415,992.

Reisman, Howard. Pretzel forming. 3,415,206, 12–10–68, Cl. 107—14.

Reliance Electric and Engineering Co., The: *See*—
Adler, Clarence E. 3,416,151.
Foster, George B., Patterson, Ostrander, and Lucka. 3,416,040.
Simonds, Clarence S. 3,415,333.

Research Corp.: *See*—
Gehrke, Charles W., and Stalling. 3,415,864.

Research-Cottrell, Inc.: *See*—
Brown, Robert F., and Hall. 3,415,735.

Reshetov, Leonid N.: *See*—
Kirpichnikov, Felix P., Bykasov, Rshetov, and Miljutin. 3,415,090.

Rex Chainbelt Inc.: *See*—
Grotewohl, John W. 3,415,165.

Rexall Drug and Chemical Co.: *See*—
Helm, Charles D. 3,415,799.
Ziegenmeyer, Robert M. 3,415,062.

Reynolds Metals Co.: *See*—
Bredza, Nikolajs, and Rostoker. 3,415,697.

Rhone-Poulenc S.A.: *See*—
Bohin, Guy E. 3,415,912.

Rice, Fred J., Jr.: *See*—
Bunlop, Andrew P., Manly, and Rice. 3,415,881.

Rice, John C., to Lowe Paper Co. Process and apparatus for producing high gloss coated paper. 3,415,671, 12–10–68, Cl. 117—64.

Rice, Martin A.: *See*—
Schuh, Arthur E., Rice, and Malizio. 3,415,307.

Richard-Merrell, Inc.: *See*—
Hennig, Roy K. 3,415,369.

Richman, Samuel L., to Sonotone Corp. Normally sealed vented metal encased rechargeable cell with excess pressure vent release. 3,415,690, 12–10–68, Cl. 136—178.

Richman, Walter A.: *See*—
Gertler, Eugene I., Huber, Richman, Ciarrocchi, and Habgood. 3,416,134.

Riddell, Edwin O., and O. W. Abel, to Chrysler Corp. Bushing. 3,415,155, 12–10–68, Cl. 85—80.

Riegel Paper Corp.: *See*—
Vrana, George. 3,415,359.

Rijnsdorp, Johannes E., J. A. Van Kampen, and H. Bollen, to Shell Oil Co. Apparatus for the automatic control of a continuous distillation operation for maintaining a constant ratio of bottom product flow to heat input flow. 3,415,720, 12–10–68, Cl. 202—181.

Rimbach, Henry W., to Westinghouse Electric Corp. Scandium-containing alkaline earth phosphate phosphor having good temperature-dependence characteristics. 3,415,756, 12–10–68, Cl. 252—301.4.

Risdon Mfg. Co.: *See*—
Little, Edward A. 3,414,946.

Riseman, Jacob: *See*—
Perri, John A., and Riseman. 3,415,680.

Ritter, Josef. and W. Boyer, to AVI Alpenlaendische Veredelungs-industrie Gesellschaft m.b.H. Structural steel element. 3,415,031, 12–10–68, Cl. 52—690.

Rittner, Edmund S.: *See*—
Leventhal, Edwin A., Neumark, and Rittner. 3,315,989.

Robarge, Robert E., to North American Plastics, Magnetic control valve with concentric coils. 3,415,487, 12–10–68, Cl. 251—137.

Robb, Lester E., to Minnesota Mining and Mfg. Co. Cross linking hydrofluorinated olefin polymers and silicone rubbers and resultant cross linked compositions. 3,415,900, 12–10–68, Cl. 260—827.

Robbins, Jim. Seat Belt Co.: *See*—
Radke, Donald G., and Booth. 3,415,538.

Roberts, David: *See*—
Minton, Abraham. 3,415,939.

Roberts, Kenneth E., and G. E. Corneau. Electrostatic grid. 3,415,222, 12–10–68, Cl. 118—636.

Robertshaw Controls Co.: *See*—
Evalds, Egils H. 3,416,060.
Zoludow, Richard S. 3,415,282.

Robertson, Fredrick: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.

Robertson, Gary: *See*—
Bucknell, Ernest H., and Ward. 3,415,279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H., Rauh, and Ward. 3,415,454.

Robertson, H. H., Co.: *See*—
Lynch, William A. 3,415,367.

Robinson, Phillip E.: *See*—
Cleminshaw, William T., and Robinson. 3,415,265.

Robinson, Raymond M.: *See*—
Royer, William W., Molnar, Kaye, and Robinson. 3,415,135.

Robinson, William H. Severable packaging structure. 3,415,404, 12–10–68, Cl. 215—46.

Robinson, William H., and G. A. Shiffer, to Buckeye Molding Co. Severable packaging structure. 3,415,412, 12–10–68, Cl. 220—54.

Robson, Leslie J., to Automatic Switching Ltd. Electrical traffic analysers. 3,416,137, 12–10–68, Cl. 340—172.

Rodak, Edward, to Borg-Warner Corp. Liquid chiller. 3,415,076, 12–10–68, Cl. 62—435.

Rogers Construction, Inc.: *See*—
Paul, John M. 3,415,173.

Rohm & Haas Co.: *See*—
Cunningham, William J. 3,415,770.
Parker, Charles O. 3,415,867.
Souder, Louis C., Powell, and Hajduk. 3,415,796.

Rolfe, Herbert E., Jr., to Evans Products Co. Boxcar door. 3,415,015. 12–10–68, Cl. 49—220.

Roller, Paul S. Electrolytic production of metal hydroxide. 3,415,726, 12–10–68, Cl. 204—96.

Rondum, Svend B., to Plexowood, Inc. Table top. 3,415,708, 12–10–68, Cl. 161—43.

Root, Bailey S. Golfer's aid. 3,415,518, 12–10–68, Cl. 273—32.

Rosemount Engineering Co.: *See*—
De Leo, Richarc V., and Hagen. 3,415,120.

Rosen, Henri E. Moccasin manufacture. 3,414,923, 12–10–68, Cl. 12—142.

Rosen, Irving: *See*—
Tirpak, Michael R., Rosen, Wilhjelm, Reed, and Kiss. 3,415,785.

Rosenberg, Harry. Hydraulic free-wheeling means for the hydraulic drives of conveyors and the like. 3,415,057, 12–10–68, Cl. 60—53.

Rosenberg, Richard L. Method of treating standing poles and the like. 3,415,612, 12–10–68, Cl. 21—7.

Rosenberry, George M., Jr., to General Electric Co. Polyphase pulse generator circuit with variable phase shift controllable twice per cycle. 3,416,061, 12–10–68, Cl. 321—5.

Ross, Earl W., to General Electric Co. Wrought nickel base alloy. 3,415,641, 12–10–68, Cl. 75—171.

Rosse-Fox Co.: *See*—
Rossello, Anthony M., and Fox. 3,415,385.

Rossello, Anthony M., and J. B. Fox, to Rosse-Fox Co. Automatic garment handling machine. 3,415,385, 12–10–68, Cl. 211—1.5.

Rostoker, William: *See*—
Bredza, Nikolajs, and Rostoker. 3,415,697.

Rostone Corp.: *See*—
Knoy, Maurice G. 3,415,942.

Rotherman, Fritz. Mount for dental posthesis. 3,414,974, 12–10–68, Cl. 32—2.

Rotostar S.p.A.: *See*—
Bate, Fred. 3,415,704.

Rousselot, Felix, to Gelgy Chemical Corp. Aerosol dispenser with differentially permeable receptacles. 3,415,422, 12–10–68, Cl. 222—193.

Royner, William W., D. Molnar, R. F. Kaye, and R. M. Robinson, to Columbus McKinnon Corp. Oblique lay pocket wheel. 3,415,135, 12–10–68, Cl. 74—229.

Rubner, Erwin, and S. Hausotter, to Linde Aktiengesellschaft. Pipe connectors. 3,415,546, 12–10–68, Cl. 285—173.

Rule, John H. Feed mixer. 3,415,492, 12–10–68, Cl. 259—3.

Rumbarger, John H., and W. Shapiro, to The Ingersoll Milling Machine Co. Worm-rack transmission with hydrostatic tooth bearings. 3,415,138, 12–10–68, Cl. 74—409.

Ruscitti, Oronzo J., to Pines Engineering Co., Inc. Tube bending mandrel. 3,415,107, 12–10–68, Cl. 72—466.

Rushton, William E., and G. Kleinman, to Whiting Corp. Method and apparatus for the recovery of fluorine. 3,415,039, 12–10–68, Cl. 55—51.

Russell, Arthur G., Co., Inc.: *See*—
Willis, Grant N., and Lake. 3,415,162.

Russell, George K., and R. E. Burks, to Sundstrand Corp. Pulse width modulated position control circuit. 3,416,052, 12–10–68, Cl. 318—18.

Russell-French, Harry M.: *See*—
Dean, Walter B., and Russell-French. 3,415,092.

Russes, Gerald F.: *See*—
Gandolfo, Peter F., and Russes. 3,416,109.

Rutenberg, Abraham, to Electrometre, S.A. Fixed quantity apparatus for metering the consumption by a consumer of electricity or the like supplied over a common supply network and for processing the data representing such consumption. 3,416,075, 12–10–68, Cl. 324—157.

S.T.D. Services Ltd.: *See*—
Chattaway, Maurice D., and Bowen. 3,415,111.

Sabatino, Anthony, R. A. Buttke, and P. V. Lowe, to Globe-Union Inc. Apparatus for fluxing and preheating plates of a battery stack. 3,415,220, 12–10–68, Cl. 118—58.

Sachs, Elihu L.: *See*—
Abramowitz, Herbert, and Sachs. 3,415,177.

Sage, Charles G.: *See*—
Mitchell, William H., Fishman, and Sage. 3,415,277.

Sahores, Jean, to Societe Nationale des Petroles d'Aquitaine. Specimen changer for an X-ray fluorescence spectrometer. 3,415,987, 12–10–68, Cl. 250—51.5.

Salerno, Paul G., to Vapor Corp. Multiple positioned pilot controlled poppet valve. 3,415,269, 12–10–68, Cl. 137—219.

Sanuoz Ltd.: *See*—
Pfister, Xaver, and Steiner. 3,415,806.

Sandrock, Gary D.: *See*—
Freche, John C., Ashbrook, Sandrock, and Dreshfield. 3,415,643.

San Marino Electronic Corp.: *See*—
Husome, Robert G. 3,415,370.

Santangelo, Francis J., to Johnson & Johnson. Edge reinforced paneling. 3,415,709, 12–10–68, Cl. 161—44.

Sapp, Robert H.: *See*—
Abruzzo, Joseph, Cox, and Sapp. 3,416,144.

Saraceno, Anthony J.: *See*—
Fuentevilla, Manuel E., and Saraceno. 3,415,445.

Sasagawa, Masao: *See*—
Akita, Yoshio, Fujii, and Sasagawa. 3,415,063.

Sasse, Klaus, E. Kuhle, and L. Eue, to Farbenfabriken Bayer Aktiengesellschaft. 2-quinoxaline pseudoureas. 3,415,828, 12–10–68, Cl. 260—250.

Sato, Tetsuo, and H. Oba, to Tokyo Kenki Kabushiki Kaisha. Multicolor printing device for business machines and equipment. 3,415,349, 12–10–68, Cl. 197—157.

Saunders, William T., to National Steel Corp. Hand-opening sheet metal and closure. 3,415,411, 12–10–68, Cl. 220—54.

Sawyer, Eugene H., to Phenix Mfg. Co., Inc. Overhead door. 3,415,304, 12–10–68, Cl. 160—235.

Scanlon, Robert M., to Granco Equipment, Inc. Billet discharging. 3,415,393, 12–10–68, Cl. 214—29.

Scarfi, Alberto, and E. Gugliotta, to Sincat Societa Industriale Catanese S.p.A. Process for the production of potassium sulfate. 3,415,620, 12–10–68, Cl. 23—121.

Schaefer, Charles, to Hans U. Sieber. Fishing rod. 3,415,002, 12–10–68, Cl. 43—18.

Schaefer, Paul: *See*—
Orth, Hans, Zuppinger, Gempeler, and Schaefer. 3,415,794.

Schaefer, William A., E. C. Schmidt, Jr., and B. E. Davis, to Esso Production Research Co. Salt water pit liner. 3,415,022, 12–10–68, Cl. 52—169.

Schaller, Frank H., W. F. Davis, and E. E. Masterson, to Honeywell, Inc. Packaged cornering station. 3,415,511, 12–10–68, Cl. 271—80.

Schaller, Johann: *See*—
Bleibtreu, Alexander, and Schaller. 3,415,957.

Scheel, John R., to Hawley Mfg. Corp. Exhaust system for hood structure. 3,415,179, 12–10–68, Cl. 98—115.

Scheib, Hermann, to Hannes Marker. Heel releasing device for safety ski bindings. 3,415,530, 12–10–68, Cl. 280—11.35.

Scheller, Walter: *See*—
Daendliker, Gustav, Jacob, and Scheller. 3,415,639.

Scheller, Walter, G. Korinek, and G. Daendliker, to Ciba Ltd. Method of forming capacitor electrodes. 3,415,722, 12–10–68, Cl. 204—15.

Schenker, Karl: *See*—
Bernasconi, Raymond, and Schenker. 3,415,829.

Schering Corp.: *See*—
Oliveto, Eugene P. 3,415,851.
Shapiro, Elliot L., and Hershberg. 3,415,855.

Scherling Aktiengesellschaft: *See*—
Philippson Rainer, Hempel, Kaspar, and Kutzsche. 3,415,817.

Schierholt, Hans, to Ingersoll Milling Machine Co. Gap width control method and apparatus for spark erosion machines. 3,415,969, 12–10–68, Cl. 219—69.

Schley, Robert: *See*—
Devin, Bernard, Durand, and Schley. 3,414,966.

Schlitter, Wolfgang: *See*—
Pink, Peter, and Schlitter. 3,415,373.

Schlogl, Elmar: *See*—
Bernutz, Johannes, and Schlogl. 3,416,114.

Schmidgall, Hartzell H. Form for making concrete pipe with wall openings. 3,415,482, 12–10–68, Cl. 249—145.

Schmidle, Claude J.: *See*—
Schramm, Charles H., and Schmidle. 3,415,901.

Schmidt, Edmund C., Jr.: *See*—
Schaefer, William A., Schmidt, and Davis. 3,415,022.

Schmitt, Johann, to Verinigte Kapselfabriken Nackenheim G.m.b.H. Bottle capping machine. 3,415,034, 12–10–68, Cl. 53—128.

Schneider, Marvin, to Pyles Industries, Inc. Foam package construction. 3,415,364, 12–10–68, Cl. 206—65.

Schnoor, Walter G.: *See*—
Yodis, Anthony W., and Schnoor. 3,415,618.

Schoff, Keith: *See*—
Buetow, Ralph W. 3,415,744.
Buetow, Ralph W. 3,415,746.

Schoonover, Russell D. Multi-utility electrical circuit tester including a solenoid with armature indicating means. 3,416,074, 12–10–68, Cl. 324—51.

Schouw, Arthur C.: *See*—
Hirs, Gene, and Schouw. 3,415,485.

Schramm, Charles H., and C. J. Schmidle, to J. T. Baker Chemical Co. Epoxyoxazolidinones. 3,415,901, 12–10–68, Cl. 260—830.

Schrader, Gert: *See*—
Belart, Juan, and Schrader. 3,415,060.

Schrieber, Charles F., and J. J. Newport, III, to The Dow Chemical Co. Process for preparing aluminum alloys. 3,415,305, 12–10–68, Cl. 164—57.

Schroeder, Kenneth K., Jr. Fixture for use in drilling and marking bowling balls. 3,415,146, 12–10–68, Cl. 77—62.

Schuh, Arthur E., M. A. Rice, and A. B. Malizio, to United States Pipe and Foundry Co. Process for casting ductile iron. 3,415,307, 12–10–68, Cl. 164—114.

Schulenberg, John W., to Sterling Drug, Inc. 1,2-diaubstituted benzimidazole 3-oxides. 3,415,839, 12–10–68, Cl. 260—309.2.

Schulken, Roger M., Jr.: *See*—
Davis, Burns, and Schulken. 3,415,790.

Schulte, Friedrich: *See*—
Cremer, Joseph, Thummler, Schulte, and Harnisch. 3,415,624.

Schultz, Dennis R., to FMC Corp. Portable harvesters for leguminous vegetable crops. 3,415,371, 12–10–68, Cl. 209—114.

Schulz, Hermann: *See*—
Grob, Burkhart, and Schulz. 3,415,091.

Schulze, Harald, to Leybold Holding A.G. Demonstration model of hot air motor and heat pump. 3,415,054, 12–10–68, Cl. 60—24.

Schulze, Hertert C., to Amsted Industries Inc. Method and apparatus for forming branched pipe. 3,414,951, 12–10–68, Cl. 25—30.

Schumacher, Robert J.: *See*—
Crounse, Nathan N., and Schumacher. 3,415,838.

Schwam, Stuart A.: *See*—
Hughes, Frank W., and Schwam. 3,415,203.

Sconce, James S., J. J. Hodan, and W. L. Schall, to Hooker Chemical Corp. Mixed triaryl phosphites wherein one or two of the aryl radicals contains a benzyl of α-alkylbenzyl substituent. 3,415,907, 12–10–68, Cl. 260—967.

Scott, Waldo E. Syringe nozzle. 3,415,248, 12–10–68, Cl. 128—245.

Scovill Mfg. Co.: *See*—
Andrews, Hugh H. 3,414,949.
Cuckson, Eric E., and Jones. 3,414,948.
Johnson, Clarence J. 3,415,497.

Sealed Air Corp.: *See*—
Chavannes, Marc A. 3,415,711.

Sear, Brian E., to Sperry Rand Corp. Storage diode memory device utilizing tunnel diode drive means. 3,416,142, 12–10–68, Cl. 340—173.

Seasafe Transport AB: *See*—
Jansson, Sven A. 3,414,942.

Sebenda, Jan, to Ceskoslouenska Akademie ved prague. Anion polymerization of lactams with (1) anionic catalyst, (2) promoter and (3) phenolic compound. 3,415,792, 12–10–68, Cl. 260—78.

Seeley, Eric C.: *See*—
Blackburn, Peter A., Chesters, and Seeley. 3,415,952.

Seitz, Thomas H., to North American Rockwell Corp. Insulated tank. 3,415,408, 12–10–68, Cl. 220—15.

Sellers, Henry G., Jr., and H. E. McLaughlin, to Tenneco Chemicals, Inc. Production of terpene resins. 3,415,798, 12–10–68, Cl. 260—93.3.

Sellers, Henry G., Jr., and W. C. Doyle, Jr., to Tenneco Chemicals, Inc. Production of synthetic pine oil. 3,415,893, 12–10–68, Cl. 260—631.5.

Semeyns de Vries van Doesburgh, Johan T.: *See*—
Boonstra, Harm J., Semeyns de Vries van Doesburgh, Deumens, and Delahaye. 3,415,876.

Senna, Peter F. Fish dressing tool. 3,414,935, 12–10–68, Cl. 17—7.

Serafini, Angelo: *See*—
Ciampa, Frederick A., Serafini, and Mazzarella. 3,414,915.

Sertich, John J., to McDonnell Douglas Corp. Cargo pallet latch. 3,415,480, 12–10–68, Cl. 248—361.

Servotronics, Inc.: *See*—
Trbovich, Nicholas D., and Meyer. 3,415,283.

Sessions Clock Co., The: *See*—
Kuzara, John C. 3,416,014.

Seubert, William A., to Union Carbide Corp. Shaft seal. 3,415,581, 12–10–68, Cl. 308—36.3.

Shaffer, William B., to Elox Corp. Hand vibrator for spark discharge metal depositing. 3,415,971, 12–10–68, Cl. 219—76.

Shapiro, Elliot L., and E. B. Hershberg, to Schering Corp. Trichloro pregnadienes and esters thereof. 3,415,855, 12–10–68, Cl. 260—397.45.

Shapiro, Levine and Crane: *See*—
Trainor, Patrick M. 3,415,086.

Shapiro, Wilbur: *See*—
Rumbarger, John H., and Shapiro. 3,415,138.

Sharp, John D., to The United Steel Companies Ltd. Nozzle and stopper assemblies for teeming liquid metal. 3,415,427, 12–10–68, Cl. 222—509.

Shaw, Hugh E., Jr., to PPG Industries, Inc. Radiation sensoritive apparatus for severing glass along a score mark. 3,415,433, 12–10–68, Cl. 225—96.5.

Shealy, Thomas L., Jr.: *See*—
Langstaff, Witt I., and Shealy. 3,414,957.

Sheeran, Stanley R.: *See*—
Egan, Richard R., and Sheeran. 3,415,614.

Sheetz, David P.: *See*—
Kangas, Donald A., and Sheetz. 3,415,870.

Sheldon, Zachary D., to Avco Corp. Means for making a surgical cast. 3,415,243, 12–10–68, Cl. 128—90.

Shell Oil Co.: *See*—
Blytas, George C., and Bell. 3,415,615.
Callander, Sidney E., and Yates. 3,415,879.
Fraser, John P. 3,415,573.
Gilderson, Peter W., Newman, and Fetterly. 3,415,621.
Johnson, Oliver. 3,415,759.
La Heij, Gerardus E., and Waterman. 3,415,772.
Meijs, Franciscus H. 3,415,318.
Rechberger, Alois. 3,415,632.
Rijnsdorp, Johannes E., Van Kampen, and Bollen. 3,415,720.
Wilson, Joseph G. 3,415,042.

Shemaev, Alexandr M.: *See*—
Butaev, Filipp I., Klimov, Pertsev, Stepanov, Shemaev, and Shkolin. 3,416,018.
Shepard, Alvin F., and B. F. Danneis, to Hooker Chemical Corp. Phosphite phospholane and phosphorinane compounds. 3,415,906, 12–10–68, Cl. 260—937.
Shepard, Lewis, Co.: *See*—
Gandolfo, Peter F., and Russes. 3,416,109.
Shepard, Robert L., to Union Carbide Corp. Process for masking a para-xylylene polymer and selectively etching it by a gaseous electrical glow discharge. 3,415,986, 12–10–68, Cl. 250—49.5.
Shepherd, Robert G.: *See*—
Wilkinson, Raymond G., and Shepherd. 3,415,869.
Sheppard, Raymond E. G., and A. G. Plackett, to Smiths Industries Ltd. Engine cooling and passenger compartment heating apparatus for motor vehicles. 3,415,311, 12–10–68, Cl. 165—33.
Sheth, Pravin: *See*—
Lachman, Leon, and Sheth. 3,415,929.
Shiffer, Gerald A.: *See*—
Robinson, William H., and Shiffer. 3,415,412.
Shinto Kogyo Kabushiki Kaisha: *See*—
Nishi, Sunao, and Ikeda. 3,415,676.
Shionogi & Co., Ltd.: *See*—
Nagata, Wataru, Narisada, Wakabayashi, and Sugasawa. 3,415,830.
Shirafuji, Ryoko: *See*—
Inaba, Seiuemon, and Shirafuji. 3,415,163.
Shkolin, Ilya D.: *See*—
Butaev, Filipp I., Klimov, Pertsev, Stepanov, Shemaev, and Shkolin. 3,416,018.
Shones, Arnold J. Anti-scalping device for rotary lawn mowers. 3,415,043, 12–10–68, Cl. 56—25.4.
Shropshire, Joseph A., and B. L. Tarmy, to Esso Research and Engineering Co. Fuel cell electrolyte comprising an alkali metal tungstate. 3,415,686, 12–10–68, Cl. 136—86.
Sieber, Hans U.: *See*—
Schaefer, Charles. 3,415,002.
Siebol, George: *See*—
Stau, Elvert H., and Siebol. 3,414,965.
Siedel, Walter, K. Sturm, and R. Geiger, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. O-alkyl-tyrosine-2-lysine-8-vasopressins. 3,415,805, 12–10–68, Cl. 260—112.5.
Siemens Aktiengesellschaft: *See*—
Bogner, Gunther. 3,416,111.
Emeis, Reimer, Haus, Herlet, Nagorsen, and Martin. 3,414,964.
Kuhnlein, Hans, and Pfreimbter. 3,416,010.
Zerbst, Manfred, Zschauer, and Touchy. 3,416,045.
Sieracki, Leonard M.: *See*—
Warren, Raymond W., Sieracki, and Campagnuolo. 3,415,263.
Sigma Sales Corp.: *See*—
Hill, George M. 3,415,246.
Sigmatez A.G.: *See*—
Weman, Per-Olaf. 3,415,536.
Simamura, Takeshi: *See*—
Taniguchi, Isoji, Maemoto, Kan-Ichi, Simamura, Kobayashi, Yasumura, and Yamadera. 3,415,904.
Simmons, Todd S.: *See*—
Lachowicz, Donald R., Simmons, and Kreuz. 3,415,856.
Simonds, Clarence S., to The Reliance Electric and Engineering Co. Manual range changer for weighing scales. 3,415,-333, 12–10–68, Cl. 177—210.
Simone, Raymond A., and R. C. Tulee, to Stauffer Chemical Co. Process of preparing N-(β-dialkyldithiophosphoryl) aryl or alkyl sulfonamides. 3,415,909, 12–10–68, Cl. 260—979.
Simonsson, Sven-Inge: *See*—
Hertz, Carl H., and Simonsson. 3,416,153.
Simpson, George R., to American Optical Co. Q-switched laser system. 3,416,097, 12–10–68, Cl. 331—94.5.
Sims, James G.: *See*—
Holton, James R., Parker, and Sims. 3,415,918.
Sims, John C., Jr.: *See*—
Eckert, John F., and Sims. 3,415,507.
Sincat Societa Industrielle Catanese S.p.A.: *See*—
Scarfi, Alberto, and Gugliotta. 3,415,620.
Sinclair Research, Inc.: *See*—
Gehrman, Gary L., and Turnquest. 3,415,897.
Isaacson, Henry V., and Young. 3,415,745.
Sincock, Thomas F., to Monsanto Co. Coating composition and heat-sealable coated polystyrene article. 3,415,661, 12–10–68, Cl. 99—171.
Singer, Frederick L., to Bell Telephone Laboratories, Inc. Control arrangement for a communication switching network. 3,415,955, 12–10–68, Cl. 179—18.
Sintelco Societa a resp. Limitata: *See*—
Viesi, Lorenzo. 3,415,944.
Sirrine, Richard C.: *See*—
Bohn, Richard E., and Sirrine. 3,416,049.
Skierski, Edwin J., to Parker-Kalon Corp. Polygonal fasteners having milled slots. 3,415,154, 12–10–68, Cl. 85—9.
Skill-Dl, Inc.: *See*—
Malmsten, Robert O. 3,415,580.
Skillman, Jack J. Container with an improved pour spout. 3,415,439, 12–10–68, Cl. 220—17.
Ski-Mor, Inc.: *See*—
Horton, John P., and Sollmann. 3,415,172.
Skladnev, Antoly A.: *See*—
Blisnjuk, Nickolai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.
Skrmetta, Cecil B.: *See*—
Skrmetta, Raphael Q., and C. B. 3,414,934.
Skrmetta, Raphael Q., and C. B. Shrimp vein removing apparatus. 3,414,934, 12–10–68, Cl. 17—2.
Sletzinger, Meyer: *See*—
Gal, George, and Sletzinger. 3,415,819.
Slodzian, Georges: *See*—
Castaing, Raymond, and Slodzian. 3,415,985.
Small, Irwin A. Drill guide for mandibular staples and staple construction. 3,414,975, 12–10–68, Cl. 32—2.
Smart, Sidney K., to General Instrument Corp. Pre-set tuner with engagement-locking means. 3,415,128, 12–10–68, Cl. 74—10.8.
Smetana, Richard D., and H. Chafetz, to Texaco, Inc. Nitration of hydrocarbon in the presence of trifluoroacetic acid. 3,415,868, 12–10–68, Cl. 260—486.
Smith, Alexander M., II, The Fiberwoven Corp. Non-woven fabric structure and method of making same. 3,415,713, 12–10–68, Cl. 161—141.
Smith, Alfred E., to United States of America, Atomic Energy Commission. Sealing arrangement for piston-cylinder pressure vessel. 3,415,170, 12–10–68, Cl. 92—246.
Smith, Ashley P.: *See*—
Paterson, James G. T., Smith, and Thrasher. 3,415,185.
Smith, De Witt C., to Harischfeger Corp. Arc welding electrode. 3,415,976, 12–10–68, Cl. 219—146.
Smith, Donald A., and E. J. Perry, to Eastman Kodak Co. Silver halide photographic emulsions containing a copolymer of vinylamine and acrylic acid. 3,415,653, 12–10–68, Cl. 96—114.
Smith, George R.: *See*—
Petrie, Warren A., and Smith. 3,414,918.
Smith, Harold L.: *See*—
Butensky, Irwin S., Smith, and Chrekian. 3,415,927.
Smith Kline & French Laboratories: *See*—
Loev, Bernard. 3,415,880.
Weisbach, Jerry A. 3,415,831.
Smith, Mahlon J., and R. E. Henderson, to The Washburn Co. Flour sifter. 3,415,376, 12–10–68, Cl. 209—236.
Smith, Michael A.: *See*—
Jenkins, Trevor, Needham, and Smith. 3,415,882.
Smith, Perry C.: *See*—
Genser, Milton, and Smith. 3,414,968.
Smith, Richard D., and J. F. Callahan, to Radio Corp. of America. Electronic computer with program debugging facility. 3,415,981, 12–10–68, Cl. 235—153.
Smith, Stanley B., to Chemcut Corp. Stacker. 3,415,389, 12–10–68, Cl. 214—6.
Smith, William D., and H. J. Liebmann, to PPG Industries, Inc. Material distributing device in a vertical kiln. 3,415,-504, 12–10–68, Cl. 263—29.
Smiths Industries Ltd.: *See*—
Sheppard, Raymond E. G., and Plackett. 3,415,311.
Smullen, Charles E.: *See*—
Irwin, Robert S., and Smullen. 3,415,782.
Snyder, Harry R., Jr.: *See*—
Davis, Charles S., and Snyder. 3,415,821.
Snyder Mfg. Co., Inc.: *See*—
Trexler, Philip C. 3,415,582.
Snyder, Marvin K., J. E. Bradley, and R. L. Cowie, to Butler Mfg. Co. Truss of spaced pyramidal units. 3,415,027, 12–10–68, Cl. 52—263.
Sobrefina SA: *See*—
Ignell, Rolf L. 3,414,941.
Rausing, Anders Ruben, and Ignell. 3,415,405.
Societe Anonyme Andre Citroen: *See*—
Cadiou, Jean G. 3,415,345.
Henry-Biabaud, Edmond. 3,415,576.
Henry-Biabaud, Edmond. 3,415,579.
Societe anonyme dite: Laboratories U.P.S.A.: *See*—
Hoffman, Charles, and Faure. 3,415,834.
Societe Auxiliare des Producteurs de Petrole Flopetrol: *See*—
Drivet, Jean A. P. 3,415,317.
Societe d'Electronique et d'Automatisme: *See*—
Dreyfuss, Bertrand A., and Tavernier. 3,416,044.
Peltier, Max B. 3,416,006.
Societe d'Etudes Scientifiques et Industrielles de l'Ile-de: *See*—
Thominet, Michel L. 3,415,934.
Societe de Prospection Electrique Schlumberger, S.A.: *See*—
Mack, Jean-Louis G. 3,416,085.
Thominet, Michel L. 3,415,934.
Societe Nationale des Petrole d'Aquitaine: *See*—
Louvel, Bernard, and Lacoste. 3,415,247.
Sahores, Jean. 3,415,987.
Soda Koryo Kabushiki Kaisha: *See*—
Kuwata, Tsutomu, Yasukawa, and Abe. 3,415,884.
Soinen, Mauri, to Valmet Oy. Nozzle-type drying machine for web-like material. 3,414,984, 12–10–68, Cl. 34—156.
Solitron Devices Inc.: *See*—
Blum, Joseph M., and Genser. 3,414,969.
Genser, Milton, and Smith. 3,414,968.
Sollmann, Robert E.: *See*—
Horton, John P., and Sollmann. 3,415,172.
Solsten, Richard T., to Monsanto Co. Blends of N-alkyl-N'-aryl phenylene diamines and a carrier. 3,415,775, 12–10–68, Cl. 260—41.5.
Sonnabend, Lawrence F., to The Dow Chemical Co. Method of making foamed phenolic resins and product obtained therefrom. 3,415,763, 12–10–68, Cl. 260—2.5.
Sonotone Corp.: *See*—
Richman, Samuel L. 3,415,690.
Sony Corp.: *See*—
Nakamura, Shoichi. 3,416,094.
Niwa, Isamu. 3,416,026.
Souder, Louis C., J. A. Powell, and F. A. Hajduk, to Rohm & Haas Co. Extruded matte finish acrylic film. 3,415,796, 12–10–68, Cl. 260—86.1.
South African Inventions Development Corp.: *See*—
Polson Alfred. 3,415,804.
Spalding, Henry A. Guard for personal items. 3,414,945, 12–10–68, Cl. 24—90.5.

Sperling, Roger L.: *See*—
Crockett, David L., and Sperling. 3,415,998.
Sperry Rand Corp.: *See*—
Maieli, Vincent, and Hardigan. 3,415,980.
Reid, Gilbert R., and Ammann. 3,414,972.
Sear, Brian E. 3,416,142.
Sperti, George S., to Stanley Drug Products, Inc. Suppository. 3,415,249, 12–10–68, Cl. 128—271.
Spickenreuther, Dieter, to Aktiengesellschaft Brown, Boveri & Cie. Semi-conductor construction. 3,416,048, 12–10–68, Cl. 317—234.
Spisak, Edward G., to Gar Wood Industries, Inc. Balancing weight holder for wheel cover. 3,415,575, 12–10–68, Cl. 301—5.
Spratt, George G. Airplane. 3,415,469, 12–10–68, Cl. 244—48.
Springer, Robert F.: *See*—
Tyburski, Robert M., and Springer. 3,415,509.
Sprout Waldron & Co., Inc.: *See*—
Fisher, Chester D., Stroup, and Zerkel. 3,415,494.
Square D. Co.: *See*—
Stevens, Arthur M. 3,415,964.
Squibb, E. R., & Sons, Inc.: *See*—
Yale, Harry L. 3,415,894.
Stacy, Charles L., Jr., and G. H. Beaver, to The Dow Chemical Co. Ethyl cellulose composition for use in arc extinguishing apparatus. 3,415,963, 12–10–68, Cl. 200—144.
Stacey, Maurice, R. Stephens, and J. C. Tatlow, to Hooker Chemical Corp. Perfluorodicyclopent-1,1'-enyl and method for manufacture thereof. 3,415,895, 12–10–68, Cl. 260—648.
Stadler, Hans, H. Gawlick, and H. Bendler, to Dynamit Nobel Aktiengesellschaft. Percussion cap and fuse and ordnance piece. 3,415,192, 12–10–68, Cl. 102—86.5.
Staempfli, Alexandre J. Sea wall structure. 3,415,061, 12–10–68, Cl. 61—4.
Stahler, Alfred F., to Ampex Corp. Fluid lubricated magnetic tape transducer. 3,416,149, 12–10–68, Cl. 340—174.1.
Stalling, David L.: *See*—
Genrke, Charles W., and Stalling. 3,415,864.
Stamicarbon N.V.: *See*—
Boonstra, Harm J., Semeyns de Vries van Doesburgh, Deumens, and Delahaye. 3,415,876.
Hanssen, Wilhelm J. 3,415,626.
Van Gorcom, Henricus J. M. 3,415,715.
Stamm, Arthur, to Pow R Matic Inc. Air temperature regulating device. 3,415,312, 12–10–68, Cl. 165—48.
Stamm, Russell D., to General Instrument Corp. Dual band pushbutton tuner. 3,415,129, 12–10–68, Cl. 74—10.33.
Stampfli, Harold, to Lucifer S.A. Flap valve. 3,415,284, 12–10–68, Cl. 137—625.66.
Standard Alliance Industries, Inc.: *See*—
Czarnecki, Adolph. 3,415,201.
Standard Box Spring Co.: *See*—
Ciampa, Frederick A., Serafini, and Mazzarella. 3,414,915.
Standard Oil Co. (Indiana): *See*—
Jason, Emil F., and Fields. 3,415,793.
Stanley Drug Products, Inc.: *See*—
Sperti, George S. 3,415,249.
Stanley, John F., and R. D. Dewey, to Joerns Furniture Co. Electrically operable hospital bed. 3,414,913, 12–10–68, Cl. 5—68.
Stanton, Robert L., to American Mfg. Co., Inc. Synthetic plastic rope for automatic devices. 3,415,052, 12–10–68, Cl. 57—144.
Starline, Inc.: *See*—
Ferris, Robert G. 3,415,455.
Stassen, Harold D. Visual teaching aid. 3,414,986, 12–10–68, Cl. 35—31.
Stau, Elvert H., and G. Siebol, to Olympic Screw & Rivet Corp. Blind rivet assembly and method of making and using same. 3,414,965, 12–10–68, Cl. 29—509.
Stauffer Chemical Co.: *See*—
Simone, Raymond A., and Tulee. 3,415,909.
Stavros, Andrew H. Cleaner for meat grinder heads. 3,414,-925, 12–10–68, Cl. 15—104.
Stearns Electric Corp.: *See*—
Wrensch, Bernard E. 3,415,347.
Steel, Henry J., to Autopack Ltd. Material feeding apparatus with capacitive control. 3,415,417, 12–10–68, Cl. 222—55.
Steele, Richard S. Lift jack apparatus. 3,415,490, 12–10–68, Cl. 254—45.
Stein, Gary, and L. E. Halwas, to Applied Power Industries, Inc. Multi-speed fluid translator. 3,415,160, 12–10–68, Cl. 91—6.
Stein, Werner, W. Umbach, and H. Baumann, to Henkel & Cie, G.m.b.H. Liquid and paste detergent concentrates. 3,415,753. 12–10–68, Cl. 252—121.
Steiner, Cecil C. Orthodontic spring wedge. 3,414,976. 12–10–68, Cl. 32—14.
Steiner, Karl U.: *See*—
Pfister, Xaver, and Steiner. 3,415,806.
Steiner, Lajos. Mechanical clamping device. 3,415,153, 12–10–68, Cl. 85—5.
Steinle, Melvin E.: *See*—
Powell, Thomas C., and Steinle, and Yoncoskie. 3,415,758.
Stempel, Arthur, and L. H. Sternbach, to Hoffman-La Roche, Inc. 2-Lower-alkanoyl-amido-nicotinic acid and derivatives thereof. 3,415 835, 12–10–68, Cl. 260—295.5.
Stenger, Richard C., to Kliklok Corp. Adhesive applicator of the spotter type for folding boxes. 3,415,221, 12–10–68, 118—243.
Stepanov, Nikolai P.: *See*—
Butaev, Filipp I., Klimov, Pertsev, Stepanov, Shemaev, and Shkolin. 3,416,018.
Stephens Charles R., Jr.: *See*—
Thomas, Paul D., and Stephens. 3,415,813.
Stephens, Robert: *See*—
Stacey, Maurice, Stephens, and Tatlow. 3,415,895.
Sterling Drug Inc.: *See*—
Carbabateas, Philip M. 3,415,814.
Christiansen, Robert G. 3,415,818.
Clarke, Robert L. 3,415,816.
Crounse, Nathan N., and Schumacher. 3,415,838.
Dennis, Emery W., McCheaney, and Surrey. 3,415,932.
Schulenberg, John W. 3,415,839.
Sterling, Walter S.: *See*—
Bergeron, Alfred L., and Sterling. 3,415,037.
Sternbach, Leo H.: *See*—
Stempel, Arthur, and Sternbach. 3,415,835.
Stevens, Arthur M., to Square D. Co. Electrical switch. 3,415,964, 12–10–68, Cl. 200—146.
Stevens, Gerald K. Auxiliary vehicle body for a tricycle. 3,415,539, 12–10–68, Cl. 280—203.
Stevens, Marcus A., to Imperial Chemical Industries Ltd. 1 - amino - 3 - indanyloxy - and - tetrahydronaphthoxy - 2 - propanols and the salts thereof. 3,415,873, 12–10–68, Cl. 260—501.18.
Stikeleather, Robert M.: *See*—
Stikeleather, Alan, and R. M. 3,415,094.
Stikeleather, Alan, and R. M. Systems for forming T-shaped fins from metal rods. 3,415,094, 12–10–68, Cl. 72—187.
Stiles, Keith L.: *See*—
Froyd, Stanley G., and Stiles. 3,416,057.
Stilwell, Robert E., to FMC Corp. Portable irrigation apparatus. 3,415,270, 12–10–68, Cl. 137—344.
Stivers, Edward C.: *See*—
Heslop, William R., Lanza, and Stivers. 3,415,287.
Stockdale, Norman S.: *See*—
Barz, Maurice R., Olson, and Stockdale. 3,415,950.
Stoddard, Frank J., J. G. Hall, and A. Hertzberg, to Cornell Aeronautical Laboratory, Inc. Isentropic compression tube. 3,415,442, 12–10–68, Cl. 230—54.
Stolz, Eberhard. Container handle attachment. 3,415,415, 12–10–68, Cl. 220—91.
Straley, James M.: *See*—
Fisher, John G., and Straley. 3,415,807.
Straley, James M., J. I. Dale, and M. Weaver, to Eastman Kodak Co. Monoazo dyes for textile fibers. 3,415,810, 12–10–68, Cl. 260—205.
Straneva, Edward J.: *See*—
Woodford, Philip R., Straneva, and John. 3,415,470.
Strecke, Heinz. Conveyor systems. 3,415,398, 12–10–68, Cl. 214—8R.
Strobel, Andrew J. Hull for a navigating vessel. 3,415,216, 12–10–68, Cl. 115—35.
Stroup, Robert L.: *See*—
Fisher, Chester D., Stroup, and Zerkel. 3,415,494.
Stubbmann, Albert. Bulb planting and recovery device and method. 3,415,012, 12–10–68, Cl. 47—37.
Sturm, Karl: *See*—
Siedel, Walter, Sturm, and Geiger. 3,415,805.
Sucker, Christian, W. Meskat, and R. Heusch, to Farbenfabriken Bayer Aktiengesellschaft. Instrument for measuring and recording the boundary surface properties of liquids. 3,415,109, 12–10–68, Cl. 73—64.4.
Sugasawa, Tsutomu: *See*—
Nagata, Wataru, Narisada, Wakabayashi, and Sugasawa. 3,415,830.
Sugie, Riichiro: *See*—
Ii, Chikai, Yamashita, Kuwabara, and Sugie. 3,415,953.
Suh, John T., to Colgate-Palmolive Co. Unsymmetrical ferrocene α-diols. 3,415,859, 12–10–68, Cl. 260—439.
Suh, John T., to Colgate Palmolive Co. α-Alkylidene-3,4-di-substituted-phenylacetonitriles. 3,415,866. 12–10–68, Cl. 260—465.
Sumitomo Chemical Co., Ltd.: *See*—
Taniguchi, Isoji, Maemoto, Simamura, Kobayashi, Yasumura, and Yamadera. 3,415,904.
Sundstrand Corp.: *See*—
Erikson, Carl F. 3,414,967.
Russell, George K., and Burks. 3,416,052.
Surrey, Alexander R.: *See*—
Dennis, Emery W., McChesney, and Surrey. 3,415,932.
Sutter, Ormond S., to Lok-Products Co. Supported ceiling lighting fixture. 3,415,018, 12–10–68, Cl. 52—28.
Svenska Ackumulator Aktiebolaget Jungner: *See*—
Bernhard, Bo B., and Kihlberg. 3,416,062.
Svenska Rotor Maskiner Aktiebolag: *See*—
Pilo, Claes-Wilhelm. 3,415,501.
Svensson, Torbjorn, to Allmak-Verken AB. Catch apparatus for the cages of scaffold elevators and the like. 3,415,343, 12–10–68, Cl. 187—19.
Swanson, Arthur, to Poole Foundry & Machine Co. Flexible coupling. 3,415,080, 12–10–68, Cl. 64—9.
Swanson, Ronald R.: *See*—
Agers, Donnell W., and Swanson. 3,415,616.
Sweeney, Richard F.: *See*—
Anello, Louis G., and Sweeney. 3,415,890.
Swett, William E. Launcher with adjustable-tension elastic bands. 3,415,239, 12–10–68, Cl. 124—20.
Swiadek, Stanley F.: *See*—
Petroff, Michael D., and Swiadek. 3,416,068.
Swierkot, Henri B.: *See*—
Nordmann, Joseph, and Swierkot. 3,415,841.
Sylvania Electric Products, Inc.: *See*—
Bohn, Richard E., and Sirrine. 3,416,049.
Kerr, James R. 3,415,995.
Levin, Robert E. 3,416,028.
Van Sandwyk, Johannes. 3,416,101.
Syntex Corp.: *See*—
Fried, John H. 3,415,820.
Knox, Lawrence H. 3,415,845.
Syntron (Canada) Ltd.: *See*—
Dean, Arthur L. 3,416,129.
Szekeres, John, Jr.: *See*—
Knapp, Milton J., Pleasanta, and Szekeres. 3,415,251.

Szepesy, Laszlo: *See*—
Freund, Mihály, Nagy, and Szepesy. 3,415,628.
Tabenkin, Benjamin: *See*—
Berger, Julius, Kierstead, Lemahieu, and Tabenkin. 3,415,716.
Taggart, William E.: *See*—
Fiedler, George H., Passarello, and Taggart. 3,415,309.
Takagi, Masusaburo, and S. Kubota. Signal selection system. 3,418,136, 12–10–68, Cl. 340—172.
Takahashi, Jukichi: *See*—
Abe, Akira, Takahashi, and Morita. 3,415,344.
Takamori, Shigeru, to Asahi Kiko Hanbai Kabushiki Kaisha. Dividing unit for dividing devices for machine tools. 3,415,145, 12–10–68, Cl. 74—813.
Takechi, Saburo: *See*—
Yamamoto, Mititaka, and Takechi. 3,415,278.
Takeda Chemical Industries, Ltd.: *See*—
Turumaru, Takesi, Yotsuzuka, and Ogino. 3,415,891.
Talbott, Richard L., to Minnesota Mining and Mfg. Co. Fluorocarbon orthoesters. 3,415,847, 12–10–68, Cl. 260—340.7.
Talobre, Joseph A. Supporting device for rock walls. 3,415,064, 12–10–68, Cl. 61—45.
Taniguchi, Isoji, K.-I. Maemoto, T. Simamura, Y. Kobayashi, T. Yasumura, and R. Yamadera, to Sumitomo Chemical Co., Ltd. Polyolefin composition comprising an amine treated ethylene/acrylic ester copolymer and a poly-alpha-olefin. 3,415,904, 12–10–68, Cl. 260—897.
Tarkington, Raife G.: *See*—
Wyand, Edwin B., and Tarkington. 3,415,647.
Tarmy, Barry L.: *See*—
Shropshire, Joseph A., and Tarmy. 3,415,686.
Tatelsi Electronics Co.: *See*—
Yamamoto, Mititaka, and Takechi. 3,415,278.
Tatlow, John C.: *See*—
Stacey, Maurice, Stephens, and Tatlow. 3,415,895.
Tavernier, Jean: *See*—
Dreyfus, Bertrand A., and Tavernier. 3,416,044.
Taylor, Elmer N., to Hughes Aircraft Co. Temperature stable trigger circuit having adjustable electrical hysteresis properties. 3,416,004, 12–10–68, Cl. 307—235.
Taylor, George E., & Co. Ltd.: *See*—
Brock, William H. J., and Turriff. 3,415,254.
Telefonaktiebolaget Ericsson, L M: *See*—
Olsson, Jöns K. A. and S. A. 3,416,147.
Telkes, Maria, to Melpar, Inc. Collapsible solar still with water vapor permeable membrane. 3,415,719, 12–10–68, Cl. 202—83.
Tenneco Chemicals, Inc.: *See*—
Sellers, Henry G., Jr., and McLaughlin. 3,415,798.
Sellers, Henry G., Jr., and Doyle. 3,415,893.
Todd, David M., and McDavid. 3,415,769.
Tesmer, Hanry A.: *See*—
Korecky, Allan J., and Tesmer. 3,415,551.
Teter, Ray E.: *See*—
Gilewski, Joseph F., and Teter. 3,415,164.
Teves, Alfred, Maschinen- und Armaturenfabrik K.G.: *See*—
Belart, Juan, and Schrader. 3,415,060.
Texaco, Inc.: *See*—
Lachowicz, Donald R., Simmons, and Kreuz. 3,415,856.
Smetana, Richard D., and Chafetz. 3,415,868.
Texas Instruments, Inc.: *See*—
Marcoux, Leo. 3,416,116.
Moorhead, John O., and Hancock. 3,416,115.
Thomas, Philip R., and Hyltin. 3,416,042.
Textile Machine Works: *See*—
Haehnel, Herbert E. 3,415,082.
Thayer, Paul M., to Water Pollution Control Corp. Selective sewage treatment plants. 3,415,379, 12–10–68, Cl. 210—195.
Thayer, Paul M. Sewage treatment plants. 3,415,381, 12–10–68, Cl. 210—202.
Thermo Electron Corp.: *See*—
Lyczko, Felix J. 3,416,011.
Theev, Charles R., to Ostby & Barton Co. Co-axial connector. 3,416,125, 12–10–68, Cl. 339—177.
Thies, Harry L.: *See*—
Coulson, Leonard W., and Thies. 3,415,437.
Thiessen, Pete. Tandem hitch. 3,415,541, 12–10–68, Cl. 280—413.
Thiokol Chemical Corp.: *See*—
Mitchell, William H., Fishman, and Sage. 3,415,277.
Thomas, Paul D., and C. R. Stephens, Jr., to Chas. Pfizer & Co., Inc. Purification of musk. 3,415,813, 12–10–68, Cl. 260—236.5.
Thomas, Philip R., and T. M. Hyltin, to Texas Instruments, Inc. Microwave integrated circuit mixer. 3,416,042, 12–10–68, Cl. 317—234.
Thomas, Robert R., to Monsanto Co. Preparation of antimony triacetate. 3,415,860, 12–10–68, Cl. 260—446.
Thomason, Herman E., and C. H. Mandel, to United States of America. National Aeronautics and Space Administration. Azimuth laying system. 3,415,126, 12–10–68, Cl. 74—5.47.
Thominet, Michel L., to Societe d'Etudes Scientifiques et Industrielles de l'Ile-de. Methods for the treatment of emesis. 3,415,934, 12–10–68, Cl. 424—274.
Thomison, William C., to The Dow Chemical Co. Electrical switching device. 3,415,959, 12–10–68, Cl. 200—61.08.
Thompson, Ivan M., and J. Maskal, to The Dow Chemical Co. Method of separating magnesium and calcium values from calcium and magnesium carbonates. 3,415,617, 12–10–68, Cl. 23—85.
Thompson, Phillip G.: *See*—
Prager, Julianne H., and Thompson. 3,415,865.
Thompson, Robert G.: *See*—
Reichenbach, Joseph V., and Thompson. 3,415,236.
Thoresen, Gunnar and T., ½ to G. and T. Thoresen. Table construction. 3,415,208, 12–10–68, Cl. 108—94.
Thoresen, Thoralf: *See*—
Thoresen, Gunnar and T. 3,415,208.
Thorstensen, Thomas C.: *See*—
Dexter, Theodore H., Minkiel, and Thorstensen. 3,415,610.
Thrasher, Bobby R.: *See*—
Paterson, James G. T., Smith, and Thrasher. 3,415,185.
Thummler, Ursus: *See*—
Cremer, Joseph, Thummler, Schulte, and Harnisch. 3,415,624.
Thuse, Erik: *See*—
Pelmulder, John P., and Thuse. 3,415,075.
Tiao, Hui-Li: *See*—
Berghaus, Donald G., Garthwaite, and Tiao. 3,416,148.
Tillisch, Paul W., G. E. Meyer, R. R. Chiffoleau, and R. Papalia, to Kaiser Gypsum Co., Inc. Building of gypsum structural wall elements. 3,415,026, 12–10–68, Cl. 52—262.
Tirpak, Michael R., I. Rosen, R. M. Wilhjelm, J. T. Reed, and K. D. Kiss, to Diamond Shamrock Corp. Copolymerization of trioxane and norbornadiene with a prepolymer catalyst. 3,415,785, 12–10–68, Cl. 260—67.
Tkachenko, Galina V.: *See*—
Bliznjuk, Nickolai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.
Todd, David M., and W. D. McDavid, to Tenneco Chemicals, Inc. Ethylene-a-olefin elastomer compositions. 3,415,769, 12–10–68, Cl. 260—29.8.
Tokyo Kakin Kogyo Co., Ltd.: *See*—
Matsumoto, Hirrshi. 3,415,642.
Tokyo Kenki Kabushiki Kaisha: *See*—
Sato, Tetsuo, and Oba. 3,415,349.
Tomchin, Ronald E., to Philips Mfg. Co. Pendant jewelry. 3,415,079, 12–10–68, Cl. 63—23.
Tomlinson, John M. D., to Tomlinsons (Rochdale) Ltd. Drive means for planetary napping device. 3,414,953, 12–10–68, Cl. 26—35.
Tomlinsons (Rochdale) Ltd.: *See*—
Tomlinson, John M. D. 3,414,953.
Toolmaster Ltd.: *See*—
Hallewell, Raymond T. 3,415,635.
Torrington Mfg. Co., The: *See*—
Glucksman, Dov Z. 3,415,443.
Torp, Egil O. S., to Karlbom, Ingenjorsfirma G., AB. Packing means for conduits. 3,415,285, 12–10–68, Cl. 138—94.3.
Toth, J. Roger, to Ametek, Inc. Brushless electric motor circuitry. 3,416,055, 12–10–68, Cl. 318—138.
Touchy, Wolfgang: *See*—
Zerbst, Manfred, Zschauer, and Touchy. 3,416,045.
Townsend, Stephen E., and J. L. Wheeler, to Xerox Corp. Facsimile synchronizing system. 3,415,948, 12–10–68, Cl. 178—69.5.
Toyama, Kazuro: *See*—
Watanabe, Takuro, and Toyama. 3,415,917.
Toyo Rayon Kabushiki Kaisha: *See*—
Tsuda, Yoshizo, Yanagi, and Minami. 3,415,784.
Toyo Seikan Kabushiki Kaisha (also known as Toyo Seikan Kaisha-Ltd.): *See*—
Ishibashi, Masaru. 3,415,298.
Trace, James C.: *See*—
Hays, Merlin B., and Trace. 3,415,926.
Trainor, Patrick M., by court order to Shapiro, Levine, and Crane. Locking bayonet connector securement. 3,415,086, 12–10–68, Cl. 70—240.
Transicold Corp.: *See*—
White, Jack H. 3,415,072.
Trbovich, Nicholas D., and W. H. Meyer, said Meyer assignor to Servotronics, Inc. Torque motor. 3,415,283, 12–10–68, Cl. 137—625.62.
Treatch, James E., to Motorola, Inc. False signal prevention system including mechanical member physically displaceable by vibration and shock. 3,416,135, 12–10–68, Cl. 340—156.
Trevorrow, William D., to Atlas Chemical Industries, Inc. Water destructible electric match. 3,415,189, 12–10–68, Cl. 102—28.
Trexler, Philip C., to Snyder Mfg. Co., Inc. Tetrahedron isolator and methods of making the same. 3,415,582, 12–10–68, Cl. 312—1.
Trilling, Theodore R. Analog-to-digital converter. 3,416,152, 12–10–68, Cl. 340—347.
True Cor Value, Inc.: *See*—
Goggins, Franklin. 3,415,537.
Tsuda, Yoshizo, M. Yanagi, and M. Minami, to Toyo Rayon Kabushiki Kaisha. Trioxane-trioxaspiro compound copolymers and process for production thereof. 3,415,784, 12–10–68, Cl. 260—67.
Tuboplast-France, S.A.: *See*—
Lecluyse, Edouard, and Beranger. 3,415,915.
Tucker, Harold H., to Lowenstein Dyes & Cosmetics, Inc. Stabilized oxidation dye compositions. 3,415,608, 12–10–68, Cl. 8—10.2.
Tulee, Roy C.: *See*—
Simone, Raymond A., and Tulee. 3,415,909.
Turner, George W.: *See*—
Arnold, Julian R., and Turner. 3,415,286.
Turner, John M., to Chas. Pfizer & Co., Inc. Partially acetylated sucrose-propylene oxide polyether polyols. 3,415,812. 12–10–68, Cl. 260—234.
Turnquest, Byron W.: *See*—
Gehrman, Gary L., and Turnquest. 3,415,897.
Turriff, William G.: *See*—
Brock, William H. J., and Turriff. 3,415,254.
Turumaru, Takesi, M. Yotsuzuka, and K. Ogino, to Takeda Chemical Industries, Ltd. Stabilization of polyoxyalkylene polyols with ascorbic acid type stabilizer. 3,415,891, 12–10–68. Cl. 260—611.5.
Tweed, Donald G., to Bourns, Inc. Viscous liquid level control system. 3,415,268, 12–10–68, Cl. 137—209.

Tyburski, Robert M., and R. F. Springer, to Farrington Electronics, Inc. Document handling apparatus. 3,416,609, 12–10–68, Cl. 271—45.
U.S. Baird Corp., The: *See*—
Holmes, Frank C., and Clay. 3,415,117.
Uchikoshi, Goji. Reversible magnetic tape recorder with independent head and drive means for selective use with one or two tapes. 3,415,956, 12–10–68, Cl. 179—100.2.
Ukrainsky Gosudarstvenny Proektny Institute Tjazhpromelektroproekt: *See*—
Zilijberman, Boris Z., Grigorenko, and Zilijbershtein. 3,415,149.
Ultronic Systems Corp.: *See*—
Gertler, Eugene I., Huber, Richman, Ciarrocchi, and Habgood. 3,416,134.
Hunkins, Stanley H., Hernan, and Beresin. 3,416,133.
Ultrasonics Ltd.: *See*—
Goodman, John E., and Grange. 3,415,548.
Umbach, Wilfried: *See*—
Stein, Werner, Umbach, and Baumann. 3,415,753.
Underwood, Herbert N., and R. H. Haas, to Borg-Warner Corp. Hydraulic pump control system. 3,415,058, 12–10–68, Cl. 60—53.
Ungerman, Warren J., to Manufactures Engineering and Equipment Corp. Detent mechanism. 3,415,141, 12–10–68, Cl. 74—527.
Unimed, Inc.: *See*—
Fossel, Eric T. 3,415,833.
Union Carbide Corp.: *See*—
Hansen, Robert E. 3,415,685.
Keogh, Michael J., and Ingberman. 3,415,887.
Morley, William E. 3,415,413.
Seubert, William A. 3,415,581.
Shepard, Robert L. 3,415,986.
Union Oil Co. of California: *See*—
Olivier, Kenneth L. 3,415,871.
Uniroyal, Ltd.: *See*—
Haldane, John, and Ashworth. 3,415,701.
Unistrut Corp.: *See*—
Papayoti, Hristo V. 3,415,554.
United Engineering and Foundry Co.: *See*—
Johnson, Lane, Jr. 3,415,392.
O'Brien, Jeremiah W. 3,415,148.
O'Brien, Jeremiah W. 3,415,459.
United Kingdom Atomic: *See*—
Lloyd, Henry. 3,415,911.
United Shoe Machinery Corp.: *See*—
De Caro, Charles J. 3,415,438.
Elliott, Richard M. 3,415,102.
Ishikawa, Shoichi. 3,415,143.
United States of America
Atomic Energy Commission: *See*—
Bush, Stuart A. 3,415,977.
Ginther, Russell J. 3,415,527.
Army: *See*—
Campagnuolo, Carl J., and Warren. 3,415,193.
Meek, James M., Charuhas, and Foure. 3,415,191.
Warren, Raymond W., Sieracki, and Campagnuolo. 3,415,263.
Goldsworthy, William W. 3,416,103.
Smith, Alfred E. 3,415,170.
National Aeronautics and Space Administration: *See*—
Burcham, Terry W. 3,415,156.
Freche, John C., Ashbrook, Sandrock, and Dreshfield. 3,415,643.
Hauser, John A. 3,415,069.
Knechtel, Earl D. 3,415,116.
Thomason, Herman E., and Mandel. 3,415,126.
Woller, John A. 3,415,032.
Navy: *See*—
Abruzzo, Joseph, Cox, and Sapp. 3,416,144.
Chambers, Robert W. 3,415,133.
Childers, Carroll D. 3,415,564.
Chwastyk, Adolph M. 3,415,593.
Fitti, Nicholas S., Jr. 3,415,994.
Harrison, William H. 3,416,090.
Hart, Otho E., and Imm. 3,415,190.
Mandel, Louis. 3,416,089.
Paciorek, Kazimiera J. L., and Kratzer. 3,415,863.
Raezer, Spencer D. 3,416 021.
Ray, William E. 3,416,083.
Redfern, John T. 3,416,065.
Woodward, Wilmer C. 3,415,520.
United States Gypsum Co.: *See*—
Kinkade, William A., and McCleary. 3,415,910.
United States Pipe and Foundry Co.: *See*—
Schuh, Arthur E., Rice, and Malizio. 3,415,307.
United States Steel Corp.: *See*—
Bowser, Donald G. 3,415,423.
Britcher, Harry H., Jr. 3,415,421.
Frey, John A., and Wald. 3,415,545.
Krueger, Glenn N. 3,415,150.
Macknick, Albert J. 3,415,460.
United Steel Companies Ltd., The: *See*—
Sharp, John D. 3,415,427.
University of Kentucky Research Foundation: *See*—
Ellis, John H. 3,415,380.
Upjohn Co., The: *See*—
Argoudelis, Alexander D., and Mason. 3,415,811.
Paquette, Leo A. 3,415 815.
Upton, Lee O., to American Optical Corp. Method for treating molten glass with a laser beam. 3,415,636, 12–10–68, Cl. 65—17.
Urich, Joseph A. Vehicle coupling means. 3,415,542, 12–10–68, Cl. 280—460.
Urquhart, Lloyd G., to H. F. Livermore Corp. Shuttle check for looms. 3,415,291, 12–10–68, Cl. 139—183.
Uta-Patentverwaltungsgesellschaft m.b.H.: *See*—
Hussmann, Peter. 3,415,665.
VEB Elektrochemisches Kombinat Bitterfeld: *See*—
Koch, Hans-Joachim, Berndt, and Dölle. 3,415,733.
Vallese, Lucio M., to International Telephone and Telegraph Corp. Variable reactance element. 3,416,105, 12–10–68, Cl. 333—80.
Valmet Oy: *See*—
Soininen, Mauri. 3,414,984.
Valyi, Emery I. Method and apparatus for making hollow articles of organic plastic material. 3,415,916, 12–10–68, Cl. 264—97.
Valyi, Emery I.: *See*—
Burne, Frederick A., and Valyi. 3,415,316.
Van Benthuysen, John D., and D. L. Kleykamp, to CTS Corp. Variable resistance control with clutch mechanism. 3,416,119, 12–10–68, Cl. 338—174.
Van Der Tas, Johannes C., W. Westerveld, and R. M. Kruimink, to North American Philips Co., Inc. Combustion flash bulbs. 3,415,605, 12–10–68, Cl. 431—93.
Van Dijk, Christiaan P., to Pullman, Inc. Alkylation process. 3,415,899, 12–10–68, Cl. 260—683.62.
Van Gils, Adrianus W. Process and an apparatus for bringing under control an unexpectedly producing well. 3,415,331, 12–10–68, Cl. 175—65.
Van Goethem, Jan, R. De Smedt, and A. E. A. Lauwers, to International Standard Electric Corp. Read-only memory system. 3,416,143, 12–10–68, Cl. 340—173.
Van Gorcom, Henricus J. M., to Stamicarbon N.V. Process for bonding metals to rubbers. 3,415,715, 12–10–68, Cl. 161—190.
Van Kampen, Johannes A.: *See*—
Rijnsdorp, Johannes E., Van Kampen and Bollen. 3,415,720.
Van Natter, William J. Self-contained tennis ball storage container and pressurizing device. 3,415,357, 12–10–68, Cl. 206—1.
Van Sandwyk, Johannes, to Sylvania Electric Products, Inc. Variable attenuator. 3,416,101, 12–10–68, Cl. 333—9.
Van Tuyl, David H., to Clemco Clementina Ltd. Metering device. 3,415,418, 12–10–68, Cl. 222—57.
Vandenberg, Edwin J., to Hercules Inc. Process for polymerization of epoxides. 3,415,761, 12–10–68, Cl. 260—2.
Vane, Arthur B., to Varian Associates. Bulk-effect negative-resistance microwave apparatus employing a coaxial microwave circuit structure. 3,416,098, 12–10–68, Cl. 331—107.
Vane, Arthur B., to Varian Associates. Bulk-effect negative-resistance microwave device employing a half wave open circuit resonator structure. 3,416,099, 12–10–68, Cl. 331—107.
Vapor Corp.: *See*—
Salerno, Paul G. 3,415,269.
Vargiu, Giacomo, to Hewlett-Packard Co. Phase-locked signal sampling circuit with adaptive search circuit. 3,416,087, 12–10–68, Cl. 328—151.
Varian Associates: *See*—
Dryden, Hugh L. 3,415,556.
Gutow, Russell S., Jr. 3,416,073.
Vane, Arthur B. 3,416,098.
Vane, Arthur B. 3,416,099.
Varshavsky, Semen L.: *See*—
Bliznjuk, Nickolai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrechshenov. 3,415,908.
Venghiattis, Alexis A., to Dresser Industries, Inc. Shaped charge perforating apparatus and method. 3,415,321, 12–10–68, Cl. 166—35.
Verbeck, John T., to The Budd Co. Method of welding sheet material. 3,415,973, 12–10–68, Cl. 219—91.
Verinigte Kapselfabriken Nackenheim G.m.b.H.: *See*—
Schmitt, Johann. 3,415,034.
Vessa Ltd.: *See*—
Waggott, John B., and Dadson. 3,414,908.
Vibrator Mfg. Co., Inc.: *See*—
Peterson, Edwin H. 3,415,396.
Vickers, Robert M. Golf swing training apparatus. 3,415,524, 12–10–68, Cl. 273—189.
Victor Comptometer Corp.: *See*—
Bear, Fred B. 3,415,240.
Bear, Fred B. 3,415,241.
Viera, Daniel A.: *See*—
Ahrens, Warren S., and Viera. 3,415,604.
Viesi, Lorenzo, to Sintelco Societa a resp. Limitata. Automatic multiple-code system for long distance information. 3,415,944, 12–10–68, Cl. 178—3.
Vinson, Paul, to Pentronix, Inc. Tool capsule for powder compacting press. 3,414,940, 12–10–68, Cl. 18—16.
Vinson, Paul, to Pentronix, Inc. Powder compacting press. 3,415,142, 12–10–68, Cl. 74—568.
Vinzelberg, Bernhard, and K. Bunge, to Farbenfabriken Bayer Aktiengesellschaft. Radiation sensitive ampoule testing apparatus and method. 3,415,997, 12–10–68, Cl. 250—218.
Visani, Francesco: *See*—
Borsini, Giancarlo, Visani, and Cevidalli. 3,415,797.
Vitta Corp.: *See*—
Ettre, Kitty S. 3,415,705.
Ettre, Kitty S. 3,415,706.
Vodinh, Hien, to Radio Corp. of America. Shaft mounting device. 3,415,472, 12–10–68, Cl. 248—27.
Von Konig, Anita, H. Mader, and E. Weyde, to Agfa Aktiengesellschaft. Light-sensitive material with incorporated developer. 3,415,651, 12–10–68, Cl. 96—95.
Voisinet, Walter E., to National Gypsum Co. Impregnation of asbestos-cement products with thermosetting formaldehyde resin. 3,415,674, 12–10–68, Cl. 117—72.
Vosika, Eugene A., to The Ramsey Engineering Co. Core handling device with air sorting system. 3,415,368, 12–10–68, Cl. 209—73.
Vrana, George, to Riegel Paper Corp. Hosiery wrapper. 3,415,359 12–10–68, Cl. 206—46.
Vriend, Joseph A. Hydraulic drive for motor vehicles. 3,415,334, 12–10–68, Cl. 180—36.

Vsesojuzny Nauchno-Issledovatelsky Institute: *See*—
Bliznjuk, Nickolai K., Kolomiets, Varshavsky, Skladnev, Kofman, Tkachenko, Libman, and Novokrecbshenov. 3,415,908.

Vyas, Ramesh, to Foseco International Ltd. Method of protecting metal surfaces during heat treatment. 3,415,891, 12–10–68, Cl. 148—6.11.

Waack, Richard, to The Dow Chemical Co. Method for inhibiting corrosion. 3,415,622, 12–10–68, Cl. 23—154.

Waggott, John B., and A. J. S. Dadson, to Vessa Ltd. Alignment devices for use with prostheses. 3,414,908, 12–10–68, Cl. 3—1.

Wagner Electric Corp.: *See*—
Mayer, Donald W. 3,416,022.

Wagner, William C. Combination adjustable belt tightener, fuel pump and air pump for internal combustion engines. 3,415,238, 12–10–68, Cl. 123—195.

Wahlberg, Eric C. Package handling apparatus having transportation cost determining means. 3,415,348, 12–10–68, Cl. 194—4.

Wakabayashi, Takao, to Nakanishi Metal Works Co., Ltd. Storage and feeding apparatus. 3,415,356, 12–10–68, Cl. 198—215.

Wakabayashi, Toshio: *See*—
Nagata, Wataru, Nariaada, Wakabayashi, and Sugasawa. 3,415,830.

Wakayama Iron Works Ltd.: *See*—
Okazaki, Narukazu, and Ishimaru. 3,415,083.

Walbro Corp.: *See*—
Catterson, Robert K. 3,415,195.

Wald, George F.: *See*—
Frey, John A., and Wald. 3,415,545.

Walford, Michael A. H.: *See*—
Brown, Stanley G., and Walford. 3,415,264.

Walker, Bertram, to Radio Corp. of America. Non-saturating emitter-coupled multi-level RTL-circuit logic circuit. 3,416,003, 12–10–68, Cl. 307—207.

Walker Crosweller & Co. Ltd.: *See*—
Jones, Michael H. 3,416,155.

Walker, Darrell W., to Phillips Petroleum Co. Polyolefin hydrogenation process. 3,415,898, 12–10–68, Cl. 260—683.9.

Walker, Frederick J., to Harry Ferguson Research Ltd. Vehicle braking systems. 3,415,577, 12–10–68, Cl. 303—21.

Walker, Frederick J., to Harry Ferguson Research Ltd. Vehicle braking systems. 3,415,578, 12–10–68, Cl. 303—21.

Walker, Larry D., and C. H. Jorgensen, Jr., to American Cement Corp. Method of casting multi-duct concrete conduits. 3,415 914, 12–10–68, Cl. 264—86.

Walker, Robert M.: *See*—
Fleischer, Robert L. Price, and Walker. 3,415,993.

Wallace & Tierman, Inc.: *See*—
Conkling, William C., Rebucci, and Wittke. 3,416 030.

Wallden, Knut A. O. Method of and apparatus for sterilizing and disinfecting articles. 3,415,613, 12–10–68, Cl. 21—56.

Wallis, Robert J.: *See*—
Korol, Peter, and Wallis. 3,415,218.

Walz, Frank C., Jr., S. F. Pickup, and C. A. Kratochvil, to Armadillo Mfg. Co. Prefabricated portable building. 3,415,025, 12–10–68, Cl. 52—222.

Wanmaker, Willem L., and A. Bril, to North American Philip Co., Inc. Fluoro-substituted europium activated gadolinium, yttrium and lanthanum oxides. 3,415,757, 12–10–68, Cl. 252—301.4.

Ward, Irving A.: *See*—
Bucknell, Ernset H., and Ward. 3,415 279.
Bucknell, Ernest H., and Ward. 3,415,280.
Bucknell, Ernest H. Raub, and Ward. 3,415,454.

Ware, Walter S., and D. R. Cannon, to Olinkraft, Inc. Bag accumulator. 3,415,351, 12–10–68, Cl. 198—33.

Warner, Frederick P., and Y. Matsuura, to Warner Mfg. Co. Applicator for paint and the like. 3,414,929, 12–10–68, Cl. 15—231.

Warner-Lambert Pharmaceutical Co.: *See*—
Brechner, Stanley, and De Vito. 3,415,607.

Warner Mfg. Co.: *See*—
Warner, Frederick P., and Matsuura. 3,414,929.

Warren, Raymond W.: *See*—
Campagnuolo, Carl J., and Warren. 3,415,193.

Warren, Raymond W., L. M. Sieracki, and C. J. Campagnuolo, to United States of America, Army. Fluid low noise vortical impedance matching device. 3,415,263, 12–10–68, Cl. 137—81.5.

Warwick Electronics Inc.: *See*—
Brand, John R. 3,415,941.

Washburn Co., The: *See*—
Smith, Mahlon J., and Henderson. 3,415,376.

Watanabe, Takuro, and K. Toyama. Process for forming and cooling thermoplastic resin pellets. 3,415,917, 12–10–68, Cl. 264—142.

Water Pollution Control Corp.: *See*—
Thayer, Paul M. 3,415,379.

Waterman, Jacques A.: *See*—
La Heij, Gerardus E., and Waterman. 3,415,772.

Watkins, Lucius D., to Outboard Marine Corp. Segmented float for air compressor. 3,414,921, 12–10–68, Cl. 9—400.

Watson, Robert T., to International Telephone and Telegraph Corp. Invisible light sensor tube and faceplate material. 3,415,990, 12–10–68, Cl. 250—71.5.

Watson, William S., to British Titan Products Co. Ltd. Gas heating apparatus. 3,415,968, 12–10–68, Cl. 219—10.65.

Watters, Charles K., to Albemarle Paper Mfg. Co. Decomposition resistant bag. 3,415,440, 12–10–68, Cl. 229—55.

Weaver, Max: *See*—
Straley, James M., Dale, and Weaver. 3,415,810.

Webb, James E., Administrator of the National Aeronautics and Space Administration with respect to an invention of K. Reinitz. Extended area semiconductor radiation detectors and a novel readout arrangement. 3,415,992, 12–10–68, Cl. 250—83.

Webb, Jervis B., Co.: *See*—
Dehne, Clarence A. 3,415,202.

Webber, Robert L. Container. 3,415,402, 12–10–68, Cl. 215—1.

Weber, H. G., and Co., Inc.: *See*—
Oertle, Lawrence C., Jr. 3,415,353.

Weber Kurt, and E. Ingold, to Ciba Ltd. Azo-dyestuffs containing 2-arylarylenethiazole groups. 3,415,808, 12–10–68, Cl. 260—158.

Webster, Earle F., to H. K. Porter Co., Inc. Method of making conveyor belt. 3,415,700, 12–10–68, Cl. 156—164.

Welhs, Edith. Foot massage roller. 3,415,514, 12–10–68, Cl. 272—57.

Weil, Edward D., and J. F. Porter, to Hooker Chemical Corp. Method of controlling insects with adducts of hexahalocyclopentadiene with alkadienes. 3,415,938, 12–10–68, Cl. 424—351.

Welland, Carl W. Hydraulically actuated valve plate for a centrifuge. 3,415,446, 12–10–68, Cl. 233—20.

Weinbrenner, Erwin: *See*—
Gugelot, Hans, Hoppe, Reichl, and Weinbrenner. 3,415,568.

Weisbach, Jerry A., to Smith Kline & French Laboratories. 2-isoquinolinyl (and carbolinyl) alkyloctahydroindolo [2,3-A]-quinolizines. 3,415,831, 12–10–68, Cl. 260—288.

Weiss, Margaret R.: *See*—
Chambliss, Keith W., Weiss, Loughman, Adams, and Beeny. 3,415,361.

Welbers, Anton, to Deutsche Rhodiaceta A.G. Process for producing alternating twist. 3,415,048, 12–10–68, Cl. 57—34.

Wellco Chemical Products Co.: *See*—
Wellman, Glenn F. 3,415,257.

Wellman, Glenn F., to Wellco Chemical Products Co. Tub washing construction. 3,415,257, 12–10–68. Cl. 134—98.

Welsh, Frank H. Animal stall and gate means. 3,415,227, 12–10–68, Cl. 119—27.

Weman, Per-Olaf, to Sigmatez A.G. Means for fastening a safety belt on the floor of a vehicle. 3,415,536, 12–10–68, Cl. 280—150.

Western Electric Co., Inc.: *See*—
Chuas, John T. 3,415,679.

Westerveld, Willem: *See*—
Van Der Tas, Johannes C., Westerveld, and Kruimink. 3,415,605.

Westinghouse Air Brake Co.: *See*—
Newell, George K. 3,415,093.
Newell, George K. 3,415,115.

Westinghouse Bremsen- und Apparatebau G.m.b.H.: *See*—
Hinrichs, Horst, and Gross. 3,415,166.

Westinghouse Electric Co.: *See*—
Asars, Juris A. 3,415,991.
Eckel, Robert A., and Nagy. 3,416,023.
Ericson, Gene S. 3,415,292.
Griffith, Dewey M., Hawkey, and Boughton. 3,416,029.
Hill, Earl R., and Carter. 3,416,058.
Long, Olan L. 3,415,261.
Metcalfe, Frederick S. 3,415,074.
Meyerhoff, Alfred. 3,415,943.
Morris, Robert D., and Hollister. 3,416,110.
Ott, Richard R., and Blair. 3,415,001.
Rimbach, Henry W. 3,415,756.

Weston, Charles D., to Martin-Marietta Corp. Method for fixing dyes on textile fibers and textile fibers resulting from method. 3,415,609, 12–10–68, Cl. 8—34.

Weum, Dale A., to Red Owl Stores Inc. Refrigeration warning system. 3,415,070, 12–10–68, Cl. 62—129.

Weyde, Edith: *See*—
Von Konig, Anita, Mader, and Weyde. 3,415,651.

Weyerhauser Co.: *See*—
Morris, Nelson J. 3,415,585.

Whalen, Edward A. Live bait harnesses. 3,415,004, 12–10–68, Cl. 43—42.74.

Whalley, John: *See*—
Wilford, Ernest, Hanson, and Whalley. 3,415,084.

Wheeler, John L.: *See*—
Townsend, Stephen E., and Wheeler. 3,415,948.

Wheeler, Stephen W. Combination gage and guide control for strip mills. 3,415,097, 12–10–68, Cl. 72—248.

Wheildon, William M., Jr.: *See*—
Ault, Neil N., and Wheildon. 3,415,681.

Whiffen & Sons Ltd.: *See*—
Jenkins, Trevor, Needham, and Smith. 3,415,882.

Whirlpool Corp.: *See*—
Barnard, Walter C. 3,415,961.
Lind, Wallace E., Winkler, and Peyer. 3,415,276.

White, Jack H., to Transicold Corp. Drive unit for transport refrigeration system. 3,415,072, 12–10–68, Cl. 62—239.

White, Kenneth J., to Dennison Mfg. Co. Ticket printing and feeding machine. 3,415,182, 12–10–68, Cl. 101—68.

White, Roy A., to Litton Business Systems, Inc. Stabilization of resins and plastics. 3,415,776, 12–10–68, Cl. 260—45.8.

White, Willard H. Toy gun. 3,415,420, 12–10–68, Cl. 222—79.

Whiting Corp.: *See*—
Rushton, William E., and Kleinman. 3,415,039.

Whitney Blake Co., The: *See*—
Clinton, Henry H. 3,416,076.

Whittaker Corp.: *See*—
McQueen, Malcolm M., and Donnelly. 3,415,118.

Whitten, H. A., & Co.: *See*—
Gubler, Kurt. 3,415,933.

Wickersheim, August. Packaging machines. 3,415,035, 12–10–68, Cl. 53—131.

Wieczorek, Stanley. Handy barrow. 3,415,534, 12–10–68, Cl. 280—47.26.

Wiener, Jack S. Sound emitting device. 3,415,526, 12–10–68, Cl. 274—9.

Wiers, William C., to Automation-Forster, Inc. Electronic tuner for inductive probe testing apparatus. 3,416,071, 12–10–68, Cl. 324—40.

Wikdahl, Nils A. L. Method and apparatus for vortical separation of solids. 3,415,374, 12–10–68, Cl. 209—211.

Wikdahl, Nils A. L. Method and apparatus for vortical separation of solids. 3,415,375, 12–10–68, Cl. 209—211.

Wilcox, Ezra M. Automatic fence tightener and extension joint. 3,415,491, 12–10–68, Cl. 256—39.

Wilcox, Richard T.: *See*—
Benatar, Victor, and Wilcox. 3,415,354.

Wilford, Ernest, J. K. Hanson, and J. Whalley, to The Bradford Dyers' Association Ltd. Apparatus for dyeing carpets and other fabrics. 3,415,084, 12–10–68, Cl. 68—9.

Wilhjelm, Richard M.: *See*—
Tirpak, Michael R., Rosen, Wilhjelm, Reed and Kiss. 3,415,785.

Wilkinson, Raymond G., and R. G. Shepherd, to American Cyanamid Co. Dibenzoyl esters of N-(methyl or ethyl)-N-N'-(methyl or ethyl)-N'-(α-ethyl-β-hydroxyethyl)-β-aminoethyl/-β-ethyl-β - aminoethanol. 3,415,869, 12–10–68, Cl. 260—477.

Williams, Chester I. Bearing bracket for rock bolts. 3,415,066, 12–10–68, Cl. 61—45.

Williams, Noble S.: *See*—
Koester, Charles J., and Williams. 3,416,089.

Williams, Ray E., and H. C. Nye, to Fostoria-Fannon, Inc. Radiation and convection responsive thermoelectric detector. 3,415,448, 12–10–68, Cl. 236—15.

Williams, Richard E., to Dimension, Inc. Frequency burst synchronization circuit. 3,415,949, 12–10–68, Cl. 178—69.5.

Williams, Thomas W., III, to The Ealing Corp. Air table. 3,415,478, 12–10–68, Cl. 248—346.

Willis, Grant N., and I. Y. Lake, to A. G. Russell Co., Inc. Escapement mechanism. 3,415,162, 12–10–68, Cl. 91—189.

Wilmot-Breeden Ltd.: *See*—
Jeavons, Philip S. 3,415,559.

Wilson, Donald M.: *See*—
Broersma, Robert J., Boomgaard, Droppers, and Wilson. 3,415,416.

Wilson, Herbert L.: *See*—
Gutierrez, William A., and Wilson. 3,415,678.

Wilson, Joseph G., to Shell Oil Co. Centrifugal separator vessel. 3,415,042, 12–10–68, Cl. 55—348.

Wilson, Russell W. Adjustable package-forming machine. 3,415,171, 12–10–68, Cl. 93—82.

Wiltron Co., *See*—
Lacy, Peter D. 3,416,077.

Windle, Herbert R. Gravel stop spliced butt joint. 3,415,020, 12–10–68, Cl. 52—96.

Winkler, Alfred, and K. Bammesberger, to Agfa-Gevaert AG. Magazine for motion-picture film. 3,415,599, 12–10–68, Cl. 352—78.

Winkler, Wynn G.: *See*—
Lind, Wallace E., Winkler, and Peyer. 3,415,276.

Winnebago Industries, Inc.: *See*—
Nerem, Marvin E. 3,415,028.

Wise, John D. Driverless lawn mower. 3,415,335, 12–10–68, Cl. 180—79.

Wittke, Edward W., Jr.: *See*—
Conkling, William C., Rebucci, and Wittke. 3,416,030.

Wolf, Hermann, to Holstein & Kappaet Maschinenfabrik "Phonix" GmbH. Bottle filling apparatus. 3,415,295, 12–10–68, Cl. 141—46.

Wolf, Milton, to American Home Products Corp. Pyrazole-1-ethanol derivatives. 3,415,840, 12–10–68, Cl. 260—310.

Wolff, Paul A., to Kerr-McGee Corp. Method of operating a submersible vessel for submarine operations. 3,415,067, 12–10–68, Cl. 61—46.5.

Woller, John A., to United States of America, National Aeronautics and Space Administration. Evacuation port seal. 3,415,032, 12–10–68, Cl. 53—22.

Woo, Kenneth E.: *See*—
Earl, Herbert E., Jr., and Woo. 3,416,095.

Woodford, Philip R., E. J. Straneva, and R. A. John, to Lord Corp. Mounting system. 3,415,470, 12–10–68, Cl. 248—5.

Woodruff, Robert W., to E. I. du Pont de Nemours and Co. Coating compositions and processes. 3,415,771, 12–10–68, Cl. 260—33.4.

Woodward, Wilmer C., to United States of America, Navy. Maneuvering tow target. 3,415,520, 12–10–68, Cl. 273—105.3.

Worcester, Gurdon S. Composite web for treating human tissue. 3,414,927, 12–10–68, Cl. 15—104.93.

Worcester, Gurdon S. Key holder. 3,415,300, 12–10–68, Cl. 150—40.

Worrel, Calvin J., to Ethyl Corp. Catalytic oxidation of nitrosophenols to benzoquinones. 3,415,849, 12–10–68, Cl. 260—396.

Worrel, Calvin J., and R. L. McLean, to Ethyl Corp. Preparation of benzoquinones and hydroquinones. 3,415,850, 12–10–68, Cl. 260—396.

Worrell, William D.: *See*—
MacKenzie, Robert P., and Worrell. 3,416,131.

Wrensch, Bernard E., to Stearns Electric Corp. Pole structure for electromagnetic clutch or brake with stationary magnet and method of manufacture thereof. 3,415,347, 12–10–68. Cl. 192—84.

Wright, Esmond P. G., and W. Bezdel, to International Standard Electric Corp. Apparatus for the analysis of waveforms. 3,416,080, 12–10–68, Cl. 324—77.

Wyand, Edwin B., and R. G. Tarkington, to Eastman Kodak Co. Photographic silver halide diffusion transfer process. 3,415,647, 12–10–68, Cl. 96—29.

Wysocki, Alfred T.: *See*—
Lynch, John F., and Wysocki. 3,415,874.

Xerox Corp.: *See*—
Fend, Fred A. 3,415,186.
Hudson, Frederick W. 3,415,224.
Mileski, Raymond P. 3,415,510.
Townsend, Stepuen E., and Wheeler. 3,415,948.

Y2 Associates: *See*—
Yamamoto, Yujiro, and Hamberg. 3,415,245.

Yale, Harry L., to E. R. Squibb & Sons, Inc. Process for preparing halogenated propanols. 3,415,894, 12–10–68, Cl. 260—633.

Yamadera, Reizo: *See*—
Taniguchi, Isoji, Maemoto, Ken-Ichi, Simamura, Kobayashi, Yasumura, and Yamadera. 3,415,904.

Yamaguchi, Kusuo: *See*—
Motooka, Tohru, Yamaguchi, Yoshitake, and Kobayashi. 3,416,056.

Yamaguchi, Terumoto, K. Kawamoto, and H. Amemiya, to Nippon Denso Kabushiki Kaisha. Method of producing flat or surface commutator. 3,414,970, 12–10–68, Cl. 29—597.

Yamamoto, Mititaka, and S. Takechi, to Tateisi Electronics Co. Automatic water valve device. 3,415,278, 12–10–68, Cl. 137—607.

Yamamoto, Yujiro, and E. S. Hamberg, to Y2 Associates. Noise-suppression diving apparatus. 3,415,245, 12–10–68, Cl. 128—147.

Yamashita, Hidetaka: *See*—
Ii, Chikai, Yamashita, Kuwabara, and Sugie. 3,415,953.

Yanagi, Masana: *See*—
Tsuda, Yoshizo, Yanagi, and Minami. 3,415,784.

Yano, Shinkichi. Annular locking assembly used in ring attachments for preventing water leakage in water pipe connections. 3,415,547, 12–10–68, Cl. 285—337.

Yarbrough, Kenneth A. Control device for camera stand. 3,415,600, 12–10–68, Cl. 352—87.

Yasukawa, Tadashi: *See*—
Kuwata, Tsutomu, Yasukawa, and Abe. 3,415,884.

Yasumura, Tomohide: *See*—
Taniguchi, Isoji, Maemoto, Ken-Ichi, Simamura, Kobayashi, Yasumura, and Yamadera. 3,415,904.

Yates, John: *See*—
Callander, Sidney E., and Yates. 3,415,879.

Yee, Tin B. Maximum temperature indicating ceramic film. 3,415,122, 12–10–68, Cl. 73—356.

Yeutter, Leo D.: *See*—
Nealon, Edward W., Yeutter, Cahoon, and Moore. 3,416,121.

Yock, Lewis M. Machine for chipping core logs and veneer. 3,415,297, 12–10–68, Cl. 144—176.

Yodis, Anthony W., and W. G. Schnoor, to Allied Chemical Corp. Process for producing high purity aluminum nitrate solutions from low grade aluminous ores of intermediate iron content. 3,415,618, 12–10–68, Cl. 23—102.

Yodis, Anthony W.: *See*—
Cunningham, William J., and Yodis. 3,415,729.

Yoncoskie, Robert A.: *See*—
Powell, Thomas C., Steinle, and Yoncoskie. 3,415,758.

Yoshitake, Norito: *See*—
Inaba, Seiuemon, Yoshitake, and Kobayashi. 3,416,053.
Motooka, Tohru, Yamaguchi, and Yoshitake. 3,416,056.

Yotsuzuka, Masaru: *See*—
Turumaru, Takesi, Yotsuzuka, and Ogino. 3,415,891.

Young, Bill M., to Halliburton Co. Method of treating clay-containing earth formations. 3,415,320, 12–10–68, Cl. 166—33.

Young, David M., to The Dow Chemical Co. Process for making ammonium phosphate. 3,415,619, 12–10–68, Cl. 23—107.

Young, David W.: *See*—
Isaacson, Henry V., and Young. 3,415,745.

Young, Warren D., to General Electric Co. Differential output incandescent lamp. 3,416,024, 12–10–68, Cl. 313—273.

Zaccaron, Luigi. Mobile concrete mixing equipment. 3,415,498, 12–10–68, Cl. 259—165.

Zagwyn, Anthony T., to Ajay Golf Products, Inc. Shaft holder and seat. 3,415,572, 12–10–68, Cl. 297—192.

Zavody Jana Svermy, narodni podnik: *See*—
Koucky, Josef, and F. 3,415,000.

Zech-Murray Corp.: *See*—
Murray, Ernest E. 3,415,017.

Zelnick, Charles, to Cooper Industries, Inc. Measuring tape construction. 3,415,461, 12–10–68, Cl. 242—84.8.

Zerbst, Manfred, K.-H. Zschauer, and W. Touchy, to Siemens Aktiengesellschaft. Semiconductor device, particularly for response to variable pressure. 3,416,045, 12–10–68, Cl. 317—234.

Zerkel, Wayne: *See*—
Fisher, Chester D., Stroup, and Zerkel. 3,415,494.

Zieber, Harold C. Driving mechanism. 3,415,131, 12–10–68, Cl. 74—31.

Ziegenhain, William C., to Continental Oil Co. Process for recovering higher aluminum alkyls from complexes containing same. 3,415,862, 12–10–68, Cl. 260—448.

Ziegenmeyer, Robert M., to Rexall Drug and Chemical Co. Diking method and product produced thereby. 3,415,062, 12–10–68, Cl. 61—12.

Ziljberman, Boris Z., V. D. Grigorenko, and M. B. Ziljbershtein to Ukrainsky Gosudakstvenny Procktny Institute Tjashpromelertroproekt. Device for wasteless cutting of metal. 3,415,149, 12–10–68, Cl. 83—311.

Ziljbershtein, Mikhail B.: *See*—
Ziljberman, Boris Z., Grigorenko, and Ziljbershtein. 3,415,149.

Zimmerman, Arnold: *See*—
Pool, Stuart D., and Zimmerman. 3,415,040.

Zimmerman Packing Co., The: *See*—
Zimmerman, Ralph C. 3,414,973.

Zimmerman, Ralph C., to The Zimmerman Packing Co. Cutting tool. 3,414,973, 12–10–68, Cl. 30—293.

Zinn, Robert E., to Falstaff Brewing Corp. Deep vat fermentation of beer. 3,415,654, 12–10–68, Cl. 99—31.

Zoludow, Richard S., to Robertshaw Controls Co. Pneumatic diverting relay. 3,415,282, 12–10–68, Cl. 137—625.48.
Zschauer, Karl-Heinz: *See*—
Zerbst, Manfred, Zschauer, and Touchy. 3,416,045.
Zucker, Myron J. Capacitor mounting case. 3,415,583, 12–10–68, Cl. 312—223.
Zuppinger, Paul: *See*—
Orth, Hans, Zuppinger, Gempeler, and Schaefer. 3,415,794.
Zweig, Gilbert, to Pitney-Bowes, Inc. Development apparatus for electrostatic copiers. 3,415,223, 12–10–68, Cl. 118—637.

CLASSIFICATION OF PATENTS

ISSUED DECEMBER 10, 1968

Note.—First number, class; second number, subclass; third number, patent number

2–172 : 3,414,906	29–577 : 3,414,969	60– 29 : 3,415,055
221 : 3,414,907	597 : 3,414,970	30 : 3,415,056
3– 1 : 3,414,908	603 : 3,414,971	53 : 3,415,057
4–185 : 3,414,909	604 : 3,414,972	3,415,058
3,414,910	30–293 : 3,414,973	54.6 : 3,415,059
241 : 3,414,911	32– 2 : 3,414,974	3,415,060
5– 52 : 3,414,912	3,414,975	61– 4 : 3,415,061
68 : 3,414,913	14 : 3,414,976	12 : 3,415,062
82 : 3,414,914	32 : 3,414,977	45 : 3,415,063
351 : 3,414,915	33–143 : 3,414,978	3,415,064
8– 10.1 : 3,415,606	201 : 3,414,979	3,415,065
.2 : 3,415,607	34– 9 : 3,414,980	3,415,066
3,415,608	22 : 3,414,981	46.5 : 3,415,067
34 : 3,415,609	31 : 3,414,982	69 : 3,415,068
94.16: 3,415,610	36 : 3,414,983	62– 40 : 3,415,069
137.5 : 3,415,611	156 : 3,414,984	129 : 3,415,070
9– 1 : 3,414,916	35– 8 : 3,414,985	158 : 3,415,071
3,414,917	31 : 3,414,986	239 : 3,415,072
8 : 3,414,918	60 : 3,414,987	259 : 3,415,073
310 : 3,414,919	36– 2.5 : 3,414,988	262 : 3,415,074
316 : 3,414,920	14 : 3,414,989	381 : 3,415,075
400 : 3,414,921	73 : 3,414,990	435 : 3,415,076
12– 20 : 3,414,922	38– 2 : 3,414,991	467 : 3,415,077
142 : 3,414,923	41 : 3,414,992	514 : 3,415,078
13– 21 : 3,415,940	77 : 3,414,993	63– 23 : 3,415,079
14– 22 : 3,414,924	102.91: 3,414,994	64– 9 : 3,415,080
15–104 : 3,414,925	140 : 3,414,995	65– 17 : 3,415,636
.3 : 3,414,926	143 : 3,414,996	30 : 3,415,637
.93: 3,414,927	3,414,997	66–151 : 3,415,081
118 : 3,414,928	40– 2.2 : 3,414,998	155 : 3,415,082
231 : 3,414,929	132 : 3,414,999	68– 5 : 3,415,083
250.36: 3,414,930	42– 70 : 3,415,000	9 : 3,415,084
.42: 3,414,931	43– 17.1 : 3,415,001	70–232 : 3,415,085
304 : 3,414,932	18 : 3,415,002	240 : 3,415,086
16–180 : 3,414,933	42.72: 3,415,003	277 : 3,415,087
17– 2 : 3,414,934	.74: 3,415,004	71– 36 : 3,415,638
7 : 3,414,935	43.12: 3,415,005	72– 54 : 3,415,088
40 : 3,414,936	67 : 3,415,006	60 : 3,415,089
18– 1 : 3,414,937	44– 74 : 3,415,632	100 : 3,415,090
5 : 3,414,938	46– 19 : 3,415,007	104 : 3,415,091
8 : 3,414,939	26 : 3,415,008	144 : 3,415,092
16 : 3,414,940	175 : 3,415,009	166 : 3,415,093
19 : 3,414,941	241 : 3,415,010	187 : 3,415,094
21– 7 : 3,415,612	47– 34 : 3,415,011	192 : 3,415,095
56 : 3,415,613	37 : 3,415,012	196 : 3,415,096
60.5 : 3,415,614	3,415,013	248 : 3,415,097
23– 3 : 3,415,615	48–196 : 3,415,633	267 : 3,415,098
22 : 3,415,616	213 : 3,415,634	290 : 3,415,099
85 : 3,415,617	49–120 : 3,415,014	317 : 3,415,100
102 : 3,415,618	220 : 3,415,015	333 : 3,415,101
107 : 3,415,619	227 : 3,415,016	389 : 3,415,103
121 : 3,415,620	51–135 : 3,415,017	391 : 3,415,102
149 : 3,415,621	293 : 3,415,635	400 : 3,415,104
154 : 3,415,622	52– 28 : 3,415,018	402 : 3,415,105
165 : 3,415,623	94 : 3,415,019	408 : 3,415,106
3,415,624	96 : 3,415,020	466 : 3,415,107
204 : 3,415,625	115 : 3,415,021	73– 23 : 3,415,108
232 : 3,415,626	169 : 3,415,022	64.4 : 3,415,109
253 : 3,415,627	213 : 3,415,023	67.8 : 3,415,110
277 : 3,415,628	220 : 3,415,024	3,415,111
285 : 3,415,629	222 : 3,415,025	104 : 3,415,112
358 : 3,415,630	262 : 3,415,026	117 : 3,415,113
24– 69 : 3,414,942	263 : 3,415,027	.2 : 3,415,114
74 : 3,414,943	281 : 3,415,028	121 : 3,415,115
81 : 3,414,944	419 : 3,415,029	141 : 3,415,116
90.5 : 3,414,945	493 : 3,415,030	161 : 3,415,117
158 : 3,414,946	690 : 3,415,031	199 : 3,415,118
196 : 3,414,947	53– 22 : 3,415,032	208 : 3,415,119
205.13: 3,414,948	32 : 3,415,033	212 : 3,415,120
208 : 3,414,949	128 : 3,415,034	264 : 3,415,121
280 : 3,414,950	131 : 3,415,035	356 : 3,415,122
25– 30 : 3,414,951	184 : 3,415,036	395 : 3,415,123
3,414,952	308 : 3,415,037	425.4 : 3,415,124
26– 35 : 3,414,953	55– 16 : 3,415,038	.6 : 3,415,125
67 : 3,414,954	51 : 3,415,039	74– 5.47: 3,415,126
28– 19 : 3,414,955	283 : 3,415,040	10.33: 3,415,129
59 : 3,414,956	342 : 3,415,041	.45: 3,415,130
74 : 3,414,957	348 : 3,415,042	.6 : 3,415,127
29–195 : 3,415,631	56– 25.4 : 3,415,043	.8 : 3,415,128
200 : 3,414,958	119 : 3,415,044	31 : 3,415,131
203 : 3,414,959	153 : 3,415,045	42 : 3,415,132
3,414,960	235 : 3,415,046	53 : 3,415,133
237 : 3,414,961	295 : 3,415,047	117 : 3,415,134
428 : 3,414,962	57– 34 : 3,415,048	229 : 3,415,135
470.3 : 3,414,963	58.49: 3,415,049	249 : 3,415,136
473.1 : 3,414,964	88 : 3,415,050	395 : 3,415,137
509 : 3,414,965	140 : 3,415,051	409 : 3,415,138
528 : 3,414,966	144 : 3,415,052	492 : 3,415,139
568 : 3,414,967	60– 14 : 3,415,053	3,415,140
577 : 3,414,968	24 : 3,415,054	527 : 3,415,141

74–568 : 3,415,142	105–199 : 3,415,203	137–132 : 3,415,267
640 : 3,415,143	282 : 3,415,204	209 : 3,415,268
3,415,144	366 : 3,415,205	219 : 3,415,269
813 : 3,415,145	369 : RE.26,500	344 : 3,415,270
75– .5 : 3,415,639	106– 1 : 3,415,666	512 : 3,415,271
3,415,640	58 : 3,415,667	516.13: 3,415,272
130 : 3,415,642	146 : 3,415,668	522 : 3,415,273
170 : 3,415,643	107– 14 : 3,415,206	551 : 3,415,274
171 : 3,415,641	57 : 3,415,207	556 : 3,415,275
77– 62 : 3,415,146	108– 94 : 3,415,208	563 : 3,415,276
83–171 : 3,415,147	112– 79 : 3,415,209	593 : 3,415,277
302 : 3,415,148	114 : 3,415,210	607 : 3,415,278
311 : 3,415,149	114– 16 : 3,415,211	625.17: 3,415,279
319 : 3,415,150	45 : 3,415,212	3,415,280
84– 1.26: 3,415,941	56 : 3,415,213	.4 : 3,415,281
186 : 3,415,151	72 : 3,415,214	.48: 3,415,282
478 : 3,415,152	90 : 3,415,215	.62: 3,415,283
85– 5 : 3,415,153	115– 35 : 3,415,216	.66: 3,415,284
9 : 3,415,154	116–115 : 3,415,217	138– 94.3 : 3,415,285
80 : 3,415,155	124.4 : 3,415,218	128 : 3,415,286
89– 1.806 3,415,156	139 : 3,415,219	141 : 3,415,287
41 : 3,415,157	117– 5.1 : 3,415,669	3,415,288
90– 13.1 : 3,415,158	10 : 3,415,670	139–157 : 3,415,289
91– 5 : 3,415,159	64 : 3,415,671	159 : 3,415,290
6 : 3,415,160	71 : 3,415,672	183 : 3,415,291
19 : 3,415,161	72 : 3,415,673	140– 92.1 : 3,415,292
189 : 3,415,162	3,415,674	93 : 3,415,293
363 : 3,415,163	102 : 3,415,675	141– 1 : 3,415,294
412 : 3,415,164	107.2 : 3,415,676	46 : 3,415,295
425 : 3,415,165	124 : 3,415,677	144– 34 : 3,415,296
426 : 3,415,166	200 : 3,415,678	176 : 3,415,297
92– 26 : 3,415,167	212 : 3,415,679	146– 3 : 3,415,298
30 : 3,415,168	3,415,680	148– 6.11: 3,415,691
59 : RE.26,503	217 : 3,415,681	.14: 3,415,692
85 : 3,415,169	218 : 3,415,682	9 : 3,415,693
246 : 3,415,170	230 : 3,415,683	13 : 3,415,694
93– 82 : 3,415,171	118– 58 : 3,415,220	101 : 3,415,695
94– 3 : 3,415,172	243 : 3,415,221	110 : 3,415,696
45 : 3,415,173	636 : 3,415,222	149–109 : 3,415,697
50 : 3,415,174	637 : 3,415,223	150– 8 : 3,415,299
95– 64 : 3,415,175	3,415,224	40 : 3,415,300
94 : 3,415,176	119– 1 : 3,415,225	151– 23 : 3,415,301
100 : 3,415,177	18 : 3,415,226	69 : 3,415,302
96– 3 : 3,415,644	27 : 3,415,227	156– 1 : 3,415,698
3,415,645	51.11: 3,415,228	13 : 3,415,699
3,415,646	80 : 3,415,229	164 : 3,415,700
29 : 3,415,647	122–379 : 3,415,230	244 : 3,415,701
36 : 3,415,648	3,415,231	276 : 3,415,702
94 : 3,415,649	448 : 3,415,232	304 : 3,415,703
3,415,650	123–119 : 3,415,233	515 : 3,415,704
95 : 3,415,651	148 : 3,415,234	540 : 3,415,705
100 : 3,415,652	149 : 3,415,235	3,415,706
114 : 3,415,653	187.5 : 3,415,236	557 : 3,415,707
98– 33 : 3,415,178	192 : 3,415,237	160–229 : 3,415,303
115 : 3,415,179	195 : 3,415,238	235 : 3,415,304
3,415,180	124– 20 : 3,415,239	161– 43 : 3,415,708
99– 31 : 3,415,654	23 : 3,415,240	44 : 3,415,709
54 : 3,415,655	24 : 3,415,241	55 : 3,415,710
77.1 : 3,415,656	125– 13 : 3,415,242	68 : 3,415,711
96 : 3,415,657	128– 90 : 3,415,243	141 : 3,415,713
163 : 3,415,658	133 : 3,415,244	161 : 3,415,714
3,415,659	147 : 3,415,245	183 : 3,415,712
3,415,660	152 : 3,415,246	190 : 3,415,715
171 : 3,415,661	204 : 3,415,247	164– 57 : 3,415,305
3,415,662	245 : 3,415,248	83 : 3,415,306
174 : 3,415,663	271 : 3,415,249	114 : 3,415,307
192 : 3,415,664	305 : 3,415,250	165– 2 : 3,415,308
199 : 3,415,665	3,415,251	26 : 3,415,309
406 : 3,415,181	131– 10.7 : 3,415,252	27 : 3,415,310
101– 68 : 3,415,182	140 : 3,415,253	33 : 3,415,311
3,415,183	132– 33 : 3,415,254	48 : 3,415,312
93 : 3,415,184	39 : 3,415,255	60 : 3,415,313
211 : 3,415,185	133– 2 : 3,415,256	122 : 3,415,314
463 : 3,415,187	134– 15 : 3,415,684	148 : 3,415,315
468 : 3,415,186	98 : 3,415,257	164 : 3,415,316
102– 24 : 3,415,188	112 : 3,415,258	166– .6 : 3,415,317
28 : 3,415,189	180 : 3,415,259	29 : 3,415,318
70.2 : 3,415,190	135– 1 : 3,415,260	33 : 3,415,319
78 : 3,415,191	136– 83 : 3,415,685	3,415,320
86.5 : 3,415,192	86 : 3,415,686	35 : 3,415,321
92.4 : 3,415,193	100 : 3,415,687	217 : 3,415,322
103– 41 : 3,415,194	3,415,688	169– 1 : 3,415,323
118 : 3,415,195	120 : 3,415,689	170–160.22: 3,415,324
125 : 3,415,196	178 : 3,415,690	172– 7 : 3,415,325
136 : 3,415,197	137– 2 : 3,415,261	269 : 3,415,326
150 : 3,415,198	81.5 : 3,415,262	793 : 3,415,327
248 : 3,415,199	3,415,263	173–105 : 3,415,328
104–172 : 3,415,200	92 : 3,415,264	174– 51 : 3,415,942
178 : 3,415,201	117 : 3,415,265	52 : 3,415,943
242 : 3,415,202	3,415,266	175– 19 : 3,415,329

175– 56 : 3,415,330
65 : 3,415,331
410 : 3,415,332
177–210 : 3,415,333
178– 3 : 3,415,944
5.4 : 3,415,945
6.8 : 3,415,946
7.1 : 3,415,950
.88: 3,415,951
69 : 3,415,947
.5 : 3,415,948
3,415,949
179– 15 : 3,415,952
17 : 3,415,953
18 : 3,415,954
3,415,955
100.2 : 3,415,956
180– 66 : 3,415,334
79 : 3,415,335
181– 48 : 3,415,336
51 : 3,415,337
59 : 3,415,338
182– 2 : 3,415,339
7 : 3,415,340
198 : 3,415,341
187– 8.41: 3,415,342
19 : 3,415,343
29 : 3,415,344
192– 3.33: 3,415,345
21.5 : 3,415,346
84 : 3,415,347
194– 4 : 3,415,348
195– 28 : Re.26,502
51 : 3,415,716
100 : 3,415,717
103.5 : 3,415,718
197–157 : 3,415,349
198– 33 : 3,415,350
3,415,351
38 : 3,415,352
156 : 3,415,353
173 : 3,415,354
209 : 3,415,355
215 : 3,415,356
200– 8 : 3,415,957
61.08: 3,415,959
.49: 3,415,960
.64: 3,415,961
67 : 3,415,962
84 : 3,415,958
144 : 3,415,963
146 : 3,415,964
152 : 3,415,965
153 : 3,415,966
158 : 3,415,967
202– 83 : 3,415,719
181 : 3,415,720
187 : 3,415,721
204– 15 : 3,415,722
3,415,723
67 : 3,415,724
79 : 3,415,725
96 : 3,415,726
128 : 3,415,727
159.13: 3,415,728
163 : 3,415,729
195 : 3,415,730
3,415,731
237 : 3,415,732
279 : 3,415,733
284 : 3,415,734
302 : 3,415,735
206– 1 : 3,415,357
46 : 3,415,358
3,415,359
3,415,364
47 : 3,415,360
3,415,361
3,415,362
56 : 3,415,363
62 : 3,415,365
65 : 3,415,366
3,415,367
208–111 : 3,415,736
139 : 3,415,737
187 : 3,415,738
323 : 3,415,739
3,415,740
3,415,741
3,415,742
330 : 3,415,743
209– 73 : 3,415,368
88 : 3,415,369
111.7 : 3,415,370
114 : 3,415,371
124 : 3,415,372
137 : 3,415,373
211 : 3,415,374
3,415,375
236 : 3,415,376
210– 22 : 3,415,744
54 : 3,415,745
59 : 3,415,746
3,415,747
96 : 3,415,377
152 : 3,415,378

210–195 : 3,415,379
202 : 3,415,380
3,415,381
282 : 3,415,382
377 : 3,415,383
484 : 3,415,384
211– 1.5 : 3,415,385
118 : 3,415,386
119.15: 3,415,387
214– 6 : 3,415,389
8.5 : 3,415,388
16.4 : 3,415,390
3,415,391
23 : 3,415,392
29 : 3,415,393
75 : 3,415,394
3,415,395
83.3 : 3,415,396
86 : 3,415,397
89 : 3,415,398
390 : 3,415,399
505 : 3,415,400
506 : 3,415,401
215– 1 : 3,415,402
42 : 3,415,403
46 : 3,415,404
48 : 3,415,405
217– 65 : 3,415,406
219– 10.65: 3,415,968
69 : 3,415,969
70 : 3,415,970
76 : 3,415,971
78 : 3,415,972
91 : 3,415,973
95 : 3,415,974
125 : 3,415,975
146 : 3,415,976
149 : 3,415,977
415 : 3,415,978
220– 4 : 3,415,407
15 : 3,415,408
40 : 3,415,409
44 : 3,415,410
54 : 3,415,411
3,415,412
67 : 3,415,413
91 : 3,415,414
3,415,415
221–221 : 3,415,416
222– 55 : 3,415,417
57 : 3,415,418
76 : 3,415,419
79 : 3,415,420
166 : 3,415,421
193 : 3,415,422
244 : 3,415,423
311 : 3,415,424
386.5 : 3,415,425
402.11: 3,415,426
509 : 3,415,427
223– 1 : 3,415,428
46 : 3,415,429
73 : 3,415,430
75 : 3,415,431
96 : 3,415,432
225– 96.5 : 3,415,433
226– 25 : 3,415,434
102 : 3,415,435
167 : 3,415,436
187 : 3,415,437
227– 10 : 3,415,438
229– 17 : 3,415,439
55 : 3,415,440
230– 22 : 3,415,441
54 : 3,415,442
125 : 3,415,443
145 : 3,415,444
207 : 3,415,445
233– 20 : 3,415,446
235– 60 : 3,415,447
150.2 : 3,415,979
.271 3,415,980
153 : 3,415,981
184 : 3,415,982
236– 15 : 3,415,448
239– 85 : 3,415,449
3,415,450
191 : 3,415,451
257 : 3,415,452
465 : 3,415,453
562 : 3,415,454
658 : 3,415,455
240– 8.25: 3,415,983
241– 21 : 3,415,456
92 : 3,415,457
242– 71.8 : 3,415,458
79 : 3,415,459
84 : 3,415,460
.8 : 3,415,461
107.4 : 3,415,462
131 : 3,415,463
244– 3.11: 3,415,464
.14: 3,415,465
.21: 3,415,466
.29: 3,415,467
13 : 3,415,468

244– 48 : 3,415,469
248– 5 : 3,415,470
14 : 3,415,471
27 : 3,415,472
59 : 3,415,473
62 : 3,415,474
158 : 3,415,475
166 : 3,415,476
225 : 3,415,477
346 : 3,415,478
358 : 3,415,479
361 : 3,415,480
486 : 3,415,481
249–145 : 3,415,482
201 : 3,415,483
216 : 3,415,484
250– 43.5 : 3,415,984
49.5 : 3,415,985
3,415,986
51.5 : 3,415,987
66 : 3,415,988
71.5 : 3,415,989
3,415,990
83 : 3,415,991
3,415,992
3,415,993
.3 : 3,415,994
199 : 3,415,995
217 : 3,415,996
218 : 3,415,997
233 : 3,415,998
251– 5 : 3,415,485
63.6 : 3,415,486
137 : 3,415,487
315 : 3,415,488
329 : 3,415,489
252– 42.7 : 3,415,749
51.5 : 3,415,750
62.59: 3,415,751
79.4 : 3,415,748
96 : 3,415,752
121 : 3,415,753
147 : 3,415,754
171 : 3,415,755
301.4 : 3,415,756
3,415,757
316 : 3,415,758
455 : 3,415,759
470 : 3,415,760
254– 45 : 3,415,490
256– 39 : 3,415,491
259– 3 : 3,415,492
7 : 3,415,493
8 : 3,415,494
75 : 3,415,495
85 : 3,415,496
118 : 3,415,497
165 : 3,415,498
171 : 3,415,499
260– 2 : 3,415,761
3,415,762
.5 : 3,415,763
3,415,764
17.3 : 3,415,765
22 : 3,415,766
27 : 3,415,767
29.2 : 3,415,768
.8 : 3,415,769
3,415,770
33.4 : 3,415,771
.6 : 3,415,772
38 : 3,415,773
3,415,774
41.5 : 3,415,775
45.8 : 3,415,776
46.5 : 3,415,777
3,415,778
47 : 3,415,779
3,415,780
3,415,781
3,415,782
67 : 3,415,783
3,415,784
3,415,785
3,415,786
75 : 3,415,787
3,415,788
77.5 : 3,415,789
3,415,790
78 : 3,415,791
3,415,792
3,415,793
.5 : 3,415,794
79.3 : 3,415,795
86.1 : 3,415,796
92.8 : 3,415,797
93.3 : 3,415,798
.7 : 3,415,799
3,415,800
3,415,801
94.3 : 3,415,802
112 : 3,415,804
.5 : 3,415,803
3,415,805
157 : 3,415,806
158 : 3,415,807

260–158 : 3,415,808
3,415,809
205 : 3,415,810
210 : 3,415,811
234 : 3,415,812
236.5 : 3,415,813
239.3 : 3,415,814
3,415,815
.5 : 3,415,816
3,415,817
.55: 3,415,818
3,415,819
3,415,820
240 : 3,415,821
248 : 3,415,822
3,415,823
3,415,824
249 : 3,415,825
.6 : 3,415,826
.8 : 3,415,827
250 : 3,415,828
286 : 3,415,829
287 : 3,415,830
288 : 3,415,831
294.8 : 3,415,832
295 : 3,415,833
.5 : 3,415,834
3,415,835
3,415,836
297 : 3,415,837
306.8 : 3,415,838
309.2 : 3,415,839
310 : 3,415,840
3,415,841
326.1 : 3,415,842
3,415,843
340.5 : 3,415,844
3,415,845
.7 : 3,415,846
3,415,847
343 : 3,415,848
396 : 3,415,849
3,415,850
397.2 : 3,415,852
.4 : 3,415,853
.45: 3,415,851
3,415,855
.5 : 3,415,854
413 : 3,415,856
429.7 : 3,415,857
431 : 3,415,858
439 : 3,415,859
446 : 3,415,860
448 : 3,415,861
3,415,862
.2 : 3,415,863
3,415,864
453 : 3,415,865
465 : 3,415,866
.1 : 3,415,867
466 : 3,415,868
477 : 3,415,869
486 : 3,415,870
497 : 3,415,871
498 : 3,415,872
501.18: 3,415,873
505 : 3,415,874
511 : 3,415,875
515 : 3,415,876
530 : 3,415,877
534 : 3,415,878
558 : 3,415,879
3,415,880
563 : 3,415,881
566 : 3,415,882
592 : 3,415,883
599 : 3,415,884
603 : 3,415,885
3,415,886
607 : 3,415,887
608 : 3,415,888
609 : 3,415,889
611 : 3,415,890
.5 : 3,415,891
617 : 3,415,892
631.5 : 3,415,893
633 : 3,415,894
648 : 3,415,895
668 : 3,415,896
677 : 3,415,897
683.62: 3,415,899
.9 : 3,415,898
827 : 3,415,900
830 : 3,415,901
849 : 3,415,902
857 : 3,415,903
897 : 3,415,904
924 : 3,415,905
937 : 3,415,906
967 : 3,415,907
971 : 3,415,908
979 : 3,415,909
261– 29 : 3,415,500
89 : 3,415,501
112 : 3,415,502
263– 8 : 3,415,503

263– 29 : 3,415,504
36 : 3,415,505
47 : 3,415,506
53 : 3,415,910
264– .5 : 3,415,911
37 : 3,415,912
48 : 3,415,913
86 : 3,415,914
94 : 3,415,915
97 : 3,415,916
142 : 3,415,917
167 : 3,415,918
3,415,919
171 : 3,415,920
176 : 3,415,921
3,415,922
221 : 3,415,923
229 : 3,415,924
331 : 3,415,925
270– 61 : 3,415,507
271– 9 : 3,415,508
45 : 3,415,509
61 : 3,415,510
80 : 3,415,511
272– 15 : 3,415,512
3,415,513
57 : 3,415,514
66 : 3,415,516
75 : 3,415,515
273– 31 : 3,415,517
32 : 3,415,518
102 : 3,415,519
105.3 : 3,415,520
124 : 3,415,521
126 : 3,415,522
186 : 3,415,523
189 : 3,415,524
274– 4 : 3,415,525
9 : 3,415,526
277– 62 : 3,415,527
280– 11.12: 3,415,528
.13: 3,415,529
.35: 3,415,530
30 : 3,415,531
34 : 3,415,532
43 : 3,415,533
47.26: 3,415,534
124 : 3,415,535
150 : 3,415,536
3,415,537
3,415,538
203 : 3,415,539
221 : 3,415,540
413 : 3,415,541
460 : 3,415,542
475 : Re.26,504
285– 24 : 3,415,543
55 : 3,415,544
149 : 3,415,545
173 : 3,415,546
337 : 3,415,547
287– 20 : 3,415,548
3,415,549
53 : 3,415,550
90 : 3,415,551
117 : 3,415,552
189.36: 3,415,553
3,415,554
3,415,555
.365 3,415,556
289– 1.5 : 3,415,557
3,415,558
290– 38 : 3,415,999
292–216 : 3,415,559
252 : 3,415,560
273 : 3,415,562
341.19: 3,415,561
294– 25 : 3,415,563
103 : 3,415,564
3,415,565
296– 1 : 3,415,566
3 : 3,415,567
31 : 3,415,568
97 : 3,415,569
297–160 : 3,415,570
188 : 3,415,571
192 : 3,415,572
299– 4 : 3,415,573
31 : 3,415,574
301– 5 : 3,415,575
303– 7 : 3,415,576
21 : 3,415,577
3,415,578
22 : 3,415,579
307– 11 : 3,416,000
38 : 3,416,001
202 : 3,416,002
207 : 3,416,003
235 : 3,416,004
237 : 3,416,005
238 : 3,416,006
252 : 3,416,007
279 : 3,416,008
299 : 3,416,009
309 : 3,416,010
308– 15 : 3,415,580

308– 36.3 : 3,415,581
310– 4 : 3,416,011
8.5 : 3,416,012
11 : 3,416,013
41 : 3,416,014
49 : 3,416,015
93 : 3,416,016
164 : 3,416,017
312– 1 : 3,415,582
223 : 3,415,583
257 : 3,415,584
261 : 3,415,585
312 : 3,415,586
313– 30 : 3,416,018
109 : 3,416,019
.5 : 3,416,020
161 : 3,416,021
178 : 3,416,022
225 : 3,416,023
273 : 3,416,024
315– 27 : 3,416,025
31 : 3,416,026
36 : 3,416,027
50 : 3,416,028
72 : 3,416,029
89 : 3,416,030
119 : 3,416,031
149 : 3,416,032
317– 2 : 3,416,033
12 : 3,416,034
22 : 3,416,035
101 : 3,416,036
123 : 3,416,037
132 : 3,416,038
3,416,039
147 : 3,416,040
148.5 : 3,416,041
234 : 3,416,042
3,416,043
3,416,044
3,416,045
3,416,046
3,416,047
3,416,048
235 : 3,416,049
255 : 3,416,050
318– 6 : 3,416,051
18 : 3,416,052
103 : 3,416,053
138 : 3,416,054
3,416,055
162 : 3,416,056
227 : 3,416,057
310 : 3,416,058
348 : 3,416,059
473 : 3,416,060
321– 5 : 3,416,061
16 : 3,416,062
3,416,063
49 : 3,416,064
61 : 3,416,065
323– 16 : 3,416,066
17 : 3,416,067
75 : 3,416,068
324– 24 : 3,416,069
33 : 3,416,070
40 : 3,416,071
43 : 3,416,072
45 : 3,416,073
51 : 3,416,074
57 : 3,416,076
58 : 3,416,077
64 : 3,416,078
68 : 3,416,079
77 : 3,416,080
3,416,081
79 : 3,416,082
83 : 3,416,083
98 : 3,416,084
154 : 3,416,085
157 : 3,416,075
325–436 : 3,416,086
328–151 : 3,416,087
330– 3 : 3,416,088
4.3 : 3,416,089
10 : 3,416,090
15 : 3,416,091
19 : 3,416,092
23 : 3,416,093
28 : 3,416,094
56 : 3,416,095
331– 2 : 3,416,096
94.5 : 3,416,097
107 : 3,416,098
3,416,099
108 : 3,416,100
333– 9 : 3,416,101
10 : 3,416,102
20 : 3,416,103
72 : 3,416,104
80 : 3,416,105
98 : 3,416,106
335– 11 : 3,416,107
37 : 3,416,108
59 : 3,416,109
336– 57 : 3,416,110

336– 60 : 3,416,111
120 : Re.26,501
337– 40 : 3,416,112
74 : 3,416,113
293 : 3,416,114
343 : 3,416,115
347 : 3,416,116
358 : 3,416,117
382 : 3,416,118
338–174 : 3,416,119
183 : 3,416,120
339– 8 : 3,416,121
17 : 3,416,122
37 : 3,416,123

339–117 : 3,416,124
177 : 3,416,125
275 : 3,416,126
340– 3 : 3,416,127
12 : 3,416,128
32 : 3,416,129
37 : 3,416,130
59 : 3,416,131
146.1 : 3,416,132
154 : 3,416,133
3,416,134
156 : 3,416,135
172 : 3,416,136

340–172 : 3,416,137
.5 : 3,416,138
3,416,139
3,416,140
3,416,141
173 : 3,416,142
3,416,143
3,416,144
3,416,145
.1 : 3,416,146
174 : 3,416,147
.1 : 3,416,148
3,416,149

340–174.1 : 3,416,150
347 : 3,416,151
3,416,152
340– 75 : 3,416,153
137 : 3,416,154
140 : 3,416,155
350– 3.5 : 3,415,587
96 : 3,415,588
156 : 3,415,589
158 : 3,415,590
160 : 3,415,591
184 : 3,415,592
285 : 3,415,593

351– 30 : 3,415,594
44 : 3,415,595
131 : 3,415,596
160 : 3,415,597
352– 63 : 3,415,598
78 : 3,415,599
87 : 3,415,600
356–225 : 3,415,601
256 : 3,415,602
401–101 : 3,415,603
122 : 3,415,604
424– 89 : 3,415,926
180 : 3,415,927

424–195 : 3,415,928
229 : 3,415,929
251 : 3,415,930
253 : 3,415,931
258 : 3,415,932
273 : 3,415,933
274 : 3,415,934
288 : 3,415,935
319 : 3,415,936
330 : 3,415,937
351 : 3,415,938
357 : 3,415,939
431– 93 : 3,415,605

Classification of Designs

D 9– 97 : 212,871
187 : 212,872
258 : 212,873
D13– 1 : 212,874
D14– 3 : 212,875
212,876
6 : 212,877
D15– 1 : 212,878
212,879
8 : 212,880
11 : 212,881

D16– 2 : 212,882
D22– 19 : 212,883
D25– 1 : 212,884
D26– 5 : 212,885
D29– 20 : 212,886
D33– 3 : 212,887
D34– 3 : 212,888
5 : 212,889
212,890
212,891

D34– 15 : 212,892
D35– 1 : 212,893
D36– 2 : 212,894
8 : 212,895
D45– 17 : 212,896
D48– 16 : 212,897
27 : 212,898
31 : 212,899
212,900
D49– 12 : 212,901

D49– 12 : 212,902
212,903
212,904
D50– 6 : 212,905
D52– 6 : 212,906
10 : 212,907
D54– 12 : 212,908
13 : 212,909
14 : 212,910
212,911

D56– 4 : 212,912
212,913
212,914
D61– 1 : 212,915
212,916
D64– 11 : 212,917
D71– 1 : 212,918
D74– 17 : 212,919
D80– 9 : 212,920
D83– 8 : 212,921

D87– 3 : 212,922
D92– .26 : 212,923
212,924
212,925
212,926
212,927
212,928
D95– 2 : 212,929
212,930
D96– 12 : 212,931

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,414,960
3,415,032
3,415,069
3,415,122
3,415,126
3,415,156
3,415,185
3,415,867
3,415,878
4 : 3,415,534
3,415,598
3,416,046
3,416,078
3,416,092
5 : 3,415,211
3,415,570
6 : 3,414,940
3,414,951
3,414,952
3,414,965
3,414,976
3,415,002
3,415,005
3,415,006
3,415,013
3,415,018
3,415,026
3,415,038
3,415,046
3,415,062
3,415,072
3,415,075
3,415,078
3,415,087
3,415,096
3,415,112
3,415,113
3,415,116
3,415,118
3,415,137
3,415,142
3,415,144
3,415,169
3,415,190
3,415,216
3,415,221
3,415,233
3,415,244
3,415,245
3,415,246
6 : 3,415,259
3,415,268
3,415,270
3,415,273
3,415,279
3,415,280
3,415,287
3,415,288
3,415,299
3,415,301
3,415,302
3,415,324
3,415,350
3,415,355
3,415,365
3,415,370
3,415,399
3,415,408
3,415,409
3,415,418
3,415,435
3,415,453
3,415,454
3,415,458
3,415,467
3,415,474
3,415,521
3,415,524
3,415,539
3,415,552
3,415,560
3,415,565
3,415,567
3,415,586
3,415,587
3,415,603
3,415,615
3,415,621
3,415,662
3,415,675
3,415,734
3,415,737
3,415,759
3,415,820
3,415,832
3,415,863
3,415,871
3,415,909
3,415,914
3,415,924
6 : 3,415,941
3,415,946
3,415,979
3,416,004
3,416,017
3,416,020
3,416,027
3,416,033
3,416,036
3,416,043
3,416,054
3,416,057
3,416,065
3,416,068
3,416,070
3,416,073
3,416,077
3,416,087
3,416,090
3,416,098
3,416,099
3,416,100
3,416,101
3,416,103
3,416,121
3,416,127
3,416,145
3,416,146
3,416,149
3,416,150
8 : Re.26,502
3,415,020
3,415,025
3,415,490
3,415,743
3,415,977
3,416,001
3,416,052
9 : 3,414,939
3,414,946
3,414,949
3,414,963
3,414,995
3,415,051
3,415,110
3,415,117
3,415,119
3,415,162
3,415,204
3,415,223
9 : 3,415,232
3,415,275
3,415,316
3,415,321
3,415,348
3,415,419
3,415,438
3,415,443
3,415,466
3,415,601
3,415,604
3,415,656
3,415,661
3,415,692
3,415,705
3,415,706
3,415,717
3,415,776
3,415,813
3,415,833
3,416,014
3,416,076
3,416,089
3,416,097
3,416,130
10 : 3,415,640
3,415,761
3,415,782
3,415,800
3,415,913
3,415,921
11 : 3,415,556
3,415,726
3,415,960
3,415,992
3,416,106
12 : 3,414,998
3,415,001
3,415,073
3,415,100
3,415,152
3,415,213
3,415,281
3,415,286
3,415,296
3,415,436
3,415,495
3,415,566
3,415,667
3,415,721
12 : 3,415,769
3,415,798
3,415,893
3,415,918
3,416,050
3,416,074
13 : 3,415,033
3,415,354
3,415,434
3,415,703
16 : 3,414,925
17 : Re.26,501
Re.26,504
3,414,909
3,414,910
3,414,937
3,414,967
3,414,980
3,415,024
3,415,039
3,415,040
3,415,043
3,415,058
3,415,085
3,415,086
3,415,107
3,415,114
3,415,130
3,415,136
3,415,146
3,415,150
3,415,178
3,415,179
3,415,208
3,415,257
3,415,267
3,415,269
3,415,326
3,415,327
3,415,349
3,415,352
3,415,371
3,415,396
3,415,403
3,415,439
3,415,455
3,415,460
3,415,471
3,415,481
3,415,488
17 : 3,415,526
3,415,580
3,415,616
3,415,663
3,415,664
3,415,697
3,415,745
3,415,793
3,415,848
3,415,881
3,415,897
3,415,910
3,415,930
3,416,000
3,416,032
3,416,104
3,416,135
18 : 3,414,919
3,414,938
3,415,021
3,415,124
3,415,125
3,415,205
3,415,228
3,415,229
3,415,261
3,415,282
3,415,294
3,415,336
3,415,338
3,415,361
3,415,367
3,415,472
3,415,597
3,415,773
3,415,942
3,415,970
3,415,990
3,416,015
3,416,086
3,416,119
3,416,131
19 : 3,415,028
3,415,227
3,415,482
3,415,531
3,415,926
20 : 3,415,027
3,415,492
3,415,516
20 : 3,415,541
21 : 3,414,945
3,415,251
3,415,380
3,415,518
3,416,115
22 : 3,414,918
3,414,934
3,415,044
3,415,167
3,415,214
3,415,351
3,415,861
23 : 3,414,997
3,416,141
24 : 3,415,080
3,415,191
3,415,193
3,415,431
3,415,571
3,415,593
3,415,669
3,415,799
3,415,925
3,416,005
3,416,021
3,416,083
3,416,142
3,416,144
25 : 3,414,915
3,414,917
3,414,922
3,414,923
3,414,927
3,414,971
3,414,982
3,415,037
3,415,077
3,415,094
3,415,102
3,415,127
3,415,128
3,415,129
3,415,147
3,415,157
3,415,182
3,415,183
3,415,217
3,415,226
3,415,243
3,415,291
3,415,300
3,415,456
3,415,478
3,415,503
3,415,507
3,415,511
3,415,512
3,415,513
3,415,589
3,415,596
3,415,622
3,415,631
3,415,636
3,415,644
3,415,645
3,415,646
3,415,654
3,415,730
3,415,767
3,415,945
3,415,974
3,416,011
3,416,028
3,416,031
3,416,041
3,416,049
3,416,093
3,416,109
3,416,129
26 : Re.26,500
3,414,936
3,414,975
3,414,981
3,415,004
3,415,015
3,415,016
3,415,017
3,415,019
3,415,066
3,415,089
3,415,101
3,415,103
3,415,139
3,415,140
3,415,155
3,415,161
3,415,164
3,415,165
3,415,194
3,415,200
3,415,201
3,415,202
3,415,240
3,415,241
3,415,266
26 : 3,415,303
3,415,346
3,415,376
3,415,384
3,415,393
3,415,402
3,415,416
3,415,432
3,415,446
3,415,461
3,415,462
3,415,477
3,415,485
3,415,505
3,415,538
3,415,543
3,415,553
3,415,554
3,415,555
3,415,575
3,415,583
3,415,617
3,415,633
3,415,673
3,415,723
3,415,732
3,415,754
3,415,755
3,415,763
3,415,795
3,415,811
3,415,849
3,415,850
3,415,858
3,415,870
3,415,892
3,415,902
3,415,920
3,415,959
3,415,963
3,415,971
3,416,071
3,416,112
3,416,113
3,414,906
3,414,929
3,414,958
3,415,070
3,415,071
3,415,081
3,415,120
3,415,220
3,415,250
3,415,274
3,415,276
3,415,368
3,415,395
3,415,407
3,415,487
3,415,614
3,415,699
3,415,764
3,415,847
3,415,865
3,415,950
3,415,961
3,415,998
3,416,038
28 : 3,414,911
3,415,212
29 : 3,414,990
3,415,225
3,415,457
3,415,527
3,415,540
3,415,562
3,415,623
3,415,657
3,415,750
3,415,864
3,415,883
31 : 3,415,047
3,415,181
3,415,234
3,415,451
3,416,120
3,416,123
3,415,239
3,415,372
3,415,468
3,414,912
3,414,928
3,414,968
3,415,029
3,415,041
3,415,052
3,415,133
3,415,154
3,415,172
3,415,260
3,415,262
3,415,277
3,415,307
3,415,312
3,415,335
3,415,387
34 : 3,415,425
3,415,445
3,415,517
3,415,544
3,415,569
3,415,581
3,415,588
3,415,590
3,415,607
3,415,618
3,415,671
3,415,686
3,415,700
3,415,709
3,415,711
3,415,716
3,415,729
3,415,735
3,415,736
3,415,749
3,415,756
3,415,771
3,415,819
3,415,826
3,415,835
3,415,837
3,415,842
3,415,846
3,415,851
3,415,855
3,415,869
3,415,877
3,415,887
3,415,890
3,415,894
3,415,899
3,415,929
3,415,937
3,415,955
3,415,981
3,416,003
3,416,022
3,416,023
3,416,025
3,416,029
3,416,030
3,416,035
3,416,081
3,416,095
3,416,105
3,416,108
3,416,133
3,416,134
3,416,138
35 : 3,415,845
36 : Re.26,503
3,414,907
3,414,920
3,414,926
3,414,959
3,414,969
3,414,977
3,414,979
3,414,987
3,414,999
3,415,012
3,415,030
3,415,042
3,415,045
3,415,055
3,415,079
3,415,095
3,415,098
3,415,177
3,415,186
3,415,218
3,415,224
3,415,238
3,415,283
3,415,293
3,415,313
3,415,330
3,415,332
3,415,359
3,415,390
3,415,428
3,415,429
3,415,442
3,415,473
3,415,476
3,415,510
3,415,537
3,415,550
3,415,584
3,415,591
3,415,592
3,415,602
3,415,608
3,415,610
3,415,627
3,415,647
3,415,650
3,415,652
3,415,653
3,415,674
3,415,680
36 : 3,415,681
3,415,682
3,415,683
3,415,684
3,415,689
3,415,690
3,415,694
3,415,695
3,415,712
3,415,728
3,415,777
3,415,780
3,415,814
3,415,816
3,415,818
3,415,821
3,415,831
3,415,839
3,415,843
3,415,844
3,415,852
3,415,856
3,415,868
3,415,896
3,415,906
3,415,907
3,415,916
3,415,927
3,415,932
3,415,938
3,415,939
3,415,940
3,415,948
3,415,958
3,415,967
3,415,980
3,415,989
3,415,993
3,416,051
3,416,061
3,416,064
3,416,069
3,416,084
3,416,096
3,416,128
3,416,132
3,416,140
3,416,148
37 : 3,415,135
3,415,289
3,415,290
3,415,609
3,415,713
3,415,791
3,415,845
3,415,922
38 : 3,415,400
39 : 3,414,954
3,414,956
3,414,973
3,415,014
3,415,074
3,415,097
3,415,131
3,415,132
3,415,187
3,415,195
3,415,198
3,415,248
3,415,249
3,415,265
3,415,292
3,415,309
3,415,333
3,415,337
3,415,342
3,415,358
3,415,366
3,415,369
3,415,383
3,415,385
3,415,404
3,415,412
3,415,413
3,415,426
3,415,440
3,415,448
3,415,449
3,415,450
3,415,483
3,415,493
3,415,504
3,415,506
3,415,545
3,415,551
3,415,595
3,415,629
3,415,641
3,415,643
3,415,658
3,415,659
3,415,660
3,415,672
3,415,685
3,415,714
3,415,758
39 : 3,415,766
3,415,778
3,415,785
3,415,786
3,415,788
3,415,815
3,415,838
3,415,905
3,415,923
3,415,954
3,415,964
3,415,966
3,415,972
3,415,978
3,415,986
3,416,019
3,416,024
3,416,040
3,416,055
3,416,082
3,416,126
3,416,151
40 : 3,414,916
3,414,950
3,415,067
3,415,272
3,415,319
3,415,320
3,415,363
3,415,710
3,415,802
3,415,862
3,415,889
3,415,898
3,415,935
3,415,936
41 : 3,414,978
3,414,992
3,415,173
3,415,297
3,415,310
3,415,391
3,415,414
3,415,499
3,415,523
3,415,532
3,415,612
3,415,668
3,415,995
42 : 3,414,924
3,414,932
3,414,961
3,414,962
3,414,972
3,414,986
3,415,082
3,415,092
3,415,093
3,415,104
3,415,115
3,415,121
3,415,138
3,415,141
3,415,148
3,415,158
3,415,168
3,415,171
3,415,188
3,415,189
3,415,203
3,415,206
3,415,207
3,415,210
3,415,219
3,415,230
3,415,231
3,415,328
3,415,364
3,415,389
3,415,392
3,415,406
3,415,421
3,415,423
3,415,433
3,415,469
3,415,470
3,415,475
3,415,479
3,415,486
3,415,494
3,415,508
3,415,519
3,415,520
3,415,542
3,415,563
3,415,630
3,415,648
3,415,677
3,415,679
3,415,687
3,415,696
3,415,708
3,415,748
3,415,762
3,415,770
3,415,774
42 : 3,415,781
3,415,787
3,415,796
3,415,840
3,415,854
3,415,872
3,415,874
3,415,880
3,415,886
3,415,900
3,415,901
3,415,943
3,415,973
3,415,975
3,415,991
3,415,994
3,416,034
3,416,039
3,416,058
3,416,060
3,416,067
3,416,072
3,416,110
3,416,122
3,416,139
3,416,152
3,416,154
43 : 3,415,928
44 : 3,414,988
3,415,222
3,415,965
3,416,116
3,416,125
45 : 3,415,050
3,415,459
47 : 3,414,957
3,415,170
3,415,377
3,415,491
3,415,637
3,415,724
3,415,789
3,415,790
3,415,801
3,415,807
3,415,809
3,415,810
48 : 3,414,944
3,414,985
3,415,010
3,415,022
3,415,056
3,415,068
3,415,123
3,415,199
3,415,305
3,415,322
3,415,382
3,415,397
3,415,420
3,415,489
3,415,496
3,415,522
3,415,573
3,415,585
3,415,600
3,415,670
3,415,731
3,415,983
3,416,042
3,416,118
49 : 3,415,252
50 : 3,415,533
51 : 3,414,935
3,414,955
3,415,253
3,415,263
3,415,341
3,415,500
3,415,509
3,415,561
3,415,564
3,415,611
3,415,678
3,415,719
3,415,822
3,415,823
3,415,949
53 : 3,415,339
3,415,357
3,415,430
3,416,102
54 : 3,415,411
3,415,775
55 : 3,414,913
3,414,914
3,414,921
3,415,011
3,415,053
3,415,160
3,415,236
3,415,237
3,415,242
3,415,304
3,415,325
3,415,347

55 : 3,415,353	55 : 3,415,381	55 : 3,415,497	55 : 3,415,572	55 : 3,415,859	55 : 3,415,962
3,415,362	3,415,437	3,415,528	3,415,744	3,415,866	3,415,976
3,415,379	3,415,480	3,415,557	3,415,746	3,415,947	56 : 3,415,340

Design Patents

4 : 212,901	6 : 212,917	13 : 212,883	25 : 212,897	36 : 212,885	39 : 212,895
212,902	212,918	212,898	212,920	212,892	212,922
212,903	212,929	17 : 212,875	26 : 212,882	212,916	42 : 212,891
212,904	212,931	212,884	27 : 212,888	212,921	212,907
6 : 212,876	9 : 212,890	212,899	212,914	212,923	44 : 212,874
212,877	212,896	212,900	212,919	212,924	45 : 212,910
212,879	212,908	212,905	29 : 212,909	212,926	212,911
212,887	212,930	212,912	34 : 212,928	212,927	53 : 212,893
212,906	10 : 212,873	18 : 212,889	36 : 212,872	39 : 212,894	55 : 212,871
212,915	12 : 212,880				

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 10, 1968 Volume 857 Number 2

TRADEMARKS
NOTICES

Oral Hearings Under Trademark Rule 2.142(c)

Effective January 1, 1969, for a trial period of six months, new procedures will be initiated which will permit Trademark Examiners having full signatory authority to present an oral argument before the Trademark Trial and Appeal Board in ex parte appeals where the applicant has been granted an oral hearing.

After the attorney representing the appellant has made his presentation, the Examiner will be allowed fifteen minutes to reply as well as to present a statement clearly setting forth his position with respect to the issue involved. Appellant may utilize any allotted time not used in the initial presentation for rebuttal.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

Nov. 14, 1968.

Errata

In the OFFICIAL GAZETTE of November 12, 1968, at page TM 83, Registration No. 859,926 should be listed under Class 8 rather than Class 7; at page TM 90, Registration No. 860,290 should be listed under Class 52 rather than Class 51.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic syrup or beverage; **Reg. No. 47,189**, same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,755** (COKE), same, Nonalcoholic maltless beverages and the syrups for making such beverages, **filed** Sept. 23, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50011, *The Coca-Cola Company v. Funland Inc.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 137,701 (SIMONIZ), Simoniz Company, Paste for cleaning and polishing automobile bodies, furniture, and the like; **Reg. No. 561,771**, same, Hard paste wax-like material for providing a coating or film, particularly for protective and preservative purposes, and for use on automobiles, furniture, and the like; **Reg. No. 563,837**, same, Cleaning and polishing compounds, in both paste and liquid form, for any painted, lacquered, enameled, or porcelain surface, as on automobiles, furniture, and the like; a paste, wax-like, material for polishing floors and providing a preservative coating therefor; a paste and a liquid material for polishing any painted, lac-

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 16,348
Date of oldest new application ..... September 11, 1967
Date of oldest amended application (filing date) ..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	3-12-68	10- 6-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	2- 1-68	7-26-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	2-28-68	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-11-67	1-5 -65
Renewals (All Classes)	9-23-68	.....
Sec. 12(c) Publications (All Classes)	10- 4-68	.....

Applications filed during the month of October 1968—2,732

Registrations Issued ..... 323—No. 861,516 to No. 861,838
Renewals Issued 110

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

quered, enameled, or porcelain surface and providing a preservative coating therefor; a "rub-down" compound in paste form for dressing newly applied lacquers, enamels, and the like, and providing a preliminary polish thereto; and paste, wax-like, materials having various coloring incorporated therein for polishing furniture and other woodwork and for minimizing the effects of scratches and other mars thereon; **Reg. No. 563,836,** same, Chrome and metal cleaner in liquid form, and for a tar solvent in liquid form, **filed** July 24, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–636, *Simoniz Company* v. *White Beret Car Care, Inc.* Consent judgment, plaintiff is owner of Reg. Nos. 137,701, 561,771, 563,837 and 563,838 which are valid; defendant enjoined, Aug. 29, 1968.

Reg. No. 154,313 (LIQUID AND DESIGN), General Dynamics Corporation, Carbonic-acid gas; **Reg. No. 332,761,** same, The Liquid Carbonic Corporation, Solid carbon-dioxide; **Reg. No. 333,957,** same, Various syrups for food purposes; **Reg. No. 334,014,** same, Non-alcoholic maltless flavors for making soft drinks; **Reg. No. 761,538** (LIQUID AND DIAMOND DESIGN), General Dynamics Corporation, Industrial gases—namely, oxygen, nitrogen, acetylene, argon, helium, welding grade CO_2 hydrogen propane, deuterium, oxygen-argon combination, oxygen-carbon dioxide combination, helium-argon combination, and hydrogen-nitrogen combination; and industrial liquids—namely, oxygen, nitrogen, argon, nitrous oxide, deuterium oxide, and carbon dioxide; medical gases—namely, nitrous oxide, cyclopropane, ethylene, oxygen-carbon dioxide combination, oxygen-helium combination, and oxygen; and medical liquids—namely, oxygen and nitrous oxide, **filed** Aug. 19, 1968, D.C., Colo. (Denver), Doc. C–1037, *Liquid Carbonic Corporation* v. *Mile-Hi Service & Supply Co.*

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 332,761. (See Reg. No. 154,313.)

Reg. No. 333,957. (See Reg. No. 154,313.)

Reg. No. 334,014. (See Reg. No. 154,313.)

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 561,771. (See Reg. No. 137,701.)

Reg. No. 563,837. (See Reg. No. 137,701.)

Reg. No. 563,838. (See Reg. No. 137,701.)

Reg. No. 582,078 (DOLL FLY), Elmer Otis Thompson, Jr., doing business as Thompson's Fishing Tackle Co., Artificial lures, **filed** June 3, 1968, D.C., W.D. Mo. (Springfield), Doc. 2418, *Thompson Fishing Tackle Co., Inc.* v. *Blakemore Bug Co.* Plaintiff owner of Reg. No. 582,078; judgment and final judgment, perpetual injunction, Sept. 4, 1968.

Reg. No. 630,412 (TRADITION), General Time Corporation, Clocks, **filed** Aug. 20, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1548, *General Time Corporation* v. *Seeco, Inc. et al.*

Reg. No. 643,366. (See 2,670,293.)

Reg. No. 724,610 (COUNTRY KITCHEN), B. H. Johnson, Restaurant and catering services; **Reg. No. 742,443** (COUNTRY BOY), B. H. Johnson, doing business as Country Kitchen, Hamburger sandwiches; **Reg. No. 820,477** (COUNTRY KITCHEN AND DESIGN), Country Kitchen, Inc., Restaurant services, **filed** Aug. 30, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–644, *Country Kitchen, Inc. and Northwestern Franchised Restaurants, Inc.* v. *Mickey Mantle, Mickey Mantle's Country Kitchen, Inc.*

Reg. No. 742,443. (See Reg. No. 724,610.)

Reg. No. 761,538. (See Reg. No. 154,313.)

Reg. No. 775,150 (INSTANT PRINTING), Christopher J. Bravos, doing business as Globe Copy Company, Reproducing multiple copies of printed matter for others; **Reg. No. 837,673,** same, **filed** Aug. 29, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1603, *Christopher J. Bravos, doing business as Globe Copy Company* v. *Goodway, Inc.*

Reg. No. 820,477. (See Reg. No. 724,610.)

Reg. No. 837,673. (See Reg. No. 775,150.)

2,670,293, F. H. Stark, FOOD PRODUCT FLAVORING COMPOSITION AND METHOD OF PREPARATION THEREOF; **Reg. No. 643,366** (CHEESWEET), S. M. Stebbings, Candy containing cheese, **filed** July 18, 1968, D.C., W.D. Wis. (Madison), Doc. 68–C–122, *Stuart M. Stebbings* v. *Bob White Candy Company and Samuel A. Lonitello.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 242,417. Lewpage Corporation, Washington, N.C. Filed Apr. 1, 1966.

PAGE *house*

Class 46—Foods and Ingredients of Foods

For Coffee, Rolls, and Pastries (Int. Cl. 30).

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).

First use on or about Jan. 10, 1966.

SN 265,103. Recorded Sales Visual Presentations, Inc., d.b.a. RSVP Inc., Indianapolis, Ind. Filed Feb. 20, 1967.

RSVP

Class 101—Advertising and Business

For Advertising and Promotional Services Including Preparation, Presentation, and Consultation in Connection With Audio Visual Presentations (Int. Cl. 35).

Class 103—Construction and Repair

For Installation of Audio-Visual Systems (Int. Cl. 37).

First use July 8, 1966.

SN 272,137. Regie Nationale des Usines Renault, Billancourt (Seine), France. Filed May 23, 1967.

RN

Owner of French Reg. Nos. 448,961, dated Feb. 2, 1955 (Seine); Natl. Inst. No. 51,398; and 513,655, dated May 29, 1963 (Seine); Natl. Inst. No. 206,294.

Class 19—Vehicles

For Automobiles, Parts and Spare Parts Therefor (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Internal Combustion and Diesel Engines and Motors, Automotive Drive Trains Comprising Transmissions, Drive shafts, Differentials and Related Structures, and Agricultural Tractors, Harvester-Thresher Combines, Backhoes, Grain Drills, Harrows, Grain Bagging Attachments and Binders, and Parts Therefor (Int. Cl. 7).

SN 274,764. Pan Britannica Industries Limited, Waltham Cross, England. Filed June 26, 1967.

pbi

Class 6—Chemicals and Chemical Compositions

For Insecticides, Fungicides, and Preparation for Imparting a Shine to House Plants (Int. Cls. 1 and 5).

Class 10—Fertilizers

For Fertilizers and House Plant Builders (Int. Cl. 1).

First use Aug. 1, 1960; in commerce Feb. 21, 1966.

SN 277,626. Bundy Corporation, Detroit, Mich. Filed Aug. 7, 1967.

b

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Tubing, Straight and Shaped Tube Lengths With and Without Fittings Attached for Connecting Purposes (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Push Rods for International Combustion Engines, Push Rods and Connecting Rods for Pumps, and Pivotal Joint Members Comprising a Solid or Tubular Rod With a Ball Attached to the End (Int. Cl. 7).

First use Mar. 13, 1967.

SN 280,579. Fibre Formations, Inc., Philadelphia, Pa. Filed Sept. 18, 1967.

MARK ONE

Owner of Reg. No. 808,944.

Class 37—Paper and Stationery

For Disposable Products—Namely, Paper Towels (Int. Cl. 16).

First use Mar. 6, 1967.

Class 39—Clothing

For Disposable Products—Namely, Mortuary Gowns, Examination Gowns, and Examination Capes (Int. Cl. 25).

First use Nov. 10, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Disposable Products—Namely, Examination Drape Sheets and Bedding Draw Sheets (Int. Cl. 24).
First use Oct. 27, 1966.

SN 286,594. K. J. Quinn & Co., Inc., Malden, Mass. Filed Dec. 11, 1967.

CINCH

Owner of Reg. Nos. 345,079 and 762,143.

Class 18—Medicines and Pharmaceutical Preparations

For Individually Impregnated Packaged Pads for Treatment of Athlete's Foot (Int. Cl. 5).
First use Nov. 28, 1967.

Class 22—Games, Toys, and Sporting Goods

For Individually Packaged Pads Impregnated With Ski Wax (Int. Cl. 28).
First use Nov. 28, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

For Hair Curlers and Hair Rollers (Int. Cl. 26).
First use Nov. 28, 1967.

Class 51—Cosmetics and Toilet Preparations

For Individually Packaged Pads Impregnated With Either Nail Polish Removers, After Shave Lotions, Baby Oils, Anti-Perspirant Deodorants, Hair Curling Lotions, Hair Setting Lotions, Hair Grooming Preparations, or Sun Tan Lotions (Int. Cls. 3 and 5).
First use Aug. 12, 1966.

SN 287,331. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 21, 1967.

EXPERIENCE

Class 51—Cosmetics and Toilet Preparations

For Personal Deodorant, Hair Dressing, Cologne, After Shave Lotion, and Shaving Cream (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Oct. 26, 1967.

SN 298,391. Wyomissing Corporation, Reading, Pa. Filed May 17, 1968.

Dura-set

Owner of Reg. Nos. 836,792 and 836,798.

Class 40—Fancy Goods, Furnishings, and Notions

For Narrow Elastic Fabrics (Int. Cl. 26).
First use Apr. 25, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Wide Elastic Fabrics (Int. Cl. 24).
First use May 6, 1968.

SN 301,809. Maul Bros. Inc., Millville, N.J. Filed July 2, 1968.

MB

Class 100—Miscellaneous

For Supervising the Construction of Glass Container Factories, and Designing of Plant Layout and Machinery To Be Used Therein for Manufacture of Glass Containers (Int. Cl. 42).

Class 103—Construction and Repair

For Repair and Rebuilding of Machinery Used in the Manufacture of Glass Containers (Int. Cl. 37).
First use June 30, 1961.

SN 304,533. Linco Products Corporation, Chicago, Ill. Filed Aug. 7, 1968.

LINCUBE

Class 2—Receptacles

For Plastic Liquid Containers (Int. Cl. 20).

Class 6—Chemicals and Chemical Compositions

For Liquid Bleaching Agent—Namely, Sodium Hypochlorite (Int. Cl. 1).

First use July 23, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 265,435. Ramsey Seed, Inc., San Leandro, Calif. Filed Feb. 24, 1967.

CAL-KOTE

For Formulated Application of High Test, Specific Strains of Live Nitrogen-Fixing Bacteria Adhered With a Technical Grade of Gum Arabic Coated With Powdered Lime for Coating Seed and Sold Only as Applied to the Seed (Int. Cl. 31).
First use Sept. 29, 1966.

SN 265,436. Ramsey Seed, Inc., San Leandro, Calif. Filed Feb. 24, 1967.

NITRA-FIX

For Formulated Application of High Test, Specific Strains of Live Nitrogen-Fixing Bacteria Adhered With a Technical Grade of Gum Arabic Coated With Powdered Lime for Coating Seed and Sold Only as Applied to the Seed (Int. Cl. 31).
First use Sept. 29, 1966.

SN 276,962. Standard Packaging Corporation, Stamford, Conn. Filed July 27, 1967.

STAN-PAK

Owner of Reg. Nos. 595,308, 604,047, and others.
For Plastic Laminations and Extrusions in Sheet and Roll Form for General Use in Industrial Arts, and Heat Seal Tapes for Cigarette Packages and Other Heat Sealable Functions (Int. Cl. 17).
First use at least as early as September 1958; Sept. 17, 1953, as to "Stanpak."

SN 287,590. Societe de Carbone Lorraine, Paris, France. Filed Dec. 26, 1967.

PAPYEX

Priority claimed under Sec. 44(d) on French Reg. No. 727,479, dated July 7, 1967.
For Flexible Graphite Sheet Material for General Use in the Industrial Arts (Int. Cl. 1).

SN 288,822. Impact Plastics, Inc., Gastonia, N.C. Filed Jan. 15, 1968.

IMPAX

For High Molecular Weight Polyethylene in Sheet and Bar Stock Intended for the Fabrication of Finished Parts (Int. Cl. 17).
First use on or about Aug. 16, 1967.

SN 289,569. Beckwith-Arden Inc., Watertown, Mass. Filed Jan. 25, 1968.

BECKBOUNCE

Owner of Reg. Nos. 690,987, 837,711, and others.
For Sheet Material for the Box Toes and Counters of Shoes (Int. Cl. 17).
First use Jan. 12, 1968.

SN 289,580. Filmex Corporation, Mahanoy, Pa. Filed Jan. 25, 1968.

FILMEX

For Unfinished Polyethylene Film, Sold in Roll Form, for Various End Uses by Customers (Int. Cl. 17).
First use on or about Nov. 15, 1967.

SN 289,795. Fabriek Van Chemische Producten Vondelingenplaat N.V., Vondelingenplaat-Rotterdam, Netherlands. Filed Jan. 29, 1968.

VONDAFOL

Owner of Dutch Reg. No. 139,722, dated Dec. 16, 1960.
For Plastic Foils and Sheets (Int. Cl. 17).

SN 289,880. Cosden Oil & Chemical Company, Big Spring, Tex. Filed Jan. 30, 1968.

TUMBLENE

For Polystyrene Plastic (Int. Cl. 1).
First use at least as early as Nov. 3, 1967.

SN 289,983. The Fouke Company, Greenville, S.C., by change of name from Fouke Fur Company, Greenville, S.C. Filed Jan. 31, 1968.

THE SEALMARK OF FASHION

For Seal Skins (Int. Cl. 18).
First use Jan. 18, 1968.

SN 289,984. The Fouke Company, Greenville, S.C., by change of name from Fouke Fur Company, Greenville, S.C. Filed Jan. 31, 1968.

For Seal Skins (Int. Cl. 18).
First use Jan. 18, 1968.

SN 290,015. Products Research & Chemical Corporation, Burbank, Calif. Filed Jan. 31, 1968.

PERMAPOL

For Polymeric Raw Material for Use in Compounding Elastomeric Products (Int. Cl. 1).
First use Mar. 29, 1966.

SN 290,026. Seafield Amalgamated Rubber Company Limited, London, England. Filed Jan. 31, 1968.

SEACRUMB

Owner of British Reg. No. 902,973, dated Dec. 15, 1966.
For Crumb Rubber for Use in the Manufacture of Rubber Goods (Int. Cl. 17).

Class 2—Receptades

SN 268,742. Eleanor V. Kingsley, d.b.a. Jackson Company, Pomona, Calif. Filed Apr. 10, 1967.

LITTER LURE LINES

The word "Litter" is disclaimed apart from the mark as shown.
For Litter Receptacles (Int. Cl. 21).
First use Feb. 3, 1967.

SN 290,721. Container Corporation of America, Chicago, Ill. Filed Feb. 9, 1968.

COVERTOP

For Paperboard Cartons (Int. Cl. 16).
First use on or before June 1, 1967.

SN 292,084. Crown Zellerbach Corporation, San Francisco, Calif. Filed Feb. 28, 1968.

GAYLOK

Owner of Reg. Nos. 206,963, 768,560, and others.
For Paperboard Pads for Skin Packages (Int. Cl. 16).
First use Jan. 31, 1968.

SN 304,747. Aladdin Industries, Incorporated, Chicago, Ill. Filed Aug. 9, 1968.

VANGUARD

For Heat Insulated Receptacles—Namely, Vacuum Bottles Including an Inner Frangible Container and an Outer Protective Jacket, and Lunch Boxes and Kits Containing Vacuum Bottles (Int. Cl. 21).
First use on or about July 15, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 262,426. The Johnson Ideal Halter Co., Aurora, Ill. Filed Jan. 12, 1967.

JOHNSON

Owner of Reg. No. 194,278.
For Animal Halters (Int. Cl. 18).
First use prior to July 1921.

SN 292,957. D. Donald Plumb, d.b.a. The Plumb-Line Incomparable, Panorama City, Calif. Filed Mar. 11, 1968.

PLUMB-LINE

For Portable Pet Cages (Int. Cl. 21).
First use May 30, 1960.

SN 299,079. Jack C. Abert, d.b.a. Mechanical Products Company, Phoenix, Ariz. Filed May 27, 1968.

FRONTIER

For Pack Frames (Int. Cl. 18).
First use June 27, 1965.

SN 300,828. Lark Luggage Corp., New York, N.Y. Filed June 19, 1968.

PERMAMATIC

For Luggage (Int. Cl. 18).
First use June 5, 1968.

SN 305,023. Ethical Products, Inc., Newark, N.J. Filed Aug. 13, 1968.

SPOT

For Toys for Pets (Int. Cl. 18).
First use Apr. 15, 1967.

Class 4 — Abrasives and Polishing Materials

SN 292,636. Trio Chemical Works, Inc., Brooklyn, N.Y. Filed Mar. 6, 1968.

AMAZON

Owner of Reg. Nos. 551,935, 735,531, and 749,227.
For Paste Wax and Wax Polish (Int. Cl. 3).
First use Mar. 15, 1960.

SN 297,159. Appearance Improvement Research, Inc., North Hollywood, Calif. Filed May 2, 1968.

AERO-CARE

For Polish for Painted Surfaces Such as Are Found on Automobiles and Aircraft (Int. Cl. 3).
First use on or about Jan. 7, 1968.

SN 297,291. Hollywood Shoe Polish Inc., Richmond Hill, N.Y. Filed May 3, 1968.

SANI-IZE WITH SANI-WHITE

Owner of Reg. No. 714,266.
For Shoe Polish (Int. Cl. 3).
First use Dec. 4, 1959.

Class 5 — Adhesives

SN 306,436. General Electric Company, Schenectady, N.Y. Filed Sept. 3, 1968.

GENERAL ELECTRIC

For Thermoplastic and Thermosetting Adhesives; Adhesive Tapes (Int. Cls. 1 and 17).
First use at least as early as 1920.

SN 306,990. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 10, 1968.

SCOTCH-GRIP

Owner of Reg. Nos. 515,733, 816,809, and others.
For Adhesive for Application to Fasteners (Such as Bolts and Screws), To Cause Such Fasteners To Remain More Securely Affixed to Articles Into Which They Are Inserted (Int. Cl. 1).
First use July 15, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 250,306. Sentry Hardware Corporation, Cleveland, Ohio. Filed July 14, 1966.

SENTRY

For Propane Fuel Contained in Tanks for Use With Lanterns, Head-Held Torches, Camping Stoves, Portable Heaters, and the Like (Int. Cl. 4).
First use Dec. 28, 1965.

SN 277,402. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Aug. 2, 1967.

ISSUE

For Bacteriostatic Fabric Softener (Int. Cl. 3).
First use July 6, 1967.

SN 280,998. Xttrium Laboratories, Inc., Chicago, Ill. Filed Sept. 22, 1967.

THERMO BENZ

For Disinfectant Solution for Storage of Fever Thermometers (Int. Cl. 5).
First use June 19, 1967.

SN 284,094. LKB-Produkter Aktiebolag, Stockholm-Bromma, Sweden. Filed Nov. 3, 1967.

AMPHOLINE

For Ampholytes and Mixtures of Ampholytes (Int. Cl. 1).
First use July 20, 1967; in commerce July 20, 1967.

SN 284,562. Allied Chemical Corporation, New York, N.Y. Filed Nov. 13, 1967.

PITCH-PAK

For Disposable Cylinders Containing Liquefied Gas Refrigerants (Int. Cl. 1).
First use May 8, 1967.

SN 290,158. Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt (Main)-Fechenheim, Germany. Filed Feb. 2, 1968.

POLYSYNTHREN

Owner of U.S. Reg. No. 710,752.
For Dyestuffs (Int. Cl. 2).
First use Jan. 4, 1967; in commerce Oct. 20, 1967.

SN 291,473. Ajem Laboratories, Inc., Livonia, Mich. Filed Feb. 20, 1968.

JEM DEFO

Owner of Reg. Nos. 641,141, 822,689, and others.
For Defoaming Agents (Int. Cl. 1).
First use at least Mar. 29, 1957.

SN 295,782. R. T. Vanderbilt Company, Inc., New York, N.Y. Filed Apr. 16, 1968.

VANGARD MB

For Hypopigmenting Agent (Int. Cl. 2).
First use Oct. 4, 1962.

SN 296,940. Ciba Corporation, d.b.a. Ciba Chemical and Dye Company, Summit, N.J. Filed Apr. 30, 1968.

For Dyes (Int. Cl. 2).
First use Dec. 7, 1967.

SN 305,377. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 19, 1968.

ACHE-TEL

Owner of Reg. No. 845,708.
For Reagents for Use in the Laboratory in Cholinesterase Determinations (Int. Cl. 1).
First use July 26, 1968.

Class 7 — Cordage

SN 305,273. Farmers Regional Cooperative, Fort Dodge, Iowa. Filed Aug. 16, 1968.

FALCO

For Baler and Binder Twine (Int. Cl. 22).
First use at least as early as Dec. 1, 1967.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 305,047. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 13, 1968.

GEOFLEX

Owner of British Reg. No. 905,656, dated Feb. 20, 1967.
For Explosive Fuses and Detonators (Int. Cl. 13).

Class 12 — Construction Materials

SN 281,230. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Insulating Materials—Namely, Fiberglass, Mineral Wool and Resinous Insulation Materials; Cellulose Fiber Insulation; Thermal and Acoustical Insulation Elements for Use in Metal Panels, Ceilings, Wall Panels, and the Like; Insulating Cement; Plastic Insulating Sheets, Rods and Tubes for Use as Construction Materials; and Mineral Fiber Thermal Insulation in the Form of Blankets, Batts, or Boards (Int. Cl. 17).

SN 283,664. Hendon Construction Company, Little Ferry, N.J. Filed Oct. 30, 1967.

Aero Pool

Applicant disclaims the word "Pool" apart from the mark as shown.
For Prefabricated Swimming Pools (Int. Cl. 19).
First use Aug. 31, 1967.

SN 297,517. Marshall E. Benjamin, d.b.a. Port-A-Pig Company, Borger, Tex. Filed May 7, 1968.

For Portable Animal Enclosure (Int. Cl. 6).
First use Feb. 1, 1968.

SN 297,518. Marshall E. Benjamin, d.b.a. Port-A-Pig Company, Borger, Tex. Filed May 7, 1968.

PORT-A-PIG

For Portable Animal Enclosure (Int. Cl. 6).
First use Feb. 1, 1968.

SN 298,065. The Tremco Manufacturing Company, Cleveland, Ohio. Filed May 13, 1968.

PENEFELT

For Asphalt Coating Material for Roofs (Int. Cl. 19).
First use at least as early as Mar. 28, 1968.

SN 299,455. Benjamin Foster Company, Philadelphia, Pa. Filed May 31, 1968.

G-P-M

For Mastics for the Protection of Thermal Insulation (Int. Cl. 17).
First use Feb. 20, 1968.

SN 304,280. General Refractories Company, Philadelphia, Pa. Filed Aug. 5, 1968.

PERATEX

For Refractory Brick and Bonding Mortar (Int. Cl. 19).
First use Feb. 28, 1939.

SN 304,987. Stran-Steel Corporation, Houston, Tex. Filed Aug. 12, 1968.

STRAN-STAND

Owner of Reg. Nos. 440,757, 715,976, and others.
For Grandstands and Structural Parts and Elements for Grandstand Construction (Int. Cl. 19).
First use June 17, 1968.

SN 305,283. Por-Vene Mfg., Inc., La Mirada, Calif. Filed Aug. 16, 1968.



For Architectural Facings—Namely, Sun Screens, Louvers, Porcelainized and Ornamental Metals Used for Facing Materials on Commercial Buildings (Int. Cls. 6 and 19).
First use Jan. 6, 1965.

SN 306,437. General Electric Company, Schenectady, N.Y. Filed Sept. 3, 1968.

GENERAL ELECTRIC

For Silicone Sealants for a Variety of Uses, Such as for Bath Tub Caulking, Sealing Boats and Automobiles; Silicone Traffic and Weather Topping; Silicone Rubber Roof Coating; Plastic Panels for Building Construction Purposes; and Plastic Glazing Compound (Int. Cls. 17 and 19).
First use at least as early as 1927.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 264,857. Sphinxworks Muller & Co., Ltd., Soleure, Switzerland. Filed Feb. 16, 1967.

SPHINX

For Precision Screw Machine Parts—Namely, Precision Screws, Precision Nuts, Precision Bushings, and Precision Collars (Int. Cl. 6).
First use January 1931; in commerce January 1931.

SN 286,283. Gustav J. Schutterman, d.b.a. Progredo Trading Co., New York, N.Y. Filed Dec. 5, 1967.

GUSTAV

Owner of Reg. No. 648,202.
For Stainless Steel Hollow Ware—Namely, Well and Tree Platters, Serving Trays and Platters, Bread Trays, Cake Plates, Sugar and Cream Sets, Salad and Fruit Bowls, Chip-and-Dip Sets, Gravy and Mayonnaise Bowls, Candy Dishes, Salt and Pepper Shakers, Egg Cups, Butter and Jelly Dishes, Fondue Dishes, and Combined Wood and Stainless Steel Condiment Sets and Pepper and Salt Shakers (Int. Cl. 21).
First use on or about Mar. 1, 1957.

SN 289,542. Thetford Engineering Corporation, Ann Arbor, Mich. Filed Jan. 24, 1968.

PortaPotti

For Toilets (Int. Cl. 11).
First use Dec. 13, 1967.

SN 293,589. Scovill Manufacturing Company, Waterbury, Conn. Filed Mar. 18, 1968.

SCOVILL

Owner of Reg. Nos. 284,266, 804,997, and others.
For Thumb Tacks, Blind Rivets, Slide Fasteners, and Tire Valves and Caps (Int. Cls. 6 and 12).
First use Oct. 31, 1964, on tire valves and caps.

SN 293,720. Hi-Shear Corporation, Torrance, Calif. Filed Mar. 20, 1968.

HL

For Fasteners (Int. Cl. 6).
First use Mar. 14, 1957.

SN 294,414. Rowe Manufacturing Company, Galesburg, Ill. Filed Mar. 28, 1968.

ROTO-PAK

For Spring Motor for Operating Overhead Doors (Int. Cl. 6).
First use Feb. 2, 1968.

SN 294,698. Titan Fasteners, Division of Slant/Fin Corporation, Roslyn, N.Y. Filed Apr. 1, 1968.

TITAN

For Nuts, Screws, and Bolts (Int. Cl. 6).
First use Feb. 13, 1968.

SN 295,147. Jordan Industries, Inc., Miami, Fla. Filed Apr. 8, 1968.

JIF-LOK

For Fasteners (Int. Cl. 6).
First use on or about Feb. 27, 1968.

SN 295,462. Robin Products Company, Warren, Mich. Filed Apr. 11, 1968.



Owner of Reg. No. 550,393.
For Metallic and Non-Metallic Fasteners (Int. Cls. 6 and 20).
First use Oct. 1, 1948.

SN 295,813. Dri Mark Products, Inc., Mount Vernon, N.Y. Filed Apr. 17, 1968.

dm

Owner of Reg. Nos. 729,143, 770,823, and others.
For Staples (Int. Cl. 6).
First use December 1965.

SN 296,096. Belwith International Ltd., Los Angeles, Calif. Filed Apr. 22, 1968.

I.C.U.

For Door Viewers (Int. Cl. 6).
First use July 3, 1967.

SN 296,362. Tridair Industries, Redondo Beach, Calif. Filed Apr. 23, 1968.

HONEYSERTS

For Fasteners—Namely, Nuts and Bolts (Int. Cl. 6).
First use Mar. 12, 1968.

SN 296,427. Hi-Shear Corporation, Torrance, Calif. Filed Apr. 24, 1968.

BLIND SERTS

For Inserts of the Type Which Provide Attachment Means in a Structural Surface (Int. Cl. 6).
First use Sept. 15, 1964.

SN 296,466. Swimquip, Inc., El Monte, Calif. Filed Apr. 24, 1968.

HYDRO-VALET

For Hydrotherapy Inlet Fitting for Use With Swimming and Bathing Pools (Int. Cl. 6).
First use July 14, 1967.

Class 14—Metals and Metal Castings and Forgings

SN 281,315. Ritter Pfaudler Corporation, Rochester, N.Y. Filed Sept. 27, 1967.

GLASTEEL

For High Strength Composite Comprising Metal and a Corrosion Impact and Thermal Shock Resistant, Protective Glass Coating Applied Thereon, Used in the Fabrication of Chemical and Corrosion Resistant Process Equipment and Accessories Such as Chemical Reactor Vessels, Storage Tanks, Heat Exchangers, Fractionation Columns, Valves, Pipes, Baffles, and Agitators (Int. Cl. 6).
First use on or before Oct. 30, 1961.

SN 306,438. General Electric Company, Schenectady, N.Y. Filed Sept. 3, 1968.

GENERAL ELECTRIC

Owner of Reg. Nos. 255,108, 836,203, and others.
For Metals and Alloys in Raw, Sheet, Wire, Pellet, Rod, Foil, Strip, Liquid, Castings, Sintered, Pressed, and Fabricated Form (Int. Cl. 6).
First use at least as early as 1928.

Class 15—Oils and Greases

SN 296,183. Nalco Chemical Company, Chicago, Ill. Filed Apr. 22, 1968.

NALROLL

For Rolling Oils Which Are Used as Lubricants in the Cold Rolling of Metals (Int. Cl. 4).
First use Apr. 28, 1967.

SN 296,788. Ashland Oil & Refining Company, Ashland, Ky. Filed Apr. 29, 1968.

A-PLUS

Owner of Reg. No. 675,457.
For Gasoline (Int. Cl. 4).
First use at least as early as Oct. 6, 1960.

Class 16—Protective and Decorative Coatings

SN 290,529. Puritan Chemical Company, Atlanta, Ga. Filed Feb. 7, 1968.

TUFFER

For Protective Coatings Having Polishing, Lubricating and Soil Release Properties (Int. Cl. 2).
First use on or about Nov. 27, 1967.

SN 302,287. Vilar Products, Redwood City, Calif. Filed July 9, 1968.

Unifloor

For Liquid Plastic Floor Coating (Int. Cl. 2).
First use May 8, 1968.

Class 17—Tobacco Products

SN 279,733. Geryl Company, Ltd., New York, N.Y. Filed Sept. 6, 1967.

GOYA

The mark consists of the name of the famous Spanish painter, who died in 1828.
For Cigars (Int. Cl. 34).
First use at least as early as Oct. 12, 1965.

SN 279,861. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Filed Sept. 7, 1967.

JOHN BARRY

"John Barry" is the name of a deceased U.S. naval officer who lived in the Eighteenth Century.
For Cigarettes (Int. Cl. 34).
First use Apr. 14, 1967; in commerce Apr. 14, 1967.

SN 297,976. Corral, Wodiska y Ca., Tampa, Fla. Filed May 13, 1968.

BERING

RED LABEL

For Cigars (Int. Cl. 34).
First use Aug. 23, 1957.

SN 300,705. House of Windsor, Inc., Windsor, Pa. Filed June 18, 1968.

MARK IV

The pictorial representation of a naval officer which forms the central portion of the mark is fanciful.
For Cigars (Int. Cl. 34).
First use May 1, 1961.

SN 305,902. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Aug. 26, 1968.

MR. MENTHOL

Applicant disclaims the word "Menthol" apart from the mark as a whole.
For Cigarettes (Int. Cl. 34).
First use Aug. 8, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 276,804. Maxim Baskies, d.b.a. Maxim Chemicals, Ltd., Chelsea, Mass. Filed July 26, 1967.

ASCAP

For Tablets for Relief of Headaches, Neuralgia, and Head Colds (Int. Cl. 5).
First use June 1, 1936.

SN 278,652. Affiliated Laboratories Corporation, St. Louis, Mo. Filed Aug. 21, 1967.

LEPTOMUNE

For Bacterin for Use by Veterinarians in Immunization Against Leptospira Pomona (Int. Cl. 5).
First use Aug. 1, 1967.

SN 280,077. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Sept. 11, 1967.

OSBIL

For X-Ray Contrast Medium for Oral Administration (Int. Cl. 5).
First use June 2, 1961.

SN 281,206. Kyorin Seiyaku Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Sept. 26, 1967.

KYORIN

Owner of Japanese Reg. No. 575,040, dated June 20, 1961.
For Medicinal Preparations (Int. Cl. 5).

SN 284,286. American Cyanamid Company, Wayne, N.J. Filed Nov. 7, 1967.

AMSTAT

Owner of Reg. No. 696,313.
For Hemostatic Agent (Int. Cl. 5).
First use Oct. 20, 1967.

SN 286,568. American Home Products Corporation, New York, N.Y. Filed Dec. 6, 1967.

GAYPET

Owner of Reg. No. 434,327.
For Worm Preparations for Dogs and Puppies, and Vitamin, Mineral and Nutritional Supplements for Dogs and Cats (Int. Cl. 5).
First use July 20, 1967.

SN 286,695. Merck & Co., Inc., Rahway, N.J. Filed Dec. 11, 1967.

ELVACAPS

For Medicinal Preparation for Use as a Psychotherapeutic Agent (Int. Cl. 5).
First use Nov. 2, 1967.

SN 287,380. Sea & Ski Corporation, San Francisco, Calif. Filed Dec. 21, 1967.

LIP SAVERS

Owner of Reg. No. 825,064.
For Lip Balm for Healing Purposes (Int. Cl. 5).
First use Aug. 27, 1965.

SN 288,270. Armour Pharmaceutical Company, Chicago, Ill. Filed Jan. 8, 1968.

MUCOGEN

For Vaccine for the Immunization of Cattle Against Bovine Virus Diarrhea (Int. Cl. 5).
First use on or prior to Aug. 25, 1967.

SN 289,920. Richardson-Merrell Inc., New York, N.Y. Filed Jan. 30, 1968.

For Mouthwash and Gargle and Also a Mouth Spray (Int. Cl. 5).
First use July 1964.

SN 291,924. James H. Walters, d.b.a. Starr Pharmacal Co., Kansas City, Mo. Filed Feb. 26, 1968.

DEXTROID

For Thyroxine Preparation in Tablet Form (Int. Cl. 5).
First use in or about September 1950.

Class 19—Vehicles

SN 274,540. North American Boat Corporation, Fort Lauderdale, Fla. Filed June 22, 1967.

NORTH AMERICAN

For Boats (Int. Cl. 12).
First use Jan. 2, 1963.
Subj. to Intf. with SN 283,868.

SN 275,521. Golden Eagle Coach Manufacturer's, Incorporated, Raytown, Mo. Filed July 7, 1967.

GOLDEN EAGLE

For Pick-Up Campers, Pick-Up Truck Covers and Travel Trailers (Int. Cls. 12 and 22).
First use Oct. 7, 1966.

SN 283,868. Central Standard Industries, Inc., Warsaw, Ind. Filed Nov. 1, 1967.

AMERICAN

No claim is made to the word "Indiana," apart from the mark as shown.
For Boats, and Parts Therefor (Int. Cl. 12).
First use Aug. 2, 1967; 1956 as to "North American."
Subj. to Intf. with SN 274,540.

SN 290,516. North American Rockwell Corporation, Pittsburgh, Pa. Filed Feb. 7, 1968.

A TOUGH BIRD

For Aircraft and Parts Thereof (Int. Cl. 12).
First use Nov. 15, 1967.

SN 295,144. Gladys Hurley, d.b.a. Walter F. Hurley Gin, Diaz, Ark. Filed Apr. 8, 1968.

Glasstarp

For Truck Cover—Namely, Cover for the Bed of a Pickup Truck (Int. Cl. 22).
First use Mar. 22, 1968.

SN 295,218. Champion Home Builders Co., Dryden, Mich. Filed Apr. 9, 1968.

TAMARACK

For Mobile Homes and House Trailers (Int. Cl. 12).
First use Feb. 29, 1968.

SN 295,909. Bright Star Industries Incorporated, Clifton, N.J. Filed Apr. 15, 1968.

BRIGHT STAR

For Bicycle Reflectors (Int. Cl. 12).
First use Mar. 4, 1968.

SN 296,001. Alexander-Reynolds Corp., Dumont, N.J. Filed Apr. 19, 1968.

COMANCHE

The drawing is lined for the colors blue and gold, but no claim is made to such colors.
For Motor Scooters (Int. Cl. 12).
First use Mar. 27, 1968.

SN 296,222. Vemaline Products Co., Inc., Wyckoff, N.J. Filed Apr. 22, 1968.

Finback

For Boats (Int. Cl. 12).
First use Jan. 2, 1968.

SN 296,453. Richards Son & Allwin Limited, Tipton, England. Filed Apr. 24, 1968.

ALLWIN

For Baby Carriages and Folding Perambulators (Int. Cl. 12).
First use 1910; in commerce 1950.

SN 297,439. Researched Plastics, Inc., Columbia, S.C. Filed May 6, 1968.

SANDLAPPER

For Boats (Int. Cl. 12).
First use Feb. 12, 1968.

SN 297,994. Federal Auto Products Co., Inc., d.b.a. Everhot Products Co., Chicago, Ill. Filed May 13, 1968.

KWICKY

For Automotive Power Steering Repair Kits and Parts Thereof (Int. Cl. 12).
First use Jan. 15, 1960.

Class 20 — Linoleum and Oiled Cloth

SN 293,907. Congoleum-Nairn Inc., Kearny, N.J. Filed Mar. 22, 1968.

CAPETOWN

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Mar. 5, 1968.

SN 293,908. Congoleum-Nairn Inc., Kearny, N.J. Filed Mar. 22, 1968.

CRESCENT

Owner of Reg. No. 242,541.
For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Feb. 13, 1968.

SN 295,915. Congoleum-Nairn Inc., Kearny, N.J. Filed Apr. 18, 1968.

FAIRFIELD

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Mar. 25, 1968.

SN 295,934. Mannington Mills Inc., Salem, N.J. Filed Apr. 18, 1968.

VINYL-EASE

For Felt Base Floor Coverings (Int. Cl. 27).
First use January 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 263,410. Stow Laboratories, Inc., Stow, Mass. Filed Jan. 26, 1967.

STOLAB

For Electromechanical Transducers, and Holders, Cables, and the Electronic Circuitry Necessary for Operation of the Transducers or Their Connection to Other Devices (Int. Cl. 9).
First use Dec. 10, 1964.

SN 267,058. John Oster Manufacturing Co., Milwaukee, Wis. Filed Mar. 17, 1967.

GALAXIE

For Domestic Electric Mixers, Blenders, Disintegrators and Liquefiers, and Parts Thereof (Int. Cl. 7).
First use in or about June 1966.
Subj. to Intf. with SN 293,282.

SN 268,279. Air Reduction Company, Incorporated, New York, N.Y. Filed Apr. 4, 1967.

YELLOW JACKET

Owner of Reg. No. 358,262.
For Electric Generators Used Primarily With Electric Arc Welding Equipment (Int. Cl. 7).
First use Nov. 19, 1937.

SN 276,716. Triangle Conduit & Cable Co. Inc., Newark, N.J., by change of name and assignment from Triangle Conduit & Cable Co. Inc., New Brunswick, N.J. Filed July 24, 1967.

EVERENE

For Insulated Electrical Conductors (Int. Cl. 9).
First use May 17, 1967.

SN 278,233. North Central Plastics, Inc., Ellendale, Minn. Filed Aug. 14, 1967.

RED SNAP'R

Owner of Reg. No. 598,995.
For Electric Fence Insulators (Int. Cl. 17).
First use first half of 1953.

SN 282,120. National Wire and Cable Corporation, Los Angeles, Calif. Filed Oct. 9, 1967.

NAFOIL

For Electrical and Electrostatic Insulation and Comprising a Laminated Metal-Plastic Tape Used Alone or Helically Wrapped on Wire and Cable (Int. Cl. 17).
First use on or about Sept. 15, 1961.

SN 293,686. Bestran Corporation, Monrovia, Calif. Filed Mar. 20, 1968.

CIR-CAP

For Electronic Circuit Consisting of a Combination of Electronic Components Such as Resistors, Capacitors, and/or Semiconducting Components Such as Integrated Circuits, Which Are Integrally Assembled on a Ceramic Dielectric Base (Int. Cl. 9).
First use Nov. 17, 1967.

SN 293,753. TRW Semiconductors, Inc., Lawndale, Calif. Filed Mar. 20, 1968.

LVA

For Semiconductor Zener Diodes (Int. Cl. 9).
First use Jan. 16, 1967.

SN 295,298. Automatic Retailers of America, Inc., Philadelphia, Pa. Filed Apr. 10, 1968.

ARAMATIC

Owner of Reg. Nos. 768,508 and 813,647.
For Electrically Heated, Automatic Coffee Brewers (Int. Cl. 11).
First use May 22, 1967.

SN 296,007. CTS Corporation, Elkhart, Ind. Filed Apr. 19, 1968.

CERMIDE

Owner of Reg. Nos. 750,438 and 765,804.
For Variable and Fixed Resistors; Potentiometers; Trimmers; Pellet Resistors; and Electronic Circuit Packages and Parts of the Foregoing Apparatus (Int. Cl. 9).
First use at least as early as Mar. 26, 1968.

SN 297,143. Marathon Electric Manufacturing Corporation, Wausau, Wis. Filed May 2, 1968.

ME

Owner of Reg. Nos. 412,830, 828,487, and others.
For Electric Motors and Generators, Terminal Blocks and Fuse Blocks; and Electrical Control Apparatus—Namely, Voltage Regulators (Int. Cls. 7 and 9).
First use Apr. 1, 1944.

SN 297,932. Vidaire Electronics Manufacturing Corp., Freeport, N.Y. Filed May 13, 1968.

VIDAIRE

For TV Interference and Noise Filters, TV and FM Couplers, Wireless Intercom Systems, Matching Transformers for TV and FM, Signal Attenuators, Vacuum Tube Base Sets, Microphones, Head Sets and Ear Phones, Line Voltage Regulators for TV and Radio Equipment, and TV Antennas (Int. Cl. 9).
First use Apr. 1, 1949.

SN 305,367. Accuray Products Incorporated, Wallington, N.J. Filed Aug. 19, 1968.

VIGILANTE

For Flashlight and Combination Flashlight, Whistle and Keyring (Int. Cl. 11).
First use March 1966.

Class 22 — Games, Toys, and Sporting Goods

SN 275,621. Brunswick Corporation, Chicago, Ill. Filed July 10, 1967.

JET BACK

For Bowling Pinsetters, Parts Thereof, Accessories Therefor and Conversion Kits Therefor (Int. Cl. 28).
First use May 22, 1967.

SN 288,025. Bruce B. Mises, Inc., Los Angeles, Calif. Filed Jan. 3, 1968.

one stop

For Fishing Line (Int. Cl. 28).
First use Nov. 8, 1967.

SN 291,033. Colt's Inc, Hartford, Conn. Filed Feb. 14, 1968.

MUSTANG

Owner of Reg. Nos. 416,686 and 832,056.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 291,034. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.

CHALLENGER

Owner of Reg. No. 408,712.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 291,035. Colt's Inc, Hartford, Conn. Filed Feb. 14, 1968.

THE FRONTIER

Owner of Reg. Nos. 753,166 and 755,302.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 291,036. Colt's Inc, Hartford, Conn. Filed Feb. 14, 1968.

FRONTIER SCOUT

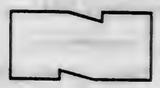
Owner of Reg. Nos. 753,166 and 755,785.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 292,109. Alan J. Klitzner, Providence, R.I. Filed Feb. 28, 1968.

Penguin

For Golf Putters (Int. Cl. 28).
First use on or about Jan. 9, 1968.

SN 292,407. Newport Paipo, Newport Beach, Calif. Filed Mar. 4, 1968.



For Surfboards (Int. Cl. 28).
First use Nov. 3, 1966.

SN 292,806. Nimrod Products, Inc., New York, N.Y. Filed Mar. 8, 1968.

NIMROD GT

For Golf Balls (Int. Cl. 28).
First use Feb. 9, 1968.

SN 294,987. George R. Wolstad, Missoula, Mont. Filed Apr. 4, 1968.

PARATEPEE

For Teepee-Type Tents Fashioned From Parachutes (Int. Cl. 22).
First use spring 1948.

SN 305,704. King Athletic Goods Company, Philadelphia, Pa. Filed Aug. 22, 1968.

trapit

For Baseball Gloves (Int. Cl. 28).
First use Oct. 1, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 245,924. Hewitt-Robins Incorporated, Stamford, Conn. Filed May 18, 1966.

HR

Owner of Reg. Nos. 352,392 and 549,790.
For Industrial Machinery and Equipment for Conveying, Processing and Handling Various Materials and Articles—Namely, Stationary and Portable Belt Conveyors, Extensible Conveyors, Conveyor Drive and Storage Sections, Sectional Conveyors, Self-Propelled Conveyors, Chain Conveyors, Roller Conveyors, Flight Conveyors, Slat Conveyors, Pan Conveyors, Conveyor Aprons, Storage and Reclaiming Machines for Handling Bulk Materials, Machines for Handling, Crushing, Screening and Washing Bulk Materials, Belt and Bucket Elevators, Hoists, Trippers, Stackers, Crushers, Impactors, Flow-Regulating Gates for Use in Material Handling Systems, Self-Loading and Unloading Mechanisms for Ships, Bin-Level Indicators for Use in Material Handling Systems, Storage Bins and Hoppers Forming Part of Equipment for Handling Bulk Materials, Belt Cleaners, Idlers, Pulleys, Vibrating Screens for Feeding, Classifying and Dewaterizing Bulk Materials, Vibratory Car and Foundry Shaking Equipment; Wire Belting for Use in Material Handling and Conveying Equipment; Wire Screen Cloth Forming Part of or as a Replacement Part for Vibratory Screens; Mechanical Power Transmission Equipment; Gears and Gear Drives; Mechanical Speed Reducing and Speed Increasing Mechanisms; Winches; Car Pullers; Chain Drives; Precision and Engineering Type Chain; Conveyor Chain; Elevating Chain; Chain Attachments; Chain Sprockets; Pillow Blocks; and Parts for Such Machinery and Equipment (Int. Cl. 7).
First use as early as January 1951.

SN 260,234. Robert Blohm, Hamburg-Bergedorf, Germany. Filed Dec. 7, 1966.

BLOHM-SIMPLEX

Priority claimed under Sec. 44(d) on German application filed Oct. 14, 1966; Reg. No. 828,827, dated Jan. 20, 1967.
For Grinding Machines and Feed Control Devices for Grinding Machines (Int. Cl. 7).

SN 266,088. Precision Welder & Flexopress Corp., Cincinnati, Ohio. Filed Mar. 6, 1967.

PALLETRON

For Assembly Line Conveyor System Utilizing Carriages for Holding and Conveying Workpieces Seated Thereon (Int. Cl. 7).
First use Oct. 17, 1966.

SN 270,894. Chem-Farm Inc., Evansville, Ind. Filed May 8, 1967.

CHEM FARM

For Farm Equipment—Namely, Plows, Soil Incorporaters, Land Leveling Apparatus, Chemical and Fertilizer Applying Apparatus (Int. Cl. 7).
First use Jan. 10, 1967.

SN 270,926. Lark Manufacturing Co., Columbus, Ohio. Filed May 8, 1967.

LARK

For Automatic Carwash Equipment—Namely, Power Wash Units; Wax Plate Units; Final Rinse Units; Power-Wash Arches; Wheel Washers; Mechanized Brushes for Cleaning Surfaces of Vehicles; Blowers; and Conveyors for Moving Vehicles (Int. Cl. 7).
First use on or prior to May 25, 1965.

SN 271,776. Donaldson Company, Inc., Minneapolis, Minn. Filed May 18, 1967.

DONALDSON

Owner of Reg. Nos. 620,305, 632,630, and others.
For Fluid Cleaner Devices—Namely, Centrifugal Separators (Int. Cl. 7).
First use Dec. 10, 1965.

SN 272,616. Lenkotex Company, Inc., New York, N.Y. Filed May 29, 1967.



For Faller Bars for Processing Textile Fibers (Int. Cl. 7).
First use Mar. 15, 1967.

SN 273,519. National Can Corporation, Chicago, Ill. Filed June 9, 1967.

JETSTER-MATIC

Owner of Reg. No. 812,352.
For Dispensing Apparatus for Mounting on a Container, Using a Compressed Gas Cylinder Propulsion Means (Int. Cl. 7).
First use Jan. 19, 1967.

SN 273,581. Albe S.A., Lugano-Viganello, Switzerland. Filed June 12, 1967.

MUTOP

Owner of Swiss Reg. No. 219,663, dated Aug. 18, 1966.
For Multiple Spindle Drilling and Tapping Machines (Int. Cl. 7).

SN 273,658. Machinery & Equipment Co., Brisbane, Calif. Filed June 12, 1967.

ME

For New and Used Machinery for Processing and Packaging Foods and for Processing and Packaging Chemicals (Int. Cl. 7).
First use January 1960.

SN 274,824. Nelson Sales Company, Kansas City, Mo. Filed June 26, 1967.

NESCO

For Hunting and Throwing Knives and Machetes, Knife, Fork and Spoon Sets of Non-Precious Metal, Axes, Shovels, and Mattocks (Int. Cl. 8).
First use on or about June 1, 1965.
Subj. to Intf. with SN 275,343.

SN 275,743. Champion Corporation, Hammond, Ind. Filed July 11, 1967.

CHAMPION

For Potato Harvesters; Sewer Cleaning Machines—Namely, Rodders and Buckets, and Parts Thereof (Int. Cl. 7).
First use 1898.

SN 276,148. MIF Industries, Inc., Branford, Conn. Filed July 17, 1967.

MIF

Owner of Reg. No. 510,262.
For Galvanizing Machines, Including Conveyors, Quenching and Drying Machines, Centrifuges, Acid and Flux Tanks, Parts, Accessories and Associated Equipment of the Above (Int. Cl. 7).
First use in or about 1945.

SN 278,046. Uniroyal, Inc., New York, N.Y. Filed Aug. 10, 1967.



Owner of Reg. Nos. 98,502, 518,612, and others.
For Fuel Pumps for Motor Vehicles (Int. Cl. 12).
First use May 11, 1967.

SN 280,536. Andar Corporation, Mountain View, Calif. Filed Sept. 18, 1967.

ANDAR

For High Vacuum Pumping Systems and Parts Thereof—Namely, Sorption Pumps, Getter-ion Pumps, Vacuum Flanges, Vacuum Fittings, Vacuum Valves, Foreline Traps, and Control Units for High Vacuum Pumps (Int. Cl. 7).
First use Oct. 5, 1966.

SN 280,900. True Temper Corporation, Cleveland, Ohio. Filed Sept. 21, 1967.

KELLY PERFECT

Owner of Reg. Nos. 210,847, 235,939, and others.
For Trowels, Rakes, Edgers, Hoes, Cultivating Tools, Shovels, Spades, Forks, Hooks, Drags, Scrapers, Chisels, Mattocks, Diggers, Shears, Loopers, Cutters, Scythes, Scoops, Bulb Planters, Seeders, Picks, Trimmers, Hammers, Hatchets, Axes, Adzes, Machetes, Ditch-Bank Blades, and Handles Therefor; Pruners, Broadaxes, Weeders, Eye Hoes, Harvesters, Hay Knives, Sod Lifters, Picks, and the Like (Int. Cl. 8).
First use as early as Sept. 1, 1885.

SN 282,039. Axbo Aktiebolag, Stockholm-Varby, Sweden. Filed Oct. 9, 1967.

AXBO

For Exhaust Systems for Motor Vehicles—Namely, Manifolds, Exhaust Pipes, Tail Pipes, and Mufflers (Int. Cl. 12).
First use 1947; in commerce 1963.

SN 284,721. Oconomowoc Manufacturing Corporation, Oconomowoc, Wis. Filed Nov. 13, 1967.

SNAP-LOK

For Ball Bearings (Int. Cl. 7).
First use Aug. 28, 1967.

SN 286,622. Applied Power Industries, Inc., Milwaukee, Wis. Filed Dec. 11, 1967.

APPLIED POWER

Owner of Reg. No. 803,851.
For Pneumatically, Hydraulically, Mechanically, and Electrically Actuated Portable, Wheeled and Stationary Lifting Equipment and Vehicle Jacks; Fluid Pressure Actuated Rams and Cylinders; Hydraulic Pumps and Operating Mechanisms Therefor; Fluid Motors; Swivel Joints; Straightening, Bending, Clamping and Spreading Equipment; Punches and Presses; Cable Pullers; Cable Cutters; Power Applying Tools; Remote Control Apparatus for Fluid Pressure Actuated Equipment; Machine Element Pullers and Pushers for Removing and Inserting Parts; Wheel Pullers; Tool Racks; Driving Mechanisms for Portable Power Tools; and Mechanically, Electrically, Hydraulically and Pneumatically Automatic and Manually Operable Fluid Pressure Directional Control and Actuating Valves (Int. Cl. 7).
First use on or about Jan. 10, 1964.

SN 286,627. U.S. Industries, Inc., New York, N.Y., assignee of Big Dutchman, Inc., Zeeland, Mich. Filed Dec. 11, 1967.

PACESETTER

For Egg Washers (Int. Cl. 7).
First use on or about July 18, 1967.

SN 287,166. Fyne Machinery & Engineering Limited, London, England. Filed Dec. 18, 1967.

ROTOPOKA

Owner of British Reg. No. B881,316, dated June 28, 1965.
For Machines for Vibrating Concrete Mix, and Parts Thereof (Int. Cl. 7).

SN 287,765. Gustav J. Schutterman, d.b.a. Progredo Trading Co., New York, N.Y. Filed Dec. 28, 1967.

INGRID

For Flatware of Stainless Steel (Int. Cl. 8).
First use on or about Oct. 1, 1954.

SN 287,775. Union Carbide Corporation, New York, N.Y. Filed Dec. 28, 1967.

HYLOX

For Food Packaging Machines (Int. Cl. 7).
First use on or about Dec. 29, 1966.

SN 288,002. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Jan. 3, 1968.

CLEVELAND

Owner of Reg. Nos. 208,281, 837,900, and others.
For Reamers (Int. Cl. 7).
First use September 1893.

SN 288,116. Reynolds Metals Company, Richmond, Va. Filed Jan. 4, 1968.

CASE-REDI

For Packaging Machinery (Int. Cl. 7).
First use at least as early as Nov. 2, 1967.

SN 288,205. The Fitzpatrick Company, Elmhurst, Ill. Filed Jan. 5, 1968.

FitzMill

Owner of Reg. No. 534,027.
For Machines of the Type Employing Revolving Blades for Mixing, Comminuting, and Homogenizing Foods, Drugs, and Like Materials (Int. Cl. 7).
First use Sept. 11, 1967.

SN 288,226. Nutri-Seal Storage Systems, Inc., Myerstown, Pa. Filed Jan. 5, 1968.

SMOKER

For Silo Unloaders (Int. Cl. 7).
First use May 1, 1967.

SN 289,685. Jacobsen Manufacturing Company, Racine, Wis. Filed Jan. 26, 1968.

VICTOR

For Lawn Mowers and Grass Catchers, and Parts Therefor (Int. Cl. 7).
First use as early as 1958.

SN 289,686. Jacobsen Manufacturing Company, Racine, Wis. Filed Jan. 26, 1968.

SNO-BLITZ

For Snow Throwers of Both the Gasoline Engine and Electric Motor Powered Type, and Parts Therefor (Int. Cl. 7).
First use as early as 1953.

SN 289,691. Jacobsen Manufacturing Company, Racine, Wis. Filed Jan. 26, 1968.

TRIM-O

For Powered Lawn Edgers (Int. Cl. 7).
First use as early as 1954.

SN 289,883. Empisal (Proprietary) Limited, d.b.a. Empisal Textile Machinery Corporation and also as Home Industries Schools, Johannesburg, Republic of South Africa. Filed Jan. 30, 1968.

INSTAMATIC

Priority claimed under Sec. 44(d) on South African Reg. No. 67/3517, dated Aug. 11, 1967.
For Knitting Machines (Int. Cl. 7).

SN 290,173. Jet-Air Thread Control Co., Hummelstown, Pa. Filed Feb. 2, 1968.

JET-AIR

For Sewing Machine Attachments—Namely, Thread Control Device, Lift, and Automated Hemmer (Int. Cl. 7).
First use Apr. 18, 1967.

SN 290,298. Jacobsen Manufacturing Company, Racine, Wis. Filed Feb. 5, 1968.

BLITZER

Owner of Reg. Nos. 436,305 and 629,051.
For Grass Cutting Equipment—Namely, Gang Mowers and Tractor-Drawn Gang Mowers, and Parts Thereof (Int. Cl. 7).
First use as early as 1941.

SN 294,220. Utica Cutlery Company, Utica, N.Y. Filed Mar. 27, 1968.

CLASSIC CHARM

For Stainless Steel Flatware—Namely, Knives, Forks, and Spoons (Int. Cl. 8).
First use June 17, 1967.

SN 295,288. The Novak Company, Inc., Plainfield, N.J. Filed Apr. 10, 1968.

NOVAK

For Document Conveyor Systems—Namely, Automatic Paper Handling Conveyors Including Multiple and Single Lanes, and Parts Thereof (Int. Cl. 7).
First use in 1932.

SN 296,962. Imperial International Corp., New York, N.Y. Filed Apr. 30, 1968.

CAMPAGNA

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Mar. 1, 1968.

SN 296,963. Imperial International Corp., New York, N.Y. Filed Apr. 30, 1968.

KANTERBURY

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Mar. 15, 1968.

SN 296,964. Imperial International Corp., New York, N.Y. Filed Apr. 30, 1968.

ESTORIL

Owner of Reg. No. 807,462.
For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Mar. 15, 1968.

SN 301,283. Utica Cutlery Company, Utica, N.Y. Filed June 24, 1968.

CLASSIC SCROLL

For Stainless Steel Flatware—Namely, Knives, Forks, and Spoons (Int. Cl. 8).
First use June 13, 1968.

SN 301,299. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

AMERACE

For Molds for the Injection and Compression Molding of Plastic (Int. Cl. 6).
First use at least as early as March 1968.

SN 306,620. The Union Fork and Hoe Company, Columbus, Ohio. Filed Sept. 5, 1968.

PAUL BUNYAN

The name "Paul Bunyan" is the name of a fictional character, and is not intended to identify any particular person living or dead.
For Hand-Operated Snow Shovels (Int. Cl. 8).
First use May 7, 1968.

Class 26—Measuring and Scientific Appliances

SN 263,851. Societe Francaise d'Optique et de Mechanique—S.F.O.M., Rueil-Malmaison (Hauts-de-Seine), France. Filed Feb. 2, 1967.

S.F.O.M.

For Photogrametric Instruments; Objective Lenses for Use in Cinematography, Photography, Reproduction and Reduction; Developers, Printers, Enlargers, Viewers, Cameras, Optical Fibers, and Laser Devices (Int. Cl. 9).
First use 1941; in commerce 1955.

SN 273,187. Weston Instruments, Inc., Newark, N.J., assignee of Electro-Mechanical Research, Inc., Princeton, N.J. Filed June 6, 1967.

ASCOP

Owner of Reg. No. 594,343.
For Image Tubes, Star Tracking Sensors, Image Dissectors, Photoelectric Sensors, and Parts and Components Thereof (Int. Cl. 9).
First use Nov. 18, 1960.

SN 287,780. Responsive Environments Corporation, Englewood Cliffs, N.J., assignee of Edu-Center, Inc., New York, N.Y. Filed Dec. 29, 1967.

EDU-CENTER

For Computerized Educational Teaching Visual Display for Teaching Typing Skills (Int. Cl. 9).
First use on or about July 1, 1967.

SN 288,114. The Porter-Spear Company, Hagerstown, Md. Filed Jan. 4, 1968.



The mark comprises the letter "P" in stylized form.
For Microscope Outfits Comprising Microscopes, Slides, Slide Glasses, Specimen Covers, Slide Labels, Lens-Cleaning Tissue, Specimen Mounting Cement and Thinner, Tweezers, Dissecting Needles and Droppers, Various Specimens for Observation Through the Microscope, Fibrous Material and Various Chemicals; Microscopes; and Microscope Slides and Parts Thereof (Int. Cl. 9).
First use Feb. 27, 1958.

SN 290,942. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Feb. 13, 1968.

TROPHY

For Rifle Scopes (Int. Cl. 13).
First use Feb. 9, 1968.

SN 297,070. L.P.C. Chemicals and Dyes Limited, London, England. Filed May 1, 1968.

ALCOLOR

Owner of British Reg. No. 879,429, dated May 13, 1965.
For Apparatus for Measuring the Alcohol Content in the Human Body (Int. Cl. 9).

SN 297,713. Sklárny Kavalier, Národní Podnik, Sázava, Czechoslovakia. Filed May 8, 1968.

silufol

Priority claimed under Sec. 44(d) on Czechoslovakian Reg. No. 157,967, dated Nov. 8, 1967.
For Reflexing Silica Gel Sheets With an Inert Inorganic Luminescent Indicator for Thin-Layer Chromatography (Int. Cl. 9).

SN 297,790. Metals Research Limited, Meybourn, Royston, England. Filed May 9, 1968.

QUANTIMET

For Image Analyzing Computers (Int. Cl. 9).
First use at least as early as March 1963; in commerce March 1964.

SN 298,711. A. B. Dick Company, Niles, Ill. Filed May 21, 1968.

PHOTOMAT

For Offset Plate Processing Machine (Int. Cl. 9).
First use Feb. 16, 1968.

SN 305,413. The J. E. Doyle Company, Cleveland, Ohio. Filed Aug. 19, 1968.



The mark consists of a stylized and symbolic design of the letter "D."
For Roll Tension Setting Gauges Used Ancillary to Printing Presses and in Other Equipment Having Adjustable Sheet-Like Stock Handling Rolls (Int. Cl. 9).
First use June 20, 1968.

Class 32 — Furniture and Upholstery

SN 269,006. Wolff Products Co., New York, N.Y. Filed Apr. 12, 1967.

BATHIQUE

For Ornamental Metal Shelving, Combined Bathroom Shelves and Towel Bars (Int. Cl. 20).
First use July 1, 1966.

SN 289,772. Burroughs Corporation, Detroit, Mich. Filed Jan. 29, 1968.



Owner of Reg. Nos. 512,717 and 514,355.
For Office Furniture—Namely, Business Machine Stands, Cash Drawers, Stationery and Forms Cabinets and Tables (Int. Cl. 20).
First use Apr. 16, 1947.

SN 289,773. Burroughs Corporation, Detroit, Mich. Filed Jan. 29, 1968.

Burroughs

Owner of Reg. No. 512,362.
For Office Furniture—Namely, Business Machine Stands, Cash Drawers, Stationery and Forms Cabinets and Tables (Int. Cl. 20).
First use March 1910.

SN 290,734. Jackson Chair Company, Inc., Danville, Ky. Filed Feb. 9, 1968.



Applicant disclaims the word "Originals" apart from the mark as shown.
For Chairs and Sofas (Int. Cl. 20).
First use Jan. 18, 1968.

SN 291,885. Midland Machine Company, Elizabeth, N.J. Filed Feb. 26, 1968.

M-I-RAK

For Storage Racks (Int. Cl. 20).
First use Oct. 5, 1967.

SN 293,746. Slick Industrial Company, Chicago Heights, Ill. Filed Mar. 20, 1968.

PARAMOUNT

For Hem Grips for Window Shades (Int. Cl. 20).
First use August 1959.

SN 294,317. Sachs Quality Stores, Inc., Bronx, N.Y. Filed Mar. 27, 1968.



The word "Quality" is disclaimed apart from the mark as shown. Owner of Reg. No. 581,155.
For Bedroom Furniture Comprising Beds, Dressers, Cribs, Wardrobes, Bedroom Chairs, Bureaus, Bedroom Mirrors, Vanities, Bedroom Benches; Living Room Furniture Comprising Living Room Suites, Chests, Living Room Chairs, Living Room Tables, Magazine Racks, Benches; Dining Room Furniture Comprising Tables, Chairs, China Closets, Serving Carts and Tea Wagons, Sideboards, Buffets; Bathroom Furniture Comprising Cabinets, Stools, Benches; and Kitchen Furniture Comprising Tables, Chairs, and Cabinets; Bookcases, Breakfast Furniture Sets, Cabinets for Radio Receiving Sets and Phonograph Apparatus; Office Furniture, Comprising Desks, Filing Cabinets, Bookcases, Tables, Chairs, Picture Frames, and Mirrors (Int. Cl. 20).
First use Aug. 22, 1945.

SN 294,318. Sachs Quality Stores, Inc., Bronx, N.Y. Filed Mar. 27, 1968.



The word "Masterpiece" is disclaimed apart from the mark shown. Owner of Reg. No. 652,047.
For Living Room Furniture—Namely, Living Room Suites, Chests, Living Room Chairs, Living Room Tables, Magazine Racks, Benches; Dining Room Furniture—Namely, Tables, Chairs, China Closets, Servers, Sideboards, Buffets; Bathroom Furniture—Namely, Cabinets, Stools, Benches; and Kitchen Furniture—Namely, Tables, Chairs, and Cabinets; Bookcases, Breakfast Furniture Sets, Cabinets for Radio Receiving Sets and Phonograph Apparatus, Sold in Trade Empty or Without the Radio and Phonograph Apparatus; and Office Furniture—Namely, Desks, Filing Cabinets, Bookcases, Tables, Chairs, Picture Frames, and Mirrors (Int. Cl. 20).
First use Sept. 15, 1941.

SN 295,777. Sure Plus Manufacturing Co., Chicago, Ill. Filed Apr. 16, 1968.

SURE PLUS

For Mirrors (Int. Cl. 20).
First use November 1965.

SN 295,834. Massey-Ferguson Industries Limited, Toronto, Ontario, Canada. Filed Apr. 17, 1968.

ALUMNA

For Desks and Cabinets (Int. Cl. 20).
First use Nov. 12, 1962; in commerce Apr. 2, 1963.

SN 296,043. Republic Steel Corporation, Cleveland, Ohio. Filed Apr. 19, 1968.

WEDGE-LOCK

Owner of Reg. No. 236,983.
For Steel Shelving (Int. Cl. 20).
First use July 1, 1925.

SN 296,341. National Mattress Company, Huntington, W. Va. Filed Apr. 23, 1968.

MONTICELLO

For Mattresses and Box Springs (Int. Cl. 20).
First use as early as Mar. 1, 1965.

SN 297,888. W & J Sloane of Beverly Hills, d.b.a. Angelus Furniture Manufacturing Co., Beverly Hills, Calif. Filed May 10, 1968.

SAFE REST

For Mattresses (Int. Cl. 20).
First use Apr. 13, 1966.

Class 33 — Glassware

SN 299,072. PPG Industries, Inc., Pittsburgh, Pa. Filed May 27, 1968.

GRAYLITE

Owner of Reg. No. 657,783.
For Sheet Glass (Int. Cl. 21).
First use at least as early as Nov. 25, 1959.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 269,411. H. Frost & Company Limited, Walsall, England. Filed Apr. 18, 1967.

SUNHOUSE

Owner of British Reg. No. 628,950, dated Apr. 27, 1944.
For Electric Fireplace Fires, Electric Radiant Heaters, Electric Radiant Heaters for Wall Mounting, Electric Convector Heaters, Combined Electric Radiant and Convector Heaters, Combined Electric Heating and Lighting Appliances for Ceiling Mounting, and Electric Fan Heaters (Int. Cl. 11).

SN 285,122. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Nov. 17, 1967.

New Castle

For Refractory Articles—Namely, Kiln Furniture, Saggers, Tile Setters, Slabs, Posts, Custom Shapes, Recuperators, Hot Tops, Refractory Tubes, and Crucibles (Int. Cls. 9 and 11).
First use May 1933.

SN 296,287. American Standard Inc., New York, N.Y. Filed Apr. 23, 1968.

SSCF

For Tube and Shell Heat Exchangers (Int. Cl. 11).
First use at least as early as December 1950.

SN 297,917. C. Cretors & Co., d.b.a. Cretors & Company, Chicago, Ill. Filed May 13, 1968.



For Commercial Machines for Popping Corn (Int. Cl. 11).
First use in or about February 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 284,297. R. & J. Dick Co., Inc., King of Prussia, Pa. Filed Nov. 7, 1967.

DIXYLON

For Flat Belting for Power Transmission and Conveying Equipment (Int. Cl. 7).
First use 1957.

SN 294,187. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Mar. 26, 1968.

memory

For Belts and Belting for Use on Conveyor Systems (Int. Cl. 7).
First use Oct. 16, 1967.

SN 297,112. Universal Packing & Gasket Company, Houston, Tex. Filed May 1, 1968.

BIG JACK

For Polished Rod Packing (Int. Cl. 17).
First use Apr. 10, 1968.

SN 297,986. Dayco Corporation, Dayton, Ohio. Filed May 13, 1968.

TRUMP

For Air Hose (Int. Cl. 17).
First use on or about Apr. 26, 1968.

SN 298,253. Sears, Roebuck and Co., Chicago, Ill. Filed May 15, 1968.

GUARDSMAN

For Automobile Tires (Int. Cl. 12).
First use in or about April 1959.

SN 298,439. Garlock Inc., Palmyra, N.Y. Filed May 17, 1968.

PLASTI PAK

For Fluorocarbon Packing (Int. Cl. 17).
First use at least as early as Feb. 5, 1968.

SN 298,440. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 17, 1968.

RAYO-STEEL

For Tires (Int. Cl. 12).
First use Apr. 11, 1968.

SN 298,442. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 17, 1968.

DYNASTEEL

For Tires (Int. Cl. 12).
First use Apr. 11, 1968.

SN 298,443. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 17, 1968.

RAYOGLAS

For Tires (Int. Cl. 12).
First use Apr. 11, 1968.

SN 298,444. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 17, 1968.

NYLOGLAS

For Tires (Int. Cl. 12).
First use Apr. 11, 1968.

SN 298,445. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 17, 1968.

SOFTRAC

For Tires (Int. Cl. 12).
First use Apr. 11, 1968.

SN 300,276. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed June 12, 1968.

NYLOSTEEL

For Tires (Int. Cl. 12).
First use Apr. 11, 1968.

SN 302,007. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

G-LUG

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Mar. 10, 1961; in commerce Mar. 10, 1961.

Class 36 — Musical Instruments and Supplies

SN 270,802. National Gramophon Works Corporation, Mount Kisco, N.Y. Filed May 5, 1967.



For Phonograph Records and Albums (Int. Cl. 9).
First use Nov. 2, 1966.
Subj. to Intf. with SN 270,827.

SN 270,827. Vsesojuznoje Exportno-Importnoje Objedinenije "Mezhdunarodnaja Kniga" USSR, Moscow, Russia. Filed May 5, 1967.



Owner of Russian Reg. No. 29,088, dated Nov. 19, 1964.
For Phonograph Records (Int. Cl. 9).
First use January 1965; in commerce in the first half of 1965.
Subj. to Intf. with SN 270,802.

SN 271,936. Grossman Music Corporation, Cleveland, Ohio. Filed May 19, 1967.

CAPITOL

For Drums, Tom-Toms, Timbales, Tympani, Chimes, Marimbas, Vibraharps, Xylophones, Bell Lyras, Bongos, Congos, Gourds, Cymbals, Gongs, Temple Blocks, Wood Blocks, Triangles, Cowbells, Foot Pedals, Sock Pedals, Drum Heads, Drum Stands, Drum Thrones, Drum Cradles, Drum Sticks, Jazz Brushes, Drum Beaters, Tympani Beaters, Drum Mufflers, Drum Slings, Leg Rests, Tom-Tom Holders, Cymbal Holders, Cymbal Stands, Cymbal Pads, Drum Snares, Stick Trays, Drum Strainers, Drum Covers, Drum Cases, Tambourines, Drum Practice Pads, Drum Major Whistles, Bell Lyra Carriers, Bell Lyra Mallets, Batons, Banjo Heads, Guitars, Banjos, Mandolins, Ukuleles, Harmonicas, Trumpets, Bugles, Trombones, Clarinets, Saxophones, Recorders (Block Flutes), Violins, Violas, Basses; and Strings for All String Instruments (Int. Cl. 15).
First use on or about Apr. 1, 1933.

SN 296,818. Douglas Dunhill, Inc., Chicago, Ill. Filed Apr. 29, 1968.

CENTURY MARK IV

For Tape Recorders (Int. Cl. 9).
First use Mar. 13, 1968.

SN 296,901. WMI Corporation, Evanston, Ill. Filed Apr. 29, 1968.

DEL REY

For Electric Guitars; Acoustic Guitars; Ukeleles; Baritone Ukeleles; Banjos; Organs; Guitar Amplifiers; Amplifier Accessories—Namely, Enclosures, Reverb Units, Rhythm Machines; Guitar Accessories—Namely, Picks, Guitar Bags, Carrying Cases, Connecting Cords, Foot Switches, Pick-Ups, Bridges, Mutes, Guitar Strings; Percussion Instruments—Namely, Cymbals, Drums, and Accessories—Namely, Drum Sticks, Brushes, Cymbal Holders, and Carrying Cases (Int. Cls. 9 and 15).
First use at least as early as July 29, 1964.

SN 296,902. WMI Corporation, Evanston, Ill. Filed Apr. 29, 1968.

MARLIN

For Guitars and Accessories Therefor—Namely, Cases, Straps, Amplifiers, and Strings (Int. Cls. 9 and 15).
First use on or about Oct. 24, 1966.

SN 297,376. Borg-Warner Corporation, Chicago, Ill. Filed May 6, 1968.



For Tape Cartridge Players and Parts Thereof for Replacement and Repair (Int. Cl. 9).
First use on or prior to Mar. 20, 1968.

SN 298,001. W. P. Hemenway Co., Portland, Oreg. Filed May 13, 1968.

TONEX

Owner of Reg. No. 846,609.
For Tape Recorders and Recorder Players (Int. Cl. 9).
First use at least as early as 1964.

SN 301,385. Behavioral Science Associates, Inc., Cincinnati, Ohio. Filed June 26, 1968.

SOUND SEMINARS

No registration rights are claimed in the word "Sound" apart from the mark as shown.
For Prerecorded Magnetic Tapes (Int. Cl. 9).
First use July 3, 1952.

Class 37 — Paper and Stationery

SN 272,923. The Fox Paper Company, Cincinnati, Ohio. Filed June 2, 1967.



For Paperboard and Coarse Paper—Namely, Paperboard, Natural Kraft, Blended Kraft, Machine Glazed Kraft, Dry Waxed Kraft, Flame Resistant Kraft, Indented Cushioning Paper, Wrapping Paper, Lined Indented Packaging Paper, Indented Cushioning Paper Pads, Cellulose Wadding, and Stuffing Paper (Int. Cl. 16).
First use January 1963; at least 1953 as to the mark "Fox."

SN 276,928. Data Mark, Inc., Maple Heights, Ohio. Filed July 27, 1967.

DATAMARK

For Self-Adhesive Labels for Use in Data Processing Machines (Int. Cl. 16).
First use Mar. 1, 1967.

SN 278,285. Combined Paper Mills, Inc., Chicago, Ill. Filed Aug. 15, 1967.



For Printing Papers, Hanging Papers, Foil Laminating Papers, Fine Papers, and Specialty Papers (Int. Cl. 16).
First use May 3, 1966.

SN 278,546. The Western Paper Goods Co., Cincinnati, Ohio. Filed Aug. 17, 1967.

GOLDTONE

For Correspondence Envelopes and Printing Paper (Int. Cl. 16).
First use on or about Dec. 1, 1945.

SN 279,820. Lynn S. Gladding, Penfield, N.Y. Filed Sept. 7, 1967.

RECKONDAR

For Employee Forms for Keeping Wage and Attendance Records (Int. Cl. 16).
First use June 5, 1967.

SN 285,282. Xerox Corporation, Rochester, N.Y. Filed Nov. 20, 1967.

OSM

For Bond Paper (Int. Cl. 16).
First use June 20, 1967.

SN 294,671. Scripto, Inc., Atlanta, Ga. Filed Apr. 1, 1968.

HAPPENINGS

For Ball Pens, Pencils, Fiber Tip Pens and Refills (Int. Cl. 16).
First use Feb. 22, 1968.

SN 297,153. Westab Inc., Dayton, Ohio. Filed May 2, 1968.



For Combination Package of a Binder, a Theme Book, and a Notebook (Int. Cl. 16).
First use Mar. 5, 1968.

Class 38 — Prints and Publications

SN 258,001. Technomic Publishing Company, Inc., Stamford, Conn. Filed Nov. 4, 1966.

ENVIRONMENTAL TECHNOLOGY & ECONOMICS

For Technical Journal Published on a Periodic Basis and Directed to Problems of Water and Air Pollution Abatement, Solids Disposal, Desalination, Water Renovation, and the Like (Int. Cl. 16).
First use at least as early as Sept. 9, 1966.

SN 281,604. The Miami Herald Publishing Company, Miami, Fla. Filed Oct. 2, 1967.

TROPIC

For Newspaper Magazine Supplement (Int. Cl. 16).
First use July 14, 1967.

SN 282,820. The Register and Tribune Syndicate, Inc., Des Moines, Iowa. Filed Oct. 18, 1967.

NOW!

For Newspaper and Magazine Feature Pertaining to Matters of Interest to Women (Int. Cl. 16).
First use Oct. 3, 1967.
Subj. to Intf. with SN 294,337.

SN 283,687. Monitor Publishing Company, Inc., Houston, Tex. Filed Oct. 30, 1967.



The letters on the drawing are "G.H.F."
For Sports Magazine Relating Primarily to Football (Int. Cl. 16).
First use Aug. 2, 1967.

SN 286,160. William Levi, d.b.a. Advertising Unlimited, Cincinnati, Ohio. Filed Dec. 4, 1967.

TEEN tempo

For Magazine Published Periodically (Int. Cl. 16).
First use April 1966.

SN 287,235. Stanley Home Products, Inc., Westfield, Mass. Filed Dec. 19, 1967.

THE WORLD'S standard

Owner of Reg. No. 505,049.
For House Organ Published From Time to Time (Int. Cl. 16).
First use Aug. 1, 1934.

SN 291,435. Sandlapper Press, Inc., Columbia, S.C. Filed Feb. 19, 1968.

SANDLAPPER

For Monthly Magazine (Int. Cl. 16).
First use Jan. 2, 1968.

SN 294,337. Whittaker Publications, Inc., San Francisco, Calif. Filed Mar. 27, 1968.

NOW

For Magazines (Int. Cl. 16).
First use July 20, 1967.
Subj. to Intf. with SN 282,820.

SN 297,831. Fleer Corp., Philadelphia, Pa. Filed May 10, 1968.

hot Spots

For Printed Images or Pictures Transferrable to Cloth by Means of Heat (Int. Cl. 16).
First use Apr. 21, 1968.

Class 39 — Clothing

SN 264,147. Cotton Art Mills, Inc., New York, N.Y. Filed Feb. 7, 1967.

Shantung Tricot

by Camco

Owner of Reg. No. 678,933.
For Ladies' and Children's Underwear (Int. Cl. 25).
First use 1956.

SN 267,162. Wm. G. Leininger Knitting Co., Inc., d.b.a. The Railroad Sock, Mohnton, Pa. Filed Mar. 20, 1967.



Applicant disclaims the word "Stretch" apart from the mark as shown.
For Socks (Int. Cl. 25).
First use May 20, 1964.

SN 272,409. Alfons Saum, d.b.a. Alfons Saum, Fabrik fur Schuhbodenteil, Uerzell, Kreis Schluchtern, Germany. Filed May 25, 1967.

HOMYPED

Priority claimed under Sec. 44(d) on German application filed Nov. 29, 1966; Reg. No. 844,387, dated Apr. 22, 1968.
For Sandals—Namely, Bathing Slippers Covered With Terry Cloth (Int. Cl. 25).

SN 273,481. Canadian Fur Trappers Corp., New York, N.Y. Filed June 9, 1967.



The word "Pants" is disclaimed apart from the mark as shown.
For Ladies' Shirt and Short Pants Combination, Culottes, Shifts, Pants, Suits, Shorts, Bermuda Shorts, Jamaica Shorts, Shirts, Slacks and Blouses, Bathing Suits, and Bikinis (Int. Cl. 25).
First use Sept. 2, 1966.

SN 275,697. David H. Smith, Inc., Lynn, Mass. Filed July 10, 1967.

DAVID SMITH

The mark "David Smith" is derived from the name of the individual, David H. Smith, whose consent is of record.
For Women's Dresses, Shirts, Shorts, Skirts, and Culottes (Int. Cl. 25).
First use November 1966.

SN 282,568. Galligaskins, Inc., Reading, Pa. Filed Oct. 16, 1967.

Galli•ga•skins

For Ladies' Fashion Hosiery (Int. Cl. 25).
First use May 16, 1967.

SN 283,417. Arlan's Dept. Stores, Inc., New York, N.Y. Filed Oct. 26, 1967.

WEE JORDAN

Owner of Reg. Nos. 764,744 and 799,562.
For Infants' Layette—Namely, Sleepers and Sleeping Bags (Int. Cl. 25).
First use July 1966.

SN 285,011. H. Freeman & Son, Inc., Philadelphia, Pa. Filed Nov. 16, 1967.

Tailored by H. FREEMAN & SON

No claim is made to the words "Tailored by" except in combination with the mark as shown.
For Men's Clothing—Namely, Suits, Coats, and Trousers (Int. Cl. 25).
First use Jan. 1, 1947.

SN 286,248. Duofold, Inc., Mohawk, N.Y. Filed Dec. 5, 1967.

duo|jet

For Sport Shirts and Tennis Shirts, Jackets, Sweaters, and Shorts (Int. Cl. 25).
First use Oct. 13, 1967.

SN 288,356. Scharff Corporation, Los Angeles, Calif. Filed Jan. 8, 1968.

Aquavanti

For Women's Rainwear—Namely, Raincoats and Rain Dresses, and Women's Coats (Int. Cl. 25).
First use on or about Dec. 16, 1967.

SN 289,175. Dorson-Fleisher, Inc., Manchester, N.H. Filed Jan. 19, 1968.

DORSINI Footwear

Applicant disclaims the word "Footwear" apart from the mark as shown.
For Ladies' Shoes (Int. Cl. 25).
First use at least as early as Nov. 25, 1964.

SN 289,800. Gino Paoli, Clifton, N.J. Filed Jan. 29, 1968.

COURT COUTURE

Applicant disclaims the word "Couture" apart from its use in connection with the mark.
For Ladies' Sportswear Consisting of Shirts, Blouses, Skirts, Culottes, Shorts, Dresses, Sweaters, Hats, Socks, and Panties (Int. Cl. 25).
First use Dec. 15, 1967.

SN 290,960. Saul Janov and Mark Janov (joint owners), New York, N.Y. Filed Feb. 13, 1968.

COLEBROOKE

Owner of Reg. No. 263,175.
For Men's Dress and Sports Shirts (Int. Cl. 25).
First use Oct. 29, 1929.

SN 292,498. J. G. Plotkin & Son Shoe Co., Scranton, Pa. Filed Mar. 5, 1968.

TRU-PALS

For Shoes (Int. Cl. 25).
First use Jan. 15, 1940.

SN 292,902. Fashionaire Hosiery, Inc., Kansas City, Mo. Filed Mar. 11, 1968.

LADY FLO

For Ladies' and Girls' Hosiery (Int. Cl. 25).
First use Feb. 5, 1960.

SN 294,007. R. G. Barry Corporation, Columbus, Ohio. Filed Mar. 25, 1968.



For Casual Footwear (Int. Cl. 25).
First use October 1967.

SN 294,314. Rob Roy Company, Inc., New York, N.Y. Filed Mar. 27, 1968.

GURU

For Dress and Sport Shirts, and Sweaters for Young Men and Boys (Int. Cl. 25).
First use Mar. 21, 1968.

SN 294,806. Cable Raincoat Company, Boston, Mass. Filed Apr. 3, 1968.

smog

For Raincoats and All-Weather Coats (Int. Cl. 25).
First use Feb. 7, 1968.

SN 294,869. The Strawberry Patch, Inc., Deer Park, N.Y. Filed Apr. 3, 1968.

THE STRAWBERRY PATCH INC.

Applicant disclaims the word "The."
For Women's, Teens' and Children's Sportswear—Namely, Swimsuits, Shorts, Slacks, Pants, Dresses, Skirts, Suits, and Vests, Blouses and Shirts (Int. Cl. 25).
First use June 6, 1967.

SN 297,193. Latest Trends, Inc., Rutherford, N.J. Filed May 2, 1968.

STOP-LITE

For Ladies' Sportswear—Namely, Jackets, Blouses, Skirts, Slacks, and Suits (Int. Cl. 25).
First use Mar. 23, 1968.

SN 297,276. Cluett, Peabody & Co., Inc., New York, N.Y. Filed May 3, 1968.

AFTER SHAVE

For Pajamas and Robes (Int. Cl. 25).
First use Aug. 12, 1966.

SN 297,611. Spartans Industries, Inc., New York, N.Y. Filed May 7, 1968.

Imperial Room

For Ladies' Apparel—Namely, Coats and Suits (Int. Cl. 25).
First use Feb. 15, 1967.

SN 298,055. Superba Cravats, Inc., Rochester, N.Y. Filed May 13, 1968.

THE SIGNE OF THE RED LION

For Neckwear (Int. Cl. 25).
First use Mar. 3, 1967.

SN 299,446. Farmington Industries, Inc., St. Louis, Mo. Filed May 31, 1968.

TUBBINS

For Infants' Shoes (Int. Cl. 25).
First use on or about May 1, 1968.

SN 299,737. Michaels Stern & Company, Inc., Rochester, N.Y. Filed June 5, 1968.

PORT OF ENTRY

For Men's Suits and Coats (Int. Cl. 25).
First use February 1959.

SN 299,843. Genesco Inc., Nashville, Tenn. Filed June 6, 1968.

ETERNALITE

For Men's Suits, Coats, and Slacks (Int. Cl. 25).
First use Feb. 15, 1968.

SN 300,418. Berkshire International Corporation, Reading, Pa. Filed June 14, 1968.

Engagement

For Panty Girdle-Stocking Combination (Int. Cl. 25).
First use May 17, 1968.

SN 304,239. Howard C. Mohn Hosiery Company, Reading, Pa. Filed Aug. 2, 1968.

LILY OF FRANCE

Owner of Reg. No. 95,138.
For Stockings and Panty Hose (Int. Cl. 25).
First use about Mar. 9, 1912, on stockings.

SN 304,517. Tex-Togs, Inc., El Paso, Tex. Filed Aug. 6, 1968.

fabri-knee

For Boys' Casual and Dress Slacks (Int. Cl. 25).
First use Apr. 1, 1968.

SN 305,089. Henson-Kickernick, Inc., Greenville, Tex. Filed Aug. 6, 1968.

FIGURE PERSUADER

For Foundation Garments—Namely, Brassieres, Girdles, and Brassiere Slips (Int. Cl. 25).
First use Feb. 15, 1968, on brassieres.

SN 305,613. Maidenform, Inc., New York, N.Y. Filed Aug. 21, 1968.

TAME-ME

For Foundation Garments and Lingerie (Int. Cl. 25).
First use Aug. 6, 1968.

SN 305,714. Caressa, Inc., Miami, Fla. Filed Aug. 22, 1968.

ultras*

Owner of Reg. No. 799,571.
For Ladies' Shoes (Int. Cl. 25).
First use July 1968.

SN 306,446. Tiny Town Togs, Inc., New York, N.Y. Filed Sept. 3, 1968.



For Children's Dresses (Int. Cl. 25).
First use Aug. 9, 1968.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 252,544. Cinematique, Ltd., Universal City, Calif. Filed Aug. 17, 1966.

CINEMATIQUE

For Artificial Eyelashes (Int. Cl. 26).
First use Oct. 19, 1965.

SN 281,984. International Wig Imports, Inc., Muskegon, Mich. Filed Oct. 6, 1967.



No claim is made to the exclusive right to use the representation of the wig apart from the mark as shown, and the portrayal of the person wearing the wig is not that of any living person but rather is imaginary.
For Wigs (Int. Cl. 26).
First use September 1966.

SN 294,684. Sterling Merchandise Co., Inc., New York, N.Y. Filed Apr. 1, 1968.



For Hair Goods—Namely, Wigs, Wiglets, and Falls (Int. Cl. 26).
First use March 1962.

SN 297,478. Yardley of London, Inc., Totowa, N.J. Filed May 6, 1968.

POETRY COLLECTION

For False Eyelashes (Int. Cl. 26).
First use July 11, 1967.

SN 305,186. Reid-Meredith, Inc., Lawrence, Mass. Filed Aug. 15, 1968.

CENTURY

For Wigs and Hairpieces (Int. Cl. 26).
First use Jan. 26, 1968.

Class 41 — Canes, Parasols, and Umbrellas

SN 299,017. Giant Umbrella Company, Inc., New York, N.Y. Filed May 24, 1968.

SMOOTHY

For Umbrellas (Int. Cl. 18).
First use May 16, 1968.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 281,233. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Textile Fabrics, Including Laces, Embroideries, Burlap and Upholstery Fabrics of Cotton, Silk, Wool, and Synthetic Fibers; Ribbons, Bed and Table Covers, Rugs and Carpets, Curtain and Draperies (Int. Cls. 24 and 27).

SN 289,767. Baron Fabrics, Inc., New York, N.Y. Filed Jan. 29, 1968.



The drawing is lined for the color gold, but no claim is made to color. The word "Fabrics" is disclaimed apart from the mark as shown. Owner of Reg. No. 670,283.
For Woven and Knitted Fabrics of Wool, Cotton, Silk, Rayon, Linen, and Synthetic Fibers (Int. Cl. 24).
First use May 30, 1967.

SN 291,882. M. Lowenstein & Sons, Inc., New York, N.Y. Filed Feb. 26, 1968.

PACIFIC SILVERCLOTH

Applicant disclaims the word "Silvercloth" except as part of the trademark.
For Silver Wrapping Cloth Made of Cotton and/or Synthetic Fibers for Wrapping Silver (Int. Cl. 24).
First use on or about June 1, 1944.

SN 294,245. Allied Stores Corporation, New York, N.Y. Filed Mar. 27, 1968.

BELLEAIR

Owner of Reg. No. 349,363.
For Curtains, Draperies, Bed Spreads, Slip Covers, Fiber Rugs, Carpeting, Sheets, Pillow Cases, Mattress Pads and Covers, Towels, Table Cloths, and Blankets (Int. Cls. 24 and 27).
First use Jan. 25, 1937.

SN 294,369. W. F. Breuss, Inc., West New York, N.Y. Filed Mar. 28, 1968.

A LAURENCE CREATION

The word "Creation" is disclaimed apart from the mark as shown.
For Home Furnishings—Namely, Scarfs, Tablecloths, Doilies, and Napkins (Int. Cl. 24).
First use Jan. 4, 1968.

SN 298,238. J. E. Morgan Knitting Mills, Inc., Tamaqua, Pa. Filed May 15, 1968.

ARCTEX

Owner of Reg. No. 662,624.
For Knitted Crib Blankets (Int. Cl. 24).
First use on or about Nov. 1, 1962.

SN 298,935. Haft & Co., Ltd., New York, N.Y. Filed May 23, 1968.



For Textile Fabrics of Wool, Silk, Cotton, and Synthetic Fibers (Int. Cl. 24).
First use Feb. 28, 1968.

SN 299,416. Albany Felt Company, Albany, N.Y. Filed May 31, 1968.

DURA-SLEEVE

For Tubular Fabric, Made of Textile Fibers by the Needle Punching Technique, for Use in Wringing Hides To Remove Water in the Manufacture of Leather (Int. Cl. 24).
First use Jan. 31, 1968.

SN 299,450. Fieldcrest Mills, Inc., Eden, N.C. Filed May 31, 1968.

LOUVEAU

For Textile Rugs and Carpeting (Int. Cl. 27).
First use Feb. 7, 1968.

SN 299,542. Beaunit Corporation, New York, N.Y. Filed June 3, 1968.

COMPUDYED

For Woven and Knitted Fabrics for Use in Outerwear, Sportswear, Loungewear, Underwear, and Sleepwear, for Men, Women, and Children (Int. Cl. 24).
First use on or about Apr. 20, 1968.

Class 43 — Thread and Yarn

SN 280,811. Johan Parmentier Textielfabrieken N.V., Dokkum, Netherlands. Filed Sept. 20, 1967.

PARLEY

For Yarns and Threads (Int. Cl. 23).
First use October 1928; in commerce Dec. 28, 1962.

SN 287,963. Sociedad Industrial Textil S.A. (Sitex), Lima, Peru. Filed Jan. 2, 1968.

POLY-ALPAC

Owner of Peruvian Reg. No. 3,996, dated Nov. 17, 1966.
For Threads and Yarns (Int. Cl. 23).

SN 298,261. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 15, 1968.

TORQUEL

For Yarn Composed of Natural or Synthetic Fibers or Blends of the Foregoing (Int. Cl. 23).
First use Apr. 30, 1968.

SN 298,866. Roselon Yarns, Inc., Philadelphia, Pa. Filed May 22, 1968.

SPINLENE

For Yarn (Int. Cl. 23).
First use May 13, 1968.

SN 299,478. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed May 31, 1968.

401

For Textured Yarn Composed of Glass Fibers (Int. Cl. 23).
First use May 24, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

SN 290,975. Precious Metals Research Works, Inc., Brooklyn, N.Y. Filed Feb. 13, 1968.

ALUMOLAIN

For Dental Porcelain and Dental Restorations (Int. Cls. 5 and 10).
First use on or about Jan. 26, 1968.

SN 293,027. Faciatoner, Inc., Oklahoma City, Okla. Filed Mar. 12, 1968.

FACIATONER

For Electronic Facial Exercisers (Int. Cl. 10).
First use Jan. 15, 1968.

SN 293,173. Professional Specialties Co., Clayton, Mo. Filed Mar. 13, 1968.

SelecTABLE

No claim is made to the word "Table" apart from the mark as shown.
For Medical Examination and Treatment Tables (Int. Cl. 10).
First use 1959.

SN 296,006. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Apr. 19, 1968.

TRIFLEX

Owner of Reg. No. 855,640.
For Vinyl Gloves for Surgical Use (Int. Cl. 10).
First use Apr. 1, 1968.

SN 298,126. Howmet Corporation, New York, N. Y. Filed May 14, 1968.

HI-LIFE

For Alloys for Making Partial Dental Restorations, Porcelain Materials for Use as a Facing on Such Restorations, and the Dental Restorations Themselves Resulting From the Use of Such Materials (Int. Cl. 10).
First use July 20, 1967.

SN 298,642. Sunbeam Corporation, Chicago, Ill. Filed May 20, 1968.

TIK-N-TEL

For Hair Dryers and Parts Therefor (Int. Cl. 11).
First use July 6, 1967.

SN 299,004. Dahlberg Electronics, Inc., Minneapolis, Minn. Filed May 24, 1968.

OLYMPUS

For Hearing Aids (Int. Cl. 10).
First use Dec. 1, 1964.

SN 299,510. Tony Velazquez, Tampa, Fla. Filed May 31, 1968.

FIWAY

For Orthopedic Braces and Accessories Therefor (Int. Cl. 10).
First use Jan. 29, 1967.

SN 299,889. Trans-Aid Corporation, Inglewood, Calif. Filed June 6, 1968.

MEDI-CART

For Mobile Nursing and Drug Distribution Cart (Int. Cl. 12).
First use Oct. 23, 1964.

SN 300,552. Black Dentaprises, Inc., Miami, Fla. Filed June 17, 1968.

ULTRA-CART

For Portable Water Cabinet for Dental Use (Int. Cl. 10).
First use Mar. 5, 1968.

SN 301,729. Encore, Inc., Portland, Oreg. Filed July 1, 1968.

ENCORE

For Control Units for Dental Appliances, Dental Syringes, Cuspidors, and Handpieces, Portable Dental Field Kits, Mobile Dental Units, and Sterilizers (Int. Cls. 10 and 11).
First use at least as early as August 1964.

SN 305,522. American Cyanamid Company, Wayne, N.J. Filed Aug. 20, 1968.

LEDERTINE

Owner of Reg. Nos. 280,833, 833,009, and others.
For Intradermal Applicator (Int. Cl. 10).
First use Aug. 2, 1968.

Class 45 — Soft Drinks and Carbonated Waters

SN 281,213. National Dairy Products Corporation, Chicago, Ill. Filed Sept. 26, 1967.

WHAM

For Imitation Fruit Flavored Drink Containing Water (Int. Cl. 32).
First use July 3, 1967.

SN 285,544. Great Lakes Beverages Corp., Brooklyn, N.Y. Filed Nov. 24, 1967.

MAYIM CHAIM

The word "Mayim" is disclaimed apart from the mark. The words "Mayim Chaim" are the Hebrew words for "life water."
For Soft Drinks (Int. Cl. 32).
First use Oct. 16, 1967.

SN 291,788. Tahitian Products Co., Inc., d.b.a. Tahiti Joe Co., Los Angeles, Calif. Filed Feb. 23, 1968.



The portrait shown on the drawing is of a fictitious person.
For Non-Alcoholic Beverage for Use as a Mix for Making Alcoholic Cocktails (Int. Cl. 32).
First use Mar. 29, 1968.

Class 46 — Foods and Ingredients of Foods

SN 256,158. Uncle Charlie's Sausage Co., Inc., Evansville, Ind. Filed Oct. 10, 1966.

Applicant disclaims the words "Tender 'n Juicy Eatin' Meat" apart from the mark as shown. The drawing is lined for the colors red and gold.
For Fresh Meats and Prepared Meat Products (Int. Cl. 29).
First use during 1955.

SN 258,270. Spillers Limited, London, England. Filed Sept. 19, 1966.

CAMBRIDGE FORMULA

The word "Formula," apart from the mark as shown, is disclaimed.
For Dietary Bread Loaves, Crisp-Bread, Biscuits, Cakes, and a Premix Therefor (Int. Cl. 5).
First use June 15, 1965; in commerce June 16, 1966.
Subj. to Intf. with SN 253,318.

SN 259,616. Beverly E. Williams, La Grange Park, Ill. Filed Nov. 28, 1966.

AccelerAged

Applicant disclaims the word "Aged" apart from the mark as shown.
For Flavored and Tenderized Fresh Meat in Carcass Form, in Whole or in Parts Thereof (Int. Cl. 29).
First use March 1959.

SN 270,855. Chicken Delight, Inc., Rock Island, Ill. Filed May 1, 1967.

CHILI DELIGHT

Applicant disclaims the word "Chili" apart from the mark. Owner of Reg. Nos. 578,807, 809,635, and others.
For Chili Con Carne (Int. Cl. 29).
First use Nov. 3, 1966.

SN 271,224. Chicken Delight, Inc., Rock Island, Ill. Filed May 11, 1967.



Applicant disclaims the word "Chili" apart from the mark. Owner of Reg. Nos. 578,807, 809,635, and others.
For Chili Con Carne (Int. Cl. 29).
First use Nov. 3, 1966.

SN 274,046. Carnation Company, Los Angeles, Calif. Filed June 16, 1967.

STOCK CHAMP

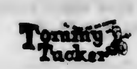
The word "Stock" is disclaimed separate and apart from the mark as a whole, but the applicant waives none of its common law rights in the mark or any feature thereof.
For Livestock Feed (Int. Cl. 31).
First use Oct. 28, 1965.

SN 275,942. Hallock-Denton Company, Newark, N.J. Filed July 13, 1967.

BON TON

Owner of Reg. No. 113,729.
For Powdered Garlic, Tapioca, and Black Pepper (Int. Cl. 30).
First use Oct. 1, 1966.

SN 282,888. Thomas & Howard Company, Incorporated, Charlotte, N.C. Filed Oct. 18, 1967.



The name "Tommy Tucker" and the representation of a boy is fictitious and refers to the well-known nursery rhyme character. Owner of Reg. No. 823,470.
For Canned Biscuits and Potato Chips (Int. Cls. 29 and 30).
First use Aug. 15, 1967, on canned biscuits.

SN 284,365. General Foods Corporation, White Plains, N.Y. Filed Nov. 8, 1967.

MR. MILK-MATE

Owner of Reg. No. 799,976.
For Flavored Milk Additive, Artificially Sweetened, for Use in Making a Food Drink (Int. Cl. 1).
First use Aug. 3, 1967.

SN 284,736. Safie Bros. Farm Pickle Co., Inc., New Baltimore, Mich. Filed Nov. 13, 1967.

SAFIE'S

For Pickled Onions, Pickled Peppers, Pickled Stuffed Peppers, Pickled Tomatoes, Pickles, Sauerkraut, and Relishes (Int. Cl. 29).
First use in or before September 1955.

SN 285,015. General Foods Corporation, White Plains, N.Y. Filed Nov. 16, 1967.

SALA WHIP

The word "Whip" is disclaimed apart from the mark as a whole.
For Low Calorie Imitation Salad Dressing (Int. Cl. 5).
First use July 26, 1967.

SN 286,179. Rerebaz, Inc., McKee City, N.J. Filed Dec. 4, 1967.

ZABERERS

For Canned Fruits, Vegetables, and Meats (Int. Cl. 29).
First use June 12, 1960.

SN 287,172. Società per Azioni Abele Bertozzi, Parma, Italy. Filed Dec. 18, 1967.

ANGELDOR

Owner of Italian Reg. No. 213,639, dated Aug. 4, 1967.
For Cheese, Canned Whole Fruits, Preserved Vegetables, Jams, Marmalades, and Jellies (Int. Cl. 29).

SN 289,775. The CG Biscuit Company, Portsmouth, Ohio. Filed Jan. 29, 1968.

King

Applicant disclaims the word "Flavor" and makes no claim to the exclusive use of this word.
For Cookies, Cakes, and Crackers (Int. Cl. 30).
First use Sept. 30, 1967.

SN 291,433. J. M. Rodriguez & Co., Inc., New York, N.Y. Filed Feb. 19, 1968.

FLOR

"Flor" is a Spanish word which means "flower."
For Canned Pimientos (Int. Cl. 29).
First use 1961.

SN 293,558. National Dairy Products Corporation, Chicago, Ill. Filed Mar. 18, 1968.

MC LAUGHLIN'S

For Coffee (Int. Cl. 30).
First use at least as early as 1882.

SN 294,886. The Harlee Company, Chicago, Ill. Filed Apr. 4, 1968.

BIG TEE

Applicant disclaims the word "Big" apart from the mark as shown, and without waiving any of applicant's common law rights in that term.
For Sandwiches (Int. Cl. 29).
First use in or about 1961.

SN 296,323. Home Town Foods, Inc., Jacksonville, Fla. Filed Apr. 23, 1968.

SUB

For Imitation Fluid Milk (Int. Cl. 29).
First use Dec. 18, 1967.

SN 296,397. Bristol-Myers Company, New York, N.Y. Filed Apr. 24, 1968.

SENSE

For Dietary Supplement in the Form of a Cookie (Int. Cl. 5).
First use Mar. 4, 1968.

SN 297,319. South Atlantic Sales Co., Baltimore, Md. Filed May 3, 1968.

444

For Complete Frozen Dinner Unit Comprising Shrimp, Fish, and French Fries (Int. Cl. 29).
First use May 2, 1968.

SN 297,540. Dairyland Food Laboratories, Inc., Waukesha, Wis. Filed May 7, 1968.

EMPORASE

For Milk Clotting Enzyme Blend (Int. Cl. 1).
First use Mar. 28, 1968.

SN 297,616. Sweetheart Bakers, Inc., Salisbury, Md. Filed May 7, 1968.

TRIMAID

For Bread (Int. Cl. 30).
First use July 20, 1964.

SN 297,784. Jiffy Fry, Inc., Crookston, Minn. Filed May 9, 1968.

Red River Valley Gold

For Frozen French Fried and Crinkle Cut Potatoes (Int. Cl. 29).
First use Nov. 11, 1960.

SN 297,785. Jiffy Fry, Inc., Crookston, Minn. Filed May 9, 1968.

Valley Farms

For Frozen French Fried and Crinkle Cut Potatoes (Int. Cl. 29).
First use Nov. 11, 1960.

SN 297,909. Wyandot Popcorn Company, Marion, Ohio. Filed May 10, 1968.

SUPER H

Owner of Reg. Nos. 741,006 and 848,280.
For Raw Unpopped Popcorn (Int. Cl. 31).
First use Dec. 21, 1966.

SN 301,224. Gerber Products Company, Fremont, Mich. Filed June 24, 1968.

So Bigs

The portrait identifies "James Allen" a living individual, and consent is of record.
For Sugar Coated Cereal (Int. Cl. 30).
First use July 27, 1967.

SN 301,492. International Minerals & Chemical Corporation, Skokie, Ill. Filed June 27, 1968.

Accent

Owner of Reg. Nos. 435,707, 838,471, and others.
For Yeast Extract for Food Manufacture (Int. Cl. 30).
First use June 14, 1968.

Class 48 — Malt Beverages and Liquors

SN 285,588. Stegmaier Brewing Company, Wilkes-Barre, Pa. Filed Nov. 24, 1967.

PARTY/PACK

For Cartons Containing Beer (Int. Cl. 32).
First use Sept. 14, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 261,665. Mr. Boston Distiller Inc., Boston, Mass. Filed Dec. 29, 1966.

Mr. Boston's
Proper Gin

No registration rights are claimed to the term "Proper Gin" apart from the mark as shown. Owner of Reg. Nos. 361,958, 770,018, and others.
For Gin (Int. Cl. 33).
First use Nov. 7, 1966.

SN 269,237. V/O Sojuzplodoimport, Moscow, U.S.S.R. Filed Apr. 14, 1967.

STOLICHNAYA

The English translation of the mark "Stolichnaya" is "capital" (meaning main city).
For Vodka (Int. Cl. 33).
First use May 9, 1944; in commerce 1946.

SN 291,107. Tequila San Matias de Jal., S.A., d.b.a. Tequila San Matias de Jalisco, S.A., Guadalajara, Mexico. Filed Feb. 14, 1968.

San Matias

For Tequila (Int. Cl. 33).
First use Jan. 2, 1948; in commerce June 15, 1962.

SN 293,420. United African Distilleries Anstalt, Vaduz, Liechtenstein. Filed Mar. 15, 1968.

SYMBOL

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 2,433, dated Sept. 15, 1967.
For Distilled Spirits Specialty Made With Grain Neutral Spirits and Added Flavor (Int. Cl. 33).

Class 50 — Merchandise Not Otherwise Classified

SN 287,013. H-C Industries, Inc., Crawfordsville, Ind. Filed Dec. 15, 1967.

For Bottle Closures (Int. Cl. 20).
First use Sept. 11, 1967.

SN 299,390. Klaus Wichelhaus, Solingen-Weyer, Germany. Filed May 29, 1968.

MANULETT

Owner of German Reg. No. 842,587, dated Feb. 15, 1968.
For Signs, Letters, Numerals, Marks and Symbols for Technical Purposes, All Made Especially of Plastics Material (Int. Cl. 20).

SN 299,437. Crown Rubber Company, Fremont, Ohio. Filed May 31, 1968.

TUFF-SPUN

For Floor Mats Made of Sponge Rubber or Sponge Vinyl (Int. Cl. 27).
First use Sept. 15, 1962.

SN 304,439. Jewel Aquarium Co., Inc., Chicago, Ill. Filed Aug. 6, 1968.

BIO-RACK

For Equipment for Displaying and Raising Marine, Plant and Animal Life—Namely, Aquaria, Terraria, and Animal Cages, and Mounting Stands for One or More of the Foregoing Items (Int. Cls. 16 and 21).
First use May 22, 1963.

Class 51 — Cosmetics and Toilet Preparations

SN 251,580. Ar. Winarick, Inc., New York, N.Y. Filed Aug. 3, 1966.

OUTDOOR MAN

Owner of Reg. No. 649,852.
For Cologne and After Shave Lotion (Int. Cl. 3).
First use Aug. 15, 1965.

SN 282,368. Houbigant, Inc., New York, N.Y. Filed Oct. 12, 1967.

QUELQUES FLEURS

"Quelques Fleurs" means "few flowers." Owner of Reg. Nos. 141,389, 141,390, and 678,618.
For Perfumes, Cosmetics, Toilet Preparations, and Men's Toiletries—Namely, Perfume, Cologne, Toilet Water, Perfumed Moisture Balm, Bath Oil, Talcum Powder, Dusting Powder, Bubble Bath, Powder Sachet, Liquid Skin Sachet, Foam Milk Bath Powder, Skin Lotions, Lipstick, Rouge, Face Powder, Skin Cream, Brilliantine, Hair Spray, and Deodorant (Int. Cls. 3 and 5).
First use 1912.

SN 288,787. Clairol Incorporated, New York, N.Y. Filed Jan. 15, 1968.

FROSTAN

For Sun Tan Gel, Sun Tan Lotion and Sun Tan Oil (Int. Cl. 3).
First use Dec. 18, 1967.

SN 288,789. Clairol Incorporated, New York, N.Y. Filed Jan. 15, 1968.

DEW-GOODER LOTION

Applicant disclaims the right to the exclusive use of the word "Lotion," apart from the mark as shown.
For Moisture Lotion (Int. Cl. 3).
First use Dec. 18, 1967.

SN 289,997. Luzier Incorporated, Kansas City, Mo. Filed Jan. 31, 1968.

FRONT AND CENTER

For Skin Conditioner After Shave Lotion (Int. Cl. 3).
First use Dec. 8, 1967.

SN 292,704. C. J. Monette Associates, Inc., Norfolk, Va. Filed Mar. 7, 1968.

Hello, Dolly

For Hair Spray (Int. Cl. 3).
First use Oct. 2, 1967.

SN 292,722. Sharon Ray Corp., Angola, Ind. Filed Mar. 7, 1968.

GOLD CRYSTAL

For Perfume, Toilet Water, and Bath Oil (Int. Cl. 3).
First use on or before Feb. 24, 1968.

SN 292,723. Sharon Ray Corp., Angola, Ind. Filed Mar. 7, 1968.

RASCAL

For Men's Cosmetic Preparations—Namely, After Shave Lotion and Cologne (Int. Cl. 3).
First use on or before Feb. 24, 1968.

SN 292,724. Sharon Ray Corp., Angola, Ind. Filed Mar. 7, 1968.

FIRE CRYSTAL

For Perfume, Toilet Water, and Bath Oil (Int. Cl. 3).
First use on or before Feb. 24, 1968.

SN 292,725. Sharon Ray Corp., Angola, Ind. Filed Mar. 7, 1968.

OCEAN CRYSTAL

For Perfume, Toilet Water, and Bath Oil (Int. Cl. 3).
First use on or before Feb. 24, 1968.

SN 292,798. Luzier Incorporated, Kansas City, Mo. Filed Mar. 8, 1968.

ULTRA VIE

For Protein Skin Lotion and Protein Conditioning Cream (Int. Cl. 3).
First use at least as early as Mar. 9, 1967.

SN 296,636. Bristol-Myers Company, New York, N.Y. Filed Apr. 26, 1968.

GOOD CLEAN FUN

For Cosmetic-Bath Oil (Int. Cl. 3).
First use Apr. 1, 1968.

SN 306,199. American Home Products Corporation, New York, N.Y. Filed Aug. 29, 1968.

PRIVAID

For Personal Deodorant (Int. Cl. 5).
First use Aug. 21, 1968.

SN 306,537. Lever Brothers Company, New York, N.Y. Filed Sept. 4, 1968.

STARLIGHT

Owner of Reg. Nos. 259,194 and 602,228.
For Hand Lotion (Int. Cl. 3).
First use Sept. 15, 1965.

Class 52 — Detergents and Soaps

SN 287,984. Yardley of London, Inc., Totowa, N.J. Filed Jan. 2, 1968.

POETRY COLLECTION

For Toilet Soap (Int. Cl. 3).
First use Dec. 14, 1967.

SN 290,127. Yardley of London, Inc., Totowa, N.J. Filed Feb. 1, 1968.

LONDONDERRY

For Hair Shampoo (Int. Cl. 3).
First use June 16, 1967.

SN 293,476. Cities Service Oil Company, Tulsa, Okla. Filed Mar. 18, 1968.

SOLVENT 26

Applicant disclaims the word "Solvent" apart from the mark as shown.
For Industrial Cleaning Solvent for Cleaning Metal (Int. Cl. 3).
First use at least as early as June 1942.

SN 294,226. Beecham Inc., Clifton, N.J. Filed Mar. 27, 1968.

SDU-145

For Antidandruff Ingredient for Shampoo (Int. Cl. 3).
First use Mar. 14, 1968.

SN 294,588. Bristol-Myers Company, New York, N.Y. Filed Apr. 1, 1968.

PATH FINDER

For Hair Shampoo (Int. Cl. 3).
First use Mar. 6, 1968.

SN 295,069. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Apr. 5, 1968.

RELLAD

For Buffing Compound Remover (Int. Cl. 3).
First use Mar. 4, 1968.

SN 295,869. Zynolyte Products Company, Compton, Calif. Filed Apr. 17, 1968.

HOUSE MATE

Owner of Reg. No. 821,288.
For Upholstery Shampoo (Int. Cl. 3).
First use Apr. 4, 1968.

SN 296,087. Alcra Industries, Inc., New York, N.Y. Filed Apr. 22, 1968.

IN

For Refrigerator Cleaner (Int. Cl. 3).
First use Apr. 5, 1968.

SN 296,637. Bristol-Myers Company, New York, N.Y. Filed Apr. 26, 1968.

GOOD CLEAN FUN

For Hair Shampoo (Int. Cl. 3).
First use Apr. 1, 1968.

SN 296,655. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

SEARCH-LITES

For Hair Shampoo (Int. Cl. 3).
First use on or about Mar. 18, 1968.

SN 296,680. Fischer-Davila Industries, Inc., d.b.a. Heinrich Fischer & Co., Cincinnati, Ohio. Filed Apr. 26, 1968.

BENDOLENE

For Granular Detergent for Scrub-and-Flush Cement Floor Cleaning (Int. Cl. 3).
First use January 1938.

SN 296,887. Tagrn Corporation, Plymouth, Mich. Filed Apr. 29, 1968.

KANT MISS

For All-Purpose Liquid Cleaning Concentrate (Int. Cl. 3).
First use Feb. 19, 1968.

SN 296,893. Tinolan Service Associates, Inc., Columbus, Ohio. Filed Apr. 29, 1968.

MAGNA

For Liquid Detergent Composition for Cleaning Carpets and Upholstery Fabrics (Int. Cl. 3).
First use Apr. 10, 1968.

SN 303,648. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 26, 1968.

SCOTCH-BRITE

Owner of Reg. Nos. 677,849 and 715,247.
For Spray Cleaner for Floors (Int. Cl. 3).
First use Feb. 12, 1968.

SN 303,651. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 26, 1968.

3M

Owner of Reg. Nos. 751,879 and 776,324.
For Spray Cleaner for Floors (Int. Cl. 3).
First use Feb. 12, 1968.

SN 306,314. Powdered Silk Mfr. Co., Inc., Stratford, Iowa. Filed Aug. 30, 1968.

POWDERED SILK

Owner of Reg. No. 355,848.
For Cleaning Preparation for Removing Grease, Grime, Ink, Paint, Stains, and All Dirt From Hands, and a General Cleaner for Bathtubs, Porcelain, Aluminum Ware, and Similar Uses (Int. Cl. 3).
First use on or about Jan. 1, 1927.

SERVICE MARKS

Class 100 — Miscellaneous

SN 245,630. Sveden House International, Inc., Minneapolis, Minn., by change of name from Sveden House Developers, International, Inc., Minneapolis, Minn. Filed May 12, 1966.



Applicant disclaims the exclusive use of the words "Smorgasbord" and "House" apart from the mark as shown. Owner of Reg. No. 847,741.
For Restaurant Services (Int. Cl. 42).
First use Feb. 8, 1966.

SN 269,395. Bergdorf & Goodman Company, New York, N.Y. Filed Apr. 18, 1967.

BEAUTY AT BERGDORF'S

For Beauty Consultation Service, Including Demonstrations and Private Consultation (Int. Cl. 42).
First use October 1966.

SN 281,763. Better Management Services, Inc., St. George, Staten Island, N.Y. Filed Oct. 4, 1967.

PEP

For Conducting Research on the Standardization of Wooden Pallets Used in Transporting Goods (Int. Cl. 42).
First use on or about Oct. 10, 1966.

SN 286,905. Chuckwagon Service Corporation, Bala Cynwyd, Pa. Filed Dec. 14, 1967.

CHUCKWAGON

For Restaurant Services (Int. Cl. 42).
First use Apr. 8, 1959.

SN 289,402. Hilton International Co., New York, N.Y. Filed Jan. 23, 1968.

HILTON INTERNATIONAL

Owner of Reg. No. 736,906.
For Hotel Services (Int. Cl. 42).
First use Jan. 11, 1968.

SN 289,496. Figure Trim, Inc., d.b.a. Insta-Trim, South Bend, Ind. Filed Jan. 24, 1968.

INSTA-TRIM

For Men's and Women's Figure Reducing Service (Int. Cl. 42).
First use Jan. 18, 1968.

SN 290,906. Special Promotions, Inc., Jackson, Miss. Filed Feb. 12, 1968.



For Photographic Service—Namely, Portrait Photography (Int. Cl. 42).
First use July 18, 1967.

SN 291,060. Fred Harvey, Chicago, Ill. Filed Feb. 14, 1968.



For Restaurant Services (Int. Cl. 42).
First use Dec. 27, 1967.

SN 300,960. Pepper Mill Associates, Inc., Westport, Conn. Filed June 20, 1968.

The PEPPER MILL

For Restaurant Services (Int. Cl. 42).
First use February 1967.

SN 305,352. Harry M. Stevens, Inc., New York, N.Y. Filed Aug. 16, 1968.

HARRY M. STEVENS

The name "Harry M. Stevens" is that of the founder of applicant's business, who is now deceased.
For Restaurant Services (Int. Cl. 42).
First use Jan. 20, 1968.

SN 306,443. Heritage House Restaurants, Inc., Springfield, Ill. Filed Sept. 3, 1968.



For Restaurant Services (Int. Cl. 42).
First use Nov. 20, 1965.

SN 306,856. The New Yorker Hotel Corporation, New York, N.Y. Filed Sept. 9, 1968.

GOTEL

For Hotel Services (Int. Cl. 42).
First use Apr. 22, 1968.

Class 101 — Advertising and Business

SN 263,275. George F. Koehnke, d.b.a. Talented Teen Foundation, Itasca, Ill. Filed Jan. 25, 1967.



The wording "Talented Teen Search" is disclaimed apart from the mark as shown.
For Promoting the Sale of the Goods and Services of Others by Conducting a Contest for Entertainers in Which a Prize Is Given to the Outstanding Entrant or Entrants (Int. Cl. 35).
First use in 1961.

SN 278,810. Mary's Sunshine Dairies, Inc., Hartsdale, N.Y. Filed Aug. 22, 1967.



Without relinquishing any of its common law rights, applicant disclaims the words "Drive-Thru Dairies" apart from the mark as shown.
For Dairy Store Services (Int. Cl. 35).
First use Apr. 4, 1967.

SN 284,962. Advo System, Inc., Hartford, Conn. Filed Nov. 16, 1967.

WHERE SERVICE IS FIRST

For Advertising, Printing, Bindery, Addressing and Mailing Services for Goods of Others; and Maintaining and Providing Mailing Lists Therefor (Int. Cl. 35).
First use at least as early as September 1965.

SN 286,600. Computer Usage Company, Inc., Mount Kisco, N.Y. Filed Dec. 11, 1967.

CUC

For Data Processing—Namely, Recording, Tabulating, Correlating, Cataloging, Studying and Analyzing, for Others, Bookkeeping, Billing, Sales Market Survey, Political, Sociological and Psychological Survey, Payroll, Budget, Procurement, Filing, Accounting and Management Data, Computer Programming, Renting of Computers for Specified Periods of Time, and Management of Computer Facilities (Int. Cl. 35).
First use May 1955.

SN 287,198. Victor Comptometer Corporation, Chicago, Ill. Filed Dec. 18, 1967.

VICTOR TEMPORARIES

No claim is made to the word "Temporaries" apart from the mark as shown.
For Providing Temporary Office Personnel, and Calculating Services for Others (Int. Cl. 35).
First use October 1962.

SN 287,521. Clark Shoe Company, Inc., Boston, Mass. Filed Dec. 26, 1967.

THE BOOTLEG PLACE

For Retail Shoe Store Services (Int. Cl. 35).
First use Oct. 2, 1967.

SN 287,932. Nan Miller & Associates, Inc., Chicago, Ill. Filed Jan. 2, 1968.

THE GAME WITHOUT A NAME

The word "Game" is disclaimed apart from the mark as shown, with no waiver of applicant's common law rights.
For Operation of Computerized Question and Answer Games Played at Fairs, Expositions, Conventions, Trade Associations, Professional Organization Meetings, and Commercial Exhibitions (Int. Cl. 35).
First use Nov. 25, 1967.

SN 288,917. Minit-Print, Inc., Miami, Fla. Filed Jan. 16, 1968.

Minit-Print

For Reproducing Copies of Written Documents (Int. Cl. 35).
First use June 8, 1964.

SN 290,176. Ronnie Ketchel, d.b.a. Ronnie Ketchel Research, New York, N.Y. Filed Feb. 2, 1968.



The mark consists of a fanciful design of the letters "RKR."
For Market Research Services (Int. Cl. 35).
First use Feb. 4, 1963.

SN 295,405. 1975 World Freedom Fair, Incorporated, Boston, Mass. Filed Apr. 11, 1968.



For Organizing and Planning a World's Fair (Int. Cl. 35).
First use Dec. 14, 1967.

SN 295,627. The A. L. Duckwall Stores Company, Abilene, Kans. Filed Apr. 15, 1968.

ALCO

For Retail Services in Connection With Variety and Discount Stores (Int. Cl. 35).
First use July 1965.

SN 298,090. 1975 World Freedom Fair, Incorporated, Boston, Mass. Filed May 14, 1968.

THE INTERDEPENDENCE OF MAN

For Organizing and Planning a World's Fair (Int. Cl. 35).
First use Apr. 1, 1968.

SN 301,672. Automated Information Management, Inc., Minneapolis, Minn. Filed July 1, 1968.

AIM



For Designing, Developing, Implementing and Managing Computerized Information Systems for Others (Int. Cl. 35).
First use Nov. 1, 1966.

Class 102 — Insurance and Financial

SN 306,843. The Independent Life and Accident Insurance Company, Jacksonville, Fla. Filed Sept. 9, 1968.



For Underwriting Life, Health, and Accident Insurance (Int. Cl. 36).
First use March 1955.

SN 306,980. The Independent Life and Accident Insurance Company, Jacksonville, Fla. Filed Sept. 9, 1968.

INDEPENDENT LIFE

For the purposes of registration, no claim is made to the exclusive right to use the word "Life" apart from the mark as shown.
For Underwriting Life, Health, and Accident Insurance (Int. Cl. 36).
First use March 1920.

Class 103 — Construction and Repair

SN 277,163. Giltech Corporation, St. Paul, Minn. Filed July 31, 1967.

GILTECH

For Custom Building of Specially Designed Packaging Machinery for Others (Int. Cl. 37).
First use May 1966.

SN 301,129. HDO Productions, Inc., Highland Park, Ill. Filed June 24, 1968.

HDO

Applicant disclaims the word "Productions" apart from the mark as shown, but without thereby waiving any common law right thereto.
For Renting or Leasing, Including Erection and Removal, of Temporary Structures, Hardwood Dance Floors, Canopies, Ground Coverings, and Lighting (Int. Cl. 37).
First use February 1968.

Class 105 — Transportation and Storage

SN 287,643. Fun in the Sun Tours, Inc., Abington, Pa. Filed Dec. 27, 1967.

FUN IN THE SUN SHOPPERS' SPECIAL

The words "Shoppers' Special" are disclaimed apart from the mark as shown. Owner of Reg. No. 820,506.
For Specialized Travel Agency Services, Tour Planning Augmented by Shopping Opportunities, and Making Reservations (Int. Cl. 39).
First use Apr. 30, 1964.

SN 288,843. Modern Intermodal Traffic Corp., Oakland, Calif. Filed Jan. 15, 1968.

MITCO

For Freight Forwarding Services (Int. Cl. 39).
First use Sept. 18, 1967.

SN 294,918. Commonwheel Corporation, Philadelphia, Pa. Filed Apr. 4, 1968.

COMMONWHEEL CORPORATION

For Truck Rentals (Int. Cl. 39).
First use Mar. 8, 1968.

Class 106 — Material Treatment

SN 273,976. Michael J. Raab, d.b.a. Raab Industries, Rockledge, Philadelphia, Pa. Filed June 15, 1967.



The mark consists of the letters "RI." The drawing is lined for the color grey or silver.
For Service of Applying to Metal Parts (Belonging to Others) a Protective or Decorative Coating—Namely, Applying Hard Chrome Plating to Valve Stems (Int. Cl. 40).
First use Jan. 1, 1967.

Class 107 — Education and Entertainment

SN 255,336. The Madison Women's Republican Club, Madison, Conn. Filed Sept. 28, 1966.



For Promoting the Welfare of the Republican Party Through Political, Educational, and Entertainment Activities (Int. Cl. 41).
First use May 24, 1964.

SN 285,682. Statistical Tabulating Corporation, Chicago, Ill. Filed Nov. 27, 1967.

CBSI

For Providing Instructional Courses in Basic and Business Skills (Int. Cl. 41).
First use Aug. 24, 1967.

SN 306,059. Hero International Corp., d.b.a. Generation Gap Productions, New York, N.Y. Filed Aug. 27, 1968.

GORDON ROSE AND THE GENERATION GAP

For Singing Group Entertainment Services (Int. Cl. 41).
First use at least as early as January 1968; at least as early as August 1966, as to "Gordon Rose."

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 270,359. CUNA International, Inc., Madison, Wis. Filed May 1, 1967.



Without waiver of common law rights, applicant disclaims the words "Hard Times," "Sickness," "Financial Distress," and "Credit Union" apart from the mark as shown. Owner of Reg. Nos. 623,499 and 720,474.

For Indicating Membership in Applicant.
First use in or about August 1924.

SN 275,760. Junior Chamber International, Inc., Miami Beach, Fla. Filed July 11, 1967.

JCI

For Indicating Membership in Applicant.
First use February 1946.

CERTIFICATION MARKS

Class A — Goods

SN 293,998. Washington State Potato Commission, Yakima, Wash. Filed Mar. 25, 1968.

FINER THAN FAMOUS

The mark certifies regional origin of the goods in the State of Washington.
For Potatoes in Their Natural State and Processed Potatoes and Potato Products—Namely, Dehydrated Sliced and Diced Potatoes, Frozen French Fries, Granules, Flakes, Hash Brown and Nugget Potatoes, and Canned Potatoes.
First use Feb. 8, 1968.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

861,516. TREVIRA 2000. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. MULTIPLE CLASS (Classes 1, 39, 42, and 43). SN 269,952. Pub. 9–24–68. Filed 4–25–67.

861,517. TREVIRA 2000 AND DESIGN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. MULTIPLE CLASS (Classes 1, 39, 42, and 43). SN 269,953. Pub. 9–24–68. Filed 4–25–67.

861,518. L AND DESIGN. Columbian Carbon Company. SN 277,149. Pub. 9–24–68. Filed 7–31–67.

861,519. PORON. Rogers Corporation. SN 290,332. Pub. 9–24–68. Filed 2–5–68.

861,520. PRIM. Ralston Purina Company. SN 296,079. Pub. 9–24–68. Filed 4–22–68.

861,521. CROWN. Crown Feather and Down Corp. SN 297,246. Pub. 9–24–68. Filed 5–3–68.

861,522. ALWATE. United States Steel Corporation. SN 300,541. Pub. 9–24–68. Filed 6–17–68.

861,523. MILVEX. General Mills, Inc. SN 300,871. Pub. 9–24–68. Filed 6–20–68.

Class 2 — Receptacles

861,524. WP. Ipco Hospital Supply Corporation. SN 270,683. Pub. 9–24–68. Filed 5–4–67.

861,525. COR-LOCK BIN. Richard S. Bingham and Markham R. Bingham (joint venture). SN 276,094. Pub. 9–24–68. Filed 7–17–67.

861,526. FULL CIRCLE PACKAGING. Alton Box Board Company. SN 282,872. Pub. 9–24–68. Filed 10–19–67.

861,527. POCKET CELL. Keyes Fibre Company. SN 293,279. Pub. 9–24–68. Filed 3–14–68.

861,528. TRIBUTE. Wilbert, Inc. SN 293,764. Pub. 9–24–68. Filed 3–20–68.

861,529. REGAL. Wilbert, Inc. SN 293,765. Pub. 9–24–68. Filed 3–20–68.

861,530. CALYPSO. Humboldt Products Corp. SN 297,504. Pub. 9–24–68. Filed 5–7–68.

861,531. ECS. Crate-Rite, Inc. SN 299,810. Pub. 9–24–68. Filed 6–6–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

861,532. CASUAL CORNER. Casual Corner Associates, Inc. MULTIPLE CLASS (Classes 3, 26, 28, and 39). SN 300,309. Pub. 9–24–68. Filed 6–13–68.

Class 5 — Adhesives

861,533. COHESIVE MASTIC. The Webtex Company. SN 235,757. Pub. 9–24–68. Filed 11–24–65.

Class 6 — Chemicals and Chemical Compositions

861,534. RHEUMINDEX. Ortho Pharmaceutical Corporation, d.b.a. Ortho Diagnostics. SN 266,130. Pub. 9–24–68. Filed 3–7–67.

861,535. MESERAN. Ametek, Inc. MULTIPLE CLASS (Classes 6 and 26). SN 274,833. Pub. 9–24–68. Filed 6–27–67.

861,536. GET LOST! AND DESIGN. Mary B. Burtis, d.b.a. The Jab Company. SN 287,141. Pub. 9–24–68. Filed 12–18–67.

861,537. INOTAB. Foseco International Limited. SN 288,506. Pub. 9–24–68. Filed 1–10–68.

861,538. CONOGAS AND DESIGN. Continental Oil Company. SN 289,784. Pub. 9–24–68. Filed 1–29–68.

861,539. WITCAMIDE. Witco Chemical Company, Inc. SN 290,678. Pub. 9–24–68. Filed 2–8–68.

861,540. SQUARE CHECKERBOARD (DESIGN). Ralston Purina Company. MULTIPLE CLASS (Classes 6, 18, and 46). SN 293,612. Pub. 9–24–68. Filed 3–4–68.

861,541. BENLATE. E. I. du Pont de Nemours and Company. SN 298,087. Pub. 9–24–68. Filed 5–14–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

861,542. AQUAFLO. Atlas Chemical Industries, Inc. SN 271,904. Pub. 9–24–68. Filed 5–19–67.

861,543. ROSETTE. Hitco. SN 272,055. Pub. 9–24–68. Filed 5–22–67.

861,544. TF (DESIGN). Alsco, Inc. MULTIPLE CLASS (Classes 9 and 32). SN 272,531. Pub. 9–24–68. Filed 5–29–67.

861,545. STRATABLAST. The Dow Chemical Company. SN 282,784. Pub. 9–24–68. Filed 10–18–67.

861,546. TRAPMASTER. Crosman Arms Company, Inc. SN 293,239. Pub. 9–24–68. Filed 3–14–68.

Class 10 — Fertilizers

861,547. N NIPAK AND DESIGN. Nipak, Inc. SN 284,026. Pub. 9–24–68. Filed 11–2–67.

Class 11 — Inks and Inking Materials

861,548. MICROPORE. The Carter's Ink Company. SN 263,252. Pub. 9–24–68. Filed 1–25–67.

861,549. HYDRO VEL. Sun Chemical Corporation. SN 286,199. Pub. 9–24–68. Filed 12–4–67.

861,550. SCORE. Old Town Corporation. SN 291,765. Pub. 9–24–68. Filed 2–23–68.

Class 12 — Construction Materials

861,551. INTERLAKE. Interlake Steel Corporation. SN 254,684. Pub. 9–24–68. Filed 9–19–66.

861,552. DUR-A-FLEX. Dur-A-Flex, Inc. SN 256,831. Pub. 6–4–68. Filed 10–20–66.

861,553. GR-RIP. McAleer Manufacturing Corporation. SN 275,157. Pub. 9–24–68. Filed 6–30–67.

861,554. CELDEK. Munters Corporation. SN 275,387. Pub. 9–24–68. Filed 7–5–67.

861,555. GLASDEK. Munters Corporation. SN 275,388. Pub. 9–24–68. Filed 7–5–67.

861,556. SEALPRO. Southeastern Aluminum Products, Inc. SN 281,126. Pub. 9–24–68. Filed 9–25–67.

861,557. SUPER SIL-A-COTE. Hastings Aluminum Products, Inc. SN 288,953. Pub. 9–24–68. Filed 1–16–68.

861,558. CREATIVEWARE. Amerock Corporation. MULTIPLE CLASS (Classes 12, 13, and 50). SN 293,069. Pub. 9–24–68. Filed 3–13–68.

861,559. DURASIL. H. H. Robertson Company. SN 295,846. Pub. 9–24–68. Filed 4–17–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

861,558. (See Class 12 for this trademark.)

861,560. INTERLAKE. Interlake Steel Corporation. SN 254,685. Pub. 9–24–68. Filed 9–19–66.

861,561. S AND DESIGN. Schaefer Equipment Company. SN 263,612. Pub. 9–24–68. Filed 1–30–67.

861,562. KENT KLIP. Kent Corporation. SN 269,764. Pub. 9–24–68. Filed 4–21–67.

861,563. SNAP-PATCH. George R. Stewart, d.b.a. Screen Patch Co. SN 271,654. Pub. 9–24–68. Filed 5–16–67.

861,564. FARBERLON. Walter Kidde & Company, Inc. SN 278,441. Pub. 9–24–68. Filed 8–16–67.

861,565. SS99. The Salem Valve Company. SN 279,753. Pub. 9–24–68. Filed 9–6–67.

861,566. SPELLOUT. Ridge Products, Inc. SN 286,182. Pub. 9–24–68. Filed 12–4–67.

861,567. WHEREVER YOU ARE — WE ARE! Illinois Tool Works Inc. SN 287,205. Pub. 9–24–68. Filed 12–14–67.

861,568. EASY READ. The Deltrol Corporation. SN 294,553. Pub. 9–24–68. Filed 4–1–68.

861,569. TAC. The Akchurin Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 298,665. Pub. 9–24–68. Filed 11–9–67.

Class 14 — Metals and Metal Castings and Forgings

861,570. INTERLAKE. Interlake Steel Corporation. SN 254,686. Pub. 9–24–68. Filed 9–19–66.

Class 15 — Oils and Greases

861,571. START 'N' GO. The Barcolene Company. SN 289,765. Pub. 9–24–68. Filed 1–29–68.

Class 16 — Protective and Decorative Coatings

861,572. SYNERGIZER. The Dexter Corporation. SN 279,288. Pub. 9–24–68. Filed 8–29–67.

861,573. SHIP N SHORE. Seal Rite Paint & Chemical Corp. SN 279,333. Pub. 7–16–68. Filed 8–29–67.

Class 17 — Tobacco Products

861,574. ENVOY. The Imperial Tobacco Company (of Great Britain and Ireland), Limited. SN 270,135. Pub. 9–24–68. Filed 4–27–67.

861,575. EL DINAMICO ETC. AND DESIGN. Don Joaquin Cigars Inc. SN 287,920. Pub. 9–24–68. Filed 1–2–68.

861,576. GISPERT. Alfresan Havana Cigars, Inc. SN 293,451. Pub. 9–24–68. Filed 3–18–68.

861,577. HELENA. The S. Frieder & Sons Company. SN 298,819. Pub. 9–24–68. Filed 5–22–68.

861,578. WHEEL (DESIGN). Conwood Corporation. SN 299,433. Pub. 9–24–68. Filed 5–31–68.

Class 18 — Medicines and Pharmaceutical Preparations

861,540. (See Class 6 for this trademark.)

861,579. BRONDIL. Meyer Laboratories, Inc. SN 263,932. Pub. 9–26–67. Filed 2–3–67.

861,580. YOMEISHU. Yomeishu Seizo Co., Ltd. MULTIPLE CLASS (Classes 18 and 47). SN 267,708. Pub. 9–24–68. Filed 3–28–67.

861,581. YOUNG PEOPLE. Youngs Drug Products Corporation. SN 275,891. Pub. 9–24–68. Filed 7–12–67.

861,582. X-11. Porter & Dietsch, Inc. SN 287,098. Pub. 9–24–68. Filed 12–18–67.

861,583. HOOF-PAK. Veterinary Research Institute, Incorporated. SN 287,197. Pub. 9–24–68. Filed 12–18–67.

861,584. CORMOCIN. The Upjohn Company. SN 287,240. Pub. 9–24–68. Filed 12–19–67.

861,585. STROMOCIN. The Upjohn Company. SN 287,242. Pub. 9–24–68. Filed 12–19–67.

861,586. TUSSABID. Meyer Laboratories Inc. SN 287,309. Pub. 9–24–68. Filed 12–20–67.

861,587. HAPPY JACK AND DESIGN. Happy Jack, Inc. SN 292,157. Pub. 9–24–68. Filed 2–29–68.

861,588. PANTOPLEX. Hoffman-Taff, Inc. SN 292,848. Pub. 9–24–68. Filed 3–11–68.

861,589. GLENALGESIC. Vitaminerals, Inc. SN 295,087. Pub. 9–24–68. Filed 4–8–68.

861,590. PURACEL. Ralston Purina Company. SN 295,209. Pub. 9–24–68. Filed 4–9–68.

861,591. CENDEHILL. Smith Kline & French Laboratories. SN 296,931. Pub. 9–24–68. Filed 4–30–68.

861,592. CADRYN. Mead Johnson & Company. SN 300,528. Pub. 9–24–68. Filed 6–17–68.

861,593. CADRYN-80. Mead Johnson & Company. SN 300,529. Pub. 9–24–68. Filed 6–17–68.

861,594. CORODILAN. Mead Johnson & Company. SN 300,531. Pub. 9–24–68. Filed 6–17–68.

861,595. CORODILAN-80. Mead Johnson & Company. SN 300,532. Pub. 9–24–68. Filed 6–17–68.

Class 19 — Vehicles

861,596. MISCELLANEOUS DESIGN. Woodside Engineering Co. SN 253,940. Pub. 9–24–68. Filed 9–6–66.

861,597. PARA-BUOY. Prodelin, Inc. MULTIPLE CLASS (Classes 19 and 26). SN 261,880. Pub. 9–24–68. Filed 1–3–67.

861,598. MCS EQUIPMENT CORP. AND DESIGN. McKee-Stewart Equipment Corporation. SN 271,504. Pub. 9–24–68. Filed 5–15–67.

861,599. IMP AND DESIGN. Bob R. Clark, d.b.a. Clark Enterprises Manufacturing. SN 275,035. Pub. 9–24–68. Filed 6–29–67.

861,600. PACESHIP AND DESIGN. Industrial Shipping Company Limited. SN 292,485. Pub. 9–24–68. Filed 3–5–68.

861,601. HUCK FINN. United Marine Co., Inc. SN 292,729. Pub. 9–24–68. Filed 3–7–68.

861,602. GM. General Motors Corporation. SN 295,402. Pub. 9–24–68. Filed 4–11–68.

861,603. SPORTING AMERICAN. R.F.D., Incorporated. MULTIPLE CLASS (Classes 19 and 22). SN 298,279. Pub. 9–24–68. Filed 5–16–68.

Class 20 — Linoleum and Oiled Cloth

861,604. GENON. The General Tire & Rubber Company. SN 288,509. Pub. 9–24–68. Filed 1–10–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

861,605. AUTO SCAN. Fisher Radio Corporation. SN 253,300. Pub. 9–24–68. Filed 8–29–66.

861,606. HEP. Motorola, Inc. SN 256,851. Pub. 9–24–68. Filed 10–20–66.

861,607. CONTRASTATIC. Emerson Electric Co. SN 259,538. Pub. 9–24–68. Filed 11–28–66.

861,608. TELE-TROL. Jerrold Electronics Corporation. SN 266,545. Pub. 9–24–68. Filed 3–13–67.

861,609. AUDIOTECHNICA. Audio Technica Co. Ltd., d.b.a. Audio Technica Corp. MULTIPLE CLASS (Classes 21 and 36). SN 250,128. Pub. 10–1–68. Filed 7–13–66.

861,610. FLUKE AND DESIGN. John M. Fluke Mfg. Co., Inc. MULTIPLE CLASS (Classes 21 and 26). SN 254,602. Pub. 10–1–68. Filed 9–16–66.

861,611. PPI. Progressive Products Incorporated. SN 273,973. Pub. 10–1–68. Filed 6–15–67.

861,612. CM–4. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 277,725. Pub. 10–1–68. Filed 8–7–67.

861,613. MAGWIRE. Essex Wire Corporation. SN 272,598. Pub. 9–24–68. Filed 5–29–67.

861,614. ALPIC. Essex Wire Corporation. SN 274,864. Pub. 9–24–68. Filed 6–27–67.

861,615. CUPIC. Essex Wire Corporation. SN 274,866. Pub. 9–24–68. Filed 6–27–67.

861,616. JBL AND DESIGN. James B. Lansing Sound, Inc. SN 283,014. Pub. 9–24–68. Filed 10–20–67.

861,617. DEV DEVILBISS ELECTRO-DIP AND DESIGN. The De Vilbiss Company. SN 286,910. Pub. 9–24–68. Filed 12–14–67.

861,618. TRANS-START. Electric Machinery Mfg. Company. SN 286,919. Pub. 9–24–68. Filed 12–14–67.

861,619. MUSICAIR. Import Associates of America, Inc. SN 290,099. Pub. 9–24–68. Filed 2–1–68.

861,620. REPEAT-O-MATIC. Fedtro, Inc. SN 300,777. Pub. 9–24–68. Filed 6–19–68.

861,621. PLUG-O-MATIC. Fedtro, Inc. SN 300,778. Pub. 9–24–68. Filed 6–19–68.

Class 22 — Games, Toys, and Sporting Goods

861,603. (See Class 19 for this trademark.)

861,622. LUCKY LETTERS GAME. O. O. Ressel, d.b.a. Woodrow Wilson Co. SN 239,932. Pub. 6–6–67. Filed 3–1–66.

861,623. SUPER-SHAD. Cordell Tackle, Inc. SN 294,165. Pub. 9–24–68. Filed 3–26–68.

861,624. TWIST BOARD AND DESIGN. Donco Products Corp. SN 297,005. Pub. 9–24–68. Filed 5–1–68.

861,625. SITUATION 4. Parker Brothers, Inc. SN 298,856. Pub. 9–24–68. Filed 5–22–68.

861,626. HIP FLIP. Parker Brothers, Inc. SN 299,248. Pub. 9–24–68. Filed 5–28–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

861,569. (See Class 13 for this trademark.)

861,627. TRANSCO AND DESIGN. Transmission Corporation of America. SN 236,305. Pub. 1–10–67. Filed 1–12–66.

861,628. VEND-A-STAMP. American Sumatra Tobacco Corporation. SN 254,907. Pub. 9–24–68. Filed 9–22–66.

861,629. LIHIT. Lihit Industrial Co., Ltd. SN 258,558. Pub. 9–24–68. Filed 11–14–66.

861,630. NAPA AND DESIGN. National Automotive Parts Association. SN 264,842. COLLECTIVE MARK. Pub. 9–24–68. Filed 2–16–67.

861,631. JET CHISEL. Nitto Kohki Company, Limited. SN 268,324. Pub. 9–24–68. Filed 4–4–67.

861,632. WATER BLASTER. American Powerstage Company. SN 270,872. Pub. 9–24–68. Filed 5–8–67.

861,633. AMERICAN LADY. Globar, Inc. SN 275,137. Pub. 9–24–68. Filed 6–30–67.

861,634. LARIAT 30. Roof Manufacturing Company. SN 282,138. Pub. 9–24–68. Filed 10–9–67.

861,635. ROFAB. Rose Patch & Label Company. SN 283,161. Pub. 9–24–68. Filed 10–23–67.

861,636. DECORA. Brewer Sewing Supplies Company. SN 283,617. Pub. 9–24–68. Filed 10–30–67.

861,637. HYDROTHERM SPRAY MIXER. American Hydrotherm Corporation. SN 285,182. Pub. 9–24–68. Filed 11–20–67.

861,638. THE GANG-NAIL COMPONENT SYSTEM. Automated Building Components, Inc. SN 285,902. Pub. 9–24–68. Filed 11–30–67.

861,639. LOCKWOOD AND DESIGN. Sellon, Inc. SN 287,960. Pub. 9–24–68. Filed 1–2–68.

Class 26 — Measuring and Scientific Appliances

861,532. (See Class 3 for this trademark.)

861,535. (See Class 6 for this trademark).

861,597. (See Class 19 for this trademark.)

861,610. (See Class 21 for this trademark.)

861,640. MISCELLANEOUS DESIGN. Associated Testing Laboratories, Inc. SN 265,598. Pub. 9–24–68. Filed 2–28–67.

861,641. SINK-FLOAT. R. P. Cargille Laboratories, Inc. SN 274,406. Pub. 9–24–68. Filed 6–21–67.

861,642. GT. Tracor, Inc. SN 275,798. Pub. 9–24–68. Filed 7–11–67.

861,643. MODULE-MATIC. Sel-Rex Corporation. SN 275,876. Pub. 9–24–68. Filed 7–12–67.

861,644. LIBRATROL. General Precision Systems Inc. SN 277,554. Pub. 9–24–68. Filed 8–4–67.

861,645. AQUALUME. Ascor Electronics, Inc. SN 279,711. Pub. 9–24–68. Filed 9–6–67.

861,646. CRC AND DESIGN. The Chemical Rubber Company. MULTIPLE CLASS (Classes 26 and 38). SN 280,741. Pub. 9–24–68. Filed 9–20–67.

861,647. PERMA-CAL. American Standard Inc. SN 280,851. Pub. 9–24–68. Filed 9–21–67.

861,648. BURRELL AND DESIGN. Burrell Corporation. SN 281,268. Pub. 9–24–68. Filed 9–27–67.

861,649. DESIKET. Amos Turk. SN 283,369. Pub. 9–24–68. Filed 10–25–67.

861,650. HYDAC. Cambridge Scientific Industries, Incorporated. SN 283,767. Pub. 9–24–68. Filed 10–31–67.

861,651. TECHMATIC. Techmatic Corporation. SN 284,845. Pub. 9–24–68. Filed 11–14–67.

861,652. MICRODEX. The Fellows Gear Shaper Company. SN 286,005. Pub. 9–24–68. Filed 12–1–67.

861,653. ACCRO-FLO AND DESIGN. Thomas M. Byrne. SN 290,253. Pub. 9–24–68. Filed 2–5–68.

861,654. INSTITOR. Bohn Benton, Inc. SN 293,339. Pub. 9–24–68. Filed 3–15–68.

861,655. VERGOPOL. Liberty Optical Manufacturing Co. Inc. SN 299,916. Pub. 9–24–68. Filed 6–7–68.

861,656. DYLUX. E. I. du Pont de Nemours and Company. SN 300,224. Pub. 9–24–68. Filed 6–12–68.

Class 27 — Horological Instruments

861,657. DATOR. Solari & C./Udine S.p.A. SN 256,816. Pub. 9–24–68. Filed 10–12–66.

Class 28 — Jewelry and Precious-Metal Ware

861,532. (See Class 3 for this trademark.)

861,658. EXCALIBUR. Henry Showell Limited. SN 282,085. Pub. 9–24–68. Filed 10–9–67.

861,659. UNIDOR. Unidor G.m.b.H. SN 282,224. Pub. 9–24–68. Filed 10–10–67.

861,660. HHL DESIGN. Harry Levitch, d.b.a. Harry Levitch Jewelers. SN 288,045. Pub. 9–24–68. Filed 12–18–67.

861,661. BEACON. Nanasi Mfg. Inc. SN 298,675. Pub. 9–24–68. Filed 5–21–68.

Class 29 — Brooms, Brushes, and Dusters

861,662. OWENS. Chemway Corporation. SN 286,904. Pub. 9–24–68. Filed 12–14–67.

Class 30 — Crockery, Earthenware, and Porcelain

861,663. QUEEN'S BOUQUET. Nobility, Inc. SN 300,659. Pub. 9–24–68. Filed 6–18–68.

Class 31 — Filters and Refrigerators

861,664. TOTAL SERVICE AND DESIGN. Hunt-Wesson Foods, Inc. MULTIPLE CLASS (Classes 31 and 52). SN 289,231. Pub. 9–24–68. Filed 1–22–68.

Class 32 — Furniture and Upholstery

861,544. (See Class 9 for this trademark.)

861,665. TASK. Standard Desk Limited. SN 275,178. Pub. 9–24–68. Filed 6–30–67.

861,666. SHIELD DESIGN. Earlon Furniture, Inc. SN 284,779. Pub. 9–24–68. Filed 11–3–67.

861,667. ROFCO. Roger Office Furniture Co., Inc. SN 298,183. Pub. 9–24–68. Filed 5–15–68.

Class 33 — Glassware

861,668. BRINTON. Brinn's China and Glassware Co. SN 257,455. Pub. 9–24–68. Filed 10–28–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

861,669. AQUA THERM. Hydrotherm, Inc. SN 181,477. Pub. 12–15–64. Filed 11–19–63.

861,670. LOCUST. Aronson Machine Company, Inc. SN 263,884. Pub. 9–24–68. Filed 2–3–67.

861,671. ORGOWELD. Th. Goldschmidt A.-G. SN 265,355. Pub. 9–24–68. Filed 2–23–67.

861,672. MAGIC-LITE. Dalton D. Gunter, d.b.a. Gunter Enterprises. SN 281,077. Pub. 9–24–68. Filed 9–25–67.

861,673. BENDWAY. Callahan Mining Corporation. SN 285,521. Pub. 9–24–68. Filed 11–24–67.

861,674. INTROLAIR. Calarage Fan Company. SN 289,782. Pub. 9–24–68. Filed 1–29–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

861,675. TORQUE TEAM. The Goodyear Tire & Rubber Company. SN 263,055. Pub. 9–24–68. Filed 1–23–67.

861,676. CUSHION-COATED. The Fitzgerald Manufacturing Company. SN 285,007. Pub. 9–24–68. Filed 11–16–67.

861,677. CUSH-N-COATED. The Fitzgerald Manufacturing Company. SN 285,008. Pub. 9–24–68. Filed 11–16–67.

861,678. TRACTION TORQUE. The Goodyear Tire & Rubber Company. SN 285,658. Pub. 9–24–68. Filed 11–27–67.

861,679. D (DESIGN). R. & J. Dick Co., Inc. SN 287,637. Pub. 9–24–68. Filed 12–27–67.

861,680. MARVEL. La Favorite Rubber Manufacturing Company. SN 292,700. Pub. 9–24–68. Filed 3–7–68.

861,681. TRU-TRAC. The Armstrong Rubber Company. SN 293,016. Pub. 9–24–68. Filed 3–12–68.

861,682. HY-SWELL. Nicolet Industries, Inc. SN 293,166. Pub. 9–24–68. Filed 3–13–68.

861,683. JET FLOW. Hewitt-Robins Incorporated. SN 293,383. Pub. 9–24–68. Filed 3–15–68.

861,684. DURAFLOW. Durametallic Corporation. SN 293,488. Pub. 9–24–68. Filed 3–18–68.

861,685. BIARRITZ. Ritz Rubber Company of America. SN 293,583. Pub. 9–24–68. Filed 3–18–68.

Class 36 — Musical Instruments and Supplies

861,609. (See Class 21 for this trademark.)

861,686. AUDIO 20/20 AF AND DESIGN. Audio Fidelity Records, Inc. SN 252,337. Pub. 9–24–68. Filed 8–15–66.

861,687. FONTANA AND DESIGN. N.V. Philips' Phonographische Industries. SN 274,229. Pub. 9–24–68. Filed 6–19–67.

861,688. TENSAFLEX. Memorex Corporation. SN 280,446. Pub. 9–24–68. Filed 9–15–67.

861,689. LESHER. H. & A. Selmer, Inc. SN 282,140. Pub. 9–24–68. Filed 10–9–67.

861,690. THOROUGHBRED AND DESIGN. Rex T. Sherry, d.b.a. Thoroughbred Records. SN 285,350. Pub. 9–24–68. Filed 11–21–67.

861,691. WM AND DESIGN. Western Merchandisers, Inc. SN 287,689. Pub. 9–24–68. Filed 12–27–67.

Class 37 — Paper and Stationery

861,692. JACKDAW. Jackdaw Publications Limited. SN 264,420. Pub. 9–24–68. Filed 2–10–67.

861,693. NIJI. Ben N. Yasutomo, d.b.a. Yasutomo & Co. SN 268,261. Pub. 9–24–68. Filed 4–3–67.

861,694. TIGER THINGS AND DESIGN. Tiger Fabrics, Inc. SN 275,329. Pub. 9–24–68. Filed 7–3–67.

861,695. FUN WITH TISSUE. Austen Display, Inc. SN 278,181. Pub. 9–24–68. Filed 8–14–67.

861,696. ALCO AND DESIGN. Al Nyman & Son, Inc. SN 278,407. Pub. 9–24–68. Filed 8–16–67.

861,697. SM. Reynolds Metals Company. SN 278,529. Pub. 9–24–68. Filed 8–17–67.

861,698. OUR FAMILY AND DESIGN. United Portrait Album Plan. SN 282,496. Pub. 9–24–68. Filed 10–13–67.

861,699. COMPUT-A-FORM AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 290,486. Pub. 9–24–68. Filed 2–7–68.

861,700. VISI-GUIDE. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 290,487. Pub. 9–24–68. Filed 2–7–68.

861,701. VIN-L-MATE. Ethyl Corporation. SN 291,257. Pub. 9–24–68. Filed 2–16–68.

861,702. TICKLED PINK. Manifold Supplies Company, d.b.a. Panama-Beaver Uni-Masters. SN 293,536. Pub. 9–24–68. Filed 3–18–68.

861,703. MINI-MASTER. Manifold Supplies Company, d.b.a. Panama-Beaver Uni-Masters. SN 293,537. Pub. 9–24–68. Filed 3–18–68.

861,704. SCHOOL-MATE. Westab Inc. SN 293,653. Pub. 9–24–68. Filed 3–19–68.

861,705. COPIMAILER. Computer Papers Incorporated. SN 293,906. Pub. 9–24–68. Filed 3–22–68.

861,706. ARROW. Astor Products Inc. SN 295,005. Pub. 9–24–68. Filed 4–5–68.

861,707. PERSONAL TOUCH. A. W. Faber-Castell Pencil Co., Inc. SN 295,023. Pub. 9–24–68. Filed 4–5–68.

861,708. UARCO IMPRESTO. Uarco Incorporated. SN 300,045. Pub. 9–24–68. Filed 6–10–68.

Class 38 — Prints and Publications

861,646. (See Class 26 for this trademark.)

861,709. THE SPORTS HOT SEAT. Baton Broadcasting Limited. MULTIPLE CLASS (Classes 38 and 107). SN 246,016. Pub. 9–24–68. Filed 5–19–66.

861,710. 'SINE QUA NON.' Drake University. SN 275,748. Pub. 9–24–68. Filed 7–11–67.

861,711. ROBIN MALONE. Newspaper Enterprise Association, Inc. SN 279,844. Pub. 9–24–68. Filed 9–7–67.

861,712. IPI AND DESIGN. Meredith Publishing Company. SN 282,111. Pub. 9–24–68. Filed 10–9–67.

861,713. LITE-O-CARD AND DESIGN. Charles Franc. SN 282,898. Pub. 9–24–68. Filed 10–19–67.

861,714. DRAG WORLD. American Hot Rod Association, Incorporated. SN 283,413. Pub. 9–24–68. Filed 10–26–67.

861,715. BOOK WORLD. Postrib Corp. SN 283,706. Pub. 9–24–68. Filed 10–30–67.

861,716. TAX-PREP ETC. AND DESIGN. William E. Drislane, d.b.a. Albany Tax Service. SN 283,996. Pub. 9–24–68. Filed 11–2–67.

861,717. THE WONDERFUL WORLD OF MILANI. Milani Foods, Inc. SN 285,341. Pub. 9–24–68. Filed 11–21–67.

861,718. DESERT SCOPE. EG & G, Inc. SN 285,403. Pub. 9–24–68. Filed 11–22–67.

861,719. EDU-FILMS. Ed-U-Cards Corporation. SN 285,729. Pub. 9–24–68. Filed 11–28–67.

861,720. HARBINGER. Harcourt, Brace & World, Inc. SN 285,736. Pub. 9–24–68. Filed 11–28–67.

861,721. MATERIALS SHOWMAN. American Society for Metals. SN 285,900. Pub. 9–24–68. Filed 11–30–67.

861,722. THE LIVING PICTURE. Bank Services, Inc. SN 286,496. Pub. 9–24–68. Filed 12–8–67.

861,723. PIANOVENTURES. Camu Press. SN 289,744. Pub. 9–24–68. Filed 1–29–68.

861,724. DISC. Hitchcock Publishing Company. SN 290,608. Pub. 9–24–68. Filed 2–8–68.

861,725. VIOLETS FOR REMEMBRANCE. Norcross, Inc. SN 291,176. Pub. 9–24–68. Filed 2–15–68.

861,726. FOTOFAX ETC. AND DESIGN. Fotomat Corporation. SN 300,522. Pub. 9–24–68. Filed 6–17–68.

Class 39 — Clothing

861,516. (See Class 1 for this trademark.)

861,517. (See Class 1 for this trademark.)

861,532. (See Class 3 for this trademark.)

861,727. ZIZI MILLE. Louis Feraud. MULTIPLE CLASS (Classes 39 and 42). SN 264,469. Pub. 9–24–68. Filed 2–13–67.

861,728. SHEEREST LIFT AND DESIGN. Chadbourn Gotham, Inc. SN 287,302. Pub. 9–24–68. Filed 3–22–67.

861,729. "COMFORTEERS." Fit-Rite Pants Company, Inc. SN 272,039. Pub. 12–19–67. Filed 5–22–67.

861,730. SURPRISE/CORDE DE PARIE. Surprise/Corde Co., Inc., by change of name from Surprise Brassiere Co. Inc. SN 283,941. Pub. 9–24–68. Filed 11–1–67.

861,731. TREASURY COLLECTION. Wembley, Inc. SN 285,777. Pub. 9–24–68. Filed 11–28–67.

861,732. MACDONALD & CAMPBELL. The Middlshade Company, Inc. SN 287,826. Pub. 9–24–68. Filed 12–29–67.

861,733. KAMA-LUX. John B. Stetson Company. SN 291,648. Pub. 9–24–68. Filed 2–21–68.

861,734. D.Q. AND DESIGN. The Manhattan Shirt Company. SN 291,756. Pub. 9–24–68. Filed 2–23–68.

861,735. DRUMOHR AND DESIGN. J. A. Robertson & Sons (Dumfries) Limited. SN 292,017. Pub. 9–24–68. Filed 2–27–68.

861,736. THE "JACKCOAT" BY BARNEY'S. Barney's Clothes, Inc. SN 292,170. Pub. 9–24–68. Filed 2–29–68.

861,737. MUSIC CITY KNITS. Ronna, Inc. SN 292,815. Pub. 9–24–68. Filed 3–8–68.

861,738. BERKFIELD. Berkley Shirt Co., Inc. SN 300,642. Pub. 9–24–68. Filed 6–18–68.

Class 40 — Fancy Goods, Furnishings, and Notions

861,739. DANTE'S HOUSE OF WIGS, Dante's House of Wigs, Inc. SN 290,078. Pub. 9–24–68. Filed 2–1–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

861,516. (See Class 1 for this trademark.)

861,517. (See Class 1 for this trademark.)

861,727. (See Class 39 for this trademark.)

861,740. FILICLAIR. Filiclair S.p.A., by change of name from Alba-Siltex Societa per la Tessitura ed il Finissaggio di Fibre di Vetro S.p.A. MULTIPLE CLASS (Classes 42 and 43). SN 266,293. Pub. 9–24–68. Filed 3–9–67.

861,741. WONDERVEL. A. Wimpfheimer & Bro., Inc. SN 272,438. Pub. 9–24–68. Filed 5–25–67.

861,742. FAIRVEL. A. Wimpfheimer & Bro., Inc. SN 272,439. Pub. 9–24–68. Filed 5–25–67.

861,743. SHADOVEL. A. Wimpfheimer & Bro., Inc. SN 272,440. Pub. 9–24–68. Filed 5–25–67.

861,744. GALAVEL. A. Wimpfheimer & Bro., Inc. SN 272,441. Pub. 9–24–68. Filed 5–25–67.

861,745. TERRYTUFT. United Merchants and Manufacturers, Inc., assignee of McAuley Enterprises, Inc. SN 273,918. Pub. 9–24–68. Filed 6–15–67.

861,746. FABRIC 24. Mac M. Rothkopf and Co., Inc. SN 281,316. Pub. 9–24–68. Filed 9–27–67.

861,747. SPINNING WHEEL AND BRAIDED RUG DESIGN. A. Leon Capel & Sons, Incorporated. SN 287,344. Pub. 9–24–68. Filed 12–21–67.

861,748. COIN AND DESIGN. Coin Sales Corporation. SN 291,887. Pub. 9–24–68. Filed 2–26–68.

Class 43 — Thread and Yarn

861,516. (See Class 1 for this trademark.)

861,517. (See Class 1 for this trademark.)

861,740. (See Class 42 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

861,749. RCI AND DESIGN. RCI-Danavox North America, Inc. SN 294,556. Pub. 9–24–68. Filed 4–1–68.

861,750. MAXIMYST. Mead Johnson & Company. SN 294,709. Pub. 9–24–68. Filed 4–2–68.

Class 46 — Foods and Ingredients of Foods

861,540. (See Class 6 for this trademark.)

861,751. KETTLE FRESH. DCA Food Industries, Inc. SN 264,035. Pub. 9–17–68. Filed 2–6–67.

861,752. LOMA LINDA FOODS AND DESIGN. Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods. SN 267,656. Pub. 9–24–68. Filed 3–27–67.

861,753. TIP TOP YOYO AND DESIGN. Ward Foods, Inc. SN 271,299. Pub. 9–24–68. Filed 5–11–67.

861,754. WINCHELL'S DONUT HOUSE AND DESIGN. Winchell Donut House, Inc. SN 272,971. Pub. 9–24–68. Filed 6–2–67.

861,755. MEREDITH & DREW. Meredith & Drew Limited. SN 276,758. Pub. 9–24–68. Filed 7–25–67.

861,756. MISCELLANEOUS DESIGN. Wometco Blue Circle, Inc. SN 282,335. Pub. 9–17–68. Filed 10–12–67.

861,757. CYCLOPS. Sternco Industries, Inc. SN 286,191. Pub. 9–24–68. Filed 12–4–67.

861,758. ROBERT TIMMS NEW GUINEA GOLD AND DESIGN. Robert Timms Proprietary Limited. SN 287,469. Pub. 9–24–68. Filed 12–22–67.

861,759. GET UP & GO. Mead Johnson & Company. SN 290,142. Pub. 6–4–68. Filed 2–2–68.

861,760. WINCHESTER. Custom Pet Food Packers, Inc. SN 290,585. Pub. 9–24–68. Filed 2–8–68.

861,761. STAFF. Staff Supermarket Associates. SN 291,440. Pub. 9–24–68. Filed 2–19–68.

861,762. FLAV-O-GOLD AND DESIGN. Stokely-Van Camp, Inc. SN 291,786. Pub. 9–24–68. Filed 2–23–68.

861,763. MINI-MIX. Murphy Products Company, Inc. SN 292,604. Pub. 9–24–68. Filed 3–6–68.

861,764. HARMONY FARMS. Agway, Inc. SN 293,676. Pub. 9–24–68. Filed 3–20–68.

861,765. DELICIOUS DOMAIN AND DESIGN. Mark G. Gehlar, d.b.a. Oregon Fruit Products Co. SN 299,278. Pub. 9–24–68. Filed 5–29–68.

861,766. CHIME AND DESIGN. The Coca-Cola Company. SN 301,006. Pub. 9–24–68. Filed 6–21–68.

861,767. JAVIQUE AND DESIGN. The Coca-Cola Company. SN 301,007. Pub. 9–24–68. Filed 6–21–68.

Class 47 — Wines

861,580. (See Class 18 for this trademark.)

Class 48 — Malt Beverages and Liquors

861,768. FROM THE LAND OF SKY BLUE WATERS ETC. Theo. Hamm Brewing Co. SN 278,397. Pub. 9–24–68. Filed 6–8–67.

861,769. GUINNESS EXTRA STOUT ETC. AND DESIGN. Arthur Guinness Son & Company Limited. SN 290,238. Pub. 9–24–68. Filed 2–5–68.

861,770. GALENA STREET. Jos. Schlitz Brewing Company. SN 300,237. Pub. 9–24–68. Filed 6–12–68.

Class 49 — Distilled Alcoholic Liquors

861,771. JEROME. Mar-Salle Chicago Co., d.b.a. Jerome Company. SN 274,222. Pub. 9–24–68. Filed 6–19–67.

861,772. NELSON RESERVE. Heaven Hill Distilleries, Inc., d.b.a. Nelson Distilleries. SN 284,818. Pub. 9–24–68. Filed 11–14–67.

861,773. NELSON DELUXE. Heaven Hill Distilleries, Inc., d.b.a. Nelson Distilleries. SN 284,819. Pub. 9–24–68. Filed 11–14–67.

861,774. ELDORADO. Destileria Serralles, Inc. SN 285,402. Pub. 9–24–68. Filed 11–22–67.

861,775. MISSION FATHERS. E. Martinoni Co., d.b.a. MF Co. SN 300,403. Pub. 9–24–68. Filed 6–14–68.

Class 50 — Merchandise Not Otherwise Classified

861,558. (See Class 12 for this trademark.)

861,776. HUMMING BIRD. Hawk Model Company. SN 295,795. Pub. 9–24–68. Filed 4–17–68.

Class 51 — Cosmetics and Toilet Preparations

861,777. SPANISH GOLD. Textron Inc. SN 269,700. Pub. 9–24–68. Filed 4–20–67.

861,778. ADJUST-A LOTION. Turner Hall Corporation. SN 280,186. Pub. 9–24–68. Filed 9–12–67.

861,779. MILK-DEW. Kay Chemical Corporation. SN 280,233. Pub. 9–24–68. Filed 9–13–67.

861,780. SEARCHER KIT. Clairol Incorporated. SN 282,269. Pub. 9–24–68. Filed 10–11–67.

861,781. ELIDA. Vinolia A/S. MULTIPLE CLASS (Classes 51 and 52). SN 283,045. Pub. 9–24–68. Filed 10–20–67.

861,782. FRAGRANCE SHADES. Avon Products, Inc. SN 283,506. Pub. 9–24–68. Filed 10–27–67.

861,783. MODEST BLONDE. John H. Breck, Inc. SN 283,765. Pub. 9–24–68. Filed 10–31–67.

861,784. UPHOLD. L'Oreal. SN 284,685. Pub. 9–24–68. Filed 11–13–67.

861,785. PAALO. Paalo Cervantes, Ltd. SN 289,116. Pub. 9–24–68. Filed 1–18–68.

861,786. CHAMPAGNE SWIZZLE. Bristol-Myers Company. SN 289,473. Pub. 9–24–68. Filed 1–24–68.

861,787. OUTRIGGER. Royal Hawaiian Perfumes, Ltd. SN 295,768. Pub. 9–24–68. Filed 4–16–68.

861,788. NITE-WASH. Helene Curtis Industries, Inc. SN 296,663. Pub. 9–24–68. Filed 4–26–68.

861,789. RAIN BARREL. Chesebrough-Pond's Inc. SN 300,517. Pub. 9–24–68. Filed 6–17–68.

861,790. STORMY WEATHER. Chesebrough-Pond's Inc. SN 300,520. Pub. 9–24–68. Filed 6–17–68.

861,791. TROPICAL SURF. The Gillette Company. SN 300,647. Pub. 9–24–68. Filed 6–18–68.

861,792. WARM CHAMPAGNE. The Gillette Company. SN 300,648. Pub. 9-24-68. Filed 6-18-68.

861,793. BE SHARP. The Gillette Company. SN 300,649. Pub. 9-24-68. Filed 6-18-68.

861,794. FEEL SHARP. The Gillette Company. SN 300,650. Pub. 9-24-68. Filed 6-18-68.

861,795. LOOK SHARP. The Gillette Company. SN 300,651. Pub. 9-24-68. Filed 6-18-68.

861,796. CLOUD BURST. The Gillette Company. SN 300,652. Pub. 9-24-68. Filed 6-18-68.

861,797. COLD FRONT. The Gillette Company. SN 300,653. Pub. 9-24-68. Filed 6-18-68.

Class 52 — Detergents and Soaps

861,664. (See Class 31 for this trademark.)

861,781. (See Class 51 for this trademark.)

861,798. SPEED-E-CLEAN AND DESIGN. Speedrite Products, Inc. SN 235,724. Pub. 9-24-68. Filed 1-3-66.

861,799. RITE-OFF. Riteoff, Inc. SN 266,692. Pub. 9-24-68. Filed 3-14-67.

861,800. 4-4-1. Specialized Coatings, Inc. SN 269,800. Pub. 9-24-68. Filed 4-21-67.

861,801. CASH. Robert W. Hocks, d.b.a. Hocks Laboratories. SN 284,477. Pub. 9-24-68. Filed 11-9-67.

861,802. KOOLSOL. Universal Oil Products Company. SN 288,561. Pub. 9-24-68. Filed 1-10-68.

861,803. SEE-CLEER. Yale Engineering Company. SN 288,906. Pub. 9-24-68. Filed 1-15-68.

861,804. ZOUT. J. C. Garet, Inc. SN 290,090. Pub. 9-24-68. Filed 2-1-68.

861,805. OPELLA. Puritan Chemical Company. SN 290,527. Pub. 9-24-68. Filed 2-7-68.

861,806. ROBUST. Puritan Chemical Company. SN 290,528. Pub. 9-24-68. Filed 2-7-68.

861,807. PISTOL. Puritan Chemical Company. SN 290,531. Pub. 9-24-68. Filed 2-7-68.

861,808. DYNABRITE. Dynasurf Chemical Corporation. SN 291,053. Pub. 9-24-68. Filed 2-14-68.

861,809. LANCE AND DESIGN. Jancyn Manufacturing Corp. SN 292,936. Pub. 9-24-68. Filed 3-11-68.

861,810. SOL-U-SAN. Huntington Laboratories, Inc. SN 301,015. Pub. 9-24-68. Filed 6-21-68.

Service Marks

Class 100 — Miscellaneous

861,811. PETER PRATT'S INN AND DESIGN. Peter Pratt's Inn, Inc. SN 266,916. Pub. 9-10-68. Filed 3-16-67.

861,812. MISCELLANEOUS DESIGN. Methodist Hospital of Brooklyn. SN 278,397. Pub. 9-24-68. Filed 8-16-67.

861,813. CAST. The Psychological Corporation. SN 285,296. Pub. 9-24-68. Filed 11-21-67.

861,814. HDR AND DESIGN. Henningson, Durham & Richardson, Inc. SN 289,677. Pub. 9-24-68. Filed 1-26-68.

Class 101 — Advertising and Business

861,815. PIC N' SAVE. Pic n' Save Drug Co., Inc. SN 265,678. Pub. 9-24-68. Filed 3-1-67.

861,816. SYSTEMATION. Systemation, Inc. SN 268,344. Pub. 9-24-68. Filed 4-4-67.

861,817. ANTIQUES SHOWS AND DESIGN. Mitchell-Ivey Management. SN 274,881. Pub. 9-24-68. Filed 6-27-67.

861,818. IVEY'S. J. B. Ivey & Company. SN 279,485. Pub. 9-24-68. Filed 8-31-67.

861,819. NANCY NEIGHBOR. Carolyn Moffitt Henderson, d.b.a. Hi-Neighbor Welcoming Service. SN 281,938. Pub. 9-24-68. Filed 10-6-67.

861,820. THE BROADWAY. Broadway-Hale Stores, Inc. SN 287,139. Pub. 9-24-68. Filed 12-18-67.

Class 102 — Insurance and Financial

861,821. MIDWEST BANK CARD AND DESIGN. Midwest Bank Card System, Inc., assignee of Continental Illinois National Bank and Trust Company of Chicago. SN 258,896. Pub. 9-24-68. Filed 11-17-66.

861,822. MOVE MM MASTER. General Fire and Casualty Company. SN 286,262. Pub. 9-24-68. Filed 12-5-67.

861,823. HBL (DESIGN). Home Beneficial Life Insurance Company. SN 290,294. Pub. 9-24-68. Filed 2-5-68.

Class 103 — Construction and Repair

861,824. TRANSCO AND DESIGN. Transmission Corporation of America. SN 236,306. Pub. 1-10-67. Filed 1-12-66.

861,825. PEC AND DESIGN. Power Engineering Company. MULTIPLE CLASS (Classes 103 and 106). SN 274,771. Pub. 9-24-68. Filed 6-26-67.

861,826. SAFTIGAS AND DESIGN. American Dynamics International, Inc. SN 282,339. Pub. 9-24-68. Filed 10-12-67.

861,827. JET THUMB. Frank Di Nardo. SN 283,511. Pub. 9-24-68. Filed 10-27-67.

Class 105 — Transportation and Storage

861,828. GOLD CHIP SERVICE. Mohawk Airlines, Inc. SN 299,855. Pub. 9-24-68. Filed 6-6-68.

861,829. WE'RE ON YOUR SIDE. Mohawk Airlines, Inc. SN 299,856. Pub. 9-24-68. Filed 6-6-68.

861,830. THE ROYAL CANADIAN. Western Air Lines, Inc. SN 300,160. Pub. 9-24-68. Filed 6-11-68.

Class 106 — Material Treatment

861,825. (See Class 103 for this trademark.)

Class 107 — Education and Entertainment

861,709. (See Class 38 for this trademark.)

861,831. BOWL-GOLF. Star Enterprises, Inc. SN 259,772. Pub. 9-24-68. Filed 11-30-66.

861,832. "ABOVE AND BEYOND." Larry L. Stewart & Associates, Inc. SN 276,365. Pub. 9-24-68. Filed 7-19-67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

861,833. Ventura Travelware, Inc., New York, N.Y. SN 274,909. Filed P.R. 6-27-67; Am. S.R. 9-20-68.

mini-Tote

For Luggage, Attaché Cases and Trunks (Int. Cl. 18).
First use June 9, 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

861,834. Raychem Corporation, Redwood City, Calif. SN 269,688. Filed P.R. 4-20-67; Am. S.R. 9-6-68.

SOLDERPAK

For Wire Coupling To Connect Wire Ends Electrically (Int. Cl. 9).
First use Aug. 6, 1966.

Class 31 — Filters and Refrigerators

861,835. J. H. Westerbeke Corp., Boston, Mass. SN 264,265. Filed P.R. 2-8-67; Am. S.R. 9-3-68.

SEA-STILL

For Distillation Unit and Controls Therefor and Parts Thereof for the Desalinization and Purification of Water (Int. Cl. 11).
First use Dec. 22, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

861,836. Fedtro, Inc., Rockville Centre, N.Y. SN 280,578. Filed P.R. 9-18-67; Am. S.R. 9-20-68.

FIX FLAT

For Portable Tire Inflator Device Consisting of a Hose for Transferring Air From the Spare Tire of an Automobile (Int. Cl. 12).
First use on or about Sept. 5, 1967.

Class 38 — Prints and Publications

861,837. Lane Magazine & Book Company, Menlo Park, Calif. SN 305,788. Filed 8-23-68.

WESTERN AUTOMOTIVE REPORT

For Trade Bulletin Issued From Time to Time. (Int. Cl. 16).
First use Jan. 3, 1967.

Class 46 — Foods and Ingredients of Foods

861,838. The Isaly Company, d.b.a. Isaly's, Pittsburgh, Pa. SN 297,011. Filed 5-1-68.

ISALY'S BIG BEEF

For Ready To Eat Beef Sandwiches (Int. Cl. 29).
First use Mar. 14, 1967.

TRADEMARK REGISTRATIONS RENEWED

32,059. "TRUMPET" AND REPRESENTATION OF TRUMPET. Cl. 35 (Int. Cl. 17). 10-18-1898.
32,062. "RED BALL." Cl. 35 (Int. Cl. 17). 10-18-1898.
69,985. "PHONO-ELECTRIC." Cl. 21 (Int. Cl. 9). 7-21-08.
69,987. "PHONO-ELECTRIC." Cl. 14 (Int. Cl. 9). 7-21-08.
71,432. RIBBON. Cl. 51 (Int. Cl. 3). 11-24-08.
72,708. HYCAP. Cl. 21 (Int. Cl. 9). 2-16-09.
245,178. "Z" ENCLOSED BY CIRCULAR DESIGN. Cl. 9 (Int. Cl. 13). 8-7-28.
245,719. BLACKHAWK. Cl. 21 (Int. Cl. 9). 8-21-28.
248,247. "PRIMROSE HOUSE" ETC. AND DESIGN. Cl. 51 (Int. Cl. 3). 10-16-28.
248,305. MOTO-AIR. Cl. 23 (Int. Cl. 7). 10-16-28.
248,619. KRACO. Cl. 46 (Int. Cl. 29). 10-23-28.
248,655. LAINE AND REPRESENTATION OF SHEEP ON BACKGROUND DESIGN. Cl. 42 (Int. Cl. 24). 10-30-28.
248,742. ENCHANTRESS. Cl. 39 (Int. Cl. 25). 10-30-28.
249,047. IBIS. Cl. 24 (Int. Cl. 7). 11-6-28.
249,700. SYMPOCAINE. Cl. 18 (Int. Cl. 5). 11-20-28.
249,756. "WALKMORE" ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 11-20-28.
249,804. SPINOCAIN. Cl. 18 (Int. Cl. 5). 11-20-28.
250,678. "THE CRAIG WAY." Cl. 12 (Int. Cl. 19). 12-11-28.
250,862. BUFFET CRAMPON. Cl. 36 (Int. Cl. 15). 12-18-28.
252,370. DURABELUM. Cl. 14 (Int. Cl. 6). 2-5-29.
252,557. ECLIPSE. Cl. 6 (Int. Cl. 2). 2-12-29.
253,071. BORGA. Cl. 42 (Int. Cl. 24). 2-19-29.
253,177. MENTHOL-ICED. Cl. 51 (Int. Cl. 3). 2-19-29.
254,493. LEO. Cl. 39 (Int. Cl. 25). 3-26-29.
437,575. ENGINAIRE. Cl. 34 (Int. Cl. 11). 3-30-48.
439,539. SWIFTS. Cl. 6 (Int. Cl. 5). 7-6-48.
439,597. BALENCIAGA. Cl. 39 (Int. Cl. 25). 7-6-48.
439,670. SIL-O-SIL. Cl. 6 (Int. Cl. 1). 7-13-48.
440,109. TRANSPAREX. Cl. 26 (Int. Cl. 1). 8-10-48.
440,123. AVIAPOST. Cl. 26 (Int. Cl. 1). 8-10-48.
440,765. JARDANEL. Cl. 51 (Int. Cl. 3). 9-28-48.
440,893. AO (DESIGN). Cl. 4 (Int. Cl. 3). 10-5-48.
441,765. MEDALO AND DESIGN. Cl. 40 (Int. Cl. 8). 1-4-49.
441,878. MISCELLANEOUS DESIGN. Cl. 27 (Int. Cl. 14). 1-18-49.
442,225. JABON DE REUTER DE LUJO AND DESIGN. Cl. 52 (Int. Cl. 3). 3-15-49.
442,273. NUPLA. Cl. 23 (Int. Cl. 8). 3-22-49.
501,204. YUKON CLUB. Cl. 46 (Int. Cl. 30). 7-27-48.
501,320. COAST TO COAST. Cl. 47 (Int. Cl. 33). 8-3-48.
501,439. ZEE AND DESIGN. Cl. 37 (Int. Cl. 16). 8-10-48.

501,542. HOLLY CARTER. Cl. 46 (Int. Cl. 30). 8–10–48.
501,966. DG (DESIGN). Cl. 52 (Int. Cl. 3). 8–31–48.
502,583. DEL CARA. Cl. 17 (Int. Cl. 34). 9–28–48.
502,599. ERSIN. Cl. 6 (Int. Cl. 1). 10–5–48.
502,611. WHIZ. Cl. 52 (Int. Cl. 3). 10–5–48.
502,613. COW (DESIGN). Cl. 6 (Int. Cl. 1). 10–5–48.
502,629. KAL. Cl. 18 (Int. Cl. 5). 10–5–48.
502,940. GRANTEIN. Cl. 6 (Int. Cl. 5). 10–12–48.
502,985. PURITAN. Cl. 7 (Int. Cl. 22). 10–19–48.
503,123. PLYM-COP GREEN. Cl. 7 (Int. Cl. 22). 10–19–48.
503,128. BEAUTITONE. Cl. 38 (Int. Cl. 16). 10–19–48.
503,160. DRAKEOL. Cl. 6 (Int. Cl. 4). 10–19–48.
503,176. PWC. Cl. 21 (Int. Cl. 9). 10–19–48.
503,180. ALKRON. Cl. 6 (Int. Cl. 5). 10–19–48.
503,233. H.H.T. Cl. 43 (Int. Cl. 23). 10–19–48.
503,488. OLD ENGLISH. Cl. 52 (Int. Cl. 3). 10–26–48.
503,500. SALEM. Cl. 42 (Int. Cl. 24). 10–26–48.
503,581. RATHAUS. Cl. 49 (Int. Cl. 33). 11–2–48.
503,644. VARIETY. Cl. 45 (Int. Cl. 32). 11–2–48.
503,685. SURPRISE. Cl. 39 (Int. Cl. 25). 11–2–48.
503,719. FLOWRATOR. Cl. 26 (Int. Cl. 9). 11–9–48.
503,732. BUNDY. Cl. 13 (Int. Cl. 6). 11–9–48.
503,781. BULL'S EYE DESIGN. Cl. 52 (Int. Cl. 3). 11–9–48.
503,912. STURDEE AND DESIGN. Cl. 21 (Int. Cl. 9). 11–16–48.
503,914. LLOYD. Cl. 21 (Int. Cl. 7). 11–16–48.
504,080. EASY-GRO. Cl. 1 (Int. Cl. 31). 11–23–48.
504,130. TRION AND DESIGN. Cl. 31 (Int. Cl. 11). 11–23–48.
504,603. SUBWAY BLACK. Cl. 16 (Int. Cl. 2). 12–7–48.
504,604. SIPAKE. Cl. 16 (Int. Cl. 2). 12–7–48.
504,610. CLOTH OF GOLD AND DESIGN. Cl. 42 (Int. Cl. 24). 12–7–48.
504,670. GRIBBON'S. Cl. 42 (Int. Cl. 24). 12–7–48.
504,801. MITCHELL'S. Cl. 46 (Int. Cl. 29). 12–14–48.
504,804. THE HAMILTON. Cl. 36 (Int. Cl. 20). 12–14–48.
504,892. PIPPIN. Cl. 46 (Int. Cl. 30). 12–21–48.
504,905. PLASTOLITH NORTH WESTERN AND DESIGN. Cl. 12 (Int. Cl. 19). 12–21–48.
504,929. CURTEICH. Cl. 38 (Int. Cl. 16). 12–21–48.
505,012. BUTTER KERNEL. Cl. 46 (Int. Cl. 29). 12–21–48.
505,077. DERMATERGENT. Cl. 52 (Int. Cl. 3). 12–21–48.
505,080. GRIFFIN AND DESIGN. Cl. 4 (Int. Cl. 3). 12–21–48.
505,159. BRUZERS. Cl. 39 (Int. Cl. 25). 12–28–48.
505,442. BLACK CAT (DESIGN). Cl. 5 (Int. Cl. 1). 1–4–49.
505,615. KERBRA. Cl. 42 (Int. Cl. 24). 1–11–49.
505,616. SWERLA. Cl. 42 (Int. Cl. 24). 1–11–49.
506,035. FENN'S. Cl. 46 (Int. Cl. 30). 1–25–49.
506,055. WESTRIDGE. Cl. 49 (Int. Cl. 33). 1–25–49.
506,089. SELMER. Cl. 38 (Int. Cl. 16). 1–25–49.
506,136. PINEHURST. Cl. 39 (Int. Cl. 25). 2–1–49.
506,335. BOILFAST. Cl. 43 (Int. Cl. 23). 2–1–49.
506,579. NOFRET. Cl. 42 (Int. Cl. 24). 2–8–49.
506,581. SWATE. Cl. 42 (Int. Cl. 24). 2–8–49.
506,585. DREADNAUGHT. Cl. 52 (Int. Cl. 3). 2–8–49.
506,805. ELECTRO-LINE. Cl. 21 (Int. Cl. 9). 2–22–49.
506,895. MEEHANITE METAL. Cl. 38 (Int. Cl. 16). 2–22–49.
506,937. MILLER. Cl. 48 (Int. Cl. 32). 2–22–49.
507,002. DIVOBRITE. Cl. 52 (Int. Cl. 3). 2–22–49.
507,063. PAMISYL. Cl. 18 (Int. Cl. 5). 2–22–49.
507,072. LAYKOLD. Cl. 38 (Int. Cl. 16). 2–22–49.
507,078. BOMBER. Cl. 52 (Int. Cl. 3). 2–22–49.
507,079. SAMSON. Cl. 52 (Int. Cl. 3). 2–22–49.
507,258. COPELAMETIC. Cl. 31 (Int. Cl. 11). 3–1–49.
507,292. IBEROL. Cl. 18 (Int. Cl. 5). 3–1–49.
507,336. MODERN PLASTICS. Cl. 38 (Int. Cl. 16). 3–8–49.
507,398. METCOLOY. Cl. 14 (Int. Cl. 6). 3–8–49.
507,458. TWILL SUEDE. Cl. 42 (Int. Cl. 24). 3–8–49.
507,578. NATIONAL AND DESIGN. Cl. 46 (Int. Cl. 30). 3–15–49.
507,694. SAFE-T. Cl. 1 (Int. Cl. 22). 3–15–49.
507,794. OLD TAYLOR. Cl. 49 (Int. Cl. 33). 3–22–49.
507,795. BEVERWYCK IRISH BRAND CREAM ALE AND DESIGN. Cl. 48 (Int. Cl. 32). 3–22–49.
507,857. TROJAN (DESIGN). Cl. 23 (Int. Cl. 7). 3–22–49.
507,975. AEROHALOR. Cl. 44 (Int. Cl. 10). 3–22–49.
507,987. MULTISTAMP. Cl. 11 (Int. Cl. 16). 3–22–49.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

819,270. FINALE. Cl. 52. 11–22–66.
846,309. FEMINIQUE FURS. Cl. 39. 3–19–68.

Section 8

The following registrations issued Oct. 23, 1962

739,585. WEAR-EVER. Cl. 4.
739,589. MODO-HEC. Cl. 5.
739,594. BALTIC. Cl. 8.
739,598. THERMAZIP. Cl. 12.
739,599. TI AND DESIGN. Cl. 12.
739,601. "BEE SAFE" AND DESIGN. Cl. 12.
739,603. TUFCON AND DESIGN. Cl. 12.
739,605. CANDLE GLOW. Cl. 12.
739,606. ATOMIC AGE SAFETY STRUCTURES AND DESIGN. Cl. 12.
739,607. DYCOUSTIC. Cl. 12.
739,608. ACOUSTICORE. Cl. 12.
739,612. CEIL-LITE. Cl. 12.
739,613. GENERAL HOMES. Cl. 12.
739,614. MIRAPLY. Cl. 12.
739,615. CURE-COTE. Cl. 12.
739,616. HACIENDA. Cl. 12.
739,618. KLADLINED. Cl. 12.
739,619. PERMA-PIER. Cl. 12.
739,629. DIA-PLUG. Cl. 13.
739,636. TANSPHERE. Cl. 13.
739,641. SEA-WAY. Cl. 15.
739,653. GOLDEN PRINCE. Cl. 19.
739,654. GOLDEN PRINCESS. Cl. 19.
739,656. TAGGIN-WAGGIN. Cl. 19.
739,660. EVER-NEW AND DESIGN. Cl. 20.
739,666. RED HEAD. Cl. 21.
739,672. STAFCO AND DESIGN. Cl. 21.
739,674. HAMPTON. Cl. 21.
739,677. BIG "D." Cl. 22.
739,678. VEGAS KARDS AND DESIGN. Cl. 22.
739,681. NUMEROMAT. Cl. 23.
739,682. A AND DESIGN. Cl. 23.
739,685. MATTH-A-MATIC. Cl. 23.
739,691. TRU TEST AND DESIGN. Cl. 23.
739,693. DOG HOUSE. Cl. 23.
739,694. MR. HORSEPOWER AND DESIGN. Cl. 23.
739,697. RAT TRAP. Cl. 23.
739,706. LOVELLEX. Cl. 23.
739,711. HANSAMAC. Cl. 23.
739,713. QUAD-O-MATIC. Cl. 23.
739,715. BIG DADDY. Cl. 23.
739,717. AIREVAC. Cl. 23.
739,719. FLOW MATE. Cl. 23.
739,720. PAC. Cl. 23.
739,721. MT. Cl. 23.
739,722. LETTER A, AMERICAN IRON & MACHINE WORKS CO., INC. AND DESIGN. Cl. 23.
739,737. RHINDICATOR. Cl. 26.
739,739. MR. BIG. Cl. 29.
739,742. C AND DESIGN. Cl. 31.
739,743. RECORD TREE. Cl. 32.
739,744. BABY LIFT AND DESIGN. Cl. 32.
739,758. ALLIGON BY FOWNES. Cl. 39.
739,760. X-TENSIBLE. Cl. 39.
739,761. COMFORT MASTER. Cl. 39.
739,762. ODALISQUE AND DESIGN. Cl. 39.
739,772. RENT-L-TUFF. Cl. 39.
739,775. RAMBL '62. Cl. 39.
739,776. TOWNBROOK. Cl. 39.
739,780. TMS. Cl. 39.
739,782. TYCON. Cl. 39.
739,785. VULCA VINYL. Cl. 39.
739,787. PRINCE YORK. Cl. 39.
739,788. CUSTOM KING. Cl. 39.
739,793. ARTIC CIRCLE. Cl. 39.
739,794. GOLD O'FARRELL. Cl. 39.
739,795. MR. SNOW. Cl. 39.
739,797. TUFLOC. Cl. 42.
739,801. GRANDEUR. Cl. 42.

739,808. PROFESSIONAL AND DESIGN. Cl. 44.
739,809. W-S WORK SIMPLIFICATION UNIT. Cl. 44.
739,816. GLIDE-MATIC. Cl. 50.
739,820. M AND REPRESENTATION OF WARRIOR WITH SHIELD, SWORD. Cl. 102.
739,823. BROST BRICK. Cl. 12.
739,832. RONCI. Cl. 39.
739,833. PAJAMAS OF TOMORROW - - - TODAY. Cl. 39.
739,834. SPORTSWEAR OF TOMORROW - - - TODAY. Cl. 39.
739,835. SHIRTS OF TOMORROW - - - TODAY. Cl. 39.
739,841. BROIL-REDI. Cl. 46.
739,842. PERLINO AND DESIGN. Cl. 47.
739,850. SPARKLING RICH. Cl. 52.
739,851. LIQUID SUNSHINE AND DESIGN. Cl. 52.
739,852. FLUME ETC. AND DESIGN. Cl. 108.

Section 18

810,209. DEBBIE LYNN AND DESIGN. Cl. 46. 6–21–66.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

70,257. DENNISON. Cl. 5. 8–18–08. Dennison Manufacturing Company, Boston, Mass. Amended to appear:

Dennison

96,144. UNIVERSAL. Cl. 23. 4–7–14. Landers, Frary & Clark. General Electric Company, Bridgeport, Conn. Amended: In the statement, column 2, lines 2 and 3, "food-choppers, meat-choppers," is deleted.

438,723. CARLYLE AND DESIGN. Cl. 17. 5–11–48. Martins Limited. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Amended: In the statement, column 1, lines 6 through 8, "the words 'Martins Ltd.' being disclaimed apart from the mark shown," is deleted, and the drawing is amended to appear:



441,703. DAN-MAR. Cl. 39. 12–28–48. Dan-Mar Trouser Company, Baltimore, Md. Amended: In the statement, column 2, lines 9 and 10 are deleted, and the drawing is amended to appear:

DAN-MAR

507,797. MOLINE. Cl. 23. 3–22–49. Minneapolis-Moline Power Implement Company. Minneapolis-Moline, Inc., Hopkins, Minn. Amended: In the statement, column 1, lines 9 and 10, "tractor and horse drawn moldboard and disk" is deleted, line 14 "rotary hoes" is deleted.

603,878. RED DOT. Cl. 19. 3–29–55. Pick Manufacturing Company, West Bend, Wis. Corrected: In the certificate, line 5, second occurrence and in the statement, column 1, line 1, "Wisconsin" should be deleted and *Delaware* should be inserted.

607,225. BLUE DOT. Cl. 19. 6–14–55. Pick Manufacturing Company, West Bend, Wis. Corrected: In the certificate, line 5, second occurrence, and in the statement, column 1, line 1, "Wisconsin" should be deleted and *Delaware* should be inserted.

616,451. WILLEM II. Cl. 17. 11–22–55. N.V. Willem II Sigarenfabrieken v.h. H. Kersten & Co., Valkenswaard, Netherlands. Amended: In the statement, column 2, lines 1 and 2, the description of goods is deleted and *cigars and cigarillos* is inserted.

730,902. SKOL. Cl. 49. 5–1–62. J. A. Dougherty's Sons, Inc., Distillers, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Maryland" should be deleted and *Delaware* should be inserted.

737,489. HI-SPOT. Cl. 21. 9–11–62. Radiant Lamp Corporation, Newark, N.J. Corrected: In the statement, column 1, line 1, "of Delaware" should be deleted.

739,158. TRIACTON. Cl. 51. 10–9–62. Bristol-Myers Company, New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

740,546. HI-FLOOD. Cl. 21. 11–13–62. Radiant Lamp Corporation, Newark, N.J. Corrected: In the statement, column 1, line 1, "of Delaware" should be deleted.

744,623. FORMARBLE. Cl. 12. 2–5–63. Texboro Cabinet Corporation. Boro Industries, Inc., Mineral Wells, Tex. Amended: In the statement, column 1, line 1, after "Corporation" *, now by change of name Boro Industries, Inc.* is inserted.

750,792. SPATTERPROOF. Cl. 21. 6–11–63. Radiant Lamp Corporation, Newark, N.J. Corrected: In the statement, column 1, line 1, "of Delaware" should be deleted.

757,650. MERCO-SPOT. Cl. 21. 10–1–63. Radiant Lamp Corporation, Newark, N.J. Corrected: In the statement, column 1, line 1, "of Delaware" should be deleted.

757,651. MERCO-WHITE. Cl. 21. 10–1–63. Radiant Lamp Corporation, Newark, N.J. Corrected: In the statement, column 1, line 1, "of Delaware" should be deleted.

852,208. FARMLAND AND DESIGN. Cl. 21. 7–9–68. Farmland Industries, Inc., Kansas City, Mo. Corrected: In the statement, column 1, line 1, "Missouri" should be deleted and *Kansas* should be inserted.

855,405. FURNI-GLYDE. Cl. 13. 8–27–68. Swish Products Limited, Tamworth, England. Corrected: In the statement, column 1, line 1, "Swiss" should be deleted and *Swish* should be inserted and line 2 should be deleted and *Lichfield Road Industrial Estates* should be inserted.

856,937. QUIETTE. Cl. 21. 9–17–68. Arrow-Hart, Inc., by change of name from The Arrow-Hart & Hegeman Electric Company, Hartford, Conn. Corrected: In the statement, column 2, line 4, "592,862" should be deleted and *592,861* should be inserted.

858,115. KANSAS BLUE PRINT CO. INC. AND DESIGN. Cl. 38. 10–1–68. Eugene Dietzgen Co., Chicago, Ill. Corrected: In the statement, column 2, line 3, "plots" should be deleted and *plats* should be inserted.

Erratum

In the OFFICIAL GAZETTE of Nov. 5, 1968, at page TM 45, under Trademark Registrations Amended, Disclaimed, Corrected, etc. "803,409" should be corrected to read *803,499*.

INDEX OF REGISTRANTS

DECEMBER 10, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed. Corrected. etc. ; New Certificates ; 12c Publications.)

Abbott Laboratories, North Chicago, Ill. 507,292, ren. 12–10–68. Cl. 18.
Abbott Laboratories, North Chicago, Ill. 507,975, ren. 12–10–68. Cl. 44.
Advance Theatrical Co. : *See*—
Harris, Leo.
Agway, Inc. Dewitt, N.Y. 861,764, pub. 9–24–68. Cl. 46.
Akchurin Corp., The, Hempstead, N.Y. 861,569, pub. 9–24–68. Multiple Class (Classes 13 and 28).
Albany Tax Service : *See*—
Drislane, William E.
Alba-Siltex Societa per la Tessitura ed il Finissaggio di Fibre di Vetro S.p.A. : *See*—
Filiclair S.p.A.
Alfresan Havana Cigars, Inc., Miami, Fla. 861,576, pub. 9–24–68. Cl. 17.
Alsco, Inc., St. Louis, Mo. 861,544, pub. 9–24–68. Multiple Class (Classes 9 and 32).
Alton Box Board Co., Wilmington, Del. 861,526, pub. 9–24–68. Cl. 2.
Aluminum Mfg. Corp., d.b.a. Bee Safe Bomb Shelter Co., Carlisle, Ohio. 739,601, canc. Cl. 12.
American Bitumuls Co., Wilmington, Del., and San Francisco, Calif., to Chevron Asphalt Co., San Franscisco, Calif. 507,072, ren. 12–10–68. Cl. 38.
American Dynamics International, Inc., Fort Lauderdale, Fla. 861,826, pub. 9–24–68. Cl. 103.
American Home Products Corp. : *See*—
Boyle-Midway Inc.
Griffin Mfg. Co., Inc.
American Hot Rod Assocation, Inc., Kansas City, Mo. 861,714, pub. 9–24–68. Cl. 38.
American Hydrotherm Corp., New York, N.Y. 861,637, pub. 9–24–68. Cl. 23.
American Iron & Machine Works Co., Inc., Oklahoma City, Okla. 739,720–2, canc. Cl. 23.
American Optical Corp. : *See*—
American Optical Co.
American Optical Co., to American Optical Corp., Southbridge, Mass. 440,893, ren. 12–10–68. Cl. 4.
American Potash & Chemical Corp. : *See*—
Eston Chemicals, Inc.
American Powerstage Co., Houston, Tex. 861,632, pub. 9–24–68. Cl. 23.
American Society for Metals, Metals Park, Ohio. 861,721, pub. 9–24–68. Cl. 38.
American Standard Inc., New York, N.Y. 861,647, pub. 9–24–68. Cl. 26.
American Sumatra Tobacco Corp., East Hartford, Conn. 861,628 pub. 9–24–68. Cl. 23.
American Thread Co., The, New York, N.Y. 503,233, ren. 12–10–68. Cl. 43.
American Woolen Co., to Deering Milliken, Inc., New York, N.Y. 507,458, ren. 12–10–68. Cl. 42.
Amerock Corp., Rockford, Ill. 861,558, pub. 9–24–68. Multiple Class (Classes 12, 13, and 50).
Ametek, Inc., New York, N.Y. 861,535, pub. 9–24–68. Multiple Class (Classes 6 and 26).
Armstrong Rubber Co., The, West Haven, Conn. 861,681, pub. 9–24–68. Cl. 35.
Aronson Machine Co., Inc., Arcade, N.Y. 861,670, pub. 9–24–68. Cl. 34.
Arrow-Hart, Inc., by change of name from The Arrow-Hart & Hegeman Electric Co., Hartford, Conn. 856,937, cor. Cl. 21.
Ascor Electronics, Inc., Miami, Fla. 861,645, pub. 9–24–68. Cl. 26.
Asgrow Seed Co. : *See*—
Associated Seed Growers, Inc.
Associated Seed Growers, Inc., New Haven, to Asgrow Seed Co., Orange, Conn. 504,080, ren. 12–10–68. Cl. 1.
Associated Testing Laboratories, Inc., Wayne, N.J. 861,640, pub. 9–24–68. Cl. 26.
Astor Products Inc., Jacksonville, Fla. 861,706, pub. 9–24–68. Cl. 37.
Atlas Chemical Industries, Inc., Wilmington, Del. 861,542, pub. 9–24–68. Cl. 9.
Audio Fidelity Records, Inc., New York, N.Y. 861,686, pub. 9–24–68. Cl. 36.
Audio Technica Co. Ltd., d.b.a. Audio Technica Corp., Tokyo, Japan. 861,609, pub. 10–1–68. Multiple Class (Classes 21 and 36).
Audio Technica Corp. : *See*—
Audio Technica Co. Ltd.
Austen Display, Inc., New York, N.Y. 861,695, pub. 9–24–68. Cl. 37.
Automated Building Components, Inc., Miami, Fla. 861,638, pub. 9–24–68. Cl. 23.
Avon Products, Inc., New York, N.Y. 861,782, pub. 9–24–68. Cl. 51.
Baby Lift Inc., Bellerose, N.Y. 739,744, canc. Cl. 32.
Bank Services, Inc., Urbana, Ill. 861,722, pub. 9–24–68. Cl. 38.
Barcolene Co., The, Boston, Mass. 861,571, pub. 9–24–68. Cl. 15.
Barney's Clothes, Inc., New York, N.Y. 861,736, pub. 9–24–68. Cl. 39.
Bartmann & Bixer, Inc., New York, N.Y. 739,801, canc. Cl. 42.
Baton Broadcasting Ltd., Toronto, Ontario, Canada. 861,709, pub. 9–24–68. Multiple Class (Classes 38 and 107).
Bear Brand Hosiery Co., Chicago, Ill. 248,742, ren. 12–10–68. Cl. 39.
Bee Safe Bomb Shelter Co. : *See*—
Aluminum Mfg. Corp.
Benton, Bohn, Inc., New York, N.Y. 861,654, pub. 9–24–68. Cl. 26.
Berkley Shirt Co., Inc., New York, N.Y. 861,738, pub. 9–24–68. Cl. 39.
Berman, Bud, Sportswear Inc., New York, N.Y. 739,787–8, canc. Cl. 39.
Beverwyck Breweries, Inc., Albany, to The F. & M. Schaefer Brewing Co., Brooklyn, N.Y. 507,795, ren. 12–10–68. Cl. 48.
Bingham, Richard S., and Markham R. Bingham, Sacramento, Calif. 861,525, pub. 9–24–68. Cl. 2.
Black-Clawson Co., The, Hamilton, Ohio. 739,717, canc. Cl. 23.
Blue Ridge Manufacturers, Inc., New York, N.Y. 739,794, canc. Cl. 39.
Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 739,850, canc. Cl. 52.
Boyle-Midway Inc., Jersey City, N.J., to American Home Products Corp., New York, N.Y. 503,488, ren. 12–10–68. Cl. 52.
Braithwaite, Isaac, & Son Engineers, Ltd., to Isaac Braithwaite & Son Engineers Ltd., Kendal, England. 249,047, ren. 12–10–68. Cl. 24.
Breck, John H., Inc., Wayne, N.J. 861,783, pub. 9–24–68. Cl. 51.
Brewer Sewing Supplies Co., Chicago, Ill. 861,636, pub. 9–24–68. Cl. 23.
Bridgeport Brass Co., The, Bridgeport, Conn., to National Distillers and Chemical Corp., New York, N.Y. 69,985, ren. 12–10–68. Cl. 21.
Bridgeport Brass Co., The, Bridgeport, Conn., to National Distillers and Chemical Corp., New York, N.Y. 69,987, ren. 12–10–68. Cl. 14.
Bridgestone Tire Co. Ltd., Chuo-ku, Tokyo, Japan. 739,653–4, canc. Cl. 19.
Brinn's China & Glassware Co., Pittsburgh, Pa. 861,668, pub. 9–24–68. Cl. 33.
Bristol-Myers Co., New York, N.Y. 739,158, cor. Cl. 51.
Bristol-Myers Co., New York, N.Y. 861,786, pub. 9–24–68. Cl. 51.
Brno Arms Factory : *See*—
Ceskoslovenska Zbrojovka, akciova spolecnost v Brne.
Broadway-Hale Stores, Inc., Los Angeles, Calif. 861,820, pub. 9–24–68. Cl. 101.
Brost, John O., Co., Minneapolis, Minn. 739,823, canc. Cl. 12.
Balenciaga, Societe Anonyme : *See*—
Societe a Responsabilite Limitee Balenciaga.
Bulova Watch Co., Inc., Flushing, N.Y. 441,878, ren. 12–10–68. Cl. 27.
Bundy Corp. : *See*—
Bundy Tubing Co.
Bundy Tubing Co., to Bundy Corp., Detroit, Mich. 503,732, ren. 12–10–68. Cl. 13.
Bunte Bros., Chicago, Ill., to Bunte Candies, Inc., Oklahoma City, Okla. 504,892, ren. 12–10–68. Cl. 46.
Bunte Candies, Inc. : *See*—
Bunte Bros.
Burrell Corp., Pittsburgh, Pa. 861,648, pub. 9–24–68. Cl. 26.
Burtis, Mary B., d.b.a. The Jab Co., Portland, Oreg. 861,536, pub. 9–24–68. Cl. 6.
Butter Kernel Products, Inc. : *See*—
Minnesota Consolidated Canneries, Inc.
Byrne, Thomas M., Madison, Wis. 861,653, pub. 9–24–68. Cl. 26.
Callahan Mining Corp., New York, N.Y. 861,673, pub. 9–24–68. Cl. 34.
Cambridge Scientific Industries, Inc., Cambridge, Md. 861,650, pub. 9–24–68. Cl. 26.
Camu Press, Halesite, N.Y. 861,723, pub. 9–24–68. Cl. 38.
Capel, A. Leon, & Sons, Inc., Troy, N.C. 861,747, pub. 9–24–68. Cl. 42.
Cargille, R. P., Laboratories, Inc., Cedar Grove, N.J. 861,641, pub. 9–24–68. Cl. 26.
Carter's Ink Co., The, Cambridge, Mass. 861,548, pub. 9–24–68. Cl. 11.
Casual Corner Associates, Inc., Silver Spring, Md. 861,532, pub 9–24–68. Multiple Class (Classes 3, 26, 28, and 39).
Cat's Paw Rubber Co., Inc., Baltimore, Md. 505,442, ren. 12–10–68. Cl. 5.
Cellulo Co., The, Sandusky, Ohio. 739,742, canc. Cl. 31.
Ceskoslovenska Zbrojovka, akciova Spolecnost v Brne, Brunn, to Zbrojovka Brno, Narodni Podnik, also named Brno Arms Factory, Brno, Czechoslovakia. 245,178, ren. 12–10–68. Cl. 9.
Chadbourn Gotham, Inc., Charlotte, N.C. 861,728, pub. 9–24–68. Cl. 39.

Chemex Industries, Inc., d.b.a. Universal Laboratories, Tampa, Fla. 739,585, canc. Cl. 4.
Chemical Rubber Co., The, Cleveland, Ohio. 861,646, pub. 9–24–68. Multiple Class (Classes 26 and 38).
Chemway Corp., Wayne, N.J. 861,662, pub. 9–24–68. Cl. 29.
Chesebrough-Pond's Inc., New York, N.Y. 861,789–90, pub. 9–24–68. Cl. 51.
Chevron Asphalt Co.: *See*—
American Bitumuls Co.
Church & Dwight Co., Inc., New York, N.Y. 502,618, ren. 12–10–68. Cl. 6.
Clairol Inc., New York, N.Y. 861,780, pub. 9–24–68. Cl. 51.
Clarage Fan Co., Kalamazoo, Mich. 861,674, pub. 9–24–68. Cl. 34.
Clark, Bob R., d.b.a. Clark Enterprises Mfg., Paramount, Calif. 861,599, pub. 9–24–68. Cl. 19.
Clark Enterprises Mfg.: *See*—
Clark, Bob R.
Coats & Clark Inc.: *See*—
Spool Cotton Co., The.
Coca-Cola Co., The, Atlanta, Ga. 861,706–7, pub. 9–24–68. Cl. 46.
Coin Sales Corp., New York, N.Y. 861,748, pub. 9–24–68. Cl. 42.
Colgate & Co., Jersey City, N.J., and New York, N.Y., to Colgate-Palmolive Co., New York, N.Y. 71,432, ren. 12–10–68. Cl. 51.
Colgate-Palmolive Co.: *See*—
Colgate & Co.
Colgate-Palmolive-Peet Co.
Colgate-Palmolive-Peet Co., Jersey City, N.J., to Colgate-Palmolive Co., New York, N.Y. 505,077, ren. 12–10–68. Cl. 52.
Columbian Carbon Co., New York, N.Y. 861,518, pub. 9–24–68. Cl. 1.
Columbian Rope Co.: *See*—
Plymouth Cordage Co.
Comfort Paper Corp., to Crown Zellerbach Corp., San Francisco, Calif. 501,439, ren. 12–10–68. Cl. 37.
Computer Papers Inc., Des Moines, Iowa. 861,705, pub. 9–24–68. Cl. 37.
Connor, Robert, Carlstadt, N.J. 739,606, canc. Cl. 12.
Continental Illinois National Bank and Trust Co. of Chicago: *See*—
Midwest Bank Card System, Inc.
Continental Oil Co., Ponca City, Okla. 861,538, pub. 9–24–68. Cl. 6.
Contractors Machinery Co., Inc., Batavia, N.Y., to Eaton Yale & Towne Inc., Cleveland, Ohio. 507,857, ren. 12–10–68. Cl. 23.
Converse Rubber Corp., Malden, Mass. 739,782, canc. Cl. 39.
Conwood Corp., Memphis, Tenn. 861,578, pub. 9–24–68. Cl. 17.
Copeland Refrigeration Corp., Sidney, Ohio. 507,258, ren. 12–10–68. Cl. 31.
Cordell Tackle, Inc., Hot Springs, Ark. 861,623, pub. 9–24–68. Cl. 22.
Craig, Jay W., Minneapolis, Minn., to Jay W. Craig Co., Cambridge, Minn. 250,678, ren. 12–10–68. Cl. 12.
Crate-Rite, Inc., Union City, Calif. 861,531, pub. 9–24–68. Cl. 2.
Crosman Arms Co., Inc., Fairport, N.Y. 861,546, pub. 9–24–68. Cl. 9.
Crown Feather & Down Corp., Brooklyn, N.Y. 861,521, pub. 9–24–68. Cl. 1.
Crown Zellerbach Corp.: *See*—
Comfort Paper Corp.
Cryogenics Corp., Meadville, Pa. 739,629, canc. Cl. 13.
Curtis, Helene, Industries, Inc., Chicago, Ill. 861,788, pub. 9–24–68. Cl. 51.
Custom Pet Food Packers, Inc., Princess Anne, Md. 861,760, pub. 9–24–68. Cl. 46.
Cybernetics, Inc., Paterson, N.J. 739,737, canc. Cl. 26.
DCA Food Industries, Inc., New York, N.Y. 861,751, pub. 9–17–68. Cl. 46.
Dan-Mar Trouser Co., Baltimore, Md. 441,703. Am. 7(d). Cl. 39.
Dante's House of Wigs, Inc., Cincinnati, Ohio. 861,739, pub. 9–24–68. Cl. 40.
Davies-Young Soap Co., The, Dayton, Ohio, to Flash Sales Co., Inc., Woburn, Mass. 502,611, ren. 12–10–68. Cl. 52.
Deering Milliken, Inc.: *See*—
American Woolen Co.
Delapenha, R. U., & Co., Inc., New York, N.Y., to J. Wertheimer & Co., Zurich, Switzerland. 503,581, ren. 12–10–68. Cl. 49.
Dell Plastics Co. Inc., Brooklyn, N.Y. 739,677, canc. Cl. 22.
Deltrol Corp., The, Bellwood, Ill. 861,568, pub. 9–24–68. Cl. 13.
Dennison Mfg. Co., Boston, Mass. 70,257. Am. 7(d). Cl. 5.
Desprez, Jean, Paris, to S.A.R.L. Parfums Jean Desprez, Neuilly-sur-Seine (Hauts-de-Seine), France. 440,765, ren. 12–10–68. Cl. 51.
Destileria Serralles, Inc., Mercedita, Puerto Rico. 861,774, pub. 9–24–68. Cl. 49.
DeVilbiss Co., The, Toledo, Ohio. 861,617, pub. 9–24–68. Cl. 21.
Dexter Corp., The, Windsor Lock, Conn. 861,572, pub. 9–24–68. Cl. 16.
Diamond Alkali Co., to Diamond Shamrock Corp., Cleveland, Ohio. 506,585, ren. 12–10–68. Cl. 52.
Diamond Alkali Co., to Diamond Shamrock Corp., Cleveland, Ohio. 507,078–9, ren. 12–10–68. Cl. 52.
Diamond Shamrock Corp.: *See*—
Diamond Alkali Co.
Dick, R. & J., Co., Inc., King of Prussia, Pa. 861,679, pub. 9–24–68. Cl. 35.
Dietzgen, Eugene, Co., Chicago, Ill. 858,115, cor. Cl. 38.
Di Nardo, Frank, Woodside, N.Y. 861,827, pub. 9–24–68. Cl. 103.
Diversey Corp., The, Chicago, Ill. 507,002, ren. 12–10–68. Cl. 52.
Dominion Tar & Chemical Co., Ltd., Montreal, Canada. 739,851, canc. Cl. 52.
Donco Products Corp., Lakeview, Oreg. 861,624, pub. 9–24–68. Cl. 22.
Dougherty's, J. A., Sons, Inc., to Distillers, Philadelphia, Pa. 730,902, cor. Cl. 49.
Dow Chemical Co., The, Midland, Mich. 861,545, pub. 9–24–68. Cl. 9.
Drake University, Des Moines, Iowa. 861,710, pub. 9–24–68. Cl. 38.
Drislane, William E., d.b.a. Albany Tax Service, Albany, N.Y. 861,716, pub. 9–24–68. Cl. 38.
Dunn, R. G., Cigar Corp.: *See*—
Sensenbrenner, A., Sons.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 861,541, pub. 9–24–68. Cl. 6.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 861,656, pub. 9–24–68. Cl. 26.
Dur-A-Flex, Inc., Hartford, Conn. 861,552, pub. 6–4–68. Cl. 12.
Durametallic Corp., Kalamazoo, Mich. 861,684, pub. 9–24–68. Cl. 35.
Dynasurf Chemical Corp., Baltimore, Md. 861,808, pub. 9–24–68. Cl. 52.
EG & G, Inc., Bedford, Mass. 861,718, pub. 9–24–68. Cl. 38.
ESB Inc.: *See*—
Electric Storage Battery Co., The.
Grant Storage Battery Co.
Earlon Furniture, Inc., High Point, N.C. 861,666, pub. 9–24–68. Cl. 32.
Eaton Yale & Towne Inc.: *See*—
Contractors Machinery Co., Inc.
Ed-U-Cards Corp., Commack, N.Y. 861,719, pub. 9–24–68. Cl. 38.
Edwards, J., & Co., to Edwards Shoes, Inc., Philadelphia, Pa. 505,159, ren. 12–10–68. Cl. 39.
Edwards Shoes, Inc.: *See*—
Edwards, J., & Co.
Ekco Products Co., Chicago, Ill. 739,816, canc. Cl. 50.
Electric Machinery Mfg. Co., Minneapolis, Minn. 861,618, pub. 9–24–68. Cl. 21.
Electric Storage Battery Co., The, to ESB Inc., Philadelphia, Pa. 72 708, ren. 12–10–68. Cl. 21.
Electro-Sonic Laboratories, Inc., New York, N.Y. 739,666, canc. Cl. 21.
Emerson Electric Co., St. Louis, Mo. 861,607, pub. 9–24–68. Cl. 21.
Enginaire, Inc., Providence, to Enginaire, Inc., Warwick, R.I. 437,575, ren. 12–10–68. Cl. 34.
Enro Shirt Co., Inc., The, Louisville, Ky. 739,833–5, canc. Cl. 39.
Essex Wire Corp., Fort Wayne, Ind. 861,613–5, pub. 9–24–68. Cl. 21.
Eston Chemicals, Inc., to American Potash & Chemical Corp., Los Angeles, Calif. 503,180, ren. 12–10–68. Cl. 6.
Ethyl Corp., Richmond, Va. 861,701, pub. 9–24–68. Cl. 37.
Eureka Fire Hose Co., to Uniroyal, Inc., New York, N.Y. 32,059, ren. 12–10–68. Cl. 35.
Eureka Fire Hose Co., to Uniroyal, Inc., New York, N.Y. 32,062, ren. 12–10–68. Cl. 35.
Ever-Tex, Inc., Cranston, R.I. 739,660, canc. Cl. 20.
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 861,707, pub. 9–24–68. Cl. 37.
Farah Mfg. Co., Inc., El Paso, Tex. 739,775, canc. Cl. 39.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany. 861,516–17, pub. 9–24–68. Multiple Class (Classes 1, 39, 42, and 43).
Farmland Industries, Inc., Kansas City, Mo. 852,208, cor. Cl. 21.
Fedtro, Inc., Rockville Centre, N.Y. 861,620–1, pub. 9–24–68. Cl. 21.
Fedtro, Inc., Rockville Centre, N.Y. 861,836. Cl. 35.
Fellows Gear Shaper Co., The, Springfield, Vt. 861,652, pub. 9–24–68. Cl. 26.
Fenn Bros., Inc., Sioux Falls, S. Dak. 506,035, ren. 12–10–68. Cl. 46.
Feraud, Louis, Paris, France. 861,727, pub. 9–24–68. Multiple Class (Classes 39 and 42).
Filiclair S.p.A., from Alba-Siltex Societa per la Tessitura Ed il Finissaggio di Fibre di Vetro S.p.A., Milan, Italy. 861,740, pub. 9–24–68. Multiple Class (Classes 42 and 43).
Fischer, Carl, Inc., to Carl Fischer Musical Instrument Co., Inc., New York, N.Y. 250,862, ren. 12–10–68. Cl. 36.
Fischer, Carl, Musical Instrument Co., Inc.: *See*—
Fischer, Carl, Inc.
Fischer & Porter Co., Warminster, Pa. 503,719, ren. 12–10–68. Cl. 26.
Fisher, Nath'l., & Co., to Polly Preston Shoes, Inc., New York, N.Y. 249,756, ren. 12–10–68. Cl. 39.
Fisher Radio Corp., Long Island City, N.Y. 861,605, pub. 9–24–68. Cl. 21.
Fit-Rite Pants Co., Inc., New York, N.Y. 861,729, pub. 12–19–67. Cl. 39.
Fitzgerald Mfg. Co., The, Torrington, Conn. 861,676–7, pub. 9–24–68. Cl. 35.
Flash Sales Co., Inc.: *See*—
Davies-Young Soap Co., The.
Flo-Tronics, Inc.: *See*—
Northern Signal Co., Inc.
Fluke, John M., Mfg. Co., Inc., Mountlake Terrace, Wash. 861,610, pub. 10–1–68. Multiple Class (Classes 21 and 26).

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,071, ren. 12–10–68. Cl. 42.
Foseco International Ltd., Birmingham, England. 861,537, pub. 9–24–68. Cl. 6.
Fotomat Corp., La Jolla, Calif. 861,726, pub. 9–24–68. Cl. 38.
Fownes Bros. & Co., Inc., New York, N.Y. 739,758, canc. Cl. 39.
Franc, Charles, New York, N.Y. 861,713, pub. 9–24–68. Cl. 38.
Frieder, S., & Sons Co., The, Philadelphia, Pa. 861,577, pub. 9–24–68. Cl. 17.
Fulham Bros., Inc., Boston, Mass. 739,841, canc. Cl. 46.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 861,699–700, pub. 9–24–68. Cl. 37.
Garet, J. C., Inc., Los Angeles, Calif. 861,804, pub. 9–24–68. Cl. 52.
Gehlar, Mark G., d.b.a. Oregon Fruit Products Co., Salem, Oreg. 861,705, pub. 9–24–68. Cl. 46.
Geigy Chemical Corp.: *See*—
Geigy Co., Inc.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 252,557, ren. 12–10–68. Cl. 6.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Fire and Casualty Co., New York, N.Y. 861,822, pub. 9–24–68. Cl. 102.
General Homes, Inc., Cleveland, Ohio. 739,613, canc. Cl. 12.
General Mills, Inc., Minneapolis, Minn. 861,523, pub. 9–24–68. Cl. 1.
General Motors Corp., Detroit, Mich. 861,602, pub. 9–24–68. Cl. 19.
General Precision Systems Inc., Glendale, Calif. 861,644, pub. 9–24–68. Cl. 26.
General Tire & Rubber Co., The, Akron, Ohio. 861,604, pub. 9–24–68. Cl. 20.
Georgia-Pacific Corp., Portland, Oreg. 739,616, canc. Cl. 12.
Gevaert-Agfa N.V.: *See*—
Gevaert Photo Producten.
Gevaert Photo Producten, Antwerp, to Gevaert-Agfa N.V., Mortsel, Belgium. 440,109, ren. 12–10–68. Cl. 26.
Gevaert Photo Producten, Oude-God, near Antwerp, to Gevaert-Agfa N.V., Mortsel, Belgium. 440,123, ren. 12–10–68. Cl. 26.
Giant Snapshots, Inc., Green Bay, to Northwestern Photo Co., Milwaukee, Wis. 503,128, ren. 12–10–68. Cl. 38.
Gillette Co., The, Boston, Mass. 861,791–7, pub. 9–24–68. Cl. 51.
Globar, Inc., Lincolnwood, Ill. 861,633, pub. 9–24–68. Cl. 23.
Gold Medal Hair Products, Brooklyn, to Gold Medal Hair Products, Inc., Inwood, N.Y. 441,765, ren. 12–10–68. Cl. 40.
Gold Medal Hair Products, Inc.: *See*—
Gold Medal Hair Products.
Goldschmidt, Th., A.-G., Essen, Germany. 861,671, pub. 9–24–68. Cl. 34.
Goodman, S. B., from Pullman Games, Inc., Dallas, Tex. 739,678, canc. Cl. 22.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 739,785, canc. Cl. 39.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 861,675, pub. 9–24–68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 861,678, pub. 9–24–68. Cl. 35.
Grant Storage Battery Co., Minneapolis, Minn., to ESB Inc., Philadelphia, Pa. 245,719, ren. 12–10–68. Cl. 21.
Gray, Dorothy, Ltd.: *See*—
Lehn & Fink Products Corp.
Great Atlantic and Pacific Tea Co., The, to The Great Atlantic and Pacific Tea Co., Inc., New York, N.Y. 501,204, ren. 12–10–68. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,320, ren. 12–10–68. Cl. 47.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,542, ren. 12–10–68. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The: *See*—
Great Atlantic and Pacific Tea Co., The.
Gribbon Co., Inc., New York, N.Y. 504,670, ren. 12–10–68. Cl. 42.
Griffin Mfg. Co., Inc., Brooklyn, to American Home Products Corp., New York, N.Y. 505,080, ren. 12–10–68. Cl. 4.
Guiness, Arthur, Son & Co. Ltd., London, England. 861,769, pub. 9–24–68. Cl. 48.
Gunter, Dalton D., d.b.a. Gunter Enterprises, Greenville, S.C. 861,672, pub. 9–24–68. Cl. 34.
Gunter Enterprises: *See*—
Gunter, Dalton D.
Hall, Turner, Corp., New York, N.Y. 861,778, pub. 9–24–68. Cl. 51.
Hamac-Hansella Maschinen G.m.b.H. Dusseldorf, Dusseldorf, Germany. 739,711. canc. Cl. 23.
Hamm, Theo., Brewing Co., St. Paul, Minn. 861,768, pub. 9–24–68. Cl. 48.
Happy Jack, Inc., Snow Hill, N.C. 861,587, pub. 9–24–68. Cl. 18.
Harcourt, Brace & World, Inc., New York, N.Y. 861,720, pub. 9–24–68. Cl. 38.
Harris Leo, d.b.a. Advance Theatrical Shoe Co., to Advance Theatrical Co., Chicago, Ill. 254,493, ren. 12–10–68. Cl. 39.
Hastings Aluminum Products, Inc., Hastings, Mich. 861,557, pub. 9–24–68. Cl. 12.
Hawk Model Co., Chicago, Ill. 861,776, pub. 9–24–68. Cl. 50.
Heaven Hill Distilleries, Inc., d.b.a. Nelson Distilleries, Bardstown, Ky. 861,772–3, pub. 9–24–68. Cl. 49.
Henderson, Carolyn M., d.b.a. Hi-Neighbor Welcoming Service, Denver, Colo. 861,819, pub. 9–24–68. Cl. 101.
Henningson, Durham & Richardson, Inc., Omaha, Nebr. 861,814, pub. 9–24–68. Cl. 100.
Hewitt-Robins Inc., Stamford, Conn. 861,683, pub. 9–24–68. Cl. 35.
Hickey-Freeman Co., Rochester, N.Y. 739,760, canc. Cl. 39.
Hi-Neighbor Welcoming Service: *See*—
Henderson, Carolyn M.
Hitchcock Publishing Co., Wheaton, Ill. 861,724, pub. 9–24–68. Cl. 38.
Hitco, Gardena, Calif. 861,543, pub. 9–24–68. Cl. 9.
Hocks Laboratories: *See*—
Hocks, Robert W.
Hocks, Robert W., d.b.a. Hocks Laboratories, Portland, Oreg. 861,801, pub. 9–24–68. Cl. 52.
Hoffman-Taff, Inc., Springfield, Mo. 861,588, pub. 9–24–68. Cl. 18.
Home Beneficial Life Insurance Co., Richmond, Va. 861,823, pub. 9–24–68. Cl. 102.
Hudson Mfg. Co., Minneapolis, Minn., to New Jersey Machine Corp., Hoboken, N.J. 248,305, ren. 12–10–68. Cl. 23.
Humboldt Products Corp., Columbus, Miss. 861,530, pub. 9–24–68. Cl. 2.
Huntington Laboratories, Inc., Huntington, Ind. 861,810, pub. 9–24–68. Cl. 52.
Hunt-Wesson Foods, Inc., Fullerton, Calif. 861,664, pub. 9–24–68. Multiple Class (Classes 31 and 52).
Hutchens Hosiery Mills, Inc., Newton, N.C. 739,761, canc. Cl. 39.
Hydrotherm, Inc., Northvale, N.J. 861,669, pub. 12–15–64. Cl. 34.
Ideal Rubber Products Co., Inc., Brooklyn, N.Y. 739,739, canc. Cl. 29.
Illinois Tool Works Inc., Chicago, Ill. 861,567, pub. 9–24–68. Cl. 13.
Imperial Shirt Corp., New York, N.Y. 739,793, canc. Cl. 39.
Imperial Tobacco Co. (of Great Britain and Ireland), Ltd., The, Bristol, England. 861,574, pub. 9–24–68. Cl. 17.
Import Associates of America, Inc., Chicago, Ill. 861,619, pub. 9–24–68. Cl. 21.
Industrial Shipping Co. Ltd., Nova Scotia, Canada. 861,600, pub. 9–24–68. Cl. 19.
Interlake Steel Corp., Chicago, Ill. 861,551, pub. 9–24–68. Cl. 12.
Interlake Steel Corp., Chicago, Ill. 861,560, pub. 9–24–68. Cl. 13.
Interlake Steel Corp., Chicago, Ill. 861,570, pub. 9–24–68. Cl. 14.
Ipco Hospital Supply Corp., New York, N.Y. 861,524, pub. 9–24–68. Cl. 2.
Isaly's: *See*—
Isaly Co., The.
Isaly Co., The, d.b.a. Isaly's, Pittsburgh, Pa. 861,838. Cl. 46.
Ivey, J. B., & Co., Charlotte, N.C. 861,818, pub. 9–24–68. Cl. 101.
Jab Co., The: *See*—
Burtis, Mary B.
Jackdaw Publications Ltd., London, England. 861,692, pub. 9–24–68. Cl. 37.
Jackson & Jackson Inc., Tryon, N.C. 504,610, ren. 12–10–68. Cl. 42.
Jancyn Mfg. Corp., East Northport, N.Y. 861,809, pub. 9–24–68. Cl. 52.
Jerome Co.: *See*—
Mar-Salle Chicago Co.
Jerrold Electronics Corp., Philadelphia, Pa. 861,608, pub. 9–24–68. Cl. 21.
Joaquin, Don, Cigars Inc., Miami, Fla. 861,575, pub. 9–24–68. Cl. 17.
K.N.M. Sportswear, Inc., New York, N.Y. 739,795, canc. Cl. 39.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 739,618–9, canc. Cl. 12.
Kay Chemical Corp., Cleveland, Ohio. 861,779, pub. 9–24–68. Cl. 51.
Kent Corp., Princeton, N.J. 861 562, pub. 9–24–68. Cl. 13.
Kevex Fibre Co., Waterville, Maine. 861,527, pub. 9–24–68. Cl. 2.
Kidde, Walter, & Co., Inc., Belleville, N.J. 861,564, pub. 9–24–68. Cl. 13.
Kraft-Phenix Cheese Co., to National Dairy Products Corp., Chicago, Ill. 248,619, ren. 12–10–68. Cl. 46.
Krauth & Benninghofen, to Krauth & Benninghofen, Inc., Hamilton, Ohio. 504,804, ren. 12–10–68. Cl. 36.
Krauth & Benninghofen, Inc.: *See*—
Krauth & Benninghofen.
La Favorite Rubber Mfg. Co., Hawthorne, N.J. 861,680, pub. 9–24–68. Cl. 35.
Landers, Frary & Clark, to General Electric Co., Bridgeport, Conn. 96,144. Am. 7(d). Cl. 23.
Lane Magazine & Book Co., Menlo Park, Calif. 861,837. Cl. 38.
Lanman & Kemp-Barclay & Co., Inc., Palisades, N.J. 442,225, ren. 12–10–68. Cl. 52.
Lansing, James B., Sound, Inc., Los Angeles, Calif. 861,616, pub. 9–24–68. Cl. 21.
Lehn & Fink Products Corp., Bloomfield, N.J., to Dorothy Gray, Ltd., New York, N.Y. 501,966, ren. 12–10–68. Cl. 52.
Levitch, Harry, d.b.a. Harry Levitch Jewelers, Memphis, Tenn. 861,660, pub. 9–24–68. Cl. 28.
Levitch, Harry, Jewelers: *See*—
Levitch, Harry.
Liberty Optical Mfg. Co. Inc., Newark, N.J. 861,655, pub. 9–24–68. Cl. 26.
Lihit Industrial Co., Ltd., Osaka, Japan. 861,629, pub. 9–24–68. Cl. 23.
Liquid Drive Corp., Holly, Mich. 739,719, canc. Cl. 23.
Loma Linda Foods: *See*—
Pacific Union Association of Seventh-Day Adventists.
L'Oreal, Paris, France. 861,784, pub. 9–24–68. Cl. 51.

Lovell Mfg. Co., Erie, Pa. 739,706, canc. Cl. 23.
Lynn, Debbie, Corp., d.b.a. Debbie Lynn's Kitchens, East Farmingdale, N.Y. 810,209, canc. Cl. 46.
Lynn's, Debbie, Kitchens: *See*—
Lynn, Debbie, Corp.
MF Co.: *See*—
Martinoni, E., Co.
Maccabees Mutual Life Insurance Co., Detroit, Mich. 739,820, canc. Cl. 102.
Macklanburg-Duncan Co., Oklahoma City, Okla. 739,612, canc. Cl. 12.
Makers of Kal, Inc., Los Angeles, Calif. 502,629, ren. 12–10–68. Cl. 18.
Manhattan Shirt Co., The, New York, N.Y. 861,734, pub. 9–24–68. Cl. 39.
Manifold Supplies Co., d.b.a. Panama-Beaver Uni-Masters, Brooklyn, N.Y. 861,702–3, pub. 9–24–68. Cl. 37.
Manufacture Francaise de Tapis et Couvertures, Beauvais, France. 248,655, ren. 12–10–68. Cl. 42.
Mar-Salle Chicago Co., d.b.a. Jerome Co., Chicago, Ill. 861,771, pub. 9–24–68. Cl. 49.
Martinoni, E., Co., d.b.a. MF Co., South San Francisco, Calif. 861,775, pub. 9–24–68. Cl. 49.
Martins Ltd., to Rembrandt Tobacco Corp. (Overseas) Ltd., Zurich, Switzerland. 438,723. Am. 7(d). Cl. 17.
Matthews, Jas. H., & Co., Pittsburgh, Pa. 739,685, canc. Cl. 23.
McAleer Mfg. Corp., Detroit, Mich. 861,553, pub. 9–24–68. Cl. 12.
McAuley Enterprises, Inc.: *See*—
United Merchants & Manufacturers, Inc.
McGraw-Hill, Inc.: *See*—
Modern Plastics, Inc.
McKee-Stewart Equipment Corp., Pittsburgh, Pa. 861,598, pub. 9–24–68. Cl. 19.
McMullen, John J., Associates, Inc., New York, N.Y. 739,852, canc. Cl. 103.
Mead Johnson & Co., Evansville, Ind. 861,592–5, pub. 9–24–68. Cl. 18.
Mead Johnson & Co., Evansville, Ind. 861,750, pub. 9–24–68. Cl. 44.
Mead Johnson & Co., Evansville, Ind. 861,759, pub. 6–4–68. Cl. 46.
Medart Engineering & Equipment Co., The, St. Louis, Mo. 739,607, canc. Cl. 12.
Meehanite Metal Corp., Chattanooga, Tenn., and New Rochelle, N. Y., to Meehanite Metal Corp., White Plains, N.Y. 506,895, ren. 12–10–68. Cl. 38.
Memorex Corp., Santa Clara, Calif. 861,688, pub. 9–24–68. Cl. 36.
Mennen Co., The, Morristownship, N.J. 253,177, ren. 12–10–68. Cl. 51.
Merck & Co., Inc.: *See*—
Sharp & Dohme, Inc.
Meredith & Drew Ltd., London, England. 861,755, pub. 9–24–68. Cl. 46.
Meredith Publishing Co., Des Moines, Iowa. 861,712, pub. 9–24–68. Cl. 38.
Metallizing Engineering Co. Inc., Long Island City, to Metco Inc., Westbury, N.Y. 507,398, ren. 12–10–68. Cl. 14.
Metco Inc.: *See*—
Metallizing Engineering Co. Inc.
Methodist Hospital of Brooklyn, Brooklyn, N.Y. 861,812, pub. 9–24–68. Cl. 100.
Metz, H. A., Laboratories, Inc., to Sterling Drug Inc., New York, N.Y. 249,804, ren. 12–10–68. Cl. 18.
Meyer Laboratories, Inc., Detroit, Mich. 861,579, pub. 9–26–67. Cl. 18.
Meyer Laboratories Inc., Detroit, Mich. 861,586, pub. 9–24–68. Cl. 18.
Middlshade Co., Inc., The, Philadelphia, Pa. 861,732, pub. 9–24–68. Cl. 39.
Midwest Bank Card System, Inc., from Continental Illinois National Bank and Trust Co. of Chicago, Chicago, Ill. 861,821, pub. 9–24–68. Cl. 102.
Milani Foods, Inc., Los Angeles, Calif. 861,717, pub. 9–24–68. Cl. 38.
Miller Brewing Co., Milwaukee, Wis. 506,937, ren. 12–10–68. Cl. 48.
Minette Mills, Inc., Grover, N.C. 739,797, canc. Cl. 42.
Minneapolis-Moline Power Implement Co., to Mineapolis-Moline, Inc., Hopkins, Minn. 507,797. Am. 7(d). Cl. 23.
Minnesota Consolidated Canneries, Inc., to Butter Kernel Products, Inc., Minneapolis, Minn. 505,012, ren. 12–10–68. Cl. 46.
Miratile Mfg. Co., Inc., Chicago, Ill. 739,614, canc. Cl. 12.
Mitchell, F. O., & Bro. Inc., Perryman, Md. 504,801, ren. 12–10–68. Cl. 46.
Mitchell-Ivey Management, Reno, Nev. 861,817, pub. 9–24–68. Cl. 101.
Modern Plastics, Inc., to McGraw-Hill, Inc., New York, N.Y. 507,336, ren. 12–10–68. Cl. 38.
Mohawk Airlines, Inc., Utica, N.Y. 861,828–9, pub. 9–24–68. Cl. 105.
Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden. 739,589, canc. Cl. 5.
Motorola, Inc., Franklin Park, Ill. 861,606, pub. 9–24–68. Cl. 21.
Moulins Yamaska Mills Inc., St-Pie, Quebec, Canada. 739,608, canc. Cl. 12.
Mound City Products Co., to Chester A. Noland, St. Louis, Mo. 506,055, ren. 12–10–68. Cl. 49.
Multicore Solders Ltd., Hemel Hempstead, England. 502,599, ren. 12–10–68. Cl. 6.
Multistamp Co., Inc., The, to The Multistamp Co., Norfolk, Va. 507,987, ren. 12–10–68. Cl. 11.
Multistamp Co., The: *See*—
Multistamp Co., Inc.
Munston Electronic Mfg. Corp., Islip, N.Y. 739,674, canc. Cl. 21.
Munters Corp., Fort Myers, Fla. 861,554–5, pub. 9–24–68. Cl. 12.
Murphy Products Co., Inc., Burlington, Wis. 861,763, pub. 9–24–68. Cl. 46.
N.V. Philips' Phonographische Industrie, Baarn, Netherlands. 861,687, pub. 9–24–68. Cl. 36.
N.V. Willem II Sigarenfabrieken v.h.H. Kersten & Co., Valkenswaard, Netherlands. 616,451. Am. 7(d). Cl. 17.
Nanasi Mfg. Inc., New York, N.Y. 861,661, pub. 9–24–68. Cl. 28.
National Automotive Parts Association, Chicago, Ill. 861,630, pub. 9–24–68. Cl. 23.
National Dairy Products Corp.: *See*—
Kraft-Phenix Cheese Co.
National Distillers and Chemical Corp.: *See*—
Bridgeport Brass Co., The.
National Distillers Products Corp.
National Distillers Products Corp., to National Distillers & Chemical Corp., d.b.a. National Distillers Products Co., and The Old Taylor Distillery Co., New York, N.Y. 507,794, ren. 12–10–68. Cl. 49.
National Starch & Chemical Corp.: *See*—
National Starch Products Inc.
National Starch Products Inc., to National Starch & Chemical Corp., New York, N.Y. 507,578, ren. 12–10–68. Cl. 46.
Naumkeag Steam Cotton Co., Salem, Mass., to Springs Mills, Inc., New York, N.Y. 503,500, ren. 12–10–68. Cl. 42.
Nelson Distilleries: *See*—
Heaven Hill Distilleries, Inc.
New Jersey Machine Corp.: *See*—
Hudson Mfg. Co.
New Plastic Corp., Los Angeles, Calif. 442,273, ren. 12–10–68. Cl. 23.
Newspaper Enterprise Association, Inc., Cleveland, Ohio. 861,711, pub. 9–24–68. Cl. 38.
Nicolet Industries, Inc., Ambler, Pa. 861,682, pub. 9–24–68. Cl. 35.
Nielsen, Poul, d.b.a. Stanwell Briar Pipes v/Poul Nielsen Kyringe, Near Ringsted, Denmark. 739,594, canc. Cl. 8.
Nifong, Lyle L., d.b.a. Taggin-Waggin Mobile, Houston, Tex. 739,656. canc. Cl. 19.
Nipak, Inc., Dallas, Tex. 861,547, pub. 9–24–68. Cl. 10.
Nitto Kohki Co., Ltd., Ohta-Ku, Tokyo, Japan. 861,631, pub. 9–24–68. Cl. 23.
Nobility, Inc., Newark, N.Y. 861,663, pub. 9–24–68. Cl. 30.
Noland, Chester A.: *See*—
Mound City Products Co.
Norcross, Inc., New York, N.Y. 861,725, pub. 9–24–68. Cl. 38.
Northern Signal Co., Inc., Milwaukee, Wis., to Flo-Tronics, Inc., Minneapolis, Minn. 506,805, ren. 12–10–68. Cl. 21.
Northwestern Photo Co.: *See*—
Giant Snapshots, Inc.
Northwestern States Portland Cement Co., Mason City, Iowa. 504,905, ren. 12–10–68. Cl. 12.
Nuzan Brassiere Co., Inc., New York, N.Y., to Surprise/Corde Co., Inc., Linden, N.J. 503,685, ren. 12–10–68. Cl. 39.
Nyman, Al. & Son, Inc., New York, N.Y. 861,696, pub. 9–24–68. Cl. 37.
Old Taylor Distillery Co., The: *See*—
National Distillers Products Corp.
Old Town Corp., Brooklyn, N.Y. 861,550, pub. 9–24–68. Cl. 11.
Oregon Fruit Products Co.: *See*—
Gehlar, Mark G.
Ortho Diagnostics: *See*—
Ortho Pharmaceutical Corp.
Ortho Pharmaceutical Corp., d.b.a. Ortho Diagnostics, Raritan, N.J. 861,534, pub. 9–24–68. Cl. 6.
Outboard Marine Corp., Waukegan, Ill. 739,682, canc. Cl. 23.
Paalo Cervantes, Ltd., Merrick, N.Y. 861,785, pub. 9–24–68. Cl. 51.
Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods, Glendale, Calif. 861,752, 9–24–68. Cl. 46.
Panama-Beaver Uni-Masters: *See*—
Manifold Supplies Co.
Parfums Jean Desprez, S.A.R.L.: *See*—
Desprez, Jean.
Parke, Davis & Co., Detroit, Mich. 507,063, ren. 12–10–68. Cl. 18.
Parker Brothers, Inc., Salem, Mass. 861,625–6, pub. 9–24–68. Cl. 22.
Pauker Brothers, New York, N.Y. 739,776, canc. Cl. 39.
Pennsylvania Refining Co., Butler, Pa. 503,160, ren. 12–10–68. Cl. 6.
Pep Boys, Manny, Moe & Jack, The, Philadelphia, Pa. 503,912, ren. 12–10–68. Cl. 21.
Perlino & C. Vini Affini Liquori S.p.A., Asti, Italy. 739,842, canc. Cl. 47.
Pfizer, Chas., & Co., Inc.: *See*—
Primrose House, Inc.
Pic n' Save Drug Co., Inc., Jacksonville, Fla. 861,815, pub. 9–24–68. Cl. 101.
Pick Mfg. Co., West Bend, Wis. 603,878, cor. Cl. 19.
Pick Mfg. Co., West Bend, Wis. 607,225, cor. Cl. 19.
Pinehurst Textiles Inc., Asheboro, N.C. 506,136, ren. 12–10–68. Cl. 39.
Plastering Development Center, Inc., Chicago, Ill. 739,603, canc. Cl. 12.
Plastic Wire & Cable Corp., The, to The Plastic Wire & Cable Corp., Jewett City, Conn. 503,176, ren. 12–10–68. Cl. 21.
Plymouth Cordage Co., Plymouth, Mass., to Columbian Rope Co., Auburn, N.Y. 502,985, ren. 12–10–68. Cl. 7.
Plymouth Cordage Co., North Plymouth, Mass., to Columbian Rope Corp., Auburn, N.Y. 503,123, ren. 12–10–68. Cl. 7.

Porter & Dietsch, Inc., St. Paul, Minn. 861,582, pub. 9–24–68. Cl. 18.
Postrib Corp., New York, N.Y. 861,715, pub. 9–24–68. Cl. 38.
Power Engineering Co., Denver, Colo. 861,825, pub. 9–24–68. Multiple Class (Classes 103 and 106).
Pratt's, Peter, Inn, Inc., Yorktown Heights, N.Y. 861,811, pub. 9–10–68. Cl. 100.
Preston, Polly, Shoes, Inc.: *See*—
Fisher, Nath'l., & Co.
Primrose House, Inc., Dover, Del., and New York, N.Y., to Chas. Pfizer & Co., Inc., New York, N.Y. 248,247, ren. 12–10–68. Cl. 51.
Prodelin, Inc., Highstown, N.J. 861,597, pub. 9–24–68. Multiple Class (Classes 19 and 26).
Progressive Products Inc., Forest Hill, Md. 861,611, pub. 10–1–68. Cl. 21.
Psychological Corp., The, New York, N.Y. 861,813, pub. 9–24–68. Cl. 100.
Pullman Games, Inc.: *See*—
Goodman, S. B.
Puritan Chemical Co., Atlanta, Ga. 861,805–7, pub. 9–24–68. Cl. 52.
RCI-Danavox North America, Inc., Wayzata, Minn. 861,740, pub. 9–24–68. Cl. 44.
R.F.D., Inc., Richwood, W. Va. 861,603, pub. 9–24–68. Multiple Class (Classes 19 and 22).
RKO Bottlers of Toledo Inc.: *See*—
Variety Club Beverage Co.
Radiant Lamp Corp., Newark, N.J. 737,489, cor. Cl. 21.
Radiant Lamp Corp., Newark, N.J. 740,546, cor. Cl. 21.
Radiant Lamp Corp., Newark, N.J. 750,792, cor. Cl. 21.
Radiant Lamp Corp., Newark, N.J. 757,650–1, cor. Cl. 21.
Ralston Purina Co., St. Louis, Mo. 861,520, pub. 9–24–68. Cl. 1.
Ralston Purina Co., St. Louis, Mo. 861,540, pub. 9–24–68. Multiple Class (Classes 6, 18, and 46).
Ralston Purina Co., St. Louis, Mo. 861,590, pub. 9–24–68. Cl. 18.
Ransone, William H., Inc., Chicago, Ill. 739,713, canc. Cl. 23.
Raychem Corp., Redwood City, Calif. 861,834. Cl. 21.
Record Tree, Inc., Philadelphia, Pa. 739,743, canc. Cl. 32.
Red Kap Garment Co., Nashville, Tenn. 739,772, canc. Cl. 39.
Red Top Maintenance Service, Inc., Denver, Colo. 819,270, canc. Cl. 52.
Ressel, O. O., d.b.a. Woodrow Wilson Co., Newport Beach, Calif. 861,622, pub. 9–6–67. Cl. 22.
Reynolds Metals Co, Richmond, Va. 861,697, pub. 9–24–68. Cl. 37.
Ridge Products, Inc., Elkhart, Ind. 861,506, pub. 9–24–68. Cl. 13.
Riteoff, Inc., Plainview, N.Y. 861,799, pub. 9–24–68. Cl. 52.
Ritz Rubber Co. of America, Skokie, Ill. 861,685, pub. 9–24–68. Cl. 35.
Robertson, H. H., Co., Pittsburgh, Pa. 861,559, pub. 9–24–68. Cl. 12.
Robertson, J. A., & Sons (Dumfries) Ltd., Dumfries, Scotland. 861,735, pub. 9–24–68. Cl. 39.
Roger Office Furniture Co., Inc., Denver, Colo. 861,667, pub. 9–24–68. Cl. 32.
Rogers Corp., Rogers, Conn. 861,519, pub. 9–24–68. Cl. 1.
Ronci Mfg. Co., Inc., North Providence, R.I. 739,832, canc. Cl. 39.
Ronna, Inc., Nashville, Tenn. 861,737, pub. 9–24–68. Cl. 39.
Ronson Corp., Woodbridge, N.J. 739,715, canc. Cl. 23.
Roof Mfg. Co., Pontiac, Ill. 861,634, pub. 9–24–68. Cl. 23.
Roper, John, & Co., Inc., from J. H. Roper, Baltimore, Md. 739,697, canc. Cl. 23.
Roper, John H., Baltimore, Md. 739,693, canc. Cl. 23.
Roper, John H.: *See*—
Roper, John, & Co., Inc.
Rose Patch & Label Co., Grand Rapids, Mich. 861,635, pub. 9–24–68. Cl. 23.
Rosenstein, Nettie, Inc., New York, N.Y. 739,762, canc. Cl. 39.
Rothkopf, Mac M., & Co., Inc., Brooklyn, N.Y. 861,746, pub. 9–24–68. Cl. 42.
Royal Hawaiian Perfumes, Ltd., Honolulu, Hawaii. 861,787, pub. 9–24–68. Cl. 51.
Salem Valve Co., The, Salem, Ohio. 861,565, pub. 9–24–68. Cl. 13.
Schaefer Equipment Co., Pittsburgh, Pa. 861,561, pub. 9–24–68. Cl. 13.
Schaefer, F. & M., Brewing Co., The: *See*—
Beverwyck Breweries, Inc.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 861,770, pub. 9–24–68. Cl. 48.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 252,370, ren. 12–10–68. Cl. 14.
Screen Patch Co.: *See*—
Stewart, George R.
Seal Rite Paint & Chemical Corp., Brooklyn, N.Y. 861,573, pub. 7–16–68. Cl. 16.
Sea-Way Oil Refining Co., Weston, Ohio. 739,641, canc. Cl. 15.
Seilon, Inc., Toledo, Ohio. 861,639, pub. 9–24–68. Cl. 23.
Selmer, H. & A., Inc., Elkhart, Ind. 506,089, ren. 12–10–68. Cl. 38.
Selmer, H. & A., Inc., Elkhart, Ind. 861,689, pub. 9–24–68. Cl. 36.
Sel-Rex Corp., Nutley, N.J. 861,643, pub. 9–24–68. Cl. 26.
Sensenbrenner, A., Sons, Los Angeles, Calif., to R. G. Dunn Cigar Corp., Lima, Ohio. 502,583, ren. 12–10–68. Cl. 17.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 502,940, ren. 12–10–68. Cl. 6.
Sherry, Rex T., d.b.a. Thoroughbred Records, Austin, Tex. 861,690, pub. 9–24–68. Cl. 36.
Showell, Henry, Ltd., Birmingham, England. 861,658, pub. 9–24–68. Cl. 28.
Simpson Timber Co., Seattle, Wash. 739,605, canc. Cl. 12.
Singer, Irving D., Chicago, Ill. 840,309, canc. Cl. 39.
Sipe, James B., & Co., Pittsburgh, Pa. 504,603–4, ren. 12–10–68. Cl. 16.
Smith, Clay, Engineering, Long Beach, Calif. 739,694, canc. Cl. 23.
Smith Kline & French Laboratories, Philadelphia, Pa. 861,591, pub. 9–24–68. Cl. 18.
Societe A Responsabilite Limitee Balenciaga, to Balenciaga, Societe Anonyme, Paris, France. 439,597, ren. 12–10–68. Cl. 39.
Solari & C./Udine S.p.A., Udine, Italy. 861,657, pub. 9–24–68. Cl. 27.
Southeastern Aluminum Products, Inc., Jacksonville, Fla. 861,556, pub. 9–24–68. Cl. 12.
Southern Wire Mesh Co., Memphis, Tenn. 739,615, canc. Cl. 12.
Sown, Frank J.: *See*—
U.S. Industrial Chemicals, Inc.
Specialized Coatings, Inc., Passaic, N.J. 861,800, pub. 9–24–68. Cl. 52.
Speedrite Products, Inc., Wichita, Kans. 861,708, pub. 9–24–68. Cl. 52.
Spencer, T. M., Inc., Cromwell, Ind. 739,780, canc. Cl. 39.
Spool Cotton Co., The, to Coats & Clark Inc., New York, N.Y. 506,335, ren. 12–10–68. Cl. 43.
Springs Cotton Mills, The, Lancaster, S.C., to Spring Mills, Inc., New York, N.Y. 505,615–6, ren. 12–10–68. Cl. 42.
Springs Cotton Mills, The, Lancaster, S.C., to Springs Mills, Inc., New York, N.Y. 506,579, ren. 12–10–68. Cl. 42.
Springs Cotton Mills, The Lancaster, S.C., to Springs Mills, Inc., New York, N.Y. 506,581, ren. 12–10–68. Cl. 42.
Springs Mills, Inc.: *See*—
Naumkeag Steam Cotton Co.
Springs Cotton Mills, The.
Stafco, Inc., San Antonio, Tex. 739,672, canc. Cl. 21.
Staff Supermarket Associates, Jericho, N.Y. 861,761, pub. 9–24–68. Cl. 46.
Standard Desk Ltd., Montreal, Quebec, Canada. 861,665, pub. 9–24–68. Cl. 32.
Stanwell Briar Pipes v/Poul Nielsen: *See*—
Nielsen, Poul.
Star Enterprises, Inc., Greenville, S.C. 861,831, pub. 9–24–68. Cl. 107.
Stearns & Foster Co., The, Cincinnati, Ohio. 507,694, ren. 12–10–68. Cl. 1.
Stearns, Frederick, & Co., Detroit, Mich., to Sterling Drug Inc., New York, N.Y. 249,700, ren. 12–10–68. Cl. 18.
Sterling Drug Inc.: *See*—
Metz, H. A., Laboratories, Inc.
Stearns, Frederick, & Co.
Stern, Harold L., Honston, Tex. 739,808, canc. Cl. 44.
Sternco Industries, Inc., Harrison, N.J. 861,757, pub. 9–24–68. Cl. 46.
Stetson, John B., Co., Philadelphia, Pa. 861,733, pub. 9–24–68. Cl. 39.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Hauffmann Co.
Stewart, George R., d.b.a. Screen Patch Co., Philadelphia, Pa. 861,563 pub. 9–24–68. Cl. 13.
Stewart, Larry L., & Associates, Inc., Coral Gables, Fla. 861,832, pub. 9–24–68. Cl. 107.
Stokely-Van Camp, Inc., Columbus, Ohio. 861,702, pub. 9–24–68. Cl. 46.
Sun Chemical Corp., New York, N.Y. 861,549, pub. 9–24–68. Cl. 11.
Superior Cable Corp.: *See*—
Superior Continental Corp.
Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 861,612, pub. 10–1–68. Cl. 21.
Surprise Brassiere Co. Inc.: *See*—
Suprise/Corde Co., Inc.
Surprise/Corde Co., Inc.: *See*—
Nuzan Brassiere Co., Inc.
Surprise/Corde Co., Inc., from Surprise Brassiere Co. Inc., New York, N.Y. 861,730, pub. 9–24–68. Cl. 39.
Swain, Frank E., Leicester, England. 739,636, canc. Cl. 13.
Swift & Co., Chicago, Ill. 439,539, ren. 12–10–68. Cl. 6.
Swish Products Ltd., Tamworth, England. 855,405, cor. Cl. 13.
Swivilstool Inc., Warsaw, Ind. 739,809, canc. Cl. 44.
Systemation, Inc., Scottsdale, Ariz. 861,816, pub. 9–24–68. Cl. 101.
Taggin-Waggin: *See*—
Nifong, Lyle L.
Techmatic Corp., New York, N.Y. 861,651, pub. 9–24–68. Cl. 26.
Teich, Curt, & Co., Chicago, Ill. 504,929, ren. 12–10–68. Cl. 38.
Texas Industries, Inc., Dallas, Tex. 739,599, canc. Cl. 12.
Texboro Cabinet Corp., to Boro Industries, Inc., Mineral Wells, Tex. 744 623. Am. 7(d). Cl. 12.
Textron Inc., Providence, R.I. 861,777, pub. 9–24–68. Cl. 51.
Thoroughbred Records: *See*—
Sherry, Rex T.
Tiger Fabrics, Inc., New York, N.Y. 861,694, pub. 9–24–68. Cl. 37.
Timms, Robert, Proprietary Ltd., Victoria, Australia. 861,758, pub. 9–24–68. Cl. 46.
Tracor, Inc., Austin, Tex. 861,642, pub. 9–24–68. Cl. 26.
Transmission Corp. of America, Stone Park, Ill. 861,627, pub. 1–10–67. Cl. 23.
Transmission Corp. of America, Stone Park, Ill. 861,824, pub. 1–10–67. Cl. 103.
Trion, Inc., McKees Rocks, Pa. 504,130, ren. 12–10–68. Cl. 31.
Turk, Amos, New York, N.Y. 861,649, pub. 9–24–68. Cl. 26.
Uarco Inc., Barrington, Ill. 861,708, pub. 9–24–68. Cl. 37.
Unidor G.m.b.H., Habermehlstrasse, Germany. 861,659, pub. 9–24–68. Cl. 28.

Uniroyal, Inc.: *See*—
Eureka Fire Hose Co.
United Marine Co., Inc., Kansas City, Mo. 861,001, pub. 9–24–68. Cl. 19.
United Merchants and Manufacturers, Inc., from McAuley Enterprises, Inc., New York, N.Y. 861,745, pub. 9–24–68. Cl. 42.
United Portrait Album Plan, Dallas, Tex. 861,098, pub. 9–24–68. Cl. 37.
Universal Laboratories: *See*—
Chemex Industries, Inc.
Universal Oil Products Co., Des Plaines, Ill. 861,802, pub. 9–24–68. Cl. 52.
U.S. Industrial Chemicals, Inc., to F. J. Sown, New York, N.Y. 439,670, ren. 12–10–68. Cl. 6.
United States Steel Corp, Pittsburgh, Pa. 861,522, pub. 9–24–68. Cl. 1.
Upjohn Co., The, Kalamazoo, Mich. 861,584–5, pub. 9–24–68. Cl. 18.
Utility Co., Inc., The, New York, N.Y. 503,781, ren. 12–10–68. Cl. 52.
Variety Club Beverage Co., to RKO Bottlers of Toledo, Inc., d.b.a. Variety Club Beverage Co., Toledo, Ohio. 503,644, ren. 12–10–68. Cl. 45.
Ventura Travelware, Inc., New York, N.Y. 861,833. Cl. 3.
Veterinary Research Institute, Inc., Dallas, Tex. 861,583, pub. 9–24–68. Cl. 18.
Vinolia A/S, Kampmannsgade, Denmark. 861,781, pub. 9–24–68. Multiple Class (Classes 51 and 52).
Vitaminerals, Inc., Glendale, Calif. 861,589, pub. 9–24–68. Cl. 18.
Waldrich, H. A., G.m.b.H., Siegen, Westphalia, Germany. 739,681, canc. Cl. 23.
Ward Foods, Inc., New York, N.Y. 861,753, pub. 9–24–68. Cl. 46.
Webtex Co., The, Wilmington, Mass. 861,533, pub. 9–24–68. Cl. 5.
Wembley, Inc., New Orleans, La. 861,731, pub. 9–24–68. Cl. 39.
Wertheimer, J., & Co.: *See*—
Delaphenha, R. U., & Co., Inc.
Westab Inc., Dayton, Ohio. 861,704, pub. 9–24–68. Cl. 37.
Westerbeke, J. H., Corp., Boston, Mass. 861,835. Cl. 31.
Western Air Lines, Inc., Los Angeles, Calif. 861,830, pub. 9–24–68. Cl. 105.
Western Merchandisers, Inc., Amarillo, Tex. 861,691, pub. 9–24–68. Cl. 36.
Westmont Automotive Parts Co., Chicago, Ill. 739,691, canc. Cl. 23.
Wilbert, Inc., Forest Park, Ill. 861,528–9, pub. 9–24–68. Cl. 2.
Wilson, Woodrow, Co.: *See*—
Ressel, O. O.
Wimpfheimer, A., & Bro., Inc., Stonington, Conn. 861,741–4, pub. 9–24–68. Cl. 42.
Winchell Donut House, Inc., South El Monte, Calif. 861,754, pub. 9–24–68. Cl. 46.
Windsor-Lloyd Products, Inc., Philadelphia, Pa. 503,914, ren. 12–10–68. Cl. 21.
Witco Chemical Co., Inc., New York, N.Y. 861,539, pub. 9–24–68. Cl. 6.
Wometco Blue Circle, Inc., Knoxville, Tenn. 861,756, pub. 9–17–68. Cl. 46.
Woodside Engineering Co., Franklin Park, Ill. 861,596, pub. 9–24–68. Cl. 19.
Yale Engineering Co., Chicago, Ill. 861,803, pub. 9–24–68. Cl. 52.
Yasutomo, Ben N., d.b.a. Yasutomo & Co., San Francisco, Calif. 861,693, pub. 9–24–68. Cl. 37.
Yasutomo & Co.: *See*—
Yasutomo, Ben N.
Yomeishu Seizo Co., Ltd., Shibuya-ku, Tokyo, Japan. 861,580, pub. 9–24–68. Multiple Class (Classes 18 and 47).
Youngs Drug Products Corp., New York, N.Y. 861,581, pub. 9–24–68. Cl. 18.
Zbrojovka Brno, Narodni Podnik: *See*—
Ceskoslovenska Zbrojovka, akciova Spolecnost v Brne.
Zippertubing Co., The, Los Angeles, Calif. 739,598, canc. Cl. 12.

U.S. GOVERNMENT PRINTING OFFICE: O—1968

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 17, 1968 Volume 857 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1968

Examiner affirmed	142
Examiner affirmed in part	18
Examiner reversed	50
Total	210

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,830,721, J. Pinsky and A. R. Nielsen, PLASTIC COATED ARTICLES, decided June 29, 1964, Interference No. 91,682, claims 1 and 7.

Patent No. 3,054,594, V. Hecht, CARBURETOR VALVE ASSEMBLY, decided Dec. 28, 1965, Interference No. 93,403, claim 4.

Patent No. 3,055,952, E. J. Goldberg, HYDROXYL-TERMINATED POLYMERS, decided July 12, 1968, Interference No. 94,757, claims 1 and 3.

Patent No. 3,150,250, W. E. Clarke, SHEET METAL ELECTRICAL BASEBOARD HEATER, decided May 27, 1968, Interference No. 95,108, claims 1 and 2.

Patent No. 3,152,361, C. E. Edwards, METHOD AND APPARATUS FOR FORMING FOAMED MEMBERS, decided June 13, 1968, Interference No. 95,408, claims 1 and 2.

Patent No. 3,166,688, R. P. Rowand and H. W. LaRose, Jr., POLYTETRAFLUOROETHYLENE TUBING HAVING ELECTRICALLY CONDUCTIVE PROPERTIES, decided May 28, 1968, Interference No. 95,106, claims 1, 2, 3, 4, and 5.

Patent No. 3,181,524, O. J. Bratz, WIRE GUN, decided Sept. 17, 1968, Interference No. 95,770, claim 1.

Patent No. 3,186,258, F. C. Meldola. LIMITED SLIP DIFFERENTIAL, decided May 28, 1968, Interference No. 95,267, claim 2.

Patent No. 3,186,865, J. P. Page, METHOD OF FORMING CHROMIUM DIFFUSION COATINGS, decided May 13, 1968, Interference No. 95,105, claim 3.

Patent No. 3,199,074, E. B. Hales and J. P. McGuire, AUTOMOBILE TRAFFIC FLOW ANALYZER, Decided Sept. 20, 1968, Interference No. 95,794, claims 1, 2, 3, and 4.

Patent No. 3,209,848, R. L. Holloway, AIR CUSHION VEHICLE, decided Sept. 10, 1968, Interference No. 95,934, claims 1, 2, 3, 4, 6, and 7.

Patent No. 3,213,149, A. Takahashi, N. Mogi and H. Takahama, METHOD OF PREPARING TELOMERS, decided July 25, 1968, Interference No. 95,536, claims 2 and 10.

Errata

In the OFFICIAL GAZETTE, issue of December 3, 1968, page 95, before Patent Number 3,413,864 insert the following:

ERRATUM

For Class 74—193 see:
Patent No. 3,414,665

page 145, before Patent Number 3,414,068 insert the following:

ERRATUM

For Class 175—391 see:
Patent No. 3,414,690

page 291, before Patent Number 3,414,743 insert the following:

ERRATUM

For Class 310—8.9 see:
Patent No. 3,414,794

Post Card Receipt Reminder

Applicants and their attorneys or agents are reminded of the provision in Section 717.01(a) of the Manual of Patent Examining Procedure relating to the use of post cards as "receipts" of papers filed in the Patent Office.

If a receipt for any paper filed in the Patent Office is desired, it may be had by enclosing with the paper a self-addressed post card identifying the paper. The Patent Office will stamp the receipt date on the card and place it in the outgoing mail.

The identifying data on the card should be so complete as to match the paper with the application or other document to which it is to be associated. For example, the document should be identified by the applicant's name(s), Serial No., filing date, appeal number, interference number, etc., and the paper should be identified by specifying the type thereof, viz, affidavit, amendment, appeal, application papers, brief, drawings, fees, motions, supplemental oath or declaration, petition, etc.

When papers for more than one document are filed under a single cover a return post card should be attached to the paper for *each* document for which a receipt is desired.

RICHARD A. WAHL,
Nov. 21, 1968. *Assistant Commissioner.*

New Applications Received During September 1968

Patents	7274
Designs	443
Plant Patents	11
Reissues	23
Total	7751

Issue—December 17, 1968

Patents	1250	No. 3,416,156 to No.	3,417,405, incl.
Designs	69	No. 212,932 to No.	213,000, incl.
Reissues	5	No. 26,505 to No.	26,509, incl.
Total	1324		

Plant Patent Applications—Filing Date

Applicants and their attorneys are reminded that an application for a patent for a plant must include two copies of the specification, Rule 163(b), and two copies of the drawing when in color, Rule 165(b).

Effective immediately, applications for plant patents which fail to include two copies of the specification and two copies of the drawing when in color will be accepted for filing only. The Application Branch will notify the applicant immediately of this deficiency and require the same to be rectified within one month. Failure to do so will result in loss of filing date.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 21, 1968.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 2, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-08-66	1-30-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-17-66	7-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-02-66	2-24-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*3-30-66	*7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-22-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-19-66	4-06-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-13-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-66	*11-01-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-07-66	10-16-63
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-66	4-28-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	2-15-68	6-14-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-07-67	10-08-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*1-03-67	2-18-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1-05-67	11-23-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-01-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-19-67	5-19-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	4-07-67	*7-10-63

Total number of pending applications (excluding Designs) 186,420
Total number of Design applications pending 2,677

Expiration of patents: The patents within the range of numbers indicated below expire during December 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents ..... Numbers 2,576,909 to 2,580,378, inclusive
Plant Patents ..... Numbers 1,049 to 1,058, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JAMES R. JOHNSON

No. 7956. Decided May 16, 1968

[55 CCPA—; — F.2d —; 157 USPQ 620]

1. PATENTABILITY—PRODUCT—PROCESS LIMITATIONS—35 U.S.C. 112.

"It appears to us that the first portion of these claims defines an article in structural terms with adequate clarity to meet the requirements of 35 U.S.C. 112. We do not see why the addition of further limitations defining the process of producing the article should be automatically fatal to the claims any more than the addition of further structural limitations would be. Since we do not agree with the Board that the process limitations in these claims in any way tend to obscure or confuse the structure of the article, we reverse the decision of the Board as to claims 1, 2, 4, 5, 6, 7, 13, 14, 21, 22 and 24."

2. SAME—SAME—SAME.

"Appellant attempts to rely solely upon process limitations in his claims to show patentability. We approve of the Board's position. As we said in *In re Stephens*, 52 CCPA 1409, 345 F.2d 1020, 145 USPQ 656: 'We think it well settled that the presence of process limitations in product claims, which product [claim] does not otherwise patentably distinguish over the prior art, cannot impart patentability to that product.'"

3. SAME—SAME—SAME.

"This court has repeatedly held that a claim for an article capable of such definition must define the article by its structure and not by the process of making it. *In re Butler*, 17 CCPA 810, 37 F.2d 623, 4 USPQ 342; *In re Grupe*, 18 CCPA 1262, 48 F.2d 936, 9 USPQ 255; *In re McKee*, 25 CCPA 1000, 95 F.2d 264, 37 USPQ 209; *In re Moeller*, supra; *In re Shortell*, 36 CCPA 1013, 173 F.2d 993, 81 USPQ 359; *In re Lifton*, 38 CCPA 1119, 189 F.2d 261, 89 USPQ 641. Since the articles involved in this case are clearly capable of structural definition, which appellant has not denied, the patentability of the claims must be determined solely on the basis of the recited structure, exclusive of the process recitations. *In re Dilnot*, 49 CCPA 1015, 300 F.2d 945, 133 USPQ 289; *In re Stephens*, supra. We agree with the Board that the meager structure recited in the claims is obvious in view of the references. We need not discuss the teachings of those references since appellant does not contend that the recited structure of those claims, absent the process limitations, defines an invention patentable over the art."

APPEAL from the Patent Office. Serial No. 331,649.

MODIFIED.

Robert C. Baker (*Carpenter, Kinney & Coulter*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherlin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

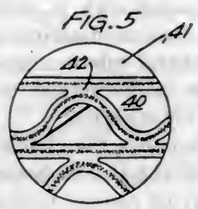
This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of all of the product claims in appellant's application entitled "Structural Articles and Method of Making." [2]

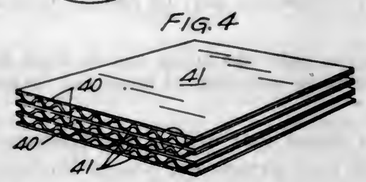
The invention relates to sintered metal or ceramic articles of thin wall section being characterized by having at least one corrugated web member permanently bonded along ridges of the corrugation to a sheet member so as to form channels. The resultant structures are

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 331,649, filed December 17, 1963. There are several allowed process claims.

used in high temperature applications such as heat exchangers, catalyst supports, and turbine blades.

FIGURES 4 and 5 of the application show a simplified illustration of the structural features of the invention.





The corrugated films 40 of the illustrated structure are separated from each other by, and sinter-welded to, thin plate members 41. The weld zone 42 is illustrated in FIGURE 5, and it will be observed that the zone is barely detectable, being essentially free of any demarcation line or juncture between corrugated films 40 and plates 41, indicating that the corrugated film and plate are well fused or coalesced together.

The articles of this invention are made by depositing a film of plasticized raw material mix containing the sinterable particles and plasticizing ingredients. The film is corrugated on standard corrugating apparatus, and is subsequently heated mildly to impart a degree of permanency to the corrugations in the green film. Where permanent bonds are to be subsequently formed, the corrugations are painted with glue media comprising the basic raw material mix diluted with a solvent, and the corrugated sheet is assembled into the final structure. Once the structure is dried, a temporary bond is formed between the ridges and the sheet member by the glue media, and this temporary bond is converted into a permanent weld when the structure is heated to sintering temperatures. Claims directed to the method have been allowed.

The Board of Appeals divided the article claims into two groups subject to different grounds of rejection. We shall accordingly consider each group separately.

The first group consists of claims 1, 2, 4, 5, 6, 7, 13, 14, 21, 22 and 24. Claim 1 is illustrative of this group and is reproduced below in outline form for convenience of analysis:

1. A fired ceramic structural article having a high surface area in relation to its size, and comprising at least one ceramic sheet member and at least one thin corrugated web of ceramic having an amplitude of corrugations at least as great as the thickness of said web, said corrugated web being no greater than 50 mils thick and being permanently ceramically bonded to said sheet member in a non-separable manner along at least a portion of some of the ridges on one side of said corrugated web so as to provide at least one set of aligned passages defined by grooves of said corrugated web between adjacent ridges permanently bonded to said sheet member,

said article being formed by a process involving ceramically firing to rigidity a self-supporting green ceramic structure of like configuration having firm temporary bonds of green ceramic corresponding in location to said permanent ceramic bonds in said structural article,

said green ceramic structure comprising materials convertible into said fired ceramic structural article by said ceramic firing, and

said firm temporary bonds of said green ceramic structure being unified continuous material paths of green ceramic material between parts of said green structure so temporarily bonded.

This claim, and the others grouped with it, define the article in substantial detail by means of structural description. The Board, in fact, found the recitation of structural relationships, apart from the process recitations, to be adequate to distinguish over the prior art, and reversed the Examiner's prior art rejection.

However, the Board did not feel that the claims were sufficiently clear to meet the requirements of 35 U.S.C. 112. Noting that the claims were composed in substantial part of process limitations, the Board concluded:

The claims purport to define the article and we share the Examiner's view that they include confusing recitations of procedural character which obscures such definition. * * *

We note at the outset that neither the Examiner nor the Board considered that the mere presence of process limitations was sufficient in itself to justify rejection of the claims. In fact the Examiner in his answer correctly conceded that process limitations are not foreclosed in article claims under proper circumstances. *In re Moeller*, 28 CCPA 932, 117 F.2d 565, 48 USPQ 542. We therefore turn to the question of whether the inclusion of process limitations in these claims tends to obscure the claimed invention so that the claims cannot be said to distinctly point out and claim the invention.

The organization of all the claims in the group is the same as that of claim 1 above. A relatively detailed description of the physical structure of the article appears first, followed by a description of the process steps which were carried out in order to create the article. The Solicitor stated in his brief, and we agree, that "[t]he first portion of each claim in the group is a complete definition of the product in terms of the structure of the product." The process recitations which the Board found objectionable are not interspersed with article recitations in such a way as to obscure the invention or as to make uncertain the scope of the monopoly being claimed. They are rather physically set apart from the article recitations, relate clearly to the process steps which have been used to produce the article defined in the structural recitations, and in no way confuse the structural description of that article.

[1] It appears to us that the first portion of these claims defines an article in structural terms with adequate clarity to meet the requirements of 35 U.S.C. 112. We do not see why the addition of further limitations defining the process of producing the article should be automatically fatal to the claims any more than the addition of further structural limitations would be. Since we do not agree with the Board that the process limitations in these claims in any way ten to obscure or confuse the structure of the article, we reverse the decision of the Board as to claims 1, 2, 4, 5, 6, 7, 13, 14, 21, 22 and 24.

The second group consists of claims 3, 8, 12, 15, 16, 25 and 26. Claim 3 is reproduced in outline form as illustrative of this group:

3. An article having [a] non-ductile multiple-webbed ceramic structural component formed by sintering a green structural component having like configuration,

said green structural component being formed of thin relatively-flexible green sheets of sinterable inorganic particles, at least a portion of said sheets being essentially uniformly thick and corrugated with alternating ridges and grooves of essentially uniform periodicity on each side of said sheets, the corrugated sheets of said green structural component being no greater than 50 mils thick and being firmly temporarily bonded along ridges of corrugations to other green sheets of said green structural component so as to form a plurality of passages suitable for the passage of fluid media,

said temporary bonds being green unified continuous material paths of sinterable inorganic particles between parts of said green structural component temporarily bonded, the strength of said temporary bonds being sufficient to maintain the temporarily bonded parts of said green structural component together and prevent relative displacement thereof during handling of said green structural component preliminary to sintering the same, and

said temporary bonds further being converted to permanent inseparable bonds during the sintering of said green structural component.

This group of claims is characterized by being devoid of significant structural description of the final article, but relies upon process recitations to describe the ultimate article. The claims are thus product-by-process claims as that term is generally used.

The Board refused to give weight to the process recitations in considering the patentability of the claims. While recognizing that product-by-process claims are permitted where the process produces characteristics which cannot be otherwise defined, the Board felt that such claims were improper in this case, noting that appellant had not alleged that the articles are incapable of structural definition. The Board therefore ignored the process recitations of the claims and found the meager structural recitations to be obvious in view of the prior art.

[2] Appellant attempts to rely solely upon process limitations in his claims to show patentability. We approve of the Board's position. As we said in *In re Stephens*, 52 CCPA 1409, 345 F.2d 1020, 145 USPQ 656:

We think it well settled that the presence of process limitations in product claims, which product [claim] does not otherwise patentably distinguish over the prior art, cannot impart patentability to that product. * * *

[3] This court has repeatedly held that a claim for an article capable of such definition must define the article by its structure and not by the process of making it. *In re Butler*, 17 CCPA 810, 37 F.2d 623, 4 USPQ 342; *In re Grupe*, 18 CCPA 1262, 48 F.2d 936, 9 USPQ 255; *In re McKee*, 25 CCPA 1000, 95 F.2d 264, 37 USPQ 209; *In re Moeller*, supra; *In re Shortell*, 36 CCPA 1013, 173 F.2d 993, 81 USPQ 359; *In re Lifton*, 38 CCPA 1119, 189 F.2d 261, 89 USPQ 641. Since the articles involved in this case are clearly capable of structural definition, which appellant has not denied, the patentability of the claims must be determined solely on the basis of the recited structure, exclusive of the process recitations. *In re Dilnot*, 49 CCPA 1015, 300 F.2d 945, 133 USPQ 289; *In re Stephens*, supra. We agree with the Board that the meager structure recited in the claims is obvious in view of the references. We need not discuss the teachings of those references since appellant does not contend that the recited structure of those claims, absent the process limitations, defines an invention patentable over the art.

We affirm the Board's rejection of claims 3, 8, 12, 15, 16, 25 and 26, but reverse the rejection of claims 1, 2, 4, 5, 6, 7, 13, 14, 21, 22 and 24. The decision of the Board is accordingly modified.

MODIFIED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE ARTHUR PHILIP JENTOFT

No. 7905. Decided April 18, 1968

[55 CCPA—; 392 F.2d 633; 157 USPQ 363]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CLAIMS WITHDRAWN FROM CONSIDERATION—RULE 142(b).

"Claims 5, 10, 11, and 15 have been allowed. Other claims in the application but withdrawn from further consideration under Rule 142(b) are claims 7, 8, and 12. As to them, the Board dismissed the appeal and they are not before us."

2. PATENTABILITY—DOUBLE PATENTING—TERMINAL DISCLAIMER—*Ex Parte Fertig et al.* APPROVED.

"One might almost take the filing of a terminal disclaimer in response to a 'double patenting' rejection to be a tacit admission that, without it, there would be double patenting except for the observation we have made in these cases that applicants frequently like to argue *both* issues. It is an unhappy circumstance to file a terminal disclaimer in a case where, on appeal, it turns out to have been unnecessary. For a solution to that problem see *Ex parte Fertig et al.*, 155 USPQ 475, decided May 12, 1967, wherein the Board of Appeals, in an obviousness-type double patenting case, affirmed the holding of obviousness and double patenting but recommended under Rule 196(c) 'that the claims on appeal be considered allowable upon the presentation of a proper terminal disclaimer,' applicant having offered, before the Examiner, to file such disclaimer."

3. SAME—SAME—SAME.

"We will assume, arguendo, both obviousness in the double patenting sense and the presence in the patent of a generic claim (which, we presume, produces what the Patent Office has been referring to of late as 'overlap'). Based on these assumptions, a 'double patenting' situation exists which suffices to prevent issuance of a patent on the application at bar, absent a terminal disclaimer."

4. SAME—SAME—OBVIOUSNESS—DISTINCT INVENTIONS—REJECTION BASED ON CASE LAW AND NOT 35 U.S.C. 101.

"Turning to the effectiveness of the terminal disclaimer to obviate the double patenting objection [based on obviousness and 'overlap'], we note * * * that there are clearly distinct inventions in the patent and application and that we are not here presented with a possible single invention issue. Therefore, cases such as *In re Siu*, relied on by the Examiner, are inapposite. Likewise, 35 U.S.C. 101 cited as a statutory basis in such cases is not involved and the rejection rests solely on the case law."

5. SAME—SAME—TERMINAL DISCLAIMER—OVERLAPPING CLAIMS.

"Since this is an obviousness-type double patenting situation, we hold that the terminal disclaimer, timely filed and considered by both the Examiner and the Board, obviates the double patenting rejection even if, as assumed, there is 'overlap'."

6. SAME—SAME—SAME—*In re Braithwaite* CONSTRUED.

"Our decision in the two cases entitled *In re Braithwaite*, 54 CCPA 1589 and 1604, 379 F.2d 594 and 606, 154 USPQ 29 and 38 * * * should answer many questions herein raised. In those cases we did not consider domination or 'overlap' to be a significant or controlling factor."

7. SAME—SAME—SAME—FILE-WRAPPER ESTOPPEL—*C-Thru Products, Inc. v. Uniflex, Inc.* CONSTRUED.

"On the matter of avoiding file-wrapper estoppel, we will now be more specific. We do not believe that it is a possibility, at least in a properly tried case before a competent court. This is amply demonstrated in a recent case, *C-Thru Products, Inc.* v. *Uniflex, Inc.* 152 USPQ 303 (E.D. N.Y., 1966). There a second patent on a subcombination of a combination claimed in an issued patent was obtained with the aid of a terminal disclaimer. The court said (p. 307): 'Under the circumstances, the effect of file wrapper estoppel may not be avoided by the filing of a second application together with a terminal disclaimer.' The claim in the second patent was held subject to file-wrapper estoppel limitations based on the prosecution of the application for the first patent. This argument for refusing effect to terminal disclaimers is totally wanting in substance."

8. SAME—SAME—SAME—HARASSMENT THEORY INVALID.

"The unreality of the harassment theory as a ground of refusing effect to terminal disclaimers is illustrated by the allowed claims in this case. By a very narrow margin they are just over the unobvious hurdle in being slightly more limited in defining the 'plug' than claim 9 which was held obvious in the double patenting sense. A patent issuing with these allowed claims will also be dominated by patent claim 2, assuming the Examiner is right, just as would claim 9. There will thus be *two patents covering the same invention* which *could* fall into the hands of different assignees who could sue the same infringer and thus 'harass' him. This is a very common situation existing with respect to genus and species, dominant and subservient, and 'overlapping' patents, whenever there are *unobvious* differences, all granted in strict accordance with law and presumed valid. Yet we do not see the courts bogged down with harassment suits. In those rare instances where there is a situation which a court can be persuaded amounts to harassment, it has means for dealing with it by inflicting the plaintiff with attorney's fees. This can be a power ful deterrent."

APPEAL from the Patent Office. Serial No. 144,610.

REVERSED.

Harry B. Keck for appellant.

Joseph Schimmel (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals affirming the rejection of claims 3, 9, 13, and 14 of application Serial No. 144,610, filed October 12, 1961, for "Extensible Plug Valve." In his brief, appellant "waives the appeal" as to claims 13 and 14 so as to them the appeal will be dismissed, leaving for consideration only claims 3 and 9.[2]

This is an obviousness-type double patenting case in which a terminal disclaimer has been filed and considered below. The sole ground of rejection is double patenting founded on certain claims of appellant Jentoft's Patent No. 3,010,692, issued Nov. 28, 1961, on an application filed Nov. 20, 1959, copending with the application at bar from Oct. 12 to Nov. 28, 1961. The patent is not, of course, prior art. To support the double patenting obviousness contention, the following prior art is relied on:

Work, 2,584,523, Feb. 5, 1952.
Eisele (German), 800,228, Oct. 17, 1950.

The Patented Invention

Broadly, the invention is a gas-flow control valve capable of remote control by fluid pressure which actuates the valve. More particularly, it is an air valve for ventilation systems. The patent discloses two embodiments both operating on the same broad principle but with differing structure. Reproduced below are FIG. 1, showing one em-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[1] [2] Claims 5, 10, 11, and 15 have been allowed. Other claims in the application but withdrawn from further consideration under Rule 142(b) are claims 7, 8, and 12. As to them, the Board dismissed the appeal and they are not before us.

bodiment, and FIGS. 8 and 9, showing the other embodiment as well as the mode of operation.

FIG. 1

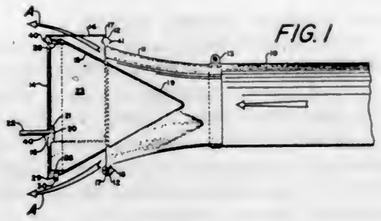


FIG. 8

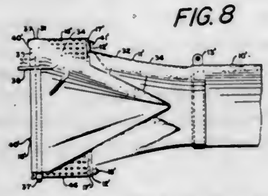
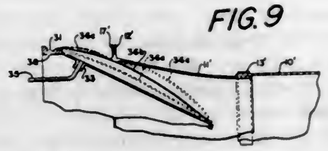


FIG. 9

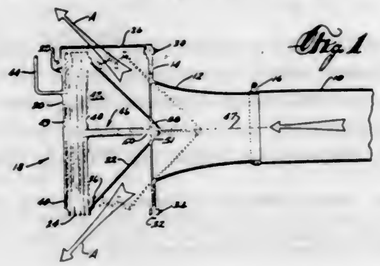


Referring to FIG. 1, the air duct is 10 and has an outwardly flared horn 11 at its end where it would open into a room. Suspended in front of the horn by brackets 16 is a cone-shaped structure consisting of a base 14 and a perforate, rigid, stationary cone 15 of metal over which is mounted a conical membrane 19 of resilient, expansible material such as rubber. The membrane 19 is attached to the base in air-tight fashion by strap 29 secured in groove 28. Pipe 22 admits control air into the conical chamber for the purpose of inflating the membrane 19 to partially or fully close the annual passage between it and the horn 11 to control the flow of air through the duct 10.

A modified form, having the advantage of lighter weight, is shown in FIG. 8 wherein the baseplate 14 of FIG. 1 is omitted and the supporting cone 32 is made imperforate, having the air inlet 35 attached to and passing through it at boss 33. FIG. 9 shows, in connection with the FIG. 8 embodiment of the invention, how the expansible membrane operates to effect a valving action when it is inflated. (The FIG. 1 form inflates in the same way.) Dotted line 36*a* shows the valve partially closed, full line 36*b* shows it fully closed, and dotted line 36*c* shows how, on further inflation, the membrane is in contact with the horn over a substantial area. The disclosure of the patent is limited to these two forms of the invention and all of its claims are limited to a "conical membrane of resilient, expansible material" as the means for controlling the flow of air. This is called the "balloon" type valve.

The Invention of the Application

In contrast with the balloon type valve of the patent, the valve of the application is called the "bellows" type. FIG. 1 is reproduced:



Instead of having an *expansible* membrane resting on a *stationary* cone and acting as a valve by being *inflated*, the invention of the application secures to the fixed backplate 20 a normally collapsed bellows 24, joined air-tight therewith and with a cone-shaped "plug" 22 attached to the other end of the bellows. This plug, as the specification says, "preferably is a hollow conical plug of relatively rigid material such as stiff rubber, sheet metal or plastic materials." Alternatively, it is of "thin resilient material such as rubber." Operation of that alternative is stated to be "similar in all respects to the operation of the preferred embodiment." Or the plug may be solid, "of lightweight plastic material such as rubber, foamed rubber, foamed polyurethane, and the like." Valve action is produced, upon changing the air pressure in the closed chamber formed by backplate, bellows, and plug, by *axial* movement of the plug as permitted by the bellows and shown in dotted lines illustrating the closed position. To prevent drooping of the plug when the bellows is extended, it is necessary to provide supporting means 46 which is shown above as consisting of a tube 48 fixed to the backplate at 49 and a rod 50 sliding in the tube and attached to the apex of the conical plug. Other supporting means such as lazy-tongs are disclosed.

It also appears that with this plug valve moving axially it is unnecessary to have the horn 11 and it has therefore been omitted from some claims. Without it, the plug would move in and out of the open or terminal end of conduit 10.

The Rejection

Claims 3 and 9 on appeal stand rejected on the sole ground of "double patenting over claim 5 of applicant's patent (3,010,692) modified either in view of (1) Eisele taken with Work or (2) Work taken with Eisele." [Examiner's answer.]

Work discloses a pressure relief valve for use in fluid pressure systems in which a fluid-pressure-actuated metal bellows raises and lowers a flat valve disk relative to its seat. Inside the bellows is a telescoping rod-and-tube guiding and aligning means.

Eisele discloses a condensate discharge valve built inside a common T fitting, the side outlet of which is plugged. In the upper leg of the T and operating downwardly a metal bellows filled with low boiling point liquid is mounted. On the lower end of the bellows is a closure cap carrying a conical plug. The lower leg of the T is provided with a valve seat having an aperture cooperating with the plug to form a valve. When condensate surrounds the bellows it contracts and opens the valve to discharge the condensate and when steam surrounds the bellows it expands and closes the valve. It is cited for its disclosure of the conical shape of the plug and for its bellows actuation.

Claim 5 of Jentoft's patent reads:

5. A gas flow regulating valve for controlling the flow of gas from a conduit terminal, comprising an outwardly flared horn engageable in communicating [relation] at its narrow end with said conduit terminal, a base plate secured in spaced outer relation to the expanded end of said horn *by means of spaced support arms extending from said base to the rim of said horn, a rigid, perforate cone extending from said base plate coaxially into said horn*, a conical membrane of resilient, expansible material secured at its base to said base plate and extending coaxially into said horn and being in its relaxed condition spaced apart from the inner wall of said horn *substantially overlying said rigid cone* to provide an annular gas passageway leading outwardly from said conduit, said conical membrane and said base plate forming an enclosed valve operating chamber, and an inlet tube extending into said valve operating chamber to ad-

mit fluids thereinto whereby said conical membrane may be extended outwardly to constrict the annular space between said membrane and said horn. [Emphasis added for reasons referred to later under "The Board Opinion."]

As is evident, claim 5 recites the elements and functional relationships thereof present in the FIG. 1 embodiment of the balloon-type valve described above. It delimits, therefore, a rather narrow patent right to that specific valve—that is, the right to exclude others from making the valve of FIG. 1 of the patent.

The Examiner's position on "double patenting" must mean that in his opinion the appealed claims delimit another potential patent right on a valve which, in view of the prior art disclosures of Work and Eisele, is merely an obvious modification of the patented FIG. 1 valve defined in claim 5, taking into account the nature of the distinctions the Examiner saw between claim 5 and the appealed claims. The Examiner expressed himself on obviousness as follows:

> * * * it is the Examiner's position that it would be an obvious expedient to a person having ordinary skill in the art to substitute the bellows 6 and conical plug 9 of Eisele for the rigid, perforate cone and overlying conical membrane of resilient, expansible material recited in lines 7–14 of claim 5 * * * since both the device of said claim 5 and of Eisele are pressure responsive valves.

That statement pertains to the obviousness not only of replacing the cone and membrane of the balloon valve with a bellows and conical plug but also mechanically arranging the same to operate by axial movement instead of expansion. As to adding the guiding means to keep the plug of the bellows valve in axial alignment during movement, the Examiner continued:

> Furthermore, it would be obvious to provide the device of claim 5 * * * as modified by Eisele with "an extensible alignment means" comprising telescopingly engaged "shafts" in view of the teaching of the use of such guide means * * * in the pressure actuated bellows valve of Work.

As to his alternative rejection on reversed application of the references, the Examiner said:

> Similarly, considering the second alternative, it would be obvious to substitute the bellows operated valve and alignment means shown in Work * * * for the expansible membrane of the device claimed in claim 5 of Jentoft * * * and to provide the valve of said device of claim 5 as modified by Work with any type valve head desired; such as, for example, the conical head of Eisele.

The Appealed Claims

To make the rejection fully intelligible, it must be related to the claims on appeal.

Claim 3 depends from claim 9 and recites only details of the alignment means, defining it to be the telescoping shaft arrangement shown above in the application drawing. It need not be further considered.

Claim 9 is the only claim we need discuss. It reads (original format):

> 9. A gas flow regulating valve for controlling the flow of gas from a conduit terminal, comprising:
> a back plate secured in spaced outer relation to the end of said conduit terminal;
> a normally collapsed, resilient bellows having one end secured to the said back plate;
> a plug having a base end and an apex end and having a diminishing cross-sectional area from the said base end to the said apex end, said plug being positioned between the said bellows and the said horn [3] and having its said base end secured to the other end of the said bellows whereby the said back plate, the said bellows and the said plug define a chamber, said plug being moveable axially toward and away from the said conduit terminal solely by the extension and contraction of the said bellows;
> extensible alignment means within the said chamber for maintaining the said plug substantially axially aligned with the central axis of said conduit terminal; and
> conduit means for introducing and withdrawing fluids from the said chamber whereby the said plug moves axially toward and away from the said conduit terminal to control the flow of gas therefrom.

[3] The word "horn" should be read "conduit terminal." As will be seen, there is no antecedent in the claim for "said horn" by reason of the fact, as shown in the record, that reference to the "outwardly flared horn" was deleted from the claim by amendment because it was not an essential element with this form of valve. The above reference to the horn, which should also have been amended, was evidently overlooked.

Patent Claim 5 and Application Claim 9 Compared

Claim 9 is clearly directed to the bellows type of valve shown above in the application drawing in which there is an axially movable "plug" rather than an expansible, resilient membrane as in the balloon type of valve. Claim 9 and patent claim 5 are both combination claims. The elements recited in patent claim 5 are horn, baseplate, support arms, perforate *rigid* (*and immovable*) *cone*, *expansible* membrane, and inlet tube (for control fluid). The elements recited in appealed claim 9 are backplate, *bellows*, *axially movable* plug, *alignment means*, and conduit means for control fluid. Obviously, two different mechanisms are defined, operating in different ways, albeit they accomplish the same result, control of air flow. Clearly they are different inventions. The Examiner recognized as much and referred to them as "the invention disclosed in the patent and the invention disclosed in the instant application." The disclosures are different, if not mutually exclusive, and the two claims under consideration closely correspond to the disclosures.[4]

Wholly separate and distinct inventions being claimed in the claims on appeal and in the only patent claim relied on to support the double patenting rejection, we do not have here a "same-invention" type of case but only an obviousness-type double patenting rejection, the Examiner's reasoning on obviousness being set forth above.

The Terminal Disclaimer

Faced with an obviousness-type double patenting rejection which was made final, appellant filed a terminal disclaimer [5] and argument as to why it should be accepted as overcoming the rejection, citing our decision in *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485.

At this point, the Examiner brought another claim of the patent into the picture, not as basis for the rejection but as reason for refusing to follow *Robeson*.[6] The Examiner said:

> The terminal disclaimer * * * is not considered effective to obviate the double patenting rejection * * * since the patent to Jentoft contains claim 2, the subject matter of which is generic to both the invention disclosed in the patent and

[4] There is no formal relationship between the application at bar and the patent or its application. While there was copendency, neither contains any reference to the other, so far as the record shows, apart from the showing in the file of the present double patenting rejection.

[5] Actually he filed two. The first was objected to as to form in being limited to the rejected claims. He filed a new one referring to any patent granted, which was accepted and considered by the Examiner. Disclaimer was by H. H. Robertson Company, a Pennsylvania corporation, of Pittsburgh, as owner of the application.

[6] The distinction of purpose was made very clear by the Examiner. Appellant was perplexed as to whether the rejection was based on claim 5 or on claim 2 and requested clarification, which was given as follows: * * * rejection of claims 3, 9, 13 and 14 is based on claim 5.

Reference to claim 2 was made for the purpose of pointing out that the patent contains a claim to subject matter which is generic to the subject matter being claimed in the instant application to establish a basis for the holding that the doctrines of *In re Robeson*, 141 USPQ 485, and *In re Kaye*, 141 USPQ 829, do not apply.

the invention disclosed in the instant application. The rejection * * * is therefore repeated.

The Examiner amplified his position in his answer. He said claim 2 "overlaps or dominates the subject matter covered by the claims of the present application." This he attempted to demonstrate by parallel analysis of claim 2 and appealed claim 9. He said this was a "vital" difference from the facts in *Robeson* and *Kaye*. "Thus," he said, "the matter of harassment by multiple assignees was not a possibility in the situations presented by the said *Kaye* and *Robeson* situations." Because of the overlap, he said,

* * * *In re Siu*, 42 CCPA 864, 222 F.2d 267, 105 USPQ 428, rather than * * * *In re Kaye* and *In re Robeson* applies and the rejection based on double patenting has not been obviated by the filing of a terminal disclaimer.

The Board Opinion

The Board's very short opinion gave a blanket approval to the Examiner's position. It also specifically agreed with the Examiner that it would be obvious that "the conical structure recited in claim 2 of appellant's Patent 3,010,692 could be moved into and out of valve closing position by a bellows type actuator such as shown by the secondary references." (We will assume the Board meant claim 5, not claim 2, as the Patent Office Solicitor also seems to assume, otherwise the Board would have been making a new rejection, not apparently intended. What is in claim 2 of the patent is shown by omitting the italicized portion of claim 5, quoted above.) The Board then said:

The terminal disclaimer filed by appellant is ineffective for its intended purpose.

The court pointed out in the *Robeson* case * * * that the objections to double patenting were (1) extension of monopoly, (2) harassment by multiple assignees, and (3) avoidance of file wrapper estoppel by filing of a second application.

In the present case the terminal disclaimer might resolve the question of extension of monopoly but the disclaimer does nothing towards resolving the second and third objections recited in the next preceding paragraph. The generic claim 2 in the patent would permit appellant, his assignee, or different assignees holding title to one of the applications [sic] to harass members of the public with multiple suits.

OPINION

The several possible issues before us are: the obviousness question; whether patent claim 2 is actually generic and would be infringed by the apparatus described and claimed in the application or, specifically, claim 9 thereof; whether, if claim 2 is generic, that would prevent the disclaimer from overcoming the rejection for double patenting; whether the disclaimer overcomes the rejection even if the other questions are decided in favor of the Patent Office and against appellant.

The Patent Office brief treats the questions of double patenting and the effect of the terminal disclaimer as separate issues, considering, first, whether there would be "double patenting" without the disclaimer and, next, whether the disclaimer "obviates" it.[7] Although from the

[2] [7] One might almost take the filing of a terminal disclaimer in response to a "double patenting" rejection to be a tacit admission that, without it, there would be double patenting except for the observation we have made in these cases that applicants frequently like to argue *both* issues. It is an unhappy circumstance to file a terminal disclaimer in a case where, on appeal, it turns out to have been unnecessary. For a solution to that problem see *Ex parte Fertig et al.*, 155 USPQ 475, decided May 12, 1967, wherein the Board of Appeals, in an obviousness-type double patenting case, affirmed the holding of obviousness and double patenting but recommended under Rule 196(c) "that the claims on appeal be considered allowable upon the presentation of a proper terminal disclaimer," applicant having offered, before the Examiner to file such disclaimer. The recommendation was predicated on our *Robeson* and *Kaye* decisions and on a finding that there was no "overlap" in the claims, a matter dealt with by us subsequently in the *Braithwaite* cases, infra.

standpoint of *patentability*, under all the circumstances, the two questions are inextricably intertwined, we will approach the problem in the same progressive order. That is the way it developed in the prosecution and the way it was approached below—one question at a time.

While we have serious doubts about both obviousness [8] and the generic nature of claim 2,[9] we find it unnecessary to pass on these issues in view of the effect which we think should be given to the terminal disclaimer. [3] We will assume, arguendo, both obviousness in the double patenting sense [10] and the presence in the patent of a generic claim (which, we presume, produces what the Patent Office has been referring to of late as "overlap"). Based on these assumptions, a "double patenting" situation exists which suffices to prevent issuance of a patent on the application at bar, absent a terminal disclaimer.

[4] Turning to the effectiveness of the terminal disclaimer to obviate the double patenting objection, we note, first, that there are clearly distinct inventions in the patent and application and that we are not here presented with a possible single invention issue. Therefore, cases such as *In re Siu*, relied on by the Examiner, are inapposite. Likewise, 35 U.S.C. 101 cited as a statutory basis in such cases is not involved and the rejection rests solely on case law.

[5] Since this is an obviousness-type double patenting situation, we hold that the terminal disclaimer, timely filed and considered by both the Examiner and the Board, obviates the double patenting rejection even if, as assumed, there is "overlap."

[6] Our decisions in the two cases entitled *In re Braithwaite*, 54 CCPA 1589 and 1604, 379 F.2d 594 and 606, 154 USPQ 29 and 38, decided June 15, 1967, a year and a half after the Board decision and after the filing of the Patent Office brief herein, should answer many of the questions herein raised. In those cases we did not consider domination or "overlap" to be a significant or controlling factor. Nor do we here on somewhat different facts.

No Extension of Monopoly

The Board was apparently of the view, though cautious in expressing it, that the terminal disclaimer obviates the extension of monopoly objection to granting the second patent, even assuming it claims subject matter differing only in an obvious manner from that claimed in the issued patent. We will strengthen the Board's tentative opinion by expressing our conviction that that is so.

Referring to our opinion in *Robeson*, the Board raises two other often-voiced presumed problems, harassment and avoidance of file-wrapper estoppel (so-called). It will be observed that in *Robeson* we did *not* approve of those arguments as grounds for supporting a rejection, we merely observed that they are points to be considered. We found them insufficient in *Robeson* to support the rejection.

[8] Our doubt on this score rests in part on the allowed claims. It would appear from the record that the Examiner allowed claims, as to *unobvious* inventions, which are like claim 9 except that the "plug" is recited to be rigid and hollow, or of thin resilient material. The distinction is a tenuous one.

[9] We have difficulty reading claim 2 of the patent on the axially moving plug valve of the application since it requires a "conical *membrane* of *expansible* material" which is spaced from the horn in its "relaxed condition," thus implying expansion and a balloon-type of operation. It is unclear, to say the least, how it would be infringed by a rigid, axially-moving, plug valve.

[10] We thus qualify the term "obviousness" to distinguish it from an issue under 35 U.S.C. 103 and as a reminder that it is predicated only *partially* on prior art, the subject matter claimed in the applicant's own copending patent being a necessary basis for the finding, without which it would not be possible. If possible, then the rejection should be on prior art, not for "double patenting."

File-Wrapper Estoppel Not Avoided

[7] On the matter of avoiding file-wrapper estoppel, we will now be more specific. We do not believe that it is a possibility, at least in a properly tried case before a competent court. This is amply demonstrated in a recent case, *C-Thru Products, Inc.* v. *Uniflex, Inc.*, 152 USPQ 303 (E.D. N.Y., 1966). There a second patent on a subcombination of a combination claimed in an issued patent was obtained with the aid of a terminal disclaimer. The court said (p. 307):

> Under the circumstances, the effect of file wrapper estoppel may not be avoided by the filing of a second application together with a terminal disclaimer.

The claim in the second patent was held subject to file-wrapper estoppel limitations based on the prosecution of the application for the first patent. This argument for refusing effect to terminal disclaimers is totally wanting in substance.

Harassment Arugment Lacks Substance

As to the mere possibility of harassment, while we do not regard it as an impossibility, we think that giving weight to it to deny effect to terminal disclaimers is to overlook the countervailing advantages to the public, pointed out in *Braithwaite*, in encouraging (1) additional disclosures of developments made subsequent to the initial filing, (2) earlier initial filing and patenting on the first application instead of sequential continuing and "c-i-p" applications which may not issue, and (3) consequent earlier expiration of patents and availability of inventions to the public generally.

In *Robeson*, the opinion refers to possible harassment through divided ownership, mentioning "multiple assignees." The implication is that if ownership remains in the same person, by original issue or assignment, the problem does not exist. Yet the Board expands it to include "appellant, his assignee, or different assignees." The argument has always been predicated on *divided* ownership of overlapping patents. When there is common ownership, we think harassment by multiple suits is most unlikely. We are further of the belief that a person or corporation obtaining patents on inventions so closely related that they can give rise to double patenting rejections is most unlikely to divide the ownership of them. Though the *Robeson* opinion says that we do not "minimize" the possibility, inter alia, of harassment by "multiple assignees," upon further reflection there does not appear to us to be much to minimize on this score. In any event, it should be remembered that we refused, in *Robeson*, to accept the harassment argument.

[8] The unreality of the harassment theory as a ground of refusing effect to terminal disclaimers is illustrated by the allowed claims in this case. By a very narrow margin they are just over the unobviousness hurdle in being slightly more limited in defining the "plug" than claim 9 which was held obvious in the double patenting sense. A patent issuing with these allowed claims will also be dominated by patent claim 2, assuming the Examiner is right, just as would claim 9. There will thus be *two patents covering the same invention* which *could* fall into the hands of different assignees who could sue the same infringer and thus "harass" him. This is a very common situation existing with respect to genus and species, dominant and subservient, and "overlapping" patents, whenever there are *unobvious* differences, all granted

in strict accordance with law and presumed valid. Yet we do not see the courts bogged down with harassment suits. In those rare instances where there is a situation which a court can be persuaded amounts to harassment, it has means for dealing with it by inflicting the plaintiff with attorney's fees. This can be a powerful deterrent. See the case relied on by the Solicitor in his brief, supposedly as illustrating harassment, *Tidewater* v. *Kitchen*, 371 F.2d 1004, 152 USPQ 36, modified on rehearing, 152 USPQ 656. In that case, we note, there was neither divided ownership nor involvement of a terminal disclaimer and the issue of double patenting which finally invalidated the second, species patent, along with invalidity under 35 U.S.C. 103, was one on which reasonable minds could differ. The Patent Office granted the patent and a Special Master and the District Court sustained it. The Court of Appeals felt otherwise.

Conclusion

The terminal disclaimer here is effective to obviate the double patenting rejection of claims 3 and 9 which must therefore be reversed. As to claims 13 and 14, the appeal is dismissed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE GEORGE A. BEKEY

No. 7954. Decided June 27, 1968

[55 CCPA —; — F.2d —; 158 USPQ 260]

1. PATENTABILITY—PROCESS—FUNCTION OF APPARATUS.

> "The issues in this case are the same as those presented in *In re Tarczy-Hornoch* (P.A. 7910), decided concurrently herewith. In that case we decided no longer to follow our previous decisions which required the rejection of method claims defining the function of an apparatus. The Solicitor concedes that *Tarczy-Hornoch* is dispositive of the issue in this case. Accordingly, the decision of the Board is reversed."

APPEAL from the Patent Office. Serial No. 846,657.

REVERSED.

R. J. Steinmeyer, of counsel for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals [2] affirming the Examiner's rejection of method claims 3 to 8 of appellant's application Serial No. 846,657 entitled "Method and Means of Generalized Integration." Apparatus claims 9–11, 13–15, and 17 have been allowed.

The invention is a method of performing generalized integration electrically by representing variables x and y as voltage signals, sampling the first variable voltage x to produce a control signal for each incremental variation of predetermined amplitude, sampling the sec-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Consisting of Friedman and Keely, Examiners-in-Chief, and Andrews, Acting Examiner-in-Chief, opinion by Friedman.

ond variable voltage y once for each of the control signals to produce a plurality of voltages, and adding together these latter voltages to form a summation thereof which is proportional to the integral of the second voltage y with respect to the first voltage x.

Claim 3 is illustrative:

3. A method of electronically performing mathematical integration of a first variable with respect to a second variable, comprising the steps of representing each of said variables by voltages varying in accordance thereto, establishing a predetermined incremental voltage, continuously sampling the second voltage and comparing a first value thereof with successive values thereof until the difference therebetween equals said incremental voltage to produce a control signal, repeating the above step with the basis of comparison in each case being the last value of said second voltage which produces the difference identity to thereby produce a succession of control signals separated by various increments of time which are dependent upon the rate of change of the second voltage, sampling said first voltage for separate periods separated by said time increments to establish a plurality of voltages proportional to the average values of said first voltage during said incremental sampling periods, and summing said plurality of voltages to produce a summation voltage proportional to the integral of said second voltages with respect to said first voltage.

The claims were rejected by the Examiner as being "unpatentable methods" in that they merely recited the inherent function of the apparatus for which claims had been allowed. The Examiner categorized the rejection as under sections 101 and 112 of the statute.

The Board affirmed, noting that it felt bound by the decisional law to uphold the "inherent function of the apparatus" rejection. See *Ex parte Packard*, 140 USPQ 27 (Pat. Off. Bd. App. 1963). Examiner-in-Chief Keely concurred solely on the ground that the Board's position on such rejections had been settled.

[1] The issues in this case are the same as those presented in *In re Tarczy-Hornoch* (P.A. 7910), decided concurrently herewith. In that case we decided no longer to follow our previous decisions which required the rejection of method claims defining the function of an apparatus. The Solicitor concedes that *Tarczy-Hornoch* is dispositive of the issue in this case.[3] Accordingly, the decision of the Board is reversed.

REVERSED.

KIRKPATRICK, *J.*, dissenting, with whom WORLEY, *Chief Judge*, joins.

I dissent for the reasons given in my dissenting opinion in *In re Zoltan Tarczy-Hornoch* (P.A. 7910), 55 CCPA —, — F.2d —, — USPQ —.

[3] The Patent Office brief states: "An extensive summary of the historical development of this rejection appears in the appendix to the appellant's brief in Patent Appeal No. 7910, involving an application of Zoltan Tarczy-Hornoch. Since the same issue is presented, a decision there would undoubtedly control here."

U.S. Court of Customs and Patent Appeals

IN RE FERDINAND MARKERT, WILLIBALD FUNK, GOTTFRIED RICHTER, AND OTTO FREY

No. 7967. Decided June 13, 1968

[55 CCPA —; — F.2d —; — USPQ —]

1. PATENTABILITY—PROCESS—WORDS AND PHRASES—"COMPACT JET" AND "JET" STREAMS—35 U.S.C. 103.

"Where patentability is predicated on such a variant as the difference between a 'compact' jet stream and the equally 'compact,' but perhaps smaller diameter, separate 'jet' stream disclosed by the prior art, it must be clearly defined. *General Electric Co.* v. *Wabash Co.*, 304 U.S. 364, 369 (1938). Thus, we agree with the Examiner that the language employed in appealed claims 1–3 as to the use of a 'compact' jet or jets does not distinguish appellants' invention in any unobvious manner over the disclosures of the cited prior art within the meaning of 35 U.S.C. 103."

2. SAME—PARTICULAR SUBJECT MATTER—IMPROVEMENT IN PRODUCTION OF GASEOUS OLEFINS BY RAPID COOLING.

The refusal of certain claims, relating to an improvement in the production of gaseous olefins by rapid cooling of reaction gases from hydrocarbon cracking, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 236,759.

AFFIRMED.

Marzall, Johnston, Cook & Root, Herbert B. Keil for appellants.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The present appeal relates to a process for the production of gaseous olefins by cracking hydrocarbons. The asserted improvement resides in rapidly cooling the reaction gases "without side reactions and without troublesome coke formation." Appellant asserts that this result is obtained:

• • • by supplying to the current of reaction gases which are at the reaction temperature, in a cooling chamber, one or more compact jets of liquid containing an amount of liquid sufficient to cool the gas current by at least 100° C., the said jet or jets being supplied laterally at such a pressure-head that the jet or jets penetrate the gas current and are disintegrated therein.

The Board [2] affirmed the Examiner's final rejection of appealed claims 1–9, inclusive, as "obvious over" the references:

Forward, 2,144,488, Jan. 17, 1939.
Kosbahn et al., 2,719,184, Sept. 27, 1955.

While the Examiner in his answer rejected *all* the claims on this basis, the Board's opinion of December 21, 1965 seems to treat the claims somewhat differently. Thus, its opinion refers to the final rejection of claims 1 to 3 and 5 and a refusal "to allow claims 4 and 6 to 9 which were amended after final rejection." The Board, however, did not comment further on the rejection and proceeded to treat all the claims as being rejected under 35 U.S.C. 103, stating:

Claims 1 to 9 are rejected as being "obvious over either of Forward or Kosbahn et al." The Examiner holds that the gas quenching by "lateral" water injection, which is employed in an old cracking procedure, is shown by each of the references. We agree. We see nothing unobvious in this procedure as applied to ordinary gas-quenching operations and we will sustain the rejection.

The foregoing recital of the background of the present appeal highlights the apparent failure of the appellants, the Examiner, and the Board to have joined issue on the grounds of rejection. As will be noted later, this extends also to the question as to precisely what limi-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The Board consisted of Mr. Behrens, Examiner-in-Chief, who wrote the opinion and Messrs. Stone and Campbell, *Acting* Examiners-in-Chief. My views concerning the lack of jurisdiction of a board so constituted have been set forth in my dissenting opinion in *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967). This view was there rejected by the majority and the issue has not been raised here by appellants. Under these circumstances and until this jurisdictional question is otherwise settled, my duty appears to be to participate in the present appeal despite my substantial reservations as to the jurisdiction of a board so constituted.

tations were present in appealed claims 4–9 when rejected by the Examiner and when this rejection was affirmed by the Board.

As we view the claims on appeal, claims 1–3 stand or fall together on the obviousness rejection, while claims 4–9 stand or fall together on the same rejection, but for somewhat different reasons.

Claim 1, selected by us as representative of the first group, is:

1. An improvement in a process for the preparation of gaseous olefines wherein hydrocarbons are cracked in a fluidized bed at temperatures between about 650° and 850° C. which comprises: passing a current of said gaseous olefines from a cracking zone through an outlet pipe and into a cooling chamber, the diameter of said cooling chamber being substantially greater than the diameter of said pipe, and thereafter cooling said gaseous olefines by injecting a single compact jet of liquid into said current, the area of contact between said current and said jet of liquid being spaced inwardly from the walls of said cooling chamber, said jet of liquid being supplied laterally to said current of gaseous olefines under sufficient pressure to enable said jet of liquid to penetrate the current a predetermined amount, whereby said jet of liquid is torn apart by the gas current and the gases are thereby rapidly cooled.

Claim 4, selected by us as representative of the second group, is:

4. An improvement in a process for the preparation of gaseous olefines wherein hydrocarbons are cracked in a fluidized bed at temperatures between about 650° and 850° C. which comprises: passing a current of said gaseous olefines from a cracking zone through an outlet pipe and into a cooling chamber, said gaseous olefines entering said cooling chamber with a pressure-head of 20 to 1,000 millimeter water column, the diameter of said cooling chamber being substantially greater than the diameter of said pipe, and thereafter cooling said gaseous olefines by injecting at least one compact jet of liquid into said current, the area of contact between said current and said jet of liquid being spaced inwardly from the walls of said cooling chamber, said jet of liquid being supplied laterally to said current of gaseous olefines wherein the product of the ratio of the pressure-head of the jet of liquid to the pressure-head of the gas current and the ratio of the diameter of the jet of liquid to the diameter of the gas current lies within the range of from about 0.01 to about 3, all four variables, being measured at the points of entry into the cooling chamber, whereby said jet of liquid penetrates said current a predetermined amount and is torn apart by the gas current and the gases are thereby rapidly cooled.

Comparison of the claims establishes that the principal difference between the two groups resides in the inclusion of certain so-called "numerical parameters" in claims 4–9 which are missing in claims 1–3.

We affirm the obviousness rejection of claims 1–3,[3] assuming that claims 1–3 were not cancelled. In reaching this conclusion, we do so after reviewing the references and finding ourselves in agreement with the Examiner's "brief description" thereof which we here adopt. The Examiner's answer contains a description of the references relied upon which is as follows:

Forward relates to the cracking of heavy hydrocarbon oils to produce lighter hydrocarbon oils. The hot oil vapors are cooled by lateral injection of a quenching liquid under pressure in the form of a jet * * *.

Kosbahn et al. relates to the production of acetylene by partial oxidation of hydrocarbons with oxygen. The reaction mixture is quenched by injection of water through jets * * *.

As stated in their brief, it is appellants' position as to claims 1 and 3 that:

* * * There are at least five specific features of the process which are neither disclosed nor suggested in either of the cited references. With respect to claim 1 * * * these features are as follows:

(1) Highly reactive gaseous olefins are produced.

(2) The diameter of the cooling chamber is substantially greater than the diameter of the pipe carrying the gaseous olefins (preferably at least seven times as large).

(3) A *compact jet* of liquid is injected into the current of olefins.

(4) The area of contact between the compact jet of liquid and the olefin current is spaced inwardly from the walls of the chamber.

(5) The compact jet of liquid is supplied laterally to the olefin current under sufficient pressure to enable the compact jet of liquid to penetrate the current a predetermined amount whereby the jet of liquid is torn apart and the gases are rapidly cooled.

In claim 3, element No. 3 includes injecting a *plurality* of *compact jets* of liquid into the current under varying pressure heads to insure that an entire cross-section of the current is uniformly contacted by the liquid. The other claims include other elements also not disclosed or suggested in the cited references.

As is too frequently the case, the legal issue has thus become obscured by semantic differences, i.e., what is the meaning of "compact jet" as used by appellants, and how does this differ from the "jets" of the references? Appellants' brief here would have us distinguish between these terms on the basis of the argument advanced in their brief:

There is no room for doubt but that the term "jet" or "jets" as it is used in the patents refers to something other than the *compact jet of liquid* disclosed and claimed by appellant-applicants. In the Kosbahn et al. and Forward patents the term "jet" refers to the device which is used to inject the water into the gaseous stream. In appellant-applicants' specification and claims the term "compact jet" refers to a solid stream of liquid coolant. This term as it is used in appellant-applicants' specification cannot be interpreted in any other way. The dictionary definition of "jet" includes (1) a liquid or gas which issues in a jet, and (2) a nozzle for a jet of gas, water, etc. (see Webster's New Collegiate Dictionary, page 453). The term "compact" is defined in Webster's Dictionary as "closely united or compact; closely knit; solid; dense; etc." The compact jet which is described in the present specification should not in any way be confused with either (1) a spray of liquid, or (2) a jet mechanism designed to inject water into a cooling chamber. * * *

We have carefully reviewed appellants' specification without finding any basis for relating the term "compact jet," as used therein, to "a solid stream of liquid coolant." As this seems to be the fundamental basis for appellants' asserted distinction between the process claimed in claims 1–3 and the prior art processes, we turn to the position stated in the Examiner's answer:

Appellants contend Forward and Kosbahn et al. use a spray as a quench stream instead of the claimed compact jet. Appellants further contend that unexpected advantages of the compact jet as a quenching stream as compared to the spray of the references are shown by the Rule 132 affidavit. It is noted that the specific examples of appellants' specification indicates the compact jet was sprayed into the quench zone. There is no particular distinction between compact jet and spray that is recognized even in appellants' own specification. The affidavit filed under Rule 132 is of no value in distinguishing over the Forward and Kosbahn et al. spray or jets since appellants use both spray and compact jet to describe their quenching stream. * * *

[1] Where patentability is predicated on such a variant as the difference between a "compact" jet stream and the equally "compact," but perhaps smaller diameter, separate "jet" stream disclosed by the prior art, it must be clearly defined. *General Electric Co.* v. *Wabash Co.*, 304 U.S. 364, 369 (1938). Thus, we agree with the Examiner that the language employed in appealed claims 1–3 as to the use of a "compact" jet or jets does not distinguish appellants' invention in any

[3] The irregularities in the present record are such that we cannot be certain whether claims 1–3 are still in the case. If the amendment of November 20, 1964 was entered to insert amendments in claims 4 to 9 for purposes of appeal, we find nothing which retracts the cancellation of claims 1–3 which was specified therein. Conversely, if the amendment was not entered, the record does not establish how the amendments therein proposed to claims 4–9 were entered and now appear in these claims as appealed.

unobvious manner over the disclosures of the cited prior art within the meaning of 35 U.S.C. 103.

The present record establishes that it is the relative pressures and diameters of the gas stream and of the liquid jet which determine whether a "jet" is a "compact" jet or not. Thus, appellants' specification points out:

> It can readily be ascertained by experiment within what pressure-head range a jet of liquid of a given diameter will penetrate a gas current of a given pressure-head and diameter. In this range, the jet of liquid is torn apart by the gas current and the latter thereby cooled very rapidly. If, on the contrary, the pressure-head of the jet of liquid is so small that it will not penetrate appreciably into the gas current, then the gas current is not cooled efficiently and rapidly enough. If, however, the jet of liquid has so high a pressure-head that it passes right through the gas current, then the liquid jet is not torn apart and, as a result, the gas current is not cooled efficiently or rapidly enough. * * *

It would appear to us, as it apparently did to the Examiner and the Board, that a stream of coolant of a given diameter under a sufficiently high pressure-head would be a "compact jet" within the meaning of this term as used in the appealed claims and, as such, is disclosed in the Kosbahn and Forward references. Likewise, it would be a "solid stream of liquid coolant" as that term is used in appellants' brief.

To support their arguments, appellants rely upon the Frey affidavit. The Board criticized this affidavit considering that Frey attempted to "interpret" the references and pointed out that "his qualifications as an interpreter of patents of the United States are not stated." We have reviewed the Frey affidavit and do not agree that it shows an attempt to "interpret" the references. Rather, it seems to us to be a helpful statement of one of skill in this art who factually sets forth what he finds to be stated in the references. However, even with the Frey affidavit before us for whatever factual data it may contain, that data is insufficient to support an interpretation of claims 1–3 as containing unobvious differences between appellants' invention and the prior art when the invention is considered as a whole under 35 U.S.C. 103.

Claims 4–9, in addition to the "compact jet" limitation of claims 1–3, contain a recital of "numerical parameters" which apparently were included as a means for further defining appellants' "compact jet" concept and for distinguishing it over the art. Despite the presence in the claims of at least certain of these "parameters," the Examiner did not consider the claims to cover an unobvious invention.

While there is a hiatus in the record [4] as to precisely what is before us for consideration as to the rejection of claims 4–9 on grounds other than obviousness, the Board acted on the assumption that the appealed claims contained all the numerical parameters which now appear therein and stated:

> Appellants' numerical parameters are not disclosed nor shown to be significant or critical. Certainly the extent of the ranges of ratios suggests that values are not critical. Moreover, the variation in a single jet—or a multitude of jets—to obtain a gas stream penetration which is sufficient to reach the internal—or more remote in the case of a single jet—areas of gas stream cross-section would be within the skill of an ordinary operator. As applied to gas and water streams of non-circular cross-section (1:20 rectangles, for instance) the skill of the operator would be of more value than appellants' catch-all formulae.

[4] It is not clear from the record as to whether the *claims as amended* by the amendment of November 20, 1964 were before the Examiner. The recitals of certain of the "parameters" in claims 4–9 appear first in the amendment of November 20, 1964 which is designated in this record as "not entered," presumably because of the Examiner's letter of December 14, 1964 in which he stated:

> The proposed amendment filed November 20, 1964 will be entered for the purpose of appeal, *if requested by applicant*, when an appeal has been filed. [Emphasis added.]

We do not find in the present record any request for the entry of the amendment, but find that the amendments were entered in appealed claims 4 to 9 as they now appear in the record.

On petition for rehearing, appellants stated:

> In the last paragraph of page 2 of its decision the Board made statements with respect to numerical parameters, rectangles, skill of the operator, etc. These remarks seem to be directed to the sufficiency of appellants' disclosure and/or the definiteness of appellants' claim. *It is not appellants' contention that the numerical parameters disclosed in the application are inventive.* Rather, armed with the knowledge of the present invention one skilled in the art could easily adjust water pressure or jet diameter to provide a satisfactory process. It is appellants' contention that the use of a compact jet or jets of liquid in the present process rather than a spray or some other means represents a significant advance in the art * * *. [Emphasis added.]

Since appellants do not appear now to consider that the numerical parameters recited in claims 4–9 are nonobvious, the issue as to these claims necessarily turns on the "compact jet" argument advanced as to claims 1–3.

We therefore affirm the Board's decision as to the obviousness of appellants' invention as claimed in appealed claims 4–9 *as they here appear* in the record.

[2] AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE FLOYD L. BEMAN

No. 7966. Decided June 13, 1968

[55 CCPA—; — F.2d —; — USPQ —]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—NEW ISSUES.

   "At oral argument, appellant's counsel attempted to draw a distinction between solid phase carboxylations, with which Lindsey is primarily concerned, and liquid phase carboxylations as discussed by Wacker, Nordt and Barkley. In substance, counsel did not think Lindsey, relating as it does to a dry, solid phase process, would make it obvious to modify the pressure in the liquid phase processes of Wacker and Nordt. In rejoinder, the Solicitor observed that the distinction appellant attempts to formulate is a new issue not discussed below. Nor is it discussed in appellant's brief. We will not discuss it here."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"PREPARATION OF ORTHO-HYDROXY AROMATIC CARBOXYLIC ACIDS AND THEIR SALTS."

   The refusal of certain claims in an application entitled "Preparation of Ortho-Hydroxy Aromatic Carboxylic Acids and Their Salts," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 250,207.

AFFIRMED.

Glwynn R. Baker, Bernd W. Sandt for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

Beman appeals from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 1–6 and 8–10 [2] as unpatentable over the prior art under 35 U.S.C. 103.

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Appearing in application Serial No. 250,207, filed January 9, 1963 and entitled "Preparation of Ortho-Hydroxy Aromatic Carboxylic Acids and Their Salts."

The invention relates to a method of producing salicylic acid and its alkali metal salts, as reflected in claim 1:

> 1. The method for producing sodium salicylate which comprises introducing a dry phenol-sodium phenolate mixture in a ratio of 3 to 9 moles of phenol per mole of phenolate into a reaction zone maintained at a temperature of from about 140° to about 175° C. and under a carbon dioxide pressure of from 15 pounds per square inch to about 500 pounds per square inch, gauge, and under at least mild agitation, and maintaining said reactants in contact with each other for a period not to exceed 5 hours, removing the reaction mixtures from the reaction zone and separating the solid crystalline sodium salicylate which formed during the reaction from the reaction mixture.

Appellant states that his process employs shorter reaction times and lower pressures (of the order of 1–33 atmospheres, gauge) than the processes of the prior art, while still maintaining a high yield of the desired salicylate material.

In claims 3, 4, 8 and 9, appellant initially distills water from an aqueous solution of sodium hydroxide and excess phenol by employing chlorobenzene as a water-azeotroping agent, thus assuring provision of a "dry phenol-sodium phenolate mixture" for introduction into the "reaction zone" recited in claim 1. He also separates the sodium salicylate precipitate by filtration, washes the precipitate with chlorobenzene and recycles the filtrate and washings, including phenol and unreacted sodium phenolate, to the process.

The references are:

Wolthuis, 2,453,105, Nov. 2, 1948.
Nordt, 2,824,129, Feb. 18, 1958.
Barkley, 2,824,892, Feb. 25, 1958.
Wacker (Great Britain), 384,619, Dec. 8, 1932.
Lindsey, Chemical Reviews, vol. 57, August–December, 1947, pages 584–592.

Wacker discloses reacting water-free sodium phenolate with carbon dioxide in the presence of excess phenol as a solvent. He forms his initial reaction charge by dissolving aqueous sodium hydroxide in excess phenol and distilling with xylene, an azeotroping agent, to remove the water. In one example he employs a temperature of "about 140° C." and a carbon dioxide pressure of "about atmospheric" to obtain "practically the theoretical quantity" of sodium salicylate within 15 hours reaction time, although observing that "* * * The reaction can of course also be conducted under an increased or reduced pressure."

Nordt also prepares sodium salicylate by reacting anhydrous sodium phenolate with carbon dioxide in the presence of excess phenol as a solvent at temperatures of 150–160° C. and carbon dioxide pressures of "at least 50 atmospheres." He states that "raising of the pressure of the carbon dioxide increases the reaction velocity," thus avoiding the long reaction times required by the prior art to obtain quantitative yields, and discloses that a "practically quantitative yield can be obtained in a very short reaction time" of the order of ½–1 hour at the pressures he employs. Nordt separates the sodium salicylate from phenol and unreacted sodium phenolate, mixes the latter with more sodium phenolate and recycles it to the process.

Barkley discloses reacting anhydrous sodium phenolate in excess phenol with carbon dioxide at temperatures of 140°–160° C. and carbon dioxide pressures of 40 pounds per square inch for about one hour to form sodium salicylate in yields in excess of 90% theoretical.

His contribution to what appears to be an otherwise conventional process is the addition of a long chain aliphatic alcohol to the reaction mixture as a diluent to facilitate mass transport and recovery of the salicylate product. After completion of the reaction, the sodium salicylate is separated from the reaction mixture, and the aliphatic alcohol and excess phenol are recycled for reuse.

Wolthuis reacts carbon dioxide with potassium phenolate employing a halogenated benzene, such as chlorobenzene, as a diluent. Initially, to form anhydrous potassium phenolate, he removes water by distilling it off with part of the chlorobenzene. The reaction is carried out at temperatures of about 150° C. and carbon dioxide pressures of 45–120 pounds per square inch. The potassium phenolate salt is said to result in higher yields of the salicylic acid than the corresponding sodium salt.

Lindsey presents a historical survey of the methods used in producing salicyclic acid and discusses the influence of such factors as pressure, temperature and the presence of water on the reaction. He states:

> The minimal pressure required for quantitative carbonation probably corresponds to the dissociation pressure of the metal aryloxide-carbon dioxide complex at the temperature employed and possibly varies according to the aryloxide used. Davies showed that for the sodium phenoxide-carbon dioxide complex (prepared by heating sodium phenoxide at 105° C. with carbon dioxide under pressure) the dissociation pressure at temperatures above 140° C. lay between 3 and 4 atm. * * *

The Board affirmed the Examiner's rejection of claims 1, 2, 5, 6 and 10 as unpatentable over either Nordt or Wacker in view of Lindsey under 35 U.S.C. 103. Both noted that Nordt differs only in employing a higher pressure than appellant utilizes, while Wacker's process differs only in the use of a somewhat lower pressure and longer reaction time. The Board was of the view that Nordt and Wacker "show just what the worker of ordinary skill in this art would expect," namely "that the reaction time would be shorter" with use of higher pressures. It agreed with the Examiner that, in view of Lindsey, the particular process conditions recited in appellant's claims would be obvious to one of ordinary skill. It also concurred with the Examiner's finding that the process steps recited in claims 3, 4, 8 and 9 would be obvious to one of ordinary skill, relying on the disclosures of Barkley and Wolthuis.

Appellant's arguments do not persuade us of error below. We agree that one of ordinary skill would find it obvious to increase the carbon dioxide pressure employed in the Wacker process,[3] as suggested by him, in full expectation of decreasing the reaction time needed to obtain nearly quantitative yields. Conversely, it is our opinion that each of the secondary references makes it clear that it is not necessary to employ "at least 50 atmospheres" of carbon dioxide pressures in the Nordt process to achieve quantitative yields in a short time. Other

---

[3] In his brief appellant appears to have some misconception as to exactly what steps and conditions the Wacker process entails. That misconception seems to have resulted from his misinterpretation of what the Lindsey article relates about the Wacker process in contradistinction to commercial processes in the United States, Germany and Great Britain. In any event, we are concerned with what the Wacker patent describes as his process, not what Lindsey may be interpreted to describe as that process.

[1] At oral argument, appellant's counsel attempted to draw a distinction between solid phase carboxylations, with which Lindsey is primarily concerned, and liquid phase carboxylations as discussed by Wacker, Nordt and Barkley. In substance, counsel did not think Lindsey, relating as it does to a dry, solid phase process, would make it obvious to modify the pressure in the liquid phase processes of Wacker and Nordt. In rejoinder, the Silicitor observed that the distinction appellant attempts to formulate is a new issue not discussed below. Nor is it discussed in appellant's brief. We will not discuss it here.

details in claims 3, 4, 8 and 9 were, we think, properly found to be obvious, the references speaking for themselves in that regard.

[2] The decision is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290: Patent Act of 1952

884,905, A. A. Dennis, PROCESS FOR GLUING VENEERS; **1,977,199**, G. H. Osgood, ART OF MAKING CROSSING SHEETS OF PLYWOOD PANELS; **2,428,325**, REINFORCED PLYWOOD; **2,640,796**, N. Langer, METHOD OF BONDING; **2,500,053**, A. M. Andrews, METHOD OF JOINING PIECES OF PLASTIC, **filed** Sept. 26, 1968, D.C. Oreg. (Portland), Doc. C–68–543, *Leading Plywood Corp.* v. *Simpson Timber Company.*

1,977,199. (See 884,905.)

2,126,786, Lasch and Schichtel, METHOD OF MELTING AND CASTING MAGNESIUM AND ALLOYS RICH IN MAGNESIUM, **filed** Dec. 8, 1964, D.C., W.D.N.Y. (Buffalo), Doc. C–11–216, *Minnesota Mining and Manufacturing Company* v. *American Optical Company.* Stipulation and order of dismissal, Aug. 14, 1968.

2,428,325. (See 884,905.)

2,500,053. (See 884,905.)

2,543,684, R. L. Blanchard, EXPLORER'S FOLDING TENT, **filed** June 21, 1968, D.C. Tenn. (Knoxville), Doc. 6339, *Robert L. Blanchard* v. *Camel Manufacturing Company.* **Same, filed** June 24, 1968, D.C., N.D. Ohio (Toledo), Doc. C–68–189, *Robert L. Blanchard* v. *National Canvas Products Corp.* **Same, filed** June 27, 1968, D.C. Oreg. (Portland), Doc. C–68–361, *Robert L. Blanchard* v. *Hirsch-Weiss Canvas Products Company.*

2,555,962, A. Einstein, PROCESS FOR MANUFACTURING WEARING APPAREL, **filed** Mar. 12, 1968, D.C., S.D.N.Y., Doc. 68–C–1045, *Alice Einstein* v. *Betty Lane, Inc.* Order dismissing action, Aug. 20, 1968.

2,582,124, R. S. Holmes, AMMUNITION; **2,582,125**, same, **filed** Dec. 17, 1965, D.C. Minn. (Minneapolis), Doc. 4–65–C–392, *Federal Cartridge Corporation* v. *Olin Mathieson Chemical Corporation.* Stipulation and order of dismissal, Sept. 13, 1968.

2,582,125. (See 2,582,124.)

2,637,617, A. B. Stotter, RECEPTACLE FOR BAKERY PRODUCTS, **filed** Aug. 13, 1968, D.C., S.D. Ohio (Columbus), Doc. 68–274, *Transparent Specialties Corp.* v. *Lancaster Colony Corp. and Pretty Products, Inc.*

2,640,796. (See 884,905.)

2,643,122, C. C. Beckett, OCCUPANT PROPELLED AMUSEMENT DEVICE, **filed** Aug. 16, 1968, D.C., E.D. Mich. (Detroit), Doc. 31628, *Leigh Heisinger* v. *Johnny Luzem.*

2,656,508, W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID; **2,869,078**, Coulter and Coulter, FLUID METERING APPARATUS; **2,985,830**, Coulter, Berg and Heuschkel, SCANNER ELEMENT FOR PARTICLE ANALYSIS, **filed** July 12, 1968, D.C. Maine (Portland), Doc. 10–103, *Coulter Electronics, Inc.* v. *The Osteopathic Hospital of Maine, Inc.*

2,717,929. (See 2,798,120.)

2,761,177, B. Walters, MANUFACTURE OF ORNAMENTAL AND DISPLAY PLASTIC SHEETS, **filed** Aug. 21, 1968, D.C.N.J. (Newark), Doc. 839–68, *Ben Walters* v. *Innoplast Corporation et al.*

2,798,120, R. W. Sabol, PHONOGRAPH PICKUPS; **Re. 24,968**, H. F. Klingener, PHONOGRAPH PICKUPS; **2,717,929**, same; **3,182,136**, Dieter and Bauer, PHONOGRAPH PICKUPS WITH DETACHABLY REPLACEABLE STYLUS DRIVE STRUCTURE; **3,236,956**, P. Kantrowitz, REPLACEABLE STYLUS HOLDERS FOR PHONOGRAPH PICKUPS, **filed** Sept. 27, 1968, D.C., S.D.N.Y., Doc. 68–C–3863, *Sonotone Corporation* v. *Rivertone Co., Inc.*

2,869,078. (See 2,656,508.)

2,903,670, G. C. Sitz, PLUG TERMINAL; **2,927,295**, same, PLUGBOARD ASSEMBLY; **3,133,775**, M. Plaxa, MULTIPLE CONTACT ASSEMBLY, **filed** Aug. 16, 1968, D.C., W.D. Va. (Harrisonburg), Doc. 68–C–17–H, *AMP Incorporated* v. *Virginia Panel Corporation.*

2,905,445. (See D. 171,963.)

2,927,295. (See 2,903,670.)

2,940,495, G. S. Wing, LOCK NUT WITH FRANGIBLE DRIVING PORTION; **3,138,987**, same, FASTENERS, **filed** Apr. 29, 1968, D.C.N.J. (Newark), Doc. 408–68, *Standard Pressed Steel Company* v. *Hi-Shear Corporation.* Order of dismissal, Aug. 22, 1968.

2,961,105, J. M. Shubin, REFUSE VEHICLE AND LOADING APPARATUS THEREFOR, **filed** Sept. 6, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1500–HP, *John M. Shubin and Peter S. Shubin* v. *Ray Gaskin Service.*

2,977,839, R. B. Koch, NYLON TUBING WITH BRAIDED COVER AND METHOD OF MAKING; **3,251,381**, same, SYNTHETIC HOSE, **filed** Aug. 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1571, *The Polymer Corporation* v. *I-T-E Imperial Corporation.*

2,985,830. (See 2,656,508.)

3,030,891, S. M. Taylor, LIQUID SUPPLY PUMPING SYSTEM, **filed** Apr. 25, 1962, D.C., W.D. Wis. (Madison), Doc. 3550–C, *Metal Coating Corporation* v. *Baker Manufacturing Company.* Opinion of the court, claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18 and 19 invalid, Aug. 16, 1968.

3,133,775. (See 2,903,670.)

3,138,987. (See 2,940,495.)

3,160,980, E. Seuthe, DEVICE TO PRODUCE STEAM FOR MOBILE AND STATIONARY TOYS, **filed** May 3, 1965, D.C., S.D.N.Y., Doc. 65–C–1338, *E. Seuthe* v. *Renwal Products, Inc. et al.* Consent judgment, June 20, 1968.

3,181,249, J. R. Coffing, FLAT-FACE ATTITUDE INDICATOR; **3,208,426**, same, ATTITUDE INDICATOR, **filed** Aug. 8, 1968, D.C., S.D. Tex. (Corpus Christi), Doc. C.A. 68–C–108, *Coffing Industries, Inc.* v. *Aviation Instrument Mfg. Corp.*

3,182,126. (See 2,798,120.)

3,185,228, J. L. Kelly, Jr., ROTARY-PERCUSSION DRILL BIT WITH HEEL ROW INSERTS TO PREVENT WEDGING, **filed** July 22, 1968, D.C., S.D. Tex. (Houston), Doc. CA–68–H–624, *Hughes Tool Company* v. *Ingersoll Rand Company.*

3,208,426. (See 3,181,249.)

3,210,835, M. J. G. Tipper, APPARATUS FOR FASTENING CASINGS AND THE LIKE, **filed** Nov. 23, 1966, D.C.N.J. (Newark), Doc. C–1169–66, *Rheem Manufacturing Company* v. *Strato Tool Corporation and Paul G. K. Schroeder.* Stipulation and order of dismissal of complaint and counterclaims, Aug. 22, 1968.

3,236,956. (See 2,798,120.)

3,251,381. (See 2,977,839.)

3,269,914, J. R. Leonards, METHOD AND COMPOSITION FOR BLOOD SUGAR TESTING, **filed** Aug. 23, 1968, D.C., S.D. Ohio (Cincinnati), Doc. 6842, *Miles Laboratories, Inc.* v. *Crocker-Fels Co., Inc.*

3,349,937, Duff and Hayward, TITRATION APPARATUS; **3,356,462**, Cooke and Hall, DISPOSABLE MICROTITRATION PLATE; **D. 202,700**, same, LABORATORY TRAY FOR MAKING MICROTITRATIONS, GROWING CULTURES, AND THE LIKE, **filed** Aug. 22, 1968, D.C. Conn. (New Haven), Doc. 12719, *The Cooke Engineering Company* v. *Linbro Chemical Co., Inc.*

3,356,462. (See 3,349,937.)

3,369,121, Bruno, Haney, Numerof and Reinhardt, RADIOACTIVE PACKAGE AND CONTAINER THEREFOR, **filed** July 23, 1968, D.C., E.D. Mo. (St. Louis), Doc. 68C331(1), *E. R. Squibb and Sons, Inc.* v. *Mallinckrodt Chemical Works.*

Re. 24,968. (See 2,798,120.)

Re. 26,244, L. S. Spielman, AIR HEATING BURNERS, **filed** Aug. 23, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1457, *Eclipse Fuel Engineering Co.* v. *The North American Mfg. Co.* Order and stipulation of dismissal, Sept. 16, 1968.

D. 171,963, L. Blum, RAIL; **2,905,445**, same, ORNAMENTAL RAIL STRUCTURES, **filed** Aug. 7, 1968, D.C. Kans. (Wichita), Doc. W–4037, *Blumcraft of Pittsburgh et al.* v. *Architectural Art Mfg., Inc. and Wenzel W. Thom* (amending report of Aug. 8, 1968).

D. 196,356, N. D. McKay, LINT REMOVER, **filed** Oct. 7, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1673–EC, *Maywood Industries and Frank S. Thomas, doing business as Genie Products Co.* v. *Helmac Products Corporation.*

D. 202,700. (See 3,349,937.)

DEFENSIVE PUBLICATIONS

PUBLISHED DECEMBER 17, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

571,996
PROCESS FOR THE PRODUCTION OF CATIONIC DYES
John G. Fisher, Box 511, Kingsport, Tenn. 37662
Filed Aug. 12, 1966. Published Dec. 17, 1968
Class 260—156
No Drawing. 15 Pages Specification

A process for the conversion of dyes to cationic dyes which comprises reacting a dye containing a hydroxyalkyl group with an alkyl- or aryl-sulfonyl-halide in the presence of a pyridine and at an elevated temperature. The products, containing a pyridinium group, are useful as dyes for acrylic and modacrylic textile materials.

587,971
PRODUCTION OF METADIOXANES
Neville Leverne Cull, Rte. 2, Box 262, Baker, La. 70714, and William Lambert Senn, Jr., 850 E. Lakeview Drive, Baton Rouge, La. 70810
Filed Oct. 20, 1966. Published Dec. 17, 1968
Class 260—340.7
No Drawing. 7 Pages Specification

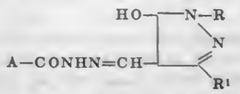
Metadioxane is prepared by reacting a monoolefin with formaldehyde in the presence of Amberlyst 15 ion exchange resin. Desirably, the reaction is conducted at temperatures ranging from 70 to 90° C. and at pressures varying from 1 to 10 atmospheres. The reaction is ordinarily carried out in a polar, inert solvent such as tetrahydrofuran. Amberlyst 15 is a hydrogen form ion-exchange resin having a macro reticular structure. In a preferred embodiment, styrene is reacted with formaldehyde in the presence of the ion-exchange resin to form phenylmetadioxanes. The phenylmetadioxanes can be hydrogenated to 3-phenyl-propanol-1.

592,761
PROCESS FOR COMPRESSION CYCLE EXERCISING OF A POROUS, BONDED FIBER STRUCTURE AND PRODUCT THEREBY
John Gerard Lavin, Wynnwood, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 8, 1966. Published Dec. 17, 1968
Class 161—157
No Drawing. 13 Pages Specification

A process for improving the durability and aesthetics of bonded, porous, low density structures (e.g., cushion and fillers for pillows or sleeping bags) comprised of crimped fibers (preferably substantially parallelized in one direction) which are attached at a plurality of contact points (preferably by a binder material) and the improved product is disclosed. The structure is exercised, e.g., by cyclical platen compression or a cyclical roller compression, for a sufficient number of cycles to provide an improvement in height retention and load support. Preferred embodiments specify a total of more than 1,000 cycles (most preferably 4,000 to 8,000), an exercising temperature of room temperature or above, an exercising load of at least 2 pounds per square inch (most preferably 2 to 4), and/or a cycle rate of 10,000 to 40,000 cycles/hour.

636,584
HYDRAZONES OF PYRAZOLONE ALDEHYDES AND POLYMERIC MATERIALS STABILIZED THEREWITH
David J. Wallace and James M. Straley, both of P.O. Box 511, Kingsport, Tenn. 37662
Filed May 8, 1967. Published Dec. 17, 1968
Class 260—240
No Drawing. 17 Pages Specification

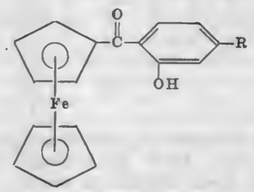
Novel hydrazones of pyrazolone carboxaldehydes, prepared by the reaction of a 5-pyrazolone-4-carboxaldehyde with an ortho hydroxy carbocyclic aromatic compound, are useful as copper deactivators for poly-α-olefins. These novel hydrazones have the general structure depicted below:



wherein A represents an ortho-hydroxyphenyl group or an ortho-hydroxynaphthyl group; R is H, alkyl or phenyl and R^1 is an alkyl, alkoxycarbonyl or phenyl group.

666,502
SUBSTITUTED 2-HYDROXYBENZOYLFERROCENES AND STABILIZATION OF POLYMERS THEREWITH
Gordon C. Newland and Gerald R. Lappin, both of Box 511, Kingsport, Tenn. 37662
Filed Sept. 8, 1967. Published Dec. 17, 1968
Class 260—45.75
No Drawing. 11 Pages Specification

2-hydroxy-4-dodecycloxybenzoylferrocene. This compound and other 2-hydroxybenzoylferrocenes of the structure:

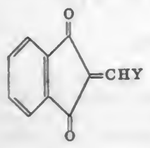


wherein R is OH, NO_2, acyl, aroyl, hydrocarbyl, hydrocarbyoxy or substituted derivatives thereof, are used as light stabilizers for poly-α-olefin polymers. Other stabilizers which prevent heat and oxygen degradation may be included in the polymer composition.

669,719
METHINE DYES FROM INDAN-1,3-DIONE
Gether Irick, Jr., and James M. Straley, both % Tennessee Eastman Company, Box 511, Kingsport, Tenn. 37662
Filed Sept. 22, 1967. Published Dec. 17, 1968
Class 260—240
No Drawing. 14 Pages Specification

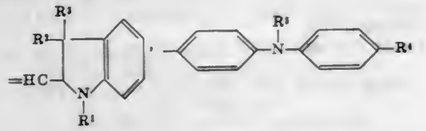
Novel water insoluble methine compounds prepared by condensing an indan -1,3-dione with an indolinylidene-

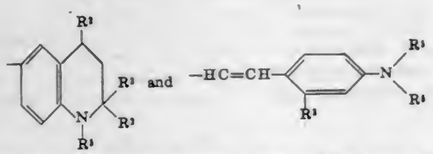
acetaldehyde, a formyldiphenylamine, a formyltetrahydroquinoline, or a cinnamaldehyde are useful as dyes for hydrophobic textile materials. These compounds have the formula below:



wherein:

R is H, lower alkyl, lower alkoxy, halo or nitro
Y is a group of the formula





wherein R^1 is an alkyl or phenyl group, R^2 is lower alkyl, R^3 and R^4 are H, lower alkyl, lower alkoxy, halogen, lower alkylthio, lower dialkylamino, nitro or CN and R^5 and R^6 are lower alkyl.

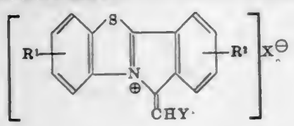
680,303

METHINE COMPOUNDS FROM ISOINDOLO[1,2-b] BENZOTHIAZOLIUM SALTS

Gether Irick, Jr., % Tennessee Eastman Company, Box 511, Kingsport, Tenn. 37662

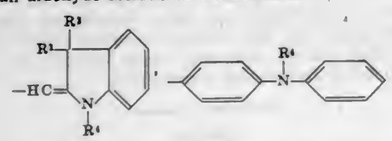
Filed Nov. 3, 1967. Published Dec. 17, 1968
Class 260—240.4
No Drawing. 12 Pages Specification

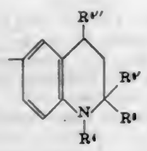
Methine compounds useful as dyes for acrylic, modacrylic and acid modified polyester materials are prepared by condensation of certain aldehydes with isoindolo 1,2-b benzothiazolium compounds. These compounds have the structure infra:

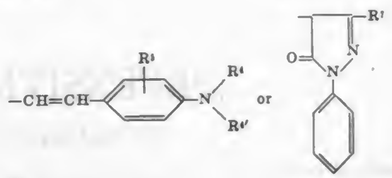


wherein

R^1 and R^2 are the same or different and may be lower alkyl, halo, nitro, lower alkylsulfonyl, dialkylamino, lower alkoxy, lower alkylthio or cyano
Y is an aldehyde residue of the formula:







wherein

R^3 is lower alkyl, R^4 and $R^{4'}$ are the same or different and each are H, lower alkyl, or lower alkyl substituted with halogen, hydroxy, alkoxy, nitro or dicarboximido groups
R^5 is H, lower alkyl, lower alkoxy, lower alkylthio, lower alkanoylamido or lower alkylsulfonamido
R^6, $R^{6'}$, and $R^{6''}$ are H or lower alkyl
R^7 represents R^4, phenyl or phenyl substituted with lower alkyl, lower alkoxy or halogen
X is any anion.

683,112

DISAZO COMPOUNDS CONTAINING A DICARBOXIMIDO GROUP

Max A. Weaver and James M. Straley, both % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662

Filed Nov. 15, 1967. Published Dec. 17, 1968
Class 8—41
No Drawing. 16 Pages Specification

Disazo compounds containing a dicarboximido group bonded to a nuclear carbon atom of a benzene diazo component and having a phenolic coupling component are useful as dyes for hydrophobic textile materials.

701,845

PROCESS FOR PREPARING 4,4'-BIS(2-BENZOXAZOLYL) STILBENE, DERIVATIVES, AND HETEROCYCLIC ANALOGS

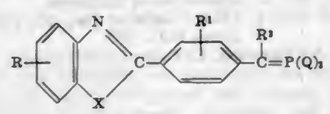
Melvin S. Bloom, Kodak Park, Rochester, N.Y., and Mary E. Martin, P.O. Box 511, Johnson City, Tenn. 37662

Filed Jan. 31, 1968. Published Dec. 17, 1968
Class 260—240
No Drawing. 28 Pages Specification

Process for the preparation of symmetrical and asymmetrical 4,4'-bis(benzazolyl)stilbenes by

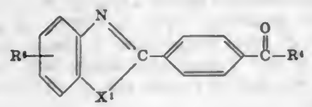
(I) reacting the corresponding 2-benzazolyl-4-benzyl halide derivative with an organophosphorous compound of formula $P(Q)_3$ wherein Q is lower alkoxy or aryl to form the interaction product thereof which is then

(II) treated with a proton acceptor to form an alkylidenephosphorane of the formula



wherein X is NR^2, —O— or —S— in which R^2 is H or lower alkyl, R and R^1 are H or substituents such as alkyl, aryl, aralkyl, alkoxy, halo, CN, CNS, amino, acyl and the like and R^3 is H, alkyl aryl or aralkyl which alkylidene-phosphorane is then

(III) reacted with an aldehyde or ketone of the formula



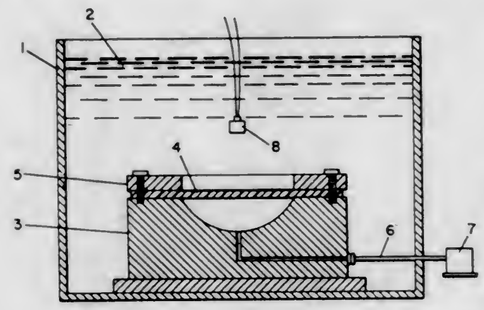
wherein R^5 and R^6 are the same as R and R^1 above, X' is the same as X and R^4 is the same as R^3. The resultant 4,4' bis(2-benzazolyl) stilbenes from this last reactive step are particularly useful as fluorescent brightening agents.

713,769

FORMING SHAPED POLYMER ARTICLES

Jack R. Knox, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Mar. 18, 1968. Published Dec. 17, 1968
Class 260—93.7
1 Sheet Drawing. 11 Pages Specification



Crystalline propylene polymer sheets can be formed into various shapes while maintaining their strength and clarity by high energy rate forming.

In the process of forming a shaped propylene polymer a force of at least about 5000 p.s.i. at a velocity of at least about 1100 feet per second for a maximum time interval of about 50 microseconds will be applied to the polymer forcing it into a forming die having a configuration to impart the desired shape. Any of several techniques which generate high pressure at high velocity for very short intervals can be used. Examples of such techniques are detonation of an explosive in a liquid medium or producing a high voltage spark discharge in a liquid medium.

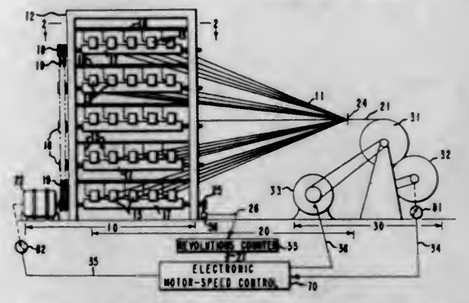
Most preferably the polymer will be biaxially oriented and can be in the form of a single sheet or a plurality of thin sheets. If desired a bridged polymer, i.e. one that has been treated with a small amount (from about 0.02% to 0.08% by weight) of an azido bridging agent, can be used. Typical azido bridging agents are the polysulfonazides and the polyazidoformates.

714,283

PROCESS AND APPARATUS FOR BEAMING YARNS

Karel Murenbeeld, Geneva, Switzerland, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 19, 1968. Published Dec. 17, 1968
Class 28—36
3 Sheets Drawing. 19 Pages Specification



A process and apparatus for beaming packages of elastomeric yarns wherein the yarn on the packages varies in elongation along its package length. The substantially constant beaming elongation normally employed in beaming elastomeric yarns is varied in an inverse relationship with respect to elongation of the yarn along its package length. The beaming apparatus includes a conventional creel and warper arrangement for beaming elastomeric yarns with separate drive motors for the creel and warper. The motors are coupled by a speed control means, the output of which is modified by a programmed control system to vary the warper speed in accordance with the length of yarn unwound from the creeled yarn packages.

724,608

HYDRAZIDES HAVING AT LEAST ONE NAPHTHALENE NUCLEUS AND THEIR USE IN POLYOLEFINS

James M. Straley and David J. Wallace, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Apr. 26, 1968. Published Dec. 17, 1968
Class 260—45.9
No Drawing. 20 Pages Specification

Hydrazide compounds defined by the general formula

A—CONHN=CH—B

wherein A and B independently represent an ortho-hydroxyphenyl group or an ortho-hydroxynaphthyl group, at least one of A or B being an ortho-hydroxynaphthyl group. The hydrazide compounds are blended with polyolefin polymers to stabilize said polymers against the accelerated degradation effects of copper. The hydrazide compounds can be used in combination with other known polyolefin stabilizers, e.g., phenolic antioxidants.

REISSUES

DECEMBER 17, 1968

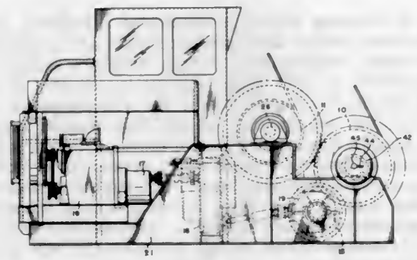
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,505
INTERLOCKING YARDER

James R. Thompson, Seattle, Wash., assignor to Washington Iron Works, Seattle, Wash., a corporation of Washington

Original No. 3,300,188, dated Jan. 24, 1967, Ser. No. 398,191, Sept. 22, 1964. Application for reissue Mar. 4, 1968, Ser. No. 710,410

13 Claims. (Cl. 254—185)



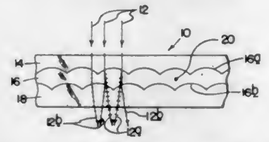
This invention is a means of minimizing the slack either in the haul-back line of a yarder during the inhaul run of the main line or in the main line during the inhaul run of the haul-back line by shifting the gears which control the angular speed of the two spooling drums in accordance with the number of cable wrapes on each drum. This provides the same linear cable speed on both drums during operation.

26,506
MULTILAYER LENTICULAR LIGHT POLARIZING DEVICE

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Original No. 3,213,753, dated Oct. 26, 1965, Ser. No. 168,398, Jan. 24, 1962. Application for reissue Dec. 27, 1965, Ser. No. 518,521

13 Claims. (Cl. 350—157)



This disclosure relates to multilayer lenticular light polarizing devices and systems of high efficiency which transmit a very large portion of incident light.

26,507
TORQUE TRANSMISSION BY INERTIA

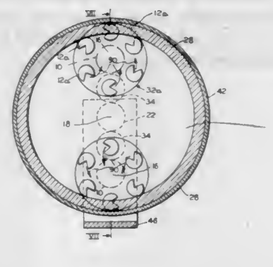
Hendrik Cancrinus, Rondebosch, Cape Province, Republic of South Africa, assignor to Inpower Works (Proprietary) Limited, Windhoek, South-West Africa

Original No. 3,077,793, dated Feb. 19, 1963, Ser. No. 20,047, Apr. 5, 1960. Application for reissue Nov. 10, 1966, Ser. No. 615,870

Claims priority, application Republic of South Africa Apr. 13, 1959

14 Claims. (Cl. 74—752)

16. A torque transmitter, including a carrier having an axis of rotation; a drum adapted to contain a quantity of liquid maintained in a peripheral layer under the influence of centrifugal force, the drum being around the carrier and coaxial with the carrier and the carrier and the drum being mounted to rotate about the carrier axis; drive connected means connected to the carrier for connecting the carrier to a source of rotary power; a sun wheel coaxial with the carrier axis and rotatably mounted relative to the carrier; connecting means connected to the sun wheel for connecting it to a load to absorb rotary power; intermediate drive means drivingly connected to the sun wheel; and torque-developing means mounted on the carrier and including a plurality of planet wheels mounted on the carrier and adapted to rotate about their own axes, the planet wheels being drivingly connected to the intermediate drive means for applying torque developed about the axis of the planet wheel to



the sun wheel in the same direction about the sun wheel axis, each of the planet wheels having a plurality of liquid-entrapping means spaced apart circumferentially from each other and radially away from the planet wheel axis to form a liquid-entrapping wheel, the central portion of said wheel radially inwardly of said liquid-entrapping means being open in the diametral direction, the liquid-entrapping means being adapted to entrap liquid from the peripheral liquid layer and being adapted to displace the entrapping liquid inwardly away from the peripheral layer in a direction towards the carrier axis, the spaces between said liquid entrapping means constituting openings so positioned as to facilitate, after such displacement and under the influence of centrifugal force, the rejection of such displaced liquid in a direction towards the peripheral liquid layer through the liquid-entrapping wheel.

26,508
CLOSURE OPERATOR

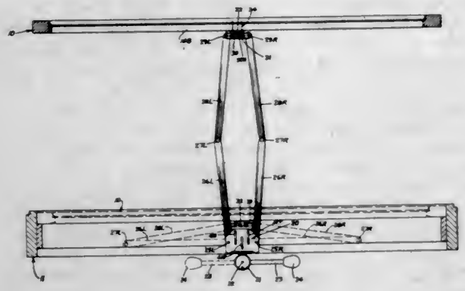
Harold L. Stavenau, Owatonna, Minn., and Dan M. Park, Madison, Wis., assignors to Truth Tool Company, Mankato, Minn., a corporation of Minnesota

Original No. 2,775,446, dated Dec. 25, 1956, Ser. No. 520,555, July 7, 1955. Application for reissue Feb. 12, 1968, Ser. No. 706,999

20 Claims. (Cl. 49—324)

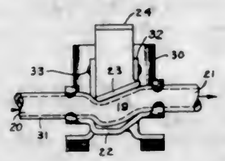
A closure operator for awning type windows in which a support frame is mounted on a window frame with a pair of arms pivotally mounted on the support frame and extending therefrom for swinging movement in opposite directions relative to the support frame. A manual mem-

ber is pivotally mounted on the support frame for oscillatory rotation through less than one complete turn between limiting positions generally parallel to the window frame about an axis parallel to the arm pivot. Eccentric link means pivotally connects the manual member with



the arms for swinging the arms on the manual member is rotated between its limiting positions. The arms are attached to the window by a connecting means which has freedom of motion about an axis parallel to the arm pivot and in a plane normal to said axis.

26,509
PULSATION TYPE PUMPS
William Melin Walton, Rockford, Ill., assignor to The Chemical Rubber Company, Cleveland, Ohio, a corporation of Ohio
Original No. 3,171,360, dated Mar. 2, 1965, Ser. No. 178,677, Mar. 9, 1962. Application for reissue Dec. 8, 1965, Ser. No. 532,481
33 Claims. (Cl. 103—148)



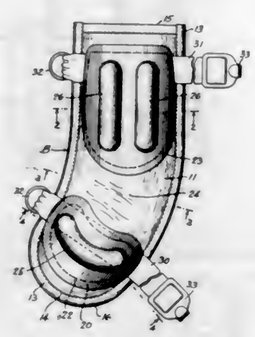
1. A pumping apparatus comprising a resilient, yieldable-walled tubular fluid transfer conduit and a relatively hard striker reciprocable at a high frequency against and substantially at right angles relative to one side of said fluid transfer conduit to pulsate the wall thereof, a support for the opposite side of said fluid transfer conduit diametrically opposite the area of impact from the striker, said striker having a conduit engaging face that is inclined at an acute angle longitudinally with respect to said fluid transfer conduit, and means for reciprocating the striker at high frequency and through a short stroke in relation to the diameter of the conduit to pulsate the wall of said conduit accordingly.

PATENTS

GRANTED DECEMBER 17, 1968

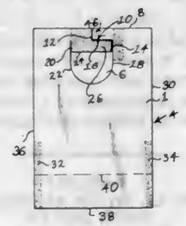
GENERAL AND MECHANICAL

3,416,156
ANKLE AND SHIN BONE GUARD
Ethel M. Marvid, 5316–18 S. Hoover St., Los Angeles, Calif. 90037
Filed Oct. 1, 1965, Ser. No. 492,062
3 Claims. (Cl. 2—22)



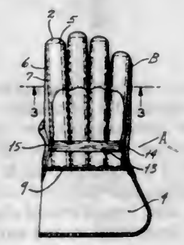
A protector for a ball player's lower leg comprising an elongated pad having spaced rigid portions for guarding the player's bones about the ankle and a flexible intermediate portion for enabling the player's foot free articulating movement about the ankle joint.

3,416,157
DISPOSABLE BIB
Herman Lowell Marder, Plainfield, George Daniel Grippo, New Brunswick, and Werner Otto Tundermann, Colonia, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,609
1 Claim. (Cl. 2—49)



1. A disposable paper bib comprising a generally rectangular paper base sheet having a water-resistant coating on one side thereof having a U-shaped neck opening at the upper end, but spaced from the top edge of said base sheet, said neck opening communicating with the top edge of the said base sheet by a cut line providing thereby two flaps adapted to be placed in an overlapping position, said flaps formed by said cut comprising one L-shaped flap and one rectangular flap with said rectangular flap nested within said L-shaped flap when normally disposed in non-overlapping relationship, an adhesive coating on one entire surface of said L-shaped flap whereby said flaps may be overlapped and secured to provide a secure and snug fit around the neck of a wearer within said neck opening, said bib further provided with a pocket section which is intricately formed from the paper base sheet by folding the bottom section of the base sheet upon itself and adhesive coatings along the overlapped folded edges of the bib for securing said respective folded edges of the folded-over section to the base sheet.

3,416,158
PROTECTIVE GLOVE
Herman M. Kulman, 2309 Mount View Drive NW., Atlanta, Ga. 30305
Filed July 31, 1967, Ser. No. 657,202
1 Claim. (Cl. 2—161)



A protective glove for use by industrial and agricultural workers having a hand portion with finger and thumb receiving portions continuous therewith and a cuff which may be short or of the gauntlet type; there being protective stays of relative flexibility provided upon the back of each finger portion and on the front of the thumb stall; a wear-resistant coating is provided upon the hand and finger portions and with a thumb crotch patch being optionally secured upon the hand portion.

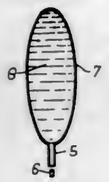
3,416,159
DOUBLE-CAGE HEART VALVE WITH CONTOURED OVERSIZE ORIFICE
Edward A. Smeloff, Sacramento, Trevor B. Davey, Carmichael, and Boris Kaufman, Sacramento, Calif., assignors to Sutter Hospital Medical Research Foundation, Sacramento, Calif., a corporation of California
Filed May 24, 1965, Ser. No. 458,074
15 Claims. (Cl. 3—1)



A heart valve with an annular valve body defining an orifice and having a plurality of struts forming a pair of cages on opposite sides of the orifice. A spherical closure member is captively held within the cages, and is moved

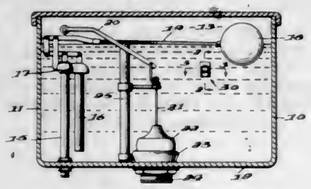
by blood flow between open and closed positions in check-valve fashion. A slight leak or backflow is provided in the closed position by making the orifice slightly larger than the closure member. Blood flow is maximized in the open position of the valve by providing an inwardly convex contour on the orifice-defining surfaces of the body. An annular rib is formed in a channel around the periphery of the valve body to anchor a suture ring used to secure the valve within a heart.

3,416,160
RETROMAMMARY PROSTHESIS
Henri Gilbert Arion, 9 Blvd. de Strasbourg, Toulon, Var, France
Filed Aug. 27, 1965, Ser. No. 483,238
Claims priority, application France, Dec. 28, 1964, 18; July 15, 1965, 21,059
1 Claim. (Cl. 3—36)



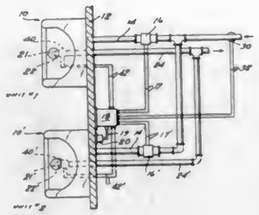
A retromammary prosthesis comprises two circular elements of thin osmotically permeable flexible film of a silicone elastomer resistant to tissue invasion and joined in fluid-tight manner at their peripheries to define a chamber capable of being crumpled so as to pass through a very small incision, less than two centimeters in length, a flexible tubular neck joined to said chamber and opening thereinto for the introduction and extraction of a filling medium into the chamber after insertion of the chamber into the incision, and means such as a plug for sealing the tubular neck.

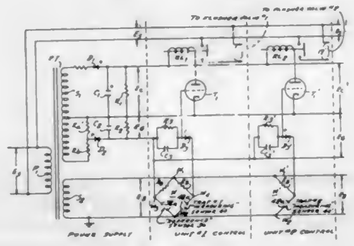
3,416,161
TOILET FLUSHING MECHANISM
Walter R. Perfater, 13708 Nancy Ave., Chesapeake, W. Va. 25315
Filed Sept. 21, 1964, Ser. No. 397,756
4 Claims. (Cl. 4—67)



A mechanism adapted to be inserted in a toilet flush mechanism and supported by the side walls of the water tank to limit the downward movement of the arm float, the mechanism includes members which engage the inner side walls of the tank and turnbuckle which is connected to the members and manually operable to move the same toward and away from each other for properly positioning the mechanism in the tank in relation to the float arm. The members may have apertures in their inner faces which are larger than the outer portions of the turnbuckle mechanism to provide play between the outer ends of the turnbuckle and the members and the turnbuckle may be oblong in cross section and surrounded by a sheath.

3,416,162
AUTOMATIC FLUSHING CONTROL MECHANISM
Milton W. Hamblen, Seattle, Wash., assignor to Contamination Control Corporation, Seattle, Wash., a corporation of Washington
Filed July 11, 1966, Ser. No. 564,371
6 Claims. (Cl. 4—100)



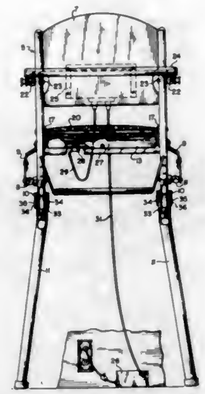


1. An automatic control mechanism for flushing a lavatory facility in response to the contamination of the water therein comprising:
(a) first electrode means supplied with fresh water and responsive to the electrical conductivity thereof,
(b) second electrode means supplied with the water in said facility and responsive to the electrical conductivity thereof,
(c) flushing means for permitting the flow of fresh water into said facility when actuated, and
(d) operating means including an electrical circuit connected to said first and second electrode means for continuously comparing the conductivity of the fresh water supplied to said first electrode means with that of the water in said facility supplied to said second electrode means, said operating means producing an output signal in response to a variation between said conductivities to actuate said flushing means.

3,416,163
ELECTRICAL MUSICAL HIGH CHAIR WITH POTTY
Walter F. Jordan, Hollywood, Fla.
(4417 Poinciana St., Lauderdale by the Sea, Fla. 33308)
Filed Mar. 24, 1966, Ser. No. 537,153
5 Claims. (Cl. 4—134)

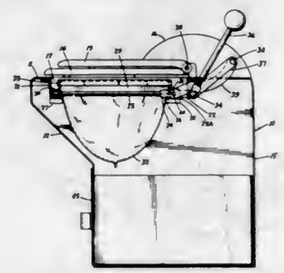
A child's chair provided with an electrical musical device which plays continuously when a child sits on a seat of the chair. The chair is provided with two hinged seats, the lower of which is a potty seat and the upper of which is a high chair seat, and a removable pot is provided under the potty seat. An override switch and a pressure actuated switch are connected to the music device, the pressure

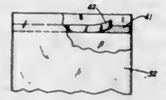
actuated switch being supported under the lower seat for actuation in response to pressure on either of the seats so that when a child sits on such seat the music device plays continuously and when the child leaves the seat



the music device stops playing. The chair is provided with short legs and leg extensions detachably connected to the short legs by rotatable locking sleeves so that the chair may be used as a high chair with the leg extensions attached or as a potty chair with the leg extensions removed.

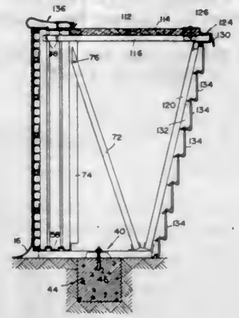
3,416,164
PORTABLE WASTE DISPOSAL UNIT
Hans G. Ekrut, 7939 Zane Ave., Brooklyn Park, Minn.
Continuation-in-part of application Ser. No. 541,313, Apr. 8, 1966. This application June 23, 1967, Ser. No. 648,263
10 Claims. (Cl. 4—142)

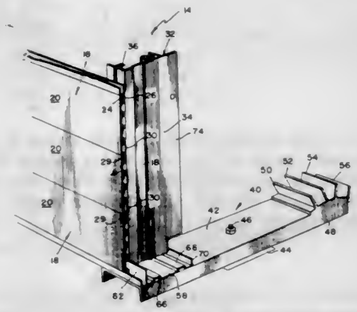




A unit for packaging human wastes for disposal for use where access to sanitary sewer facilities is not available. The unit includes a frame for supporting a waste receiving bag in open mouth position for deposit of wastes. The interior edges of the bag in the area of the mouth are pressure sensitive. The unit also includes a pair of pressure bars, at least one of which is movable, which are brought together to squeeze the top pressure sensitive edges of the waste containing bag to seal the bag for dry sanitary disposal.

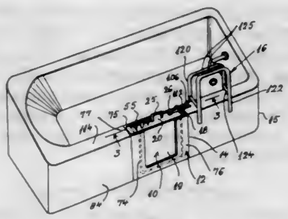
3,416,165
SWIMMING POOL CONSTRUCTION
John P. Pereira, Warwick, R.I., assignor to Weatherking Products, Inc., Providence, R.I., a corporation of Rhode Island
Filed Dec. 5, 1966, Ser. No. 599,100
11 Claims. (Cl. 4—172)





A swimming pool construction in which all of the component parts thereof are prefabricated and are assembled at the site of installation. A plurality of preformed panel assemblies are interconnected to form a shell and receive a flexible inner liner that defines the interior surface of the pool.

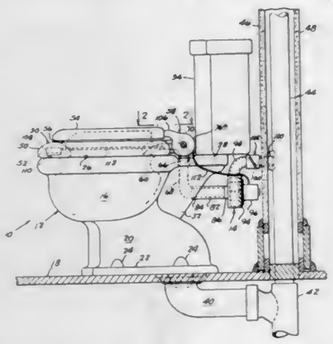
3,416,166
EASY OPENING SLIDING DOOR FOR BATHTUB
Adelheid Hanson, 12914 NW. 7th Ave., North Miami, Fla. 33161
Filed Aug. 1, 1966, Ser. No. 569,391
10 Claims. (Cl. 4—173)



A sliding door assembly for a lateral opening in a bathtub. The sliding door has spring supports for making it easy to lift the door to clear the opening. The door is hingeless and easy to open and close. The door assembly includes a U-shaped frame vertically fixed in the opening in the tub and a vertically sliding door having U-shaped

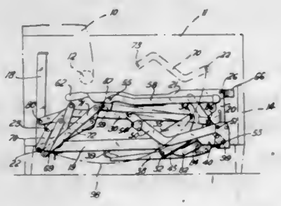
gaskets on opposite sides the gasket on one side being mechanically movable outwardly to effect sealing of the door to the frame. Normal locking means is provided for holding the door closed.

3,416,167
VENTILATED TOILET
William R. Klemme, Rte. 1, 2721, Colfax, Calif. 95713
Filed Feb. 8, 1967, Ser. No. 614,582
1 Claim. (Cl. 4—217)



A toilet provided with air inlet means at the front and air exit means at the rear and a blower for drawing a stream of air through the toilet bowl and exhausting air and odor at the rear and a switch in the toilet seat for energizing the blower is disclosed.

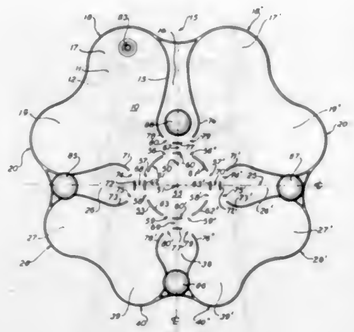
3,416,168
SOFA-BED ASSEMBLY
Louis Pokorny, Jr., Ronkonkoma, N.Y., assignor of one-third each to Louis Pokorny, Ronkonkoma, and John M. Pokorny, Bellport, N.Y.
Filed Mar. 21, 1967, Ser. No. 624,847
6 Claims. (Cl. 5—13)



Sofa-bed mechanism comprising four sections pivoted to one another in succession and foldable between collapsed sofa position and extended bed position. Support linkage movably supports mechanism between opposed side walls of sofa body, and support linkage arranged in its entirety below back of sofa when mechanism is in collapsed condition, so that sofa back can be made relatively narrow.

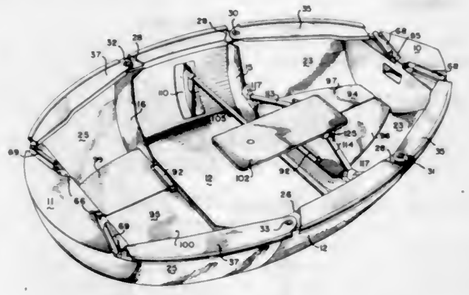
3,416,169
INFLATED BATH OR BOUDOIR PILLOW
William M. Emery, 44 Pittsford Way, New Providence, N.J. 07974
Filed Apr. 7, 1967, Ser. No. 629,198
10 Claims. (Cl. 5—337)

Inflated pillow substantially symmetrical about its vertical and horizontal center lines with circular and radiating lobes including the spacing of its circumcenter from juncture of center lines to provide a wedgelike cross section. Excess material relatively free of or without stress in the



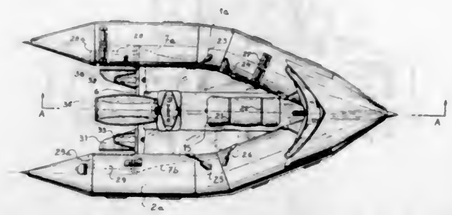
center area resulting from shortening of said periphery incident to inflation of lobes, and the location of interconnecting pneumatic passageways in said area.

3,416,170
EXTENSIBLE-COLLAPSIBLE STRUCTURE
Pierre E. Dohet, 208 S. Lee St., Alexandria, Va. 22314
Filed Aug. 3, 1966, Ser. No. 569,869
16 Claims. (Cl. 9—2)



An occupiable structure has a pair of rigid end members linked by a flexible skin or sheet coextensive with the edges of the end members so that the structure may be repeatedly extended and collapsed. Rigid beams operating in a chord compression system are employed to erect the structure from a collapsed state or vice versa, each beam pivotally fastened to an end member such that its free extremity would describe an arc were it not for the presence on the opposite end member of an intercepting channel along a chord of that arc, the channel arranged to accept a spring-loaded pin at the extremity of the beam. As each beam is pushed or otherwise moved into the erecting condition its associated pin slides within the channel against the force of the loading spring and ultimately locks into position in the channel thereby to latch the beam. Each beam supports a portion of the flexible sheet, which is incapable of self-support, to impart to it a curvature maintaining substantial continuity of contour with that of the rigid end members.

3,416,171
SURF-BOAT WITH AIR-FLOATS
Georges Bertrand Léon Hennebutte, 4 Rue du Jardin Public, Biarritz, Basses-Pyrenees, France
Filed Sept. 12, 1967, Ser. No. 667,207
Claims priority, application France, Sept. 19, 1966, 76,890
8 Claims. (Cl. 9—2)



A surf-boat comprising a rigid hull with concave sides and elongated air-floats fixed along the sides, blocks which each have a profiled underface fixed on the top of each float and a hollowed-out top face forming a recess, at least one surf-board being placed flatwise within said recess and a detachable elastic tie which serves to hold said surf-board in position.

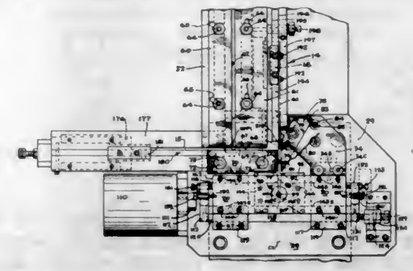
3,416,172
SWIMMING AID
Ann M. Gerling, 1150 W. Garmon Road NW., Atlanta, Ga. 30327
Filed Feb. 8, 1967, Ser. No. 614,638
3 Claims. (Cl. 9—337)



A compact universal swimming aid composed of three substantially rectangular, flexible, non-absorbing, polyethylene foam, buoyant pads which are capable of being joined together in a first stacked arrangement to provide a concentrated amount of buoyancy or a second end to end arrangement to provide a distributed amount of buoyancy. In the stacked and end to end arrangements the long axis of each of the buoyant pads is perpendicular to the long axis of the individual to which the swimming aid is attached.

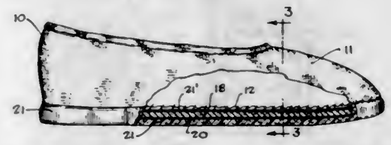
3,416,173
MACHINE TOOLS
Adolph V. Klancnik, 1020 Glenview Road, Glenview, Ill. 60025
Original application Sept. 29, 1964, Ser. No. 400,126, now Patent No. 3,289,884, dated Dec. 6, 1966. Divided and this application Mar. 28, 1966, Ser. No. 537,866
8 Claims. (Cl. 10—107)

An equalized clamping device for a workpiece in a machine tool comprises a pair of slideable blocks or jaws and means are afforded to assure that when the jaws are



moved to grip the workpiece they do so by moving through equal increments at the same rate.

3,416,174
METHOD OF MAKING FOOTWEAR HAVING AN ELASTOMERIC DIPPED OUTSOLE
Ralph J. Novitske, Ripon, Wis., assignor to Ripon Knitting Works, Ripon, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 347,073, Feb. 20, 1964, which is a division of application Ser. No. 82,462, Jan. 13, 1961. This application Aug. 19, 1964, Ser. No. 390,641
10 Claims. (Cl. 12—142)

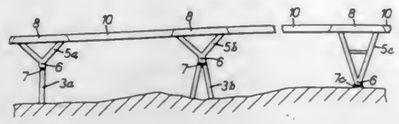


1. A method of manufacturing an article of footwear which comprises; forming a footwear upper including a footwear upper section and a footwear insole section having marginal portions of said footwear upper section and said footwear insole section joined to provide a preformed footwear upper assembly mounting said footwear upper assembly on a footwear support means, applying a continuous coating of a flowable plastisol material which intimately coats a lateral surface portion of said footwear upper and the exposed surface portions of said insole section securing said support means on a conveyor means adapted to rotate said support means about a horizontal axis to maintain even distribution of said coating and convey said footwear upper assembly through a heating zone, exposing said coating to heat within said heating zone while said footwear upper assembly is roated about said horizontal axis and conveyed through said heating zone to effect solidification of said plastisol material; thereby providing a one piece elastomeric outsole for said footwear upper assembly which securely holds said footwear upper and insole sections in assembly relationship by forming a direct locking engagement with said lateral surface of said footwear upper assembly and said outer surface of said insole section.

3,416,175
BRIDGE ASSEMBLIES
Benjamin M. Hutchinson, 37 Great James St., London W.C.1, England
Filed Apr. 25, 1966, Ser. No. 544,798
Claims priority, application Great Britain, Apr. 28, 1965, 17,961/65
19 Claims. (Cl. 14—1)

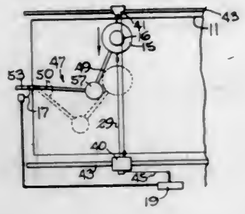
This disclosure relates to a bridge formed by a plurality of longitudinally adjacent bridging elements, each secured

by pivot means to a vertical support with rigid span portions extending between longitudinally adjacent pairs of the bridging elements. The pivot means are the sole



articulatable connection between the supports and the bridging elements and are positioned between terminal chamfered ends thereof which cooperate with like chamfered ends of the span portions.

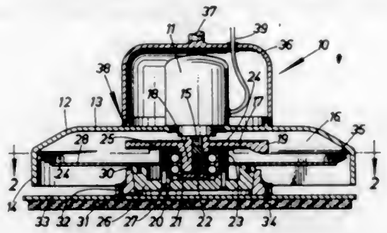
3,416,176
UNIT FOR REMOVING SOLIDS FROM TANKS, RESERVOIRS AND THE LIKE
Richard B. Ravitts, Rockford, Ill., assignor to Richards of Rockford, Inc., Rockford, Ill., a corporation of Illinois
Filed Aug. 9, 1967, Ser. No. 659,419
20 Claims. (Cl. 15—1.7)



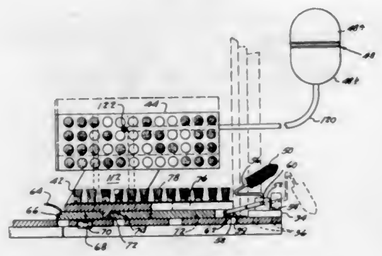
A cleaning unit comprising a suction pump is supported within a tank of liquid by a buoyant float and communicates with an intake head disposed near the bottom of the tank. The pump and the float are movable automatically back and forth across the tank and also sidewise within the tank through a predetermined pattern with the head sweeping over substantially the entire area of the bottom of the tank and sucking up solid materials which accumulate on the bottom. To remove scum and other material on the surface of the water, two skimmers are disposed in leading and trailing relationship with the float and are alternately lowered into the water each time the float reverses directions.

3,416,177
FLOOR CLEANING MACHINE
Vera E. Young, Lachine, Quebec, Canada, assignors to C.T. & R.E., Inc., Danvers, Mass., a corporation of Massachusetts
Filed Apr. 18, 1966, Ser. No. 543,416
Claims priority, application Canada, June 17, 1965, 933,613
9 Claims. (Cl. 15—98)

The disclosure describes a surface (e.g. floor) treating machine using an eccentric drive to an intermediate oscillatory plate, which is supported for oscillatory nonrotating motion, and to which surface-treating plates having optionally a wide variety of dimensions, which can be larger than the dimensions of the driving mechanism, can be coupled for oscillatory drive. The machine has a housing supporting a motor for the eccentric drive, and the intermediate plate is supported in the housing by springs which allow it to oscillate but not to rotate. Surface-treating plates are coupled to the intermediate plate, and can extend beyond the housing, since they are not attached to it. Surface-treating plates having mass within prescribed limits, but a wide variety of dimensions, can be counterbalanced while driven.



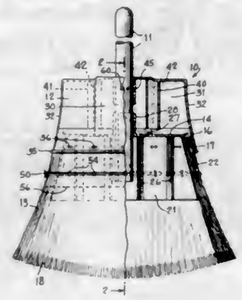
3,416,178
FOOT WASHER AND MASSAGER
Horace A. James, 6662 Blakemore St., Philadelphia, Pa. 19119
Filed May 26, 1967, Ser. No. 641,528
5 Claims. (Cl. 15—104.92)



A foot cleaning and massaging unit which includes a slatted shower board, a baseboard secured to the shower board, a wing board pivotally secured to the baseboard, bottom and side brushes secured to the wing board, the side brushes being secured for pivotal and spacial movement relative to the wing board, a toe brush pivotally secured to the baseboard, a link interconnecting the wing board and the toe brush such that the wing board may be lifted from a generally horizontal position for use to a generally vertical position for storage relative to the shower board, the toe brush automatically moving from a use position to a non-use position when the wing board is lifted, and a soap injector for spraying soap toward the bottom brush is disclosed.

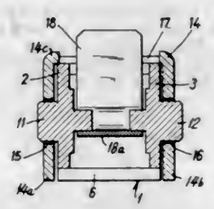
3,416,179
BROOM CONSTRUCTION
Albert H. Wiese, Chesterfield, Mo., assignor to National Industries for the Blind, New York, N.Y., a corporation of New York
Filed Feb. 1, 1968, Ser. No. 702,463
12 Claims. (Cl. 15—171)

A broom construction composed of a skirt portion of monofilaments which are adhesively secured and set at their upper ends, an inner plastic insert member of generally broom shaped cross-section disposed within such skirt serving to provide resiliency and body for such filaments, and an outer cap or shroud of similar broom shape which engages over the skirt and inner plastic insert, all three elements being maintained in assembled relation by



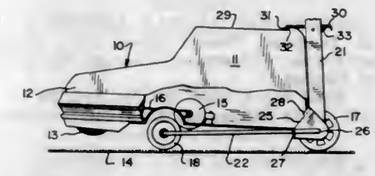
stapling. The inner plastic insert extends into the skirt portion of monofilaments well below the lower edge of the outer cap or shroud and provides a secondary attachment for the monofilaments by staples and broom twine.

3,416,180
WINDSHIELD WIPER SUPPORTING JOINT CONSTRUCTION
Hans-Christian Deutscher, Ludwigsburg, Kurt Bauer, Kleiningersheim, and Alfred Kohler, Bietigheim, Germany, assignors to SWF-Spezialfabrik fur Autozubehor Gustav Rau G.m.b.H., Bietigheim, Germany
Filed May 13, 1966, Ser. No. 549,939
Claims priority, application Germany, Oct. 2, 1965, S 99,911
6 Claims. (Cl. 15—250.32)



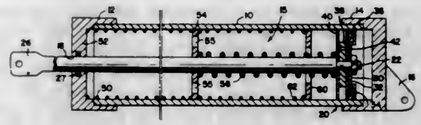
A joint construction for mounting a supporting wiper arm to a U-shaped stirrup member comprises a substantially rectangular frame member having longitudinal walls which are each provided with an exterior projection for engaging into an opening in a leg portion of the stirrup member and are also provided with an interior projection to provide an engagement point for a U-shaped end of a wiper support arm. The construction provides a means for simple engagement of the support arm with the U-shaped stirrup and requires only that the rectangular frame be inserted into the stirrup by compressing the side walls to permit clearance of the projections and engagement of the projections in the openings of the leg portions of the stirrup. Thereafter, the support arm of the wiper may be easily engaged over the inwardly directed pin formations of the frame member. The wiper support arm is made wide enough to prevent further compression of the frame member and thus effectively locks the member in position engaged with the stirrup.

3,416,181
NOZZLE ADJUSTMENT FOR VACUUM CLEANERS
Erwin E. Nordeen, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,428
7 Claims. (Cl. 15—359)



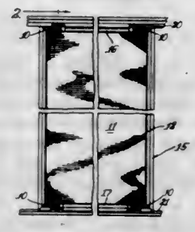
A vacuum cleaner having a surface agitator such as a brush in a housing rotatable against a surface, surface engaging support means such as wheels adjacent the agitator, stress deformable resilient mounting means with one portion thereof attached to the housing and another portion spaced from the one portion carrying the wheels and means for applying deforming stress to the resilient mounting means between the two spaced portions for moving the surface engaging wheels away from the agitator and in the direction of the surface thereby to maintain the agitator away from the surface as during off the floor cleaning.

3,416,182
DOOR CHECK
Louis J. Gibson, 1014 Anna Road, Huntingdon Valley, Pa. 19006
Filed May 18, 1967, Ser. No. 639,510
10 Claims. (Cl. 16—52)



A door check for outside doors such as storm and screen doors constructed to provide a substantial delay in the closing of an opened door to allow time for a person to pass through the doorway without the necessity for holding the door open manually.

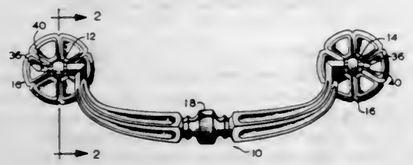
3,416,183
ROLLER ASSEMBLY FOR A SLIDING CLOSURE
Jerry L. Martin, Echo Heights, Minn., assignor to Truth Tool Company, a corporation of Minnesota
Filed Aug. 22, 1966, Ser. No. 574,179
15 Claims. (Cl. 16—105)



A roller assembly for a sliding closure which is a self-contained unit for simple insertion into the frame of a sliding closure and wherein the roller member of the assembly can have its position of extension relative to the sliding closure frame simply adjusted by a rotatable mem-

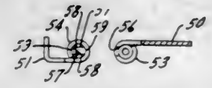
ber fixedly located in the closure frame and, further, wherein the adjustment can be made without varying the over-all effect of a floating mounting for the roller provided by spring means located between the base of the roller assembly and the movable part which carries the roller.

3,416,184
FURNITURE HANDLE ASSEMBLY
James R. Deadrick, Winston-Salem, N.C., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed July 8, 1966, Ser. No. 563,788
4 Claims. (Cl. 16—112)



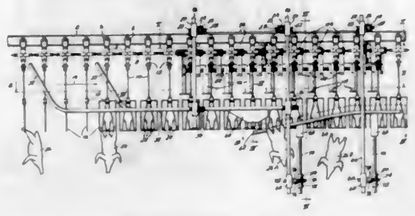
1. A drawer pull for use in opening a drawer, the improvement comprising a pair of spaced posts for mounting on said drawer with each post having a closed ring at one end spaced from one surface of said drawer, a bail having a generally central plane and journaled in each ring with opposite ends of said bail having a solid head formed thereon passing through and beyond the opening in the respective ring and thereafter expanded along one portion thereof to a dimension greater than the respective ring opening in a direction transverse to the axis of the ring opening to prevent retraction of each head through said opening with the material for said expanded portion being provided by reduction of another portion of said head to a dimension less than the respective opening and terminating in a flat surface lying in a plane located substantially 45° to said bail central plane, and a curved surface on each expanded bail head facing outwardly of said drawer surface and upwardly when said bail is positioned solely under the influence of gravity after said posts are mounted on said drawer to present said curved surface to view.

3,416,185
CASKET HINGE STRUCTURE
Raymond E. Peterson, 801 Clinton Place, River Forest, Ill. 60305
Filed Aug. 24, 1965, Ser. No. 482,245
2 Claims. (Cl. 16—171)



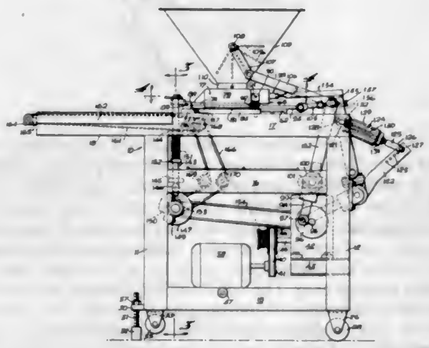
A hinge assembly for joining a casket cover and a casket bottom so as to permit removal of the cover from the bottom when the cover is opened to a preselected angle. One of the hinge members has a planar portion with an edge thereof turned to form a pair of spaced sockets. The other hinge member has a planar portion with an edge turned to form an axle holding tube. Slots are formed in the sockets and extend from the ends of the sockets facing each other for distances less than the length of the sockets. The slots are spaced from the turned edges of the socket portions. The axle portions which extend beyond the axle holding tube have minimum and maximum thicknesses with the minimum thicknesses being less than and maximum thicknesses being greater than the width of the slots so that the axle portions may be inserted into and removed from the sockets through the slots.

3,416,186
POULTRY SHACKLE UNLOADING DEVICE
Ralph S. Zebarth, and Henry E. Frederick, Kansas City, Mo., assignors to Ralph Zebarth, Inc., Kansas City, Mo., a corporation of Missouri
Filed June 21, 1966, Ser. No. 559,320
5 Claims. (Cl. 17—11)



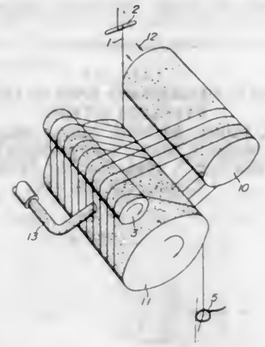
A device for unloading poultry suspended from shackles on a conveyor line in a poultry processing plant, each of said shackles being generally planar in a vertical plane and having downwardly convergent notches in which portions of a bird's anatomy are engaged and from which said bird may be disengaged by upward movement thereof in said notches, said shackle being suspended by a drop rod pivoted at its upper end to said conveyor, said unloading device comprising a pair of lift rails disposed closely adjacent each side of the path of travel of said shackles and being inclined upwardly in the direction of conveyor travel, a series of stop fingers supported to project horizontally between the drop rods of the shackles engaged between said lift rails to prevent rearward swinging of said drop rods on their pivots, and means operable by said conveyor to move said stop fingers in the same direction and at the same speed as said conveyor.

3,416,187
PATTY MOLDING MACHINE
Rene A. Chartier, 4361 E. 10th Lane, Hialeah, Fla. 33013
Filed Apr. 18, 1966, Ser. No. 543,388
2 Claims. (Cl. 17—32)



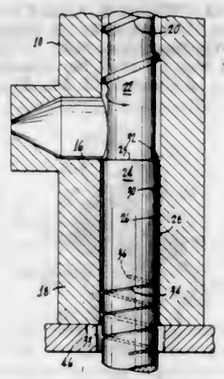
A patty molding machine comprising a reciprocable mold plate having openings defining the shape and thickness of patties to be molded and a reciprocating piston for forcing the food to be molded from a pressure chamber through communicative openings and into the mold openings with automatically controlled pressure afforded by a spring-controlled override mechanism, the mold plate being reciprocable in sliding movement out of communication with the food pressure chamber in such timed relation with respect to the reciprocating piston as to remove patties of uniform density and shape from the food pressure chamber for deposit on a conveyor.

3,416,188
APPARATUS FOR HEAT-TREATING THERMOPLASTIC SYNTHETIC FIBERS
Norboru Fukuma, Kazuo Jono, Toshihiko Kihara and Yuzo Midorikawa, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan
Filed Aug. 24, 1965, Ser. No. 482,103
Claims priority, application Japan, Aug. 25, 1964, 39/47,852; Sept. 11, 1964, 39/51,366
3 Claims. (Cl. 18—1)



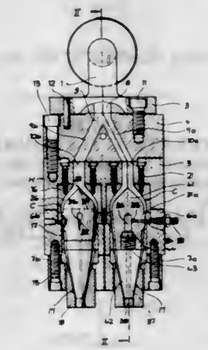
Apparatus for heat-treating thermoplastic synthetic fibers to improve the shrink characteristics thereof in which a traveling filamentary fiber is guidably advanced along a helical path in contact with the surface of a roller such that the fiber is cold stretched as it passes along a smooth surface portion of the roller, whereafter the thus stretched fiber is heat relaxed as it passes on a separate aventurine surface of the same roller.

3,416,189
SHAFT SEAL FOR EXTRUDERS OF HEAT-SENSITIVE PLASTICS AND LIKE MATERIALS
Benjamin P. Welt, 16 Hart Drive, South Orange, N.J. 07079
Filed Mar. 10, 1967, Ser. No. 622,219
10 Claims. (Cl. 18—12)



The feed screw shaft of a plastic materials extruder bears in a land in the extruder barrel. Material forced between the shaft and land forms a seal through which there is zero leakage during off periods. A helical groove in the shaft extends for part of the seal land length, and during duty cycles, is effective to reduce the length of the land. The shortened land is inadequate to support zero leakage, so that material bleeds through the seal to replace worn sealing material with fresh material that will serve as a static sealing agent during the next off period.

3,416,190
DIEHEAD
Gottfried Mehnert, Lankwitzer Str. 14/15, Berlin-Mariendorf, Germany
Filed June 28, 1966, Ser. No. 561,098
20 Claims. (Cl. 18—14)

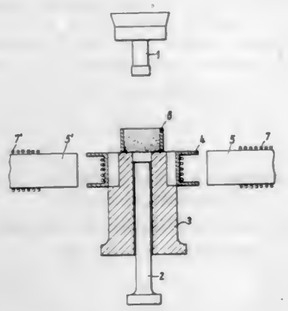


A plastic extrusion apparatus in which a torpedo-shaped core is arranged with clearance in the housing of the diehead to define between the outer surface of the core and the inner surface of the housing an annular passage through which plastic material under pressure may pass from the inlet to the outlet of the housing and in which a plurality of preferably equally spaced self-centering projections extends substantially radially outwardly from the core. The projections have outer faces abutting flush against portions of the inner surface of the housing which taper towards the outlet of the latter so that the pressure of the plastic material will press the outer faces of the projections against the inner surface portions to maintain the axial position of the core relative to the housing and to prevent any plastic material to penetrate between the outer faces and the inner surface portions to thus maintain perfect centering of the core.

3,416,191
APPARATUS FOR COMPACTING PERMANENT MAGNET POWDERS INTO PRESSINGS
Henning Richter, Dortmund, Karl Heinz Büttner, Dortmund-Wambel, and Gerhard Bintzek, Dortmund-Brackel, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft
Filed Mar. 14, 1966, Ser. No. 533,899
Claims priority, application Germany, Mar. 30, 1965, D 46,932
3 Claims. (Cl. 18—16.5)

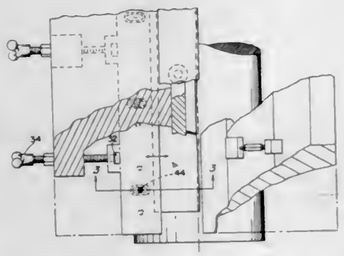
1. Apparatus for compacting permanent magnet powders into pressing magnetised diametrically across the pressing direction in a die into which the powder is introduced by magnetic suction, comprising the die and a magnet coil which are relatively movable in the axial

direction of the die for drawing the powder into the die and a pair of magnet coils with poleshoes moveable cross-



wise of the pressing direction at the level of the pressing inside the die.

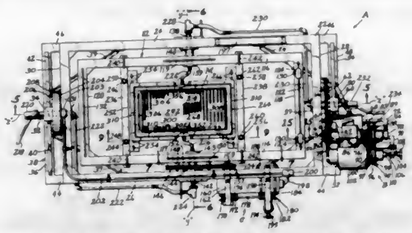
3,416,192
TREATING MATERIALS
Thomas D. Packard, Stoughton, Mass., assignor to Bird Machine Company, Walpole, Mass., a corporation of Massachusetts
Filed Oct. 14, 1966, Ser. No. 586,790
5 Claims. (Cl. 18—19)



Shown is a machine for applying lengthwise compressional forces to materials confined in a treatment cavity while moving on a drive roll. Preceding the retarding device is a sheet form member, the face of which presses the material against the drive roll. Adjustment forces applied in the direction of the plane of the sheet mmeber at a number of points, with the end portion of the sheet member supported against deflection away from the roll surface, provide a means of regulating the treatment in the cavity to compensate for variations in the material and in the machine surfaces. Shown also are a bar secured to the sheet member for applying the forces; the sheet member extending over a substantial unsupported length to its end portion; and a retarder device comprising a stationary retarder and a resilient cooperating member in the form of a flexible sheet member.

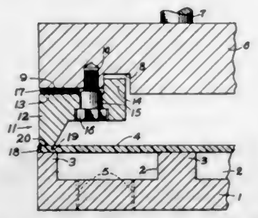
3,416,193
ROTATIONAL MOLDING APPARATUS AND MOLD THEREFOR
George E. Freeborn, Faribault, Minn., assignor to Faribo Manufacturing Company, Inc., Faribault, Minn.
Filed Apr. 18, 1966, Ser. No. 544,061
6 Claims. (Cl. 18—26)

A rotational molding apparatus including a base, an outer frame support, means carried by the base for rotating the outer frame support on an axis thereof, an inner frame support together with means carried by the outer frame support for rotating the inner frame support on an axis thereof, a mold adjustably mounted on the



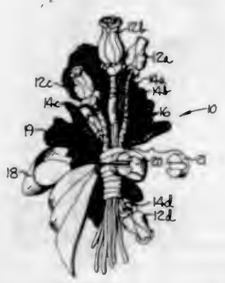
inner frame support, together with means for supplying a liquid to and from the mold for heating and cooling the same while the inner and outer frame supports are rotated.

3,416,194
MOLD CLAMPING AND SEALING CONSTRUCTION
Frederick O. Miller, Saginaw, Mich., assignor to Miller Mold Co., Saginaw, Mich., a corporation of Michigan
Filed Oct. 7, 1966, Ser. No. 585,004
9 Claims. (Cl. 18—35)



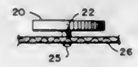
1. A mold construction comprising a first member on which material to be molded may be supported; a second member adapted to overlie said first member with said material interposed therebetween; a clamp member carried by one of said members having a plurality of spaced apart substantially coplanar continuous surfaces adapted to engage said material and clamp it tightly against the other of said members; and deformable means interposed between said one of said members and said clamp member for enabling relative movement therebetween.

3,416,195
FLORAL CORSAGE AND FASTENER
Theodore H. Borthwick, 230 Fairfax Drive, Winston-Salem, N.C. 27104
Filed May 31, 1967, Ser. No. 642,468
5 Claims. (Cl. 24—5)



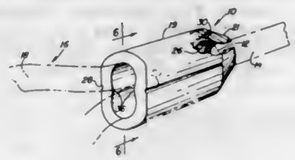
The combination of a floral corsage and a pair of mutually attractive magnetic bodies for fastening the corsage to an article of clothing for display as a personal ornament without penetration of the fabric thereof.

3,416,196
BUTTONS
Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804
Filed Feb. 13, 1967, Ser. No. 615,427
4 Claims. (Cl. 24—90)



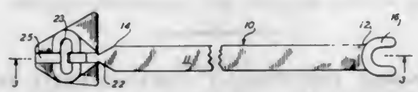
Buttons with deformable, substantially pointed projections and a proturberant, spacer member on center portion of rear faces thereof.

3,416,197
LOOP-FORMING CABLE FITTING
Edward R. Mark, 6819 NE. Broadway, Portland, Oreg. 97213
Continuation of application Ser. No. 379,198, June 30, 1964. This application Sept. 6, 1966, Ser. No. 577,530
2 Claims. (Cl. 24—123)



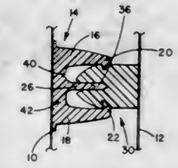
A fitting for forming a loop in a cable is of initial elliptical cross-section with grooves along the center of its sides to eliminate flash upon compression of the fitting. The fitting has an interior shoulder to position the cable end, and is formed of cast brass of between 85 to 89 percent copper and 15 to 11 percent zinc.

3,416,198
RETAINING AND LOCKING DEVICE
George H. Geisinger, Elizabeth, N.J., assignor to The Thomas & Betts Co. Inc., Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 3, 1967, Ser. No. 613,886
9 Claims. (Cl. 24—150)



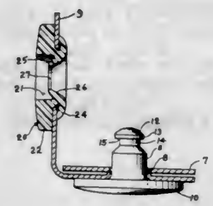
A retaining and locking device having an elongated strap body portion to be passed through an assembly of items, a base portion formed at one end thereof to abut the assembly and prevent excess insertion, and a locking head movable on the projecting end of the strap body portion, and against the assembly, with means for locking the head on the strap body portion against the assembly, thus saving time and cost in retaining the assembly and eliminating the need for use of 360° wrapping devices such as have been conventionally used.

3,416,199
SEAL FOR BAGS
Harry H. Imamura, Seattle, Wash., assignor, by mesne assignments, to Minigrip, Inc., Orangeburg, N.Y., a corporation of New York
Filed June 10, 1965, Ser. No. 462,918
2 Claims. (Cl. 24—201)



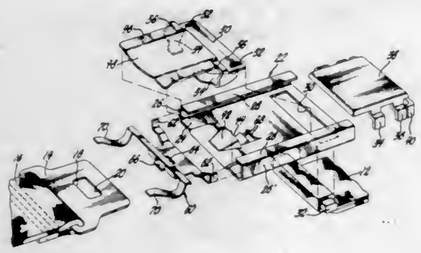
A seal for releasably closing an open end of a plastic bag. The seal includes elongated male and female elements formed along adjacent surfaces of the open end of the bag. The two elements may be pressed into engaging relation with one another along the lengths thereof to close the open end of the bag and then may be pulled apart to disengage the two elements to again open the end of the bag.

3,416,200
PERMANENTLY LOCKING SNAP FASTENER
Domenic J. Daddona, Jr., Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Mar. 22, 1967, Ser. No. 625,173
4 Claims. (Cl. 24—208)



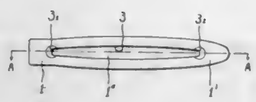
A permanently locking snap fastener as used on hospital identification bracelets and mail pouches economically made of plastic material, the socket and stud each consisting of a one-piece molding. An angular locking strut in the socket snaps behind an abrupt shoulder on the stud when the parts are brought together. The stud head is made solid rather than slotted, and the locking strut is preferably an uninterrupted wall to resist any such deformation as might permit the fastener to be pulled apart. The head must be made somewhat larger than the opening in the strut portion of the socket to permit manual engagement of the parts and a substantial clearance between the stud neck and the opening allows shifting of the stud head over the edge of the strut to lock the stud in the socket even more securely when an attempt is made to pull them apart.

3,416,201
SEAT BELT BUCKLE
Robert E. Meshew, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,043
4 Claims. (Cl. 24—230)



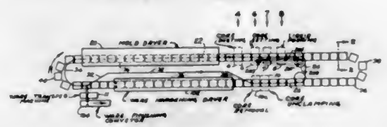
In a seat belt assembly, a lock plate is attached to one of the strap ends and is engageable with a buckle which is adjustably attached to the other strap end. The buckle comprises a frame which mounts a strap adjustment slide bar that is enclosed by a rear cover. The frame includes channel-shaped sides and a locking boss struck out from the base and engageable with the lock plate. A spring is secured to the base and includes a pair of curved arms confined in the side channels for biasing the inserted lock plate downwardly into engagement with the locking boss. A front cover engages the spring and is confined within the side channels. The front cover includes a pair of depending curved tabs which rockably engage the base and underlie the inserted locking plate. Lifting causes pivoting or rocking of the cover member on the tabs which raise the lock plate against the bias of the spring arms and out of engagement with the locking boss to permit withdrawal.

3,416,202
RESILIENT PLATE CLIP
Takenori Sasaoka, 3072–2, Koiwacho, Edogawa-ku, Tokyo, Japan
Filed July 19, 1967, Ser. No. 654,561
Claims priority, application Japan, July 24, 1966, 41/69,811
3 Claims. (Cl. 24—259)



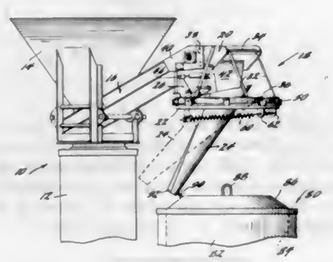
A resilient plate clip is disclosed here, very simple in construction and use and very economical in manufacture. According to the present invention, a resilient steel plate is folded in two portions, a long slit is formed in one of these two portions, both ends of said slit are pressed so that said slit portion can be made resiliently inflective in opposite directions. This resilient plate clip is different from conventional ones of prior art in that the central part and end part of said slit portion have only to be pushed by the finger tips to open and close in opposite directions alternately.

3,416,203
AUTOMATIC APPARATUS WITH CONTINUOUSLY MOVING CONVEYORS FOR CASTING CERAMIC ARTICLES
Gilbert J. Ozenne, Manhattan Beach, and Floyd M. Stephen, Bellflower, Calif., assignors to American Standard Inc., a corporation of Delaware
Filed June 17, 1964, Ser. No. 375,892
14 Claims. (Cl. 25—29)



2. A casing machine comprising a first continually moving overhead conveyor for casting cores; a second continually moving lower conveyor for mold cavity members; first means automatically operable to remove individual casting cores from the overhead conveyor and deposit same in the moving mold cavity members without halting either conveyor; second means downstream from the first means for feeding liquid casting material into the defined mold cavities without halting the lower conveyor; and third means downstream from the second means for automatically transferring cores from filled mold cavity members onto the overhead conveyor without halting either conveyor.

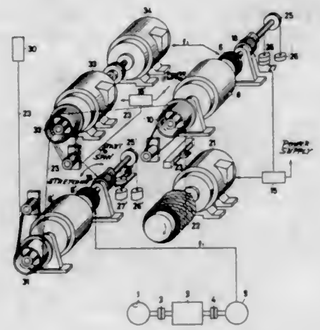
3,416,204
SELF-TRACKING CONCRETE CHUTE
Philip L. Waddington, Brantford, Ontario, Canada, assignor to Concrete Pipe Machinery Company, Sioux City, Iowa, a corporation of Iowa
Filed Sept. 30, 1966, Ser. No. 583,177
8 Claims. (Cl. 25—103)



The disclosure comprises a self-tracking concrete chute for pouring concrete into a concrete pipe mold in an endless spiral stream and includes a conveyor, rotatable about a concrete supply station, a chute rotatably mounted beneath the free end of the conveyor, a spring assembly urging the lower chute end against a frusto-conical top of the inner member of the pipe mold, a roller on the chute end to guide the chute about the mold and lever means to move the chute to a non-pouring position.

3,416,205
TENSION ADJUSTMENT ARRANGEMENT FOR STRETCHING AND WINDING MACHINES
Artur Müller, Karlsruhe, Baden, Germany, assignor to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany, a corporation of Germany
Filed July 24, 1967, Ser. No. 655,404
Claims priority, application Germany, July 29, 1966, J 31,428
6 Claims. (Cl. 28—71.3)

A tension adjustment for stretching and winding machines which produce spools or windings of thread or other textile fibers. The thread or other material before taken up by a motor driven rotary winding body is guided over at least one motor driven tension controlling rotary body. The two motors are controlled in their relative speeds to one another in such a manner that the rotary



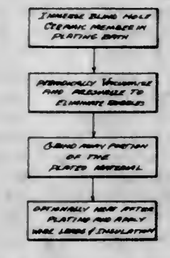
body controls and changes the tension in the material to be wound up, while the other motor in accordance with the gradually increasing diameter of the winding forming on the winding body is so controlled that it drives the winding body with a gradually decreasing speed.

3,416,206
MEANS FOR LOCALIZING TENSION IN RUNNING YARN
Frederick C. Allen, Abergavenny, England, assignor to British Nylon Spinners Limited, Pontypool, Monmouthshire, England
Filed Mar. 8, 1965, Ser. No. 437,986
Claims priority, application Great Britain, Mar. 12, 1964, 10,434/64
10 Claims. (Cl. 28—71.3)



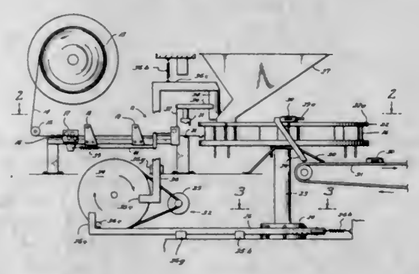
The tension in a running length of yarn is localized by passing the yarn in contact with a nonrotatable curved surface having a profile with a continuously increasing radius of curvature along at least substantially the entire yarn path.

3,416,207
METHOD OF MANUFACTURING A CAPACITOR
Francis X. Maida, Hampton, Va., assignor to Maida Development Company, Hampton, Va., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,547
7 Claims. (Cl. 29—25.42)



1. The method of producing a capacitor which comprises the steps of
immersing a blind hole ceramic member into a plating bath,
periodically applying a vacuum above the surface of the plating solution to elimnate formation of bubbles,
grinding away a portion of the plated material from the outside surface of the ceramic member, and then
attaching wire leads in the usual manner.

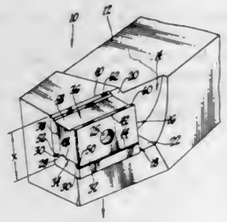
3,416,208
APPARATUS FOR AUTOMATICALLY PRODUCING A DEODORANT BLOCK HAVING A HANDLE
George A. Sarandos, 6906 Ashcraft, Houston, Tex. 77036
Filed Mar. 10, 1967, Ser. No. 622,351
7 Claims. (Cl. 29—33)



A table which rotates to various manufacturing stages is provided with multiple, equally spaced hollow cylindrical receptacles with the upper ends of the receptacles opening flush against the top of the table. A movable piston seated at the bottom of each of the recptacles is provided with a rod connected to the piston and projecting from the bottom of the receptacles. An axial slot along the outer wall of each of the receptacles opens to the outer circumference of the table. A wire insertion mechanism is provided for inserting the crimped leading end of a wire into the slot in the receptacle. The wire insertion mechanism has a first fixed wire lock with a spring loaded inclined wedging member which permits movement of the wire in the direction of the table and a second movable wire lock which moves back and forth over the wire so that it feeds the wire from the supply roll to the table when it moves in the direction of the table and slips along the wire without moving it when it moves away from the table. A gravity feed hopper

containing loose crystals of a chemical deodorant is positioned above the table. The hopper has a circular opening at its lower end which rides against the upper surface of the table. When the opening in the hopper registers with the top of one of the cylindrical receptacles, crystals from the hopper are loaded into the receptacle. A tool between the wire insertion mechanism and the rotating table crimps and cuts the wire. The tool has a fixed die face co-operating with a movable die face whereby the wire between the die faces is cut when the faces meet and a crimp is impressed on the supply roll end of the severed wire. A plunger mounted over the table compresses the loose crystals in the receptacle. When a receptacle is under the plunger, the wire insertion apparatus inserts the crimped wire through the slot in the receptacle and into the loose crystals contained therein. The plunger then compresses the crystals about the crimped wire to form a solid block. The table rotates to a final station whereupon the piston rod at the bottom of the cylinder is pushed upwardly to eject the completed block.

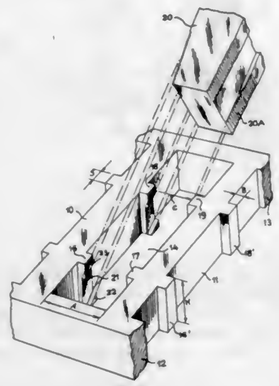
3,416,209
CUTTING TOOL
Raymond J. Contrucci, Rochester, Walter H. Kelm, Mount Clemens, and Henry M. Schrier, Centerline, Mich., assignors to General Electric Company, a corporation of New York
Filed Mar. 24, 1966, Ser. No. 537,129
5 Claims. (Cl. 29—96)



A heavy-duty cutting tool for the machining of metal in which an indexable and invertible cutting insert and cutting insert seat are mounted on a side of the shank of the cutting tool. The insert in its preferred form has an H-shaped cross section and the seat has a complementary shape for full support of the insert. The shape of the insert and seat and the manner in which they are mounted on the toolholder are such as to provide maximum performance in machining operations involving large feeds and depths of cut.

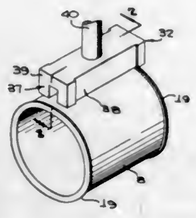
3,416,210
METHOD OF MANUFACTURING NEEDLE BEARING CAGES
Giacomo Einaudi, Turin, Italy, assignor to RIV-SKF Officine di Villar Perosa S.p.A., Turin, Italy
Filed July 26, 1966, Ser. No. 567,926
Claims priority, application Italy, July 31, 1965, 17,939/65
3 Claims. (Cl. 29—148.4)

1. In the method of manufacturing a roll cage for a needle bearing of the character comprising a pair of solid end rings integrally interconnected by solid roll-separating bars defining roll-windows therebetween, and wherein each of the windows is formed at locations adjacent its end portions with a pair of chordal surfaces for guiding a respective roll on its assigned axial plane of the cage, each of said chordal surfaces having adjacent thereto a pair of circumferentially directed projections located at radially opposite sides of the pitch cylinder of the cage for radially retaining the rolls in the cage; said method comprising punching in a cage blank the roll-windows having end sections of a width greater than the roll diameter permitting passage of a slotting tool through said sections in a direction inclined to the blank axis, and slotting the flanks of the windows between said end sections over a radially limited extent by passing the said tool in said direction through the window to thereby form said chordal surfaces;



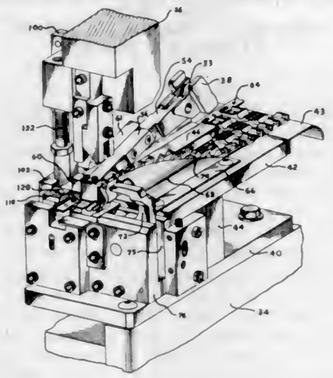
the improvement comprising forming each window in the blank with a width greater than the roll diameter, except for a pair of constricted regions, each of which is confined between a pair of mutually opposing chordal ribs on the window flanks, and forming the said chordal roll-guiding surfaces and the roll-retaining projections by slotting each rib by means of said tool to a depth smaller than the extent by which the rib protrudes from its respective bar into the window.

3,416,211
METHOD OF PUNCH-FORMING WINDOWS IN BEARING RETAINERS
Sven Robert Ahlman, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Original application Dec. 19, 1962, Ser. No. 245,736, now Patent No. 3,314,737, dated Apr. 18, 1967. Divided and this application Jan. 6, 1967, Ser. No. 607,753
6 Claims. (Cl. 29—148.4)



This disclosure is directed to providing a method for making bearing retainers and wherein windows are punched in the retainers, the windows having wall portions at different angular relationships with each other for retaining rollers therein. The method is directed to obtaining these different angular relationships between the window wall portions. Punch and die means are employed in practicing the method and the dies are especially configured to have two die elements which are movable simultaneously into shearing contact with a retainer, and whereby upon one punching operation portions of a first window are sheared by a first punching element, and portions of a second window are sheared by a second punching element. The retainer is then pivoted, or indexed such that the second window is positioned beneath the first punching element, and whereby, during another punching operation portions of the second window are punched by the first punching element, which completes that window, simultaneously with the punching of portions of a third window by the second punching element. This process is continued, until all windows have been punched by both punching elements, and the retainer is completed.

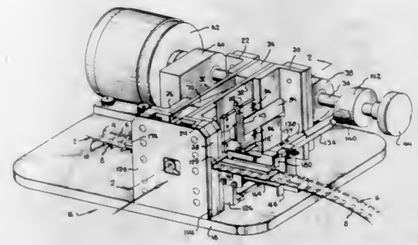
3,416,212
APPARATUS FOR APPLYING INSULATING HOUSINGS TO ELECTRICAL TERMINALS
Willard L. Busler and Howard C. Phillips, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 3, 1966, Ser. No. 570,054
5 Claims. (Cl. 29—203)



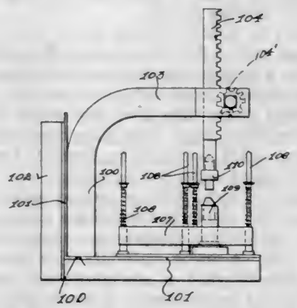
1. Apparatus for assembling insulating housings to terminals, said housings being in ladder strip form and each housing comprising first and second hinged-together parts adapted to close into enveloping relationship with a terminal, said apparatus comprising means for feeding a strip of said housings along a predetermined path to an assembling zone, supporting means in said zone for supporting the leading housing of said strip, ram means reciprocable towards and away from said supporting means, bending means in said zone for bending said first one of said parts partially towards the second one of said parts until said first part is on the path of reciprocation of said ram, and punch means on said ram for further bending said first part towards said second part and into assembled and enveloping relationship with a terminal.

3,416,213
CRIMPING APPARATUS FOR ELECTRICAL TERMINALS
Harold Edwin Cootes, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Aug. 16, 1966, Ser. No. 572,713
7 Claims. (Cl. 29—203)

1. Apparatus for crimping electrical connecting devices in strip form onto the ends of conductors comprising, means for feeding a strip of said devices to an operating zone, a plurality of indentors disposed in surrounding relationship to said zone, closable terminal gripping means in said zone for gripping the leading terminal of said strip and properly locating said leading terminal with respect to said indentors, said gripping means being normally closed and holding a previously fed terminal centered with respect to said indentors, and means for sequentially driving said indentors into said terminal, retracting said indentors, opening said gripping means, feeding the next adjacent terminal to said operating zone, and closing said gripping means onto said next adjacent terminal whereby, upon insertion of a wire into said leading terminal and actuating said apparatus, said leading terminal is crimped onto said wire and said next adjacent terminal is properly located in said operating zone for the next operating cycle.

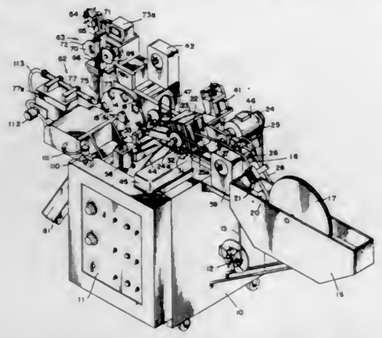


3,416,214
DIODE INSTALLATION AND REMOVAL APPARATUS
Ernest E. Clark, 3302 Kay St., Corpus Christi, Tex. 78411
Filed Sept. 29, 1966, Ser. No. 584,326
6 Claims. (Cl. 29—203)



1. In an apparatus for the installation and removal of diodes from automotive engines, a main frame supported on a base backed up by a vertical support member, a supporting arm extending at a right angle therefrom, a gear rack positioned in said supporting arm and power means for said rack, said gear rack adapted for said diodes to be positioned in the bottom of said gear rack, a cylindrical back-up tool positioned on said main frame, a movable head guide and holding rack located on the horizontal portion of the main frame directly above said back-up tool, said head guide having a plurality of vertical posts positioned in said main frame whereby a holding rack is provided as said diodes are replaced.

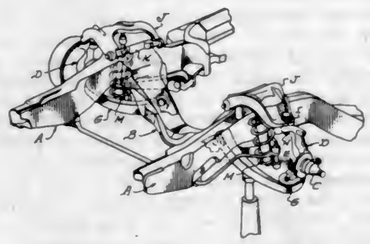
3,416,215
AUTOMATIC ANODE WINDING MACHINE
Edwin T. Allen, Lexington, N.C., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,282
6 Claims. (Cl. 29—204)



1. A winding machine adapted to form alternate layers of a metallic foil and an absorbent paper material to form an anode in a casing, said machine comprising:
(a) individual supply reels providing a source of supply for a metal foil strip, and a strip of absorbent paper material;
(b) motor driven metal foil corrugating rolls for corrugating said metallic strip and for pulling said strip from said supply reel;
(c) means to feed the so corrugated metal strip to a strip winding means;
(d) sequentially timed cutting means for cutting a pre determined length of said corrugated metal foil;
(e) roller drive means for intermittently feeding a predetermined length of said absorbent paper strip to said foil winding means;
(f) means to direct a source of air under pressure at the free end of the cut, corrugated metal strip so as to form a tension free length of said strip;
(g) sequentially timed cutting means for cutting said absorbent paper strip after said metal foil strip and said absorbent paper strip have been wound on said winding means in alternating layers to form an anode in the form of a spool of such layers;
(h) means to index the so formed anode to become aligned with means for applying a casing around said anode, said means comprising a supply reel for feeding a strip of casing material, drive rolls adapted to intermittently feed a predetermined length of said strip to said anode, means to apply said casing about said anode, sequentially timed cutting means for cutting said casing, and sealing means to effect a connection between the ends of said strip; and
(i) means to eject the completed anode with its casing from said indexing means.

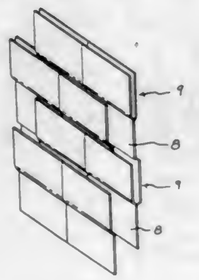
3,416,216
MOTOR VEHICLE WHEEL SUSPENSION BALL JOINT INSTALLING TOOL
John H. Castoe, 6718 Shady Grove St., Tujunga, Calif. 91042
Filed Jan. 30, 1967, Ser. No. 612,702
7 Claims. (Cl. 29—261)

A screw operated tool for in situ, press fit installation of steering knuckle support ball joint assemblies in the arm components of motor vehicle front wheel suspension means. Means is provided to accommodate different diameters of ball joint assemblies and different widths of the arm component at the openings in which the ball joint



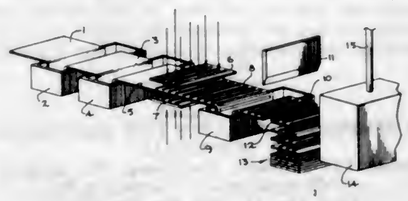
assemblies are installed. Adaptors are provided, whereby the tool is additionally employable to press out ball joint assemblies which are to be replaced.

3,416,217
METHOD FOR MAKING LAMINATED SHEET METAL FROM RECLAIMED TINNED METAL WASTE PIECES
Fred M. Walker, 1014 6th Ave., S., Escanaba, Mich. 49829
Filed Apr. 1, 1966, Ser. No. 540,165
4 Claims. (Cl. 29—403)



A method of making multi-layer metal sheet from tin cans by slitting and flattening the cans and arranging the flat pieces in an interlocking overlapping configuration.

3,416,218
METHOD OF FORMING AN EXPANDABLE METALLURGICALLY BONDED ALUMINUM CELLULAR CORE
Carl T. Armenoff and Edward L. Reed, Woodland Hills, Calif., assignors, by mesne assignments, to North American Rockwell Corporation, a corporation of Delaware
Filed Sept. 25, 1964, Ser. No. 399,310
11 Claims. (Cl. 29—470.9)



A method of forming an expandable aluminum honeycomb core structure. Anodized and active areas of pre-

determined width and spacing are provided on adjacent aluminum foil surfaces, generally in an offset pattern. The active areas are solid-state bonded to form an expandable block of cellular core material. The active areas of aluminum foil are preferably coated with a thin layer of a metal such as silver which eutectically bonds the aluminum members in a metal-to-metal bond.

3,416,219
METHOD FOR MOUNTING VERY FINE WIRES
Michael D. Petroff, Los Angeles, and Stanley F. Swiadek, Pasadena, Calif., assignors to National Engineering Science Company, Pasadena, Calif., a corporation of California
Filed June 13, 1966, Ser. No. 557,261
5 Claims. (Cl. 29—471.1)



1. A method for mounting a length of extremely fine wire on a frame, said method comprising the steps of:
Coating one end of the wire with a material having sufficient weight to keep the wire vertically straight when freely suspended from its other end; freely suspending the length of wire from said other end; coating a pair of opposite sides of the frame with a metallo-organic compound that will form a metallic film thereon when suitably heated; bringing top and and bottom portions of the wire into contact with said coated sides of the frame by rotatably positioning the frame in such a manner that one of the coated sides of the frame is nearer the wire than the other of the coated sides, slowly moving the suspended wire toward the frame until the top portion of the wire contacts the nearer coated side thereof, and rotating the frame until the other coated side thereof contacts the bottom portion of the wire; and heating the frame and the wire to reduce said metallo-organic compound to a metallic film that bonds the wire to the sides of the frame.

3,416,220
METHOD OF BOW STRINGING AND BOW STRINGER
Richard I. Wilson, Kalamazoo, Mich., assignor to Shakespeare Company, Kalamazoo, Mich., a corporation of Michigan
Filed Sept. 17, 1965, Ser. No. 488,100
6 Claims. (Cl. 29—446)

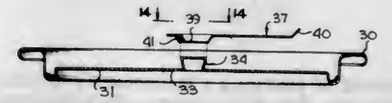
1. A device for assisting in the stringing of an archery bow which comprises a flexible strap adapted to be placed around an archer's foot at the instep thereof, means for adjustably securing said strap to form a fixed loop comprising a pair of metallic rings engaged within a loop formed in the end of said strap, and means affixed to said strap for engaging and restraining one end of said bow while said bow is being flexed and a bow string affixed to its other end which comprises a flexible frustoconical strap loop oriented perpendicular to and encircling said strap and affixed at its ends thereto, said loop being wider at its center than at its ends.

2. A method for stringing an archery bow which comprises mounting an assisting device on the foot of one leg, said device comprising a flexible strap encircling the foot and having means at one end adjustably securing said strap about said foot and having means affixed to said strap for engaging and restraining the end of a



bow, inserting the lower end of said bow having one end of a bow string secured thereto into said engaging and restraining means, placing the handle of said bow against the thigh of the other leg, flexing the bow by manually pushing on the upper end of the bow and securing the other end of said bow string to the upper end of said bow.

3,416,221
METHOD OF PRE-FORMING AND ATTACHING METAL PULL TAB TO METAL CAN END RIVET FORMATION
John Henchert, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,763
9 Claims. (Cl. 29—509)

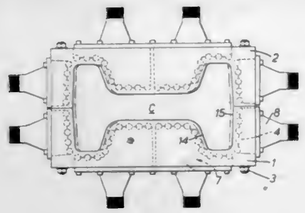


9. A method of securing a pull tab to a tear strip of a container member, said method comprising the steps of shaping the container member to have an integral tubular rivet having free end and a base end connected to the container member, forming an opening in the pull tab of a diameter to snugly receive the rivet base end, deforming the pull tab around the opening therein to define a flared flange surrounding the opening with the opening being offset from the original position thereof and the diameter of the opening increased to receive the rivet free end, positioning the pull tab on the rivet, flattening the flange of the pull tab to reduce the diameter of the pull tab opening with the pull tab gripping the rivet base end, said crimping the rivet free end over the pull tab around the pull tab opening to further and securely attach the pull tab to the container member.

3,416,222
MANUFACTURE OF ELONGATE ARTICLES
John Pearson, Dore, Sheffield, England, assignor to The British Iron and Steel Research Association
Continuation of application Ser. No. 451,785, Apr. 29, 1965. This application Feb. 16, 1968, Ser. No. 706,188
Claims priority, application Great Britain, May 5, 1964, 18,713/64
4 Claims. (Cl. 29—528)

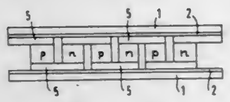
A method of making an elongate metal article having a cross-section which is constant longitudinally of the article and has a re-entrant portion, which method com-

prises the steps of feeding molten metal into an open-ended mold defining a cavity having a transverse cross-section larger than but of substantially the same geometric



shape as the cross-section of said article, withdrawing the casting from the mold and rolling it while completely solidified to produce a reduction of at least 5:1 in the cross-sectional area of the casting.

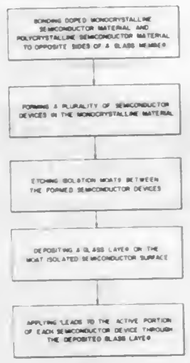
3,416,223
METHOD OF PRODUCING THERMOBATTERIES
Heinz Walz, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Oct. 24, 1965, Ser. No. 504,399
Claims priority, application Germany, July 2, 1965, S 97,948
2 Claims. (Cl. 29—573)



Method of producing a thermobattery includes covering the base plate of the battery with an insulating layer formed of a foil of synthetic plastic containing glass fiber, coating the plastic foil on both sides with a polymerizable bonding agent, cementing the foil onto the base plate and to a thermobattery conductor plate respectively with the aid of a bonding agent, covering the conductor plate with photosensitive varnish, exposing the varnish to an illumination pattern corresponding to that formed by thermobattery contact members, and etching the conductor plate through the resulting varnish mask to convert it to the contact members pattern.

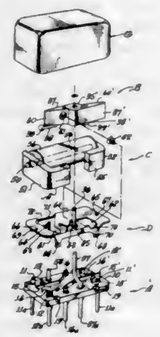
3,416,224
INTEGRATED SEMICONDUCTOR DEVICES AND FABRICATION METHODS THEREFOR
William J. Armstrong and Albert M. Healy, Essex Junction, Vt., and Michael C. Duffy, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 8, 1966, Ser. No. 532,754
10 Claims. (Cl. 29—580)

A method of fabricating insulator encapsulated, dielectrically isolated integrated semiconductor devices. A doped monocrystalline semiconductor material and a polycrystalline semiconductor material are bonded to opposite sides of a glass member. Then, a plurality of semiconductor devices are formed in the monocrystalline material, after which isolation moats between such semiconductor devices are formed by etching. A glass layer is deposited over the surface containing the moat-isolated devices to provide dielectric isolation between the devices, as well as dielectric or insulator encapsulation of the entire semiconductor substrate. Conductive connections are then



formed to active portions of each semiconductor device through the glass covering layer.

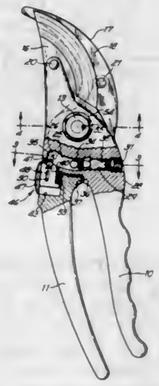
3,416,225
METHOD OF ASSEMBLING A RELAY
Thomas Ross Welch, Los Angeles, Calif., assignor to Welch Relay Company, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 18, 1963, Ser. No. 317,366
26 Claims. (Cl. 29—593)



A method of assembling a relay having a contact header with fixed and movable contact posts of cylindrical form including the steps of fabricating the header; fabricating a pair of fixed contacts each of resilient ribbon metal of generally spiral form with a curled hub and a generally circumferential contact tip; fabricating a resilient movable contact blade with a hub curl at one end; locating the header in a jig so as to establish a datum axis by reference to which the contact positions can be established; providing test circuit connections to some of the contact posts; adjusting the movable contact to an unstressed position with its blade in contact with the hub of a respective fixed contact and fixing it in that position; and then rotating the normally closed contact to a position in which its blade is preloaded in a flexed condition and fixing it in that position.

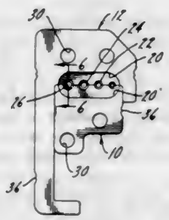
Also, a method of assembling the magnetic subassembly of a relay to a previously assembled contact and armature subassembly, by effecting relative movement between the subassemblies so as to mate them; then further moving the magnetic-armature subassembly so as to reverse the contact positions; and then securing the subassemblies together in a positional relation thus determined.

3,416,226
PRUNER
Arthur K. Pfaffenbach, Watertown, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 579,947
7 Claims. (Cl. 30—261)



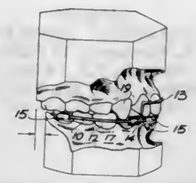
A pruner having crossed pivoted levers, and a pruner opening mechanism including a recess defined in one lever open to the engaging faces of the levers and a spring positioned in this recess and held therein by a closure inserted from the exterior of the pruner over one end of the recess.

3,416,227
PRECISION LAMINATED STRIPPER BLADE
Harrison M. McDonald, Dekalb, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed Oct. 5, 1966, Ser. No. 584,399
4 Claims. (Cl. 30—348)



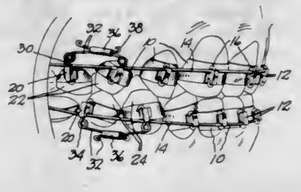
A stripper blade which is formed by a plurality of laminates which are stacked and joined in registry. A wire insulation cutting knife may be formed by one or more laminates. The laminates may be formed to provide collets to center and grip the wire to be stripped.

3,416,228
ORTHODONTIC APPLIANCE
Frank A. Grimmett, 3660 Glenmere Drive, Youngstown, Ohio 44511
Filed Jan. 18, 1966, Ser. No. 521,354
2 Claims. (Cl. 32—14)



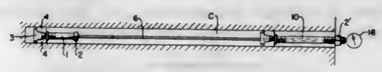
An orthodontic appliance consisting of a curved member adapted to be positioned around the exterior surfaces of the teeth of the lower jaw and an arcuate member positioned in fixed relation above the front portion of said curved member and offset forwardly for engaging teeth of the upper jaw to limit the inward motion of the lower jaw relative thereto.

3,416,229
ORTHODONTIC UPRIGHTING SPRING
David L. Kesling, 3843 Hiawatha Drive, Michiana Shores, Michigan City, Ind. 46360
Filed Jan. 23, 1967, Ser. No. 610,845
8 Claims. (Cl. 32—14)



An orthodontic uprighting spring having two spring wires each having a coiled part intermediate its ends, wherein adjacent end parts are slidably connected and the opposite end parts are anchored to bands carried by adjacent tilted teeth independently of arch wires to exert uprighting force upon said teeth.

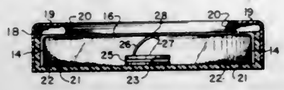
3,416,230
MEANS FOR MEASURING MOVEMENT IN MASSES OF ROCK OR THE LIKE
Raymond W. Oleson, 1041 Mildred, Chico, Calif. 95226, and Elmo G. Leishman, 3629 Ashley Ave., Oroville, Calif. 95965
Filed July 11, 1966, Ser. No. 564,319
6 Claims. (Cl. 33—1)



The apparatus is used for measuring the relaxational movement of a mass of rock or the like when it is relieved of its stress by removing a part of the confining support, as in open cut excavations, tunnels, etc. It comprises a pair of independent expansion bolts adapted to be anchored at inner and outer spaced points in a hole drilled into the mass of rock. A rod is anchored at one end to the bolt at the inner point and extends loosely

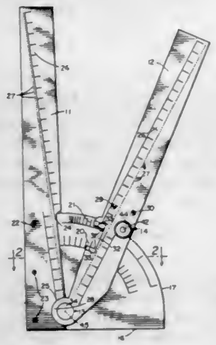
through the hole into an opening in the bolt at the outer point, and a manually movable meter, at the bolt at the outer point, and co-operating with the free end of said rod measures the relative movement which has taken place between the bolts at the two points.

3,416,231
DRAWING DEVICE
John N. Mercorelli, 37 Halleck St., Newark, N.J. 07104
Filed June 7, 1967, Ser. No. 644,355
9 Claims. (Cl. 33—18)



A drawing device in which a movable weight is skillfully moved in a housing in a chosen direction and distance by tilting, or by tilting and percussing the housing; the movement of the weight moves a contact finger mounted on the weight, to scrape off a coating from the underside of a transparent portion of the housing, thereby making an externally visible design.

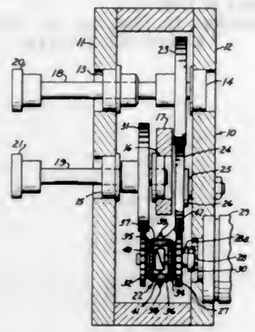
3,416,232
CHORD DETERMINING TOOL
Charles H. Overbay, Rte. 1, Box 210, Benton City, Wash. 99320
Filed Aug. 23, 1966, Ser. No. 574,326
1 Claim. (Cl. 33—75)



A quadrant protractor having one stationary arm and one pivotable arm with scales thereon adapted to indicate chords subdividing a circle. The scales have division indicated by conical indentations and the movable arm is adjustably fixable relative the protractor body.

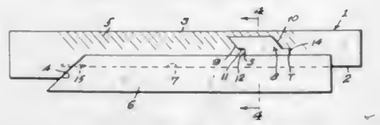
3,416,233
EXTENSOMETER AND ATTACHMENT
Robert D. Steele, El Dorado, and Richard J. Farris, Citrus Heights, Calif., assignors to Aerojet General Corporation, El Monte, Calif., a corporation of Ohio
Filed Nov. 4, 1966, Ser. No. 592,018
1 Claim. (Cl. 33—147)

1. In an extensometer having a pair of spaced friction wheels rotatable on parallel axes which engage the side of a test specimen, a support for said wheels, a differential gear assembly mechanically interconnecting the friction wheels and mounted on said support, said assembly comprising a pair of differential gears rotatable differentially relative to each other, a pair of interconnecting gears each interconnecting said differential gears, a supporting member mounted for rotary movement on said support, by which said differential and interconnecting gears are supported in a manner such that the differential and interconnecting gears are freely rotatable on the supporting member, an indicating means comprising a rotary



shaft the angular position of which effects an indication, said rotary shaft being fixed to said supporting member, whereby the angular rotation of the shaft indicates the differential rotation of the friction wheels, and therefore the elongation of the part of the specimen between the friction wheels, said indicating means is an electrical potentiometer containing a resistance element, and the rotary shaft carries a wiper arm which wipes over said resistance element, the arm position being readable on a meter connected from the wiper arm to a point of said resistance element.

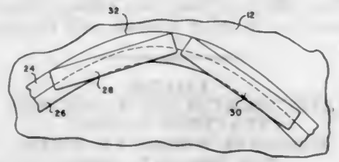
3,416,234
PICTURE FRAME LAYOUT JIG
Joseph I. Bluhm, 12 Roberta Road, Sharon, Mass. 02067
Filed Dec. 5, 1966, Ser. No. 599,688
3 Claims. (Cl. 33—174)



1. A picture frame layout jig for use with picture framing stock having an inner edge which defines the viewable portion of the picture when the stock is made up into a frame, said inner edge having a groove the bottom of which is an inside edge and receives the object to be framed, the jig comprising in combination, an elongated, substantially rectangular member for placement over the inside edge of a length of picture frame stock having a first forty-five degree cut made thereon to measure said stock for a subsequent length cut, said rectangular member having an under-cut along its lower portion to define a lower edge having a face and a shoulder, the face of said lower edge and the shoulder defining a one hundred thirty-five degree angle, the rectangular member

having forty-five degree rulings along an edge parallel to the under-cut edge which rulings are perpendicular to said shoulder, said face of said lower edge being straight to about the inside edge of said stock, a slide having an edge which is adapted to rest on the inner edge of said stock, said slide having another edge which is adapted to about the side of said elongated member, and having a third edge which cooperates with said rulings when said slide is in an operative position for measuring a length of said stock for a subsequent forty-five degree cut at an angle opposite to said first forty-five degree cut and a non-skid member carried by said forty-five degree shoulder for steadying said jig while marking said stock.

3,416,235
GUIDE STRIP FOR STRIPING TOOLS
Donald D. Spilker, P.O. Box 684, Lima, Ohio 45802
Filed Feb. 1, 1967, Ser. No. 613,302
1 Claim. (Cl. 33—177)



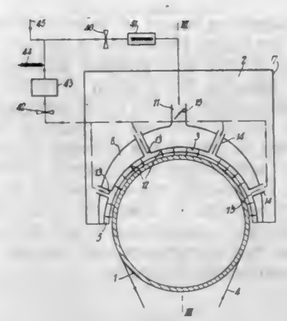
Means are provided by the present invention for facilitating the application of painted stripes on surfaces, specifically the body surfaces of automobiles. Magnetized plastic strips are used as the guide for the striping tool with metallic strips applied to the surface of the strips to increase the holding power of the strips.

3,416,236
PROCESS FOR DRYING WEB MATERIAL
Geoffrey D. Hughson, Glens Falls, N.Y., assignor to International Paper Company, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 28, 1966, Ser. No. 597,223
2 Claims. (Cl. 34—23)

A process of drying a web of paper or the like more uniformly and with a reduction in the incidence of overdrying on at least one of its sides by adjustably partitioning a rotatable dryer roll interiorly to form a closed zone at the corresponding end of the roll, flowing high pressure steam into the roll adjacent the closed zone, and flowing low pressure steam or some other medium having a predetermined temperature lower than that of the high pressure steam into the closed zone.

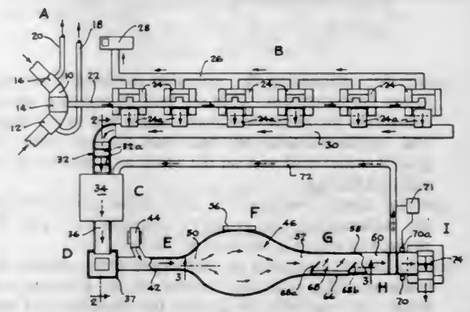
3,416,237
METHOD AND APPARATUS FOR DRYING FLEXIBLE MATERIAL SUCH AS PAPER AND BOARD FORMED FROM CELLULOSIC FIBROUS MATERIAL
Charles Arthur Orr Sutherland, and John Luckins, Surrey, England, assignors, by mesne assignments, to The Research Association for the Paper and Board Printing and Packaging Industries, Leatherhead, Surrey, England, a British company
Filed Dec. 21, 1966, Ser. No. 603,665
Claims priority, application Great Britain, Dec. 23, 1965, 54,748/65
19 Claims. (Cl. 34—23)

A method of drying a continuously moving damp web of paper or board material, wherein heated gases are directed against side-by-side regions of the web, the gases after contact with each such region being withdrawn and operating a temperature sensing device for controlling the drying effect, for example, velocity or temperature, of the heated gases to be applied to that region. An apparatus for drying the web includes a drying hood with several compartments for blowing heated gases onto the different regions of the web, each compartment having



an inlet for the drying gases, control means for controlling the drying effect of such gases, suction means for withdrawing the gases after contact with the web and a temperature sensing device for operating the associated control means to control the drying effect of the heated gases directed onto each region of the web in response to the temperature of gases withdrawn from that region.

3,416,238
SELF-ORIENTATION OF FLATGOODS
Howard Rosenfeld, New York, N.Y., assignor to Linen Supply Association of America, Miami Beach, Fla., a corporation of Illinois
Filed May 11, 1967, Ser. No. 637,784
17 Claims. (Cl. 34—23)



A method and article for improved flatgoods handling where washed flatgoods are deposited in a conduit and delivered by air to an unfolding station having an area larger than the conduit where the velocity of the articles is reduced and the article tends to orient itself to relaxed fiber condition imposed upon the article during original formation thereof.

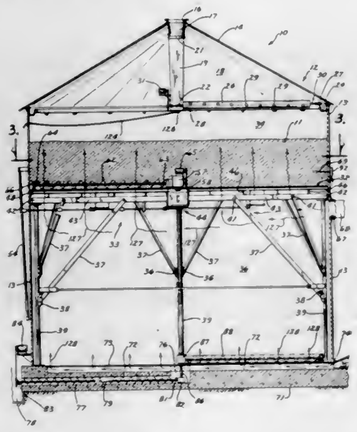
3,416,239
APPARATUS FOR TREATING GRANULAR MATERIAL
Robert A. Louks, Gilman, Iowa 50106
Filed Jan. 10, 1966, Ser. No. 519,540
5 Claims. (Cl. 34—211)

1. Apparatus for treating granular material in a circular storage bin having a lower floor comprising:
an upper horizontally disposed, perforated floor mounted in said bin and adapted to support a quantity of granular material, said upper floor separating said

bin into an upper compartment and a lower compartment, and further wherein said upper floor includes a plurality of apertures formed therein, and with a sweep auger movably mounted on top of said upper floor for moving the granular material to said apertures;

means for supplying heated air below said upper floor, whereby the heated air percolates through said upper floor and through said granular material;

means for dumping the granular material from said upper compartment to said lower compartment, said dumping means including a plurality of slidable doors, each of said doors mounted in one of said apertures, and further wherein said doors are connected to reciprocally movable means, whereby said doors are operable to dump the granular material from said upper compartment to said lower compartment, and further wherein said movable means is operable externally of the bin;



means for evacuating the granular material from said lower compartment, wherein said evacuating means comprises an auger mounted below the lower floor, and communicable on one end thereof with the granular material and on the other end thereof externally of the bin;

leveling means mounted in said upper compartment for maintaining the granular material in a pile the surface of which is substantially level;

control means mounted in said upper compartment for measuring the moisture content of the granular material and operable to control the operation of said heated air means;

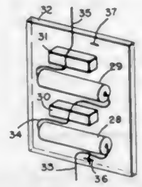
the lower floor being perforated;

means for supplying air below the lower floor whereby the air percolates through the lower floor and through said granular material; and

a second sweep auger movably mounted on the lower floor, said second sweep auger operable to move the granular material to said evacuating auger.

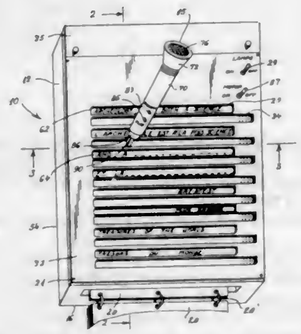
3,416,240
ELECTRONIC SYMBOLS COMBINING FUNCTIONAL CAPABILITIES WITH SYMBOLIC GRAPHIC REPRESENTATION
Alfred W. Barber, 32—44 Francis Lewis Blvd., Flushing, N.Y. 11358
Filed Jan. 11, 1967, Ser. No. 616,741
11 Claims. (Cl. 35—19)

The present invention comprises a plurality of electronic and associated devices which look like three dimensional graphical symbols, cast a shadow in the form of these symbols and at the same time are operational devices. The object is to provide a teaching system to bridge the gap between functional devices and their graphical representations. A schematic circuit diagram can be drawn and when duplicated with my devices in accordance with the present invention provides a working cir-



cuit which looks like the schematic. This method of setting up circuits makes learning easier, faster and more fun. The association of the device and its function with its graphical symbol becomes very easy. This association is often difficult to teach since hitherto there has been no physical way to relate symbols with functions.

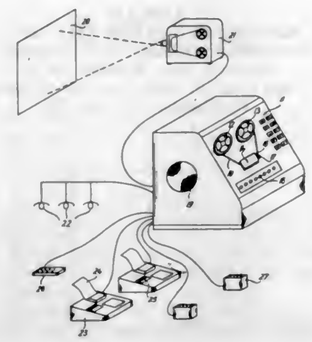
3,416,241
ELECTROACOUSTIC LANGUAGE TEACHING DEVICE
Dorothea M. Weitzner, 8 E. 62nd St., New York, N.Y. 10021
Filed Mar. 1, 1967, Ser. No. 619,712
10 Claims. (Cl. 35—35)



The disclosure describes an assembly including a cabinet in which a language card can be inserted for reading electromagnetically or electrooptically. On the card are magnetic or optically recorded signal tracks corresponding to spoken words inscribed in adjacent lines on the card. Reading is done by a hand-held, manually operable electroacoustic transducer device having magnetic or optical pickup and reproducing heads. Recording can be done by the same transducer device on magnetic or optical tracks of a card. A moving belt in the cabinet guides the transducer device along the tracks during signal recording and reproducing.

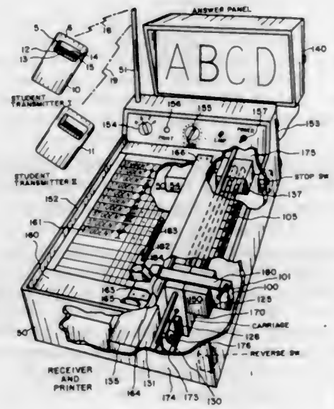
3,416,242
TEACHING MACHINE AND CONTROL SYSTEM
Thomas R. Nisbet, Palo Alto, Calif., assignor, by mesne assignments, to Edex Corporation, Mountain View, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 143,867, Oct. 9, 1961. This application Mar. 31, 1965, Ser. No. 444,298
12 Claims. (Cl. 35—48)

A teaching machine and control system which includes means for reproducing pre-recorded audio instructional material, projection means for visually displaying desired information and student entry devices for answering questions. The system also includes a control system which is



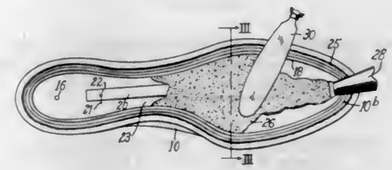
responsive to control pulses developed in time relationship with respect to the audio instructional material to control the delivery of the audio and visual material and the asking and weighting of questions.

3,416,243
RESPONDING APPARATUS
Malvin Greenberg, Commack, Soloman Alter, Hartsdale, and John M. Belanich, Port Washington, N.Y., assignors, by mesne assignments, to General Electronic Laboratories, Inc., Boston, Mass., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 448,917
5 Claims. (Cl. 35—48)



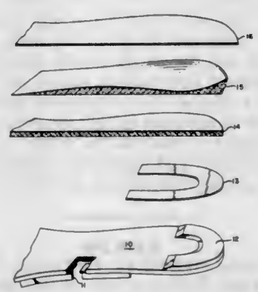
A radio frequency student-to-teacher answering system having a transmitter for each student and a receiver for the teacher, with each transmitter operating at a different carrier frequency and having capacity by the student for modulating the carrier selectively with one of several available tones, the receiver having a chart carrying an identifying space for each of the transmitters, a marking device on a carriage carrying the marking device consecutively over each identifying chart space on the chart, and an arrangement for causing the marking device to selectively mark or not mark the identifying chart space in accordance with the absence or presence of a preselected modulation tone from the corresponding transmitter when the marking device is at the corresponding chart space.

3,416,244
SHOE MANUFACTURE
Milton R. Radcliffe, Marblehead, and William Tabroff, Peabody, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., Boston, Mass., a corporation of New Jersey
Filed Feb. 18, 1964, Ser. No. 345,773
15 Claims. (Cl. 36—30)



9. A shoe assembly having a bottom cavity filled with a mastic filler in expanded solid state comprising polyurethane obtained by in situ curing a quantity of a moisture-curable isocyanate-containing prepolymer located within said bottom cavity and having an outsole laid on the same prior to said curing in situ.

3,416,245
CONTOURED INSOLE
Joseph J. Ferreira, Raynham, Mass., assignor to Frank Noone Shoe Co., Inc., Rockland, Mass., a corporation of Massachusetts
Filed July 27, 1967, Ser. No. 656,376
1 Claim. (Cl. 36—44)

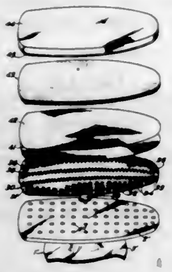


A composite insole having a concave heel seat portion resiliently supported by a molded cushion pad and a spring metal plate and including a built-in wedge tuck.

3,416,246
SPRING PAD FOR PRESSING BUCK
Claude E. Terry, Senoia, Ga., assignor to Southern Mills, Inc., Atlanta, Ga., a corporation of Georgia
Filed Feb. 20, 1967, Ser. No. 617,220
7 Claims. (Cl. 38—66)

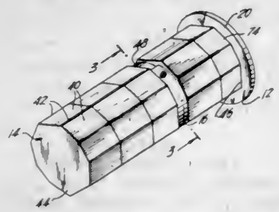
A pad support adapted to be placed on the upper surface of the pressing platen of a steam buck and covered with a padding including a frame having a configuration outlining the upper surface of the platen and at least one

set of parallel arranged serpentine spring members secured at their opposite ends to the frame and forming a



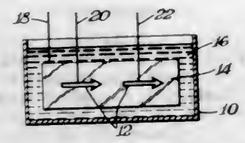
plurality of arches across the mid-section of the frame which define a three-dimensional pad supporting surface.

3,416,247
IDENTIFICATION APPARATUS AND IMPROVED SEAL ELEMENT
Herbert B. Sternberg, 265 Quentin Road, Brooklyn, N.Y. 11223
Filed June 16, 1966, Ser. No. 558,109
9 Claims. (Cl. 40—2.2)



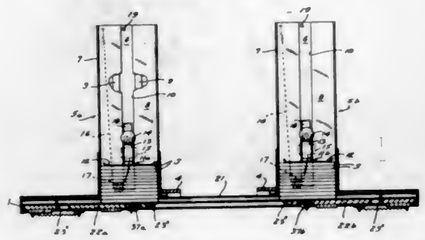
The invention is concerned with apparatus for providing a permanent record of information pertaining to a vehicle or other type of machinery and includes a bracket adapted to be fixed to a part of the vehicle or machinery and a cover adapted to be removably engaged over the bracket, the cover and bracket each being provided with several panels and the panels on the cover being adapted to receive printed information, and a seal which is connected with a tongue on the bracket and which passes through a pair of openings in both the cover and the bracket and is adapted to encircle the cover so as to lock the cover to the bracket and reduce the possibility of tampering with the printed information on the cover.

3,416,248
ELECTRO-CHEMICAL OPTICAL DISPLAY
Charles G. Kalt, Williamstown, Mass., and Franklin D. Frantz, Jr., Woodford, Vt., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Nov. 2, 1966, Ser. No. 591,595
12 Claims. (Cl. 40—52)



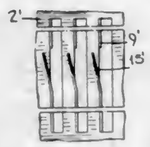
This invention concerns an electro-chemical optical display system in which an indicating electrode immersed in an electrolyte is employed to provide visible indicia by means of electro-tarnishing. Accordingly, a reversible oxidation-reduction reaction is utilized to form a contrasting reaction product on the electrode in response to electrical polarization.

3,416,249
REVERSIBLE SLIDE CHANGER
Orrin Millie, Flushing, N.Y., assignor to Genarco Inc., Jamaica, N.Y.
Filed Jan. 19, 1966, Ser. No. 521,615
16 Claims. (Cl. 40—79)



A reversible slide changer in which slides in a stack of slides in a first storage may be moved one by one from the front end of the first storage first to an exposure portion and from there into a second storage, and in which the slides stacked in the second storage may be moved one by one from the front end of the latter first into the exposure portion and from there back into the first storage.

3,416,250
METAL SLIDE MAGAZINE
Karl D. Schweers, Spring Valley, N.Y., assignor to Air-equipt Inc., New Rochelle, N.Y., a corporation of New York
Filed Mar. 23, 1966, Ser. No. 536,910
3 Claims. (Cl. 40—79)

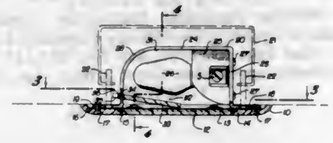


A metal magazine for storing and exhibiting photographic slides formed of two principal portions including a top member having an integral depending side plate and depending end flanges and a bottom member having integral upstanding end plates which cooperate with and are fastened to the end flanges of the top member. Slide accommodating channels are formed in the magazine by inwardly bent tabs formed by transversely slotting of the top and bottom members. Slide retaining means are formed by cutting the bent tab members transversely and longitudinally to form yieldable spring fingers which are bent into the channels between the tab members.

3,416,251
ELECTRICALLY ILLUMINATED FACE PLATE INSIGNIA
Lee T. Bordner, Los Angeles, Calif., assignor, by mesne assignments, to Sierra Electric, Inc., Gardena, Calif., a Corporation of Wisconsin
Filed June 22, 1966, Ser. No. 559,625
7 Claims. (Cl. 40—132)

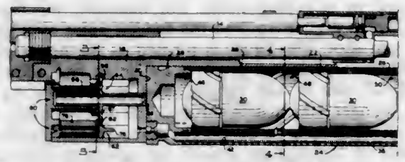
In wall plates having lamp illuminated translucent insignia area increased brightness in the area is achieved with a practical, low cost assembly in which the wall

mounting strap for the plate is shaped to accommodate the lamp and is provided with an inside light reflective



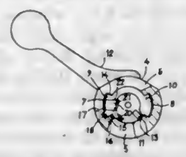
surface which reflects lamp light to the translucent area. The strap may additionally carry a heat and light diffuser.

3,416,252
COMBINATION FIRING AND EJECTING MECHANISM FOR A GRENADE LAUNCHER
Stanley D. Silsby, Granby, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 2, 1963, Ser. No. 270,117
6 Claims. (Cl. 42—1)



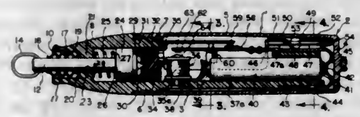
1. In combination, a cartridge, a barrel functioning case of said cartridge, a plurality of grenades disposed in said case in tandem arrangement, detonating means having respective communication with said grenades for separate projection thereof from said case, a launcher for releasably mounting said cartridge for discharge, firing pins disposed in said launcher for respective displacement against said detonating means, a compression-torsion spring, and a sear-ejector device mounted in said launcher for cooperation with said spring to be angularly dispaced thereby for searing said firing pin in cocked positions and to be translationally displaced for ejecting said case from said launcher when released therefrom, said sear-ejector device including a plurality of sears equal to the number of said firing pins extending radially in said sear-ejector device, said sears being disposed in cooperation with said firing pin for successive release thereof when said sear-ejector device is successfully actuated in an increment of angular displacement.

3,416,253
GUIDE MEANS FOR BOLT-ACTION FIREARMS
Sven Gunnar Olof Larsson, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed Nov. 14, 1966, Ser. No. 594,209
Claims priority, application Sweden, Nov. 15, 1965, 14,693/65
4 Claims. (Cl. 42—16)



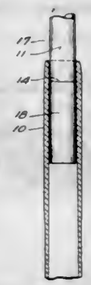
A bolt-action firearm, particularly a repeating rifle, comprising a breech bolt having two locking lugs, preferably dovetailed, and housed in a receiver provided with longitudinal grooves for the lugs, an obliquely upwardly directed loading opening intersecting one of the grooves; guide means provided for guiding the breech bolt past the intersecting loading opening and comprising a tongue and a longitudinal slot provided on each of the lug and the groove being intersected.

3,416,254
SONIC FISHING LURE
Verl J. Bornzin, 2121 Robin Crest Lane, Glenview, Ill. 60025
Filed July 14, 1966, Ser. No. 565,324
9 Claims. (Cl. 43—17.1)



A fishing lure having a vibratory reed and a helical cam engaging the reed at selected points against a support for lengthening and shortening the reed to adjust its pitch, and a switch having a stem sealed to the body of the lure and protruding from the front of the lure and biased in one embodiment to open position and in the other to closed position and displaceable from its position by pull or release of the fishing line to which it is attached.

3,416,255
TELESCOPIC FISHING POLE
John Douglas Johnson, Ironwood, Mich., assignor to All-sports & Marine of Michigan, Inc., Ironwood, Mich., a corporation of Michigan
Filed Dec. 1, 1965, Ser. No. 510,813
6 Claims. (Cl. 43—18)



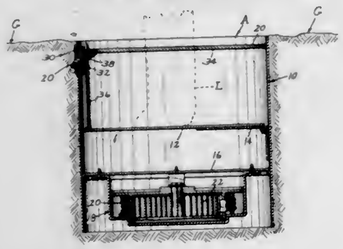
A pole having tapered sections with the largest outside diameter of each section being spaced inwardly from its largest end extends telescopically by moving each section in the direction of its small end until it jams in the next section, and may also be socketed by moving each section in the direction of its large end toward the small end of the next larger section. The specially tapered tube shapes are achieved by the special shape of the blank which is wound to form the respective tubes. Fiberglass having greatest strength axially of the tube is used and end reinforcing having greatest strength circumferentially is added. In a modification a rubber plug extends from the larger end of each section and frictionally contacts the inner diametrical wall of the small end of an adjacent section.

3,416,256
CATAPULTING CASTING ROD
Andrew R. Blocker, Fort Worth, Tex., assignor to L. C. Line, Fort Worth, Tex.
Filed June 17, 1966, Ser. No. 558,375
2 Claims. (Cl. 43—19)



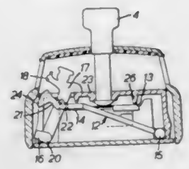
A catapulting casting rod having an imperforate tubular handle section with a bore of uniform diameter, a slide within the handle section having a diameter corresponding to the bore and having air bypass means thereon, a rod on the slide and extending outwardly of an end of the handle section, a lure or bait receiving cup on the extending end of the rod and spring means in the handle section for quickly moving the rod and cup outwardly. The cup and rod are actuated by a knob connected with the inner end of the slide whereby the spring means may be manually compressed any desired amount and manually released to catapult the lure or bait a desired distance. The handle section has closure means at each end which serve as guides for the rod and knob connection, respectively. The cup is of a size and shape to substantially fully receive the lure or bait so as to protect others from fish hooks thereon.

3,416,257
ANIMAL TRAP
Wallace L. Dahlgren, Rte. 4, Box 576, Duluth, Minn. 55803
Filed June 2, 1967, Ser. No. 643,106
6 Claims. (Cl. 43—87)



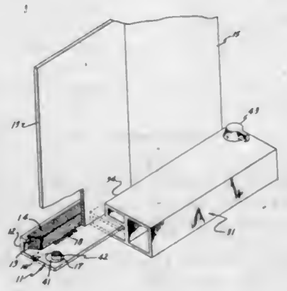
The animal trap includes a base member in the form of a housing in which is mounted a movable trip member. The trip member has mounted thereon an extension in the form of a rod extending upwardly therefrom. A cable is provided which has a loop formed on the outer end thereof, and a cable take-up means is mounted on the housing. The cable is extended through the loop of the cable to form a noose with the inner end of the cable connected to the take-up means. The cable carries an eye through which the rod is extended to hold the cable in a noose formation within the housing against the action of the take-up means, the extension being withdrawn from the eye when the trip is moved which allows the cable take-up means to take up the cable and draw up the noose. Further provided is means for selectively holding the cable in an extended position against the action of the take-up means in the form of a bead on the cable which is engageable with a shoulder member carried by the housing.

3,416,258
SOUNDING TOY VEHICLE WITH ANIMATED FIGURE
Howard William Fairbairn, Dallington, Northampton, England, assignor to The Mettoy Company Limited
Filed June 13, 1966, Ser. No. 557,119
Claims priority, application Great Britain, Apr. 21, 1966, 17,507/66
2 Claims. (Cl. 46—99)



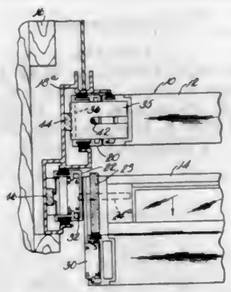
The invention provides a toy vehicle in which is simulated the effect of a figure periodically appearing at a side opening of the vehicle, this appearance being accompanied by a sudden noise. For example, the figure may represent a gunman, and the sudden noise may simulate a gun shot. The figure is formed as the upper part of a member which can pivot at its lower end about a longitudinal axis of the vehicle, and is operable by a manual plunger which acts through the intermediary of a leaf spring having a reversible embossing. Operating movement of the plunger causes the spring to flex and move the figure from a retracted position to an exposed position, and the embossing to reverse suddenly. A second figure may be linked to the first so as to move together with it, under the control of the plunger and control means.

3,416,259
WEATHER-TIGHT REVERSE LOCKING DEVICE
Leo Kogan, Los Angeles, Calif., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,235
8 Claims. (Cl. 49—320)



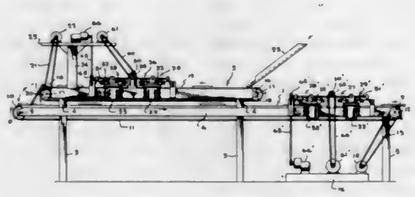
A weather-tight reverse locking device designed to seal sliding or fixed panels such as windows or doors from weather and the elements, e.g., rain, wind, dust, pollen, etc. The weather-tight locking device of the present invention comprises one or more sliding or fixed panels, a mounting frame and a movable locking bar having a sealing block attached thereto on the outside portion of the bar and wherein the bar is movably mounted on the mounting frame. The movable locking bar is designed to be pulled into the mounting frame and when in the closed position the sealing block is firmly pressed against the outside or weatherside of the panels forming an excellent seal against the weather and the elements.

3,416,260
TILT-OUT MAGNETIC SLIDABLE SASH GUIDE
Waldo O. Johnson, Wooster, Ohio, assignor to Weather-Seal, Inc., N. Barberton, Ohio, a corporation of Ohio
Filed June 20, 1966, Ser. No. 558,639
9 Claims. (Cl. 49—404)



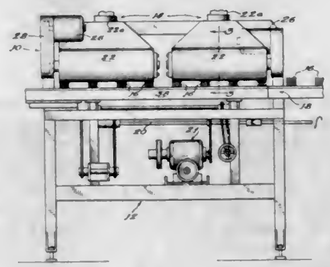
1. In a window assembly, the combination of:
a pair of side jambs,
a pair of vertically extending runner strip means engaged by each of said pair of side jambs for vertical sliding movement therein,
an upper and a lower sash each having a pair of vertically extending side rails having face-to-face contact with a respective runner strip means,
laterally protruding pivot pin means provided in said sashes and being seated in receiving sockets in said runner strip means to position said sashes in said runner strip means for controlled pivotal movement thereabout,
magnet means positioned in each of said runner strip means, and
second magnet means positioned in each of said side rails having a positive magnetic attraction to said first magnet means whereby said first magnet means and said second magnet means magnetically interlock to hold the side rails of said sashes in a vertical position in said runner strip means.

3,416,261
SANDING AND POLISHING MACHINE
Floyd F. Sherman and Robert R. Staples, Atlanta, Ga., assignors to United States Plywood Corporation, New York, N.Y., a corporation of New York
Filed Oct. 19, 1966, Ser. No. 587,921
11 Claims. (Cl. 51—60)



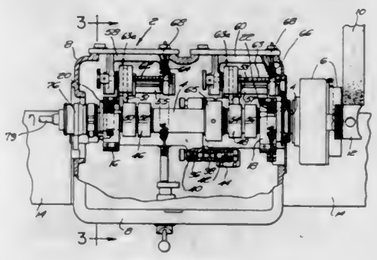
1. A sanding and polishing machine comprising, a table, means to convey work pieces along the table, means defining guide grooves parallel to and above the conveyor means at either side of the table, a plate having its ends in the guide grooves and slidable in the grooves in the direction of movement of the conveyor means and transversely thereto, rollers carried by the plate at either side of the plate, an abrasive sheet wound upon the rollers and underlying the plate intermediate the rollers, means to impart a reciprocating force to the plate in a direction parallel to the direction of movement of the conveyor means, and means to simultaneously impart a reciprocating force to the plate transversely to the direction of movement of the conveyor means.

3,416,262
ABRASIVE DEVICE FOR FINISHING PAINT BRUSHES
Harold J. Hazelton, Batavia, Ill., assignor to Carlson Tool & Machine Co., a corporation of Illinois
Filed Nov. 10, 1965, Ser. No. 507,213
3 Claims. (Cl. 51—80)



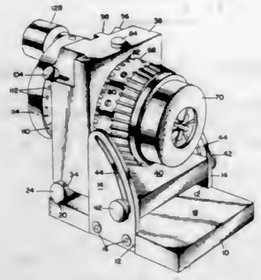
A brush finishing device in the form of an abrasive drum having a sinuous exterior, generally of a sign wave configuration, the drum preferably being utilized by two such drums being tandem mounted in offset relationship with respect to one another on opposite sides of a path of brush travel, the two drums being driven in opposite directions relative to each other to roughen the bristles of brush fed through the path of brush travel.

3,416,263
MACHINE TOOL
Olva E. Hill, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Dec. 14, 1964, Ser. No. 418,091
3 Claims. (Cl. 51—101)



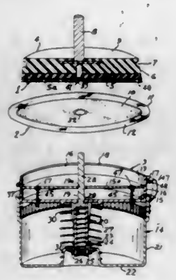
Apparatus supporting a cantilevered workpiece in a chuck mounted at one end of a single elongated rotating spindle supported in self-aligning bearings upon spaced independently movable coaxially pivoted rocker arms and oscillated cyclically by cams spaced lengthwise along, encircling, and secured to the spindle.

3,416,264
INDEXING GRINDING FEATURE
Edward S. Adamczyk, 47 Mazarin St., Indian Orchard, Mass. 01051
Filed Nov. 30, 1966, Ser. No. 597,905
1 Claim. (Cl. 51—216)



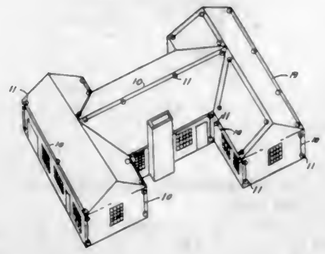
A work holder adapted to be secured to a work bed of a grinding machine etc., with an indexing workpiece. A base for mounting a fixture relative to the bed of the machine. A housing is pivotally mounted on the base with means for releasably locking the housing in any one of a plurality of angular positions relative to the base. A chuck collet extending longitudinally through the housing. A locking ring provided with circular row of equi-spaced axial openings sleeving the chuck collet and being normally rotatable relative to the housing. A retainer ring having a spring-loaded detent having a coaxial nose for seating engagement within one of the openings in the locking ring under force of the detent. Locking means in the housing for releasably locking the nose of the detent in one of the openings of the locking ring.

3,416,265
DISC SANDING APPARATUS
Miksa Marton, 27 Waverley Drive, Brockville, Ontario, Canada
Application Feb. 24, 1967, Ser. No. 618,398, now Patent No. 3,378,961, dated Apr. 23, 1968, which is a continuation-in-part of application Ser. No. 467,275, June 28, 1965. Divided and this application Sept. 19, 1967, Ser. No. 668,850
Claims priority, application Canada, Oct. 21, 1966, 973,694, Patent 772,369
10 Claims. (Cl. 51—381)



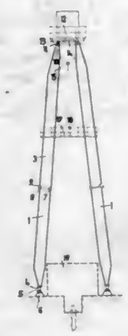
A disc-shaped mounting member for a rotary sander and a circular sheet of sand paper material adapted to be mounted thereon. The disc-shaped member is provided with a groove in its peripheral side wall to receive an elastic band and the circular sheet of sand paper has a non-abrasive peripheral portion adapted to be folded about the side wall of the mounting member so as to overlie the groove and be retained by the elastic band placed therearound. A central recess is provided in the mounting member and a central aperture is provided in the sheet so that the sheet can be centered with respect to the mounting member through the use of a removable guide rod extending through the aperture into the recess.

3,416,266
POLY-SONIC MECHANICAL PEST DETERRENT
Robert E. Eron, 1439 5th Ave. N., St. Petersburg, Fla. 33705
Filed Sept. 8, 1964, Ser. No. 394,769
1 Claim. (Cl. 52—101)



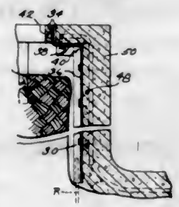
This invention relates to a pest exterminator to repel or scare birds away from a structure such as a house, a boat, a vehicle, a column and for the like structures, and consisting of a wire or single strand, means being provided to vary tension in the wire, and additional means to readily mount the wire on the structure and readily dismount it and adjust it in other locations, further means being provided to cause mechanical vibrations in the wire.

3,416,267
COLLAPSIBLE DERRICK FOR DRILLING
Tiberiu Dimitrie Maniu, Bucharest, Rumania, assignor to Ministerul Petrolului, Bucharest, Rumania
Filed Sept. 10, 1965, Ser. No. 486,361
Claims priority, application Rumania, Sept. 21, 1964, 48,554
3 Claims. (Cl. 52—121)



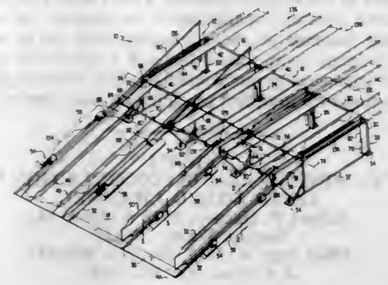
1. In a collapsible derrick for drilling operations and the like, a pair of identical columns symmetrically situated with respect to a vertical plane of symmetry situated midway between the columns, said columns each having upper and lower ends and including upper and lower column elements pivotally connected to each other substantially midway between the upper and lower ends of each column so that the columns can be collapsed and raised by turning movement of the column elements with respect to each other at the connection therebetween, a table having an elongated portion extending between and connected to the upper ends of the columns for spacing said upper ends of said columns from each other, raising and lowering means operatively connected to the columns for raising and collapsing the same, and equalizing means extending along said table in the space between and connected to the upper ends of the columns for maintaining the table which extends therebetween horizontal during raising and collapsing of the columns, said equalizing means including an even number of gears which extend between and are operatively connected with the upper ends of the columns and which are permanently in mesh with each other, said gears including a pair of end gears, respectively situated at said upper ends of said columns and a plurality of additional gears situated between said end gears.

3,416,268
SWIMMING POOL BACKWALL FORMING METHOD AND STRUCTURE
Dawson A. Johnson, 807 NW. 8th Ave., Fort Lauderdale, Fla. 33311
Filed Mar. 24, 1966, Ser. No. 537,200
11 Claims. (Cl. 52—169)



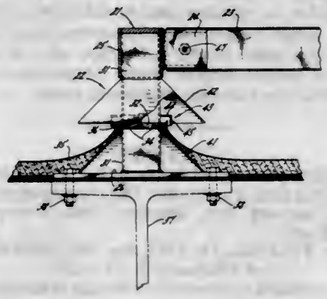
The specification discloses a blank adapted to be erected into a form for use as a backing member in constructing the vertical wall of a swimming pool by blowing cementitious material thereon. The blank is made of a flat, rectangular sheet of corrugated cardboard having opposite flat surfaces thereof coated with a film of water impervious material, the sheet being provided with a first plurality of straight strengthening strut defining fold lines formed therein parallel to one pair of parallel edges of the sheet and a second plurality of straight beam defining fold lines formed therein perpendicular to the first plurality of fold lines, the strengthening strut fold lines including two sets of three fold lines, the lines of each set being spaced apart a distance subtsantially less than the space between adjacent lines and the three fold lines of each set defining elongated rectangular strengthening strut sections adapted to be disposed in back-to-back coextensive relationship and to be secured in such relationship by staples or other fastening means. The straight beam defining fold lines being spaced adjacent an edge of the sheet to provide the top of the form when in use and including two spaced fold lines defining therebetween an intermediate section which, when erected, extends at an angle between two parallel sections defined by the fold lines and the adjacent parallel edges of the sheet respectively. In constructing a swimming pool backwall in accordance with this invention, a plurality of erected forms are secured together in side-by-side relation with adjacent vertical marginal edge portions in overlapping relation. A network of metal reinforcing members are positioned inwardly of the erected and secured-together forms and then a layer of cementitious material is blown onto the forms in surrounding relation to the network of metal reinforcing members and allowed to harden. The forms of corrugated material then form a part of the erected wall.

3,416,269
AUTOMOTIVE SUPPORT STRUCTURE FOR INCREASING THE CAPACITY OF PARKING LOTS
Wayne B. Stone, Jr., Kensington, Md., assignor of twenty-four and one-half percent each to G. Turner Moller, Lanham, and Edward L. Goldman, Bowie, Md.
Continuation-in-part of application Ser. No. 628,491, Apr. 4, 1967. This application Nov. 9, 1967, Ser. No. 681,771
17 Claims. (Cl. 52—175)



This invention relates to an improvement in automotive support structure including inclined ramps defining a path of automotive wheel travel over which an automobile may be driven to an elevated parking location after which time the ramps are moved transversely of their original position to permit a second automobile to be driven directly beneath the first automobile. The support members for the elevated parking location are transversely spaced a distance sufficient to accommodate the lower automobile. A plurality of the support structures will normally be positioned side-by-side permitting a plurality of automobiles to be parked in superposed relation to a like number of automobiles parked therebeneath. The improvement resides, primarily, in providing two wheel track supporting surfaces on at least one of the inclined ramps and so mounting the ramps on the support structure that one of the track surfaces may be used in conjunction with another ramp to support an automobile as it is driven to a first elevated parking position and thereafter moving the ramp so that its other track surface may coact with a different ramp to support an automobile as it is driven to a second elevated position adjacent the car parked in the first elevated position.

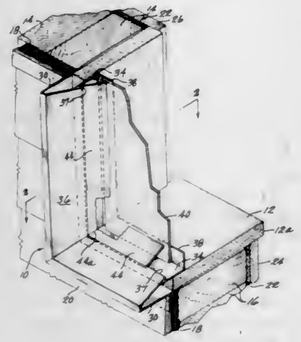
3,416,270
PORTABLE STRUCTURAL SUPPORT BASE
James J. McHugh, Joliet, Ill., assignor to McVee Industries, Inc., Joliet, Ill., a corporation of Illinois
Filed May 29, 1967, Ser. No. 642,095
8 Claims. (Cl. 52—36)



A portable support bed formed by posts anchored at the desired bed location, base caps with a box-like cap portion slipped over and seated upon the top of the posts

and with support arms extending horizontally from the cap portion, and hollow rails each interfit at its opposite end for support with a support arm. The posts, base caps, and rails each being light enough to be readily transported and assembled by one man. The posts being suitable for mounting the support bed on a rooftop or elsewhere and, for purposes of a rooftop-type installation, having a connecting strip surrounding the post at a level slightly above the normal level of the roof and adapted to be fastened to the roofing material, a skirt with a tetrahedral truncated pyramid configuration to support the roofing material fastened to the connecting strip so as to provide drainage away therefrom, and a hood with a tetrahedral truncated pyramid configuration overhanging the connecting strip to deflect precipitation away therefrom.

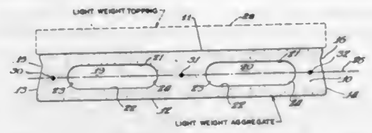
3,416,271
METAL WINDOW FRAME CONSTRUCTION WITH LINER BOARD CHANNEL
Robert F. Heeney, 3948 S. Mead St., Seattle, Wash. 98118
Filed Aug. 4, 1967, Ser. No. 658,435
6 Claims. (Cl. 52—214)



A metal window frame construction of the aluminum extrusion type wherein the top, bottom and side frame members include parallel outer and inner side pieces interconnected by an outer facing member and mounted on a flange adapted to abut the outer face of outer wall sheeting surrounding a window frame opening, the interconnected outer and inner side pieces forming a channel adapted to receive the edge of a liner board whose opposite edge extends inwardly of the opening as a finish member for the window. The frame further includes a reveal flange fastened to the inner side piece to receive the glass for the window, and an additional inwardly extending flange cooperable with conventional means for securing the glass to the outer face of a reveal flange, or with a special snap-in frame adapted to be inserted between the glass and the additional flange.

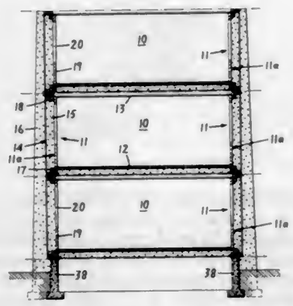
3,416,272
THIN PRE-STRESSED CONCRETE SLAB
David J. La Gue, Centerville, Ohio, assignor to The Flexicore Company, Inc., Dayton, Ohio, a corporation of New York
Filed Jan. 16, 1967, Ser. No. 609,567
3 Claims. (Cl. 52—223)

A pre-stressed concrete slab having a thickness of substantially 4 inches and a width of 1 or more feet is useful for spans up to 20 feet. The slab has between 25% and 37% of its cross-sectional area void to provide for longitudinal passages symmetrically disposed between the top and bottom and sides of the slab. Steel reinforcement is provided along the neutral plane located half way between the top and bottom slab faces. Such a slab has highly desirable load-carrying characteristics and, in addition,



has highly desirable fire resistance characteristics. The slab utilizes light weight aggregate and high strength steel and can receive a topping layer up to about 2 inches in thickness also of lightweight material.

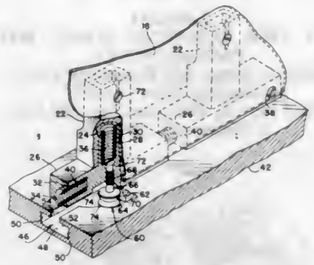
3,416,273
PLURAL-STOREY PREFABRICATED BUILDINGS
Fritz Christoph Stucky and Rudolf Meuli, Zug, Switzerland, assignors to Elcon A.G., Zug, Switzerland
Filed Nov. 6, 1964, Ser. No. 409,528
Claims priority, application Great Britain, Nov. 9, 1963, 44,293/63
10 Claims. (Cl. 52—236)



A building structure composed of prefabricated building units assembled in at least two storeys and with at least two units included in each storey. Each of the units includes a base or floor member and a pair of vertical end members affixed at oppostite ends of the floor member. The end members include structural column members at each corner of the floor member, and in order to provide additional load capacity, particularly for structures having several storeys, vertically continuous stiffener columns located exteriorly of the building units are provided. The building units are stacked vertically so that the column members are vertically aligned, and the column members are formed to provide one or more vertically continuous recesses which receive formations on the stiffener columns so that the column members and stiffener columns interengage and coact to provide a substantially continuous composite vertical pillar.

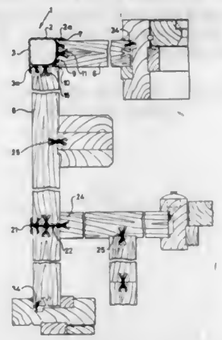
3,416,274
FLEXIBLY CONNECTED SUPPORT AND SKIN
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of William O. Leffke, Tonawanda, N.Y.
Filed Oct. 8, 1965, Ser. No. 494,283
6 Claims. (Cl. 52—272)

An arrangement for fastening a skin to a frame allowing resilient and sliding movement of the skin relative to the frame along one or more axes so as to allow thermally



induced expansionary and contractionary movements along these axes.

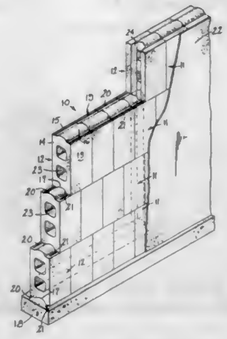
3,416,275
WALL CONSTRUCTION
Johannes Jacobus van Loghem, 83 Sophia St., and Johannes La Grouw, Te Wairoa Road, both of Rotorua, North Island, New Zealand
Filed June 22, 1966, Ser. No. 559,566
Claims priority, application New Zealand, June 23, 1965, 142,048
8 Claims. (Cl. 52—282)



A wall construction in which columns having longitudinal key locking slots and connecting members provided with key members and splayed engagement means is such that the key members are adapted to engage in the locking slots with planks arranged to fit between adjacent columns. The planks have splayed engageable slots in the ends bearing against the columns with such engageable slots being complementary to the splayed engagement means. The splayed engagement means are adapted to engage within the complementary engageable slots at the ends of the planks for holding the planks in association with the columns.

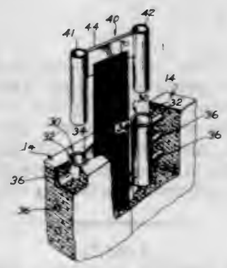
3,416,276
MASONRY WALLS AND PARTITIONS AND METHOD OF FABRICATING SAME
Arnold P. Caputo, Hamden, Morris Schupack, Stamford, and Alex D. McDonald, Glenbrook, Conn., assignors, by direct and mesne assignments, to Intercon Research, Incorporated, Indianapolis, Ind., a corporation of Connecticut
Filed Aug. 26, 1966, Ser. No. 575,383
6 Claims. (Cl. 52—293)

A masonry wall and method of making it which employs masonry blocks having opposed generally rectangular side, end and facing surfaces. A first course of the blocks is laid with the side surfaces thereof in non-bonded abutting relation and the longer dimension of said blocks vertically oriented. Generally parallel beads of an adhesive are applied to the upper horizontally disposed end surfaces of the first course of blocks, and a second course of said



blocks is laid upon the first course of blocks with the end surfaces of said second course spanning the line of abutment with the blocks in the first course and with the side surfaces of said blocks of the second course in abutting relation with each other.

3,416,277
BUILDING COMPONENTS
Howard J. Wood, 1456 Sunset Point Road 33515, and James A. Greiner, 1263 Flushing Drive, Clearwater, Fla. 33516
Filed Mar. 16, 1967, Ser. No. 623,754
6 Claims. (Cl. 52—300)

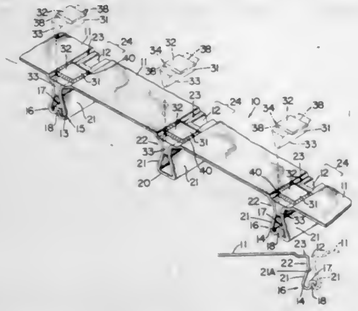


Building components for the erection of vaults, cesspools, settling tanks, sludge tanks, reservoirs for water or grain and the like which consist of precast panels with key joints in the edges joined by stress keys into a wall structure and a template which sits on top of said joined panels to align and to strengthen the erected structure.

3,416,278
NAILABLE SURFACE MEANS AND METHOD FOR MAKING SAME
George F. Swenck and George S. Gresham, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 8, 1966, Ser. No. 525,899
4 Claims. (Cl. 52—377)

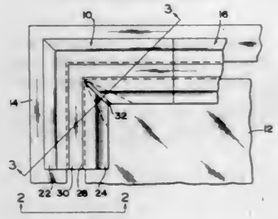
This disclosure relates to nailable surface means comprised of a plurality of panels interconnected in side-by-side relation and having elongated groove means pro-

vided therein for receiving nail means used to fasten an article against such surface means. Each groove means is defined by a cooperating pair of substantially resilient



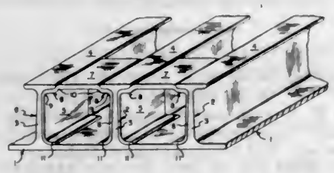
angular surface means which cooperate to provide an optimum strength clamping action against said nail means.

3,416,279
RESILIENT CORNER GASKET
John A. Dallen, Port Clinton, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 23, 1966, Ser. No. 604,404
2 Claims. (Cl. 52—400)



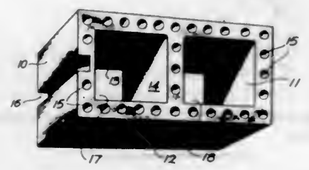
A resilient corner gasket having an apex formed by complementary membranous wings extending inwardly from a base portions to a leading edge, an included cavity within the bodies of a complementary pair of wings localized at the apex, and comprising a slot disposed in a plane generally parallel to the wings and extending substantially from the base portions to the leading edges of the wings.

3,416,280
CONTOURED INSERT SUPPORT FOR UPSTANDING I-BEAM ELEMENTS OF A CARGO-SUPPORTING FLOOR
Charles W. Young, Catonsville, Md., assignor to Revere Copper and Brass Incorporated, New York, N.Y., a corporation of Maryland
Filed Oct. 5, 1965, Ser. No. 493,092
5 Claims. (Cl. 52—588)



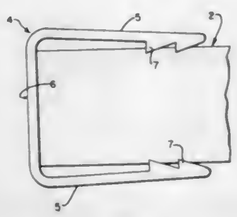
A contoured support for cargo-supporting floors is provided of extruded or formed shape such that it can be inserted between the upstanding cargo-supporting floor beams and thus reinforce and supplement the cargo-supporting floor provided by the upstanding beams.

3,416,281
CLAY TILE BUILDING BLOCK WITH PASSAGEWAYS
Philip E. Kopp, 620 Ridgeleigh Drive, Minerva, Ohio 44657
Filed Nov. 8, 1966, Ser. No. 592,938
1 Claim. (Cl. 52—606)



A clay tile building block that may be fired in a kiln without danger of distortion in shape or size due to the presence of a plurality of spaced parallel passageways extending vertically through the walls thereof.

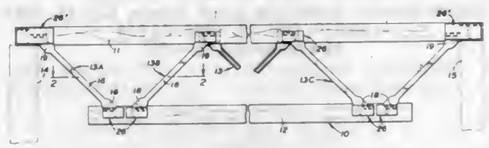
3,416,282
ELONGATE PANEL EDGING STRIP OF THE PREFABRICATED TYPE
Benjamin E. Daugherty, Louisville, Ky., assignor to Cardinal Extrusions Co., Louisville, Ky., a corporation of Kentucky
Filed June 16, 1966, Ser. No. 558,075
7 Claims. (Cl. 52—627)



An elongate stiffly-resilient metal extrusion of U-shaped cross-section intended to be press fitted over and thereby secured to the marginal edge portion of a panel, such as a shelf, and constructed to have opposed substantially-straight slightly-converging side walls, a bight, a mouth wide enough to receive the panel and an elongate ledge of transverse triangular cross-section integrally formed on the inner face of one side wall to extend longitudinally parallel with the bight but spaced a substantial distance therefrom, the ledge being arranged for slidable engagement by the edge of an incoming panel, which, during insertion, cams the side wall apart.

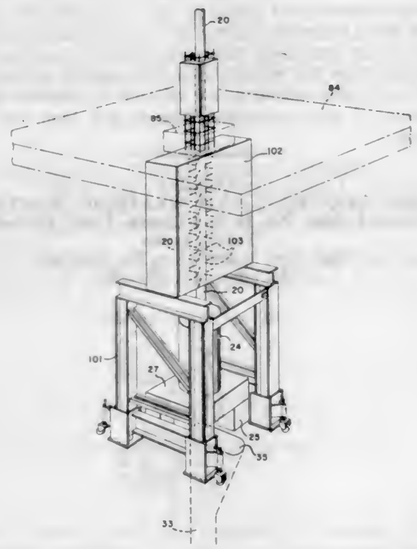
3,416,283
COMBINATION WOOD AND METAL TRUSSES
Arthur Carol Sanford, 400 S. Ocean Blvd., Palm Beach, Fla. 33480
Filed Nov. 3, 1966, Ser. No. 591,788
11 Claims. (Cl. 52—693)

A truss having wooden chord members and metallic web or strut members therebetween having apertured load transfer end flanges abutting the chord members, said end flanges being secured to the chord members by overlying toothed connector plates of larger area than the end flanges, all of the teeth of said connector plates being



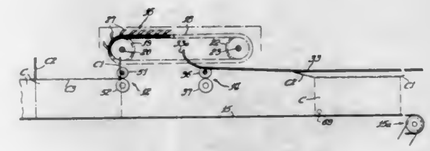
embedded in said chord members, and a plurality of said teeth extending through and abuttingly intermeshing with the apertures in said end flanges to maintain said flanges against lateral movement relative to said connector plates.

3,416,284
METHOD FOR CONSTRUCTING A BUILDING INCLUDING FEEDING A PLURALITY OF END CONNECTED COLUMN SECTIONS UPWARDLY THROUGH A JACK SYSTEM
Felix M. Adler, Woodlands, Birds Hill Road, Oxshott, Surrey, England
Filed July 22, 1965, Ser. No. 474,030
Claims priority, application Great Britain, July 24, 1964, 29,785/64; Sept. 3, 1964, 36,217/64
9 Claims. (Cl. 52—745)



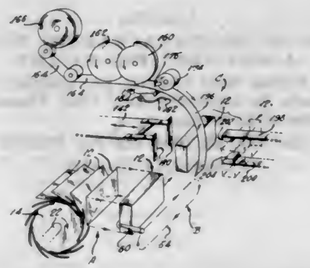
A method of constructing a building comprising feeding a plurality of steel column sections, joined end-to-end, through a plurality of jacks, each jack having two gripping devices for alternately gripping the columns, and operating the jacks to raise the columns and therewith a roof and floors attached, at a single assembly level, to the columns.

3,416,285
CASE FLAP FOLDING MECHANISM AND METHOD
Wendell E. Standley, Lake Forest, and Richard B. Wittmann and John E. Karlovitz, Chicago, Ill., assignor to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed Aug. 9, 1965, Ser. No. 478,316
12 Claims. (Cl. 53—3)



Empty paperboard cases are advanced in a constantly moving row, abutted end-to-end, with their end wall flaps in raised position. Successive leading cases in the advancing row are engaged by a propelling means to accelerate the forward motion of the leading case and separate it a distance from the next case. While the case is so propelled at an increased speed, the leading end wall flap is engaged by a folding member to fold the flap forwardly and downwardly and direct it beneath a flap hold-down means. The case continues to be propelled at an increased speed until the trailing end wall flap is folded rearwardly and downwardly by the hold-down means.

3,416,286
BANDING MACHINE AND METHOD
Jack M. Ciccone, Westbury, N.Y., assignor to F. L. Smithe Machine Co., Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 103,473, Apr. 17, 1961, which is a continuation-in-part of application Ser. No. 824,501, July 2, 1959. This application June 22, 1966, Ser. No. 559,689
27 Claims. (Cl. 53—3)



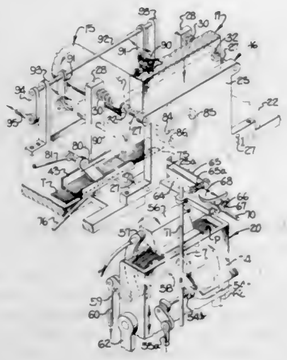
Envelope making, stacking and banding machinery are provided wherein from the delivery end of an envelope making machine, envelopes are advanced by a slotted wheel mechanism in flat spaced relationship; means are provided to accumulate the envelopes with their edges contacting an aligned surface; after a predetermined number of envelopes have accumulated, a pusher element moves the accumulated stack of envelopes laterally to a banding station where further pusher means push the stack broadside through the banding mechanism.

3,416,287

APPARATUS AND METHOD FOR WINDING AND PACKAGING WEB MATERIAL

John L. Hawkins and Newman McIntyre, Shelby, N.C., assignors to McIntyre Packaging, Incorporated, Hickory, N.C., a corporation of North Carolina

Filed Aug. 19, 1966, Ser. No. 573,647
10 Claims. (Cl. 53—3)



8. A method of forming a package of web material such as elastic tape comprising the steps of:

(a) winding a predetermined length of web material in overlying convolutions about a mandrel,

(b) stripping the wound convolutions from the mandrel while frictionally engaging opposite side edges of the wound convolutions to substantially maintain the convolutions in their wound form after removal from the mandrel,

(c) moving the stripped convolutions to a packaging station while flattening the convolutions by applying a force to the periphery of the wound convolutions, and

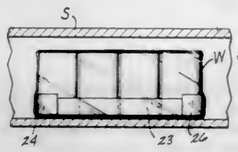
(d) applying a wrapper around the medial portion of the flattened convolutions to form a package of web material.

3,416,288

METHOD OF SHRINK-PACKAGING UTILIZING A SELF-ERECTING PALLET

Everett A. Coons, West Monroe, La., assignor, by mesne assignments, to Olinkraft, Inc., West Monroe, La., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 496,908
1 Claim. (Cl. 53—27)



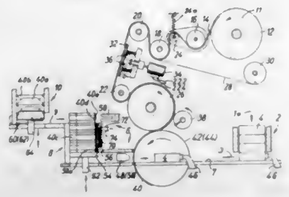
A method of fabricating a shrink package of the type including a plurality of articles disposed in a pallet where the pallet is fabricated simultaneously and in combination with the shrink step.

3,416,289

APPARATUS FOR WRAPPING CIGARETTE PACKS AND THE LIKE

Alfred Sebelin, Hamburg-Bergedorf, Germany, assignor to Hauni-Werke Koerber & Co. KG., Hamburg-Bergedorf, Germany

Filed July 18, 1966, Ser. No. 566,073
Claims priority, application Great Britain, July 19, 1965, 30,550; Dec. 21, 1965, 54,050
16 Claims. (Cl. 53—55)



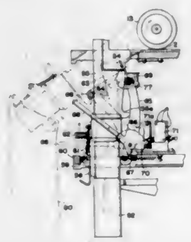
1. In an apparatus for wrapping cigarette packs and analogous commodities in envelopes of sheet material, in combination, a plurality of instrumentalities operative to move the commodities seriatim along a predetermined path and to apply and deform blanks of sheet material around successive commodities to convert such blanks into envelopes each having at least two adjoining portions which can be secured to each other by the application of heat; multiple-speed drive means for operating said instrumentalities at a plurality of speeds including a full speed; at least one heat-applying element movable between a heat-transmitting first position with reference to said adjoining portions of successive envelopes and at least one retracted second position; shifting means operated by said drive means and arranged to move said element to first position with reference to successive envelopes and to maintain said element in such first position for a predetermined period of time in response to operation of said instrumentalities at said full speed; and control means comprising time-delay means for moving said element from first position to second position after elapse of said predetermined period of time in response to operation of said instrumentalities at less than said full speed.

3,416,290

COIN COUNTING AND WRAPPING MACHINE

Isamu Uchida, No. 10–1, 4-Chome, Daito, Daito-ku, Tokyo, Japan

Filed Nov. 3, 1966, Ser. No. 591,742
13 Claims. (Cl. 53—78)



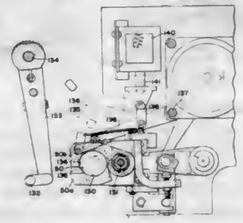
1. Apparatus comprising coin counting means, coin wrapping means, connecting means providing a passage through which said coin counting and said coin wrapping means are in communication with each other, said connecting means including movable means movable between a first position whereat coins are guided through said passage from the coin counting means into the coin wrapping means and a second position whereat the coins are guided through said passage from the coin counting means to a position other than the coin wrapping means, and control means to deactivate said coin wrapping means when said movable means is in said second position.

3,416,291

COIN COUNTING AND WRAPPING MACHINE

Isamu Uchida, No. 10–1, 4-chome, Daito, Daito-ku, Tokyo, Japan

Filed Nov. 3, 1966, Ser. No. 591,743
12 Claims. (Cl. 53—78)



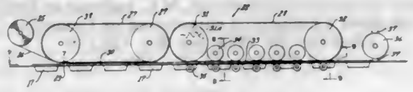
1. Apparatus comprising coin counting means, coin wrapping means, said coin counting means including control means to count coins delivered from said coin counting means to said coin wrapping means and to interrupt the delivery of coins when a predetermined number of coins have been delivered, said coin wrapping means including a coin accumulating cylinder for receiving coins from said coin counting means and accumulating coins as a stack therein and a coin wrapping mechanism for removing said stack of coins from said coin accumulating cylinder and wrapping the stack with a wrapping material, and further control means to reset said coin counting means and simultaneously discharge any partial stack of coins remaining in said coin accumulating cylinder.

3,416,292

APPARATUS FOR MAKING COVERED RECEPTACLES OR THE LIKE

Otto R. Weber, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Original application Aug. 18, 1964, Ser. No. 390,295. Divided and this application Jan. 6, 1967, Ser. No. 621,374
7 Claims. (Cl. 53—329)



This disclosure relates to a method and apparatus for continuously securing cover means to the upper peripheral flange means of open top receptacles as the receptacles are continuously being fed along a path with the cover means, the securing means being continuously moved over and along with the cover means to secure the cover means to the peripheral flanges of the receptacles and including a continuous orbiting belt means being heated to heat seal the cover means to the receptacles at the peripheral flanges thereof or providing pressure means for pressing a pressure adhesive side of the cover means against the peripheral flanges of the receptacles.

3,416,293

SULFUR ADSORPTION

Larry G. Alexander, Louisville, Ky., assignor to Catalysts and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed June 22, 1967, Ser. No. 647,907
10 Claims. (Cl. 55—73)

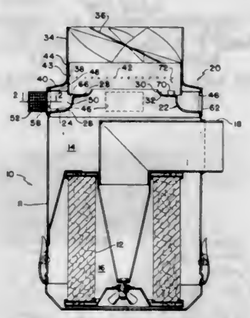
The use of activated carbon in removing small quantities of sulfur compounds has gained wide acceptance as a pretreatment stage in hydrocarbon streams used in such processes as steam gas reforming. Capacity of activated carbon or metal oxide carbon is increased by the use of water.

3,416,294

CONTINUOUS SELF-EVACUATING AIR CLEANER

Stanley R. Holliday, Monticello, Wis., assignor to Rice Filter, Inc., Detroit, Mich., a corporation of Michigan

Filed Aug. 11, 1966, Ser. No. 571,738
10 Claims. (Cl. 55—431)



An air cleaner adapted to be connected to a vacuum source such as an engine manifold, the cleaner having means for inducing whirling motion of the air drawn through the cleaner, an annular channel for receiving air particles centrifgually separated from the air, at least one radially outwardly facing opening in said channel extending through the side of said cleaner, wall means overlying the opening and defining therewith an elongated chamber of tapered cross-section open at its ends through which air is drawn into the channel substantially tangentially thereof in a direction to assist air circulation around the channel, movement of air circumferentially of said channel causing air particles to be centrifugally ejected through the opening at the small end of said chamber.

3,416,295

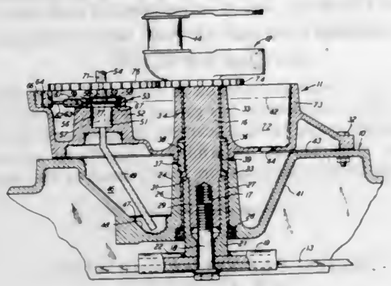
ROTARY LAWN MOWER WITH GASOLINE ENGINE

Vernon R. Kaufman, Racine, Wis., assignor to Jacobsen Manufacturing Company, Racine, Wis., a corporation of Wisconsin

Filed Oct. 24, 1965, Ser. No. 504,548
5 Claims. (Cl. 56—25.4)

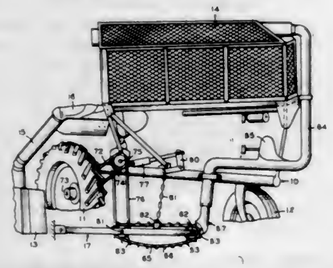
A rotary lawn mower having an engine mounted on a mower housing, and having the engine crank shaft extending through an engine mounting base and through the mower housing. A crankshaft bearing is supported in each of the engine base and the mower housing, and an alignment dowel is disposed between the engine base and

the mower housing for aligning the bearings. Also, the mower housing is recessed to form an oil sump with a low intake for constant oiling. The engine crankshaft carries



a sleeve which in turn supports the cutter, and the sleeve and crankshaft have mating friction surfaces therebetween for transmitting rotation between the crankshaft and the sleeve.

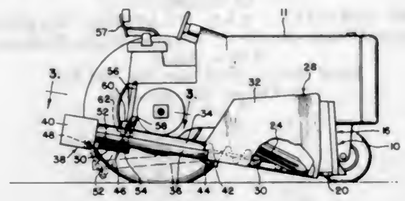
3,416,296
COTTON PICKUP UNIT
John F. Culp, Rte. 1, Box 163, Bell City, Mo. 63735
Filed July 7, 1966, Ser. No. 563,603
12 Claims. (Cl. 56—28)



1. In a cotton pickup unit:
(a) a frame,
(b) a pair of longitudinal spaced shafts extending transversely of and rotatively mounted on the frame,
(c) a plurality of endless flexible members extending between and operatively driven by the shafts, the members being disposed in side-by-side relation and having lower spans which sag downwardly adjacent the surface of the ground,
(d) hook means carried by the endless flexible members,
(e) a transfer station adjacent the endless flexible members at one shaft for removing cotton from the hook means, and
(f) means turning the shafts and driving the endless flexible members so that the lower spans drag the ground and the hook means on the lower spans pick up cotton from the ground and deliver the cotton to the transfer station.

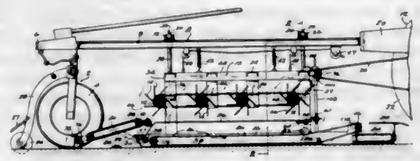
3,416,297
COTTON HARVESTER
Forrest L. Simpson and Gerald L. Robertson, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,819
10 Claims. (Cl. 56—33)

1. In a cotton harvester of the character having harvesting means for removing bolls from the plants and having a leading end closely adjacent the ground, conveyor means adjacent the harvesting means and also having a leading end closely adjacent the ground, the bolls removing means having the effect of incidentally lifting foreign material from the ground and depositing it in the conveyor means, the conveyor means including a housing and a transfer device operative therein, and



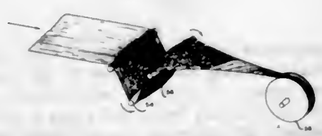
the conveyor means being operative for conveying the cotton bolls and such foreign material toward a delivery end of the conveyor means, the combination comprising, a section of the conveyor housing adjacent its delivery end being separable for exposing the interior of the housing whereby to enable removal of accumulated and congested foreign material in the housing.

3,416,298
CROP HARVESTING MACHINE
Paul Erdman, Rte. 1, Almond, Wis. 54909
Filed Apr. 13, 1965, Ser. No. 447,707
17 Claims. (Cl. 56—327)



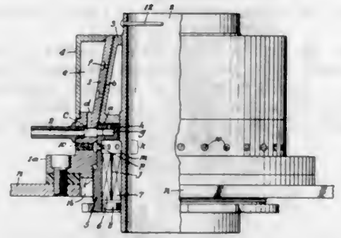
A crop harvesting machine having laterally spaced vegetable removing means which are propelled along either side of a row of vines by a prime mover. The vegetable removing means are provided with means to lift the vines from their growing position and place them in the vegetable removing means. The vegetable removing means removes the vegetables from the vines, conveys them from the machine, and returns the vines to their growing position.

3,416,299
PILE FABRICS FROM NONWOVEN FABRICS
Anthony Bottomley, Maplewood, N.J., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 18, 1965, Ser. No. 426,130
8 Claims. (Cl. 57—31)



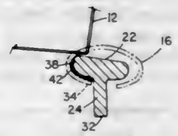
Method and apparatus for forming a pile fabric from a plastic film comprising orienting the film, partially disintegrating same, folding out the partially disintegrated film, and then randomly severing interconnected fibers of the partially disintegrated film to produce a bulky, nonwoven fabric.

3,416,300
SPINNING AND TWISTING APPARATUS
Erwin Schenkel, 19 Weinbergstrasse, 7412 Eningen, Germany
Filed Apr. 3, 1967, Ser. No. 627,794
Claims priority, application Germany, Apr. 6, 1966, Sch 38,801
6 Claims. (Cl. 57—77)



A spinning and twisting apparatus in which a tubular spinning member has directly attached to its circumference the squirrel cage rotor of a high frequency motor and a conical member and is kept aerostatically floating by compressed air in an air bearing formed of a conical air gap extending around said conical member and an axially effective air gap formed at the base of said conical member and communicating with said conical air gap. Both of said air gaps are adapted to be simultaneously adjusted.

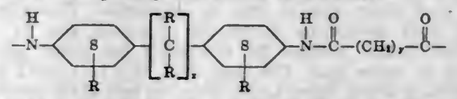
3,416,301
SPINNING RING WITH INDENTED SURFACE
Kurt Constantine Chilpan, Seneca, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1967, Ser. No. 612,965
9 Claims. (Cl. 57—119)



An improved yarn spinning device having a spindle for winding up yarn, a traveler for receiving and redirecting the yarn, and a metal ring for guiding the traveler as it is moved about the spindle by the action of the yarn being wound on the spindle, the ring having a bearing surface for contacting the traveler. The improvement includes a bearing surface having a multiplicity of smooth-surfaced indentations for accumulating the natural elements that separate from the yarn during processing and adapting those elements to act as lubricants between the traveler and ring, those elements including waxes and finishes used in processing the yarn and fibers of the yarn alone and in combination with the waxes and finishes.

3,416,302
DIFFERENTIAL SHRINKAGE YARN
Robert H. Knospe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 608,281, Jan. 10, 1967. This application Sept. 12, 1967, Ser. No. 667,095
51 Claims. (Cl. 57—140)

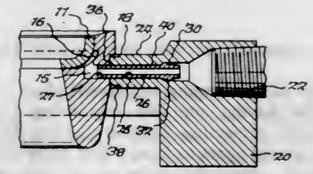
A yarn comprising a plurality of differentially shrinkable drawn continuous filaments including a high shrinkage group of filaments and a lower shrinkage group of filaments, the filaments of each said group being constituted by a polycarbonamide wherein at least 50 mol percent of the repeating units are of the formula:



I

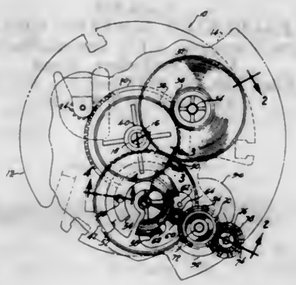
wherein x represents 1 or 2, y represents an integer in the range of 7–14 and R represents the same or different member of the class consisting of hydrogen and methyl, said yarn being typified by exhibiting a DFL greater than 1.0% after being subjected to a load of 4 mg. per denier during boil-off and increasing at least 0.5% in DFL after being subjected to heat-setting at 177° C. for two minutes under the same total load. These yarns yield attractive fabrics of excellent bulk and covering power, and increase in bulk upon heat-setting.

3,416,303
MEANS FOR PREVENTING LEAKAGE OF LUBRICANT FROM SPINNING RING MOUNTING
Hyatt B. Atwood, Buffalo, and James N. McLean, Tonawanda, N.Y., assignors to Herr Manufacturing Company, Inc., Buffalo, N.Y.
Filed Feb. 21, 1967, Ser. No. 617,535
3 Claims. (Cl. 57—120)



The invention comprises the securing of a spinning ring in fixed and leakproof relation to a supporting member or mechanism so as to avoid any connection between these two parts through which oil or lubricant may leak, so that when the ring wears out, it and the supporting member are removed as a unit and replaced by a similar unit.

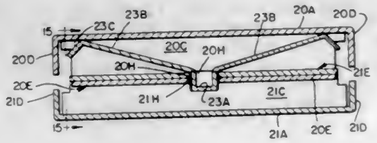
3,416,304
CLOCK REGULATING APPARATUS
Arthur J. Little, Springfield, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Feb. 17, 1966, Ser. No. 528,219
15 Claims. (Cl. 58—85.5)



A regulator adjustment apparatus having a planet gear rotatably carried by an occasional gear and both coupled to the reset shaft through respective pinion gears. The

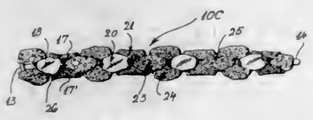
planet gear is rotated to alter the regulator adjustment, while rotation of the occasional gear serves to both reset the clock mechanism and disengage the planet gear from its reset pinion gear to limit the adjustment. Thereafter the clock mechanism rotates the occasional gear to a predetermined position for reengaging the planet gear with its pinion gear. The reset shaft may be located in various positions along an arc about the axis of the pinion gears to permit variations in the distance between the reset shaft and the clock hand shaft to accommodate styling changes without major alterations.

3,416,305
ADJUSTABLE SECTION FOR A WATCH BRACELET
Kurt Albert Rieth, Warwick, R.I., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,463
14 Claims. (Cl. 59—79)



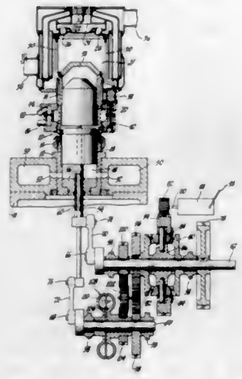
1. An adjustable section for a watch bracelet comprising:
two rows of overlapping, staggered links,
each link having one side comprising a plurality of inwardly projecting members having their adjacent ends spaced apart to form a first gap extending longitudinally along the centerline of said one side and adjacent inner side portions spaced apart to form a pair of second gaps which extend in opposite directions from said first gap towards the outer portions of said one side,
the inwardly projecting members of the link in one row of links overlying the inwardly projecting members in the other row of links with pairs of second gaps registering with each other,
a catch member, and
resilient means in the links of at least one row of links, each resilient means urging a catch member through at least one pair of registering second gaps,
whereby said links may be separated by moving said catch member out of said registering gaps and sliding said links longitudinally relative to each other.

3,416,306
ENCRUSTED JEWELRY CHAIN
Shigesaburo Nakagawa, 1,176 Yawata-Machi, Ichikawa, Chiba Prefecture, Japan
Filed Feb. 20, 1967, Ser. No. 617,399
10 Claims. (Cl. 59—80)



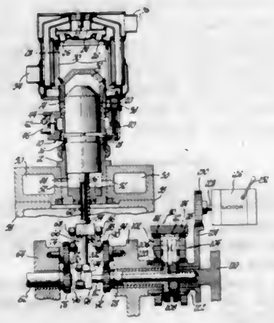
The disclosure describes jewelry chains having different external configurations produced by electroforming rough, porous jackets around core links of various shapes.

3,416,307
VARIABLE POWER AND VARIABLE DIRECTION ENGINE AND SPLIT TORQUE PHASE CHANGING DEVICE
Rolland B. Wallis, La Grange Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,464
10 Claims. (Cl. 60—24)



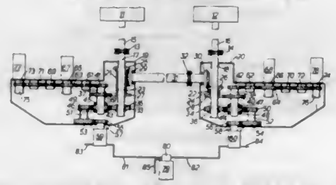
A variable power and variable direction hot gas engine in the preferred embodiment has a phase changer providing a split torque drive between the engine's power and displacer mechanisms. In one power path there is a fluid coupling whose torque transmitting characteristics are matched to the displacer mechanism's torque requirements when the phase relation of the mechanisms is fixed, this power path continuously transmitting a major portion of the power required to normally drive the displacer mechanism. The other power path which transmits the remaining portion of the torque requirements for the displacer mechanism includes infinitely variable phase drive means for normally maintaining the mechanisms in a fixed phase relation and for momentarily changing their phase relation to establish a new phase relation.

3,416,308
VARIABLE POWER AND VARIABLE DIRECTION ENGINE AND COMPOUND PLANETARY PHASE CHANGING DEVICE
William G. Livezey, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 5, 1967, Ser. No. 636,405
1 Claim. (Cl. 60—24)



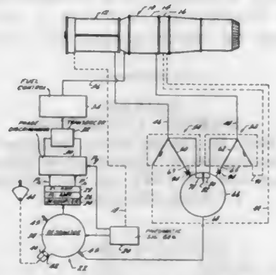
A hot gas energy transforming device operating with the Stirling cycle has a phase changing device employing a compound planetary drive connecting the engine's power mechanism to its displacer mechanism. A pair of like planetary drive sets are compounded to provide the compound drive which is controlled by a servomotor to fix and vary the phase relation between the power and displacer mechanisms.

3,416,309
ENGINE INSTALLATIONS AND STARTING MEANS THEREFOR
Robert T. Elmes, Birdlip, and Arthur H. Lane, Innsworth, England, assignors to Dowty Rotol Limited, Gloucester, England, a British company
Filed Nov. 22, 1966, Ser. No. 596,307
Claims priority, application Great Britain, Dec. 7, 1965, 51,840/65
10 Claims. (Cl. 60—39.15)



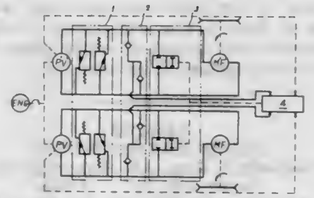
An engine installation which has at least two engines each connected to drive a respective accessory gearbox, and thus accessories mounted thereon, includes gas turbine-type starter means, one for each engine, mounted upon the respective gearbox. It is arranged that the engine which is running at the fastest speed alone drives the accessories on all the gearboxes, and the starting means is such that when all the engines are inoperative one or other of said means can be employed to drive all the accessories on the gearboxes, gas for operating the starter means being derived from a single gas generator.

3,416,310
FLUID TEMPERATURE CONTROLS PARTICULARLY FOR GAS TURBINE ENGINES
Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Original application Oct. 22, 1965, Ser. No. 500,697, now Patent No. 3,383,038, dated May 14, 1968. Divided and this application Oct. 20, 1967, Ser. No. 684,091
3 Claims. (Cl. 60—39.28)



A fluid temperature control for providing a speed reference signal insensitive to the changes in the ambient operating temperature of a gas turbine engine. The reference signal generating means includes a chamber which has a fluid pressure signal input having a frequency proportionate to the rate of turbine rotation. The chamber is flushed with a constant temperature gas derived from the engine so that changes in the input signal thereto result in changes in its output strength, whereby an error signal may be derived to vary fuel flow and thus maintain the turbine at a desired rate of rotation. The constant temperature gas for the chamber is derived from a plenum which has inputs respectively connected to the engine compressor discharge and the turbine inlet. Flow dividers divert hot or cool air into the plenum to maintain a desired temperature. The flow dividers have control ports which either divert the hot or cool air to the plenum or divert it back to the engine gas stream. A bimetal element in the plenum is effective against conduits connected to these control ports to control their pres- their phase relation to establish a new phase relation.

3,416,311
POWER-DISTRIBUTING SYSTEM
Heiji Yoshizawa, Komatsu-shi, Japan, assignor to Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co. Ltd.), Tokyo, Japan
Filed Aug. 31, 1966, Ser. No. 576,369
Claims priority, application Japan, Sept. 7, 1965, 40/54,381
10 Claims. (Cl. 60—53)

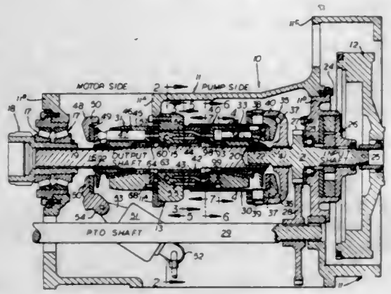


A system for distributing power among a plurality of hydraulic circuits of a hydraulic transmission. Each hydraulic circuit includes a pump and a motor hydraulically connected to the pump through a pair of conduits with the output of the motor of each circuit being connected to an element which is to be driven. Each hydraulic circuit further includes a shorting means for shorting the flow of fluid between the conduits of each circuit. A totalizing means is operatively connected with the plurality of hydraulic circuits for totalizing the powers respectively expended in the plurality of circuits at any given moment, and this totalizing means is also operatively connected with the plurality of shorting means of the several hydraulic circuits, respectively, for simultaneously actuating all of the shorting means to place them simultaneously in shorting positions where the conduits of each circuit have the flow of fluid shorted therebetween, this totalizing means bringing about the simultaneous actuation of all of the shorting means when the sum of the powers expended at any given instant in all of the hydraulic circuits exceeds a given value. The several pumps of the several circuits are driven from a single source of power capable of efficiently supplying power up this latter given value, so that power from a single source can be distributed in any desired manner among the several hydraulic circuits as long as the total power of all of the circuits does not exceed the value at which the totalizing means will shift the plurality of shorting means to their shorting positions.

3,416,312
FORCE COMPENSATING MEANS FOR AXIAL PISTON MACHINES
William Margolin, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,873
12 Claims. (Cl. 60—53)

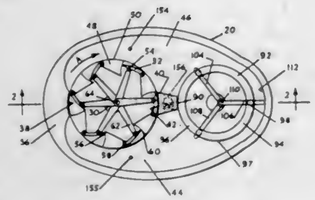
For an axial piston type hydraulic energy translating machine auxiliary hydraulic piston means are provided for urging the cylinder block members into fluid sealing

engagement with associated valve plates at the abutting interfaces; the piston means being disposed in a cylinder block in continuous fluid communication with the high



pressure side of the fluid working circuit whereby the magnitude of force urging engagement of the cylinder block members with associated valve plates is proportional to the load applied to the machine.

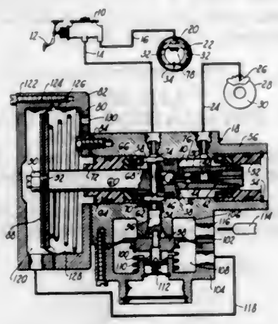
3,416,313
FLUID TRANSMISSION
Kenneth P. Gray, 336 Highbridge St., Fayetteville, N.Y. 13066
Filed Mar. 13, 1967, Ser. No. 622,511
5 Claims. (Cl. 60—53)



Hydraulic transmission comprising a casing having at one end a variable volume rotary pump, and a constant volume hydraulic motor at the other end, the pump and motor dividing the casing into two portions, one acting as a reservoir and the other acting as a pressure chamber. The pump volume output is varied by varying the stroke of the pistons. The motor comprises vanes pivoted on a shaft eccentric of the motor output shaft and extend through pivoted slots in the motor rotor. Two such transmissions may have a common drive shaft and drive the rear wheels of the vehicle independently. A control responsive to the pressure in the pressure chamber is adapted to exert control over the pump volume output.

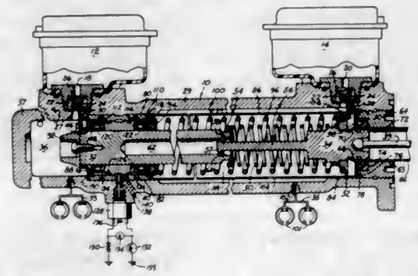
3,416,314
HYDRAULIC PRESSURE HOLD-OFF AND BOOSTER MEANS
Maxwell L. Cripe, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,164
11 Claims. (Cl. 60—54.5)

A hydraulic pressure regulating device in a hydraulic system between an actuator and a motor, which device initially permits flow from the actuator to the motor, terminates it for a period, holds back pressure for a period thereafter and returns full pressure potential upon full release of the means holding back pressure which includes



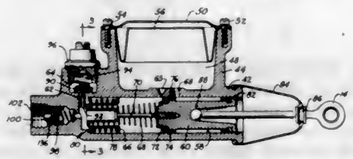
a pressure responsive valve controlling a pressure hold-off motor by a fluid actuated valve means.

3,416,315
BRAKE SYSTEM FAILURE WARNING DEVICE
Harvey E. Wortz, Kokomo, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,784
6 Claims. (Cl. 60—54.6)



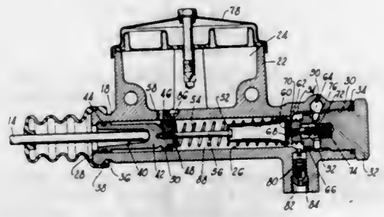
A split system type of master cylinder for a vehicle braking system having two plungers arranged in tandem to divide the cylinder into two pressure chambers with a bearing member located between said chambers and movable axially in response to a predetermined differential pressure therebetween to actuate a warning device which appraises the vehicle operator of a brake malfunction.

3,416,316
MASTER CYLINDER
Richard L. Lewis, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,214
9 Claims. (Cl. 60—54.6)



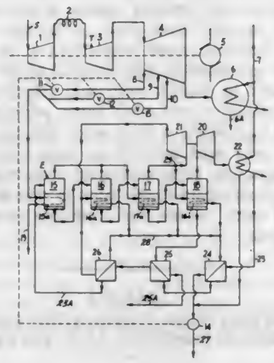
A master cylinder having first and second pistons for developing separate pressures in separate chambers with first and second valve means operatively related to ports leading to said first and second chambers and to a common passage so as to equalize pressures in said first and second chambers whenever said first and second pistons are moved together.

3,416,317
MASTER CYLINDER
Paul B. Shutt, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,065
5 Claims. (Cl. 60—54.6)



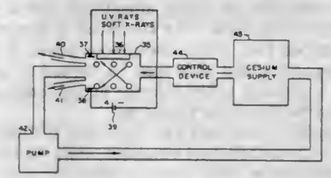
A master cylinder having first and second pistons for developing separate pressures in separate chambers with first and second piston valve means operatively related to said first and second pistons with each of said first and second piston valve means having valve elements operable upon translation of said first and second pistons within the bores of the master cylinder to communicate the pressure being developed in the respective chamber to a passage means communicable to the other chamber for the other piston.

3,416,318
EVAPORATING APPARATUS
Achille Etienne Jean Chocquet, Paris, France, assignor to Universal Desalting Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,121
Claims priority, application France, Feb. 18, 1966, 50,229
10 Claims. (Cl. 60—67)



An electric generator is driven by a multi-stage steam turbine. Steam selectively bled from the turbine at selected states of expansion provides the heat input for an evaporator system comprising a plurality of stages. Liquid to be evaporated is fed to the first stage of the evaporator system and unevaporated portions of the liquid are fed successively to other stages. Vapor produced by one or more stages of the evaporator is fed to the heating coils of a successive stage. Moreover, vapor produced by one or more stages of the evaporator is mechanically recompressed by a compressor driven by an expansion motor and the recompressed vapor is fed to the heating coils of at least one of the evaporator stages. The expansion motor for driving the compressor is driven by vapor from one or more stages of the evaporator and exhausts into a condenser. Vapor produced by the evaporator is condensed and the heat content of the condensate and also that of unevaporated liquid is recovered and used at least in part to preheat the liquid to be evaporated.

3,416,319
PROPULSION SYSTEM
Albert M. Rubenstein, 2709 Navarre Drive, Chevy Chase, Md. 20015
Filed Aug. 20, 1959, Ser. No. 835,151
5 Claims. (Cl. 60—202)



1. Apparatus for propelling a vehicle in space with energy obtained from radiation existing in free space from a source independent of said vehicle comprising, a chamber having an aperture for the escape of high velocity charged particles of matter and a portion which will admit the radiation, a fluid material within said chamber which is readily ionized by the radiation to produce positive and negative charged particles within said chamber, means for supplying said material to said chamber in fluid form, and means for accelerating the charged particles within said chamber to a high velocity whereby said charged particles escape through the aperture in one general direction, causing a reactive force upon the chamber in the opposite direction.

3,416,320
TURBO-JET PROPULSION METHOD USING EMULSIFIED FUELS AND DEMULSIFICATION
William J. Asher, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed July 14, 1967, Ser. No. 653,457
19 Claims. (Cl. 60—208)

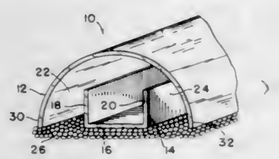
Stable emulsions of hydrocarbons, or halogenated or oxygen containing derivatives thereof, are continuously produced wherein the emulsion contains at least 75 wt. percent and up to 99 wt. percent of such components, as the dispersed phase, the remainder being a continuous phase polar organic liquid immiscible with the dispersed phase together with a small amount of at least one organic emulsifier. The three component admixture, with the dispersed component initially present in no more than about 50 wt. percent concentration, is continuously subjected to an initial stage of emulsification at a shear rate sufficient to effect appreciable emulsification and between about 1,000 and about 50,000 reciprocal seconds with the major amount of the partially emulsified composition being withdrawn from the emulsification zone and continuously being recycled to the head end of said zone for further emulsification. The rate of recycle to the rate of introduction of fresh components and rate of withdrawal of

emulsion varies between about 10 volumes and about 250 volumes of recycle per volume of fresh feed and per volume of emulsion withdrawn. In the same stage, or in subsequent stages connected in series, additional amounts of hydrocarbon or derivative, such as a fuel, are continuously added but all of the liquid to be the continuous phase is added initially to the first stage. The final emulsion typically contains about 97 wt. percent hydrocarbon or derivative thereof in the stable emulsion. Generally the later stages progressively employ increased recycle ratios over each preceding stage, the amount of effluent from one stage and going to the next succeeding stage being increased, with the volume of fresh material to be dispersed added being approximately equal to the volume of emulsified mixture entering that particular stage.

The emulsion is continuously broken by subjecting it in a single stage or in a series of successive stages to a shear rate of at least 5,000 reciprocal seconds greater than the shear rate last applied in making the emulsion, followed by passing the emulsion so treated into a zone of coalescence and then to a separator with the unbroken emulsion portion so separated being recycled to the same demulsification zone or being introduced into a succeeding demulsification zone. The coalesced dispersed phase, if a hydrocarbon fuel, now a continuous phase, is removed from the separator and may then be burned in an engine by passing it through a fuel injector in conventional manner or it may be stored for future use.

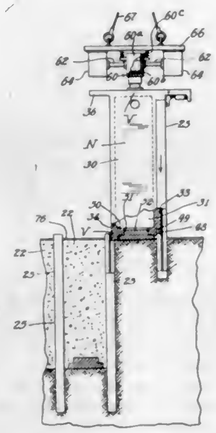
The demulsification and fuel injection systems, in the case of a hydrocarbon fuel emulsion, may be integral or in close association with the operation of a jet engine powering an aircraft or in association with a diesel engine powering a truck, ship, pump, or the like, wherein the fuel tanks contian the stable emulsion. The engine in such cases is powered by a liquid fuel which is obtained by continuously demulsifying the emulsion and pumping the fuel so demulsified. Emulsifier and polar organic liquid are so chosen initially that traces thereof in the demulsified fuel are not harmful to the engine operation and cause no undue maintenance problems for the engine.

3,416,321
DRAIN TILE STRUCTURE
Oscar C. Saad and James T. Otenbaker, both of 1434 Maryland Ave., Grosse Pointe Park, Mich. 48236
Filed Aug. 8, 1966, Ser. No. 570,966
3 Claims. (Cl. 61—13)



A drain tile is disclosed comprising an elongated drain channel having a generally U-shaped cross section and an elongated cover having an inverted, generally U-shaped, cross section positioned over the drain channel in longitudinal alignment therewith. The cover dimensions are substantially twice those of the drain channel, whereby the drain channel and cover may be separately supported from a single bed of gravel in vertically spaced apart relation. Separate members may be positioned between the drain channel and cover at predetermined spaced apart locations longitudinally thereof to maintain the drain channel and cover in spaced apart relation. Alternatively extensions of the drain channel may be used to maintain the drain channel and cover in predetermined spaced relation.

3,416,322
SONIC METHOD AND APPARATUS FOR IMPLANTING UNDERGROUND CONCRETE WALLS
Albert G. Bodine, Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif. 91406)
Filed Nov. 14, 1966, Ser. No. 594,153
12 Claims. (Cl. 61—35)

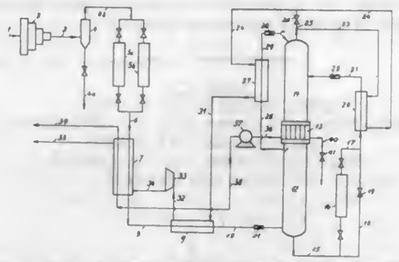


1. The process of implanting a concrete wall below ground level in the earth, that comprises:
lowering into pressural engagement with a surface of the ground an elastic, hollow, box-structure wall form, having substantially vertical side walls, of pronounced width, and substantially vertical edge walls of a dimension substantially equal to the thickness of the wall to be implanted;
causing a rotor means to travel orbitally about a bearing means at a frequency in the range of resonance for a pattern of standing wave vibration in said wall form;
applying an inertial cyclic force of reaction so developed at said bearing means to said wall form to set up in said wall form a pattern of resonant elastic standing wave vibration, so as to sonically vibrate and mobilize the material of the earth underneath and in contact with said resonantly vibrating form, whereby said wall form penetrates into the ground and forms a wall space therein;
elevating said wall form from said wall space while simultaneously both setting up a pattern of resonant elastic standing wave vibration in said form by means of said rotor means and installing concrete in said wall space.

3,416,323
LOW TEMPERATURE PRODUCTION OF HIGHLY COMPRESSED GASEOUS AND/OR LIQUID OXYGEN
Peter Heinik, Grunwald, Germany, assignor to Linde A.G., Wiesbaden, Germany
Filed Jan. 13, 1967, Ser. No. 609,153
Claims priority, application Germany, Jan. 13, 1966, L 52,585
3 Claims. (Cl. 62—18)

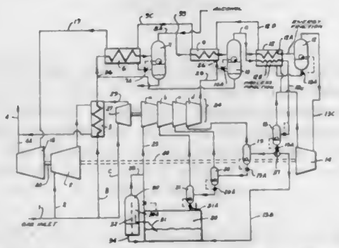
High pressure oxygen production using adsorbers to clean air, wherein nitrogen overhead is treated in the

order: (1) to subcool reflux or feed; (2) warmed by air-to-be-separated; (3) expanded to provide make-up refrig-



eration; and (4) warmed to normal air temperature by freshly cleansed incoming air-to-be-separated.

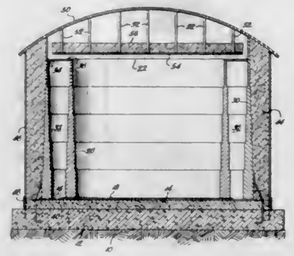
3,416,324
LIQUEFACTION OF A GASEOUS MIXTURE EMPLOYING WORK EXPANDED GASEOUS MIXTURE AS REFRIGERANT
Judson S. Swearingen, 2235 Carmelina Ave., Los Angeles, Calif. 90064
Filed June 12, 1967, Ser. No. 645,268
12 Claims. (Cl. 62—23)



A process of liquefying natural gas and the like wherein only the expansion energy of the gas is employed for liquefaction. A throughput portion of the gas is expanded and cooled by a turboexpander and then used to cool a liquid producing portion of the gas. Heavy hydrocarbons in the liquid producing portion are separated from this portion by countercurrent heat exchange with previously separated condensibles. The cooled and lighter liquid producing portion is divided into an energy fraction and a process fraction. The energy fraction is cooled and expanded by a second turboexpander and by countercurrent heat exchange cools the process portion to form and separate a liquid product. The liquid product is then flashed to atmospheric pressure and collected. Before expansion the throughput portion and the energy fraction are at pressure of the gas at the input of the process. The expansion of the throughput portion and the energy fraction generates mechanical work which drives a compressor. The compressor has its outlet at the pressure of the expanded throughput portion and its inlet at the pressure of the expanded energy fraction so that this latter pressure is maintained, and the expansion of the energy fraction is through a wide pressure differential.

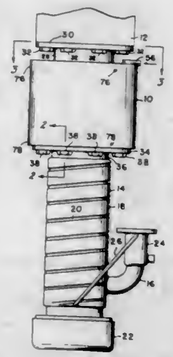
3,416,325
LOW TEMPERATURE STORAGE TANK
Ardell H. Nelson, Coraopolis, Pa., assignor to Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 9, 1967, Ser. No. 645,018
10 Claims. (Cl. 62—45)

A low temperature storage tank includes a base portion comprising a foundation portion supporting an insulating layer which in turn supports an outer tank bottom plate which further supports an inner tank bottom plate. An inner cylindrical wall means extends upwardly from the inner tank bottom plate and defines an inner tank open at the top thereof. An outer wall means of generally cylindrical configuration extends upwardly from said outer tank bottom plate and is disposed concentrically about the inner wall means. An open area is defined between the inner and outer wall means, the upper open end of the inner tank being in communication with the



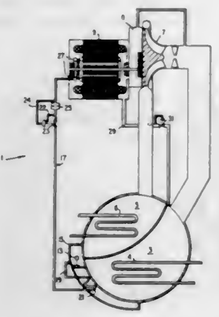
upper portion of the open area between the inner and outer wall means. Anchor straps are secured to the outer surface of the outer wall means and extend downwardly and are embedded within a foundation portion. Insulating means is disposed in surrounding relationship to the outer wall means, and a moisture barrier means is disposed in surrounding relationship to the insulating means. Roof means is supported by the outer wall means and includes a suspended inner roof portion which is insulated and which is spaced from the inner and outer wall means.

3,416,326
EFFICIENT NITROGEN TRAP
Rowen Stuffer, 20 Glenview Lane, Willingboro, N.J. 08046
Filed June 2, 1967, Ser. No. 643,092
7 Claims. (Cl. 62—55.5)



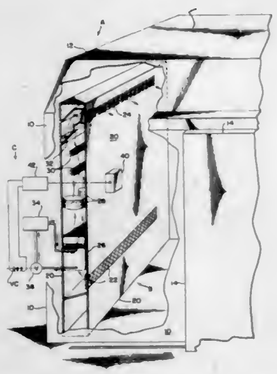
An efficient nitrogen trap having a central through opening maintained at a very low temperature, the through opening being defined by metallic mesh of good thermal conductivity in good thermal contact with extremely cold portions of the trap which are maintained at a very low temperature by virtue of the evaporation of internally housed liquid nitrogen, the mesh also extending into the through opening but not completely closing said opening.

3,416,327
REFRIGERATION MACHINE
George J. Akerhielm and James W. Endress, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,605
3 Claims. (Cl. 62—115)



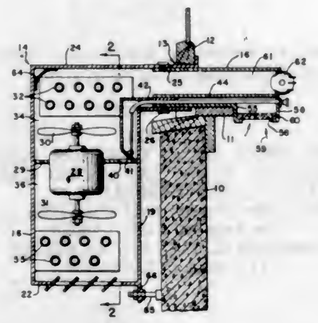
A refrigeration compressor motor cooling circuit having a fixed orifice to regulate flow of refrigerant therethrough with a pressure regulator upstream therefrom to maintain a constant pressure drop across the orifice to maintain a steady flow of refrigerant to the motor irrespective of the pressure drop across the machine.

3,416,328
METHOD AND APPARATUS FOR CONTROLLING THE OPERATION OF AN ENVIRONMENTAL GROWTH CHAMBER
Noel Davis, Russell Township, and Carl E. Merchant, Mentor, Ohio, assignors to Integrated Development and Manufacturing Co., Chagrin Falls, Ohio, a corporation of Ohio
Filed Apr. 4, 1967, Ser. No. 628,479
8 Claims. (Cl. 62—118)



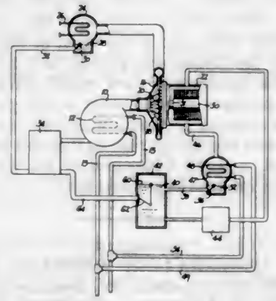
Apparatus for, and a method of, operating an environmental growth chamber having cooling coils through which coolant is circulated at a temperature below the freezing point of water, fans for continuously circulating air over the coil and through the chamber to maintain a desired temperature above freezing within the chamber, and a temperature sensor responsive to the temperature within the chamber for stopping flow of coolant whenever the temperature sensed is below the desired temperature and permitting flow of coolant whenever the temperature sensed is above the desired temperature. The method includes the step of limiting the maximum length of time which coolant can flow by periodically overriding, for brief periods, the temperature sensor's call for coolant flow; while the apparatus comprises a pair of timers arranged to practice the noted method.

3,416,329
AIR CONDITIONING UNIT
George Marshall Thomas, 4282 Roswell Road NE., Apt. J3, Atlanta, Ga. 30305
Filed Dec. 8, 1966, Ser. No. 600,229
4 Claims. (Cl. 62—262)



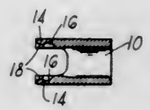
This invention relates to a window air conditioning unit to be supported from a window opening. The housing containing the compressor, evaporator, expansion valve, and condenser, together with the fan and electrical wiring necessary for these elements is suspended outside the window, and substantially below the window opening. The air circulating through the housing to cool the condenser enters the sides of the housing disposed normal to the wall of the building and exits through the bottom wall of the housing, thereby leaving the top, outside, and inside walls imperforate.

3,416,330
APPARATUS FOR COOLING DYNAMOELECTRIC MACHINES
Peter A. Weller, Farmington, and Hollis C. Grubb, Southfield, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed May 18, 1966, Ser. No. 551,153
4 Claims. (Cl. 62—505)



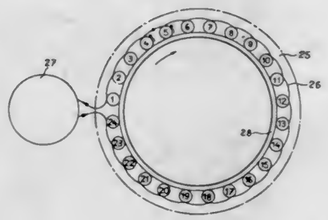
A main refrigerating system and an isolated refrigerating or cooling system are provided with the isolated system being associated with the main system. The isolated system is utilized for cooling the compressor motor of the main system and the refrigerant of the isolated system is not reintroduced into the main system and yet refrigerant is selectively replenished to the isolated system from an accumulator in the main system. At the same time, the heat from the heated refrigerant is conducted through the medium of the isolated system to the medium to be cooled by the main refrigerating system.

3,416,331
UNIVERSAL JOINT
Irving Ray Ritsema, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 8, 1967, Ser. No. 644,665
6 Claims. (Cl. 64—17)



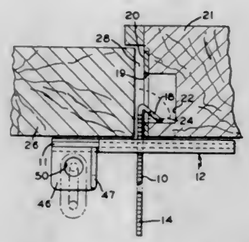
The following relates to a universal joint of the type sometimes referred to as a Hooke's Coupling. The universal joint consists of two angularly disposed rotatable tubular members, each of which has a forked portion formed on the end thereof, and a block having two pairs of diametrically opposed protruding spherical surfaces formed thereon which are guided into trapped engagement with concave seats formed in the forked portion through means of inclined grooves which are formed in the forked portion and extend into the concave seats. The tubular members and components thereof can be stamped out of flat sheets of suitable material.

3,416,332
PATTERNING DEVICE FOR JACQUARD CIRCULAR KNITTING MACHINES
Pierre Joseph, Neuchatel, Switzerland, assignor to Edouard Dubied & Cie. (Societe Anonyme) Couvet, Neuchatel, Switzerland
Filed Aug. 2, 1966, Ser. No. 569,607
Claims priority, application Germany, Aug. 2, 1965, D 47,878
8 Claims. (Cl. 66—50)



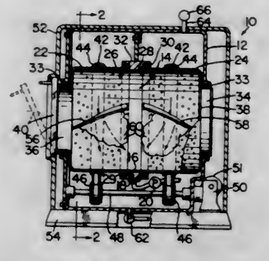
Patterning device for Jacquard circular knitting machines having a rotating needle cylinder, including: a single endless patterning band; a plurality of work stations distributed in a circle; at least two rotating patterning wheels located at each work station, each wheel of a station, when knitting a pattern wider than the circumference of a wheel being responsible for only a portion of the width of the pattern, the entire width then consisting of consecutive portions; a plurality of jacks; a plurality of patterning sinkers for each wheel, said sinkers being vertically movable between a lower position and an upper jack operating position; and means associated with each wheel for interrupting operation of the jacks by the sinkers in said upper position for at least one complete revolution of that wheel, when knitting a pattern wider than the circumference of a wheel.

3,416,333
TRAVEL LOCK
Richard I. N. Weingart, P.O. Box 1526, Nassau, Bahama Islands
Filed Feb. 13, 1967, Ser. No. 615,651
8 Claims. (Cl. 70—14)



A lock having a locking bar with teeth along an edge and an abutment to be inserted behind a portion of members to be locked, and a locking plate which has an opening to receive the bar, and be secured thereto, the plate engaging the outside of the member, and a holding plate, secured to the locking plate by a padlock and which holds the bar in teeth engaging position.

3,416,334
WASHING AND/OR DRYING MACHINE
Robert R. Candor, Miami Township, Montgomery County, and James T. Candor, Centerville, Ohio, assignors to Whirlpool Corporation, Benton Township, Mich., a corporation of Delaware
Continuation of application Ser. No. 544,192, Sept. 21, 1966. This application Sept. 22, 1967, Ser. No. 669,970
10 Claims. (Cl. 68—20)

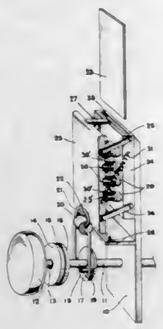


This disclosure relates to a laundry machine having a stationary laundry supporting portion disposed intermediate two movable laundry supporting portions with the stationary laundry supporting portion having a foraminous nozzle inlet means connected therewith whereby movement of the movable portions will move wet laundry and the like across the formainous part of the stationary portion and have the moisture thereof removed by means causing a large volume of air to flow from the confining means through the wet laundry and into the nozzle inlet means.

ERRATUM

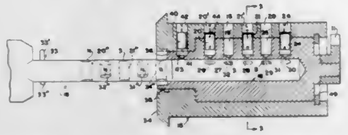
For Class 70—14 see:
Patent No. 3,416,333

3,416,335
MAGNET CONTROLLED APPARATUS
Walter Barney, 4720 Rubio, Encino, Calif. 91316
Filed Jan. 10, 1967, Ser. No. 611,214
8 Claims. (Cl. 70—134)



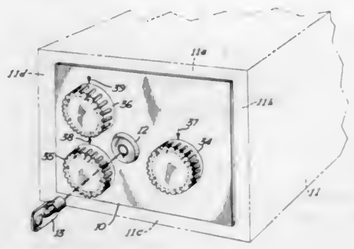
This disclosure relates to a key member in the form of a card containing one or more concealed magnets for reception in a slot to in turn actuate one or more locking magnets within the slot structure to thereby release a movable member to enable opening of a door. In this respect, where a plurality of magnets are included in the door lock structure, it is necessary that all be actuated by the magnets in the card in order to release the movable member and enable the door to be opened. The physical positions of the magnet in the door lock structure determines the positions of their respective poles and if the corresponding opposite positions are not provided by the magnets in the card, the mechanism will not operate. Therefore, a large number of combinations can be provided and only the correct card is capable of unlocking the door mechanism.

3,416,336
MAGNETIC LOCK DEVICES
Ronald Felson, Laurelton, N.Y., assignor to Liquidonics Industries, Inc., Westbury, N.Y., a corporation of New York
Filed Dec. 22, 1965, Ser. No. 515,588
10 Claims. (Cl. 70—276)



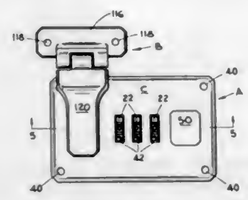
A springless magnetic lock in which each tumbler is a permanent magnet and the key has permanently magnetized inserts, one for each tumbler, and so arranged that upon insertion of the key in proper position into the lock, the tumblers are attracted thereby respectively, to unlocking position. For each tumbler, there is an auxiliary magnet fixed on the lock casing, and so arranged that each constantly attracts its related tumbler to bring and hold it in locking position when the key is withdrawn. At all times, each tumbler is under the attraction of its related auxiliary magnet, regardless of the direction and line of movement of the tumbler. Contact of the tumbler with its associated fixed companion magnet, is avoided by a nonmagnetizable media between them. Except for the magnets, the lock structure is of nonmagnetizable material. In each such set of three related magnets, the strength of the auxiliary magnet is sufficient to maintain the tumbler in locking position regardless of the direction of movement of the tumbler, and the strength of the magnetic key insert is sufficient to shift the tumbler into unlocking position against the action of the auxiliary magnet regardless of the line of movement of the tumbler. The magnets are so positioned that all action on the tumbler is in attraction.

3,416,337
LOCKING COVER FOR A COIN BOX
Marlyn R. Hutchins, Minneapolis, Minn., assignor, by mesne assignments, to Raven Industries, Inc., Sioux Falls, S.D., a corporation of South Dakota
Filed Nov. 23, 1966, Ser. No. 596,489
9 Claims. (Cl. 70—284)



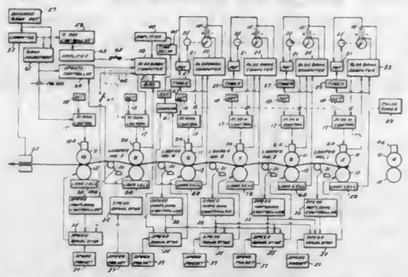
The disclosure is directed to an improved combination lock mechanism in which it is made difficult to interpret the position in which the lock may be opened because the tumblers of the lock have random depth slots formed therein at random positions. The movable part of the lock is supplied with numerous pins which engage numerous slots in rotatable discs and upon all the pins engaging a slot deeper than all others, the bolt mechanism may be moved. At any other position, movement of the movable part of the lock causes at least one pin to engage a slot of one disc before all others, the disc receiving the first engagement with a pin receiving such pin in random order representative of the random order and depth of the slots in the disc making it difficult to determine which pin and disc combination prevents the lock from being operated.

3,416,338
LATCHING DEVICE AND COMBINATION LOCKING MEANS
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Nov. 9, 1966, Ser. No. 593,123
11 Claims. (Cl. 70—312)



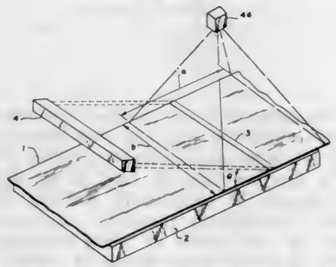
A combination lock of simplified construction wherein the latching slide member is constructed and related to the sleeves cooperable with the dials to selectively lock or unlock the member. The lock employs spring means to key the sleeves to their associated dials, and the same spring means serves to urge the latching slide member toward latched position. Also, the combination lock is provided with a visual finding feature to enable the lock to be opened when the open combination is not known.

3,416,339
AUTOMATIC CONTROL SYSTEM FOR ROLLING MILLS
Harold A. List, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,343
11 Claims. (Cl. 72—8)



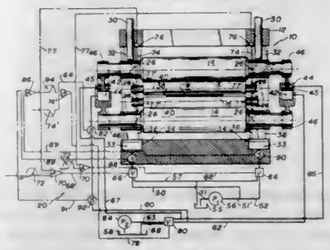
An automatic control system for a rolling mill consisting of a series of initial gagemeter controlled stands, a pivot stand controlled by signals representing (a) the calculated gage of sheet or strip material exiting from the last such gagemeter stand, said calculation being derived by algebraic summing of a screw position signal and a load cell signal from said last gagemeter stand, and (b) by a signal from a multi-functional controller associated with an X-ray gage following the last stand in the mill, to which last stand a signal from the X-ray gage is also applied as a control signal. A screw position feedback signal from the pivot stand balances the combined X-ray control signal and the feed forward signal from the last gagemeter stand. The screw position signal is also applied directly to the mill motor speed control of the last gagemeter stand to supplement speed control provided by a looper control system. Alternately the signal from a load cell on a stand subsequent to the pivot stand may be combined with the X-ray signal or used in place of the X-ray signal to combine with the feed forward signal from the last gagemeter stand to control the pivot stand. The gagemeter stands are returned to a predetermined position after each strip drops out of the mill, while the stands controlled by the X-ray are returned to an updated position representing an adjustable integration of the changes made during the rolling of the previous strip.

3,416,340
AUTOMATIC CONTROL AND INDICATING SYSTEMS FOR ROLLER LEVELERS
James W. Reesor, Allison Park, Pa., assignor to Voss Engineering Company, Callery, Pa.
Filed June 8, 1966, Ser. No. 556,042
7 Claims. (Cl. 72—12)



1. In combination with a continuous sheet processing line including a sheet leveling device through which a longitudinally moving sheet is passed to flatten the sheet, means for detecting at least a portion of the width of the sheet for the presence of ripples, and means responsive to said detecting means for indicating the portion of the width of the sheet in which the ripple is present.

3,416,341
ROLLING MILL CONTROL SYSTEM
Chester Dey, Piedmont, and Arthur Dean Smith, San Lorenzo, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 600,928
17 Claims. (Cl. 72—20)



1. In a rolling mill apparatus including a framework and a pair of rolls rotatably and slidably mounted within said framework; a mill roll gap control system for said apparatus comprised of a roll pushup means including a first actuator operatively connected to said frame work and one of the rolls for applying selected pushup loads to said rolls and a first fluid circuit for said first actuator; a roll bending means including a second actuator operatively connected to a roll for applying bending loads thereto and a second independent fluid circuit for said second actuator; a first control means for controlling said first fluid circuit and for operating the actuator of said roll pushup means; a second control means for controlling said second fluid circuit and for operating the actuator of said roll bending means; means including electro-load sensing means interlocking said first and second control means, said first and second fluid circuit and said first and second actuators in an interdependent relationship whereby a predetermined actuation of one of said actuators can produce a preselected actuation of the other actuator in order to reestablish and maintain an established roll gap setting.

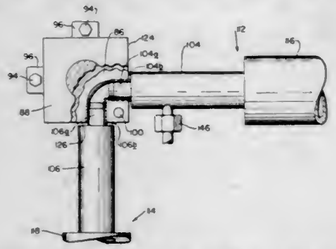
3,416,342
METHOD FOR TREATING WORKING AND BONDING REFRACTORY METALS AND ALLOYS
David Goldstein, Adelphi, William J. Buehler, Bethesda, and Raymond C. Wiley, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,686
9 Claims. (Cl. 72—47)

A method of processing refractory metals and their alloys by cold working them while they are embedded in a TiNi matrix at a temperature above the recrystallization temperature of TiNi and below the recrystallization temperature of the refractory metal.

3,416,343
METHOD AND MEANS FOR FORMING FITTINGS
Helmut J. Thielsch, Cranston, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Original application Mar. 28, 1963, Ser. No. 268,658, now Patent No. 3,303,680, dated Feb. 14, 1967. Divided and this application Mar. 15, 1966, Ser. No. 534,447
6 Claims. (Cl. 72—58)

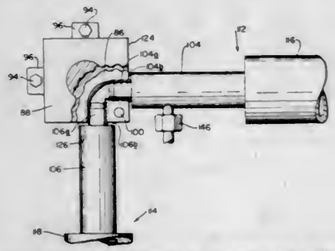
A method and means for forming fittings from tubular stock by first bending the stock, and then conforming the fitting to a die cavity by applying internal pressure. The

tube stock, after insertion of a plug into at least one end to maintain circularity, is bent by pressing radially in a central portion while the end portions are supported. The end portions are also pressed longitudinally toward the central portion to feed tube material toward the convex portion of the bend, preferably as a consequence of supporting the ends on pivotal blocks. The plug is partially



withdrawn in the course of the bending. The bent tube has the interior and exterior surfaces of its ends confined in a die, and the ends are driven toward the central portion to form them and to seal the interior of the tube. Final forming is carried out by internal pressure applied either by hydraulic fluid or by deformable resilient plungers, e.g. of rubber.

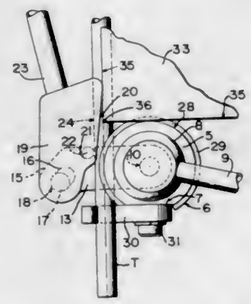
3,416,344
METHOD AND MEANS FOR FORMING FITTINGS
Helmut J. Thielsch, Cranston, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Original application Mar. 28, 1963, Ser. No. 268,658, now Patent No. 3,303,680, dated Feb. 14, 1967. Divided and this application Mar. 15, 1966, Ser. No. 534,464
1 Claim. (Cl. 72—58)



An apparatus for forming a finished elbow fitting from a tubuar workpiece having a partially collapsed central bend, includes a die with a cavity conforming to the finished elbow and dimensioned to receive the workpiece with its ends protruding from openings at the ends of the cavity. A plunger has an end which can be advanced into the cavity opening, and a shoulder which engages a protruding end of the workpiece as the plunger advances, forcing the end into the cavity. The shoulder is arrested in an advanced position in which it closes the cavity opening. Pressure fluid is introduced into the workpiece to expand the collapsed bend through a conduit which opens through the end face of the plunger.

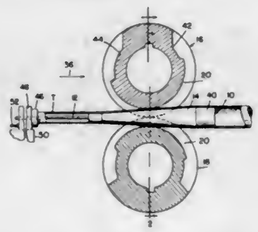
3,416,345
HAND-HELD TUBE BENDER AND BEND CENTERING PROCEDURE
John H. Stanley, Euclid, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 24, 1965, Ser. No. 504,951
4 Claims. (Cl. 72—159)

There are disclosed a method of and apparatus for setting up a tube bending operation employing a peripherally grooved radius block having a rabbeted edge presenting an outwardly facing peripheral shoulder and a planar ledge paralleling the center of the bending plane, means to secure a tube-to-be-bent, and a follower die grooved to partially embrace the tube and swingable about the block during a bending operation, the method comprising, marking the tube-to-be-bent at a point intended to lie centrally of the bend when completed, placing the tube with its center line in tangential relation to said shoulder, selecting a templet having converging edges defining therebetween an included angle corresponding to



the angle of bend to be made in the tube, supporting the templet against the planar ledge with one of its converging edges against the outwardly facing peripheral shoulder and its other converging edge aligned over the tube center, sliding the tube along its center through the securing means and block groove to place the mark on the tube at the point of convergence of said templet edges, fixing the securing means on the thus placed tube and then proceeding with the bending of the fixed tube through the predetermined angle, thus to center the bend on the tube mark.

3,416,346
METHOD AND APPARATUS FOR REDUCING THE WALL THICKNESS OF METAL TUBING
Thomas B. Arrington, Detroit, Mich., assignor to Calumet & Hecla, Inc., Allen Park, Mich, a corporation of Michigan
Filed May 11, 1964, Ser. No. 366,328
4 Claims. (Cl. 72—189)



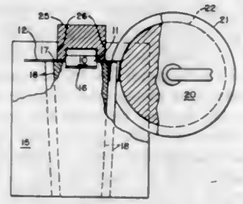
1. Tube expanding and wall thinning apparatus comprising a tapered mandrel of circular cross-section, means for incrementally rotating and advancing tubing over said mandrel in a direction from the small to the large end thereof, a plurality of peripherally grooved rolls engageable with longitudinally elongated circumferentially spaced zones on the exterior of tubing extending over said mandrel, said rolls being shaped to provide clearance laterally of said zones to provide for bulging of the tube laterally intermediate said zones, and means for reciprocating said rolls longitudinally of said mandrel and imparting rotation thereto to approximate rolling contact with tubing on said mandrel.

3,416,347
SLITTING AND EDGE CONDITIONING MEANS
Joseph S. Walsh, Fairview Park, and Frank Szel, Cleveland, Ohio, assignors to The Yoder Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 29, 1965, Ser. No. 505,709
15 Claims. (Cl. 72—203)



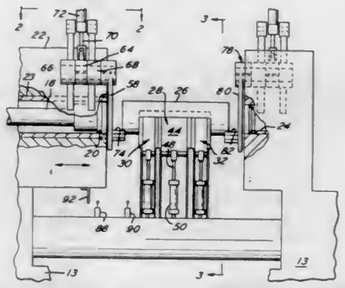
Apparatus and method for forming electrical strip and the like which includes a pinch slitter partially severing such strip while simultaneously partially forming the edges, such strip being drawn under controlled tension through the slitter between adjustable pressure pads, and then edge conditioning the split strip by drawing such strip through an edge conditioner, the latter including a plurality of edge conditioning rolls each independently urged into contact with the strip edge, such strip in the edge conditioner passing through pressure pads having lateral floating movement.

3,416,348
FLAT-PACK LEAD BENDING DEVICE
Henry G. Carter, Jr., Severna Park, and John H. Gifford, Laurel, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1966, Ser. No. 583,337
4 Claims. (Cl. 72—220)



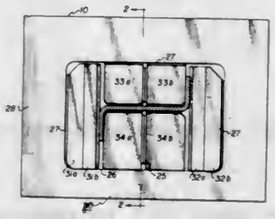
1. A device for bending leads of a flat-pack microcircuit module having a flat rectangular case and a plurality of straight output leads in dual parallel arrays extending outwardly from opposite sides edges of such case, said device comprising, a fixed member having horizontal lead-support surfaces of a width less than the length of the flat-pack leads, a recess between such lead-support surfaces of a depth sufficient to accommodate a flat-pack case while its leads lie on and project beyond said lead-support surfaces and of a width substantially equal to that of said case, lead-forming surfaces extending downwardly from the outer ends of said lead-support surfaces, clamping-member guide shoulders beyond opposite ends of said lead-support surfaces and extending above and within the width span thereof at opposite sides of said recess, and bending-roller guide shoulders extending outwardly at opposite ends of said lead-forming surfaces and vertically therealong into extension above the plane of said lead-support surfaces; a lead-clamping member of inverted U-shape in cross section insertable downwardly between said clamping-member guide shoulders at its opposite ends into abutment with flat-pack leads lying on said lead-support surfaces, while straddling a flat-pack case from which such leads extend; and bending roller means insertable downwardly between the upper ends of said bending-roller guide shoulders into rolling engagement with ends of flat-pack leads projecting beyond said lead-support surfaces for deflection of such leads into progressive contact with said lead-forming surfaces.

3,416,349
EXTRUSION APPARATUS AND METHOD
Francis J. Kent, Wallingford, Pa., and Otto Hammon, Cherry Hill, N.J., assignors to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,461
10 Claims. (Cl. 72—270)



Extrusion apparatus and method are disclosed wherein a container is mounted for movement between an extrusion position and a loading position. In its loading position, the container is telescoped over the stem. A discrete supporting means is provided for supporting the billet between its ends while the container is moving from its loading position to its extrusion position. The supporting means is at least in part mounted for movement parallel to the stem and may be, at least in part, supported by the container itself.

3,416,350
GRIPPING STRUCTURE
Thomas N. Eagleson and George A. Windish, Baltimore, Md., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 23, 1966, Ser. No. 529,512
10 Claims. (Cl. 72—293)

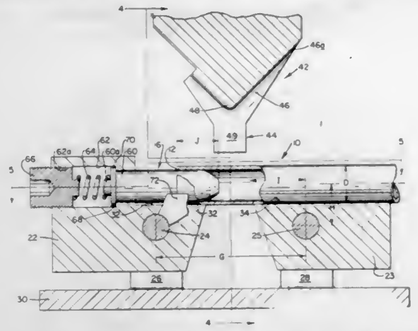


A set of stretch press shock jaws comprises two opposed pairs of jaws having gripping surfaces defining an H-shaped cleavage. The four jaws are split, and by appropriate shimming, one set of jaws can accommodate a diversity of cross-sectional configurations of material to be gripped.

3,416,351
METHOD AND MEANS FOR FORMING FITTINGS
Helmut J. Thielsch, Cranston, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Original application Mar. 28, 1963, Ser. No. 268,658, now Patent No. 3,303,680, dated Feb. 14, 1967. Divided and this application Mar. 15, 1966, Ser. No. 534,446
2 Claims. (Cl. 72—398)

Apparatus for bending tubing comprises a pair of pivoted cradles for supporting ends of the tubing, and a ram

movable in opposition to the cradles to produce a bend in the center. A plug is freely slidable in a journal provided in one of the cradles lengthwise into the tubing. A rounded end of the plug engages the center of the tubing

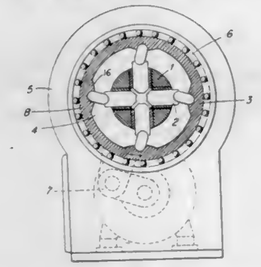


as it bends to maintain a circular section in the tubing end, and is forced partially from the tubing by the bend under formation. A spring or other means may bias the plug resiliently into the bend.

3,416,352
PRESS FOR DEFORMING PLASTIC STOCK

Bernd Ribback, Unterm Bocksberg, Wasserbillig, Luxembourg

Filed Jan. 11, 1966, Ser. No. 519,981
Claims priority, application Germany, Jan. 29, 1965, R 29,935
8 Claims. (Cl. 72—402)

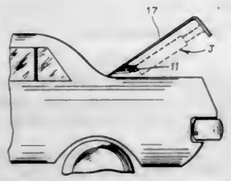


The press has a ring to actuate same and cam surfaces inside the ring.

3,416,353
HOOD AND DECK TOOL TO ASSIST IN THE REPAIR OF AUTOMOBILE HOODS AND DECK LIDS

Richard S. Hopkins, 346 S. Broad St., Ridgewood, N.J. 07450

Filed Nov. 8, 1965, Ser. No. 506,663
2 Claims. (Cl. 72—446)

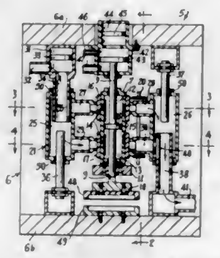


A tool adapted to serve as a rigid support for a body straightening jack in the form of an elongated bar having two adjustably mounted side brackets adjacent each end. Each bracket has a bifurcated portion adapted to be secured beneath one of the hinge bolts of a vehicle hood or trunk deck thereby rigidly securing the bar across the deck. A jack adapter rider is adjustably located on the bar and serves as a point of attachment for the jack.

3,416,354
HYDRAULIC VIBRATING FORGING HAMMERS AND PRESSES

Earl H. Fisher, 630 Casgrain Ave., St. Lambert, Montreal, Quebec, Canada

Filed Sept. 21, 1966, Ser. No. 580,966
10 Claims. (Cl. 72—453)

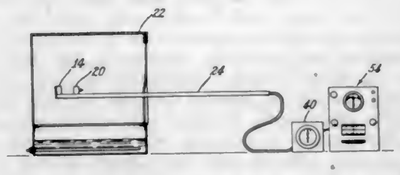


1. A hydraulic forging and pressing hammer comprising a main frame, a double acting hydraulic cylinder mounted for reciprocation in said main frame, a piston and double-ended piston rod in said cylinder, the said double ended piston rod existing above and below said cylinder, a first anvil mounted on the lower end of the said cylinder, a second anvil mounted on the lower end of said piston rod, the said anvils adapted to make contact with each other as a hammer on reciprocating movement of the said cylinder and piston rod relative to each other, a two part press die, located between the lower portion of the said main frame and the under side of said second anvil, valve means adapted to direct fluid under pressure alternately to both ends of said double acting hydraulic cylinder to produce rapid oscillation of the said cylinder and said first anvil to effect hammering of said first anvil on said second anvil, and fluid pressure means adapted to reciprocate the said double ended piston rod, said second anvil and an attached part of said two part die into pressure contact with the other part of said die mounted on the said main frame.

3,416,355
DEW POINT INDICATORS

Philip E. Nokes, Beverly, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Oct. 22, 1965, Ser. No. 501,781
1 Claim. (Cl. 73—17)

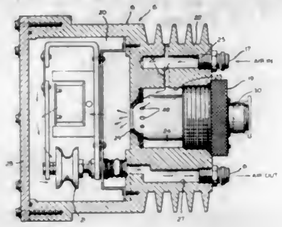


Apparatus for determining the dew point of an atmosphere confined in an enclosed chamber comprising an elongated member having a light source, a molded plastic member having a reflective surface and a thermocouple embedded therein, and a light responsive member mounted on one end thereof.

3,416,356
DEW POINT HYGROMETER

Richard C. Bridgeman, Northbrook, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 17, 1965, Ser. No. 514,557
11 Claims. (Cl. 73—17)

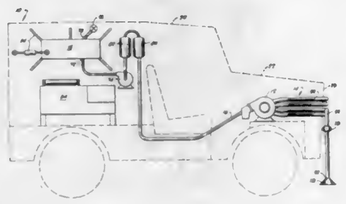


Dew point hygrometer for continuously determining the dew point temperature of a gas including a sensing element for sensing the conductivity of the gas and operating a heat exchanger to maintain the sensing element temperature a predetermined amount above the dew point temperature of the gas, and means for reading the temperature of the sensing element and translating same into the dew point temperature.

3,416,357
GAS LEAK SURVEYING

Martin C. Kelsey, Edward R. Loyd, Jr., and James F. Rollins, Dallas, Tex., assignors to Rayflex Exploration Company, Dallas, Tex., a corporation of Texas

Continuation-in-part of application Ser. No. 32,660, May 31, 1960, now Patent No. 3,107,517. This application June 27, 1963, Ser. No. 291,017
9 Claims. (Cl. 73—23)



1. A system for surveying for leaks in an underground gas line, comprising:

a vehicle for movement over the ground along the path of the gas line;

a gas analyzer carried by the vehicle having an inlet and an outlet;

a blower carried by the vehicle having a gas capacity substantially greater than the gas capacity of the analyzer, said blower having an inlet and an outlet;

probe means connected to the blower inlet comprising a plurality of evenly spaced funnel-shaped members arranged in a line transversely to the path of the gas line to draw gas into the blower from the surface of the ground over an area extending a plurality of feet on both sides of the gas line, said probe means being arranged to draw in said surface gas in substantially uniform amounts per square foot over the entire area surveyed over the gas line;

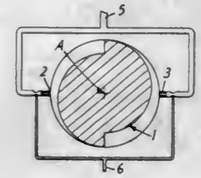
means for mixing the surface gases drawn in through the probe means upstream of the blower; and

means for feeding a continuous sample of the mixed surface gases from the blower outlet through the analyzer, whereby the response of the analyzer will indicate the relative sizes of leaks in the gas line.

3,416,358
FLUID SENSORS

John Christopher Hammond Davis and Guy Edward Davies, Taplow, England, assignors to British Telecommunications Research Limited, Taplow, England, a British company

Filed June 23, 1967, Ser. No. 648,424
Claims priority, application Great Britain, July 4, 1966 30,016/66
10 Claims. (Cl. 73—37)

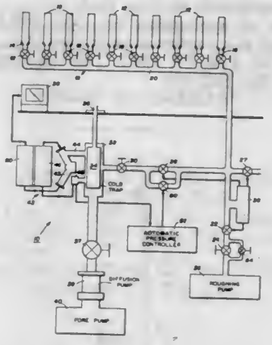


A fluid device for determining the angular position of a shaft comprises a cam structure mounted on the shaft and two fluid sensing heads disposed confronting opposite surfaces on the cam. The sensing heads have their outputs interconnected and either function as distance gauges or are arranged to have a varying area obstructed by the cam. The cam structure is so formed that the distances between the sensing heads and the respective surfaces of the cam are nominally equal so that possible errors due to wear of the shaft on which the cam is mounted for its bearings are compensated for.

3,416,359
METHOD AND APPARATUS FOR TESTING HERMETICALLY SEALED TRANSISTOR DEVICES

Hairrel A. Durbin, Plano, and Thomas Ray Pledger, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,240
8 Claims. (Cl. 73—40.7)

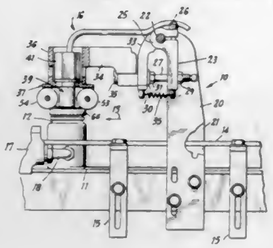


Disclosed is a method and apparatus for testing hermetically sealed transistor devices. The devices are subjected to helium pressure and then placed in an evacuation chamber connected to a number of vacuum pumps and a mass spectrometer. As soon as the evacuation begins, the gas in the chamber is continuously sampled during the evaculation by the mass spectrometer to test for gross leaks.

3,416,360
DUD DETECTOR FOR SMALL DIAMETER CAPS

Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Oct. 19, 1966, Ser. No. 587,906
12 Claims. (Cl. 73—52)

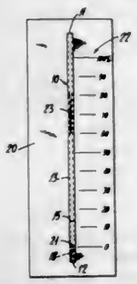


1. Apparatus for inspecting containers having caps with an inner deformable portion and an outer peripheral reference portion comprising a frame, means supporting said frame to move in a vertical direction, a detector mounted on said frame, reference means at the side of said detector and mounted on said frame, lift means at the front and rear of said detector and mounted in said frame crosswise to said reference means to raise said frame on engagement by caps on passing containers, said reference means extending below said detector for positioning said detector in an inspecting relation with a deformable portion of a cap on engagement of a reference portion, said lift means extending below said detector and spaced a greater distance from said detector than said reference means to raise said detector to a non-inspecting relation with the cap on passage under a lift means and to intermediately set said reference means on a reference portion of a cap between said lift means for inspection of a deformable portion by said detector.

3,416,361
MICROHEMATOCRIT TUBE

Marvin A. Asnes, New York, and Richard K. Bernstein, Bronx, N.Y., assignors to Clay-Adams, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 499,579, Oct. 21, 1965, which is a continuation-in-part of application Ser. No. 174,185, Feb. 19, 1962. This application June 23, 1966, Ser. No. 562,425
2 Claims. (Cl. 73—61)

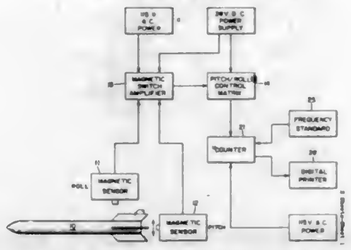


A calibrated microhematocrit tube for making microhematocrit determinations using a reader having a linear scale, and a method of using such a tube.

3,416,362
SYSTEM FOR MEASURING MOMENTS OF INERTIA

Leroy C. McGahan, Camarillo, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Sept. 22, 1966, Ser. No. 581,397
5 Claims. (Cl. 73—65)

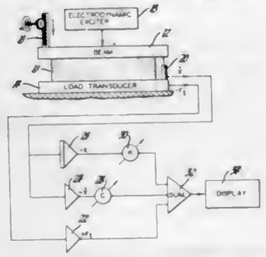


A method and apparatus to measure moments of inertia of a wide variety of objects, particularly missiles, wherein the object to be measured is set in oscillation in a magnetic field, and the dampening of the magnetic field by the oscillating object is sensed and converted electrically into a pulsed voltage signal, whose number of pulse counts is used to calculate the moment of inertia.

3,416,363
METHOD AND APPARATUS FOR DETERMINING THE DYNAMIC QUALITIES OF ELASTIC MATERIALS

David T. Siems, Highland, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,185
3 Claims. (Cl. 73—67.1)



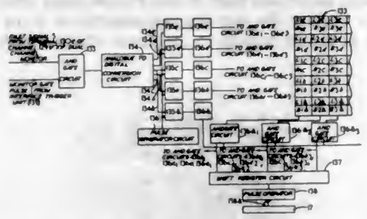
Technique for determining damping coefficient and spring rate of elastic parts without requirement to attain resonance. Transmitted force is equated to the vectorial sum of displacement rate multiplied by damping coefficient and displacement multiplied by spring rate. A simple electronic computer system is disclosed.

3,416,364
APPARATUS FOR NON-DESTRUCTIVE TESTING OF METAL BILLETS AND OTHER ELONGATED BAR-LIKE WORKPIECES

John Ralph Wycherley, Penn, Wolverhampton, and William Wilkes, Walsall, England, assignors to G.K.N. Group Services Limited, Smethwick, England, a British company

Filed Apr. 28, 1965, Ser. No. 451,380
Claims priority, application Great Britain, Apr. 30, 1964, 17,918/64
12 Claims. (Cl. 73—67.8)

An acoustic flaw testing device for bar-like metal workpieces. The workpieces are moved along a feed path under which a detector head having a V-shaped guide channel defined by a plurality of rollers is positioned. The detector head rollers engage two adjacent surfaces of the workpieces. Acoustic transducer elements are mounted on the detector head adjacent to the rollers, and a liquid is supplied which forms a coupling medium between the

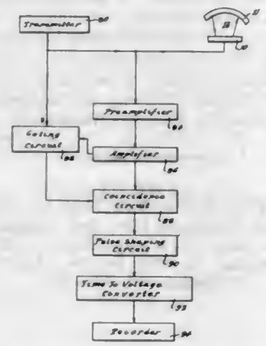


transducers and the adjacent workpiece surfaces. Acoustic vibrations are transmitted to the workpieces from the transducers, and echoes returning from the opposite side of the workpieces and from flaws, if any, therein, are received by the transducer, amplified, and displayed on a cathode ray tube.

3,416,365
METHOD OF DETERMINING ELASTIC PROPERTIES OF A METAL SAMPLE

Charles L. Frederick, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 28, 1965, Ser. No. 491,063
10 Claims. (Cl. 73—67.9)



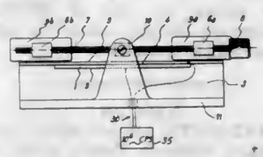
A method for determining the elastic properties of a sample includes generating and transmitting a pulsed ultrasonic wave to impinge on the surface of the sample to generate therein longitudinal ultrasonic waves, shear ultrasonic waves and complex longitudinal-shear ultrasonic waves. The generated longitudinal, shear and complex longitudinal-shear u'trasonic waves travel through the sample, generating ultrasonic plane waves radiating from the sample. The radiated ultrasonic plane waves are detected and the time intervals therebetween measured. These measured time intervals are a function of the elastic properties of the sample.

3,416,366
VARIABLE SIZE ULTRASONIC BEAM PRODUCING TRANSDUCER

Louis Beaujard and Jacques Mondot, Saint Germain-en-Laye, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France

Filed Aug. 17, 1965, Ser. No. 480,424
Claims priority, application France, Sept. 17, 1964, 988,418
6 Claims. (Cl. 73—71.5)

The beam of radiation in an ultrasonic testing device is widened or narrowed to suit the tested specimen by means of rubber shutters moved toward or away from each other across the beam between the radiation emitting transducer and the specimen. The shutters may be linked

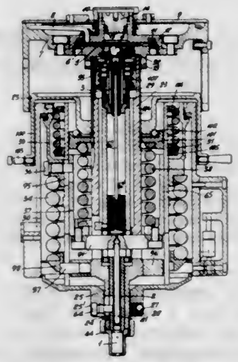


to the transducer so as to move toward each other when the transducer is moved toward the specimen and vice versa.

3,416,367
HARDNESS MEASURING APPARATUS

Alfred Ernst, Via del Cairo 37, Varese, Italy

Filed Mar. 28, 1966, Ser. No. 538,029
Claims priority, application Italy, Apr. 15, 1965, 3,582/65
4 Claims. (Cl. 73—83)

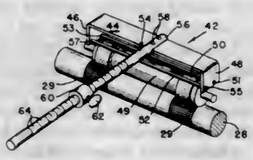


A hardness measuring instrument has a penetrating means mounted for engagement with a test piece. An actuating member is connected to the penetrating means by spring arrangements which during travel of the actuating member first move the penetrating means towards the test piece, then apply a preload on the penetrating means and then apply a greater final pressure on the penetrating means. Means are provided to measure and indicate the penetration. The final pressure is released during the return movement of the actuating member; however, after this release, the indicating means is still operative.

3,416,368
MAGNETIC DRAFTING SYSTEM TEST APPARATUS

William N. Lilly, Greensboro, N.C., assignor to Cone Mills Corporation, Greensboro, N.C., a corporation of North Carolina

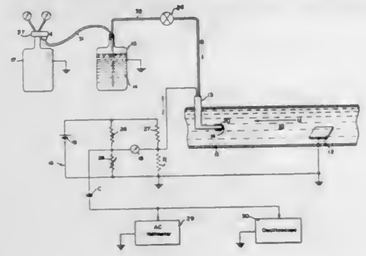
Filed Oct. 22, 1965, Ser. No. 501,540
3 Claims. (Cl. 73—141)



An apparatus for testing the magnetic strength of magnetized top rolls of a spinning machine drafting element while these rolls are retained in their normal operating

position having a support member carrying magnetically responsive means to hold the apparatus against the top roll. An adjustable lever arm permits the apparatus to be varied for testing top rolls of differing magnetic strengths for insuring that all tested top rolls are of at least a minimum magnetic strength.

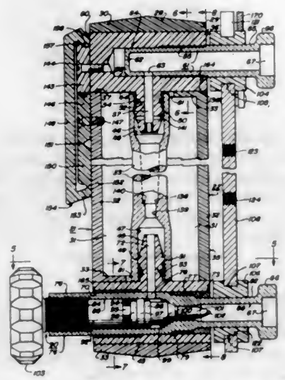
3,416,369
FLUID VELOCITY MEASURING DEVICE
Larry L. Higgins, Hermosa Beach, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Nov. 14, 1966, Ser. No. 594,026
4 Claims. (Cl. 73—194)



A fluid velocity measuring device wherein a first electrode is inserted into a conductive liquid, the velocity of which is to be measured. A conductive liquid solution, having a conductivity substantially different than the conductive liquid to be measured, is dispensed, substantially parallel and opposite to the flow of conductive liquid at a constant velocity. A second electrode is placed in contact with the liquid solution, with means connected across the electrodes for determining the conductivity between the electrodes which is proportional to the velocity of the conductive liquid.

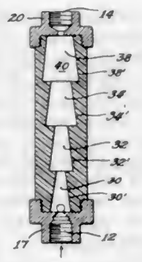
3,416,370
TUBE TYPE FLUID METER AND CONSTRUCTION THEREOF
Erwin K. Kaucher, Souderton, Joseph F. McLay, Warminster, and Richard H. Weingrad, Ambler, Pa., assignors to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Sept. 15, 1965, Ser. No. 487,355
30 Claims. (Cl. 73—209)

A variable-area flowmeter which can be readily disassembled and re-assembled, including two resilient plastic tube-mounting members with integral and co-axial tube-connectors, each having an integral radially-resiliently-comprisible fluid-sealing annulus forming an interference-fit with an end of the metering-tube, an O-ring on each tube-connector between the sealing annulus and the end of the metering-tube, a fluid-line-connecting glass sleeve in each tube-mounting member at a right angle to the axis of the tube-connectors and having its end exteriorly thereof, and a resilient shock-absorber on said exterior ends thereof, and a demountable support detachably interfitting with such shock-absorbers, a flow-throttling valve in one of the glass sleeves, and a two-part hard-plastic housing comprising two similar channel-shaped halves having the edges of their flanges thereof juxtaposed to each other, each channel-shaped housing member being open at one end and closed at the other end by an integral closure portion extending across the juxtaposed open end of the other housing member, interfitting means at the juxtaposed closed and open ends of the two housing members detachably uniting the two against separation from each other in a direction normal to the plane which is common



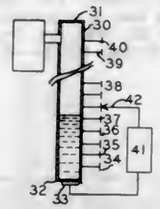
to the edges of the flanges of the two U-cross-sections thereof, and a socket extending through the closed end of each housing member and extending between the flanges and the web at the juxtaposed open end of the other housing member and extending transversely of the housing members, for slidably receiving and operatively mounting the tube-mounting members transversely of the housing members.

3,416,371
FLOW METER WITH ELECTRICAL READ-OUT
John P. Locke, Michigan City, Ind., assignor to F. W. Dwyer Mfg. Co., a corporation of Illinois
Filed Apr. 7, 1966, Ser. No. 540,947
3 Claims. (Cl. 73—209)



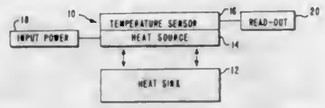
A float type flow meter in which a freely suspended body is placed in a vertical passageway having in excess of two adjacent end to end bores, each succeeding bore in the direction toward the outlet being of greater cross-sectional area than the preceding bore, and the outlet end of each bore having a cross-section no larger than its inlet end whereby snap action of the freely suspended body is obtained upon the change in rate of flow of fluid through the gauge. Means are provided along the gauge to indicate the position of the freely suspended body and thereby either indicate or register the rate of flow.

3,416,372
CORROSIVE LIQUID-METAL-LEVEL GAUGE
Cheng-Lin Chen, Monroeville, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 8, 1966, Ser. No. 593,242
3 Claims. (Cl. 73—304)



A liquid level indicator in the form of a hollow gauge body connected to a fluid storage container, whereby fluid from the container may enter the body and assume the same level as that in the container. A plurality of vertically spaced apart electrical contacts are affixed to the wall of the gauge body which is composed of a material having a high specific ohmic resistance compared to the resistance of the fluid. A meter is connected to the plurality of contacts to ascertain the resistance which is indicative of the fluid level.

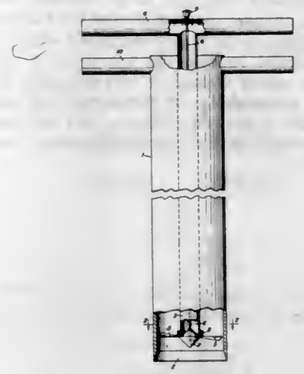
3,416,373
DISPLACEMENT DETECTOR
Ralph J. Havens, 11900 Susan Drive, Granada Hills, Calif. 91344
Continuation-in-part of application Ser. No. 153,025, Nov. 17, 1961. This application Apr. 1, 1966, Ser. No. 539,557
26 Claims. (Cl. 73—339)



Devices and systems for detecting displacement or relative displacements of extremely small magnitude comprise a pair of thermally conductive elements having opposed surfaces spaced apart by a small distance, e.g. 40 mils or less, occupied by a relatively low thermal conductivity fluid. One of the thermally conductive elements acts as a heat sink, and the second element is heated, so that heat is transferred between the second element and the first element through the low thermal conductivity volume. Temperature variations in the second element are sensed, and the thermal transfer characteristic is such that minute changes in the spacing between the elements result in relatively wide temperature swings in the temperature of the heat element employed as the heat source.

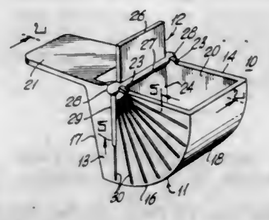
3,416,374
SAMPLING DEVICE
Colen S. Smith, Rte. 3, Box 837, Spokane, Wash. 99203
Filed Apr. 24, 1967, Ser. No. 634,058
1 Claim. (Cl. 73—425.2)

A device for obtaining samples of materials consisting of an outer cylindrical housing, a cutter-retainer mechanism which is inserted into the outer housing to loosen and hold the sample during withdrawal of the device and



a valve mechanism within the cutter-retainer to release the vacuum in the area behind the device as it is withdrawn.

3,416,375
ADJUSTABLE MEASURING DEVICE
Seymour A. Lubman, Livingston, and Jacob Kurland, Leonia, N.J., assignors to The Purdue Frederick Company, Yonkers, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 416,721, Dec. 8, 1964. This application Oct. 4, 1967, Ser. No. 672,925
4 Claims. (Cl. 73—429)

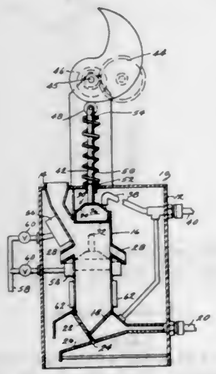


A measuring cup includes parallel sector shaped side walls and a cylindrical bottom and end wall. A panel is swingably supported between the end walls with its edges proximate the cup side and cylindrical walls. Indexing grooves are formed in a side wall outer face radiating from the panel swing axis and an arm coplanar and integrally formed with the panel is positioned along the outer face of a side wall and is provided with a detent resiliently urged into releasable engagement with a selected groove.

3,416,376
SURFACE AREA MEASUREMENT OF VARIABLE LENGTH SAMPLE OF FINELY DIVIDED SOLIDS
Bernard A. Johnson, Deerfield, and Max Adamski, Jr., Wheeling, Ill., assignors to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Nov. 30, 1966, Ser. No. 598,097
10 Claims. (Cl. 73—432)

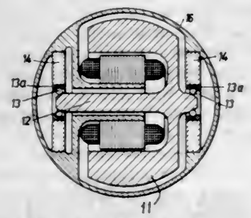
7. Apparatus for testing a finely divided solid material to determine its fineness comprising: means defining a tube having a closed porous end; inlet means remote from said closed porous end for introducing into said

tube a fixed volume of the material to be tested; means associated with said tube for uniformly compacting in the lengthwise direction a sample of the material which has been introduced into said tube whereby the length of said sample changes; control means for said compacting means responsive to a predetermined density of the compacted material to stop the operation of said compacting means; means associated with said tube for measuring the gas permeability of the compacted sample of material in said lengthwise direction and for generating a signal indicative of the gas permeability; measuring



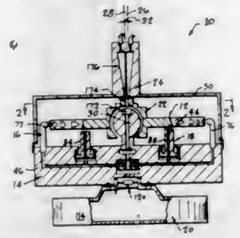
means for measuring the length of the compacted sample and for generating a signal indicative of said change; and means responsive to both said gas permeability signal and said length signal for generating an output signal which is indicative of the gas permeability of the compacted body of material compensated for the length of the compacted body and which is thereby indicative of the gas permeability of a compacted body of the material of standardized density and standardized length, said output signal being useful as a measurement of the fineness of the material being tested.

3,416,377
MOUNTING FOR GYROS
Konrad Beyerle, 86 Hohenstaufenallee, 51 Aachen, Germany
Filed Apr. 18, 1966, Ser. No. 543,398
Claims priority, application Germany, Apr. 20, 1965 B 81,537
6 Claims. (Cl. 74—5)



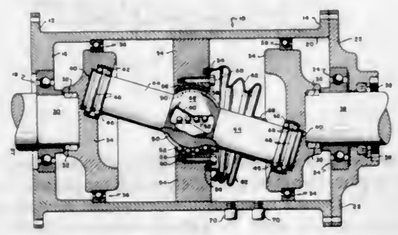
An elastic mounting of a gyro rotor is provided by an annular member between the outer race of its gyro antifriction bearing and the gyro housing. This enables an operation of the bearing without play and without excessive variations in the axial preload in the case of differential changes of the lengths of rotor and housing. The annular member consists of an elastic material and has, for example, spiral apertures extending axially through it. The apertures enable an elastic deformation of the member in radial and axial directions and can contain a viscous material.

3,416,378
FREE-ROTOR GYRO
John L. Evans, Oakland, Hugh E. Riordan, Wyckoff, and Harold J. Straut, Wayne, N.J., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 489,913
17 Claims. (Cl. 74—5.6)



A gyro wherein the gas bearing, gas pickoff, gas drive and gas caging mechanism are operated from a single gas supply. The rotor has a pivot point supported by the stator so that the rotor may both spin and tilt about the stator. The stator has axes defined therein. A gas pickoff arrangement is provided for sensing the amount and direction of the rotor tilt relative to these defined axes. The pickoff arrangement includes in part a gas jet attached to and moving with the rotor.

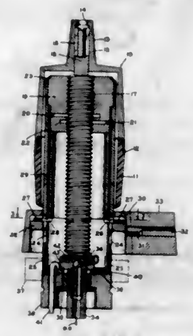
3,416,379
STATICALLY SEALED GYRATING LEVER TRANSMISSION
Roland W. Robbins, 93 Church Road, Arnold, Md. 21012
Filed May 31, 1967, Ser. No. 643,322
7 Claims. (Cl. 74—18.1)



A gyrating lever device, for transmission of rotary power through a water-tight bulkhead, including improvements to a spherical joint containing a set of ball bearings which permits gyrating motion but precludes rotary motion of the gyrating lever. A static seal in the form of bellows is providing to positively stop communication of fluids through the bearing from one side to the other.

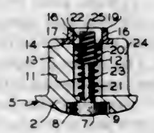
3,416,380
MICROMETER ADJUSTMENT LOCK
Albert J. Faustini, Oakland, Calif., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 577,933
4 Claims. (Cl. 74—89.15)

1. In locking means for locking a rotatably adjustable threaded screw in a rotatably adjusted position, the combination with said rotatable screw of a slotted internally threaded nut carried on said screw, said nut being provided with at least one slot extending into the body of said nut and at least partially across said threads to permit the connected parts separated by said slot to be flexed relative to each other about the connection as a fulcrum



and means comprising a reciprocable sleeve surrounding said screw and adapted to bear on said slotted nut for causing the connected parts separated by said slot to be flexed and thereby to produce sufficient friction to cause the binding of the threads of said screw and said nut against rotation relative to each other and to be locked by the frictional pressure produced.

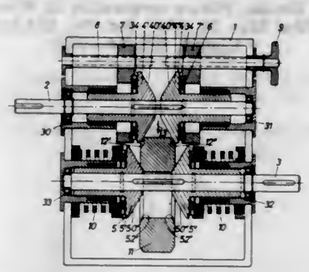
3,416,381
SOLENOID ACTUATED VALVE WITH MANUAL OVERRIDE
Clifford W. Allen, Lexington, Ky., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Original application Dec. 6, 1963, Ser. No. 328,755, now Patent No. 3,332,445, dated July 25, 1967. Divided and this application May 19, 1967, Ser. No. 639,837
7 Claims. (Cl. 74—89.15)



An axially movable stem is engageable with a coaxially movable solenoid plunger to effect valve operation manually through movement of the plunger. A rotary movement of the stem releasably locks the valve in operated position.

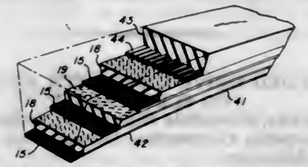
3,416,382
INFINITELY VARIABLE FRICTION GEARING
Karl Maichen, Thalackerstrasse 12, Lauterach, Austria
Filed July 12, 1966, Ser. No. 564,639
Claims priority, application Austria, July 15, 1965, A 6,513/65
4 Claims. (Cl. 74—193)

Axially displaceable pairs of bevel wheels on driving and driven shafts grip a peripheral section of a contact ring. One pair of wheels is resiliently urged together while the other pair of wheels is engaged by thrust members



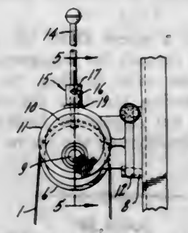
which stabilize such wheels and control their axial separation to vary the drive ratio between the shafts.

3,416,383
POWER TRANSMISSION BELTS
Howard J. Jensen, Springfield, Kenneth D. Richmond, Nixa, and Alden W. Brooks and Dale L. Waugh, Springfield, Mo., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,279
6 Claims. (Cl. 74—233)



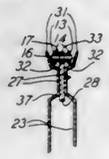
A V-belt having laminated sections in the compression or tension section, or both, in which the sections comprise alternate layers of fabric and elastomeric material. The elastomeric material has fibers embedded therein.

3,416,384
BELT MACHINE
Paul Donald Maca, Western Springs, Ill., assignor to Sommer & Maca Glass Machinery Company, Chicago, Ill., a corporation of Illinois
Filed May 5, 1967, Ser. No. 636,407
1 Claim. (Cl. 74—242.16)



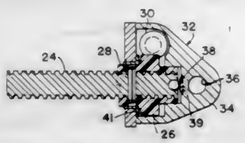
A belt machine having a tensionnig roller within a housing and fixedly secured to a shaft which is journaled eccentrically within a rotatable cylinder positioned externally of the housing, the bearing being remote from fluid carried by the belt, the cylinder being rotatable downwardly to position the roller for increased belt tension and having a means for locking the cylinder in the desired tension position of the roller.

3,416,385
SPROCKET ASSEMBLY
Erwin L. Schenk, Moline, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 20, 1967, Ser. No. 624,258
6 Claims. (Cl. 74—243)



Two circular plates of relatively thin material are formed to be spaced apart in certain areas and to be secured together in other areas. Flanges are provided on the circumferences of the plates, and these flanges guide the sprocket chain which is also meshed with a toothed ring secured intermediate the plates in the vicinity of the flanges. Also, a hub is secured between the plates and provides a cylindrical opening for mounting of the sprocket. The various pieces can be made from stampings, and the thin plates are shaped to have adequate strength comparable to cast or forged sprockets of considerably heavier and more expensive materials and manufacturing processes.

3,416,386
THREADED DRIVE GEAR WITH ABUTMENT FOR SCREW SHAFT
Joseph Pickles, Bloomfield Hills, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 539,037, Mar. 31, 1966. This application Apr. 7, 1967, Ser. No. 629,142
12 Claims. (Cl. 74—424.8)



A drive gear for a screw shaft, the gear being provided with internal threads for engagement with threads on the shaft to take axial loading, the gear having a generally radially facing shoulder for engagement with a similarly shaped but oppositely facing shoulder on a nut, and the combination of the screw shaft, threaded drive gear, and nut.

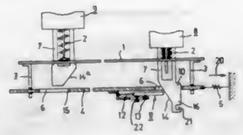
3,416,387
TRANSLATION MOVEMENT CONTROL DEVICE
Roger Henri Huret and Jacques André Huret, both of 60 Ave. Felix Faures, Nanterre, Hauts-de-Seine, France
Filed May 27, 1966, Ser. No. 553,531
Claims priority, application France, June 8, 1965, 19,924
4 Claims. (Cl. 74—473)

The invention relates to a side-travel control device comprising supports receiving a pivoting of pulleys or the like, over which a belt or the like passes so that this belt angularly positions these pulleys in relation to each other so that when the supports pivot, the pulleys retain the



same orientation thus enabling the side-travel control of the mechanical assembly connected to one of its pulleys.

3,416,388
PUSH BUTTON RETENTION AND RELEASE MECHANISM
Tadeus Piotrowski, Vienna, Austria, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 10, 1967, Ser. No. 608,368
Claims priority, application Austria, Jan. 14, 1966, A 327/66
4 Claims. (Cl. 74—483)
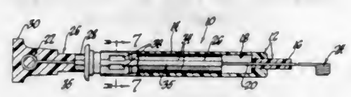


The push button switch mechanism disclosed comprises a series of selectively operative push buttons which switch on and operate a particular device while locked in a depressed position and a release push button that when depressed mechanically releases said operative push buttons from the locked position and thereby discontinues the operation of said device. The series of operative push buttons are typified by a spring biased push button which is movably retained in a first support plate and which lockingly engages a holding beam when depressed through the cooperation of a catch on the push button and a spring bias mechanism coacting with the holding beam and the push button. The release push button coacts with the holding beam to return the beam to its original position and thereby release the locked push buttons.

3,416,389
MOTION-TRANSMITTING REMOTE CONTROL ASSEMBLY
Winthrop B. Conrad, Franklin, and August E. Tschanz, Birmingham, Mich., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,770
17 Claims. (Cl. 74—502)

A motion transmitting remote control assembly including a flexible conduit and an end fitting secured thereto with a flexible motion transmitting core element movably supported within the conduit and extending through the fitting. The core element has a deformed portion at the

end extending from the fitting and a terminal means of organic polymeric material is disposed about the core element and in mechanical interlocking engagement with the deformed portion thereof. The terminal means in-



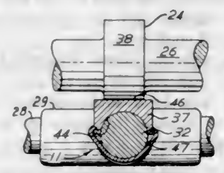
cludes an elongated section slidably supported in a bore in the fitting and a knob section and the elongated section is flexible so as to be bendable along the length thereof.

3,416,390
CONTROL DEVICE FOR LOCKING A SHAFT AGAINST AXIAL TRANSLATION
Richard D. Houk, Stow, Ohio, assignor to Morse Controls Inc., Hudson, Ohio, a corporation of Ohio
Filed Mar. 22, 1967, Ser. No. 625,193
2 Claims. (Cl. 74—531)



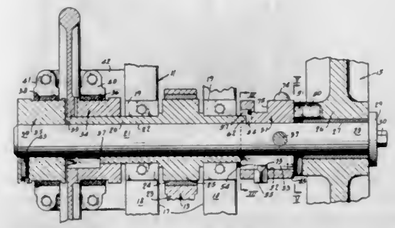
A locking device primarily adapted for the core of a push-pull control cable. The core is secured to a control shaft axially slidable in a bore of generally elliptic transverse section which extends longitudinally through a sleeve-like housing. At least a portion of the control shaft presents diametrically opposed, curved surfaces on locking lugs of greater diameter than the shaft itself. These curved surfaces permit the shaft to slide axially of the housing when oriented in the plane of the major, or transverse, axis of the elliptic bore, but lockingly wedge against the generally elliptic surface of the bore when turned toward the plane of the minor, or conjugate, axis to prevent axial translation of the control shaft.

3,416,391
MISALIGNMENT COMPENSATING CAM FOLLOWER
Alexander Goloff, East Peoria, and Dennis D. Feucht, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 19, 1966, Ser. No. 580,363
9 Claims. (Cl. 74—569)



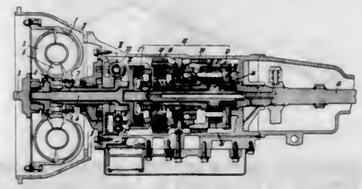
In a mechanism having a rotatable eccentric cam operating a rocker arm, a self-adjusting cam follower is situated therebetween and has a first surface which is automatically maintained in aligned contact with the cam. For this purpose the cam follower has an opposite second surface which is cylindrical and which abuts a matching cylindrical surface on the rocker arm whereby the cam follower may shift thereon to maintain the line contact.

3,416,392
PUNCH PRESS
Leon E. Rutz, Goodhue County, Minn., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed June 30, 1966, Ser. No. 561,918
19 Claims. (Cl. 74—625)



1. A punching machine comprising:
(a) a frame having a bed;
(b) a pair of concentric shafts rotatably supported on said frame, one of which shafts is hollow, and in which the other is disposed;
(c) a ram having an eccentric connection with a first of said shafts for reciprocation with respect to said bed;
(d) a driven flywheel rotatably supported on a second of said shafts;
(e) a one-revolution clutch supported on said second shaft and including means for selectively transmitting power from said flywheel to said first shaft through an angular lost-motion connection therebetween; and
(f) a handwheel secured to said first shaft for rotating it to at least partially lower said ram manually during rotation of said flywheel.

3,416,393
AUTOMATIC TRANSMISSION WHICH EFFECTS GEAR SHIFTING IN RESPONSE TO OUTPUT TORQUE OF CONVERTER
Torao Hattori, Yamato-machi, Kitaadachi-gun, Saitama-ken, Japan, assignor to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Kitaadachi-gun, Saitama-ken, Japan
Filed Nov. 30, 1966, Ser. No. 598,117
Claims priority, application Japan, Dec. 1, 1965, 40/73,419
9 Claims. (Cl. 74—731)

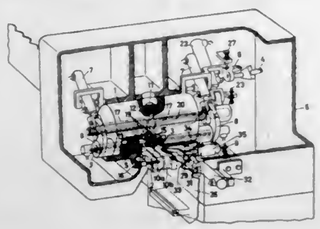


An automatic transmission having a device responsive to the rotation of a stator impeller of a torque converter and thereby to the output torque of the converter for controlling the pressure of a fluid supplied to a friction engaging device of a gear mechanism which couples the converter and a driven output shaft.

3,416,394
SAWTOOTH TREATING APPARATUS

Otto Stier and Ernst Beck, Biberach an der Riss, Germany, assignors to Vollmer Werke Maschinenfabrik G.m.b.H., Biberach an der Riss, Germany

Continuation-in-part of application Ser. No. 436,783, Mar. 3, 1965. This application June 12, 1967, Ser. No. 645,272
9 Claims. (Cl. 76—49)

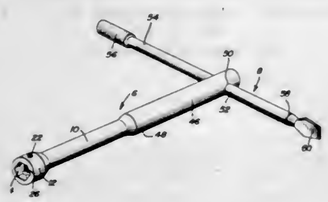


A saw treating apparatus in which a rotary upsetting rod extends perpendicularly to a saw blade to engage a sawtooth thereof which is at a working station, the rotary upsetting rod engaging the cutting edge of the sawtooth to upset the sawtooth in the region of its cutting edge during rotary movement of this rod. A moving means is operatively connected with the rotary upsetting rod for moving the latter from a rest position into engagement with the cutting edge of the sawtooth, and a distributing means is provided for redistributing the material of the sawtooth which is upset by the upsetting rod. This distributing means has a rest position displaced from the working station, and the moving means is operatively connected to the distributing means to displace the latter to the working station from its rest position, this distributing means engaging the material which has been upset by the upsetting rod so as to redistribute the material while each tooth remains at the working station subsequent to the upsetting thereof by the upsetting rod.

3,416,395
LUG WRENCH WITH STORAGE MAGAZINE AND NUT HOLDING MEANS

Merlin T. Hanson, Nunda, S. Dak. 57050

Filed July 24, 1967, Ser. No. 655,622
1 Claim. (Cl. 81—125)

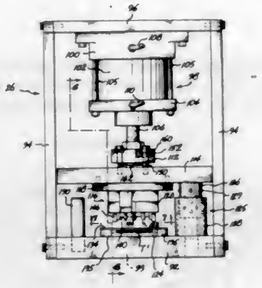


The implement shown provides a multipurpose retractor lug wrench. It is adapted to handle vehicle wheel retaining nuts and bolts. The main barrel bore provides a magazine for progressive storage of the hex nuts. A spring-loaded cap-type follower prevents twisting of the coil spring as it advances nuts or bolts forwardly toward spring-biased ball detents in the socket end. The handle serves as a lever and has a terminal hub cap prying blade.

3,416,396
GUMMED LABEL STRIP PUNCH CUTTING MACHINE

Mark R. Donner, Seattle, Wash., assignor to The Richmark Company, Seattle, Wash., a corporation of Washington

Filed Mar. 21, 1966, Ser. No. 535,869
6 Claims. (Cl. 83—9)

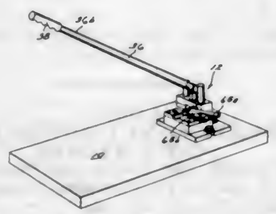


A machine for forming pre-gummed labels from pre-gummed paper is disclosed which includes improvements in the means for transmitting force from the drive means to the cutting elements. The improvements enable construction of the machine with closer tolerances between the stationary and movable cutting elements to substantially eliminate build-up of adhesive and cuttings between the cutting elements.

3,416,397
SHEARING APPARATUS FOR KEYS

Richard A. Preston, 520 W. 17th St., Santa Ana, Calif. 92706

Filed Dec. 19, 1966, Ser. No. 602,869
9 Claims. (Cl. 83—459)



Apparatus for retaining an ordinary key, for use in a lock, in a predetermined position relative to cutting and punching dies whereby the head of the key can be sheared from the shank thereof and an aperture punched in one end of the shank of such key.

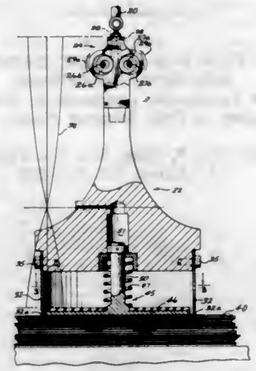
Shearing apparatus as above described which can be operated quickly and effectively to uniformly shear the head from each key of a series of keys and to punch a hole therein to enable the keys to be carried on a single retaining element or screw.

3,416,398
SONIC CUTTING APPARATUS

Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406

Filed July 5, 1966, Ser. No. 562,579
5 Claims. (Cl. 83—523)

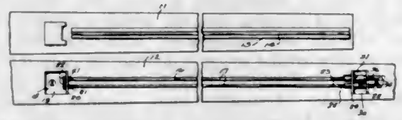
A cutting blade comprising a shaped die cutting edge engages material to be cut. An elastic resonator member is resonantly vibrated by means of an orbiting mass oscillator, the sonic energy being transferred to the cutting edge, thereby enabling the blade to sever the material.



3,416,399
REINFORCED GUITAR NECK

Giovanni E. Baldoni, 2234 N. 24th Place, Milwaukee, Wis. 53205

Filed July 28, 1966, Ser. No. 568,544
3 Claims. (Cl. 84—293)

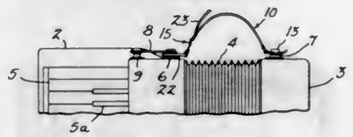


A guitar neck reinforced by two rods longitudinally held in channels therein and individually adjustable to counteract warping.

3,416,400
STRAP FOR LIMITING THE EXPANSION OF THE BELLOWS OF AN ACCORDION

Joseph P. Alessandro, 4076 E. 123rd St., Cleveland, Ohio 44105

Filed Apr. 12, 1965, Ser. No. 447,406
7 Claims. (Cl. 84—376)



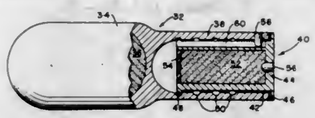
A strap for application to the heads or sections of an accordion for limiting the expansion of the bellows to simplify the teaching of the execution of the bellows shake.

3,416,401
MORTAR AND AMMUNITION

Bernard J. Golbeck, Crystal Lake, and Joseph W. Hunter, Chicago, Ill., assignors to the United States of America as represented by the Secretary of the Army

Filed May 9, 1956, Ser. No. 583,891
6 Claims. (Cl. 89—1)

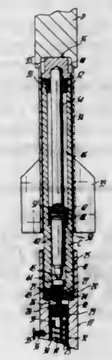
1. A round of ammunition having spin means and adapted to be launched from a guide tube having a port on the underside of said tube, a plug closing said tube at the breech, and a firing pin passing through said plug and extending into said tube; said round comprising in combination: a projectile and a cartridge, said cartridge containing a propellant charge, said cartridge being snugly fitted within said projectile along cylindrical surfaces, said projectile being adapted to be propelled axially away from said cartridge in response to the ignition of said charge, the propulsion of said projectile being due entirely to the action of gas pressures contained within the cavity formed by said cartridge and said projectile, said cartridge being strong enough to withstand said gas pressures, said projectile having a pin on its inner surface which fits in a rifling groove in the surface of said cartridge, said rifling groove having a predetermined helical angle, said cartridge having a percussion igniter positioned so that when said round is dropped into said tube said firing pin actuates said igniter causing said charge to be ignited, said projectile thereupon being propelled axially away from said cartridge, the friction between said cartridge and said plug preventing said cartridge from rotating, said groove thus imparting a rotation to said projectile, the magnitude of said rotation being determined by said predetermined helical angle.



3,416,402
ENGINE LAUNCHING DEVICE

Jean-Jacques Griessen, Geneva, Switzerland, assignor to Transurvey Holding Company Inc., S.A.

Filed Oct. 14, 1966, Ser. No. 586,721
Claims priority, application Switzerland, Oct. 22, 1965, 14,628/65
6 Claims. (Cl. 89—1)



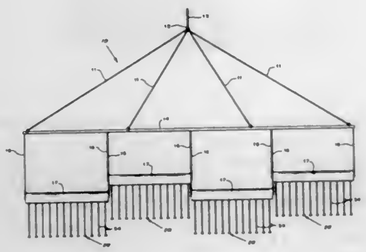
A projectile launcher comprises a fixed percussion device having a cylindrical recess at its forward end and a launcher having a cylindrical outer contour at its rear end which freely but closely slidably fits within the percussion device recess. The launcher has an internal explosion chamber for receiving an explosive charge. A projectile has a cylindrical recess at its rear end that freely but closely slidably fits over the cylindrical forward end of the launcher, so that the side walls of

the percussion device recess and the projectile recess between them confine and reinforce at least most of the side walls of the explosion chamber. The explosion chamber has a slidable piston therein so that it is expansible at the same time that it is tightly closed, so that noise and gas do not escape.

3,416,403
ANTIMINE WEAPON

Donald F. Smith, Center Square, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 17, 1959, Ser. No. 793,939
3 Claims. (Cl. 89—1)

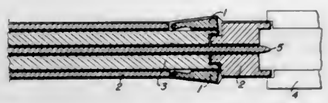


1. An apparatus for clearing mines from a water lane for submarines and surface vessels, comprising in combination: an elongated rigid control surface formed to sustain itself submerged in water while towed therethrough, means adapted to be connected to a towing craft and connected to said control surface on one side in such a manner that the motion imparted to said control surface is normal to the ends thereof, a plurality of elongated streamer rods depending from another side of said control surface at equally spaced intervals over the length of said control surface for combing the water lane defined by the extension of said streamer rods and the area traversed by said control surface, and a plurality of self-releasing elements respectively connected to the freely depending ends of said rods, each of said self-releasing elements comprising a permanent magnet structure adapted to engage and remain affixed to an object containing a substantial quantity of magnetic material, electrically energized detonating means secured to said permanent magnet structure, and circuit means electrically coupled to said permanent magnet structure and to said detonating means to be operative to energize said detonating means when said permanent magnet structure becomes affixed to said object.

3,416,404
FIREARMS LOCKING SYSTEM

Walter E. Fowler, 8560 Culfor Crescent, Norfolk, Va. 23503

Filed Apr. 18, 1967, Ser. No. 631,688
1 Claim. (Cl. 89—190)

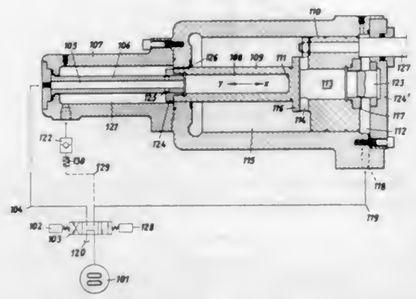


A locking system for locking the breech bolt of a high power firearm or cannon to the receiver, the locking system comprising a plurality of locking wedges, each wedge being pivoted at its rear end to the breech bolt in such a manner that in the locking position each locking wedge is within a locking wedge recess in the receiver.

3,416,405
CYLINDER FOR PLASTIC INJECTION MOLDING MACHINES

Hans-Joachim Langenohl, Ludenscheid, Westphalia, Germany, assignor to Fritz Sommer Nachf., Ludenscheid, Germany

Filed May 9, 1966, Ser. No. 548,651
17 Claims. (Cl. 91—25)

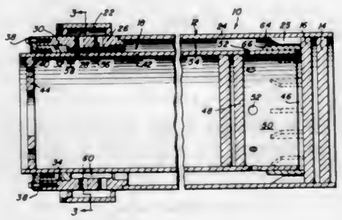


An arrangement for a plastic injection molding machine whereby a piston has high and low speed gradations during its operational strokes. The piston is displaceable in a cylinder through which a hollow closing sleeve extends into engagement with one side of the piston. A slow-stroke space is defined between the sleeve and cylinder and a guide cylinder is mounted externally on the cylinder. A tubular guide member is located in the guide cylinder and slidably supports the closing sleeve. Pressure is applied through the tubular member into the sleeve and into the guide cylinder axially against the sleeve as well as against the opposite side of the piston. The piston and closing sleeve can be fixedly or slidingly engaged.

3,416,406
HYDRAULIC RAM WITH MOVEMENT DECELERATING LIMIT STOP

Robert B. McCreery, Xenia, Ohio, assignor of fifty percent to The Marmac Company, a corporation of Ohio

Filed May 10, 1967, Ser. No. 637,568
13 Claims. (Cl. 91—27)

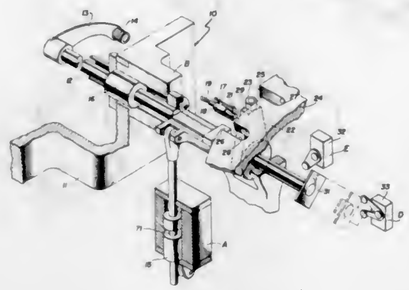


A hydraulic cylinder assembly equipped with an emergency slow-down device progressively cutting off the inflow of hydraulic fluid to the volumetrically expanding work chamber as the piston ram approaches the end of its stroke, in order to prevent damage to the assembly from impact of the ram with a positive stop. The reduction in the inflow rate of hydraulic fluid to the work chamber is accomplished internally of the cylinder assembly.

3,416,407
LOADING APPARATUS FOR RECIPROCATING AND ROTATING A SHAFT

Howard W. Renner and Herbert R. Uhtenwoldt, Worcester, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware

Filed Aug. 8, 1966, Ser. No. 571,114
4 Claims. (Cl. 91—36)

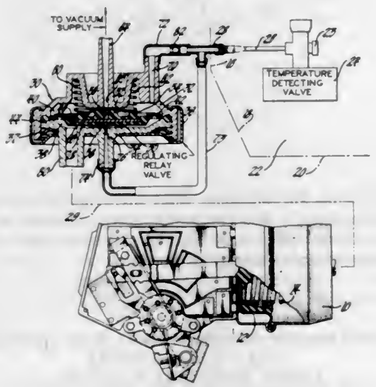


This invention has to do with a loading apparatus arranged to introduce workpieces into the operating area of a work machine tool and consisting of a shaft which is both slidably and rotatably carried in the machine tool housing, separate actuators are provided for rotating and sliding the shaft and means is provided to cause these actuators to operate in a cycle for the loading operation.

3,416,408
VACUUM CONTROL SYSTEM WITH REGULATING RELAY VALVE

Ronald D. Freiberger, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 4, 1967, Ser. No. 636,212
5 Claims. (Cl. 91—419)

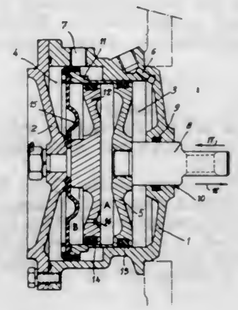


A vacuum control system using a control slave member moved in accordance with the extent of a vacuum in turn modulated in accordance with a condition variation encountered, the supply of crude vacuum being regulated to cause desired modulation of the controlled vacuum and consequent action of the slave member more effectively to compensate for the variation.

3,416,409
PNEUMATIC DOUBLE-ACTING CONTROL DEVICES

Pierre Labat, Suresnes, France, assignor to Societe Anonyme de Vehicules Industriels et d'Equipements Mecaniques Saviem, Suresnes, Hauts-de-Seine, France, a corporation of France

Filed Dec. 16, 1966, Ser. No. 602,369
Claims priority, application France, Jan. 27, 1966, 47,460
5 Claims. (Cl. 92—8)

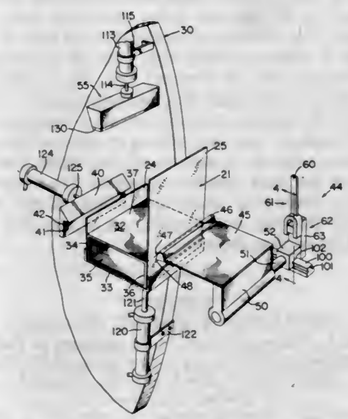


A double-acting control device for use in such devices as pneumatic actuators, comprising a double-acting hollow piston having opposite ends which are respectively acted upon by pressure conditions in opposite ends of a chamber, the piston cavity in turn being subdivided into two axially opposite sealed compartments by a rigid stationary partition connected to the chamber housing, said piston cavity being defined by a rigid wall at one end of the piston and a flexible wall at its other end, damped flow being permitted between both piston compartments.

3,416,410
APPARATUS FOR AND METHOD OF MAKING A CIGARETTE PACKAGE CONSTRUCTION OR THE LIKE

William C. Whitaker, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

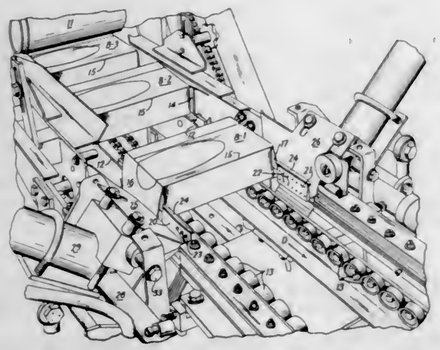
Continuation-in-part of application Ser. No. 622,703, Mar. 13, 1967. This application May 8, 1967, Ser. No. 648,511
24 Claims. (Cl. 93—12)



This disclosure relates to an improved apparatus for and method of making packages such as a cigarette pack-

age, for example, in which each package is made from a foldable blank in an automatic sequence on an indexing device comprising such apparatus. Each blank is folded about a suitable arbor carried on such indexing device using folding means provided on such indexing device and externally thereof. The improved apparatus comprises a multifunction device which folds one end portion of each blank in overlapped relation against an associated opposite end portion of such blank and then, simultaneously holds and heat seals such overlapped end portions together. Further, this invention provides means for automatically moving the heat sealing means away from an associated package in the event the indexing device is stopped for any reason to thereby provide optimum safety.

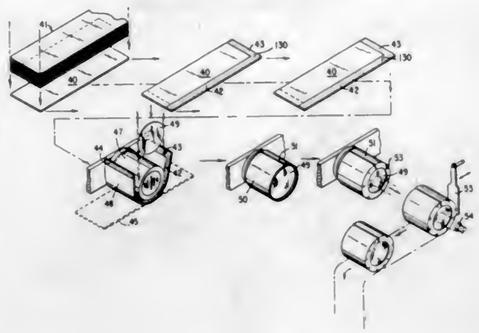
3,416,411
METHOD OF HEAT BONDING PANELS OF PAPERBOARD HAVING A THERMOPLASTIC COATING
William H. Hittenberger, Santa Clara, Kenneth C. Gobalet, Redwood City, and Thomas R. Baker, Los Altos, Calif., assignors to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,281
4 Claims. (Cl. 93—36)



The present improvements provide a method for sealing, by application of heat, overlapping closure panels of a folding box made from paperboard having an extremely thin coating of moisture-proofing thermoplastic material on opposite surfaces. Heated air is directed at the surfaces to be bonded, the temperature of the air at the point of impact on the surfaces being above the char point of the board. The duration of application of heat is made so brief, by a corresponding high rate of advance of the boxes through the air stream, that the coating on the reverse side of the panels remains substantially non-tacky. The bond is formed immediately after heating within a period of time for any one surface point less than the total time of exposure to heated air of that point. Under such conditions the heat applied to soften the thermoplastic coating is dissipated after completion of the bond by absorption into the board acting as a heat sink without the need for cooling devices.

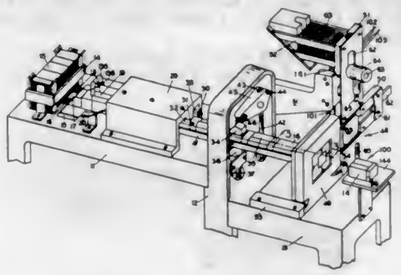
3,416,412
CONTAINER FORMING MACHINE
Isaac L. Wilcox, Fulton, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,293
11 Claims. (Cl. 93—39.1)

A container forming apparatus wherein a side wall blank is partially wrapped about a mandrel, with an end portion of the blank extending beyond the end of the mandrel. A bottom closure disk is positioned in the extending end portion of the partially wrapped blank and the latter is then completely wrapped about the mandrel and closure. Mechanism is provided to fold the



extending end portion of the side wall blank inwardly in sealing engagement with the bottom disk. The overlapping portions of the side wall blanks and bottom closure disks are joined by heated thermoplastic coatings.

3,416,413
MACHINE FOR MAKING OPEN-ENDED CONTAINERS
Howard M. Hill, Hamilton, Va. 22068
Filed Sept. 18, 1967, Ser. No. 668,330
6 Claims. (Cl. 93—55.1)

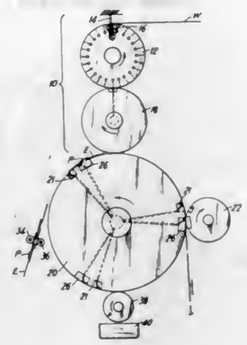


A machine for forming sheet material into container bodies, sealing the side seam and closing one end, in which the container may pass through the closure applying means upon completion of its operation.

3,416,414
MULTIPURPOSE SUCTION ROLL FOR ENVELOPE MAKING MACHINES
Eliot S. Smithe, 315 E. 68th St., New York, N.Y. 10021
Filed July 20, 1967, Ser. No. 654,918
7 Claims. (Cl. 93—61)

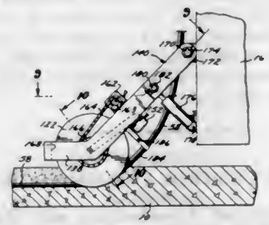
In an envelope making machine, a single cylinder provides the multiple functions of successively receiving individual envelope blanks, receiving window patches in timed relationship to the envelope blanks, collating the envelopes after a patch has been applied and removing patches that have not been applied to the envelope blank. Means are provided to carry the blank to apply the patches

and to collate the processed blanks. But should a blank be missing from the stream of blanks flowing to the collating apparatus, means are provided to hold down the leading edge of the patch that would normally be associated with



the missing blank. The edge of the patch to be removed is held below the surface of the cylinder by suction until the nonapplied patch moves past the collating area and then it is automatically removed from the cylinder.

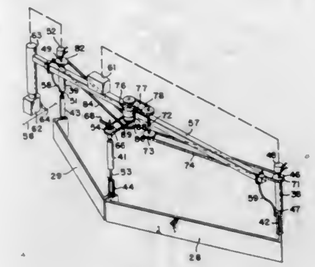
3,416,415
METHOD AND APPARATUS FOR INSERTION OF JOINT FORMER MATERIAL IN UNCURED CONCRETE
Lee Worson, Long Beach, Calif., assignor to Edoco Technical Products, Inc., Long Beach, Calif., a corporation of California
Continuation-in-part of application Ser. No. 533,960, Mar. 14, 1966. This application June 26, 1967, Ser. No. 652,394
14 Claims. (Cl. 94—22)



A method and apparatus operative to continuously insert or embed in uncured concrete an elongated strip of joint former material and characterized by progressive engagement of vertically and transversely oriented portions of such material by rotating wheel means to thereby align and thrust downwardly such material in the uncured concrete.

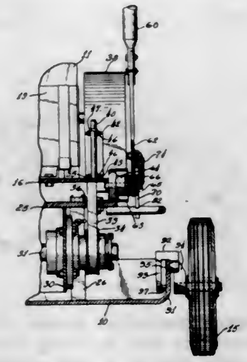
3,416,416
CONTROL SYSTEM FOR FLEXIBLE AND SECTIONALIZED SCREEDS
George E. Long, Rte. 2, Box 382, Monroe, Wash. 98272, and Howard G. Anson, 15823 35th NE., Seattle, Wash. 98105
Filed Dec. 23, 1966, Ser. No. 605,151
8 Claims. (Cl. 94—46)

A control system for a moving screed of the flexible or multiple sectioned type having separate vertical adjustment means on the end points and intermediate of the end points for forming a "crown" on the material being spread. The intermediate control point or points are raised and lowered simultaneously with adjustment of either or both of the end points by means of a differential drive unit driven by the screed end adjusting means.



The adjustment of the intermediate portion of the screed through differential drive means serves to maintain a preset crown relation on the screed as the outer end points are adjusted from time to time during its course of travel.

3,416,417
VIBRATORY COMPACTOR
William P. McIlrath and Chris Stougaard, Racine, Wis., assignors to Racine Hydraulics & Machinery, Inc., a corporation of Wisconsin
Filed Aug. 1, 1966, Ser. No. 569,449
5 Claims. (Cl. 94—48)

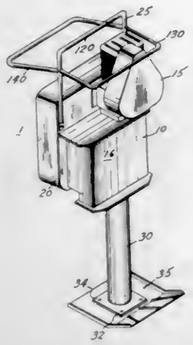


A plate type vibratory compactor having a ground compacting plate which is vibrated to accomplish compacting and wherein the unit can be rendered readily portable by quick attachable wheels, with the wheels being carried by mounting members and the mounting members coacting with the frame of the compactor to provide interengaging pin mounting members and abutment members to facilitate attachment of the wheels to the frame and retention thereof.

3,416,418
IMPACTING MACHINE
Franklin M. Frohnauer, Jr., Columbus, Ohio, assignor to The Dyna-Quip, Inc., a corporation of Ohio
Filed Oct. 19, 1965, Ser. No. 497,638
6 Claims. (Cl. 94—49)

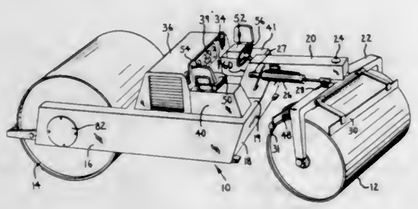
This invention is a machine for imparting impact upon a compressible material utilizing a combustion engine in

a structural arrangement with the impact elements wherein the impact action is freely slidably within a cylinder—



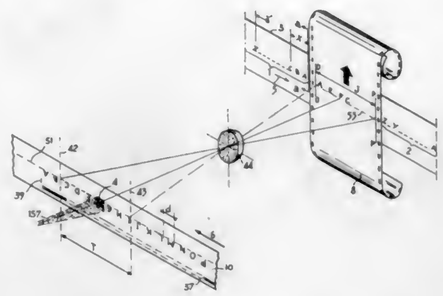
without mechanically engaged guides. Further, the gasolene tank for the engine has been centrally integrated in the over-all structure.

3,416,419
TANDEM ROLLER
Donald D. Kronholm, Portland, Oreg., assignor to Hyster Company, Portland, Oreg., a corporation of Nevada
Filed Aug. 7, 1967, Ser. No. 658,672
38 Claims. (Cl. 94—50)



This application discloses a tandem roller especially suited for compacting road surfacing materials such as asphalt. The roller includes a front steerable roll and a rear driven roll which together support a frame composed of a platform between the rolls, longitudinal side frame members on opposite sides of the traction roll and a gooseneck extending forwardly from the platform over the front roll for connection to a steering yoke. A driver's compartment on the platform has a pair of operator seats facing inwardly toward one another on opposite sides of and below the upper level of the gooseneck, which is extremely narrow so that the operator has a clear view of the steering roll. A single steering wheel is positioned on one side of and between the seats, and a directional control bar is positioned on the opposite side of and between the seats so that the operator can control the roller from either seat and in either direction with equal facility. The engine compartment is positioned behind the seats toward the traction roll, and a water supply tank for a sprinkler system is positioned beneath the seats. Neither of the two rolls is shrouded and the longitudinal side frame members are of a narrow, thin design which permit an unobstructed view of the traction roll from the operator's seats.

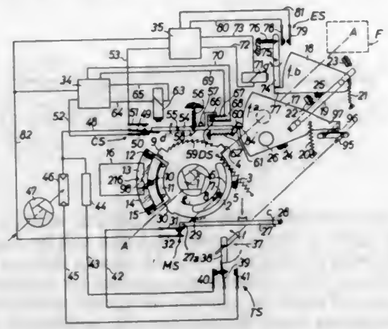
3,416,420
PHOTOGRAPHIC COMPOSITION APPARATUS
Louis M.Moyroud, 50 Brooks St., Medford, Mass. 02155
Filed Nov. 9, 1965, Ser. No. 506,936
Claims priority, application Great Britain, Nov. 10, 1964, 45,719/64
3 Claims. (Cl. 95—4.5)



1. In photographic type composing apparatus the combination of a continuously moving matrix upon which are carried master characters, a fixed optical system effective to project images of the master characters onto a film plane, a cathode ray tube positioned in close proximity to the continuously moving matrix, means for forming on the face of the cathode ray tube a patch of light positioned to illuminate a selected character at the precise moment when it will be projected onto the film plane in an exactly predetermined position, said position corresponding to the total accumulated widths of all the characters and spaces previously composed on a line, timing slits carried on the continuously moving matrix band, the said timing slits spaced an integral number of character width units apart, means to detect the passage of these timing slits past a fixed station and effective to generate an electrical pulse at each passage, means to count such pulses and constantly compare the total of such timing pulses to the displacement value of the character to be projected, means to unblank the beam of the cathode ray tube at the time where equality is achieved, and a film holder for holding a sensitized sheet in the film plane.

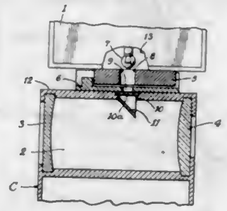
3,416,421
EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERAS
Friedrich Biedermann, Unterhaching, near Munich, and Erwin von Wasielewski and Joachim von Albedyll, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Apr. 28, 1966, Ser. No. 546,017
Claims priority, application Germany, May 6, 1965, A 49,123
20 Claims. (Cl. 95—10)

1. In a camera, a diaphragm including setting means normally assuming a first end position and movable to a second end position through a plurality of intermediate positions each of which corresponds to a different diaphragm aperture; cocking means for moving said setting means to second end position; a trigger for releasably holding said setting means in second end position and operative to release said setting means; a shutter movable between open and closed positions; opening and closing means for said shutter; an exposure control comprising two delay circuits including light-sensitive means for selecting the delaying action of said circuits as a function of the intensity of light reaching said light-sensitive means, means for completing one of said circuits in response to operation of said trigger and said one circuit including a first electromagnet energizable with a delay determined by said light-sensitive means to arrest said setting means on operation of said trigger in a position wherein the size of said aperture is a function of said intensity, to actuate said opening means and to complete the other



circuit, said other circuit including a second electromagnet energizable with a delay determined by said light-sensitive means to actuate said closing means so that the exposure time is also a function of said intensity; and control means cooperating with said setting means for indicating said intensity.

3,416,422
PHOTOGRAPHIC CAMERA WITH FLASH UNIT
Rolf Dietrich and Hans Ruhle, Stuttgart, and Helmut Ebertz, Stuttgart-Mohringen, Germany, assignors to Zeiss-Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed Feb. 28, 1966, Ser. No. 530,426
Claims priority, application Germany, Mar. 4, 1965, Z 11,382
5 Claims. (Cl. 95—11)



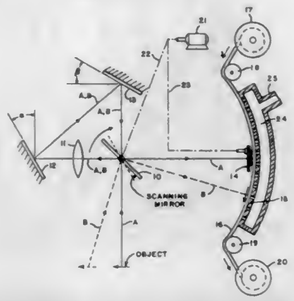
A photographic camera having a viewfinder above which is arranged an accessory shoe for receiving a flash unit containing a test lamp. The camera and the flash unit are provided with aligned apertures and a light ray deflecting device for rendering the light of the test lamp visible in the finder when the flash unit is inserted in the accessory shoe. As an alternative, the viewfinder may be provided with a secondary lamp which is electrically connected to the test lamp of the flash unit and illuminated in response to insertion of the flash unit into the accessory shoe.

3,416,423
OPTICAL SYSTEM FOR PANORAMIC CAMERAS
Ralph H. Wight, Portuguese Bend, Calif., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,378
6 Claims. (Cl. 95—16)

1. An optical system for a panoramic camera comprising:

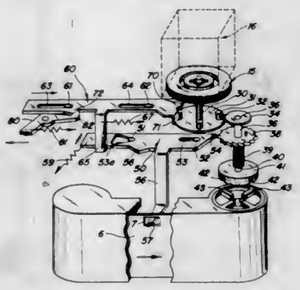
a continuously rotatable means having at least two planar reflective surfaces parallel to its axis of rotation;

optical means effective to direct an image element upon one surface of said rotatable means substantially at its axis of rotation and thence upon another surface thereof also substantially at its axis of rotation;



and an arcuate film-supporting platen having a radius of curvature substantially equal to the equivalent focal length of said optical means and disposed with its center of curvature at the axis of rotation of said rotatable means.

3,416,424
APPARATUS FOR SHUTTER ENERGIZATION AND FILM ADVANCE IN CAMERAS
Donald M. Harvey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 16, 1965, Ser. No. 479,742
13 Claims. (Cl. 95—31)

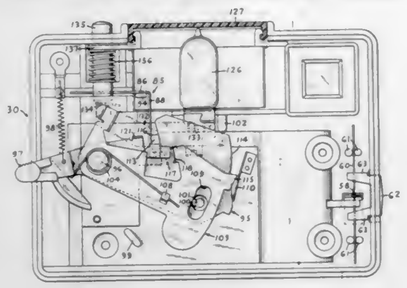


A device for relating the rotary movement of a multiple flash unit to other sequential mechanical operations of the camera. Manual rotation of a multiple flash unit is utilized to advance the film and/or to re-energize a shutter actuating device. A common motor can also be used to rotate the flash unit, re-energize the shutter actuating mechanism and advance the film.

3,416,425
CAMERA
Venerio J. Rigolini, Brooklyn, N.Y., assignor to Whitehouse Products Inc., Brooklyn, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 458,593
17 Claims. (Cl. 95—31)

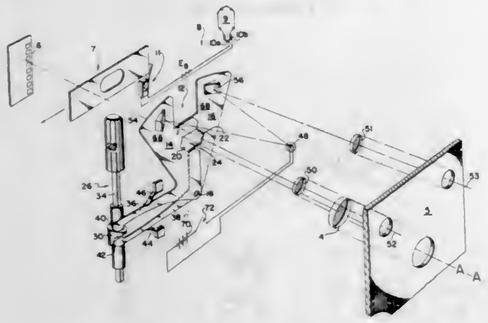
A slidable and pivotable metering plate, in a photographic camera, which locks the film-winding mechanism after the film has advanced sufficiently to take a new picture, prevents double exposures from being taken before

this mechanism becomes locked, provides some slack in the film before the shutter trips and unlocks the film-winding mechanism after each picture is taken. In addi-



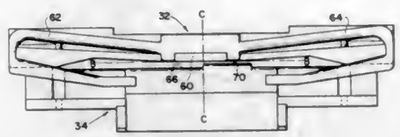
tion, the camera includes a mechanism for changing the shutter speed upon insertion of a flash bulb in the camera socket and for ejecting spent flash bulbs from the camera.

3,416,426
PHOTOGRAPHIC APPARATUS WITH RANGE-FINDER-APERTURE CONTROL
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,827
11 Claims. (Cl. 95—44)



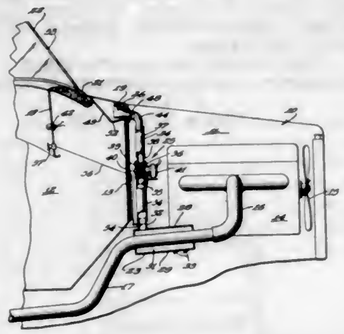
1. A photographic camera including means for assisting in the selection of an appropriate exposure value for flash photography purposes, comprising:
means defining an exposure aperture of an optical axis for exposing photosensitive material in a camera;
variable aperture control means registered with said exposure aperture for defining a range of effective apertures;
light generating means for generating a pair of light beams for projection upon a subject to be photographed; and
means for effecting relative angular movement of said beams in coordination with adjustments in the effective exposure aperture defined by said aperture control means such that the intersection of the beams occurs at a distance from the camera coordinated with the selection of an effective aperture which is appropriate for a flash exposure of a subject at said distance.

3,416,427
PHOTOGRAPHIC APPARATUS
John B. Murphy, West Roxbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,524
4 Claims. (Cl. 95—89)



A self-developing, film pack camera in which a processing liquid is distributed within a film unit by manually withdrawing the film unit from the camera between a pair of pressure rolls. A member is provided for engaging the film unit off center to assist in the proper distribution of the processing liquid despite improper withdrawal of the film unit by the operator.

3,416,428
DEFROSTER AND WINDSHIELD HEATER
Walter K. Heller, 502 Edward St., Sycamore, Ill. 60178
Filed July 10, 1967, Ser. No. 652,094
4 Claims. (Cl. 98—2)

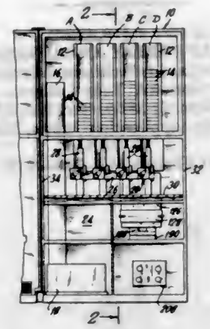


A heater for windshields of a motor vehicle having a jacket surrounding an exhaust pipe to form a chamber, a blower to draw air through the chamber to be heated and to direct the heated air through nozzles onto an exterior surface of the windshield to defrost and heat the windshield. The entire heating system is mounted on the engine side of the fire wall of the vehicle so that the occupants of the vehicle will not be subjected to any exhaust fumes if they should enter the system.

3,416,429
FOOD DISPENSING MACHINE
Joseph Torsiello, Pinebrook, N.J., and Lawrence Reiss, deceased, late of Old Westbury, N.Y., by Linda Reiss Kirschner, executrix, New York, N.Y., assignors to Micro Vend, Inc., Newark, N.J., a corporation of New York
Filed Oct. 14, 1966, Ser. No. 587,942
15 Claims. (Cl. 99—327)

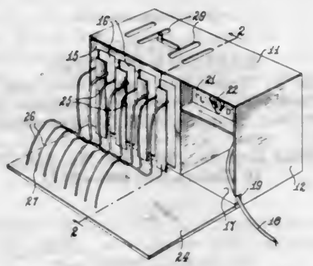
A food dispensing machine for dispensing articles of food in either a heated or a non-heated state. A plurality of vertically disposed storage racks are disposed within a

refrigerated chamber in the upper portion of the machine. At least one of the storage racks is adapted to deliver an article of food to a microwave oven, wherein the article of food is heated. After the heating cycle is completed, the heated article of food is delivered from the microwave oven to a receptacle bin. Individual selector mech-



anisms are provided to permit an operator of the dispensing machine to select either an unheated or a heated article of food. Means are provided to deliver unheated articles of food directly from certain of the storage racks to the receptacle bin, thereby bypassing the microwave oven.

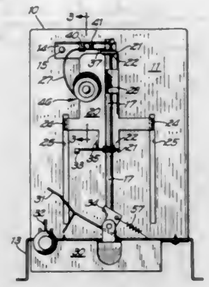
3,416,430
SIDE LOADING TOASTER
Jon W. Hauser, St. Charles, Ill., assignor of six percent to Charles H. Redman and four percent to Richard D. Shearer, both of St. Charles, Ill.
Filed Mar. 20, 1967, Ser. No. 624,573
9 Claims. (Cl. 99—332)



A toaster having a housing with lateral openings to receive articles to be toasted, which articles are carried in a frame on a cover and are movable through the openings into the housing when the cover is closed. Automatic switch means is provided to start and stop operation.

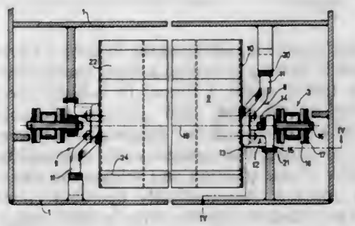
3,416,431
NEGATOR SPRING TOASTER
Franklin C. Hitzeroth, Centerville, Iowa, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 626,996
9 Claims. (Cl. 99—391)

Apparatus for returning a toaster carriage to a raised loading position utilizing a zero gradient spring which provides both biasing means and shock absorbing termination of upward carriage travel. The coiled end of this



spring is carried about a spool or drum having a minimal resistance to rotation.

3,416,432
INSTALLATION FOR THE PASTEURIZATION OR STERILIZATION OF COMMODITIES PACKED IN CONTAINERS
Johannes B. Van Der Winden, Amstelveen, Netherlands, assignor to Gebr. Stork & Co.'s Apparatenfabriek N.V., Amsterdam, Netherlands
Filed Jan. 11, 1967, Ser. No. 608,673
Claims priority, application Netherlands, Jan. 21, 1966, 6600787
9 Claims. (Cl. 99—362)

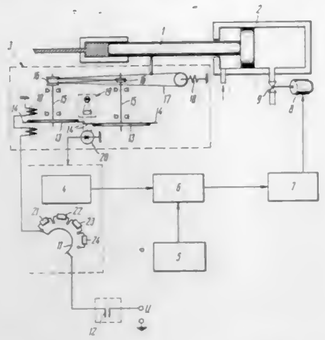


An installation for the thermal treatment of filled bottles or tins, accommodated in carriers passing through the installation by means of a conveyor, each carrier comprising at least a lever and a reaction member co-operating with zig-zag rails in the interior of the installation for imparting a rocking movement to the carriers.

3,416,433
HYDRAULIC PRESS PLUNGER TRAVEL SPEED GOVERNING DEVICE
Eduard Julievich Gutnikov, ul. Botanicheskaya 23, kv. 19; Oleg Nikolaevich Melnikov, ul. Bashova 125, kv. 117; German Borisovich Matjunin, ul. Studencheskaya 13, kv. 66; and Iosif Ilich Alterman, ul. Krasnykh komandirov 126, kv. 2, all of Sverdlovsk, U.S.S.R.
Filed Mar. 1, 1967, Ser. No. 619,819
5 Claims. (Cl. 100—48)

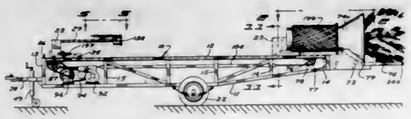
A plunger travel speed governing device for hydraulic presses having an optico-mechanical converter as a speed transmitter unit for providing a precise measurement of speeds of 0.2 mm./sec. and greater. The speed transmitter unit includes two rotating conductive disks having optical gratings and in the area of whose overlapping are

located a light source and photocell arranged at both sides thereof, and a damping system of the type of viscid fric-



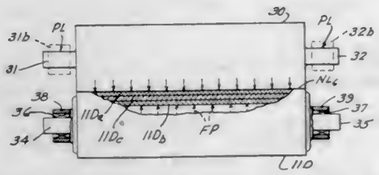
tion on eddy currents for providing a change of the value of damping in accordance with the speed being measured.

3,416,434
CHRISTMAS TREE LOADER APPARATUS
Otto Woserau, Minneapolis, and Harold N. Anderson, Golden Valley, Minn., assignors to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri
Filed May 8, 1967, Ser. No. 636,894
31 Claims. (Cl. 100—144)



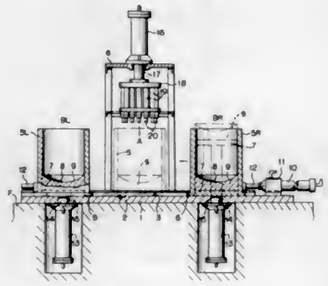
Trailer mounted apparatus for loading a Christmas tree into plastic netting including gripper mechanism for pulling the tree through a funnel to radially compress the branches of the tree, said gripper mechanism being mounted on a carriage for longitudinal movement. The gripper mechanism is automatically operated to grip the tree trunk at one position and release the tree trunk at a second position. Automatically operated clutch mechanism is provided to stop the drive to the carriage adjacent longitudinally spaced position.

3,416,435
ROLLER PRESS
Carl B. Dahl, Rockton, Ill., and Edgar J. Justus, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 13, 1966, Ser. No. 557,111
8 Claims. (Cl. 100—170)



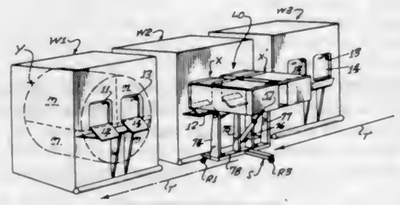
This invention relates to a press nip-defining device employing a pair of pressure load applying elements, preferably rolls, one of which consists of a rotary shell having a tendency to deflect in response to the load, which is subjected to rapid cyclic stress reversal in the shell annulus as it rotates, mounted on anti-deflection means, through load receiving to load relieving peripheral regions. For improved performance in such rapid cyclic stress reversal conditions the shell is formed of concentric integrated annular shell portions including outermost hard chill iron (Ni-Cr) alloy, innermost soft (low Ni-Cr alloy or substantially unalloyed) gray cast iron and intermediate (Ni-Cr content) mottled iron portions.

3,416,436
SCRAP-METAL COMPRESSOR
Kunitoshi Tezuka, 34, 7-chome, Minamisuna-machi, Koto-ku, Tokyo, Japan
Filed Sept. 2, 1966, Ser. No. 576,917
Claims priority, application Japan, Mar. 29, 1966, 41/18,960
11 Claims. (Cl. 100—218)



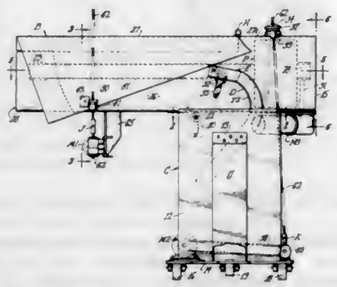
Scrap-metal compressor for forming into blocks various iron and metal materials to be re-processed in a furnace, with at least two casings into which the materials are alternatively introduced, at preparatory positions spaced apart from a central compressing position, compressing means at the latter position, and track means interconnecting the positions, for moving the casings to and from the compressing position.

3,416,437
LAUNDRY LOADERS
Lawrence V. Drace, Las Vegas, Nev., and Earl E. Weatherly, Bellflower, Calif., assignors to G. A. Braun, Inc., Syracuse, N.Y., a corporation of New York
Filed June 26, 1967, Ser. No. 648,676
10 Claims. (Cl. 100—218)



An open-top laundry-loading bin with normally outtilted collectively-funnel-shaped side walls which sequentially intilt from a bottom hinge line to form a rectangular-shaped ejection chute upon compressed-air activation of operating pistons. Another air piston then quarter-rotates the upstanding bin in position to transversely expell its compacted contents into a side-loading washer by lengthwise movement of a bottom pallet to the mouth of the now-horizontal bin. Pallet is moved by opposite pair of side belts which line bin and are terminally wound on motor-operated reels. Pallet is initially spring-retracted from extreme discharge position in washer mouth before bin reverts quarter turn and side walls again outtilt to funnel shape.

3,416,438
LAUNDRY LOADERS
Earl E. Weatherly, 9714 Ramona Ave., Bellflower, Calif. 90706, and Lawrence V. Drace, 2020 Howard Ave., Las Vegas, Nev. 89105
Continuation-in-part of application Ser. No. 648,676, June 26, 1967. This application Aug. 18, 1967, Ser. No. 661,680
13 Claims. (Cl. 100—218)



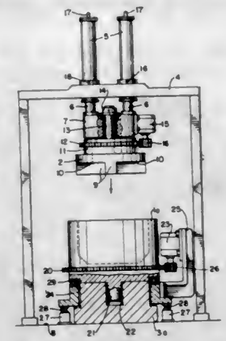
An open-top bin having one bottom-hinged wall outtiltable from rectangular-bin configuration, is pivotally suspended within a horizontal U-shaped yoke of a dolly, so as to accumulate laundry items dropped into the outtilted open-top bin. The movable wall is then intilted to laterally compress the load, and the compacted bin is rotated a quarter turn over a horizontal free-roller which forms the cross-arm of the U-yoke, and allows limited longitudinal movement of the tilted bin therealong. This projects the bin into the mouth of a side-loading washer for discharge, effected by means of a pallet forming the bin-bottom being then drawn lengthwise by a motor-operated endless belt which is looped over a bin side-wall. Bin rotation as well as wall tilting are separately effected, each by a pair of parallel, universal-jointed jack screws, each pair driven respectively by a reversible electric motor, one carried by the dolly frame and the other by the bin.

3,416,439
ROTARY SCRAP-METAL COMPRESSOR
Kunitoshi Tezuka, 34 7-chome, Minamisuna-machi, Koto-ku, Tokyo, Japan
Continuation-in-part of application Ser. No. 501,499, Oct. 25, 1965. This application Sept. 2, 1966, Ser. No. 576,918
Claims priority, application Japan, Nov. 4, 1965, 40/67,210
11 Claims. (Cl. 100—223)

Rotary scrap-metal compressor for forming into blocks various iron and metal materials to be re-processed in a furnace, with a casing into which the materials are introduced, coaxial compressing means above the casing, and means for causing relative rotary displacement between the casing and the compressing means.

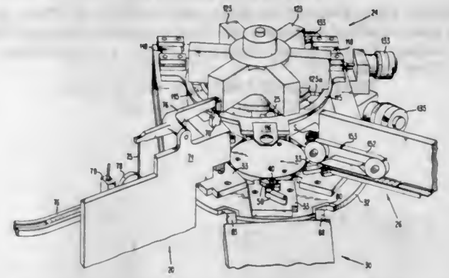
Preferably, a presser element forms part of the compressing means and is rotatably suspended above the casing, means being provided for rotating the presser element intermittently while the materials are intermittently compressed in the casing. The presser element may be made reciprocable.

In an alternative embodiment, the casing is rotatably supported below the compressing means which is station-



ary. Elevating rams may be disposed underneath the rotatable casing for moving the same to and from the presser element.

3,416,440
APPARATUS FOR SCREEN PRINTING
Donald L. Miller and Gerard J. Spillman, Poughkeepsie, Edward J. Stokowski, Jr., Wappingers Falls, and James D. Wharmby, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 18, 1966, Ser. No. 535,384
17 Claims. (Cl. 101—35)

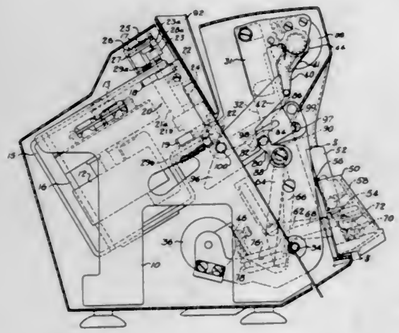


The printing apparatus has a turret, a workpiece holder on the turret, a loading station, a printing station and a discharge station arranged about the turret. Workpieces are loaded at the loading station on the turret so that the upper surface of the workpiece is maintained at a predetermined reference plane. This plane is maintained, irrespective of variations in workpiece thickness by suitable workpiece holders on the turret. At the printing station, the printing mechanism is mounted on flexible straps to pivot into and out of printing position. Precise control of the plane of the upper surface of the workpiece and the printing position of the printing mechanism results in consistently uniform thicknesses of printed matter.

3,416,441
DATA RECORDER
John A. Maul, Lyndhurst, Ralph B. Porter, Timberlake, and Jack G. Nantz, Euclid, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,288
7 Claims. (Cl. 101—56)

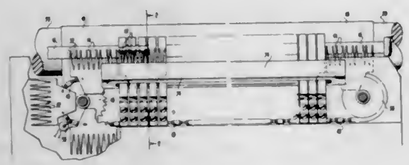
A printing machine in which two operative sections close together to clamp a printing token, and a form to be imprinted, into the machine. One machine portion car-

ries a roller platen device which sweeps back and forth in a given area to apply pressure to any stack of a printing token and form that is held at that plane of action. The printing token is mechanically loaded at a remote



station and injected into position. It is then mechanically returned to the original loading station. The mechanical placement is to assure correct location of the printing device with respect to the machine and eliminate human judgment from such positioning.

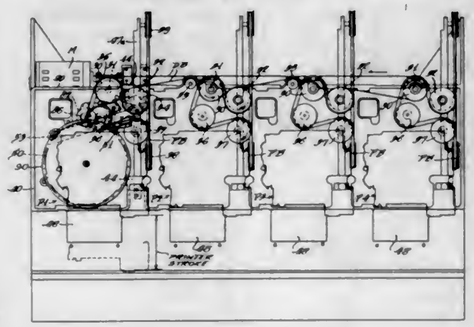
3,416,442
SELECTIVE HAMMER ACTUATING MEANS IN CHAIN PRINTERS
Edgar Alan Brown, Saratoga, and Albert S. Chou, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 20, 1967, Ser. No. 647,414
11 Claims. (Cl. 101—93)



A printing apparatus having a flexible carrier which moves print elements along a print line before a row of print hammers, each hammer covering a plurality of adjacent print positions and each having a plurality of preferred print portions. The print elements are spaced along the carrier so that a plurality of print elements are before each hammer at all times. Selective printing is accomplished by controlling the time at which the hammer is actuated coincident with the position of a print element to be engaged by one of the plurality of preferred printing portions.

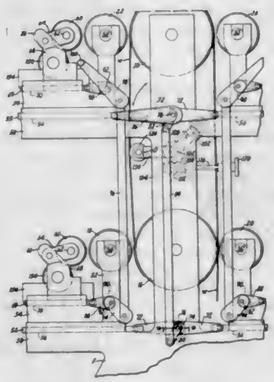
3,416,443
SELECTIVELY POSITIONABLE PRINT HEADS FOR SCORER PRINTER
William M. Crimmins, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,742
31 Claims. (Cl. 101—93)

A device for printing bowling scores on a score sheet from frame and score information and bowler identification information which uses one printer for each score sheet. The printer includes a relatively large carriage with a print head on the carriage and the carriage can be driven across bowler lines to position the print head at the proper bowler line. The print head includes an array of single digit printing members, one for each frame column on the score sheet and each member has a plurality of type character elements indexable to present the correct digit to be printed at a printing station. The print members are interconnected so that they can all be simultaneously



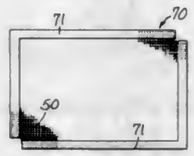
shifted along the bowler line to print a plurality of digits of a single score value. A common unidirectional drive can index all of the print members to ready them for printing the same digit but the print members are individually actuable through a latch and bail system so that printing can be effected in one frame column at a time without actuating the other print members. A plurality of such printers can be used to print on a corresponding plurality of score sheets and the plurality printers can be driven from a common motor system.

3,416,444
WEB REGISTRY FOR FLEXOGRAPHIC PRESSES
Leon J. Cahn, Long Islands City, N.Y., assignor to Lee Machinery Corporation, New York, N.Y.
Original application Oct. 16, 1962, Ser. No. 230,953, now Patent No. 3,233,539, dated Feb. 8, 1966. Divided and this application Sept. 16, 1965, Ser. No. 487,823
4 Claims. (Cl. 101—181)



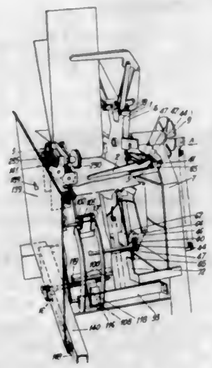
A web registry means for a flexographic press having multiple printing stations whereby rollers are employed intermediate a pair of printing stations and are caused to enter into greater or lesser contact with the non-indicia bearing surface of the web passing through said printing stations to obtain the proper registry of the printed indicia on the web.

3,416,445
SCREEN STENCIL WITH SEPARATE BORDER STRIPS
Theodore H. Krueger, Jr., Mapledale Road, Orange, Conn. 06477
Filed Oct. 18, 1965, Ser. No. 497,348
1 Claim. (Cl. 101—128.1)



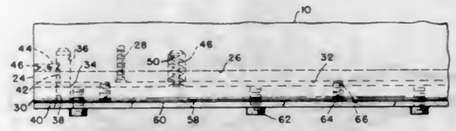
This invention is directed to a silk screen structure which utilizes separate border strips affixed to the two sets of strands or elements making up the screen. The opposite border strips are spaced from each other, such that the strands therebetween are of equal length and such that the strands secured to one surface of the border strips are parallel to each other.

3,416,446
PRINTING MECHANISMS FOR PRINTING ON PAGES OF A BOOK
Richard E. Baldwin, Coulsdon, England, assignor to English Numbering Machines Limited, Enfield, Middlesex, England, a British company
Continuation-in-part of application Ser. No. 552,757, May 25, 1966. This application Mar. 8, 1968, Ser. No. 711,713
Claims priority, application Great Britain, June 18, 1965, 26,003/65
10 Claims. (Cl. 101—287)



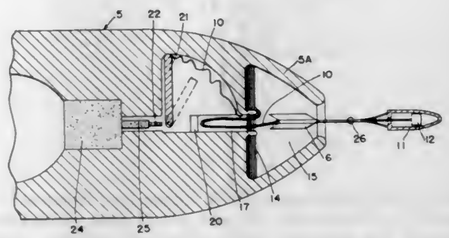
The present invention is concerned with a printing mechanism in which pages of a book, such as pages of a cheque book are successively printed. The book is mounted in the mechanism and has each page first raised and thereafter gripped by fingers attached to an intermittently rotatable member which carry the pages individually to a printing station at which the pages are printed. The mechanism is such that the pages are held stationary at the printing station during printing, and the printing unit is pivotable from a position outside the path of the pages to a position in which a print is effected on the page by the printing unit.

3,416,447
SADDLE FOR USE WITH FLEXIBLE WRAP-AROUND PRINTING PLATES
Norman J. Pozniak, Dearborn Heights, Mich., assignor to Brooks & Perkins, Inc., Detroit, Mich., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,411
6 Claims. (Cl. 101—415.1)



A cylindrically shaped saddle formed of a light soft metal such as magnesium for mounting a flexible printing plate. Means connect one edge of the printing plate to one straight edge of the saddle. A steel bar is movable circumferentially toward and away from the other straight edge of the saddle. Guide means in the form of elongated pins longitudinally slidable in sockets, connect the bar for movement circumferentially of the saddle toward and away from the edge thereof. The pins include axially elongated recesses and abutments extend from the sides of the sockets into the recesses. Both compression springs and adjustable abutments screws are provided between the edge of the saddle and the steel bar.

3,416,448
CONTROL SYSTEM FOR STAND-OFF FUNCTIONING OF A PROJECTILE IN FLIGHT OVER A TARGET AREA
Jack Brothers, Succasunna, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 5, 1966, Ser. No. 562,918
5 Claims. (Cl. 102—56)

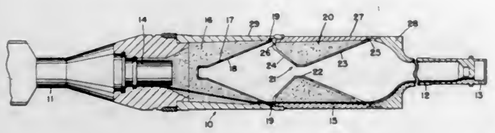


A small missile carried in an open cavity in the forward end of a larger explosive projectile body in flight is projected or driven ahead at a higher speed along the normal trajectory or flight path on a lanyard cord to precede the projectile by a distance determined by the length of the lanyard which is sufficient to position the projectile over a target area as the missile strikes ground. When the lanyard cord becomes taut in flight it moves an arming switch element, with which it is connected in the projectile, to effect arming thereof, and when the missile strikes it provides an electric firing current through the lanyard and the switch to function or fire the projectile.

3,416,449
TANDEM EFFECT ANTI-TANK PROJECTILE
Jack Brothers, Succasunna, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 7, 1966, Ser. No. 600,698
2 Claims. (Cl. 102—56)

A tandem effect anti-tank projectile, in which the forward impact sensitive nose portion and the rearwardly

positioned ignition fuze are interconnected by electrical circuitry, having a first high explosive filler forwardly adjacent the fuze for developing a first forwardly directed shock wave. The first filler has a forwardly opening conical surface to which a first liner is juxtapositioned. A second high explosive filler, in the form of a centrally apertured



annulus positioned forwardly of the first filler and liner, is responsive to the first developed shock wave and develops a second forwardly directed shock wave. A mid-section of the second filler defines a throat-like nozzle portion and extending forwardly therefrom is a forwardly opening conical surface. A second liner surrounds the entire internal surface area of the second filler.

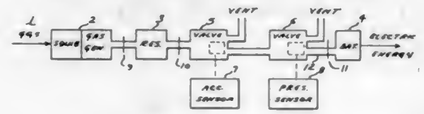
3,416,450
FRICTION IGNITOR
Kurt Ballreich, Nurnberg, and Alfred Ketterl and Wolfgang Spranger, Furth, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Oct. 18, 1966, Ser. No. 587,482
Claims priority, application Germany, Oct. 28, 1965, D 48,534
10 Claims. (Cl. 102—70)



A friction ignitor provided with a coiled pull ignitor wire to frictionally ignite a primer charge, which in turn ignites a detonating charge; a plurality of meltable, preferably spherical lead, particles are placed between the coiled end of the wire and the detonating charge to be melted by and flow under the influence of the temperature and pressure of the burning detonating charge to seal the end of the cartridge case where the wire passes therethrough.

3,416,451
BATTERY ACTIVATOR SYSTEM
Donald R. Hamerla, King of Prussia, Pa., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 11, 1967, Ser. No. 667,339
4 Claims. (Cl. 102—70.2)

An environmental pressure activated two-way valve and an acceleration activated two-way valve, both with venting ports, are series connected in the fluid flow line between a squib pressurized electrolyte reservoir and a dry charged battery, for enabling the activation of the battery with electrolyte by the firing of the squib to occur

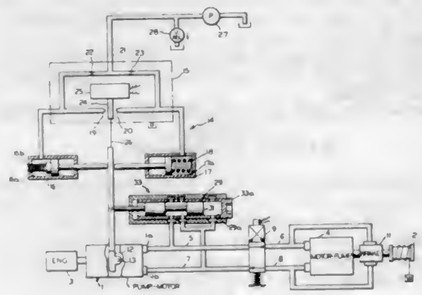


only when the proper environmental conditions are present.

ERRATUM

For Class 102—78 see:
Patent No. 3,416,894

3,416,452
CONTROLS FOR VARIABLE DISPLACEMENT PUMPS
Edward V. Misulis, Watertown, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Dec. 29, 1966, Ser. No. 606,094
2 Claims. (Cl. 103—10)

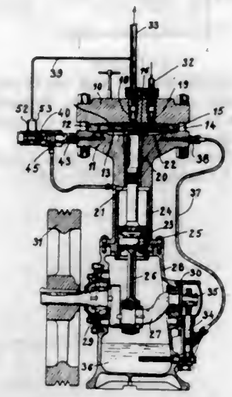


A variable displacement, hydraulic pump-motor unit having a displacement control element which is biased toward zero and maximum displacement positions, respectively, when the unit is pumping and motoring. A power operated mechanism normally positions the displacement control element, but allows that element to move in accordance with the bias acting on it when its supply of motive power is interrupted. A safety device, in the form of a fluid pressure motor connected with the inlet port of the unit, automatically shifts the displacement control element to zero displacement position when the supply of motive power to the power operated mechanism is interrupted while the unit is motoring.

3,416,453
DIAPHRAGM-TYPE COMPRESSORS AND PUMPS
Louis Feuillebois and Germain Ormut, Paris, France, assignors to Societe des Compresseurs à Membrane Corblin
Filed Mar. 8, 1967, Ser. No. 621,558
Claims priority, application France, Mar. 24, 1966, 54,790
3 Claims. (Cl. 103—44)

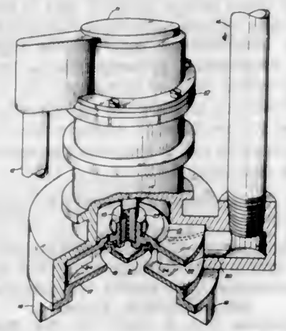
Pressure limiting device for diaphragm-type pumps and compressors which comprises a valve member adapted to co-act with a seat and responsive on the one

hand to the liquid pressure producing the diaphragm pulsations and on the other hand, through the medium of



spring means, to a differential piston receiving on either faces the gas delivery pressure.

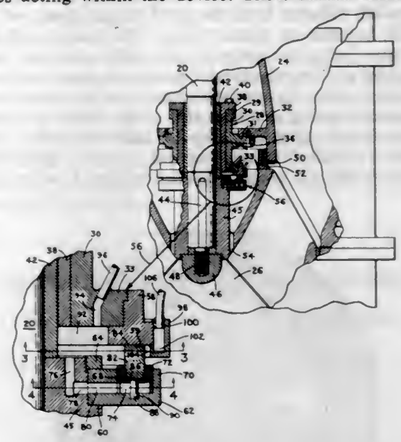
3,416,454
CHECK VALVE
Franklin W. Dowdican, Rte. 1, Talala, Okla. 74080
Filed Oct. 31, 1966, Ser. No. 590,916
6 Claims. (Cl. 103—103)



A pump adapted for liquid-submerged operation has a check valve element positioned within its casing to alternately engage the impeller and the seat surface about the inlet to the casing.

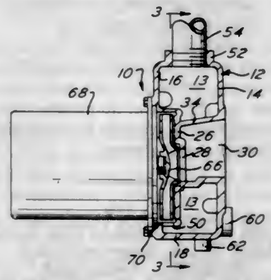
3,416,455
HYDRAULICALLY ACTUATED SEALING MEANS FOR ROTATING EQUIPMENT
William J. Pietrucha, Paramus, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,363
16 Claims. (Cl. 103—111)

A sealing device having cooperating stationary and movable sealing elements adapted for installation in rotating equipment. The cooperating elements of the sealing device are placed in operative association by fluid forces acting within the device. These forces result from



the structure or operation of the associated rotating equipment or a combination of both.

3,416,456
CENTRIFUGAL PUMP
Henry M. Pollak, 1235 Queen St., and Robert S. Pollak, 1007 N. Warren St., both of Pottstown, Pa. 19464
Filed Nov. 14, 1966, Ser. No. 594,001
3 Claims. (Cl. 103—113)

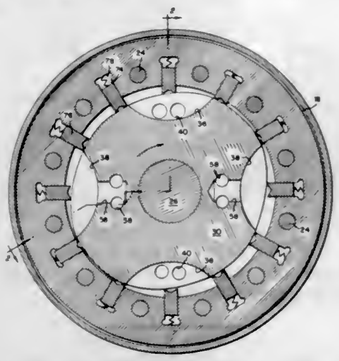


The centrifugal pump of the present invention is of the self-priming type having first and second volute discharge ports providing communication between the pumping chamber and the air separator outlet chamber. The volute discharge ports are generally diametrically opposite one another with one of the ports being below the axis of the impeller. A recirculation port provides communication between the outlet chamber and the bottom of the pumping chamber. The recirculation port is spaced from said one volute discharge port by an arcuate distance of less than 120 degrees. Said one volute discharge port performs no function during priming.

3,416,457
VANE TYPE FLUID CONVERTER
Richard C. Hare, Wauwatosa, Wis., assignor to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 19, 1966, Ser. No. 566,326
7 Claims. (Cl. 103—123)

1. In a fluid power converter of the type having a shaft mounted rotor rotating in a housing and radially extending vanes between the housing and the rotor to provide a plurality of expansible chambers therebetween, the improvement comprising:

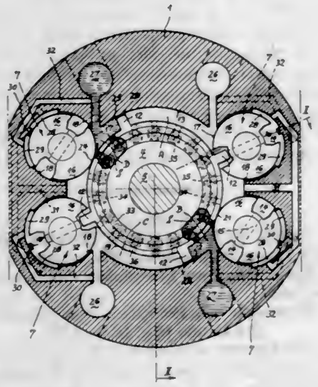
inlet and outlet bores disposed through said housing, a first and second annular groove of equal radii and coaxial with the shaft disposed on the inner wall of said housing on either side of the rotor, said first groove being in communication with said inlet bore, a third and fourth annular groove of equal radii and coaxial with the shaft disposed on the inner wall of said housing on either side of the rotor, said third and fourth grooves being of different radius than that of said first and second grooves, said third groove being in communication with said outlet bore;



at least one inlet recess disposed in the periphery of said rotor, at least one inlet conduit formed through said rotor communicating with said inlet recess and the surface of the rotor at points coincident with said first and second grooves to maintain continuous communication therebetween; and

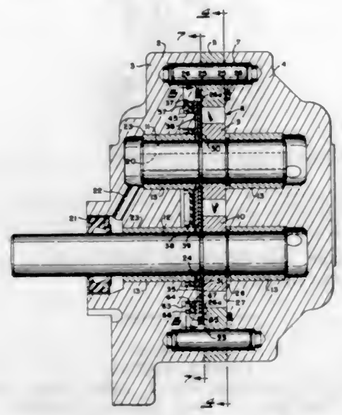
at least one outlet recess formed in the periphery of said rotor, at least one outlet conduit formed through said rotor communicating with said outlet recess and the surface of the rotor at points coincident with said third and fourth grooves to maintain continuous communication therebetween.

3,416,458
MOTOR OR PUMP OPERATING MACHINE
Josef Köpfli, Sonnenwinkel 1, Weinfelden, Switzerland
Filed Apr. 8, 1966, Ser. No. 541,344
Claims priority, application Austria, Apr. 12, 1965, A 3,385/65
1 Claim. (Cl. 103—125)



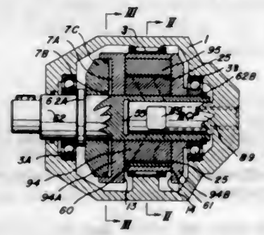
A machine operating as a pump or motor having a housing unit with central rotary piston with side surfaces and a circular groove in each surface, and having a packing ring in each groove in contact with the housing so that by means of passages in the piston in communication with each circular groove the pressure in the housing will influence the packing rings to force them against the housing.

3,416,459
ROTARY PUMP OR MOTOR
Leonard H. Reimer and Edward A. Prijatel, Lyndhurst, Ohio, assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 24, 1966, Ser. No. 552,462
13 Claims. (Cl. 103—126)



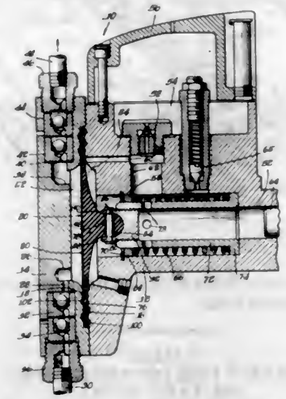
A gear pump characterized by a passage in the wall of the pump cavity for extending the high pressure zone over a major portion of the cavity, and a flexible wear plate in the housing having an inner face in juxtaposition to the gear faces and an outer face contacted by a seal to provide a compartment opposite the high pressure zone and an intermediate pressure zone in the cavity to which high pressure fluid is introduced for providing a fluid pressure balance on the plate opposite the high pressure zone and an overbalance opposite the intermediate pressure zone tending to flex the plate into sealing engagement with the gear faces.

3,416,460
FLUID HANDLING DEVICE INCLUDING END-WALLS ON A TROCHOID CURVED BODY
Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan
Original application Dec. 5, 1963, Ser. No. 328,395, now Patent No. 3,320,898, dated May 23, 1967. Divided and this application May 22, 1967, Ser. No. 640,143
9 Claims. (Cl. 103—126)



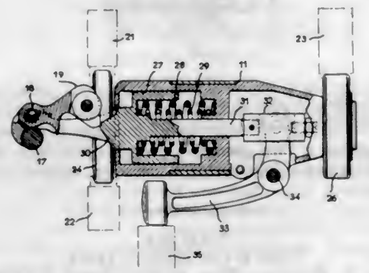
Side walls rotating with one gear rotor slide on another gear rotor and are held in sealing contact by a balancing chamber.

3,416,461
DIAPHRAGM PUMP
Rolland McFarland, Crystal Lake, Ill., assignor to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois
Filed Sept. 1, 1966, Ser. No. 576,704
4 Claims. (Cl. 103—150)



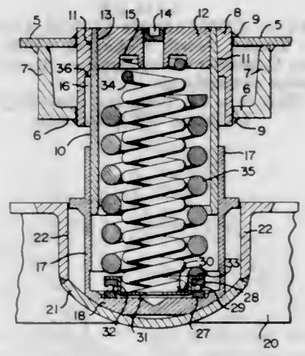
There is disclosed a pump comprising a diaphragm having a central portion of progressively increasing thickness and an integral axially extending projection connected to an actuating member by a fitting extending over the projection and a transversely disposed pin.

3,416,462
DEVICE FOR COUPLING LOADS SUSPENDED FROM A CABLE
Jean Pomagalski, 114 Chemin de l'Eygala, Corenc-Montfleury, Isere, France
Filed Aug. 9, 1966, Ser. No. 571,329
Claims priority, application France, Aug. 12, 1965, 28,377
3 Claims. (Cl. 104—202)



This disclosure concerns a device for coupling to a movable cable loads that are to be suspended and transported by the cable having: a body provided with rolling means; at least one clamp for receiving and clasping the cable and including a fixed portion carried by the body and a movable portion pivoted on the fixed portion, a spring on the clamp urging the movable portion angularly away from the fixed portion so as to open the clamp to a diameter substantially greater than the diameter of the cable; a first fixed device for guiding and controlling including support means for the rolling means of the body, guide means cooperating with the support means for ensuring a translational movement to the body in accordance with a determined trajectory, and control means acting upon the movable portion of the clamp in the closing direction when the body is supported and maintained by the support and the guide means; a clasping device for the clamp including a piston housed in the body and spring-biased against the body, the piston having a cam; the clasping device being actuated toward the clasping position by second control means pivoted on the body and extending to the outside of the body, the cam acting on the movable portion of the clamp in the closing direction in a response to the movement of the second control means; a second fixed device disposed in spatial relationship to the first fixed device for guiding and controlling so that the second fixed device will act upon the second control means when the first control means have caused closing of the clamp.

3,416,463
SPRING SUPPORTED GIMBAL SUPPORTED MINE CARS
Henry Fort Flowers, 3023 Del Monte Drive Houston, Tex. 77019
Filed Aug. 27, 1965, Ser. No. 483,106
21 Claims. (Cl. 105—179)

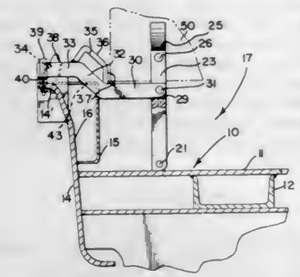


A railway car is provided, having gimbal mounts for wheels, each of the gimbal mounts utilizing a hollow king post rotatable in a tubular member. A pair of generally concentric compression springs are provided within the hollow king posts, the king post being telescopically movable relative to the tubular member. The springs are mounted on an anti-friction bearing assembly disposed within the tubular member, at one end, whereby, during use of the railway car, and consequent compression of the springs, the tendency for ends of the springs to rotate relative to one another, during their compression is transmitted into rotation of one race of the anti-friction bearing relative to another race of the anti-friction bearing, and precludes the transmission of forces resulting from spring compression to associated wheels, whereby undesirable wear on wheel flanges is avoided. The king posts are tapered at upper ends, to facilitate a knocking-out of the posts, as desired.

3,416,464
MOUNTING ARRANGEMENT FOR DEMOUNTABLE CONTAINERS ON RAILWAY CARS
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 23, 1967, Ser. No. 662,770
4 Claims. (Cl. 105—366)

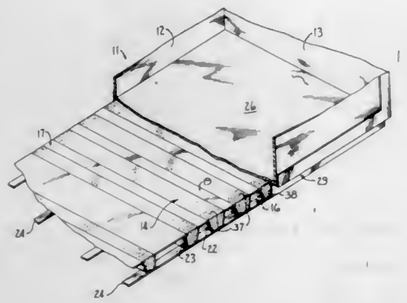
A railway car having upstanding side sills providing tire guides for highway trailers carried hereon includes container mounting brackets which are movable from a rest position to an erect operative position wherein they coact with the four corner brackets of a container carried on the car. The brackets include supporting beams which cooperate with the upstanding side sills of the car and which may be disposed in a non-used or rest position

lying flat on the deck of the car so as to permit loading and unloading of trailers with the mounting brackets pro-



viding a minimum obstruction relative to the rolling of the wheels.

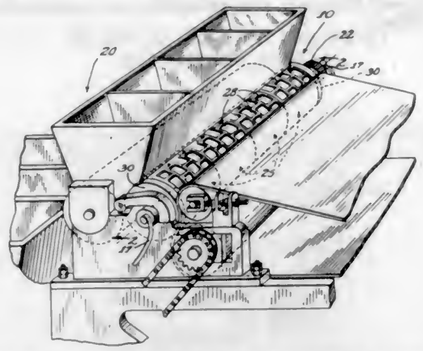
3,416,465
CARGO CONTAINER FLOOR SYSTEM
Russell L. Turpen, North Richmond, Calif., assignor to Compass Container Company, Inc., Richmond, Va., a corporation of California
Filed June 21, 1966, Ser. No. 559,316
5 Claims. (Cl. 105—422)



A cargo container is described which has a floor system which is structurally strong and waterproof and which is not susceptible to physical damage. The floor includes a metal base of transversely extending alternating ridges and grooves upon which is secured a floor panel in bridging relation to the ridges and grooves to define with the grooves a plurality of cells. Side rails secured to the side of the base close the ends of the cells and each of the cells is filled with a foamed plastic slab. The side rails have upwardly extending vertical portions which peripherally enclose the floor panel, and marginal side walls for the container extend upward from the side edges of the base and are secured to the vertical portion of the side rails inwardly thereof.

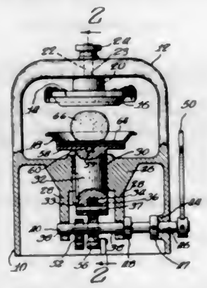
3,416,466
ROTARY COOKIE DIE ROLLS
Edward A. Weidenmiller, 6720 La Porte Ave., Lincolnwood, Ill. 60645
Filed Aug. 19, 1966, Ser. No. 573,631
1 Claim. (Cl. 107—8)

A die roll for use in forming cookies and the like, wherein the periphery of the die roll is formed in a plurality of readily removable and easily replaced cylindrical sections, each of which is keyed to a cylindrical drum closed by end hubs having extending stub axles about which axis the drum is rotated and with end caps secured to the hub holding the cylindrical sections firmly in place on the drum. Each of the stub axles has a passageway therethrough communicating to the interior of



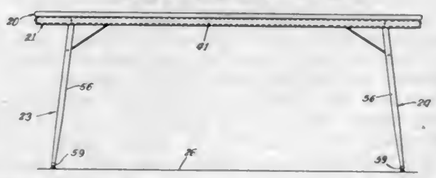
the drum whereby fluids may be circulated to control the temperature of the drum.

3,416,467
DEVICE FOR FORMING A PIE OR TART SHELL
Raymond B. Pfeifer, Chicago Heights, and Charles J. Kopp, Chicago, Ill., assignors to Original Equipment Manufacturers, Inc., a corporation of Illinois
Filed Sept. 14, 1966, Ser. No. 579,406
2 Claims. (Cl. 107—15)



A device for forming a pie or tart shell comprising an upper mold member and a lower reciprocable mold member, with the lower reciprocable member being operated by means of a cam member having a first lobe portion, an intermediate lobe portion and an uppermost lobe portion.

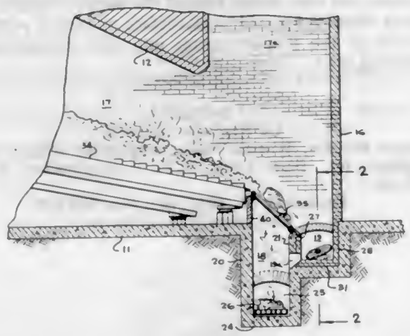
3,416,468
TABLE CONSTRUCTION
Warren J. Peterson, Two Rivers, James L. Fontaine, Manitowoc, and Joseph E. Wachtel, Two Rivers, Wis., assignors, by mesne assignments, to Hamilton Manufacturing Company, a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,126
10 Claims. (Cl. 108—131)



This disclosure deals with a folding table construction including a table top and a pair of spaced apart leg assemblies for supporting the top. The leg assemblies are pivot-

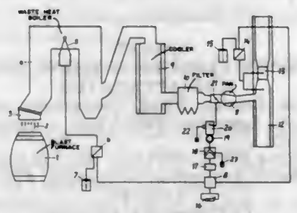
ally connected to the top and may be swung between extended positions where they support the top and retracted positions where they lie flat against the underside of the top. The leg assemblies are connected to the table top by a support channel which holds the legs in assembled relation with each other and with the table top, the support channel being connected to the top, and manually operable latch mechanisms are provided to lock the leg assemblies in their extended positions.

3,416,469
INCINERATOR
Miro Dvirka, Long Island City, and Auram B. Zanft, New York, N.Y., assignors to Hagan Industries, Incorporated, Corona, N.Y., a corporation of New York
Filed Nov. 25, 1966, Ser. No. 597,026
15 Claims. (Cl. 110—7)



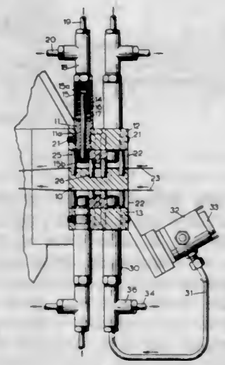
An incinerator comprising a combustion chamber, a first residue chamber disposed adjacent the combustion chamber, a second residue chamber disposed adjacent the first residue chamber, means disposed in the combustion chamber for conveying residue toward and discharging the residue into the residue chambers and classifying means for receiving residue from the conveyor means operable to permit residue particles smaller than a predetermined size to be discharged into the residue chamber and to discharge residue particles the predetermined size or larger into the second residue chamber.

3,416,470
METHOD OF CONTROLLING AND/OR REGULATING INDUCED DRAUGHT FANS FOR WASTE HEAT BOILERS
Ernst Friedrich Hey, Mulheim (Ruhr), Hans Kulpers, Wesel Feldmark, Volker Schiel, Rhinehausen, Friedl Erich, Essen, and Germuth von Hoffmann, Franz Hinte, and Eugen Braun, Rhinehausen, Germany, assignors to Deutsche Babcock & Wilcox-Dampfkellel-Werke Aktiengesellschaft, Oberhausen, Rhineland, Germany, a corporation of Germany
Filed Nov. 4, 1965. Ser. No. 506,296
Claims priority, application Germany, Nov. 7, 1964, H 54,240
4 Claims. (Cl. 110—162)



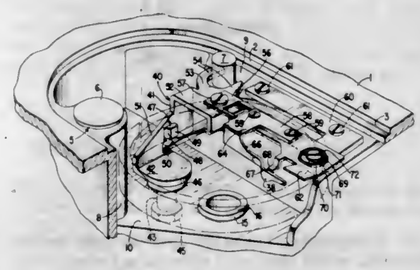
Control of a draft fan for waste heat boilers in accordance with the temperature of the fully burned gas and the flow rate of the exiting gas to maintain a predetermined ratio of waste gas volume to waste gas temperature.

3,416,471
YARN TENSIONING APPARATUS FOR TUFTING MACHINES CAPABLE OF MAKING PILE FABRICS WITH REPEAT PATTERNS THEREON OF LOOPS OF VARYING LENGTHS
Ronald Ellison, Norman Pickles, John Pritchard, and Lawrence Taylor, Bastfield Mill, Blackburn, England, assignors to Ellison Tufting Machinery Limited, Blackburn, England
Filed Jan. 23, 1967, Ser. No. 610,988
Claims priority, application Great Britain, Jan. 28, 1966, 3,867/66
2 Claims. (Cl. 112—79)



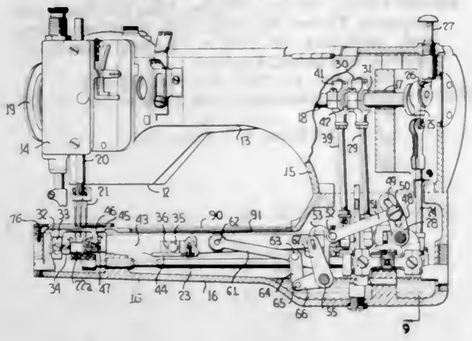
To provide a compact yarn tensioning and braking arrangement, a common bar, over which yarns are guided in parallel, is drilled with holes transverse to the yarn, with pistons located in the holes against which compressed air is applied when a particular yarn is to be placed under increased tension; a supply of compressed air can be readily arranged for a number of piston simultaneously to provide for pattern repeat.

3,416,472
CONSTRUCTION OF BOBBIN CASE ROTATION RESTRAINING MEANS
Ralph E. Johnson, Boonton, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 26, 1967, Ser. No. 633,850
5 Claims. (Cl. 112—184)



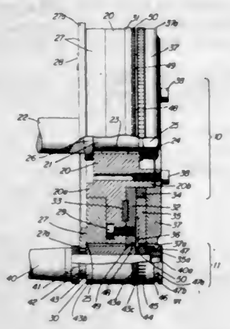
A sewing machine having means for holding the bobbin case stationary and preventing it from rotating with the loop taker or hook as the latter moves about its axis.

3,416,473
COMBINED FEED MECHANISM WITH STEPPED FEED-DOGS FOR SEWING MACHINES
Albert C. Peterson, Park Ridge Manor, Robert A. Hayes, Franklin Park, and Richard H. Lukins, Glen Ellyn, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 1, 1965, Ser. No. 429,583
14 Claims. (Cl. 112—209)



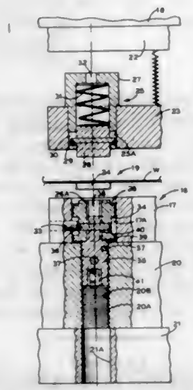
A multiple needle felling machine of the feed-off-the-arm type wherein there are included a main feed bar and a differential feed bar, a main drive shaft, means connecting each bar with the main drive shaft, means for varying the motion of the differential feed bar relative to the motion of the main feed bar, each bar having a vertically adjustable feed-dog with a front portion higher than the rear portion and both portions of the differential feed-dog higher than both portions of the main feed dog.

3,416,474
METHOD AND APPARATUS FOR FORMING A BREAKABLE CONNECTION BETWEEN TWO PORTIONS OF A CLOSURE CAP
Charles Louis Musy, Taisey par Saint-Reimi-les-Chalon, France, assignor to Le Bouchage Mecanique, Neuilly-sur-Seine, France
Filed Nov. 15, 1966, Ser. No. 594,527
Claims priority, application France, Dec. 9, 1965, 41,504
10 Claims. (Cl. 113—1)



5. Apparatus for making cuts through the tubular deformable metal skirt of a closure cap comprising support means having first and second support surfaces spaced apart with an indentation between for supporting the interior of a skirt of a closure cap thereacross, said first support surface having a rectangular peripheral edge adjacent said indentation, tool means movable toward said support means, a work surface on said tool means adapted when the tool means is moved toward the support means to engage a portion of a skirt on the support means and press said portion into said indentation, said work surface having a configuration comprising a rectangular edge across one side and two spaced apart surfaces extending generally at right angles therefrom with a concave indentation between extending almost to the rectangular edge, said work surface being aligned so that when the tool means is moved toward the support means to engage and press a portion of a skirt supported on the support means into said indentation, the rectangular edge of the work surface cooperates with said rectangular edge of the first support means to shear said skirt across the latter edge and said two spaced apart surfaces and rectangular edge of the work surface press a corresponding configuration of the skirt into said indentation, and means to move the tool means toward the support means a sufficient distance for said work surface to press a portion of a skirt on the support means into said indentation and shear the skirt.

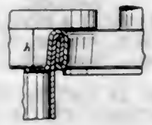
3,416,475
CURLING DIE SET
Walter Richter, Syosset, N.Y., assignor to Regina Enterprises, Inc., New York, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 500,130
10 Claims. (Cl. 113—1)



This disclosure is directed to a drawing die set which includes relatively movable complementary reciprocating die members mounted for movement toward one another. The forming station defined in the respective die members to form a collared hole in a sheet material having a curled end comprises a hole size holding means carried on one of the die members which is adapted to be received within the collared opening of the work piece, disposed between the die members to maintain the size thereof during the curling operation, and a complementary curling means carried on the other of said die members.

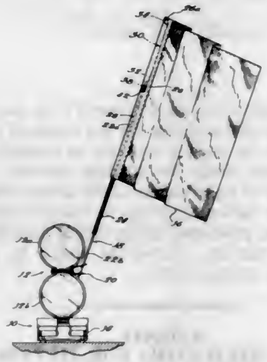
3,416,476
CONTAINER CLOSURE SEAMING METHOD AND APPARATUS
Hans Wyss, Corsier, Vaud, Switzerland, assignor to Afico S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed Feb. 6, 1967, Ser. No. 615,296
Claims priority, application Switzerland, Feb. 11, 1966, 1,980/66
13 Claims. (Cl. 113—30)

The invention relates to the seaming of and end closure with a curled rim to a can body with an outwardly turned lip by a novel method comprising the steps of pinching the rim around the lip, then turning the pinched rim obliquely and downwardly and finally, pressing the rim against the side wall of the can body. The invention also



relates to an apparatus for carrying out this method by means of a mandrel provided with a shoulder, a spring loaded roller, a frusto-conical roller and a flattening cylindrical roller. The invention relates further to a can made by the said seaming method.

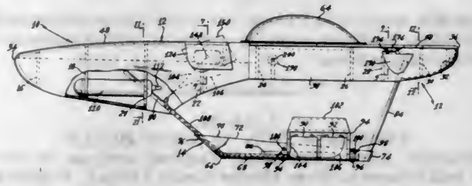
3,416,477
EXTENSIBLE FLAGSTAFF FOR HIGHWAY WARNING SIGNAL
Ralph R. Gunderson, Land of Lakes, Wis. 54540
Filed May 26, 1966, Ser. No. 553,236
6 Claims. (Cl. 116—63)



There is disclosed herein an extensible flagstaff for supporting a warning flag in operative position spaced from a reflector supported by and foldable relative to a base member of an associated highway warning signal. The flagstaff comprises a support member including first and second elongated rods connected by a flexible intermediate member. An extension member is slidably secured to the second rod and is movable relative thereto between a retracted position, in which the supporting member having the extensible member adjacent the second rod may be distorted into a generally U-shaped configuration for storage within the base member of the associated warning signal, and an extended flag supporting position, in which the extension member projects outwardly from the end portion of the second rod. Holding means is carried by the extension member for holding the extension member in selected positions of adjustment relative to the supporting member.

3,416,478
WATERCRAFT
Wesley K. Markham, 5546 Keystone Drive N., Jacksonville, Fla. 32207
Filed July 18, 1967, Ser. No. 654,124
10 Claims. (Cl. 114—16)

A submersible marine vehicle capable of surface and subsurface operation comprising a hull, a hydrofoil assembly connected to the top of the hull, propulsion means attached to the hull for propelling the vehicle in the surrounding body of water in which the vehicle is located, the propulsion means being selectively controllable to drive the vehicle generally vertically downward and upward within the body of water, and rudder means attached to the hydrofoil assembly for selectively controlling the horizontal movement of the vehicle in the body of water. The hull includes an operator carrying compartment having an aid entrapping upper portion open to entry of water from the surrounding body of water and an air source is associated with the upper portion for supplying air thereto. The upper portion of the compartment



entrapping air therein for use by the operator and being adapted to receive the head of the operator therein to permit free breathing within the upper portion of the compartment with the body of the operator substantially being exposed to the body of water. The vehicle further includes a selectively controllable air control valve mounted in the upper portion of the compartment and communicating with an opening through the hull to provide an exhaust passageway from the interior of the upper portion outwardly to the exterior of the hull for the air in the upper portion such that the volume of air in the upper portion may be varied to alter the buoyancy of the vehicle.

3,416,479
FLOATING DRY DOCK
Daniel D. Strohmeier, Scarsdale, N.Y., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Jan. 19, 1967, Ser. No. 610,320
6 Claims. (Cl. 114—45)

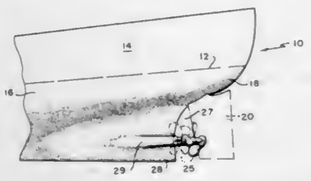


A floating dry dock having a mechanical linkage connecting one end of the dock with the shore to provide transverse stability during docking and undocking operations. The dock does not have conventional wing walls. Instead, two stabilizing columns, one at each end of one side of the dock, provide longitudinal stability and control amount of sinkage when the dock is submerged.

3,416,480
SHIP'S STERN AND PROPELLER ARRANGEMENT
Pao C. Pien, Montgomery County, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 31, 1967, Ser. No. 613,043
4 Claims. (Cl. 114—57)

A ship's stern and propeller arrangement having twin laterally spaced and overlapping propellers mounted symmetrically with respect to the central longitudinal plane close to the main hull on shafts extending from stern tube bossings which are smoothly faired into the

stern form or which are carried on short struts attached to the stern. This arrangement utilizes the energy of the water in the viscous wake-belt which normally follows



the ship due to skin friction, yet avoids the cavitation and vibration problems normally associated with single-screw ship configurations.

3,416,481
CONSTRUCTION OF SHIPS' HULLS
Frederick Taylor, Ponteland, England, assignor of one-half interest to Swan Hunter Group Limited, Wallsend, Northumberland, England, a company of Great Britain and Northern Ireland
Filed Aug. 7, 1967, Ser. No. 658,863
Claims priority, application Great Britain, Aug. 11, 1966, 36,018/66
13 Claims. (Cl. 114—77)



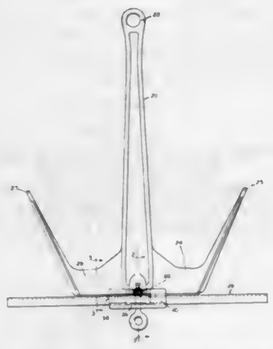
This invention has for an object to provide an improved method of and means for constructing a hull from two or more portions that are subsequently secured together.

The invention provides a method of constructing a ship's hull from at least two prefabricated portions wherein said portions are brought into alignment while afloat and temporarily secured together to form a region of jointing between them, temporary watertight sealing means is applied to the exterior of said region below the waterline to form an access space, the region of jointing is then freed from water and permanent securing of said portions is performed by a watertight jointing operation at least partly applied to the exterior of said portions from within said temporary sealing means access space.

Said temporary sealing means may be arranged to provide access from above the waterline for a welding operation to be performed on the exterior of the portions to secure said portions permanently together. Said temporary sealing means may be adjusted in buoyancy to bear against the hull portions and to form seals therewith at opposite sides of the region of jointing, and further, said portions may be held spaced apart at said region so that below the waterline hull plates may be inserted and welded externally from within said access space.

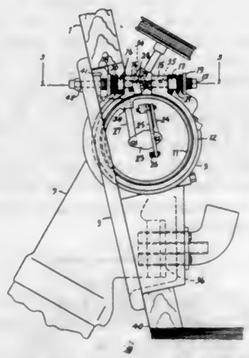
The invention further provides apparatus for performing the aforesaid method, comprising a caisson having a generally horizontal intermediate section and respective upwardly extending end sections, watertight seals on said caisson arranged to bear against the hull portions at the region of jointing, a transversely extending compartment within said intermediate section, said end sections extending above the waterline of the hull portions and at least one of said end sections providing an external access passage to said compartment. Advantageously, the caisson comprises a central gallery extending between the end sections and providing access by an operator to the exterior of the jointing region, and buoyancy chambers arranged on both sides of said gallery for floatation of the caisson.

3,416,482
ANCHOR HAVING A PIVOTABLE STOCK
Frederick P. Dickow, Auburn, N.Y., assignor to The Eastern Company, Naugatuck, Conn., a corporation of Connecticut
Filed Feb. 28, 1967, Ser. No. 619,451
2 Claims. (Cl. 114—207)



Kedge type anchor having a channel iron stock pivoted on the lower end of the anchor on the shank of a retrieval eye and between the anchor end and an integral diagonal bridge strap which limits the rotation between positions parallel with and at right angles to the anchor fluke arms, the bridge strap having grooves to receive the channel flanges in the two positions, and a spring threaded on the eye shank and bearing against the shank to yieldingly lock the stock in either position.

3,416,483
BRAKE MECHANISM FOR TILTABLE PROPELLER UNITS
Karl Abdon Bergstedt, Goteborg, Sweden, assignor to AB Penta, Goteborg, Sweden
Filed Dec. 19, 1966, Ser. No. 602,820
Claims priority, application Sweden, Dec. 22, 1965, 16,680/65
7 Claims. (Cl. 115—41)

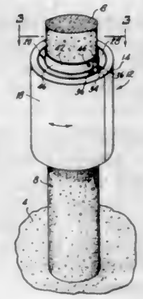


1. In a boat propulsion arrangement including an outboard power leg tiltably mounted on a boat by means establishing a horizontal tilt axis for said leg, the combination of a brake drum fixed to said leg coaxial with said tilt axis, a friction brake band having opposite ends, a respective lug affixed to each said end, said band being disposed around said drum with said lugs in proximity, means for urging said lugs toward each other thereby to engage said band with said drum, and for restraining said band against rotating with said drum, said last means comprising a fixed stop member having a respective stop land for each said lug disposed behind its respective lug and each land being selectively engageable by its respective lug when said leg tends to move on said axis, said last means further comprising a respective spring for each lug, means fixing a first portion of each said spring with respect to said stop member, each said spring having a second portion engaging and urging its respective said lug in a direction toward the other said lug and away from its respective stop land.

ERRATUM

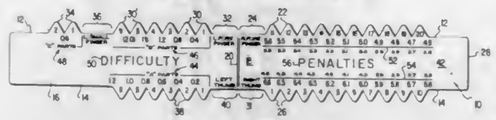
For Class 116—63 see:
Patent No. 3,416,477

3,416,484
PARKING STALL FENDER
Rick Chapman, Illikai Hotel, Room 1409, 1777 Ala Moana Blvd., Honolulu, Hawaii 96815
Filed Mar. 30, 1966, Ser. No. 538,665
5 Claims. (Cl. 116—67)



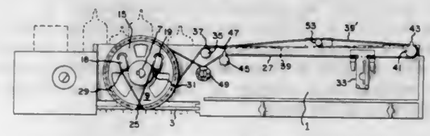
A fender assembly for mounting on a column in a vehicle parking area, including a cylindrical drum rotatably mounted concentrically on said column in spaced relationship by bearing means near each end of the drum. The bearing means extend across the space between the column and the drum to prevent radial shifting of the drum, and are designed to prevent axial shifting of the drum in either direction. A ring gear and ratchet element are mounted between the drum and the column, to give an audible signal when the drum is rotated by a moving automobile in engagement therewith.

3,416,485
SCORING AID
Chester W. Phillips, 74D Amberley, Rte. 2, Annapolis, Md. 21401
Filed Sept. 8, 1966, Ser. No. 578,054
7 Claims. (Cl. 116—120)



1. A scoring aid for manual manipulation comprising: an elongated body having opposed edges, a first and second series of undulations carried by one of said edges, a medial edge portion separating said first and second series of undulations to initially receive the index fingers of respective right and left hands during use, subtractive factor indicia carried by said body corresponding to individual undulations of said first series and additive factor indicia carried by said body corresponding to individual undulations of said second series, whereby, the scorer manually moves respective index fingers along said edge to sequentially apply partial score counts and to thereby provide a cumulative score for a multiple part exercise.

3,416,486
DIAL INDICATOR APPARATUS FOR RADIO RECEIVER
William O. Mongesku, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1966, Ser. No. 546,451
10 Claims. (Cl. 116—124.1)



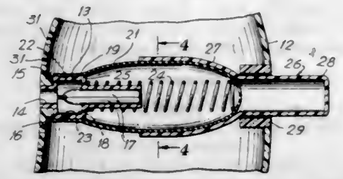
A dial indicator apparatus for a radio receiver wherein a dial cord is strung over integral bosses with the desired tension without the necessity for pulleys or springs, the ends of the dial cord being automatically clamped to a tuning capacitor drum by the provision of dogs thereon.

3,416,487
METHOD AND APPARATUS FOR GENERATING AND APPLYING SONIC ENERGY
George B. Greene, Lafayette, Calif., assignor to Green Engineering Company, a corporation
Filed Mar. 22, 1966, Ser. No. 536,363
11 Claims. (Cl. 116—137)



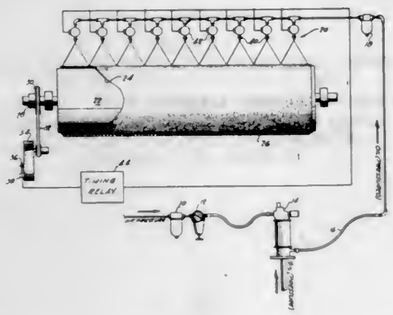
1. A generator for producing sonic waves in a fluid medium, comprising: a plurality of nozzles supplied with operating fluid under pressure and a pair of splitters each presenting an edge to one of said nozzles and defining therewith a jet-edge transducer, said transducers being substantially parallel and spaced apart by a distance which is a function of the wavelength in the operating fluid corresponding to the design frequency of the generator.

3,416,488
SOUND PRODUCING DEVICE
Carl J. Merl, Erie, Pa., assignor to Louis Marx & Co., Inc., a corporation of New York
Filed Apr. 28, 1966, Ser. No. 545,896
7 Claims. (Cl. 116—139)



A sound producing device for mounting within a body having opposed walls in which reeds are mounted within a bulb proximate to one wall and an actuator for collapsing the bulb is slidably mounted through the opposite wall with a portion extending through the wall through which the actuator is mounted and an envelope portion closely embracing a portion of the bulb for controlling the collapsing of the bulb.

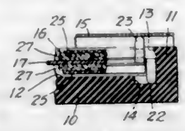
3,416,489
OIL SPRAY LUBRICATING DEVICE
Günter F. M. Hoffmann, Grunstr. 3, Hilden, Germany
Filed Mar. 29, 1966, Ser. No. 538,299
9 Claims. (Cl. 118—227)



Apparatus for depositing a film of material on band or sheet stock in which a roller having an absorbent layer is in contact with the surface of the stock and applies the material which is sprayed directly onto the roller. The roller revolves in synchronism with the speed of the stock passing thereby. The rotation of the roller controls a timing device to initiate the beginning of a spray interval and a separately controlled timer is provided for controlling the duration of each spraying interval whereby the thickness of the layer is independent of the speed of the material but is adjustable by means of the timing device.

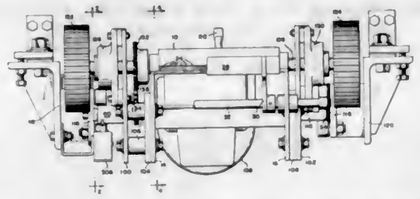
3,416,490
INKING PAD FOR STAMP PADS
Whitney K. Munson, 192 Comanche Drive, Oceanport, N.J. 07757
Filed July 28, 1967, Ser. No. 656,863
2 Claims. (Cl. 118—269)

An inking pad employing a thin apertured plate, preferably of plastic material, for extended support of cushioning ink absorbing pads and the fabric facing sheet; further, wherein sides of the sheet adjacent one end thereof include upwardly and downwardly projecting key and mounting fingers or lugs, facilitating positioning of the inking pad in the base and pressure seating the inking pad



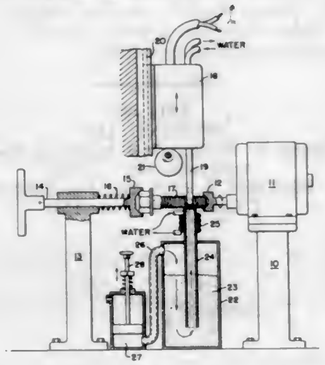
in the base by engagement of the cover with fingers or lugs then projecting upwardly from the surface of the inking pad, keeping in mind reversible mounting of the inking pad in said base.

3,416,491
LEADING EDGE GLUER
Roger F. Turnbull, Montesano, and George W. Herigstad, Aberdeen, Wash., assignors to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash., a corporation of Washington
Filed Oct. 20, 1966, Ser. No. 588,043
7 Claims. (Cl. 118—411)



An automatically operable leading edge gluer for wrapping paper suitable for mounting overhead wrapper dispenser station is provided with adhesive extruding means shielded from the surrounding atmosphere except when adhesive is to be deposited on a wrapper sheet. The leading edge gluer of this invention includes a carriage means for transporting the adhesive extrusion means into and out of contact with a wrapper sheet.

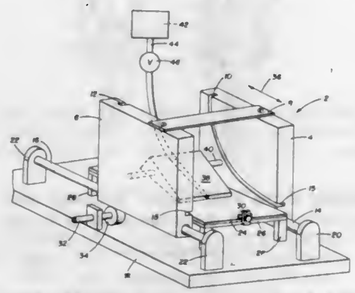
3,416,492
COATING APPARATUS FOR THREADED FASTENERS
Richard J. Greenleaf, Ipswich, Mass., assignor to International Fastener Corp., Kenilworth, N.J., a corporation of New Jersey
Filed Apr. 21, 1967, Ser. No. 632,651
4 Claims. (Cl. 118—620)



Apparatus for applying a torque-controlling coating or sealing coating to a threaded element, characterized by

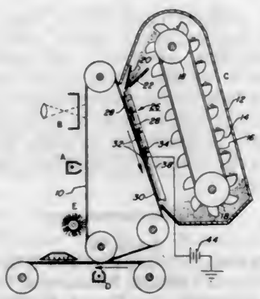
means for spinning the element about its axis and heating an intermediate section while delivering a plastic material to a predetermined 360° area thereof.

3,416,493
ELECTROGRAPHIC LIQUID DEVELOPING APPARATUS
Gene H. Robinson and Orville C. Rodenberg, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 14, 1965, Ser. No. 471,860
8 Claims. (Cl. 118—637)



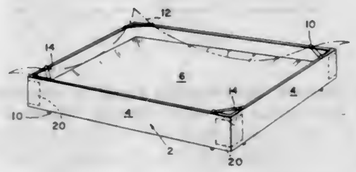
A liquid developing apparatus employing a development plate adapted to support a thin layer of liquid developer on one surface thereof, which apparatus simulates the rolling action used in hand processing of xerographic sheets. A shuttle means comprises a pair of parallel sidewalls in spaced-opposed relationship with the inner facing wall of each sidewall provided with a curved groove for slidingly holding a record member. A liquid manifold, connected through a valve to a supply tank, is mounted on the shuttle means so that it moves with the shuttle means to dispense the proper amount of liquid developer onto the development plate.

3,416,494
XEROGRAPHIC DEVELOPMENT ELECTRODE
Frederick W. Hudson, West Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,214
2 Claims. (Cl. 118—637)



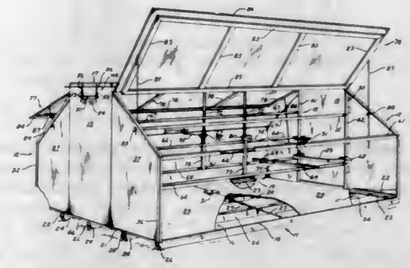
A development electrode comprising a plurality of conductive segments extending across a development zone adjacent a movable latent electrostatic image-bearing surface to be developed. The segments are spaced from each other to define developer supplementing apertures for the introduction of fresh, fully toned, two-component developer into the development zone at various locations along the development zone. Developer directing plates extend from the electrode segments on the side thereof remote from the development zone to direct the flow of developer into into the apertures.

3,416,495
PET PAN WITH DISPOSABLE LINING
Henry Allen Wilson, Tampa, Fla.
(1000 Eldorado Ave., Clearwater Beach, Fla. 33515)
Filed Nov. 2, 1966, Ser. No. 591,627
7 Claims. (Cl. 119—1)



1. An animal toilet comprising a framework, a flexible sheet connected to the framework, a lining adapted to cover said sheet, and anchoring means unitary with the framework providing means for holding down the lining on the sheet.

3,416,496
FARROWING STRUCTURE
Darwin L. Peterson, Williams, Iowa 50271
Filed Oct. 10, 1966, Ser. No. 585,507
5 Claims. (Cl. 119—16)

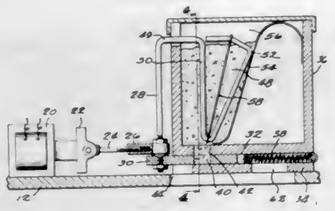


This invention pertains to a farrowing structure for swine, and wherein maximum aeration is provided by a box-like framework having removable side panels slidably mounted in side frames, hinged, sloping roof panels extended between a flat roof section and the side frames, door panels which are also openable and closable by pivoting same at their base connections with the framework, and including internal, open partition means for forming a stall interior the framework.

3,416,497
TIMER-CONTROLLED FEEDER
Dick Riel, Box 203, Oakfield, Wis. 53065
Filed Sept. 8, 1966, Ser. No. 578,011
6 Claims. (Cl. 119—51.11)

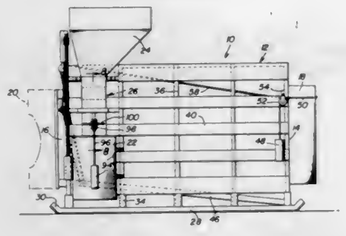
The invention is not limited to the delivery of any specific kind of food. However, the disclosure concerns delivery of fish food into an aquarium as a means of exemplifying the invention. A timer-controlled solenoid

periodically shifts a slide valve for a distance which may be varied to deliver a predetermined quantity of fish food into an aquarium. Supplying the valve is a hopper having a flexible wall which is jarred in the course of operation



of the solenoid, the objective being to preclude bridging of the feed across the valve opening. Means is also provided to relieve any tendency of food or other foreign matter to accumulate in the way along which the slide valve is operable.

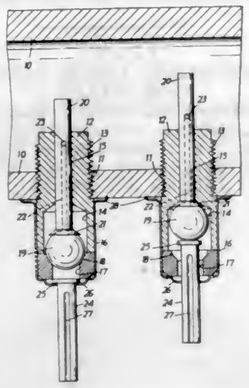
3,416,498
ANIMAL FEEDING DEVICE
Chester B. Stahl, Sr., Rte. 1, Trenton, Ky. 42286
Filed June 29, 1966, Ser. No. 561,589
2 Claims. (Cl. 119—55)



A feeding stall having oppositely disposed entrance and exit gates and a feed receptacle attached to a lateral wall therein. A treadle board is disposed substantially between the gates, the board being pivotally secured to the stall at the entrance gate end. The opposite end of the board is caused to pivot downwardly upon entrance of an animal which in turn causes closing of the entrance gate and operation of feed metering means.

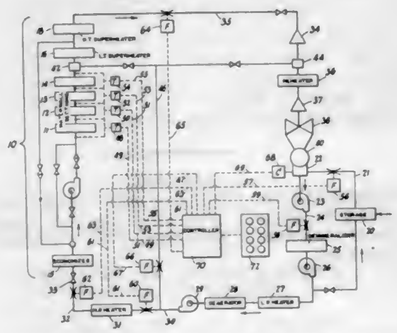
3,416,499
DRINKING VALVES FOR POULTRY
Kenneth Wilmot, Clitheroe, England, assignor to John Blake Limited, Clayton-le-Moors, Accrington, Lancashire, England, a British company
Filed June 19, 1967, Ser. No. 646,958
Claims priority, application Great Britain, June 24, 1966, 28,547/66
8 Claims. (Cl. 119—72.5)

A valve arrangement for delivering drinking water to poultry has a body portion which is inserted in a water supply line and which has a depending stem which is upwardly movable by the beak of the animal to obtain a supply of water. The body portion is provided with a through passage the upper portion of which is closed by a movable stem having a water inlet passage normally within the body portion. The lower portion of the through passage is closed by a ball valve with the lower end of the movable stem resting on top of the ball. Upward movement of the depending stem opens the ball valve to lift the movable stem to expose the water



inlet passage to the water supply to enable water to flow through the valve and down the depending stem.

3,416,500
METHOD AND SYSTEM FOR DETECTING LEAKS IN A FORCED THROUGH FLOW STEAM GENERATOR PLANT
Donald E. A. Lyons, Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,408
3 Claims. (Cl. 122—406)

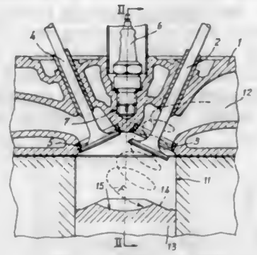


A system receiving input signals from a multiplicity of detection stations, which signals constitute measurements of actual flow, temperature and conductivity of the working fluid at an established steam load, and which are compared with normal predetermined values. A deviation from normal values results in an output signal from the comparison, indicating for example, boiler tube leak, location of water wall leak, feedwater heater leak, and condenser leak.

3,416,501
INTERNAL-COMBUSTION ENGINES
Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Oct. 31, 1966, Ser. No. 590,696
Claims priority, application France, Jan. 13, 1966, 45,812
1 Claim. (Cl. 123—30)

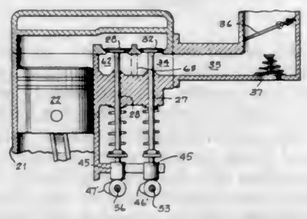
In an internal combustion engine, the inclined seats of the inlet and exhaust valves are arranged in such a manner that their upper edges practically touch. A central spark

plug is placed in a recessed cavity communicating with the combustion chamber via two inclined channels. The gas inlet conduit terminates in the form of a volute to impart a gyrating movement to the gases which will rotate



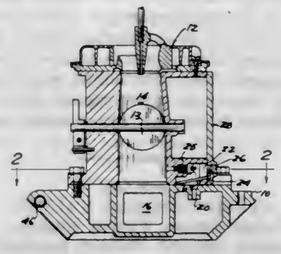
around the axis of the cylinder. The head of the piston has a conical frustum shape with a slightly hollowed small base which fits the shape of the combustion chamber.

3,416,502
INTERNAL COMBUSTION ENGINES
Joseph Weiss, 134 W. 93rd St., New York, N.Y. 10025
Filed Apr. 22, 1965, Ser. No. 450,124
13 Claims. (Cl. 123—75)



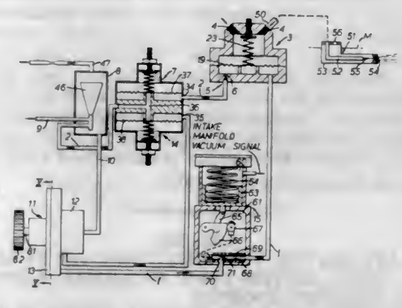
2. In an internal combustion engine having a plurality of cylinders and a piston for each of said cylinders, the combination of gas intake conduit means communicating at its intake end with a source for the continuous supply of air for said cylinders and having no throttle valve restricting such air passing therethrough from such supply source, thereby providing an unrestricted supply of air from such source to said cylinders, means providing a supply of fuel to be mixed with such air, first valve means for exhausting fluid from each of said cylinders, first operative means for maintaing said first valve means closed during the intake stroke of the piston in such cylinder, second valve means for controlling the gas charge in each of said cylinders, second operative means for operating said second valve means to permit the entry of gas from said intake conduit means into each of said cylinders throughout the entire intake stroke of its associated piston so as to completely fill the cylinder with a gas charge such as to avoid the creation of a high partial vacuum at any time during the intake stroke, said second operative means including control means not actuated by supercharging means for maintaining the communication of each cylinder through said second valve means open during the initial portion of each compression stroke of its associated piston to permit the exhaust of a portion of the inducted gas in such cylinder through said second valve means on each compression stroke of each of said cylinders uninterruptedly reducing the initial charge supplied to such cylinder, said control means being operative to vary the exhaust of said second valve means during each of the compression strokes of said cylinders to vary the total compressible inducted charge in each of said cylinders in accordance with operating conditions and thereby the power created therefrom in the compression cycle of said cylinder.

3,416,503
ENGINE FUME DISCHARGE REDUCTION SYSTEMS
Carl F. High, 17581 Appoline, Detroit, Mich. 48235
Continuation-in-part of application Ser. No. 519,132, Jan. 6, 1966. This application Oct. 27, 1967, Ser. No. 700,336
15 Claims. (Cl. 123—119)



An internal combustion engine port carburetion system adapted for fume discharge reduction in which crankcase fumes are discharged into the air intake manifold downstream of the throttle valve and in which fuel jet nozzles at each cylinder intake port are selectively vented to minimize the effect of manifold suction on the fuel distribution lines, with means for selectively directing air and other gas, either exhaust gas or externally supplied gas under pressure, to the fuel jet nozzle vents utilizing a valve selectively positioned responsively to engine manifold pressures.

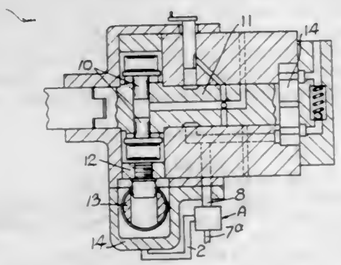
3,416,504
FUEL INJECTION SYSTEMS
Harold Ernest Jackson, Plympton St. Mary, Devon, England, assignor of one-half to Petrol Injection Limited, Plymouth, Devon, England
Filed Aug. 25, 1966, Ser. No. 575,010
Claims priority, application Great Britain, Sept. 8, 1965, 38,394/65
10 Claims. (Cl. 123—139)



A continuous circulation fuel injection system in which fuel supply to injector devices is pressurised in dependence on the square of engine speed by a rotary ring impeller and also controlled by a variable area orifice metering valve operated by engine air intake manifold vacuum. In order to eliminate vaporisation of fuel fed to the impeller devices, the supply branch is connected to the impeller devices by a chamber having a first compartment having an upstanding tubular portion against which a

diaphragm is seated by a predetermined, constant force sufficient to ensure that fuel pressure in the supply branch does not fall below a predetermined value adequate to prevent fuel vaporisation. The diaphragm has an aperture located within the confines of the annular seating so that when the diaphragm is unseated, fuel flows from the first compartment through the diaphragm aperture to a second compartment and hence to the injector devices, fuel flowing from the second compartment having removed therefrom the said predetermined pressure. The first compartment is also connected to the fuel return branch which also includes a second diaphragm valve closed by the same predetermined force as the first mentioned diaphragm valve. In the system described fuel flow from the second diaphragm valve is to a vapour separator which has an upstanding funnel member the lower, constricted end of which receives fuel from the second diaphragm valve. The funnel member is disposed in a chamber having an upper vapour vent and a lower fuel outlet from which the fuel pressurising means is supplied.

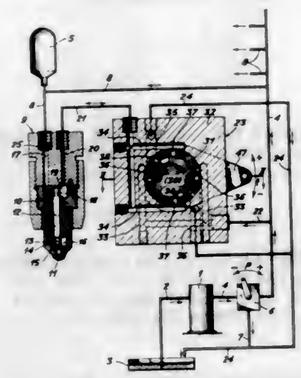
3,416,505
FLUID CONTROL VALVES
Stanley Frederick Barber, Pinner, England, assignor to C.A.V. Limited, London, England, a company of Great Britain
Filed Oct. 3, 1966, Ser. No. 583,856
Claims priority, application Great Britain, Oct. 5, 1965, 42,139/65
3 Claims. (Cl. 123—139)



A fuel pump for delivering fuel in timed relationship with the engine having a fluid source whose pressure can vary in dependence on the engine speed and means responsive to the fluid pressure for varying the timed relationship of the pump with the engine during engine operation. A valve between the fluid source and the pressure responsive means serves to prevent fluid pressure application to the responsive means until the pressure has risen to a predetermined value and thereafter allow pressure application to the responsive means at any value of the pressure above second predetermined value lower than the first predetermined value.

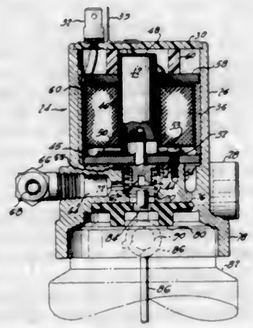
3,416,506
APPARATUS FOR INJECTION OF FUEL INTO PISTON-TYPE INTERNAL COMBUSTION ENGINES
Anton Steiger, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Sept. 8, 1966, Ser. No. 577,899
Claims priority, application Switzerland, Sept. 14, 1965, 12,729/65
3 Claims. (Cl. 123—139)

1. Fuel injection apparatus for a piston-type internal combustion engine, said apparatus comprising a fuel storage vessel, a fuel pump having an outlet connected to said storage vessel, and a fuel injector having a housing and a valve stem movable within said housing between injector-opening and injector-closing positions, said housing having separate spaces formed therein to which the ends of said stems are exposed, a first of said spaces communicating, when said valve stem is in injector-opening position, with a fuel injection aperture through said housing, said apparatus further comprising first conduit means connecting said vessel to said first space, second conduit means connecting to said second space, and means to connect said second conduit means cyclically and successively to a source of high pressure at least as high



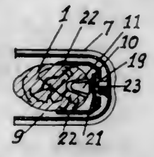
as the pressure in said outlet and to a source of lower pressure, said last-named means including an axially shiftable cylinder coupled for rotation to the engine crankshaft and disposed within a housing having a connection to said second conduit means, a connection to said source of lower pressure and a plurality of ported sleeves surrounding said cylinder, said sleeves being supported coaxially for rotation together and being circumferentially shiftable through a fraction of a turn, said apparatus further including means for adjusting the axial positions of said sleeves one with respect to another.

3,416,507
ETHER INJECTION ASSEMBLY FOR INTERNAL COMBUSTION ENGINE
Arthur J. Little, Springfield, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 3, 1966, Ser. No. 591,763
2 Claims. (Cl. 123—180)



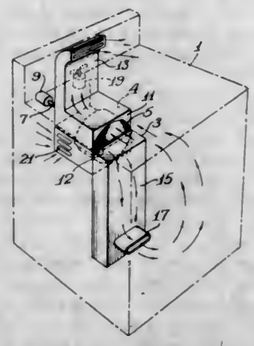
The following specification describes a housing having a pivotable bail for detachably carrying a valved ether can. The can valve is operated on energization of a coil in the housing for releasing ether as an engine starting aid. A cup-shaped can in the housing seals a passageway in the housing through which the coil armature passes to actuate the valve for preventing contact between the electrical circuit and the ether.

3,416,508
SHOCK ABSORBING HANDLE FOR AN ARCHER'S BOW
George D. Thompson, 9100 Cincinnati Dayton Road, West Chester, Ohio 45069
Filed Sept. 9. 1966, Ser. No. 578,188
6 Claims. (Cl. 124—24)



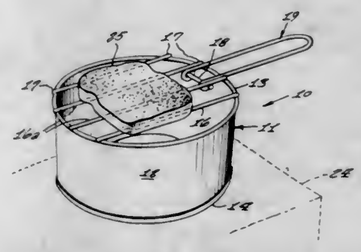
1. An archer's bow for shooting an arrow comprising;
a bow handle with flexible limbs fixed to said bow and extending lengthwise therefrom;
a string connected to ends of said flexible limbs for shooting said arrow from said bow;
a U-shaped shock absorbing handle loosely surrounding said bow handle adapted to be held stationary and having sufficient clearance relative to said bow handle to permit said bow handle to translate as a unit back and forth within said U-shaped handle;
spur means fixed on said U-shaped handle in communication with another means on said bow handle to guide and position said bow relative to said U-shaped handle when said bow handle is moved backward on the drawing of said bow string preparatory to shooting said arrow and flexible means surrounding the back of said bow handle and connecting the U-shaped handle and bow handle to limit the forward movement of said bow within said U-shaped handle.

3,416,509
SELF-CLEANING GAS OVEN
Jack Huebler, Deerfield, Robert B. Rosenberg, Evergreen Park, and William F. Rush, Arlington Heights, Ill., assignors to Institute of Gas Technology, a not-for-profit corporation of Illinois
Continuation-in-part of application Ser. No. 583,291, Sept. 30, 1966. This application Nov. 23, 1966, Ser. No. 596,521
41 Claims. (Cl. 126—21)



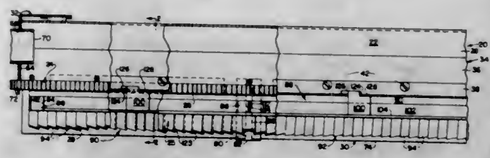
The specification discloses gas-fired self-cleaning ovens for commercial or domestic use and methods of self-cleaning that are made possible by the use of heat exchangers in conjunction with conventional gas ovens. Hot flue gases drawn from the oven are cooled by heat exchange with incoming air in a recuperator or, preferably in a rotating wheel type regenerator, to sufficiently low temperature that such gases may be exhausted directly into the room, thus obviating outdoor venting of hot flue gases. The incoming air is preheated by the exchanger and the efficiency of utilization of the heating value of the gas is increased. The cleaning time for a heavy food soil load is typically one hour. The method of cleaning involves incineration of food soil vapors by the flame to completely oxidized products of CO_2 and H_2O, and substantially no smoke and potentially hazardous vapors are exhausted into the room. Careful control of all air is taught, and the use of air in excess of stoichiometric is disclosed. Conventional burners may be used, and range from the totally aerated to nonaerated type, with the method being equally applicable to single or double cavity type of gas ovens. Improved performance as compared to electric self-cleaning ovens, and to gas ovens having venting means is disclosed.

3,416,510
CAMP STOVE TOASTER
Albert L. Paulson, Glen Rte., Aitkin, Minn. 56431
Filed June 27, 1966, Ser. No. 560,497
1 Claim. (Cl. 126—25)



A camp stove for cooking out of doors, comprising a cylindrical member having a central opening therethrough, a grill secured across the top thereof, and a handle hingedly secured to the grill, the handle being pivotable between a position adjacent the grill and an extended position for operative use, and the handle being fastened to a pivoted piece traversing two grill bars.

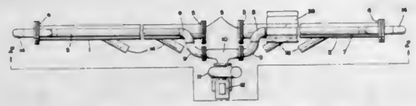
3,416,511
COMBUSTION TYPE INFRARED GENERATORS
John J. Fannon, Jr., Grosse Pointe Park, Mich., and Marc Resek, Shaker Heights, Ohio, assignors to Fostoria-Fannon, Incorporated, Fostoria, Ohio, a corporation of Ohio
Filed Jan. 20, 1967, Ser. No. 610,515
35 Claims. (Cl. 126—92)



An infrared burner or generator having an elongated distribution tube which is provided with an orifice structure along its longitudinal length. An elongated radiating member, formed of a series of overlapping arch-like

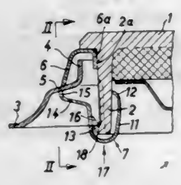
blades with a discharge opening between each blade, surrounds the orifice structure and forms a combustion chamber. These arch-like blades are so configured that combustion products exiting through the discharge openings wipe both sides of each blade. When an installation includes two infrared generators aligned in an end-to-end relationship, a conduit having a valve therein may be provided between the opposed ends of the distribution tubes, and a flash tube may be provided between the ends of the radiating members. The installation may also be provided with reflectors and heat shields for the radiating member.

3,416,512
INFRARED HEATING SYSTEM
Alvin Mintz, 4457 Baintree Road, University Heights, Ohio 44118
Filed Jan. 9, 1967, Ser. No. 608,186
4 Claims. (Cl. 126—94)



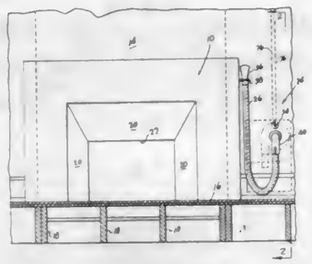
A heating system is provided in which a pair of heat-emitting conduits are disposed in axial alignment with each other and spaced axially from each other, burner units are provided spaced along said conduits for providing flames interiorly of the conduits, and means common to both conduits is provided adjacent the space between the conduits for simultaneouly exhausting the products of combustion from both conduits in countercurrent relationship to the flow of heat in the first-named conduits and in heat-transferring relationship to the latter.

3,416,513
DEVICE FOR SECURING A HEATING PLATE TO THE TOP PLATE OF A RANGE
Karl Fischer, Gerhard Goessler, and Horst Meissner, Oberderdingen, Wurttemberg, Germany, assignors to Messrs. E.G.O. Elektro-Geraete, Blanc u. Fischer
Filed Sept. 1, 1967, Ser. No. 665,023
Claims priority, application Germany, Sept. 14, 1966, E 32,483
9 Claims. (Cl. 126—215)



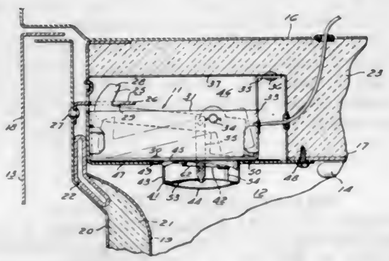
A device for securing a heating plate having an annular flange to the top plate of a range having a hole into which the flange is inserted by means of several spring clamps which are applied from the lower side of the range plate and each of which has one part resiliently pressing against the inner side of the range plate and another part resiliently pressing in a downward direction against the flange, whereby an overflow or facing ring surrounding and secured to the upper end of the flange adjacent to the heating plate is pressed tightly upon the upper side of the range plate.

3,416,514
FIREPLACE ASH REMOVER
William R. Klemme, Rte. 1, Box 2721, Colfax, Calif. 95713
Filed Apr. 17, 1967, Ser. No. 631,236
3 Claims. (Cl. 126—242)



A vacuum blower, a flexible hose, a swivable L-connection between the blower and the hose, and a disposal receptacle, or, alternatively, a system for flushing ashes picked up by the flexible hose into a soil pipe is disclosed.

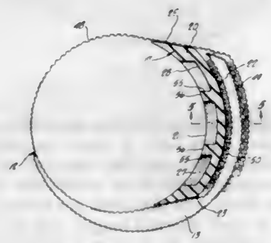
3,416,515
DOOR LATCHING ACTUATOR ASSEMBLY
Charles S. Mertler, Mansfield, Ohio, assignor, by mesne assignments, to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 502,088
7 Claims. (Cl. 126—273)



1. In a heatable cavity having a cavity wall, a movable door to close the cavity, and means to heat the cavity through a first temperature range to a higher temperature second range,
the provision of a door latching actuator assembly operative to latch the door closed during operations in said second temperature range but not during operations in said first temperature range, comprising, in combination,
a temperature responsive actuator mechanism including, a bimetallic member having first and second positions of operation and mounted on said mechanism with one portion of said bimetallic member acting on said mechanism and with said bimetallic member mounted to be responsive to the temperature within the cavity,
an operating member having first and second portions,
means connecting said operating member first portion to another portion of said bimetallic member which is movable with temperature changes,
said bimetallic member moving from said first to said second position upon temperature rise above the first temperature range into the higher temperature second range and moving from said second to said first position upon a lowering of temperature below said second temperature range,

a latch mechanism having first and second parts connected to the cavity wall and to the door, respectively, to cooperate together.
means connecting said second portion of said operating member to directly actuate one of said latch parts to prevent opening the door upon said bimetallic member being in said second position and to permit opening the door upon said bimetallic member in said first position,
a switch mechanism,
said operating member being an actuator plunger movable along the length thereof by means of said bimetallic member,
means on said actuator mechanism having an aperture to loosely receive and guide said actuator plunger,
and means on said actuator plunger to actuate said switch mechanism as said bimetallic member moves between said first and second positions.

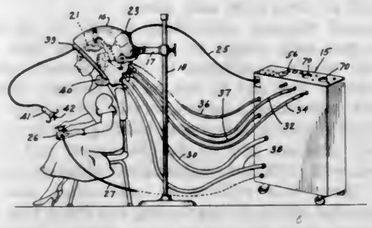
3,416,516
BLOOD PRESSURE CUFF TRANSDUCER
David D. Cohen, Northridge, and Armand F. Du Fresne, Duarte, Calif., assignors to Dupaco, Inc., Arcadia, Calif., a corporation of California
Filed Mar. 22, 1965, Ser. No. 441,572
13 Claims. (Cl. 128—2.05)



A stethoscope audio pickup transducer for use in ausculatory measurements of blood pressure comprising a pliable and flexible member having a substantially cylindrical surface, concave exterior surface and a cavity extending within the member adjacent a substantial portion of the concave surface. The cavity is effectively open for the purposes of sound transmission to the concave surface over a substantial portion of its boundary proximate to the concave surface. A passage extends from the cavity to a surface of the member other than the concave surface and is adapted at its end spaced from the cavity for sound transmitting connection to a stethoscope earpiece.

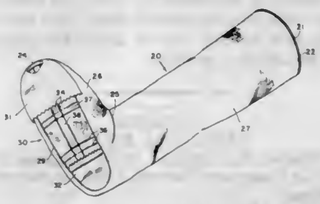
3,416, 517
AUTOMATIC SHAMPOO APPARATUS
Arthur H. Adams, Hollywood, Calif. (608 S. Hill St., Los Angeles, Calif. 90014), by Z. Harry, Astor, executor of said Arthur H. Adams, deceased, and Mary Bozocos, deceased, late of Los Angeles, Calif., by Helen Bozocos McKinney, Los Angeles, and Thalia Bozocos Fasano, Hayward, Calif., heirs, and Alexander Bozocos, Los Angeles, Calif., heir, by Helen McKinney, attorney-in-fact
Substituted for abandoned application Ser. No. 692,761, Oct. 28, 1957. This application Dec. 2, 1965, Ser. No. 515,292
21 Claims. (Cl. 128—65)

Apparatus including a fluid tight helmet for the head of a user, with a motor driven scrubber inside the helmet, and further including a user operated control for regulating the scrubber motor speed. Also included are fluid actuated means controllable by the user for regulating the pressure of the scrubber upon the user's head. The scrubber is provided with openings through which fluid is applied to the user's head. A supply cabinet automatically supplies water and hair treating fluid to the helmet. Separate solenoid actuated valves control the flow of



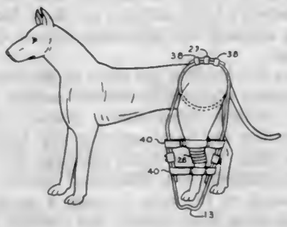
water and hair treating fluid from the supply cabinet to the helmet. A hydraulic cylinder and piston in the cabinet is used to move a rod having means for successively engaging the solenoid control switches as the piston moves lengthwise of the cylinder.

3,416,518
CAST COVER
Bessie M. Samuels, R.R. 5, Box 138 46011, and Edith M. Long, 2729 Alexandria Pike 46012, both of Anderson, Ind.
Filed Sept. 12, 1966, Ser. No. 578,701
7 Claims. (Cl. 128—82)



1. A cast cover, comprising a tubular sleeve of an elastic material having an open end and a closed end, a toe guard secured to said sleeve adjacent the closed end thereof, and a plurality of intersecting rows of stitching adjacent said toe guard defining sleeve areas therebetween adapted to have openings formed therein for the reception of a cast projection.

3,416,519
ANIMAL SPLINT
David John Dowers, 110 Broad St., Waveland, Miss. 39576
Filed Aug. 25, 1966, Ser. No. 575,057
12 Claims. (Cl. 128—87)



1. A device having separable, adjustably connectable elements for the support of an injured animal's leg comprising:
an element having a loop, large enough to go over and up to the pit of any leg of an animal of the general

size for which the dimensions of the device are designed, and a pair of depending rods, adapted to be fastened to the animal's leg, having upper portions that are fixed to said loop and converging lower portions, at least parts of said rods being movable toward or away from each other;

a second element comprising a pair of upright, divergent rods, joined by a cross rod at their bottom ends which is adapted to be positoned below the animal's foot and to rest on the ground, said divergent rods being adjacent to said convergent rods;

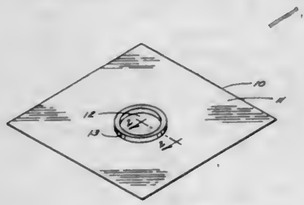
connecting means comprising holding means to envelop each adjacent pair of the convergent and divergent rods with sufficient clearance for adjusting movement of these rods relative to each other, and screw-threaded means for tightening and fixing said holding means about the rods in their adjusted position;

a third element having a pair of projecting legs adapted to rest horizontally on a top portion of the animal's back and a middle arcuate part to which the projecting legs are fixed, said arcuate part having a curvature which fits that of the upper portion of said loop;

and a member comprising a second loop, adapted and large enough to go over and up to the pit of the opposite leg of the animal, and a pair of projecting legs that are fixed to said second loop, adapted to rest substantially horizontally on a top portion of the animal's back and to be adjacent to said first-named pair of projecting legs; and

connecting means comprising holding means to envelop said four projecting legs, with sufficient clearance for adjusting movement of the legs relative to each other, and screw-threaded means for tightening and fixing said holding means about the projecting legs in their adjusted position.

3,416,520
SURGICAL DRAPE
Paul Creager, Jr., Dayton, Ohio, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 22, 1966, Ser. No. 596,337
2 Claims. (Cl. 128—132)



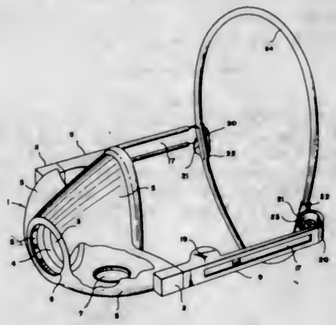
1. In a surgical drape comprising:

(a) a sheet of pliable membrane material for covering a patient's body surface, the sheet having a hand opening adapted for alignment with a surgical incision, and

(b) means for holding the sheet in position,

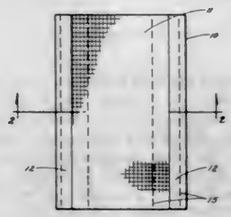
the improvement comprising flexible anchor means constituting an endless substantially planar open flexible loop surrounding the hand opening and fastened to the sheet at the edge of the hand opening, the loop being manually deformable to a relatively narrow shape suitable for passage of the loop through a surgical incision into the adjoining body cavity but further being sufficiently elastic to flex back into its original open loop shape when released from manual pressure so as to lie anchorably beneath the edges of the incision, the reaches of the loop having a generally rectangular cross-section of uniform dimension in which the height exceeds the width whereby the loop can be manually deformed to the narrow shape and deposited in the body cavity without curling or twisting from the planar conformation.

3,416,521
BREATHING MASK SUSPENSION
Humphrey A. S. Hamlin, Montacute, Somerset, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Sept. 27, 1965, Ser. No. 490,324
Claims priority, application Great Britain, Oct. 6, 1964, 40,645/64
8 Claims. (Cl. 128—146.7)



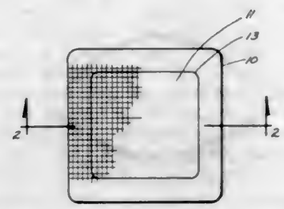
An oro-nasal mask suspension assembly which can be quickly donned using only a single hand, the assembly including a shell supporting the mask and also supporting folding side-arms which bear a flexible head-engaging loop between them. The side-arms are telescopic and resiliently urged to their shortest length, and also biased from the folded condition to a user wearing position that extends on each side of a user's face during use.

3,416,522
STABILIZED NON-ADHERENT PAD
George J. Yeremian, Greenwood, S.C., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 6, 1966, Ser. No. 599,574
3 Claims. (Cl. 128—156)



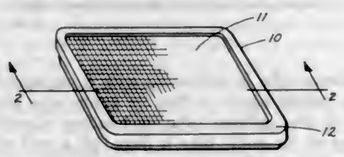
1. In a surgical dressing having a non-adherent laminated pad with at least one cellulosic layer and a porous resin fiber layer mutually secured by needling means, the improvement comprising a backing strip for the pad adhesively secured at edges of the pad and at spaced points along at least a major axis of the pad backing surface sufficient to render the pad resistant to sheering forces in the plane of the pad.

3,416,523
NON-ADHERENT DRESSING
George J. Yeremian, Greenwood, S.C., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 6, 1966, Ser. No. 599,573
3 Claims. (Cl. 128—156)



1. A non-adherent dressing for application to a wound site comprising a laminated pad of a moisture absorbent non-woven cellulosic layer face to face with a porous layer of thermoplastic resin fibers some of which fibers are needled through the layers and bonded therein by heat fusion and pressure means sufficient to secure the layers together, the cellulosic layer having a marginal shoulder constituting a peripheral area of increased compression, the shoulder being bonded in position by heat fusion means.

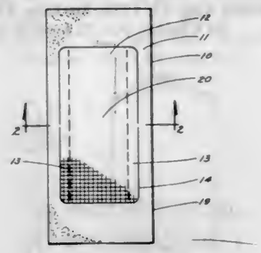
3,416,524
SURGICAL DRESSING
William G. Meier, Grosse Pointe Park, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 16, 1966, Ser. No. 602,302
3 Claims. (Cl. 128—156)



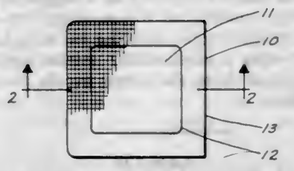
1. In a surgical dressing having a non-adherent laminated pad with at least one cellulosic layer and a porous resin fiber layer mutually secured by needling means, the improvement comprising crown means surrounding and stabilizing the edges of the cellulosic layer and the resin fiber layer, the crown means containing a flange contacting one of the pad surfaces, the crown means being secured to the pad whereby the pad is protected from delamination and dislodgement of fibrous particles from the pad.

3,416,525
STABILIZED NON-ADHERENT DRESSING
George J. Yeremian, Greenwood, S.C., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 6, 1966, Ser. No. 599,572
3 Claims. (Cl. 128—156)

1. In a surgical dressing having a non-adherent laminated pad with at least one cellulosic layer and a porous resin fiber layer mutually secured by needling means, the improvement comprising an adhesively coated backing strip adhesively secured to the pad surface opposite the non-adherent surface of the pad, the pad being spaced inwardly from the margins of the backing strip with sufficient adhesive surface exposed around the pad to permit adhesive sealing at points surrounding a wound site, and a marginal shoulder constituting areas of increased compression of the pad over at least a major proportion of the pad edge.

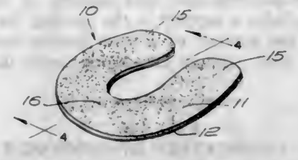


3,416,526
NON-ADHERENT BANDAGE PAD
George J. Yeremian, Greenwood, S.C., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 6, 1966, Ser. No. 599,501
3 Claims. (Cl. 128—156)



1. A surgical dressing comprising a non-adherent laminated pad having a cellulosic layer and a porous resin fiber layer mutually secured by needling means, the pad being folded at the mid-line and doubled upon itself to confine the cellulosic layer and expose the resin fiber layer, the opposing faces of the folded pad being adhesively secured together at least at the unfolded edges of the pad.

3,416,527
TOPICAL ARCH TRAY
William A. Hoef, Birmingham, Mich., assignor to Edward Weck & Company, Inc., Long Island City, New York, N.Y., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 596,945
4 Claims. (Cl. 128—260)

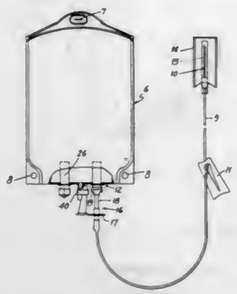


1. A flexible, deformable laminated topical arch tray for topical treatment of teeth and adjacent gum areas, comprising:

a flat U-shaped liquid absorbent element; and

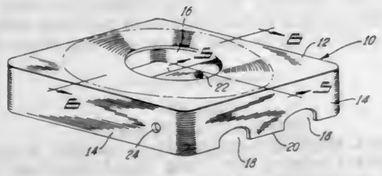
a substantially coextensive flat U-shaped deformable liquid impermeable element fixed to one surface of said liquid absorbent element, said liquid impermeable element being capable of retaining said topical arch tray in substantially any shape to which it is deformed.

3,416,528
BLOOD HANDLING EQUIPMENT
Paul Kahn, San Francisco, Calif., assignor to Cutter Laboratories, Inc., a corporation of Delaware
Filed Aug. 17, 1959, Ser. No. 834,218
14 Claims. (Cl. 128—214.2)



1. In an apparatus for obtaining separate main donation and pilot sample blood volumes in sterile manner, a flexible plastic collecting tube, a flexible plastic blood container connected to an end of said collecting tube, a donor needle mounted at the other end of the tube, and a stopper piercing cannula received in said tube and pointed at one end for applying to a stoppered pilot tube, said tube being conditioned for movement to expose the pointed end of the stopper piercing cannula, said collecting tube providing a substantially uninterrupted path for the flow of blood from the donor needle to the flexible blood container.

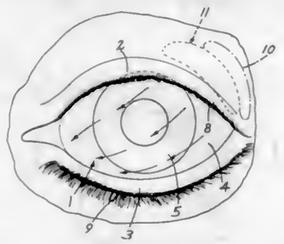
3,416,529
THERAPEUTIC AND SERVICE DEVICE
William W. Weisman, 307 N. Dixie, West Palm Beach, Fla. 33401
Filed Sept. 23, 1965, Ser. No. 489,549
15 Claims. (Cl. 128—232)



A device utilized by individuals when bathing or therapeutically treating the perineal and anal regions of the body. The device comprises a seat with an opening for receiving the perineal and anal regions of the human body, and includes a support in the opening for engaging and holding the genitals of a male human body out of contact with fluid medium circulating under the opening in the seat.

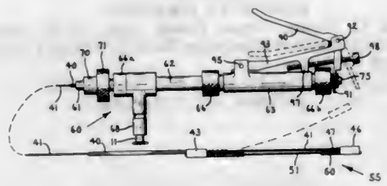
3,416,530
EYEBALL MEDICATION DISPENSING TABLET
Richard A. Ness, Fergus Falls, Minn. 56537
Filed Mar. 2, 1966, Ser. No. 531,311
7 Claims. (Cl. 128—260)

1. A medication dispensing tablet for a human eye ball, said tablet comprising a cross-sectionally concavo-convex body of flexible material for insertion into the cul-de-sac of the conjunctiva between the sclera of the eyeball and upper eyelid in generally radially spaced relation to the cornea of the eyeball and in the path of flow of tears from the associated lacrimal gland, said body having a curved outline and an inner concave surface, said concave surface having a generally spherical radius substantially equal to that of the outer scleral surface of an eyeball, and a supply of medicament contained within said body, said body being responsive to flow of



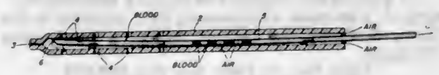
tears thereover, when the body is applied to the eyeball, to dispense said medicament to the eyeball generally above the cornea, said body being so constructed and arranged that the rate of dispensing said medicament is dependent upon the rate of flow of tears over said body.

3,416,531
CATHETER
Miles Lowell Edwards, 13191 Sandhurst Place, Santa Ana, Calif. 92705
Filed Jan. 2, 1964, Ser. No. 335,049
25 Claims. (Cl. 128—348)



A catheter tube is connected with a manipulative handle. The handle carries a flexible guide tube which is insertable in the catheter tube. A bending element on the distal end of the guide tube is flexed by a pull wire which may be tensioned by a lever on the handle to bend the tip of the catheter tube. Means are provided on the handle for rotating the catheter tube and guide tube and the catheter tube contains torsional reinforcement so that it will rotate uniformly throughout its length.

3,416,532
DRAINAGE TUBE WITH MEANS FOR SCRAPING AWAY DEBRIS THEREWITHIN
Alan Richard Grossman, 9201 Sunset Blvd., Los Angeles, Calif. 90069
Filed July 24, 1964, Ser. No. 384,918
3 Claims. (Cl. 128—350)



A drainage tube is described made of bendable material, such as plastic, so that the whole tube is flexible. The tube is formed of two sections, an outer section with a distal end which is closed and with perforations adjacent this end. The outer tube is sufficiently long so that its proximate end extends outside of a patient's body when the tube is inserted for drainage. This end is open to the

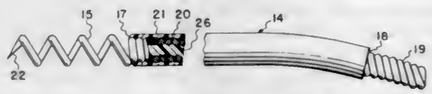
atmosphere. An inner tube of smaller diameter fits into the outer tube and forms therewith an annulus. The distal end of the inner tube, which can extend near to the distal end of the outer tube, is open and is cut off so that there are relatively sharp edges. If desired, it may be cut beveled to increase the sharpness of one of the edges. The length of the inner tube from distal end to proximate end is greater than that of the outer tube, and at its proximate end it is attached to a suction fitting so that a partial vacuum can be applied. The small inner tube can be removed and it or a replacement reinserted without touching the tissues of the patient; and if there is any plugging of the perforations near the distal end of the outer tube, the inner tube may be moved up and down and its relatively sharp edges at its distal end serve to scrape out debris or other material plugging the perforations in the outer tube. As the annulus between inner and outer tubes is open to the atmosphere, there is no vacuum applied to the tissues of the patient through the perforations and there is, therefore, no risk of sucking tissue in through the perforations, with resulting pain and clogging.

3,416,533
CONDUCTIVE CATHETER
David C. Fisher, Brookfield, and Henry J. Czech, Milwaukee, Wis., assignors to General Electric Company, a corporation of New York
Filed May 20, 1966, Ser. No. 551,686
5 Claims. (Cl. 128—404)



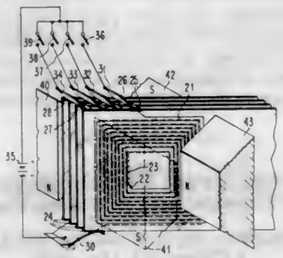
A flexible wire helix is insulated and inserted coaxially in another helix. Corresponding uninsulated distal ends of the helices serve as spaced electrodes for passing current to the heart. The opposite proximal end of the helices are stiffened and serve as pins in a connector that may join a mating connector on an electric heart stimulator. A removable stylet may be inserted in the small helix through its hollow connector pin for stiffening the conductor as it is being directed to its destination.

3,416,534
BODY ORGAN ELECTRODE
Joseph G. Quinn, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York
Filed Apr. 11, 1966, Ser. No. 541,726
2 Claims. (Cl. 128—418)



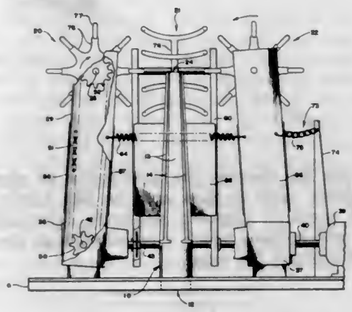
A helically wound conductor is insulated except that it has some bare turns at each end. The turns at one end have an open pitch and the conductor tip is sharpened to facilitate screwing it into an organ which is to be electrically stimulated. The other bare end may be connected to an implanted or external power supply. The helix may be directed to the organ through a hollow needle which is slid off after the tip of the helix is screwed in.

3,416,535
SELECTION APPARATUS
Clement H. Kalthoff, Boulder, Colo., and Leo J. Rigbey, Winchester, England, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 25, 1967, Ser. No. 655,877
7 Claims. (Cl. 129—16.1)



Apparatus for random selection of a desired strip or card. Each strip in a given container has a coil laminated thereon. A plurality of contact bars are provided extending across the container, each perpendicular to and in contact with an edge of each strip. Each coil terminates in a unique combination of two, separate contact points along an edge or edges of the strip. Each coil is thus in contact with a unique combination of two of the contact bars. Magnets are arranged to provide opposite magnetic fields through the opposite parts of the coils. Current is applied to a selected set of contact bars and, thereby, to a selected one of the coils. The current direction is such that the coils coact with the magnetic fields to drive an end of the selected strip linearly out of the open container, thereby selecting that strip.

3,416,536
APPARATUS FOR STRIPPING BRUSSELS SPROUTS
Hugo O. Brown, 2434 E. Santa Ysabel, Fullerton, Calif. 92631
Filed July 6, 1965, Ser. No. 469,644
13 Claims. (Cl. 130—30)

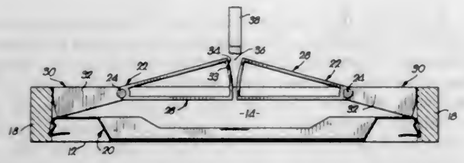


An apparatus and method for severing Brussels sprouts from their stalks including a chuck member having an edge. A stalk is inserted into the chuck member, and periodically operating means, such as a plurality of rotating severing members, cause the base of the sprouts to bear against the edge of the chuck member and be severed from the stalk.

3,416,537
TOBACCO SHEET MANUFACTURE OF HIGH WET STRENGTH
John Townend, Lancaster, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 1, 1966, Ser. No. 598,215
16 Claims. (Cl. 131—140)

This invention relates to the manufacture of coherent tobacco products suitable for smoking and more particularly to such tobacco products in the form of a leaf or foil with an appearance and other physical qualities that they may be applied as the outer wrapper of cigars, cigarillos and the like in lieu of leaf tobacco ordinarily used as such wrapper. A feature of the new tobacco products is high resistance to disintegration when moistened and even chewed.

3,416,538
CIGARETTE EXTINGUISHER
Larry N. Croswhite, 3611 N. Chelsea, Kansas City, Mo. 64117
Filed Nov. 21, 1966, Ser. No. 595,837
6 Claims. (Cl. 131—237)



The structure disclosed herein includes a pair of swinging arms mounted on a base, the arms being disposed above an ashtray and arranged to swing portions thereof toward each other for extinguishing a cigarette placed therebetween.

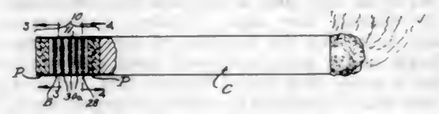
3,416,539
PIPE CLEANER
Clarence L. Sharpe, 2208 E. 81st St., Cleveland, Ohio 44103
Filed Feb. 21, 1966, Ser. No. 528,744
5 Claims. (Cl. 131—245)



A device for cleaning the mouthpiece of pipes, cigarette holders, cigar holders and the like having a plurality of angularly disposed resiliently deformable tines covered with flocking which is pulled through the mouthpiece for cleaning the same.

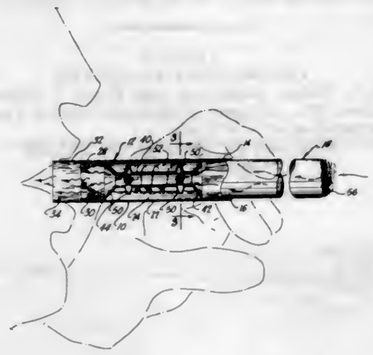
3,416,540
ELECTROSTATIC PRECIPITATOR
Rudolf A. Lidums, 3129 Palmer Square, Chicago, Ill. 60647
Filed Sept. 24, 1965, Ser. No. 489,861
6 Claims. (Cl. 131—262)

A dry cell battery composed of a multitude of electrolytic cells printed on a sheet of paper and electrically connected together to form a battery by circuitry also printed on the paper. The battery, in one of its uses, is connected to an electrostatic precipitator apparatus, also printed on the paper, and is thus adaptable for use as a



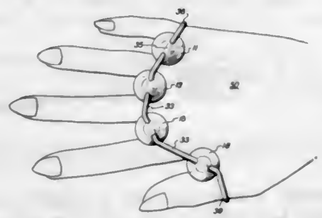
battery-powered electrostatic filter for cigarettes or the like.

3,416,541
CIGARETTE FILTER
Andrew C. Hoover, Jr., 1112 N. Washington, Tacoma, Wash. 98406
Filed Oct. 24, 1965, Ser. No. 504,879
3 Claims. (Cl. 131—266)



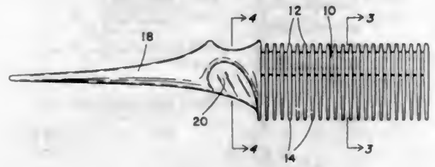
A cigarette smoke filter is added to a cigarette during manufacture and, if not, it is subsequently fitted to an end of a cigarette, extending the longitudinal configuration of a cigarette to include a moisture chamber composed of an outer space which surrounds a central passageway that is interconnected to the outer space by radial passageways, and beyond the moisture chamber, further extending the resulting overall cigarette assembly, are a charcoal filter and a cellulose filter.

3,416,542
MANICURE AID
Alvin Lee Shook, 301 S. Pearl St., Salem, Ill. 62881
Filed June 16, 1966, Ser. No. 558,111
4 Claims. (Cl. 132—73)



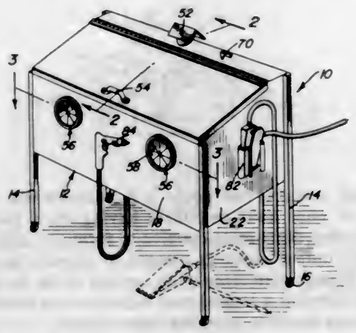
The manicure aid holds a person's fingers apart while the nails are being treated. Four connected spools fit between the fingers. The cord-like support which connects the spools has lateral extensions to encircle the thumb and pinky. The end spools may have slotted feet to engage these lateral extensions.

3,416,543
HAIR TREATING DEVICE
Lionel L. Hantman, Chicago, Ill., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Apr. 5, 1966, Ser. No. 540,228
3 Claims. (Cl. 132—125)



An applicator for applying viscous material to the hair has the form of a comb with spaced parallel fins extending from the spine, each fin merging with a tooth of the comb, the spaces between fins serving as a reservoir for the material.

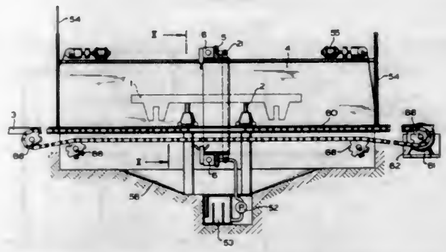
3,416,544
TOOL WASHING MACHINE
Joseph Paiva, 6260 Woodleaf, Star Rte., Oroville, Calif. 95965
Filed Dec. 9, 1966, Ser. No. 600,421
14 Claims. (Cl. 134—102)



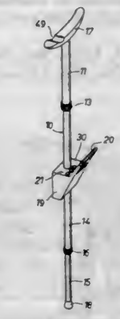
1. A tool washing machine comprising an enlarged tank including a top, bottom, and front, back and side walls extending vertically between the top and bottom, a first elongated solvent manifold mounted along the back wall near the top, solvent line means communicating said first manifold in liquid transferring relation with the lower interior of the tank, a second elongated manifold mounted on said back wall above and generally parallel to the first manifold, a series of lateral discharge nozzles on said second manifold, flow line means extending from said second manifold for communication of said second manifold with a source of pressurized fluid for discharge through said nozzles, tube means extending between said first manifold and each nozzle, said tube means allowing a drawing of the solvent into the nozzles upon the creation of a partial vacuum in the nozzles effected by the passage of pressurized fluid therethrough, and control mean for selectively opening and closing said flow line means.

3,416,545
CLEANING APPARATUS
Ferdinand Holzemer, Frankfurt am Main, Germany, assignor to Wilhelm Hegenscheidt Kommanditgesellschaft, Erkelenz, Rhineland, Germany
Filed Dec. 20, 1966, Ser. No. 603,189
25 Claims. (Cl. 134—129)

An apparatus for cleaning bulky workpieces by spraying liquid under pressure from rotating nozzles against opposite sides of a workpiece while the latter is moved along a predetermined path between the nozzles. The nozzles are constructed, arranged and rotated in such a manner that the jets emanating from opposite nozzles will not interfere with each other and also in such a manner that the direction at which the jets impinge on the workpiece may be adjusted.



3,416,546
POWER-OPERATED CRUTCH
William T. Carpenter, Houston, Tex. (Rte. 1, Box 102 A, Ragley, La. 10657)
Filed Nov. 29, 1967, Ser. No. 686,509
20 Claims. (Cl. 135—49)

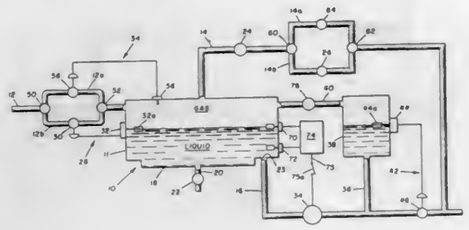


This application discloses a crutch of the type used by handicapped persons, the crutch being expandable under power whereby the user may raise himself from sitting to a standing position. The crutch includes upper and lower telescoping sections which provide a hydraulic piston and cylinder arrangement, with extension of the crutch being provided by forcing hydraulic fluid under pressure into the cylinder. A hydraulic reservoir having a floating piston therein is used for supplying fluid to the cylinder, the power for moving the floating piston being compressed gas. A gas chamber located in the crutch assembly stores high pressure gas, and the reservoir may be charged with a small volume of the high pressure gas through a valve arrangement as the first step in the operating cycle. Secondly, hydraulic fluid is admitted into the cylinder by another valve to extend the telescoping sections. To lower or retract the crutch, the user first vents the gas in the reservoir by a valve, then opens another valve to allow the hydraulic fluid to cycle back into the reservoir.

3,416,547
SEPARATING FLOW CONTROL SYSTEM AND METHOD
Edwin E. Glenn, Jr., Dallas, and Vasel R. Slover, Jr. and Malcolm K. Strubhar, Irving, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed June 6, 1966, Ser. No. 555,369
9 Claims. (Cl. 137—12)

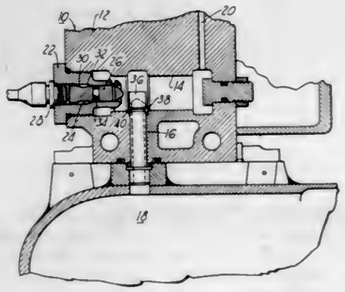
A method and apparatus for controlling the flow of a multicomponent fluid stream in order to achieve a speci-

fied flow rate of one component thereof wherein said stream is passed into a separator where it is separated into its components. One of the components is withdrawn



from said separator at said specified rate and the flow of the fluid stream into the separator is regulated in response to the withdrawal of one said component.

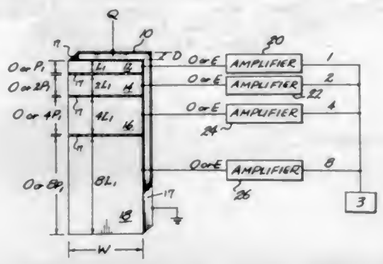
3,416,548
HIGH PRESSURE RELEASE VALVE
Lloyd G. Bach and William B. Claxton, Mishawaka, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 527,226
1 Claim. (Cl. 137—68)



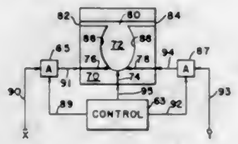
The following relates to an explosively actuated high pressure release valve wherein a closed end tube extending into a transverse bore is utilized as a metallic sealing partition member and is partially severed by a squib-actuated piston member. The tube has a notched weakened wall portion extending around the periphery thereof and a non-weakened indented portion on one side thereof at the end of the weakened wall portion which acts as a hinge for the severed tube.

3,416,549
ELECTRIC FLUID VALVE
Harold K. Chaney and Halvor T. Strandrud, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,032
8 Claims. (Cl. 137—81.5)

An electric fluid control apparatus having a plurality of electrically conducting plates defining an electric fluid passageway therebetween and circuit means interconnecting said plates with a field control source whereby an electric or magnetic field is established between the plates to control the electric fluid therebetween. The electrically conducting plates are geometrically arranged and proportioned so as to exhibit pressure drops or flows that are related by integral ratios.

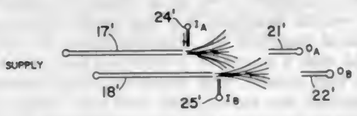


3,416,550
FLUID LOGIC CIRCUITS
Benjamin F. Griffin, Jr., Fairfax County, Va., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,323
7 Claims. (Cl. 137—81.5)



A fluid actuated half-adder is provided which includes a pair of pure fluid amplifiers having their power and control input ducts cross-coupled to form two input points and their output channels merged to provide two output points. Binary input signals are applied to the input points so as to develop a logical sum signal at one output point and a carry signal at the other output point.

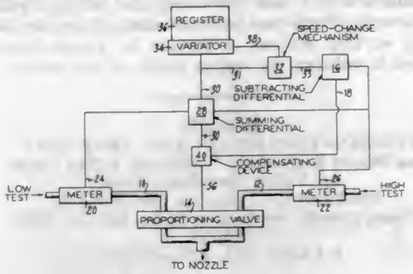
3,416,551
FLUID DIFFUSION LOGIC SYSTEM
Hans-Dieter Kinner, Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Mar. 7, 1967, Ser. No. 621,193
7 Claims. (Cl. 137—81.5)



Two diffusion functions are laterally adjacent and lengthwise offset. One function triggers the other, but not the reverse.

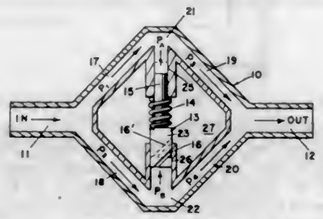
3,416,552
BLEND CONTROL DEVICE
William J. Hildebrandt, Simsbury, Conn., assignor to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut
Filed Dec. 28, 1966, Ser. No. 605,270
18 Claims. (Cl. 137—98)

A blend control device usable in a fluid dispensing apparatus for delivering variable preselected mixtures of fluids and having a compensating device connected between a blend control shaft and a proportioning valve to effect proper delivery of a desired mixture substantially



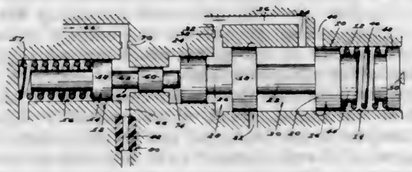
free of blend error irrespective of the relative proportioning of the fluids of a prior delivery.

3,416,553
RELIEF VALVE
Joseph Spiteri, 142 W. 26th St., Erie, Pa. 16508
Filed Oct. 30, 1964, Ser. No. 407,824
5 Claims. (Cl. 137—115)



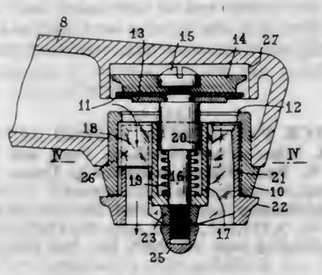
The valve disclosed herein is suitable to be connected in the fluid line so that the fluid line will be connected to a bypass when the pressure exceeds a certain value. The valve is made on a Wheatstone bridge principle and in one embodiment of the invention, two pistons having different areas are each subjected to the pressure of the fluid in the line. The piston having the larger area acts in opposition to the force from a spring, thus when the total force on the large piston exceeds the sum of the force on the small piston and the spring, the valve will be moved to a position where bypass is connected to the flow stream. Throttling members are provided in the legs in the valve to vary the flow.

3,416,554
TEMPERATURE SENSITIVE CONTROL FOR A FLUID PRESSURE ACTUATED VALVE
Po-Lung Liang, Lincoln Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,095
9 Claims. (Cl. 137—116.3)



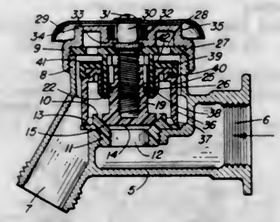
A temperature sensitive actuator for controlling the movement of a fluid pressure regulating valve by means to bias the valve towards a non-regulating position with a force of a magnitude that varies in inverse proportion to the changes in temperature.

3,416,555
REVERSING COCKS FOR DISTRIBUTING WATER
Yves Chapou, 21 Cours Marigny, Vincennes, Val-de-Marne, France
Filed Mar. 3, 1966, Ser. No. 531,426
Claims priority, application France, Mar. 9, 1965, 8,375
5 Claims. (Cl. 137—119)



A reversing cock for distributing water under pressure in which a dispensing nozzle having an outlet orifice and a union adapted to be connected to a shower pipe branch off from the cock body forming a water receiving chamber to which ingress of water is controlled by a conventional valve, and in which a valve arranged in the outlet orifice of the nozzle is normally held in open position spaced from a registering valve seat in the orifice by a spring and provided with an outer gripping collar fixed thereto to be moved against the spring force to a closed position in which it is then held by the water pressure. On the other hand, another valve normally seated by spring means but adapted to open under predetermined pressure is provided in the union.

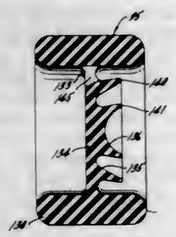
3,416,556
COMBINATION SILL-COCK AND VACUUM BREAKER
Axel B. Nelson, Mount Prospect, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 22, 1966, Ser. No. 574,171
10 Claims. (Cl. 137—218)



1. In a valve structure, a valve body having an inlet, an outlet and a bonnet opening, a main valve seat in said body, a movable valve plug cooperating with said valve seat to control the flow of water through said valve, a guide sleeve within which said valve plug is adapted to reciprocate, said guide sleeve having a flange portion around one end thereof, a bonnet on said body, said bonnet clamping the flange portion of said guide sleeve to said bonnet opening, said bonnet and said flange portion having vent openings therein leading into the interior of said body, a valve stem threaded into said valve plug from said bonnet, an operating handle

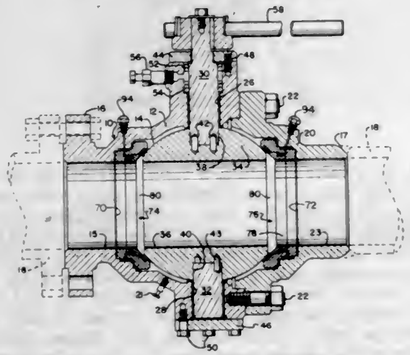
on said valve stem for closing and opening said valve plug from said valve seat, and a vacuum breaker device incorporated in said valve structure, comprising a hollow inverted cup-shaped member having an inner wall portion surrounding said guide sleeve and slidable thereon, an outer wall portion spaced from said inner wall portion, the upper joined ends of said inner and outer wall portions forming air valve means adapted to close upon said air vents whenever said cup-shaped member is moved upwardly on said guide sleeve by flow of water through said valve, and a check valve seat formed in said valve body surrounding said main valve seat, said vacuum breaker device sliding downward so the bottom end of said outer wall is adapted to close upon said check valve seat and said air vents are opened, whenever a vacuum condition exists at the valve inlet.

3,416,557
CHECK VALVE WITH WIPING ACTION
Thomas J. Schoenecker, North St. Paul, and Robert L. Olson, St. Paul, Minn., assignors to Union Tank Car Company, a corporation of Delaware
Original application Apr. 29, 1964, Ser. No. 363,547, now Patent No. 3,335,671, dated Aug. 15, 1967. Divided and this application Sept. 22, 1965, Ser. No. 509,661
5 Claims. (Cl. 137—242)



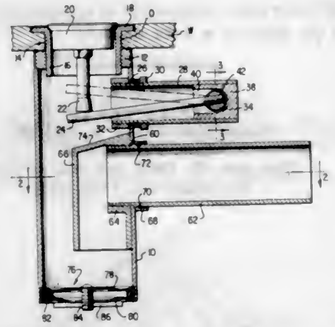
A check valve arrangement wherein a valve member overlies an inlet port having a planar surface surrounding it. The valve member includes a core having annular resilient lip means on it which engage and wipe the surface to clean it in normal operation of the valve arrangement.

3,416,558
SPHERICAL PLUG VALVE HAVING LUBRICATED SEATS
Madden T. Works, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 23, 1967, Ser. No. 610,906
12 Claims. (Cl. 137—246.22)



The valve of this invention incorporates movable seat members which are disposed in sealing engagement with the valve body and which carry an entrapped elastomeric sealing member for establishing sealing engagement between the seat member and the spherical plug. The valve is provided with a seat lubricating and sealing system, which evenly distributes lubricant material on the seat-to-plug working surfaces to provide for proper lubrication and to enhance the sealing ability of the valve.

3,416,559
COMBINATION DRAIN AND TRAP UNIT
Jose Marlet Barrera, Po. Valldorelx 6, San Cugat del Valles, Barcelona, Spain
Filed July 27, 1966, Ser. No. 568,276
Claims priority, application Spain, July 30, 1965 316,278
5 Claims. (Cl. 137—247.13)

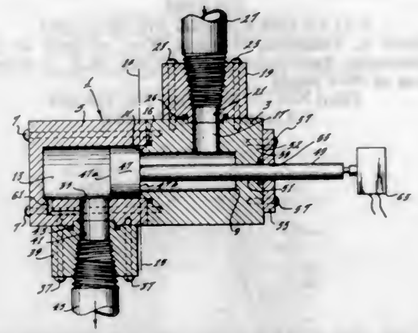


1. A combination drain and trap unit comprising a straight tubular body to be disposed vertically when in use, a drain valve seat and valve removably mounted in the upper end of said body, said tubular body having two openings in its cylindrical wall, a radially disposed tubular member secured in one of said openings and sealed at its outer end, a shaft disposed transversely in the sealed end and extending outwardly of said member for operation thereof, a valve operating lever fixed to said shaft and extending through said member and into said body for operative association with said valve, a radially disposed outlet pipe extending through the other of said openings, a trap member within said body and secured on the inner end of said pipe, and a closure member removably secured in the bottom of said body.

3,416,560
FLUID LEAK MONITORING APPARATUS
Peter Bruno, 2933 Colgate Ave., Delanco, N.J. 08075
Filed Aug. 23, 1965, Ser. No. 481,525
13 Claims. (Cl. 137—456)

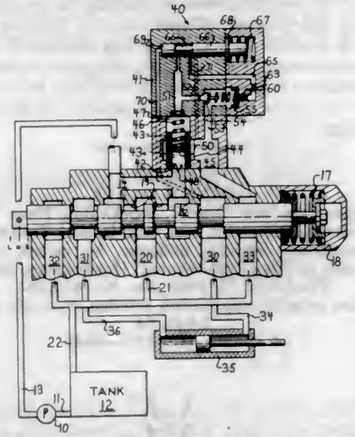
A leak sensing device for a fluid transmitting system is connected in the system as near to the supply as possible and comprises a housing having a pair of coaxial, stepped, communicating chambers of relatively small and large diameters. The smaller one serves as a fluid inlet chamber from the supply and the larger one as an outlet chamber to the system. A piston loosely mounted within the larger chamber for axial movement therealong has its front surface facing downstream and entirely exposed. The rear surface of the piston, which can seat against the step of the chambers, has connected thereto a rod which extends through the smaller chamber to a microswitch in an arming circuit which controls a shut-off valve coupled to the fluid input pipe of the system. This piston rod is of such diameter as to substantially reduce the open area of the piston rear surface below that of its front surface. Thus, when the system is filled with the fluid, since the fluid pressure per unit area is constant

throughout the system, the total force on the piston's larger, front surface is then greater than that on its rear, smaller surface. The resulting upstream force differential holds the piston against the aforesaid step and maintains the microswitch open. Should a leak develop downstream



of the sensing device, the force on the piston front surface drops below that on its rear surface. The resulting downstream force differential thereupon forces the piston away from said seat to cause the piston rod to follow and close the microswitch. This energizes the aforesaid circuit to cause the system shut-off valve to close and shut off the fluid supply.

3,416,561
DUAL PRESSURE RELIEF VALVE WITH SHOCK DAMPING
Joseph Kokaly, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 21, 1966, Ser. No. 603,518
7 Claims. (Cl. 137—491)



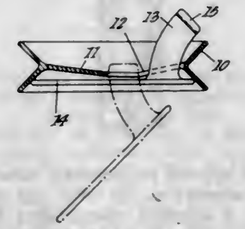
1. A dual pressure relief valve having pressure modulation for use in hydraulic circuits with dual relief pressure requirements comprising:
- a valve body having a port therein which drains to reservoir, said port being in fluid communication with a source of pressure fluid;
- a dump spool reciprocally mounted in a balance chamber in said valve body and operable to close such port to prevent fluid flow therethrough from said source of pressure fluid to reservoir, said dump spool having an orifice therethrough whereby pressure fluid may enter such balance chamber to counterbalance fluid pressures on said dump spool from said source of pressure fluid;
- a biasing means located in such balance chamber operable to directionally urge said dump spool to close such port;
- a drain to reservoir located in such balance chamber;
- a spring biased poppet means closing said drain until pressure in such balance chamber exceeds the bias;
- a pressure responsive member in contact with the spring bias operable to increase such bias when subject to pressure fluid;
- a passage from such balance chamber to said pressure responsive member whereby pressures in such balance chamber are reflected as spring bias on said spring biased poppet means; and
- shuttle valve means located in said valve body operable to close off said passage and dump fluid pressure reflected to said pressure responsive member through said passage to reservoir causing said relief pressure of the valve to be reduced.

3,416,562
HEART VALVE
Frank George Freeman, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Dec. 30, 1965, Ser. No. 517,698
Claims priority, application Great Britain, Oct. 15, 1965, 43,752/65
2 Claims. (Cl. 137—512.15)



A valve in which a ring-like part has a conical portion split radially or lengthwise at a plurality of locations to terminate adjacent the apex thereof with each split merging with an arcuate split adjacent the ring-like part for providing a plurality of substantially triangular flaps. A conical support carried by the ring-like part underlies the conical portion and has openings closed by the flaps when fluid pressure is applied to one side but when pressure is applied to the other side the flaps are forced away from the support allowing fluid flow through the openings.

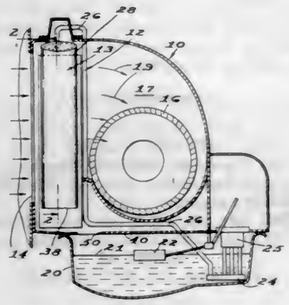
3,416,563
HEART VALVE
Denis Ernest Lee, Acocks Green, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Nov. 23, 1965, Ser. No. 509,325
2 Claims. (Cl. 137—519)



A valve comprising a ring like member defining a seating and having a web extending across it, and a flap having

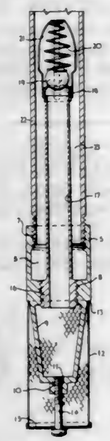
a tongue engageable in the slot in the web so as to guide the movement of the flap towards and away from the seating and when in the position away from the seating the flap is wholly separated from the seating.

3,416,564
WATER DISTRIBUTING DEVICE FOR HUMIDIFIERS
William H. Peters, Bryan, Ohio, assignor to The Rooto Corporation, a corporation of Michigan
Filed Dec. 30, 1965, Ser. No. 517,607
8 Claims. (Cl. 137—525)



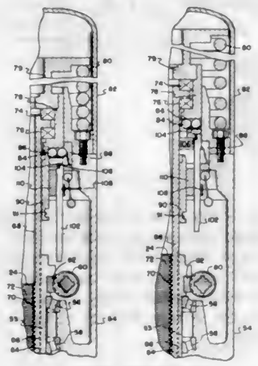
A tubular water distributing member having side walls flexible from a collapsed to a separated condition with outlet openings in the side walls for normal water flow therethrough, and flow resistance means operative in response to increasing pressure to permit flow from the normally closed discharge end of the tubular member.

3,416,565
FOOT VALVE
John R. Reise, R.R. 2, Kelly Lake Road, Sudbury, Ontario, Canada
Filed Jan. 25, 1966, Ser. No. 522,917
1 Claim. (Cl. 137—549)



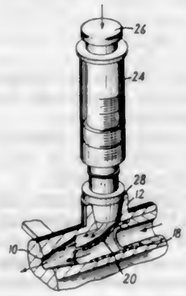
A foot valve, suitable for domestic water services and adapted to be mounted on the lower end of a well pipe. The valve has a sediment compartment located below the level of the valve in which foreign particles may collect without in any way impairing the perfect functioning of the valve. The valves is in the form of a ball normally nesting in a tapered or knife-edge seat that provides no resting place for sand or other foreign particles that just naturally shed from its rim. The seat for the ball valve is self-cleansing.

3,416,566
VALVE OPERATING MECHANISM
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Nov. 7, 1966, Ser. No. 592,567
9 Claims. (Cl. 137—554)



A fail-safe valve operator mechanism which includes a rotatable drive shaft for imparting linear movement to the operating stem of the valve to which the operator mechanism is attached. The operator mechanism also includes a fail-safe mechanism including a retainer connected to the rotatable drive shaft and being movable linearly to a safe position by a spring member responsive to predetermined conditions. A latching mechanism is provided for the purpose of retaining the fail-safe mechanism in a position so that the spring member is retained under compression. Electrical circuitry and circuitry actuation structure is provided for transmitting to a remotely located control facility the exact position of the fail-safe mechanism.

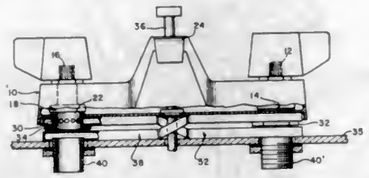
3,416,567
SYRINGE VALVE
Georges Otto von Dardel, Stockholm, Hans Gosta Enstrom, Ostertalje, and Olle Robert Tauberman, Djursholm, Sweden, assignor, by mesne assignments, to Viggo Aktiebolag, Halsingborg, Sweden
Filed Feb. 12, 1965, Ser. No. 432,204
Claims priority, application Sweden, Feb. 20, 1964, 2,041/64
5 Claims. (Cl. 137—604)



The specification discloses a syringe valve for infusion assemblies for simultaneous administration of two fluids,

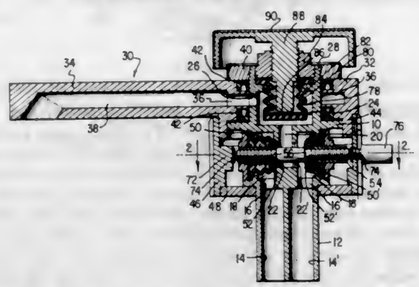
comprising a housing having a mixing chamber intermediate an inlet and an outlet and an inlet for a second fluid provided with a pressure responsive sealing closure.

3,416,568
CROSSOVER FAUCET
Albert W. Parr, 4700 Meldrum Ave., Milwaukie, Oreg. 97222
Filed Nov. 29, 1965, Ser. No. 510,222
9 Claims. (Cl. 137—606)



A faucet fixture for receiving hot and cold water is supported on a base which is in turn mounted on a sink or the like. The base includes therewith a pair of fluid passages and a pair of laterally spaced inlet ports wherein the fluid passages each extend from one such inlet port to an inlet opening in the faucet fixture. In so doing, the fluid passages cross over one another to reverse the apparent source of fluid supply. In one embodiment, this base is a unitary body having interior passages, and in another embodiment the base comprises a pair of flat stacked lateral arms mutually supporting each other and supporting the faucet fixture.

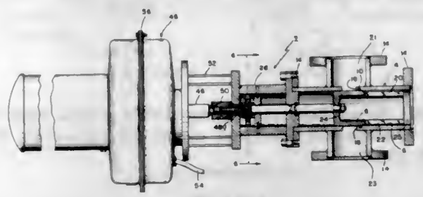
3,416,569
MIXING FAUCET
Jose Marlet Barrera, P.O. Valldoreix No. 6, San Cugat del Valles, Barcelona, Spain
Filed July 27, 1966, Ser. No. 568,302
Claims priority, application Spain, July 30, 1965, 316,279
8 Claims. (Cl. 137—606)



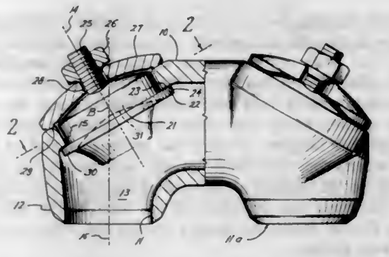
A mixing faucet having a pair of axially aligned inlet chambers each provided with an inlet valve mounted on a common actuating rod, surrounded by a rotatable eccentric valve control member which operates the inlet valves simultaneously through the common actuating rod, slidably mounted in the cam and inlet chambers.

3,416,570
GAS MIXING VALVE
Willis D. Kervin, 1306 Sunset Drive, Johnson City, Tenn. 37601
Filed Jan. 11, 1966, Ser. No. 519,870
12 Claims. (Cl. 137—625.17)

A mixing valve having a valve body which comprises a length of pipe with circumferentially spaced slots therein constituting inlet ports, each slot having an end of a pipe section secured thereover for inletting a different gas into and through each slot, and a hollow tubular valve member slidably and rotatably adjustable in the length of pipe and having a pair of slots therein arranged so that rotational adjustment thereof in one direction changes the effective flow area of one of such inlet ports without affecting substantially the effective flow area of the other inlet port, so that rotational adjustment thereof in an opposite direction changes the effective flow area of the other inlet port without affecting substantially the effective flow area of the one inlet port, and so that longitudinal adjustment thereof changes total flow through both inlet ports. The effective flow areas and total flow are changed as aforesaid by changing the degree of rotational and axial registry of the slots in the valve member with the inlet ports. Rotational adjustments of the valve member are achieved by a worm gear arrangement.



3,416,571
HEATER FITTINGS
Robert B. Sivyer, 1314 Beutel, Houston, Tex. 77055
Filed Dec. 24, 1964, Ser. No. 421,019
4 Claims. (Cl. 138—92)

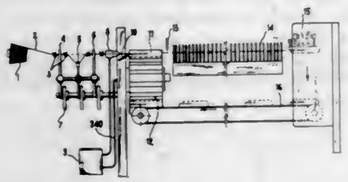


This disclosure relates to heater fittings, particularly, pipe fittings or couplings, manifolds, 180° return bends and elbows. A curved body is provided with a racetrack shaped opening disposed so as to provide a cylindrical continuation of an internal passageway. An inner sealing surface is arranged perpendicular to the central axis of the opening for engagement with a flanged closure member. A cover and the outer surface are similarly arranged.

3,416,572
STRAIGHT SHUTTLELESS LOOMS
Guido Giavini, 2 Angolo Via Olgiate Olona, Busto Arsizio, Varese, Italy
Filed Dec. 28, 1966, Ser. No. 605,376
Claims priority, application Italy, Dec. 30, 1965, 12,941/65; Oct. 27, 1966, 29,347/66
7 Claims. (Cl. 139—126)

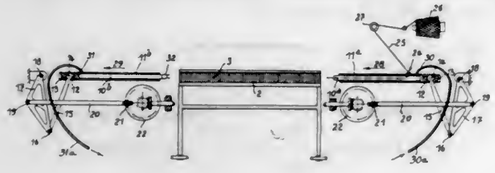
A shuttleless loom including flying gripper shuttle means provided with at least one resilient clip, the shuttle means being sequentially carried up by rotating means and thereby disposed in the presence of a wedge which opens the resilient clip, whereby the weft thread is caused

to be gripped, and pneumatic means to maintain the weft thread in a suitable gripping position. The loom also comprises means, movable together with a slay box, to release



the weft thread from each flying shuttle means, after its throw through the shed and means for recovering the shuttle means.

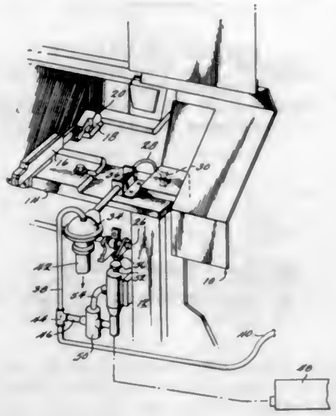
3,416,573
LOOM
Henri Fournier, Caluire, Rhone, France, assignor to AREF, Fribourg, Switzerland, a company of Switzerland
Filed Feb. 9, 1967, Ser. No. 614,973
Claims priority, application France, Feb. 21, 1966, 46,964
6 Claims. (Cl. 139—127)



A loom having two tubular weft guides recipricating along the same axis in opposite directions. A thread from at least one weft bobbin passes continuously lengthwise through one of said tubular guides and is maintained in such guides with a free end extending beyond the end of such guide, while the other weft guide is provided with a gripper adapted to grip the projecting end of said thread when the two weft guides are closest to each other but not in contact at the end of their inward strokes, and to complete the insertion of the weft in the shed by drawing thread from the supply during the return stroke of said weft guides.

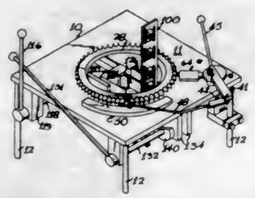
3,416,574
FILLING TAIL REMOVAL EQUIPMENT
Howell M. Tate, Cheraw, S.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,799
5 Claims. (Cl. 139—256)

This invention relates to a shuttle feeler tip air clearer for removing the filling tail from a spent bobbin in an automatic filling replenishing loom having a reciprocating lay with a shuttle box thereon at the replenishing end thereof, and a temple cutter for cutting tails of bobbins at the selvage. The shuttle feeler tip has a cut-out forming a hook in the tip end thereof and has connected to it a suction member. Thus, when it is necessary to replace the spent bobbin in the shuttle with a new one, the shuttle feeler tip air clearer removes the tail of the spent bobbin from the shuttle box after the filling tail has been cut from the bobbin by a Stafford-type thread cutter. With subsequent movement of the lay, the shuttle feeler tip air clearer returns to its normal position, holding the tail for several picks until the temple thread cutter cuts the tail at the selvage. The tail is then quickly passed through the suction member mounted on the shuttle filler tip air clearer to a suitable waste receptacle. A flexible hose connects



a suction source to the suction member mounted on the shuttle feeler tip and thus positive action is insured in the removal of the filling tail from spent bobbins.

3,416,575
STATOR COILER
Bobby R. Ellis, 2827 Bolch St., Shreveport, La. 71104
Filed Aug. 9, 1966, Ser. No. 571,251
1 Claim. (Cl. 140—92.1)



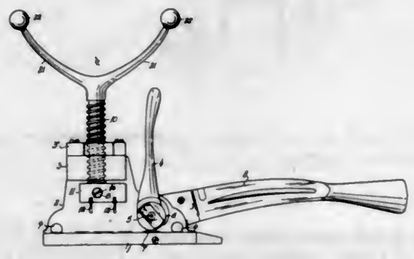
Method and apparatus for inserting preformed wire coils into the slots of the stator of a multi-stage automotive alternator. The method includes the steps of forming a series of spaced coils from a continuous wire, extending said series of coils in the direction disposed parallel to the central axis of said stator, positioning the first coil of the series of coils into juxtaposition with a first pair of a plurality of slots in the stator, inserting the first coil of the series of coils into said first pair of slots in the stator, moving the stator and the series of coils with respect to each other to position the next coil of the series of coils into juxtaposition with the next adjacent pair of slots in the stator, and repeating the process.

The apparatus includes a form for supporting wire comprising an elongated strip of flexible material including a series of spaced, hollow protrusions extending from one of its sides along its length and wherein a continuous wire is serially wound about said protrusions beginning at the base of the first one of the protrusions and continuing about the first protrusion for several turns and passing serially to and wound about the next adjacent protrusion in a similar manner.

The apparatus also includes means for positioning a coil of a series of pre-wound coils into juxtaposition with a pair of slots in a stator, means for inserting a coil into said pair of slots comprising wedging members movable

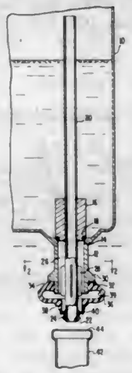
toward the slots in a direction transverse to the disposition of the series of coils, means for moving the stator and the remaining coils of the series of coils with respect to each other to position the next coil of the series of coils into juxtaposition with another pair of slots in the stator by rotating the stator about its longitudinal axis and by moving the next coil of the series of coils into the plane of the slots in the stator, and means for positioning retaining means into said slots in the stator to retain therein the coils thus positioned in the slots of the stator.

3,416,576
DEVICES FOR SECURING HOOPS
Ernesto Britz, Brooklyn, N.Y.
(18 Calle 0–45, Zona 1, Guatemala City, Guatemala)
Filed Apr. 21, 1966, Ser. No. 544,252
4 Claims. (Cl. 140—93.2)



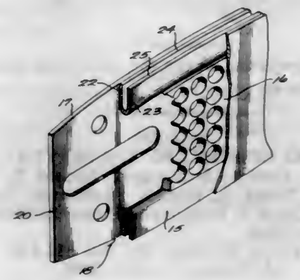
A device for uniting the overlapped ends of metal or similar straps or hoops about a packing case or other object and which consists of clamping means for holding ends of the straps or hoops in overlapping relation. The device is provided with two interchangeable sets of dies, one of the sets being effective to punch out tongues from the hoop and create an interlock at the overlapped ends, and the other set of dies being effective to split parts of a joining plate and fold said parts around the overlapped part of the hoop thereby holding said ends against separation.

3,416,577
VALVE FOR CONTAINER FILLING APPARATUS
Henry H. Franz, 3201 Falls Cliff Road, Baltimore, Md. 21211
Filed May 31, 1966, Ser. No. 553,787
5 Claims. (Cl. 141—117)



An apparatus for filling containers with a liquid having a receptacle nozzle and a vent tube extending therethrough and into said receptacle. The vent tube is provided with a valve member for controlling the flow of fluid from the receptacle through said nozzle and a bellows member carried by said nozzle for controlling the level of the liquid in the vent tube.

3,416,578
CHAIN SAW BAR
Finn T. Irgens, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,260
4 Claims. (Cl. 143—32)



1. A chain saw bar comprising two side plates, a channel shaped member mounted between said plates, and a spacer mounted between said side plates inwardly of said channel shaped member said channel shaped member having two parallel spaced apart side walls located between said side plates.

3,416,579
HACKSAW BLADE
William E. Cowley, Louisville, Ky., assignor to Vermont American Corporation, Louisville, Ky., a corporation of Kentucky
Filed Feb. 2, 1966, Ser. No. 524,449
8 Claims. (Cl. 143—133)

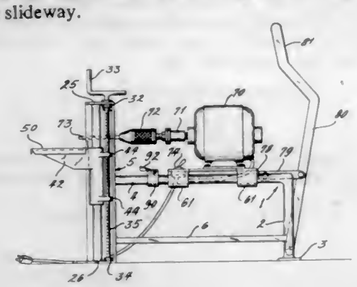


Hacksaw blades having starting teeth provided with a land on their rear edge which narrows the top width of the gullets therebetween to about ⅗ the pitch of the teeth, all the teeth of the blades having the same pitch, depth, shape of forward cutting edge and are spaced by gullets having a bottom edge of the same width and constant radius.

3,416,580
DOWELING MACHINE
Glen I. Walter, 1510 Ave. F, Kearney, Nebr. 68847
Filed Apr. 14, 1966, Ser. No. 542,562
2 Claims. (Cl. 144—92)

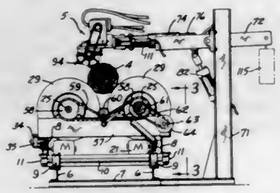
A base with a horizontal-bearing-providing slideway; a motor supporting carriage mounted for linear horizontal movement on the slideway; a motor mounted on the carriage with its shaft oriented parallel with the direction of movement of the carriage; drill holding means on the shaft; a workpiece face plate having an opening aligned with the shaft of the motor and workpiece holding means projecting from the face plate adjacent the opening; a workpiece platform mounted on the base for vertical movement with respect to the base and with respect to the face plate; means for adjusting the vertical height of

the platform and means for moving the carriage along the base slideway.



A handle projecting above the motor for moving the carriage manually.

3,416,581
LOG DEBARKING APPARATUS
Raymond L. Parrish, Stephenson, Arnold C. Parrish, Wells, and Lloyd A. Parrish, Stephenson, Mich., assignors to Lloyd A. Parrish and Esther Parrish, both of Stephenson, Mich.
Filed May 25, 1966, Ser. No. 552,838
23 Claims. (Cl. 144—208)

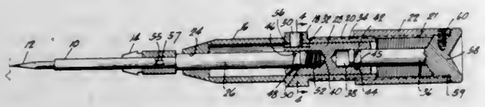


An apparatus for debarking logs, including a carriage which is mounted for movement on a track. Two pairs of driven wheels are mounted on the carriage and the log to be debarked is carried by the wheels and as the wheels rotate, the log is rotated about its axis.

As the carriage moves along the track, a cutting head assembly progressively engages the log and removes the bark. The cutting head assembly includes a cutting head having a series of blades or beaters disposed generally parallel to the axis of the head. As the head rotates, the blades strike the log and serve to remove the bark.

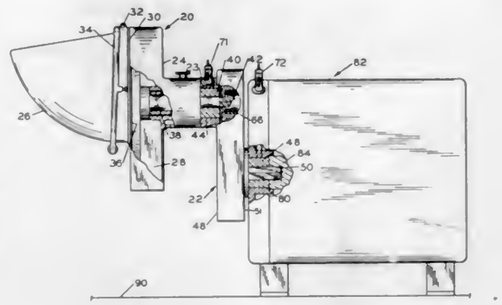
The head is mounted with respect to the head-supporting structure so that the head will maintain the same relative position with respect to a vertical plane passing through the longitudinal center of the log as the head moves in vertical pivotal movement, and this insures that the head will always be slightly over center with respect to the vertical plane passing through the center of the log. By maintaining the head slightly over center, pounding of the head on the log is prevented.

3,416,582
REDUCTION DRIVER
David M. Jenks, Canoga Park, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Oct. 10, 1966, Ser. No. 585,550
6 Claims. (Cl. 145—50)



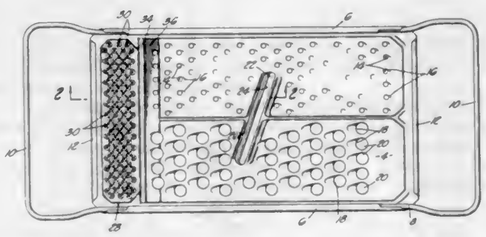
A shaft rotation rate reduction mechanism for rotating a nut, bolt or screwdriver shaft with high angular accuracy. By rotating an actuating knob, a reduction barrel is moved longitudinally with a slight rotation twist which is followed by the shaft.

3,416,583
VEGETABLE CUTTER APPARATUS
Melvin E. Bricker, 2723 Saddleback Drive, Cincinnati, Ohio 45244
Filed May 10, 1966, Ser. No. 548,988
14 Claims. (Cl. 146—115)



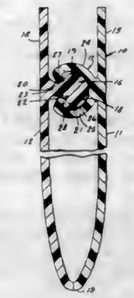
1. A high speed cutter attachment for a power take-off hub of a food machine comprising, in combination a cutter portion provided with a driven shaft, cutting means operatively connected to said driven shaft and an inlet and an outlet disposed on opposite sides of said cutting means; and a high speed adapter portion including a housing provided with a boss for insertion into detachable mounted relationship with said power take-off hub, a first rotary member in said housing, a second rotary member in said housing and detachably connectable to said driven shaft of said cutter portion whereby said high speed adapter portion can be detachably mounted between said power take-off hub and said cutter portion, and means operatively connecting said rotary members for increasing the revolutions per minute delivered by said power take-off hub to said cutter portion.

3,416,584
VEGETABLE GRATER AND SLICER
Charles A. Rowley, 7803 E. Harper, Downey, Calif. 90241
Filed Jan. 23, 1967, Ser. No. 610,937
3 Claims. (Cl. 146—171)



A combination vegetable grater and slicer. A transverse rib is disposed between the slicer means and the grater means in order to divert a product being sliced and the user's fingers away from the grater means.

3,416,585
FLEXIBLE CONTAINER HAVING INTERLOCKING RIB AND GROOVE CLOSURE ELEMENTS
Karel J. Staller, Rutherford, N.J., assignor to Minigrip, Inc., Orangeburg, N.Y., a corporation of New York
Filed Oct. 24, 1965, Ser. No. 504,842
4 Claims. (Cl. 150—3)



2. A flexible reclosable container having interlocking rib and groove elements formed at the inner surface of the opening thereof,

said container having external flanges extending outwardly of said elements,

said flanges being drawn apart to separate said elements and to open said container thereby,

said container being closed by pressing said elements together,

said rib element having an engaging tooth facing inwardly of the container and having a rounded head and specifically a double curve contour facing outwardly from the container,

said double curve contour having a protruding convex portion adjacent to the extremity thereof and a concave portion formed intermediate said convex portion and the base of said rib element,

said groove element having first and second curved arm portions for enveloping said rib element,

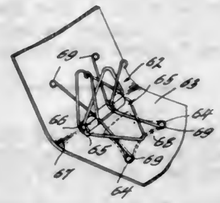
said first curved arm portion being disposed inwardly of said rib element and having a hook member formed at the outer extremity thereof for engaging said tooth of said rib element,

said second curved arm portion being disposed outwardly of said rib element and having a hook member formed at the outer extremity thereof for being received within said concave portion of said rib element

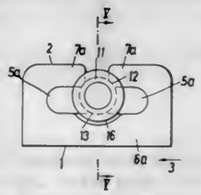
whereby the distinction between said engaging tooth and said double curve contour provides ease of opening from the outside and resists opening from the inside of said container.

3,416,586
MONEY CARRIER
Walter Christian Voss, 500 5th Ave., New York, N.Y. 10036
Continuation-in-part of application Ser. No. 59,551, Sept. 30, 1960. This application Feb. 3, 1964, Ser. No. 342,016
6 Claims. (Cl. 150—38)

4. A multiple money carrier comprising a plurality of clip elements including outer clips and a hinge connected to the clip elements for opening and closing the carrier and a casing with overlapping parts, the hinge and clip elements mounted in the casing to protect the contents of the clips when the carrier is in use, the overlapping parts permitting the proper opening and closing of the multiple carrier, a plate attached to one of the outer clips, and fastening means for the plate so that the plate is held to the outside of the casing with the fastening means extending through the plate and the casing as well as a part of the clip element.

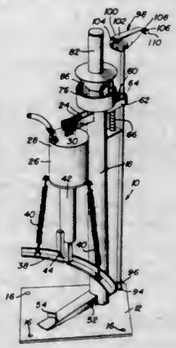


3,416,587
CHAIN LINK FOR ANTI-SKID AND TIRE-PROTECTIVE CHAINS
Werner Schürle, Aalen, and Anton Müller, Unterkochen, Germany, assignors to Eisen- und Drahtwerk Erlau A.G., Aalen, Germany
Filed Mar. 11, 1966, Ser. No. 535,307
Claims priority, application Germany, July 5, 1965, E 29,642
16 Claims. (Cl. 152—243)



A chain link for an anti-skid chain structure in the form of an elongated plate-shaped member having an aperture therein for the connection of the member to other chain links which member has a road-engaging surface on one long side and a tire-engaging surface on the opposite long side, said road-engaging surface being wider and larger than the tire-engaging surface.

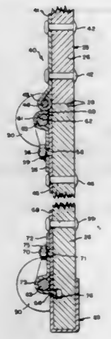
3,416,588
TIRE CHANGING MACHINE
Harold W. Hilyard, Lima, Ohio, assignor to Marwood Enterprises Incorporated, a corporation of Ohio
Filed July 28, 1966, Ser. No. 568,490
1 Claim. (Cl. 157—1.17)



A tire changing machine includes an upright which supports a bead breaker mechanism in the form of a pneumatic cylinder operating in arcuate pressure foot

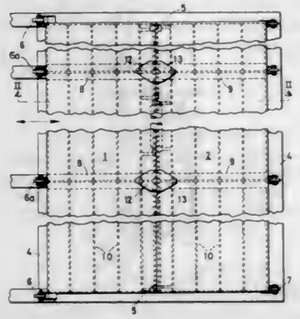
and having a locator lug on the cylinder. The upper portion of the upright removably supports a holddown member and the upright also supports spring bias positioning pins for the wheel. A lever has a ball on one end and a head on the other end, the head having a flange with a tongue and L-shaped guide for installing a tire on a wheel.

3,416,589
CARGO TRUCK REAR DOOR
Glen H. Lambein, Batavia, N.Y., assignor to T. Whiting Manufacturing, Inc., Akron, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,733
9 Claims. (Cl. 160—201)



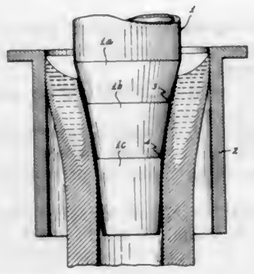
A truck door roller plate is secured by a single bolt and nut on one of two hinge leaves and is provided with a C-shaped tubular roller shaft carrying end portion having a free edge facing and in contact with the adjacent face of the one hinge leaf, such end portion also extending along and in contact with the knuckles of the two leaves for stability of the plate, the purpose of this structure being to facilitate removal of the door and repair of the hinge leaves simply by removal of the roller plate.

3,416,590
HATCH COVER OR SIMILAR CLOSURE MEMBER
Ulf Sune Ivar Nordh and Johan Bertil Olsson, Goteborg, Sweden, assignors to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Sept. 7, 1965, Ser. No. 485,491
Claims priority, application Sweden, Oct. 1, 1964, 11,782/64
4 Claims. (Cl. 160—213)



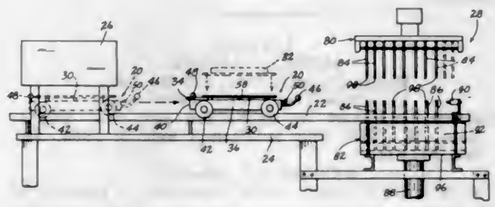
A cover for a rectangular hatchway is formed of sections connected together in pairs by means of folding hinges, and one side edge of one section of each pair is swingably secured to a long side of a coaming about said hatchway. A plurality of two-part articulated strengthening beams perpendicular to said long side of the coaming are secured to the sections. In extended form, each such beam rests with both ends on such coaming. The beams are foldable in the same manner as, and with, said cover sections. At the folding joint of each articulated joint there are provided means for counteracting downward acting forces on such joint.

3,416,591
PROCESS FOR EFFECTING THE CONTINUOUS ROTARY CASTING OF HOLLOW STEEL BLANKS
Louis Babel, Sauvigny-les-Bois, and Pierre Peytavin, Aulnoye-Aymeries, France, assignors to Societe Civile dite: Societe Civile d'Etudes de Centrifugation, Paris, France
Original application Mar. 26, 1964, Ser. No. 355,027, now Patent No. 3,353,587, dated Nov. 21, 1967. Divided and this application Nov. 29, 1966, Ser. No. 610,707
Claims priority, application France, Mar. 27, 1963, 929,486
1 Claim. (Cl. 164—85)



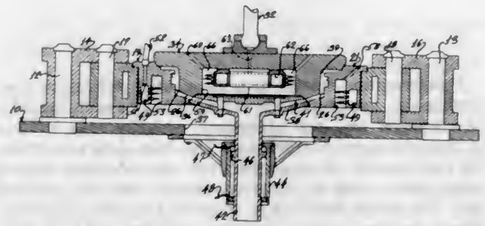
A process for effecting the continuous rotary casting of a hollow metallic blank formed between a rotating mould and a central mandrel which comprises the step of reducing the rate of heat exchange between the blank and mandrel below that which would result from continuous contact between the blank and mandrel, so as to produce slower cooling of the inner wall of the blank.

3,416,592
MOLD PRESS AND CARRIAGE
Thomas K. Hutchinson, 4649 Levis Lane, Godfrey, Ill. 62035
Filed June 9, 1966, Ser. No. 556,481
18 Claims. (Cl. 164—210)



A mold transfer system utilizing a mold press and a U-shaped carriage movable between the jaws of the mold press when open. The carriage is provided with wheels for moving it from a work surface into the jaws of the mold press with finger support means for supporting the mold in the opening of the U-shaped frame of the carriage. The mold press is provided with mold engaging means for both the top and the bottom jaw portions for engaging the mold and lifting it from the carriage into the mold clamping position.

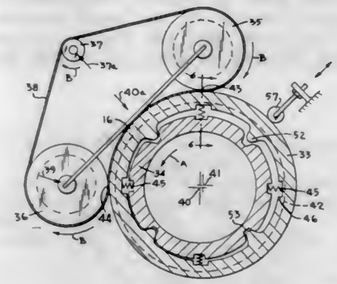
3,416,593
CORE BOX ASSEMBLY WITH HEATING MEANS THEREFOR
Roy C. Hathorn, 1309 Kilby Terrace, Anniston, Ala. 36201
Filed Aug. 19, 1966, Ser. No. 573,572
6 Claims. (Cl. 164—234)



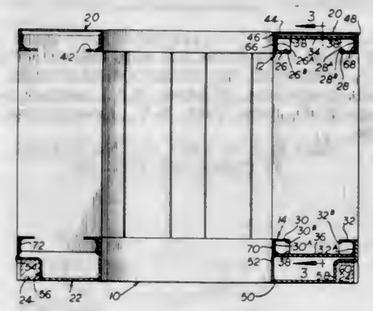
1. In a core box assembly with heating means therefor:
(a) a core box having a mold cavity therein,
(b) a mandrel adapted to enter said core box with the outer surface of said mandrel in spaced relation to said mold cavity,
(c) means to introduce a moldable material into the core box between said mandrel and said mold cavity,
(d) there being a passageway within said core box extending around and in spaced relation to said mold cavity,
(e) means to supply a combustible mixture to said passageway in the core box,
(f) a combustion chamber within said core box between said mold cavity and said passageway in the core box,
(g) means communicating said passageway in the core box with said combustion chamber therein to supply the combustible mixture to said combustion chamber,
(h) there being a passageway within said mandrel in spaced relation to said outer surface thereof,
(i) means to supply a combustible mixture to said passageway in the mandrel,
(j) a combustion chamber within said mandrel between said passageway therein and the outer surface thereof,
(k) means communicating said passageway in the mandrel with the combustion chamber therein to supply said combustible mixture, and
(l) means venting the products of combustion from the combustion chamber in said core box and the combustion chamber in said mandrel.

3,416,594
ROTARY CONTINUOUS CASTING MACHINE HAVING RESILIENTLY MOVABLE SIDEWALLS
Ivan Gyöngyös, Liebefeld, Bern, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland
Filed Jan. 28, 1966, Ser. No. 523,789
Claims priority, application Switzerland, Feb. 2, 1965, 1,412/65
10 Claims. (Cl. 164—278)

A rotary continuous casting machine has a rotor and side rings and an endless cover band defining a mold groove; the cover band makes contacts with the rings and displaces them yieldingly so that the cover band will be in pressure contact with the surface of a casting while the casting is in the mold.



3,416,595
HEAT EXCHANGER ROTOR AND METHOD FOR MAKING SAME
David A. Cobb, Hazelcrest, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,186
8 Claims. (Cl. 165—8)

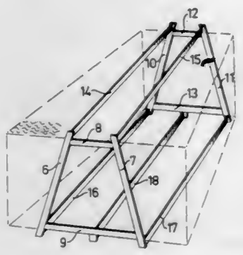


A rigid reinforced rotor or cage for a rotary regenerator is provided with slots in its circumference for inserting the matrix plates in assembly. The rigid cage is formed by the spacers between the rings holding the matrix plates at each end and by the separator plates which connect and space the respective spacers of each rotor end.

3,416,596
PACKAGES OF HEAT EXCHANGING PLATES FOR ROTARY REGENERATIVE HEAT EXCHANGERS
Klaus Oldehaver, Leiman, near Heidelberg, Germany, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Aug. 11, 1966, Ser. No. 571,873
Claims priority, application Germany, Aug. 12, 1965, K 56,865
5 Claims. (Cl. 165—10)

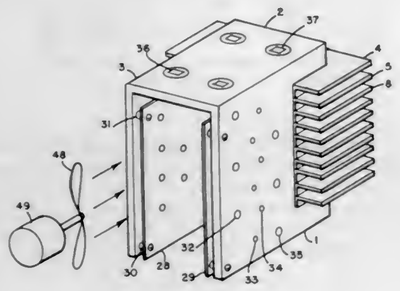
A framed structure is provided for holding packages of heat exchanging plates and for easy insertion and withdrawal of said packages into and out of a rotary regenerative heat exchanger with said framed structure being substantially open on all sides and constructed to provide as little interference as possible with the flow of heat exchange fluid through said exchanger. The structure includes two spaced-apart substantially open frames

interconnected with a plurality of substantially flat stays with the latter being positioned so that the longer sides of their cross-section are parallel with the flow of the heat exchange fluids. In addition, as disposed in an exchanger with a vertical axis, the framed structure has at least one stay on the upper side thereof and more stays on the lower side than the upper side with the lower and



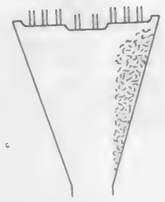
upper stays being vertically offset from each other. The frame does not limit the shape of the packages of plates being held which may be either triangular or parallelepipedic and they are so constructed that when disposed in layers in the regenerator body the lower frame structures support the upper ones without special support devices from the regenerator body itself except for the lower layer of packages.

3,416,597
HEAT SINK FOR FORCED AIR OR CONVECTION COOLING OF SEMICONDUCTORS
Kenneth Kupferberg, Flushing, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed June 15, 1967, Ser. No. 654,025
11 Claims. (Cl. 165—80)



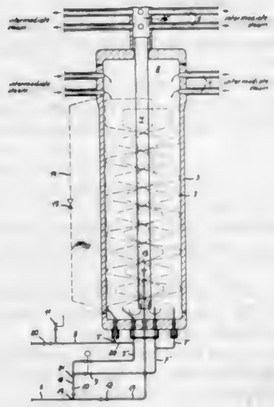
Semiconductor devices, such as transistors and the like, require heat sinking means if they are to be operated at the power levels for which they are intended. The heat generated in the device is conducted to the case of the device but the typical case by itself has little heat dissipating ability. Thus, while the thermal resistance between the semiconductor and its case may be very low, the thermal coupling of the case to the surrounding atmosphere presents a very high thermal resistance. In order to reduce the thermal resistance between the semiconductor and the atmosphere heat sinks are used. These are metal plates or finned metal configurations on which the transistor is mounted. Typically these are aluminum extrusions providing thermal resistances of a few degrees centigrade per watt of dissipation of the semiconductor.

3,416,598
INLET DEVICE AND METHOD FOR PREVENTING COKE BUILD-UP
Rolf K. Dorn, Berkeley Heights, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,390
6 Claims. (Cl. 165—134)



This invention relates to a novel inlet device for connecting the output of a gas cracking heater with the inlet of a transfer line heat exchanger, whereby coke buildup in the inlet cone is prevented. The inlet device provides for the injection of steam into the circumference thereof concurrently and/or countercurrently with the cracked gas. The steam injection is controlled so as to fill completely the area of the cone where eddying and back flow occur, thus preventing the cracked gas from entering this area.

3,416,599
BRANCH CURRENT HEAT EXCHANGE WITH INJECTION COOLER
Willibald Kraus, Gummersbach, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummersbach, Germany
Filed Sept. 20, 1966, Ser. No. 580,673
Claims priority, application Germany, Sept. 23, 1965, St 24,420
9 Claims. (Cl. 165—145)

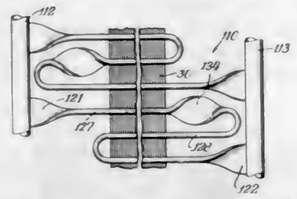


A heat exchanger in which steam is introduced into one end of a tubular housing and is withdrawn from adjacent the other end by a tubular member extending into the housing through the said one end thereof.

Spiral pipes in the space inside the housing and surrounding the tubular member are connected to supply and discharge pipes through said other end of the housing and which supply and discharge pipes have control valves therein.

A water injector is located in the open end of the tubular member and is connected to the supply pipe via a control valve.

3,416,600
HEAT EXCHANGER HAVING TWISTED MULTIPLE PASSAGE TUBES
Robert W. Fink, Nashville, Tenn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,943
12 Claims. (Cl. 165—175)

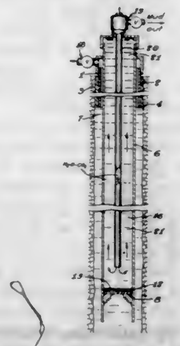


A heat exchanger including flat tubes having twisted end portions arranged to have the flat extent thereof parallel to the axis of elongated headers to which the ends are connected. There is provided a 180° twist in an intermediate portion of the tube with the tube being internally divided into at least two through passages whereby the 180° twist permits one passage to be disposed foremost in one portion of the tube and rearmost in another portion of the tube, and the other passage disposed rearmost and foremost respectively in these portions relative to a flow of heat exchange fluid past the tube in a direction parallel to the flatwise extent thereof, thereby to equalize heat transfer conditions in fluids flowing through the respective passages.

3,416,601
RESIN COMPOSITION AND METHOD OF USE
Bill M. Young and Buddy W. Anderson, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,413
21 Claims. (Cl. 166—12)

The patent describes a catalytically curable composition containing a mixture of diethyl phthalate and dioctyl phthalate which can be hardened to form a porous mass possessing continuous lines of permeability. The hardened mass is useful in many types of filters, in wells, and screening devices.

3,416,602
HYDRAULIC BOND BETWEEN CASING AND FORMATION WALL
Lowell D. Boughton, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,895
6 Claims. (Cl. 166—29)



The securement of metal casings in wells by use of a settable cement slurry is facilitated and improved by circulating a mixture of liquid CO_2 and water in the casing during the setting of the cement in place whereby the tendency of the casing to shift or "float" is lessened and the casing is maintained at a reduced temperature by the mixture which counteracts the heat of hydration of the cement, thus avoiding displacement and damage to the casing due to expansion during cement hydration and the consequent contraction after such heat has been dissipated.

3,416,603
CONSOLIDATION OF SUBTERRANEAN FORMATIONS
George G. Bernard, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Oct. 20, 1966, Ser. No. 587,967
14 Claims. (Cl. 166—33)

A method for consolidating an incompetent earth formation surrounding a well wherein a liquid resin-forming material is injected into the well, then an inert gas is injected into the well at a pressure sufficient to force the resin-forming material from the well into the formation, and thereafter inert gas is passed through the formation to displace the excess of the resin-forming material from the portion of the formation to be consolidated prior to the material undergoing substantial hardening.

3,416,604
EPOXY RESIN GROUTING FLUID AND METHOD FOR STABILIZING EARTH FORMATIONS
Roger F. Rensvold, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Mar. 20, 1967, Ser. No. 624,173
12 Claims. (Cl. 166—33)

This patent describes a novel grouting fluid comprising an epoxy resin and an alkylamine wherein each alkyl group is a tertiary alkyl group containing from about 4 to about 8 carbon atoms, and its use in stabilizing and sealing of earth formations. Epoxy resins utilized herein are normally the polyglycidyl ethers of organic diphenols, e.g., polyglycidyl ethers of 2,2-(4-hydroxyphenyl) propane, with Epon 820 and Epon 828 being among the preferred resins. Solid fillers, e.g., silica flour, may also be included in the present grouting fluids.

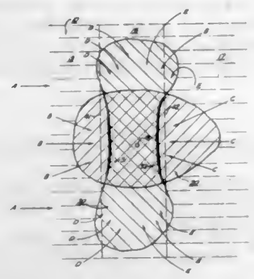
3,416,605
PARAFFIN DEPOSITION CONTROL
Byron E. Marsh, Western Springs, and Roy J. Betty, Jr., Chicago, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware
No Drawing. Filed June 30, 1967, Ser. No. 650,262
11 Claims. (Cl. 166—38)

A method of controlling paraffin deposition in oil field and associated operations by addition of urea or polyurea formed by the reaction of an amine and an isocyanate.

3,416,606
HYDRAULIC FRACTURING OF TILTED SUBTERRANEAN FORMATIONS
David J. Watanabe, Orange, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Mar. 25, 1966, Ser. No. 537,405
11 Claims. (Cl. 166—42)

A method of fracturing an inclined subterranean formation in which a fracturing fluid containing solid particles of low density diverting agent having a lower density than the fracturing fluid and solid particles of high density diverting agent having a higher density than the fracturing fluid is injected through a well and into contact with the formation at a pressure and volume

flow rate sufficient to fracture the formation whereby the particles enter into the fracture so as to establish therein



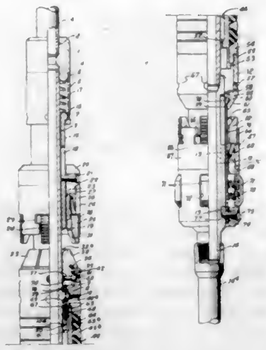
at a distance removed from the well flow diverting barriers updip and downdip from the well.

3,416,607
PACKER THERMALLY TRIPPED
Eugeniu Anastasiu, Str. Logofat Luca Stroici, 1, and Traian Margarit, Str. Sabinelor, 24, both of Bucharest, Rumania
Filed Feb. 7, 1966, Ser. No. 525,697
7 Claims. (Cl. 166—57)



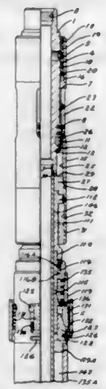
A packer for controlling the flow of fluids in boreholes, which is adapted to be thermally activated. The packer is provided with a plurality of fixing wedges, which are operatively connected to means containing an expandable fluid. When the temperature in the borehole rises, the last mentioned fluid expands, thereby activating the fixing wedges and transferring them into a position in which they are pressed against the walls of the casing. The packer is further provided with tubing, coaxial with the borehole, by means of which the packer is suspended in the borehole. This tubing expands under the influence of the rising temperature in the borehole, caused by the circulation of hot fluid, such as steam, through the tubing and casing in the borehole. The expanding tubing finding the packer in a fixed position, causes a packing, operatively connected thereto, to bulge out and thereby tightly close the annular space between the tubing and the casing in the borehole. The means containing an expandable fluid, as well as the tubing with its packing, are constructed and arranged so that the fixing wedges first are fixed in position and then the packing is made to bulge out by the expanding tubing.

3,416,608
RETRIEVABLE WELL PACKER
Morgan L. Crow, Marion D. Kilgore, and Robert C. Pumpelly, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,756
8 Claims. (Cl. 166—129)



A retrievable packer for use in a well bore. A mandrel extends through the packer and is coupled with a lower anchoring mechanism adapted when actuated to hold the packer against downward movement in the well bore. An upper anchoring mechanism for the packer includes a setting sleeve that is carried by the mandrel and arranged to engage segmented expanders which are in turn engaged by upper slips upon relative movement between the mandrel and the segmented expanders. The slips are moved radially by such engagement to retain the packer against upward movement in the well bore. A deformable packing element, located between the anchoring mechanisms, forms a fluid-tight seal with the well bore. Valve means is provided in the packer to control flow of fluid through a by-pass passageway located between the packing element and the mandrel.

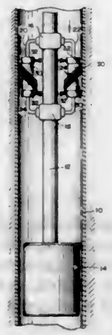
3,416,609
WELL PACKER WITH BY-PASS VALVE
Marion D. Kilgore, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,893
10 Claims. (Cl. 166—131)



A well packer and by-pass valve combination for use in a well bore. The combination includes a mandrel releasably connected to and extending through the packer,

a port extending through the mandrel relatively above the packer, a port closure member slidably mounted on the mandrel above the packer and cooperable with the packer whereby the valve closure member can be moved between positions opening and closing the port. The arrangement being such that the packer can be set in the well bore, the closure member moved to open and close the port as desired, and the mandrel and valve closure member moved longitudinally relative to the packer to compensate for thermal expansion or contraction of the pipe to which the mandrel is connected while the packer remains set.

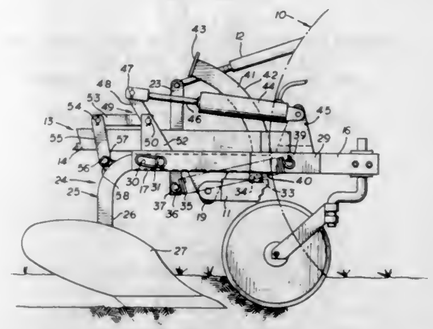
3,416,610
LOAD SUPPORT FOR WELL CASING
Robert E. Prescott, Jr., 10 Railroad Ave., Exeter, N.H. 03833
Filed Sept. 29, 1966, Ser. No. 582,808
4 Claims. (Cl. 166—216)



1. Load supporting means for use in a well casing, comprising a device having elements extending, when unstressed, in opposite directions to an overall distance slightly greater than the interior diameter of the casing in which the device is to be used, said elements being resiliently deflectable to be inclined with respect to the axis of a casing when the device is inserted therein, said elements being capable of yielding toward the axis of the casing to reverse the inclination thereof when sufficient force is applied to the device in an axial direction, said device comprising a frame including two parallel stiffly resilient rods, a number of disks of equal size loosely threaded on each of said rods, and means on each said rod resiliently maintaining said disks at right angles to said rods when unstressed.

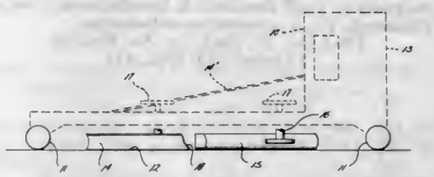
3,416,611
AUTOMATIC RETURN TRIP FOR MOLDBOARD PLOW
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 27, 1966, Ser. No. 590,035
7 Claims. (Cl. 172—261)

1. In a trip plow, a traveling supporting frame, a plow including a standard having a lower tool-carrying portion and a forwardly directed portion, means mounting said plow on said frame for tripping in response to abnormal draft forces comprising, pivot means connecting the tool-carrying standard to the frame to accommodate said tripping, said pivot means including a pin and slot connection accommodating rearward movement of the plow relative to the frame, holding means acting between the frame and the plow to prevent tripping of the latter and releasable after a predetermined rearward movement of the plow, spring means acting between the plow and the frame to yieldably oppose said rearward movement of the plow, hydraulic power transmitting means mounted on the frame for cushioning the plow when it is tripped and automatically operable to return it to its operating position, and connecting means between the plow and said hydrau-



lic power transmitting means including lost motion means accommodating limited rearward movement of the plow in response to draft forces acting thereon prior to the transmission of said draft forces to said hydraulic power transmission means.

3,416,612
LAND LEVELING EQUIPMENT
Aaron G. Reynolds, McAllen, Tex., assignor to Reynolds Research & Manufacturing Corp., McAllen, Tex.
Filed June 14, 1966, Ser. No. 557,430
3 Claims. (Cl. 172—784)

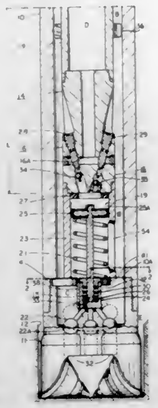


1. Land leveling equipment, comprising a frame movable forwardly over the ground level, and a pair of blades carried by and extending one in front of the other in opposite diagonal directions across the frame, the trailing end of the front blade being disposed laterally inwardly of the leading end of the rear blade so that soil accumulated by said front blade and moving past said trailing end will be received by said rear blade for spreading over the lateral extent of said rear blade, and said front blade including a portion adjacent its trailing end having an upper edge which terminates below the upper edge of the portion of said front blade adjacent its leading end so that relatively high levels of soil accumulated by said front blade will be free to pass over said portion prior to movement beyond said trailing end of said front blade.

3,416,613
COMBINED ROTARY AND PERCUSSION DRILL UTILIZING LIQUID DRILLING FLUID
Homer I. Henderson, 2220 Live Oak, San Angelo, Tex. 76901
Filed Apr. 14, 1966, Ser. No. 542,571
11 Claims. (Cl. 173—57)

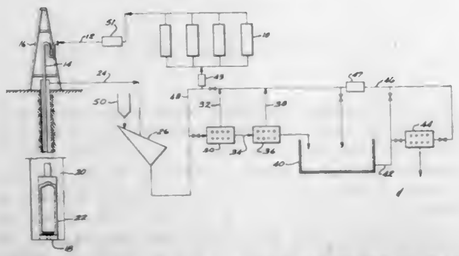
A combined rotary and percussion drill having an elongated, open top tube within the drill pipe or drill collar. The tube is closed at the lower end by a pressure-responsive member such as a piston which operates a valve to shut off fluid circulation. The other side of the piston

is exposed to fluid flowing through the drill string around the inner tube. When friction losses in the flowing stream reduce its pressure by an amount lower than the near



static stream in the inner tube sufficient to overcome a spring, the piston is operated to close the valve and generate a pressure wave against the drill bit.

3,416,614
HYDRAULIC JET DRILLING METHOD USING FERROUS ABRASIVES
Robert J. Goodwin, Oakmont, Ernest A. Mori, Hampton Township, Allegheny County, and Joseph L. Pekarek and Paul W. Schaub, Penn Hills Township, Allegheny County, Pa., and Robert E. Zinkham, Richmond, Va., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,290
4 Claims. (Cl. 175—67)



A method of drilling hard rock formations in which particles of ferrous abrasives having a size in the range of 7 to 80 mesh are suspended in a drilling liquid. The drilling liquid is pumped down rotating drill pipe in a well and discharged at a velocity of at least 500 feet per second through tungsten carbide nozzles in a drill bit at the lower end of the drill pipe to cut the formation being drilled. The ferrous abrasives give increased drilling rates with reduced wear of the nozzles in the drill bit.

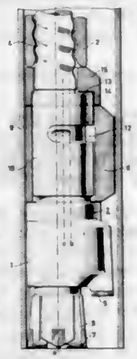
3,416,615
APPARATUS FOR BORING BY CABLE-CONTROLLED PERCUSSION
Pierre Grospas, Le Continental, Place des Moulins, Monte Carlo, Monaco
Filed Mar. 21, 1966, Ser. No. 536,084
Claims priority, application France, Mar. 22, 1965, 10,191
21 Claims. (Cl. 175—173)

A cable-controlled percussion drilling apparatus comprising a derrick supporting a cable and a trepan provided with a master rod connected to the cable, a beater motor for moving the cable, a circulation column provided at its lower end with a guide member for the trepan and/or the master rod and at its upper end with an injection head suspended on a yoke guided by the derrick and controlled by a pulley block mounted on the derrick. An axially movable, sealed input screen for the cable held in the



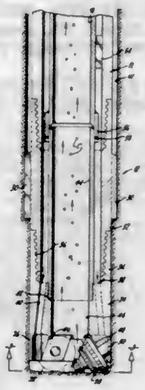
injection head surrounding the cable in a sealed manner. Means for communicating the circulation column with a space situated in front of a cutting edge of the trepan when the trepan is located in a hole to be bored and a suspension head integral with the trepan and intended to hook the trepan and its master rod alternately to either the lower tip of the cable or to the circulation column.

3,416,616
DEEP DRILLS WITH ECCENTRIC BITS
Hans Hj. Ahlgren, Solna, Sweden, assignor to AB Skanska Cementgjuteriet, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 1, 1967, Ser. No. 619,746
2 Claims. (Cl. 175—258)



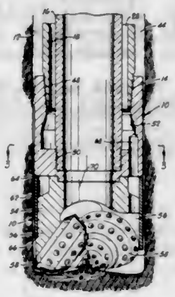
A bit having an eccentric cutting edge and an eccentric sleeve rotatable through 180° about an upper portion of the bit to move the cutting edge laterally to a drilling position under the lower edge of a lining tube or to move the eccentric cutting edge under the interior of the tube thus permitting upward withdrawal of the bit.

3,416,617
DRILL BIT
Wayland D. Elenburg, Wichita Falls, Tex., assignor to Walker-Neer Manufacturing Company, Inc., Wichita Falls, Tex., a corporation of Texas
Filed Aug. 22, 1966, Ser. No. 574,054
6 Claims. (Cl. 175—339)



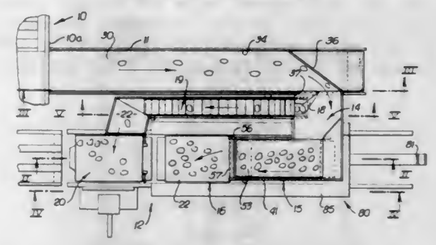
A drill bit adapted for use with a continuous dual passage drill pipe and including fluid ducts for directing flow from around the inner drill pipe onto the cutting members. A skirt around the cutting members greatly restricts flow to the outside of the bit so that almost all return flow is up through the inner pipe. A radial collar further restricts upward flow.

3,416,618
SHROUDED BIT
Elmer A. Kunnemann, Dallas, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,435
3 Claims. (Cl. 175—339)



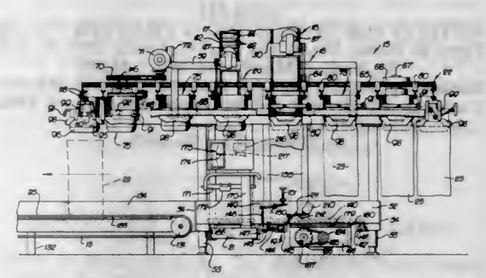
A rotary drill bit for use in the drilling of oil and gas wells or the like with concentric drill pipe. The bit includes a body rotatably supporting a plurality of cutting members that are arranged on the body to disintegrate the bottom of the well bore as the bit is rotated. The body is arranged for connection with each of the concentric drill pipes. A shroud is attached to the body and forms a portion thereof. The shroud has an outside diameter substantially the same as the diameter of the well bore to prevent or at least inhibit fluid flow between the bit and the well bore wall. The shroud is extended downwardly as close to the well bore bottom as possible to increase the efficiency of recovery of the cuttings and to aid in preventing contamination of the cuttings.

3,416,619
MEANS AND METHOD FOR RAPIDLY FILLING RECEPTACLES
Stanley A. McClusky, 3001 Baylor Ave., Bakersfield, Calif. 93305
Filed Feb. 7, 1966, Ser. No. 525,671
12 Claims. (Cl. 177—53)



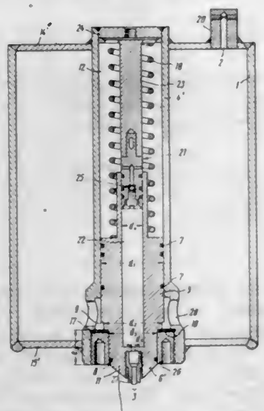
A machine for filling receptacles with articles to a precise predetermined weight by providing two filling and weighing stations, the first of which is a bulk filling station at which the receptacle is filled with articles to an underweight condition and is then moved to a second weighing station wherein the receptacle is filled to a final predetermined weight condition by successively feeding discrete articles to the receptacle.

3,416,620
BAG FILLING AND WEIGHING MACHINE
Stanley A. McClusky, 3001 Baylor Ave., Bakersfield, Calif. 93305
Continuation-in-part of application Ser. No. 525,671, Feb. 7, 1966. This application Mar. 1, 1967, Ser. No. 619,801
17 Claims. (Cl. 177—123)



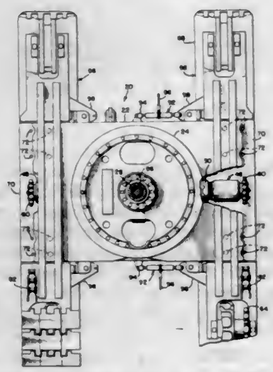
A bag filling and weighing machine including an endless conveyor with bag holding devices carried thereby and releaseably suspending pliant bags in open condition. The conveyor stops at a main article feed station and a dribble article feed station for two-stage filling and weighing and at which stations the bags and bag holding devices are not supported by the endless conveyor and are weighed at weighing stations associated with each feed station. Each bag holding device frictionally grips and holds the open end of a bag in open position and is automatically released to deposit a filled and weighed bag onto a moving conveyor.

3,416,621
ACOUSTIC WAVE PRODUCING DEVICE
Mikhail Ivanovich Balashkand, Akademicheskaya ul. 8, kv. 13, Monino, Moskovskoi oblasti, U.S.S.R.; Georgy Stepanovich Evdokimov, Novoselskoe shosse, 35a, kv. 48, Ramenskoe, Moskovskoi oblasti, U.S.S.R; Berta Lvovna Kaplan, ulitsa Vorontsovskaya, 24/6, kv. 12, Moscow, U.S.S.R.; Sergei Alexandrovich Lovlya, 1 Radiatorskaya, 97, kv. 2, Moscow, U.S.S.R.; Leonid Nikolaevich Solodilov, ul. Studencheskaya, 32, kv. 145, Moscow, U.S.S.R., and Oleg Lanfanovich Chen, Podolsky raion, p. Vostryakovo, 1 Sadovaya ulitsa, 2, Moskovskaya oblasti, U.S.S.R.
Filed Mar. 6, 1967, Ser. No. 620,959
3 Claims. (Cl. 181—.5)



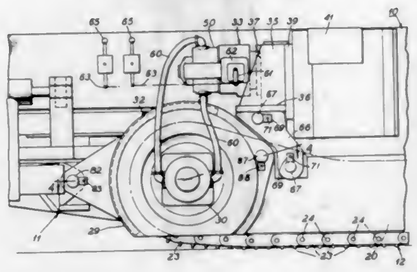
A device for producing acoustic waves for use in marine seismic surveying. The underwater multiple high power pulse emiter utilizes the energy of either highly compressed non-explosive gas, or of an explosive gas mixture when ignited. A reciprocating stepped piston controls the emission of the gas into the fluid media. In the case of the non-explosive gas, high-pressure gas is abruptly emitted from the device to produce an acoustic wave. When utilizing the explosive gas, high-pressure explosive gas is emitted into the fluid media and then ignited.

3,416,622
METHOD FOR STABILIZING A CRAWLER CRANE
Percy R. Helm, Rte. 4, and Carl O. Lewis, 1009 N. 12th St., both of Manitowoc, Wis. 54220
Original application Sept. 30, 1963, Ser. No. 312,413, now abandoned. Divided and this application Nov. 7, 1966, Ser. No. 606,483
11 Claims. (Cl. 180—6.7)



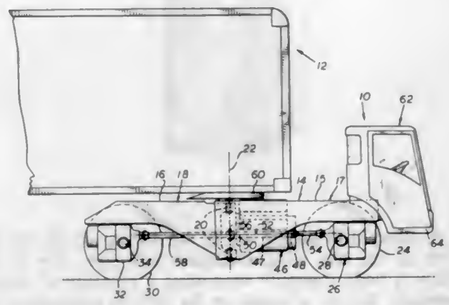
A vehicle having a crawler type traction assembly which is stabilized by increasing and decreasing the distance between the traction assemblies when desired. The distance between the assemblies is changed by driving an assembly on one side of the vehicle relative to an assembly on the other side of the vehicle.

3,416,623
TRAM DRIVE UNIT FOR MINING MACHINE
William D. Boone, Chicago, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 12, 1967, Ser. No. 652,782
9 Claims. (Cl. 180—6.48)



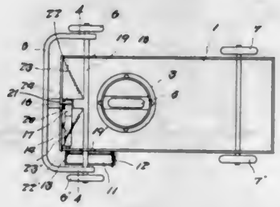
Tram drive for mining machines of the loading and mining and loading type having an individual drive unit for each tram unit. The drive comprises a power pack including a pump and an electric motor for driving the pump and a drive pack including a hydraulic motor located within the extended confines of the drive element for an associated tram unit, and planetary reduction gearing within the confines of the drive element and driven by the hydraulic motor. The speed and direction of tramming is controlled by the control for the pump. The power pack and the drive pack are mounted on individual frames detachably mounted on the main frame of the machine by coupling pin and apertured mounting connections, enabling ready removal of the power pack and the drive pack for inspection and repair.

3,416,624
TRACTOR DRIVE AND LOAD ARRANGEMENT
C. Paul Kolthoff, Jr., Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,189
10 Claims. (Cl. 180—14)



A motor truck tractor, for supporting a portion of a load-carrying trailer, having two major sections hinged together about a vertical axis pivot therebetween for power-actuated articulated steering thereof. The tractor includes a fifth wheel member positioned coextensive with the vertical pivot axis for supporting the forward end of the trailer which distributes the load uniformly on the tractor's ground engaging wheels. The rear section of the tractor is propelled through a hydraulic transaxle connected to the rearward end of the engine's output shaft and the front section of the tractor may be propelled through a substantially identical second transaxle connected to the forward end of the engine's output shaft whereby all ground engaging wheels are driven.

3,416,625
BUMPER ACTUATED SAFETY MEANS FOR ELECTRIC MOTOR DRIVEN CAR
Shigeru Narntani, 430, 2-chome, Shimotakaido, Suginami-ku, Tokyo, Japan
Filed Oct. 10, 1966, Ser. No. 585,336
Claims priority, application Japan, Oct. 15, 1965, 40/62,904
2 Claims. (Cl. 180—96)



The present invention relates to the child playing electric-driven car and comprises three wheels, one of which is a driving wheel being rotated by a handle wheel manually, and a pair of auxiliary wheels mounted on a bumper. The bumper is mounted on a chassis and elastically movable. A pedal switch is provided for closing the motor circuit. A safety switch is also provided for opening the motor circuit, when the bumper abuts an object. Both switches are series connected in the motor circuit.

3,416,626
GROUND EFFECT VEHICLE
Brian H. Nagamatsu, 1046 Cornelius Ave., Schenectady, N.Y. 12309
Filed Mar. 9, 1967, Ser. No. 621,861
1 Claim. (Cl. 180—124)



The invention centers in the new concept of using a low-pressure gas source in combination with a thin, lightweight inflatable bag designed to discharge air continuously to produce a ground-effect, hover or lifting action.

3,416,627
FLEXIBLE SKIRTS FOR AIR CUSHION BORNE VEHICLES
Frank Phillip George Francis and Gordon Victor Watts, Wiltshire, England, assignors, by mesne assignments, to British Hovercraft Corporation Limited, Yeovil, Somerset, England
Filed Sept. 20, 1966, Ser. No. 580,635
Claims priority, application Great Britain, Sept. 22, 1965, 40,467/65
14 Claims. (Cl. 180—127)

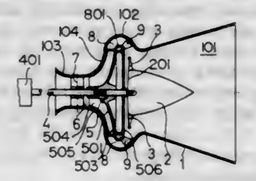
A flexible skirt or keel arrangement, for air cushion vehicles, providing tensile means for maintaining the outer skin of the skirt or keel in convoluted form during operation by way of flexible webs extending from ridges along the inner side of the skin. The webs have



cut-outs open to the edges remote from the ridges so that the web portions between the cut-outs provide local points of attachment for connection to the body of the vehicle and allow passageways through the structure.

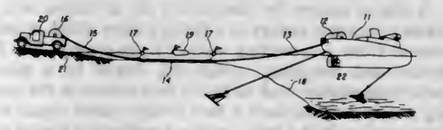
ERRATUM
For Class 181—5 see:
Patent No. 3,416,621

3,416,628
SHOCK WAVE GENERATOR
Oskar Bschorr and Josef F. Neumair, Munich, Germany, assignors to Entwicklungsring Sud G.m.b.H., a corporation of Germany
Filed Feb. 21, 1967, Ser. No. 617,664
Claims priority, application Germany, Feb. 25, 1966, E 31,117
5 Claims. (Cl. 181—.5)



A shock wave generator including a casing having a forward section and a rearward intake section, a rotor in the forward section having a radial arm or blade extending from the base periphery of the rotor, a compressor positioned rearwardly of the rotor, the compressor and casing being so configured to define an air duct leading from air intake casing section to discharge the air against the rotor arms, and adjustable vanes for guiding and modulating the air positioned rearward of the compressor, and a second set forward of the compressor.

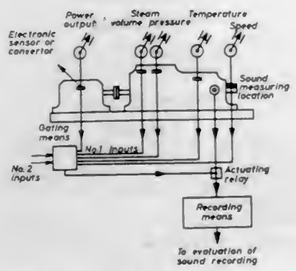
3,416,629
METHOD OF MOVING A SEISMIC CABLE IN UNNAVIGABLE WATERS
Erwin C. Brede, Metairie, La., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,237
1 Claim. (Cl. 181—.5)



A method of seismic exploration in shallow water areas wherein a boat is anchored to provide a first control station and a land vehicle is parked to establish a second

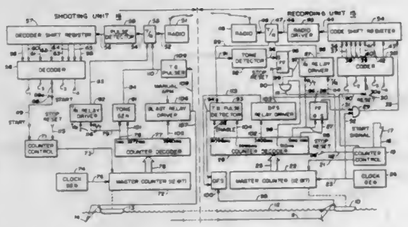
control station. These control stations are located along the desired exploration path and displaced from each other. Lines connected between the control stations and a drag-type seismic cable are manipulated to position the cable along a desired exploration path.

3,416,630
METHOD AND ARRANGEMENT FOR MONITORING MACHINES BY MEANS OF THEIR EMITTED SOUND WAVES
Ernst J. Pohl, Ebenhausen, Isartal, Karlheinz Gunter Schmitt-Thomas, Ismaning, and Werner Bürck, Neugilching, Germany, assignors to Werkstoff-Untersuchung G.m.b.H., Ismaning, Germany
Filed Apr. 26, 1967, Ser. No. 633,934
Claims priority, application Germany, Apr. 27, 1966, W 41,442
8 Claims. (Cl. 181—.5)



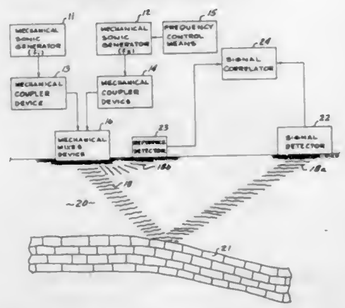
Sound waves emitted by a machine when the machine is under normal operating conditions are recorded, together with the values of all pertinent operating parameters at the time. During operation of the machine the pertinent operating parameters are continuously monitored and the sound waves emitted from the machine are re-recorded when all pertinent operating parameters are again equal to the value at which the first recording was made. The two recordings are then compared to see if the machine is malfunctioning.

3,416,631
DIGITAL REMOTE FIRING SYSTEM
John David Patterson, Arlington, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,428
6 Claims. (Cl. 181—.5)



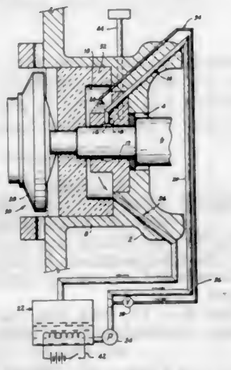
A digital system for controlling the actuation of a generator of seismic energy at a firing station which is located remote from a recording station is described. The firing station and recording station are linked by a two-way radio transmission link so that a first source at the recording station can transmit a first binary coded signal to the firing station. If the firing station receives the binary coded signal from the recording station, the firing station will transmit a tone signal. The tone signal from the firing station, if detected, at the recording station will permit enabling of the seismic signal recording means. Timing means at the firing station will effect actuation of the generator of the seismic energy in a predetermined time relationship with respect to generation of the first binary coded signal in the recording station. If the binary coded signal from the recording station is not received by the firing station in its properly coded form, no tone signal will be transmitted by the firing station and logic means at the recording station will initiate a repeat of the transmission of the first binary coded signal.

3,416,632
BEAT FREQUENCY SONIC TECHNIQUE AND APPARATUS FOR USE IN SEISMIC SURVEYS
Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406
Filed Oct. 20, 1966, Ser. No. 588,031
10 Claims. (Cl. 181—.5)



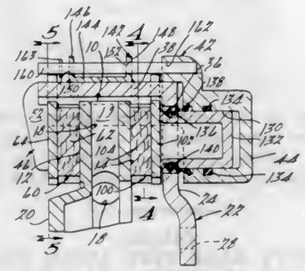
First and second mechanical sonic generators which generate high level sonic energy at frequencies substantially higher than and which differ by a desired seismic transmission frequency, have their outputs coupled to resonant vibration systems. The outputs of the resonant vibration systems are mixed in a nonlinear device to obtain a beat frequency difference signal which is at the desired transmission frequency, this difference signal being coupled into the ground for use in seismic survey work.

3,416,633
METHOD OF AND APPARATUS FOR PREWARMING A LUBRICATED SHAFT SEAL ASSEMBLY
Judson S. Swearingen, 2235 Carmelina Ave., Los Angeles, Calif. 90064
Filed Nov. 8, 1966, Ser. No. 592,805
8 Claims. (Cl. 184—1)



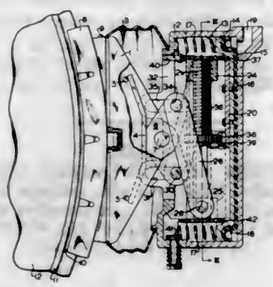
7. The method of warming a lubricated bearing in a cryogenic machine to render the lubricating fluid operable prior to initial start-up of the machine, said method comprising: warming the lubricating fluid to be used in the lubrication of the bearing to a suitable temperature; flowing the warmed lubricating fluid over the outer surface of the lubricated bearing to warm the bearing and uncongeal lubricating fluid congealed therein; and draining off the lubricating fluid.

3,416,634
CALIPER-TYPE DISK BRAKE AND SUPPORT MEANS THEREFOR
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Aug. 18, 1967, Ser. No. 661,621
5 Claims. (Cl. 188—73)



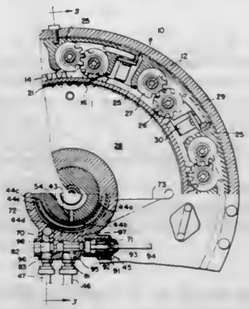
A disk brake of the floating caliper type in which the torque reaction on the brake pads is taken by a portion of a torque plate that extends across the outer periphery of the brake disk. The caliper assembly is slidably supported on the portion of the torque plate adjacent the periphery of the disk by means of a pin that extends in the direction of sliding movement.

3,416,635
BRAKE CYLINDER DEVICE
Robert B. Salton, East McKeesport, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 8, 1966, Ser. No. 600,080
9 Claims. (Cl. 188—196)



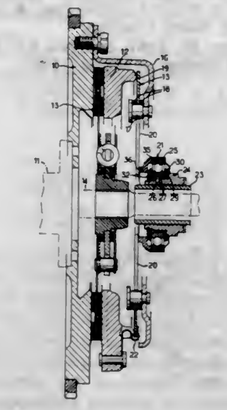
A single shoe tread brake unit of compact design having interposed between a brake cylinder and the brake head and shoe a mechanical linkage of the lazy tong type comprising two pairs of crossed links normally locked in fixed angular relation for transmission of braking force to the brake head and shoe. A slack adjusting mechanism in the form of a pawl and ratchet responsive to increased travel of the brake cylinder piston due to brake shoe wear automatically turns a screw to adjust the angularity of the crossed links thereby taking up slack. Manual means accessible from the exterior of the unit also turns the screw to adjust the angularity of the crossed links to provide for manual adjustment of the normal clearance between the brake shoe and the tread of a wheel braked thereby.

3,416,636
REMOTE CONTROL ARRANGEMENT FOR POWER TRANSMISSION
Karl G. Ahlen, Stockholm, Sweden, assignor to S.R.M. Hydromekanik AB, Stockholm, Sweden
Filed Nov. 17, 1966, Ser. No. 595,263
Claims priority, application Great Britain, June 28, 1966, 28,952/66
9 Claims. (Cl. 192—57)



A power transmission mechanism including a hydrostatic coupling and a mechanical coupling. The mechanical coupling is actuated by a hydraulic piston operated by pressurized fluid derived from a source external to the mechanism. The flow of this pressurized fluid through a central valve to the hydraulic piston is controlled by a fixed servo valve. This servo also includes an arrangement for continuously circulating fluid through the mechanism; and also an arrangement for providing make-up pressurized fluid.

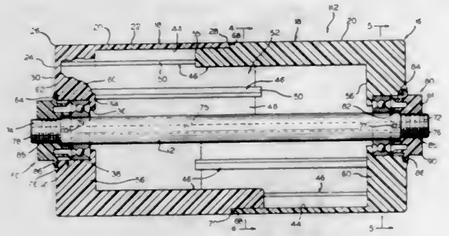
3,416,637
RADIALLY MOVABLE CLUTCH BEARING
Jean Maurice, Paris, France, assignor to Société Anonyme Française du Ferodo, Paris, France, a corporation of France
Filed Dec. 12, 1966, Ser. No. 601,134
Claims priority, application France, Dec. 20, 1965, 42,919
22 Claims. (Cl. 192—98)



A declutching device comprises a fork-driven actuating element slidable on a fixed guide and urging a driving ele-

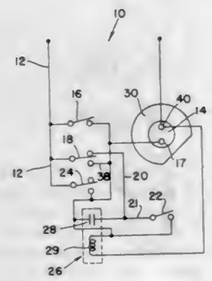
ment against the inner fingers of a Belleville washer to disengage a clutch. As the fixed guide is not always exactly coaxial with the clutch, a self-centering coupling is provided between the actuating element and the driving element. This coupling is free to move in any direction perpendicular to the axis of the clutch against the action of a frictional grip.

3,416,638
CORROSION RESISTANT CARRIER ROLLER FOR BELT CONVEYORS
Richard D. Buck, 645 Seneca Drive, Aurora, Ill. 60506
Filed Dec. 8, 1967, Ser. No. 689,080
9 Claims. (Cl. 193—37)



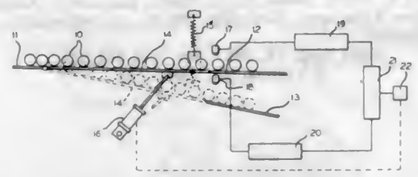
The invention relates to a conveyor belt carrier roller formed from a corrosion resistant plastic and in the form of two identical sections that are joined together by solvent bonding. The sections are each in the form of an annular wall having one end closed by a web defining a sleeve forming a bearing unit receiving socket, with the sections each including a plurality of ribs extending axially thereof and comprising radially and circumferentially extending portions that project outwardly of the respective section open ends for insertion in the other section, with the bonding solvent being applied to the open ends of the sections and the overlapping rib portions. The radial rib portions extend the length of the respective sections and are joined to the respective section sleeves. Ball bearing units are press fitted into the sockets of the respective ends and are received over a mounting shaft which is in turn seated on a carrier frame.

3,416,639
COIN-ACTUATED VENDING CONTROL APPARATUS
James Phillip Dorsett and Charles R. Smith, Asheboro, N.C., assignors to Vend-A-Matic Inc., Asheboro, N.C., a corporation of North Carolina
Filed Mar. 30, 1967, Ser. No. 627,225
8 Claims. (Cl. 194—10)



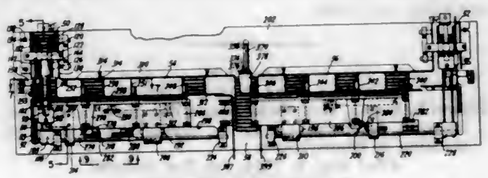
This invention relates to a combination coin-token vending apparatus responsive to the deposit of an assortment of coins, tokens or random combinations thereof and in particular to a vending device for receiving coins and/or tokens to initiate the dispensation of articles or services in response thereto.

3,416,640
AUTOMATIC DIVIDER
Loren Svobida, 1837 W. 88th St., Chicago, Ill. 60620
Filed Feb. 24, 1965, Ser. No. 434,929
6 Claims. (Cl. 198—31)



A divider for dividing articles moving along a first conveyor line onto two second conveyor lines. Self-correcting and self-compensating counter means associated with each second conveyor line to actuate the divider.

3,416,641
MULTI DUTY RAKE TYPE BATCH COLLATOR
Frank Hollenton, Mountainside, N.J., assignor to American Machine & Foundry Company, a corporation of New Jersey
Original application Apr. 22, 1965, Ser. No. 450,080, now Patent No. 3,314,521, dated Apr. 18, 1967. Divided and this application Feb. 8, 1967, Ser. No. 641,069
4 Claims. (Cl. 198—32)



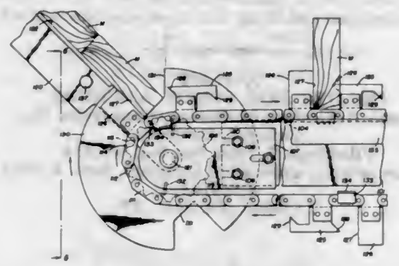
Mechanism for assembling articles from incoming plural streams into a single outgoing stream including channel means, rake means for conveying the articles in the channels and enabling-disabling means responsive to the number of articles conveyed to control the enabling-disabling means.

3,416,642
PRESSURELESS ACCUMULATION CONVEYOR
Donald C. Muller, Whittier, Calif., assignor to C. F. Butz Engineering, Azusa, Calif., a corporation of California
Filed Dec. 28, 1966, Ser. No. 605,473
14 Claims. (Cl. 198—34)



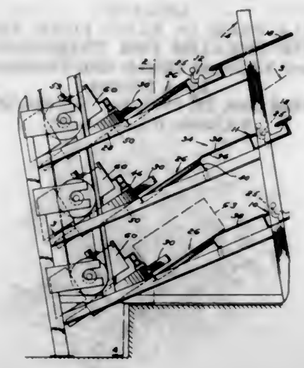
A chain reaction stopping and spacing mechanism in a conveyor for preventing bunching of a series of articles on the conveyor. A forward roller assembly is disengageable from the power source by pressure of a leading article on that roller assembly, and tie means connects such roller assembly to roller assemblies sequentially following so as to disengage such following roller assemblies from the power source simultaneously with the forward roller assembly thereby preventing bunching of articles.

3,416,643
AUTOMATIC MATERIAL RELEASE DEVICE
Claudius F. Kotila, Mansfield, Ohio, assignor to Good-Ko Industries, Inc., Flint, Mich., a corporation of Michigan
Original application July 9, 1965, Ser. No. 470,795. Divided and this application May 9, 1967, Ser. No. 649,392
5 Claims. (Cl. 198—34)



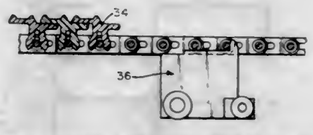
A feed device for a multiple cut saw apparatus is described. Specifically, raw wood material is dropped from a supply hopper onto an endless conveyor by a release wheel which is synchronously actuated by lugs on the conveyor.

3,416,644
ARTICLE CONVEYING APPARATUS FOR AUTOMATIC WAREHOUSING
Howard C. Blake, 23580 Norwood, Oak Park, Mich. 48237, and James F. McClelland, Jr., 40 Beacon Hill, Grosse Pointe Farms, Mich. 48236
Filed Oct. 3, 1966, Ser. No. 583,684
21 Claims. (Cl. 198—43)



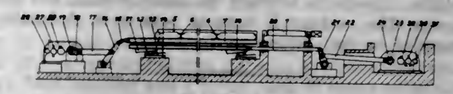
Apparatus for receiving and conveying articles stored on inclined chutes in which the articles released from the chutes are discharged onto an inclined roller conveyor and moved along the roller conveyor by pushers of an endless belt conveyor travelling along the lower side of the roller conveyor. Preferably the axes of the rollers are skewed to urge the articles against the belt conveyor and are inclined at an angle greater than the inclinations of the chutes and greater than the inclination of an apron mounted between the discharge end of the chutes and upper side of the roller conveyor. The belt conveyor pushers are of resilient construction and are operated in timed relation with the release of articles from the chutes.

3,416,645
LATERAL BEND CONVEYOR SYSTEM
Grady M. Jones, 2115 Bolden Road, Irving, Tex. 75060
Filed May 15, 1967, Ser. No. 638,332
9 Claims. (Cl. 198—181)



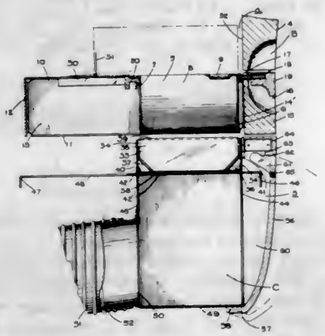
The conveyor system described herein includes a uniplanar or superposed run system having at least one lateral bend or turn therein, which includes a metal collapsible conveyor belt, extruded, plastic slat-type coverings for the metal belt having longitudinal traction ribs formed on the upper surfaces thereof, a multiplane side profile adapted to permit overlapping of adjacent slats and a generally centrally positioned annular clamp on the lower surface adapted to snap over transverse rounded rods of the collapsible belt; and at least two synchronized driving devices, including a driven drive chain carrying a plurality of drive dogs, pivoted on cross-members of the chain adjacent the forward portion of the dogs, the dogs having forward cam rollers mounted on the pivots of the dogs, rearward cam rollers mounted adjacent the trailing ends of the dogs, an intermediate upstanding pusher element adapted to engage the transverse rods of the collapsible belt and push the same along a horizontal path, and a co-operating cam of generally-elliptical shape corresponding to the shape of the drive chain but configured along its upper edge to hold the trailing cam rollers in a position whereby the pushing elements of at least two of the driving dogs are in contact with and driving at least two respective, transverse rods of the belt at all times, and whereby the pusher elements are locked into contact and out of contact with the transverse rods of the belt in an arcuate movement.

3,416,646
PROCESS FOR COOLING AND TRANSVERSE CONVEYANCE OF METAL SHEETS
Hermann Boos, Nordstrasse 30, Buderich, near Dusseldorf, Germany; Wolfgang Post, Martinstrasse 93, and Hans Malinowski, Jordanstrasse 9, both of Dusseldorf, Germany
Filed Aug. 30, 1966, Ser. No. 576,132
Claims priority, application Austria, Sept. 3, 1965, A 8,108/65; Feb. 8, 1966, A 1,139/66
5 Claims. (Cl. 198—219)



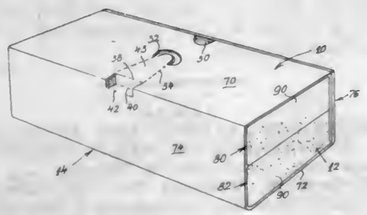
A method of and means for cooling and transversely conveying metal sheets or plates with stationary supporting gratings and with gratings that are movable in vertical and horizontal directions, wherein lifting and horizontal transporting movements of the movable transporting gratings are followed by return movements of the same extent, and wherein the horizontal return movement of the movable suppotring gratings is followed by a partial stroke, which stops the rise of the movable supporting gratings when their upper edges are flush with the upper edges of the stationary supporting gratings.

3,416,647
ASH DISPOSAL SYSTEM FOR VEHICLES
Geraldine P. Schiller, 233 S. Warson Road, and Lola S. Stutman, 215 S. Warson Road, both of Ladue, Mo. 63124
Filed Mar. 22, 1967, Ser. No. 625,258
7 Claims. (Cl. 206—19.5)



An ash tray for disposition between the dashboard and fire wall of a vehicle and adapted for rotation for discharge of its contents into an intermediate collector, with a remote collecting unit located in the engine compartment of the vehicle and connected to said collector by a conduit; there being a vacuum creating device for pulling matter from said collector to said collecting unit.

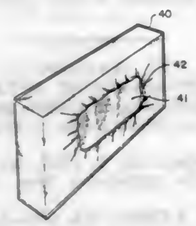
3,416,648
PLASTIC FOAM HOUSING WITH LOCK-ON COVER SLEEVE
Hans L. Levi, 888 8th Ave., New York, N.Y. 10019
Filed Oct. 4, 1966, Ser. No. 584,233
4 Claims. (Cl. 206—46)



A two-part package having an inner part of Styrofoam plastic forming a housing for supporting the contents in a fixed position and an outer wrap around cardboard carton open at both ends, with means for preventing relative movement between the inner housing and outer carton. The package is open at both ends. A handle is provided on the carton.

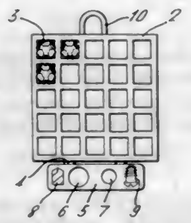
3,416,649
PACKAGES AND PACKAGING APPARATUS AND METHODS
William T. Snow, Jr., Greenville, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Application Mar. 7, 1966, Ser. No. 545,516, which is a division of application Ser. No. 254,676, Jan. 29, 1963. Divided and this application Oct. 18, 1967, Ser. No. 704,190
2 Claims. (Cl. 206—46)

The invention relates to a package that is composed of a tray-like member having a bottom, form sides and an open top which is closed by a heat shrunk film being placed over the open top sides and part of the bottom,



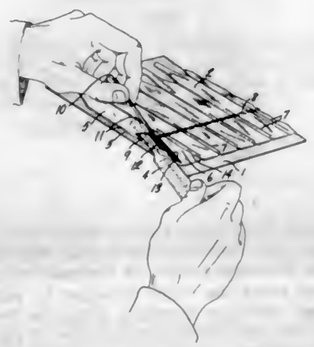
another heat shrunk film covering the part of the bottom not first covered and being shrunk around the side walls.

3,416,650
HOLDER FOR SCREW ANCHORS
Louis Ackersberg Mortensen, Kongevejen 35, Birkerod, Denmark
Filed Sept. 2, 1966, Ser. No. 576,934
Claims priority, application Denmark, Sept. 4, 1965, 4,559/65
7 Claims. (Cl. 206—47)



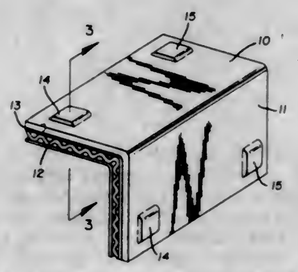
A holder for screw anchors is equipped with means for measuring the diameter of the drill and of a screw suitable to be used in connection with the screw anchors retained in the holder.

3,416,651
MULTIPLE PACK IN BAND FORM FOR PROTECTIVE SHEATHS FOR THERMOMETERS
Harry Sigurd Valdemar Järund, Otto Lindbladsvagen 18, Lund, Sweden
Filed Nov. 20, 1967, Ser. No. 684,322
6 Claims. (Cl. 206—56)



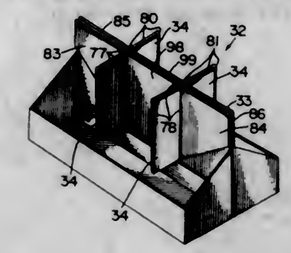
A pack of protective sheaths in band form is provided for thermometers having a thermometer cavity of greater length than that of the thermometer itself and an extension, the ends and sides of which are sealed, extending from the upper boundary of the cavity and provided with a slit therein for insertion of a thermometer into the sheath. To widen the slit for facilitating rapid insertion of the thermometer, a pulling tape common to all sheaths is arranged longitudinally between the upper and lower plastic surfaces of the sheaths during their manufacture, the tape being formed of a material which will not become welded to the strips of plastic when they are heat-sealed to form the sheath.

3,416,652
CORNER CLIP FOR USE WITH PACKAGE STRAPPING
David M. Almasy, 2233 N. Hubbard Road, Hubbard, Ohio 44425
Filed July 25, 1967, Ser. No. 655,897
4 Claims. (Cl. 206—60)



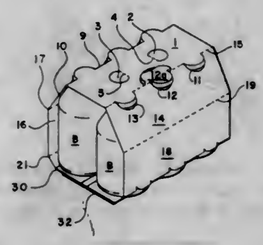
A rigid corner clip having two planar sections disposed at a 90° angle with a laminated cushioning liner material.

3,416,653
CONTAINER MEANS AND METHOD OF MAKING SAME AND BLANKS FOR MAKING SUCH CONTAINER MEANS
Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,697
17 Claims. (Cl. 206—65)



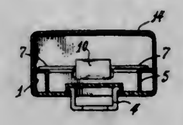
This disclosure relates to improved partitioned container means having a central vertical partition extending the full length thereof and having a plurality of transverse partition means extending transverse to such central partition in spaced apart relation and supported solely by such central partition, to an improved method wherein a simple suitably cut and scored carton having the general shape of a parallelepiped is folded in a predetermined series of steps to provide such improved partitioned container means, and to blanks for making such improved container means.

3,416,654
ARTICLE CARRIER
Lambertus Johannes van Plateringen, Wassenaar, Netherlands, assignor to The Mead Corporation, a corporation of Ohio
Filed Jan. 24, 1968, Ser. No. 700,223
8 Claims. (Cl. 206—65)



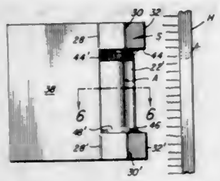
An article carrier comprising a tubular structure having top, bottom and spaced side walls arranged so that the top wall overlies a plurality of articles arranged in side-by-side relationship is arranged to accommodate an article which is taller than its fellows by providing a cover tab in the top wall of the carrier which coincides with the top of the high article and which is secured to the top wall by yieldable holding means.

3,416,655
TRAY-ENCLOSED JEWELRY BOX
Jerome Shiffman, 128 Cartage Road, Scarsdale, N.Y. 10583
Filed June 30, 1966, Ser. No. 561,841
1 Claim. (Cl. 206—75)



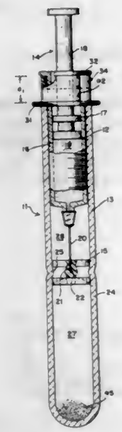
The invention provides a display box which not only incorporates a pivoted internal tray, but in which the tray is formed in a special manner, enabling the insertion of a velvet-covered type material, the box incorporating a base member and a cover, each of which at its rear flanges is provided with a channel to receive an elongated bead at the rear end of the tray, a spring-clip passing through the tray inwardly of its bead and engaging two in-cut seats provided one for the body member and one for the cover. When the cover is opened, the spring-clip holds it in such position, and when the cover is closed the spring-clip keeps it in such closed position. The bottom wall of the box base member is provided with a centrally disposed inverted protrusion, which is open at its base and has opposed side walls formed with pintle-receiving recesses adapted for a movable easel having spaced arms, each with a pintle for one of said recesses.

3,416,656
PILFER-PROOF PACKAGE
Joseph Addiego, Bayside, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1967, Ser. No. 625,750
4 Claims. (Cl. 206—78)



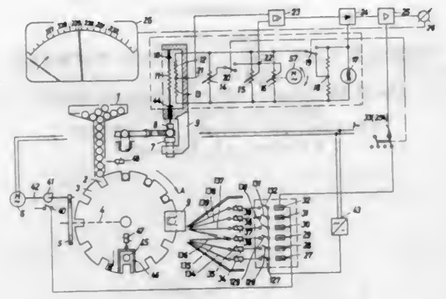
A pilfer-proof package in which a shrink film and centrally apertured panel are assembled about an article to expose the article in secured relation at the aperture.

3,416,657
SYRINGE ASSEMBLY UNIT
Cloyd J. Sorensen, Jr. and Robert E. Porter, both % Trimar Co., P.O. Box 398, Vista, Calif. 92083
Filed Mar. 27, 1967, Ser. No. 626,153
11 Claims. (Cl. 206—47)



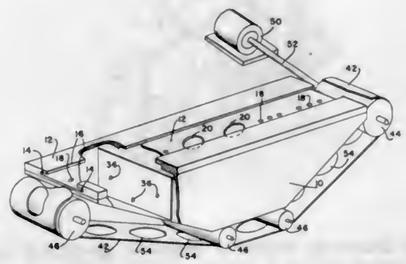
A composite packaged unit containing a syringe and two substances that are isolated from each other until the time of use comprises a tubular vial in the mouth of which the syringe is mounted with the open end of its hypodermic needle imbedded in a fixed plug that also defines an isolated mixing chamber at the bottom of the vial. The syringe is loaded with one substance, and the other substance is disposed in the mixing chamber. A special removable holding collar arrangement maintains the syringe and vial in the foregoing relation in the package. After removal of the holding collar, the syringe can be advanced further into the vial to project the needle tip through the plug and enable discharge of the entire syringe contents into the mixing chamber and, after mixing, withdrawal of all of the mixture into the syringe. Now the syringe is pulled out of the remainder of the package and is ready for use.

3,416,658
PROCESS OF AUTOMATICALLY PERFORMING LENGTH MEASUREMENTS AND SELF-CALIBRATING MEASURING AND SORTING APPARATUS FOR CARRYING OUT THE PROCESS
Walter Goller, Hammerlestrasse 39, Feldkirch-Gisingen, Austria; and Karl Max Harder, Bannholzstrasse 277, and Werner Haechler, Lett, both of Vaduz, Liechtenstein
Filed Apr. 27, 1966, Ser. No. 546,160
17 Claims. (Cl. 209—73)



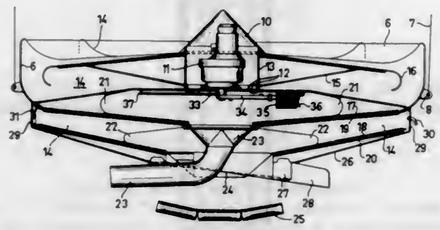
A process and an apparatus for automatically performing length measurements on test specimens in apparatus comprising a gauge gap which has an abutment at one end and a sensing head having a feeler at the other end, the feeler being movable and constituting a variable element of a compensating electric network. The test specimens are moved through the gauge gap and a master specimen is moved through the gauge gap. The difference between the dimensions of each test specimen and the corresponding dimension of the master specimen is measured and a reference value is determined. The master specimen is moved through the gauge gap again and the reference value is automatically readjusted stepwise and in dependence upon the differences between the results of repetitive measurements.

3,416,659
CAN TESTING
Garrett B. Linderman, Washington, D.C., and Harry T. Gibson, Gaithersburg, Md. (both % Linderman Engineering Co., Inc., 8814 Brookville Road, Silver Spring, Md. 20910)
Filed Mar. 31, 1967, Ser. No. 627,454
10 Claims. (Cl. 209—111.7)



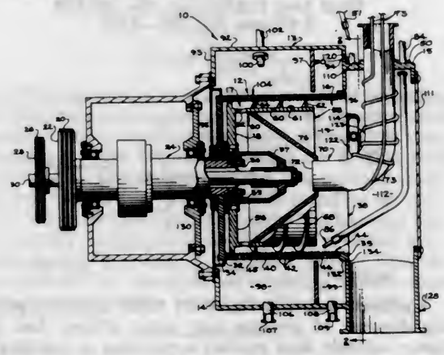
A casing traversed by an endless belt containing openings with which cans to be tested are registered and suitable hold-down means is provided to maintain the cans in light-tight relationship with the belt so that when light is directed upon the external surfaces of the cans, due to the reflective properties of the can surfaces, and the spacing between adjacent cans, light will be imposed upon the entire outer surfaces of the cans so that it will pass through the can wall should there be a pin hole present, to energize a photosensitive device disposed on the opposite side of the belt from the cans themselves. By means of a pulse generator driven in synchronism with the belt and signals from the photosensitive device or devices, a shift register is actuated so that any can containing a pin hole will be rejected at a point downstream from the inspection station.

3,416,660
SCREENS, PARTICULARLY FOR WOOD CHIPS
John Larsson, Bromma, Sweden, assignor to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden
Filed Sept. 2, 1966, Ser. No. 577,073
Claims priority, application Sweden, Sept. 10, 1965, 11,825/65
9 Claims. (Cl. 209—254)



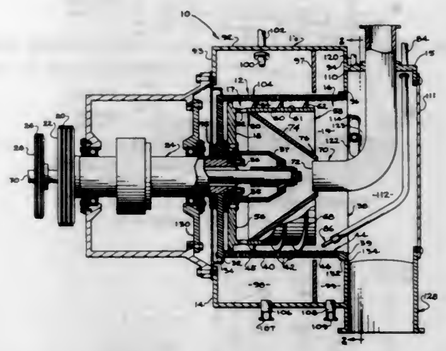
Screening apparatus having a casing flexibly suspended from an overhead support and supporting a plurality of removable screen sections arranged in annular array. A motor with an eccentric mass distribution is supported in the casing for producing a generally planar vibratory motion of the screen while the latter is retained against rotary motion.

3,416,661
METHOD OF CENTRIFUGALLY SEPARATING ICE CRYSTALS FROM AN AQUEOUS SOLUTION
Neophytos Ganiaris, Riverdale, N.Y., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 511,951, Dec. 6, 1965. This application Oct. 25, 1966, Ser. No. 589,458
1 Claim. (Cl. 210—78)



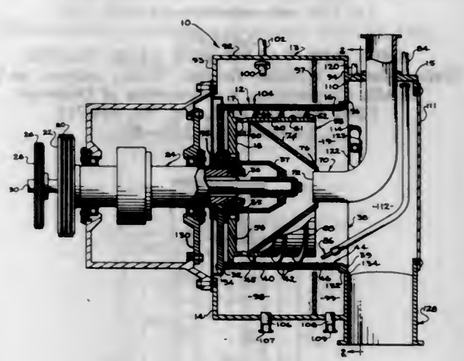
An improved method for contrifugally separating ice crystals from an aqueous solution wherein ice build-up on the exterior surface of the feed conduit and on the interior surface of the centrifuge housing is prevented by heating these surfaces above 32° F.

3,416,662
CENTRIFUGAL ICE WASHING METHOD
Robert H. Hedrick, Warren, Pa., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 510,185, Nov. 29, 1965. This application Dec. 1, 1966, Ser. No. 598,517
1 Claim. (Cl. 210—78)



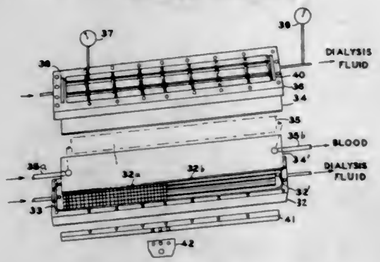
There is provided a method of washing ice in the basket of a centrifuge comprising (a) directing a first aqueous wash fluid within said basket both radially downward, and outward and also axially tangentially against a cake of ice advancing axially along the inside of a perforate rotating centrifuge basket from an inlet for slurry to a discharge outlet for ice; (b) intermittently directing a second wash fluid against the outside of said basket; and (c) collecting and recovering said fluid after separating the ice therefrom.

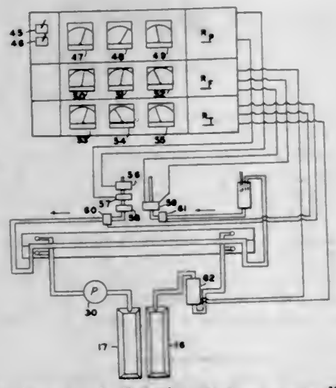
3,416,663
PROCESS FOR MAINTAINING A PERFORATED BASKET CENTRIFUGE FREE OF BASKET PLUGGING
John G. Muller, Scarsdale, and Neophytos Ganiaris, New York, N.Y., assignors to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 510,184, Nov. 29, 1965. This application Dec. 1, 1966, Ser. No. 598,518
1 Claim. (Cl. 210—78)



A method of maintaining a centrifuge basket free of plugging of the perforations therein by applying a spray of heated wash liquid to the external surface of the basket.

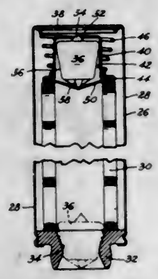
3,416,664
ARTIFICIAL KIDNEY
Herman L. Kumme, 2312 Walnut Lane, Arden, Del., and John F. Lontz, 515 Eskridge Drive, Wilmington, Del. 19809
Filed Nov. 16, 1964, Ser. No. 411,206
2 Claims. (Cl. 210—87)





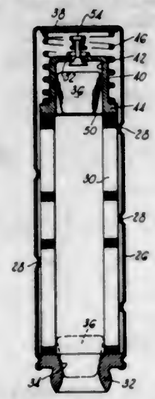
An integrated dialyzing system controlling pressure, temperature and flow of blood flowing in the system. The blood is passed between semi-permeable membranes and the dialyzing solution is passed on the outside of the membranes. The dialyzing solution is passed through in the system only once and then discarded. This permits optimum control of the purity and composition of the dialyzing solution. The system is flexible and the temperature, pressure, and flow can be read and controlled or not controlled independently as desired. These controls may be manual or automatic as desired.

3,416,665
SHUT-OFF VALVE FOR FUSE FILTER
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,711
8 Claims. (Cl. 210—96)



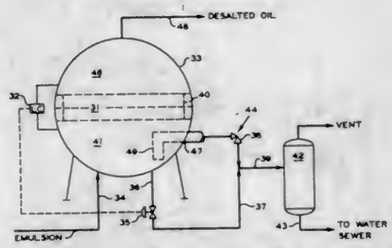
A positive shut-off valve for interrupting the flow of fuel through a fuse filter element of a fuel monitoring device in the event such fuel contains free water. The shut-off valve is responsive to the pressure differential across the fuse element, and is releasably confined at the end opposite the outlet port by a resilient member, such as a flexible diaphragm or a prong-type spring. The shut-off valve also incorporates a pilot or trigger valve control for actuating the shut-off valve.

3,416,666
SHUT-OFF VALVE FOR FUSE FILTER
Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,712
5 Claims. (Cl. 210—96)



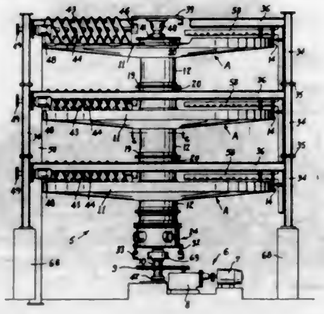
A positive shut-off valve for interrupting the flow of fuel through a fuse filter element of a fuel monitoring device in the event such fuel contains free water. The shut-off valve member is confined at the end opposite the outlet port by a non-resilient thin disc-type shear diaphragm which ruptures when the pressure differential across the fuse element exceeds a predetermined value and is permitted to act on the diaphragm. A poppet-type trigger valve prevents the full differential pressure from acting on the diaphragm until the predetermined value is exceeded.

3,416,667
PRESSURE RELIEF SYSTEM
John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,519
3 Claims. (Cl. 210—104)



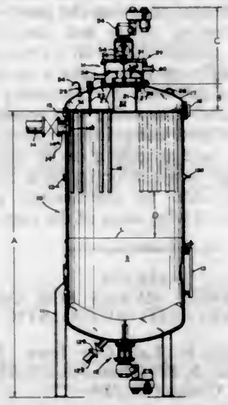
A pressure vessel and pressure relief apparatus permitting disposal of pressure and water without loss of a lighter valuable fluid product comprising in combination a closed vessel, interface control means, pressure relief conduit means, discharge outlet conduit, pressure valve, and a T or similar joint so positioned to permit a substantially continuous discharge of fluids to communicate with said valve to prevent the freezing of fluids in said relief system.

3,416,668
TABLE FILTER WASHER
Derek Gordon Lobley, St. Bruno, Quebec, Canada, assignor to D. & S. Engineering International Limited, Montreal, Quebec, Canada, a Canadian company
Continuation of application Ser. No. 377,006, June 22, 1964. This application Aug. 23, 1967, Ser. No. 662,835
3 Claims. (Cl. 210—203)



A rotatable table-type pulp thickener unit vertically stacked and readily extended to increase total capacity.

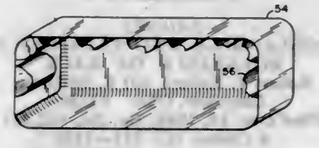
3,416,669
FILTER BACKWASH MEANS
Peter J. Hubbard, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Apr. 7, 1967, Ser. No. 629,288
11 Claims. (Cl. 210—333)



In a filter apparatus wherein plural groups of depending filter tubes have their upper ends connected to corresponding plural filtrate receiving chambers; a backwash valve comprising a valve housing supported on a valve plate and divided by a transverse partition into an upper backwash feed chamber and a lower filtrate receiving chamber, and a rotary valve member having a cylindrical neck portion centrally seated in the partition and a hollow body portion having a bottom in operating contact with the valve plate and an outlet portion extending radially from the body portion with a bottom co-planar therewith.

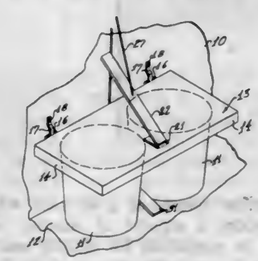
3,416,670
SMALL ARTICLE HOLDER
Guy A. Turner, 8410 Sunrise, La Mesa, Calif. 92041
Filed Oct. 14, 1966, Ser. No. 586,802
5 Claims. (Cl. 211—60)

An automobile glove compartment having a plurality of pockets secured to the upper and side surfaces of the compartment for carrying small articles or the like and



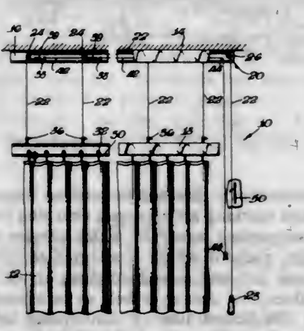
which pockets project only slightly inwardly into the volume of the compartment.

3,416,671
GARBAGE CAN COVER
Johnson T. Morgan, Rte. 13, Box 1190, Birmingham, Ala. 35216
Filed Dec. 11, 1967, Ser. No. 689,593
6 Claims. (Cl. 211—83)



A garbage can cover of a size to extend over and engage at least one garbage can with one side of the cover being pivotally supported for movement selectively to open and closed position. The lower end of an upwardly inclined elongated member is pivotally connected to the cover with the upper end of the elongated member extending toward and adapted to engage a supporting structure to retain the cover in closed position. A retainer element is carried by the upper end of the elongated member and releasably engages a support element carried by the supporting structure to hold the cover in open position.

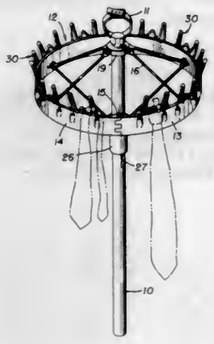
3,416,672
ARRANGEMENT FOR HANGING CURTAINS
Betty Kohaut, Geisenheimer Strasse 133, Frankfurt am Main-Schwanheim, Germany
Filed Dec. 13, 1966, Ser. No. 601,417
Claims priority, application Germany, Dec. 27, 1965, F 48,005
3 Claims. (Cl. 211—103)



An arrangement for hanging curtains including a movable curtain rod having a guide track, and an assembly

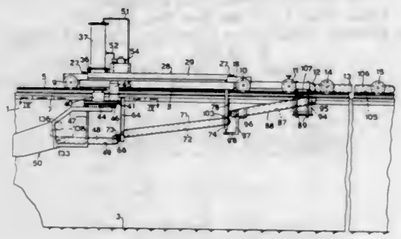
for lowering the rod from its normal position to facilitate securing a curtain to the track.

3,416,673
COLLAPSIBLE AND EXPANSIBLE ROTATABLE TIE RACK
Robert T. Ballard, 401 E. Main St., Lancaster, Ohio 43130
Filed Dec. 19, 1966, Ser. No. 602,981
4 Claims. (Cl. 211—115)



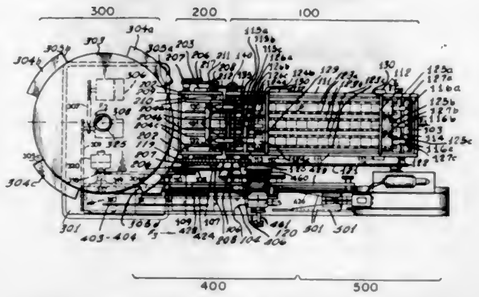
This invention relates to a tie rack which, when expanded, provides a support of annular form on which the ties can be supported for display and ready access. The support is rotatably mounted to facilitate access to and selection of a particular tie when the device is expanded. The device can be collapsed readily so that it will occupy less area for the purpose of saving space in a closet or cabinet in which it is supported or to facilitate packing.

3,416,674
DEVICE FOR ARRANGING AND STACKING OBJECTS ON A CHARGING FLOOR
Emmanuel Gualandris, Via A. Ressi 17, Milan, Italy, and Heinz Wilhelm Hessling, Oststrasse 41, Beckum, Germany
Filed Nov. 7, 1966, Ser. No. 592,417
Claims priority, application Italy, Nov. 9, 1965, 10,976/65
12 Claims. (Cl. 214—6)



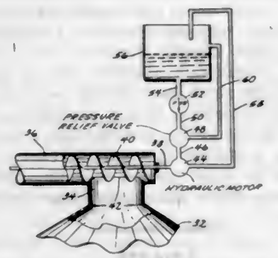
This invention is directed toward an apparatus for arranging and stacking articles on a charging floor and comprises a supporting structure which carries a set of conveyor belts, each of which is adapted to receive said articles at one end and to unload them at the opposite end onto a subsequent conveyor belt so as to make up a continuously interlinked line of conveyance of the articles from a loading spot to an unloading spot and a loader-stacker arranged at the unloading end of the ultimate conveyor belt.

3,416,675
MACHINE FOR AUTOMATICALLY PACKING THINGS IN OVERLYING TIERS
Edgar Jean Marcel Dardaine, and Jean-Luc Berry, Poissy, France, assignors to E. P. Remy et Cie, Dreux, Eure-et-Loir, France, a company of France
Filed Nov. 2, 1966, Ser. No. 591,461
Claims priority, application France, Jan. 4, 1966, 44,816
39 Claims. (Cl. 214—16.4)



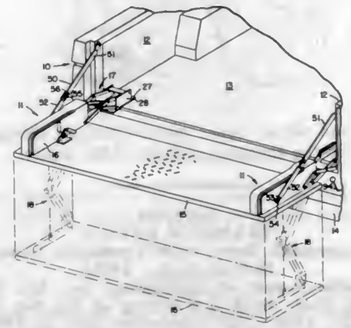
A machine for automatically selecting, stacking in overlying relationship and then packing articles such as pots of yogurt and the like, comprising in combination an arranging device receiving the pots and like articles all lying on a same level and aligned in a number of parallel rows, said arranging device comprising means for driving said rows of pots in translation and selecting among these rows a constant number of pots so as to deliver them in groups containing a same number of pots; a rotary distributor receiving the groups of pots delivered by the arranging device and comprising means for collecting these groups of pots on a constant level and carrying them to different levels, and a device receiving the groups of pots delivered by the rotary device and comprising means for superposing said groups of pots so as to form a set of pots comprising a plurality of overlying rows of pots, said arranging device and rotary distributor being driven in synchronism by a common driving mechanism in order to continuously perform the successive automatic driving steps of the pots.

3,416,676
HYDRAULIC POWER MEANS FOR CONVEYORS AND THE LIKE WITH AUTOMATIC SHUTOFF MEANS
Karl W. Nolin, Jr., Lake City, Iowa 51449
Filed Mar. 3, 1966, Ser. No. 531,714
1 Claim. (Cl. 214—17)



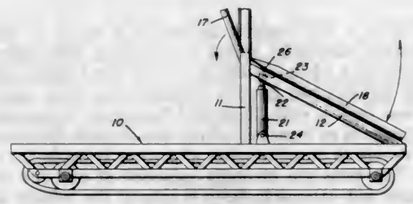
A hydraulic power means for conveyors and the like having a hydraulic power means operatively connected to a power shaft and in communication with the upper end of a storage compartment, and control means on the hydraulic power means adapted to de-energize the power means when reverse torque of predetermined magnitude is imparted thereto.

3,416,677
TAILGATE LIFT DEVICE
Duane R. Abfalter, 19275 Arnold Drive, Sonoma, Calif. 95476
Filed June 3, 1966, Ser. No. 555,040
15 Claims. (Cl. 214—75)



A tailgate lifting device attachable to a truck type vehicle as by a pair of housing members hingedly attached to the vehicle at each side. Suspended from each housing member is a parallel linkage and a platform is supported between linkages. The linkages are capable of extension to a level below the bed of the vehicle and retraction at which time the platform is at the level of the vehicle bed. The housing members are of such dimension as to house the linkages when in retracted position.

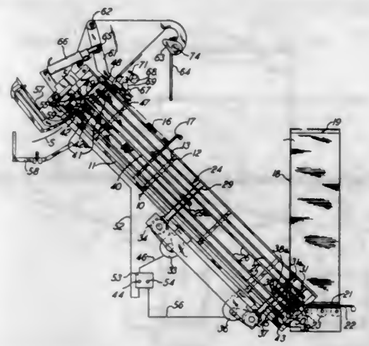
3,416,678
SIDE UNLOADING DEVICE FOR LOGS
Joseph E. Blonsky, Summerville, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,601
4 Claims. (Cl. 214—82)



A pivotable device for sidewise unloading of logs being trailed by a vehicle having support means for the device, comprising a diagonally aligned lifting arm that traverses the load area, a vertically aligned retaining arm, the arms being rigidly joined together and pivotably attached to the support means at the juncture, and a means for pivoting the arms that raises the lifting arm to approximately 45° above the pivot axis.

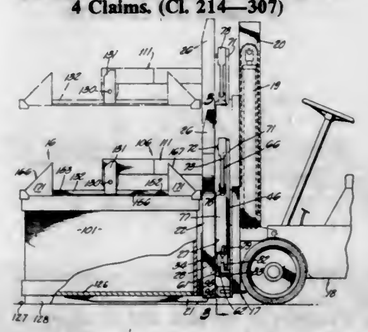
3,416,679
SIGNATURE FEEDER
Anton R. Stobb, Pittstown, N.J., assignor to Stobb, Inc., Mountainside, N.J., a corporation of New Jersey
Filed Jan. 16, 1967, Ser. No. 609,610
9 Claims. (Cl. 214—8.5)

A signature feeder is provided with a conveyor which engages and moves a stack of signatures into position for a gripper to take the signatures separately from the stack and to place them on a collector chain or the like. Automatically operated switches are provided for both moving the stack upwardly to feed it to the gripper, and for removing a support plate at the base of the stack. The operator need not manually attend to these functions. The relationship between the length of the conveyor and



the length of the stack of signatures is such that when a first stack is partially exhausted, a next stack can be placed onto the lower end of the conveyor. The conveyor operates at speeds and is controlled so that the second stack will then be moved into end contact with the support plate of the first stack. and the entire feed of the signatures of the two stacks to the gripper is continuous and automated.

3,416,680
BIN TURNING ATTACHMENT FOR FORK LIFT VEHICLE
Martin Tomasovich, Rte. 1, Box 26, Live Oak, Calif. 95953
Filed Mar. 13, 1967, Ser. No. 622,806
4 Claims. (Cl. 214—307)

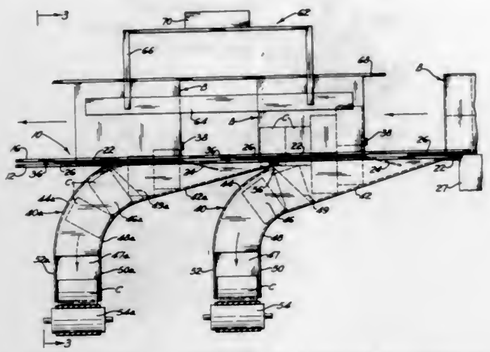


The disclosure comprises a framework attachable to the vertically movable carriage of a fork lift vehicle. Projecting forwardly from the framework are bin-supporting forks, the top of the bin being engaged by a vertically movable bin-clamping member enabling the bin to be inverted and the contents poured out as the framework is rotated about a fore and aft axis.

3,416,681
CAN SORTING APPARATUS
Warren J. Robicheaux, Port Arthur, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1967, Ser. No. 613,029
12 Claims. (Cl. 214—308)

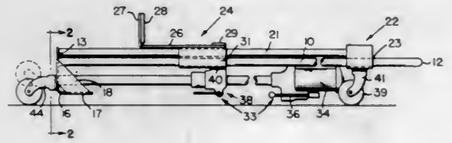
Apparatus for unloading a plurality of similar articles from containers open on one end in which the ar-

ticles are packed in orderly rows, wherein the container is held by its side flaps in guide rails and moved, upsidedown, across a number of article pick-up stations equal to the number of layers of articles in the height of the container. Each pick-up station comprises a sloped



bottom wall down which the articles slide as the container moves across the station, and a divider which insures that the bottommost layer only is directed into that pick-up station, and that all subsequent layers are directed to subsequent pick-up stations.

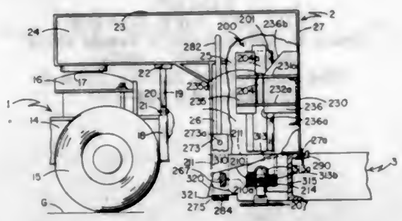
3,416,682
COMBINATION LIFT TRUCK, HAND TRUCK AND FLOOR DOLLY
Dominick L. Pezzuti, 320 Robble Ave., Endicott, N.Y. 13761
Filed Oct. 3, 1966, Ser. No. 583,711
6 Claims. (Cl. 214—370)



The improvement in a versatile, multipurpose combination lift truck, hand truck, and floor dolly including a frame, a support or lift plate and an upper set of casters characterized in that a lower set of swivel mounted casters are positioned such that the casters (1) extend beyond the lower end of the frame for use of the truck in an upright position and also (2) extend beyond the bottom of the truck for cooperation with the upper set of casters for use of the truck in a horizontal position. Locking means are provided for locking the lower set of casters in either of two positions; the locking means can also be disengaged to allow free 360° swivel action of the lower set of casters.

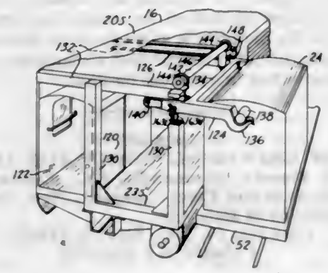
3,416,683
DETACHABLE LOW BED TRAILER
Richard D. Tracey, 5 Butler Ave., Lexington, Mass. 02173
Filed Aug. 8, 1966, Ser. No. 571,089
1 Claim. (Cl. 214—506)

A detachable low bed trailer of the type described in U.S. Patent 2,934,230 is described having improved flexibility for loading on uneven surfaces such as rough roads. A guiding means is provided whose lower portion is



vertical and whose upper portion permits tilting of the cylinder on the engaging element of the trailer.

3,416,684
TRANSFER DEVICE
Leonard D. Barry, 19300 Pennington Drive, Detroit, Mich. 48221
Continuation-in-part of applications Ser. No. 422,988, Jan. 4, 1965, which is a division of Ser. No. 714,453, Jan. 27, 1958. This application Jan. 9, 1967, Ser. No. 607,962
8 Claims. (Cl. 214—516)

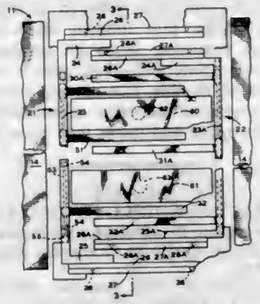


This is a side transfer device for a cargo or transfer container especially suited for loading and unloading railway cars while moving in a train The transfer mechanism includes two parallel transfer arms fully supported by one vehicle only, to extend therefrom to transfer the container to or from the vehicle and controls for operating the device to transfer when alignment is made for transfer. The arms are pivotally mounted at one end on the vehicle and extensible from a side of the vehicle to lift, lower and transfer the container from that side of the vehicle. There are two arms, one for supporting each end of the container. The arms have lifting ends which interfit with a portion of the container to prevent the container from jumping off of the arms during transfer. The arms are controlled by light beams directed at photoelectric cells on the transfer vehicle when in alignment for transfer.

3,416,685
TRANSFER DEVICE WITH INDEPENDENTLY MOVABLE LOAD SUPPORTING MEANS
Mihai Alimanestianu, Nyack, N.Y., assignor to Speed-Park, Inc., New York, N.Y., a corporation of New York
Filed Dec. 12, 1967, Ser. No. 690,002
6 Claims. (Cl. 214—730)

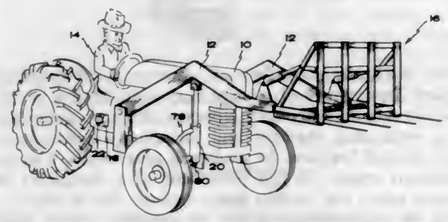
Transfer apparatus including finger means arranged for relative movement to engage and cradle objects of

varying dimensions and contours, together with means for projecting and retracting the finger means relative to



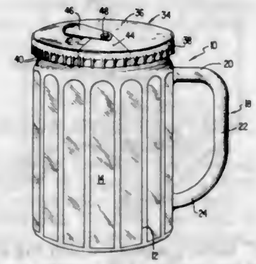
an object supporting surface to deposit the engaged and cradled object on such surface or to remove it therefrom.

3,416,686
HAYSTACKER
Lloyd Penrod, Box 5, Goshen, Utah 84633
Filed Dec. 2, 1966, Ser. No. 598,869
10 Claims. (Cl. 214—778)



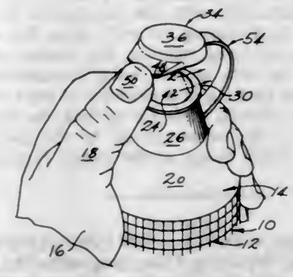
A baled haystacker, to be used with a vehicle having load elevation equipment, which comprises a bale aligning face connected to the load elevating equipment and bale support fingers attached to the aligning face proximate its bottom edge and positioned substantially perpendicular to said aligning face. The support fingers are adapted to move outwardly away from the aligning face and inwardly to a position behind said face. The aligning face can be pivotally connected to the load elevating equipment for adjusting the position of support fingers when the haystacker is raised and lowered.

3,416,687
CONTAINER
Fabian Arnaud, Condesa 6—703, Mexico City 1, Mexico
Filed Sept. 19, 1966, Ser. No. 580,485
1 Claim. (Cl. 215—39)



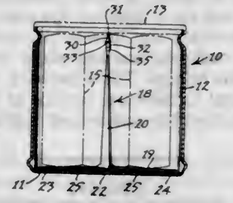
A mug container for holding liquids and a crown type cap therefor sealingly to close the mouth of the mug and allow transportation and storage of the liquid material within the mug.

3,416,688
BAIT CONTAINER
Joseph S. Fanning, Atlanta, Ga. (% Southern Manufacturing Co., Duluth, Ga. 30136)
Filed July 29, 1966, Ser. No. 568,897
5 Claims. (Cl. 215—41)



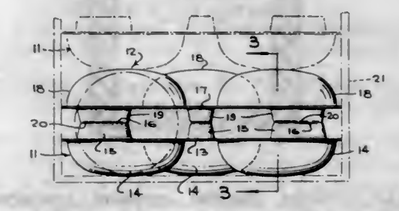
A cricket or bug container of the sort which is used by fishermen and others to keep live bait for selective use during fishing and the like, having an open top through which the bait is inserted and removed usually with one hand and on which top there is a pressure-fitted closure retained in place by a bendable member which is sufficiently rigid to resist substantial displacement of the closure and to help align it for manipulation by one hand.

3,416,689
CONTAINER CONTENTS EXTRACTOR
Ronald N. Greenfield, 2516 Gallatin Road, Nashville, Tenn. 37206
Filed May 29, 1967, Ser. No. 642,057
3 Claims. (Cl. 215—100)



An extractor for the contents of a container having a base and an upright stem, the upper end of the stem being enlarged to provide a finger grip and pointed to pierce the contents.

3,416,690
PACKING TRAY
Joe W. Michael, 1 Earring Point, Orchid, Fla.
Filed Jan. 5, 1967, Ser. No. 607,524
1 Claim. (Cl. 217—26.5)



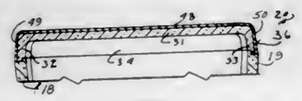
A packing tray comprising a lower section including a base portion having a plurality of depressions opening

upwardly for receiving and supporting objects to be held in the tray, said base portion having a plurality of upwardly projecting load bearing elements, an upper section including a base portion adapted to overlie the lower section having a plurality of depressions registerable with the depressions in the lower section when the sections are disposed in overlying relation whereby the depressions in the upper section open downwardly for receiving and forming a cover over the objects supported in the lower section, the second section having a plurality of depending elements registerable with and engageable in seating relation on the load bearing elements when the sections are disposed in overlying relation, the bottom walls of the depressions in each section being substantially flattened to facilitate stacking of a plurality of trays whereby when a plurality of such trays are stacked, the weight of the upper trays is supported entirely by the lower trays thus preventing injury to any of the objects carried in the trays.

3,416,691
THERMALLY INSULATED CONTAINER

Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio

Filed June 23, 1965, Ser. No. 466,230
2 Claims. (Cl. 220—9)

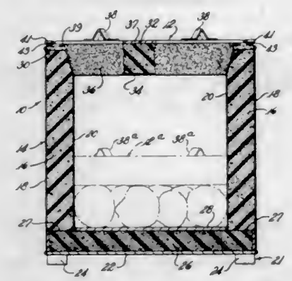


The containers of the present invention are formed of expansible polystyrene foam particles resulting in the containers having relatively thick bottom, cover and spacing walls between said bottom and cover with the outer surfaces of said container bottom, top and separating walls quite soft and capable of deformation and bruises. The application of a relatively hard polystyrene sheet to the chest bottom and for a distance upwardly of said bottom to act as a kick-strip and thereby prevent damage to the chest bottom outer surface and walls outer surface upwardly from the bottom. The adherence of a similar hard polystyrene sheet to the outer surface of the cover avoids damage to the cover top surface and depending walls outer surface.

3,416,692
SHIPPING CONTAINER

Delbert Charles Cline, San Pedro, and George Bowman Harr, Pasadena, Calif., assignors to The Firestone Tire & Rubber Company, Akron, Ohio

Filed July 1, 1964, Ser. No. 379,495
5 Claims. (Cl. 220—9)

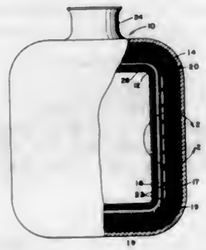


1. An insulated shipping container comprising a rigid base, wall means supported on said base, and an insulated cover cooperating with said wall means, said base, wall means and cover together forming an insulated storage compartment, said wall means comprising a foamed, resilient, flexible, elastomeric, open-cell insulating member enclosed between substantially fluid-impervious coverings, said foamed material having an elastic memory returning it to its original configuration upon release from distortion, said base comprising a foamed, resilient, flexible, elastomeric, open cell insulating member laminated between substantially rigid and fluid-impervious upper and lower face coverings.

3,416,693
REFRIGERATION SHIELDED DEWAR VESSEL

George D. Covington, Broomfield, and James R. De Haan, Boulder, Colo., assignors to Cryogenic Engineering Co., Denver, Colo.

Filed Dec. 7, 1966, Ser. No. 599,902
12 Claims. (Cl. 220—9)

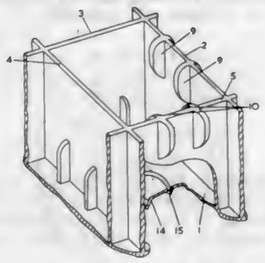


The disclosure describes an improved refrigeration-shielded Dewar type of storage container. That is a container having an inner wall separated from an outer wall by an evacuated chamber and including a refrigeration shield located between the inner and outer walls. The improvement resides in the placement of a laminated insulation about the vessel's inner wall so that it does not touch the refrigeration shield. A structure which yields particularly good results is described as having an inner wall emissivity of greater than about 0.015; an inner laminate comprised of nylon or terepthalic ester polymer fibers having diameters greater than about 10 microns; and an effective thermal conductivity across the inner laminate of less than about 10×10^{-6} B.t.u./hr.-ft. ° R.

3,416,694
BOTTLE CRATES

Richard Hodson Bebb, Wilmslow, England, assignor to Rolinx Limited, Lancashire, England

Filed Aug. 4, 1967, Ser. No. 658,429
Claims priority, application Great Britain, Aug. 13, 1966, 36,335/66
8 Claims. (Cl. 220—21)

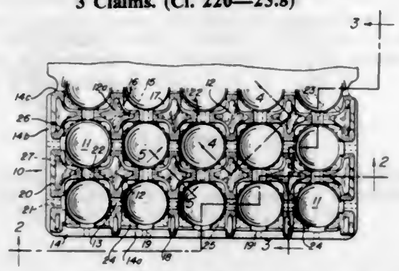


"Half-height" bottle crates in which the centres of the spaces provided for receipt of the bottles are off-set at the upper part of the crate relative to the lower part of the crate.

3,416,695
TRAY CONSTRUCTION

Clifford H. Bessett, South Holland, Ill., and James W. Boyd, Crown Point, Ind., assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed Oct. 28, 1966, Ser. No. 590,270
3 Claims. (Cl. 220—23.8)

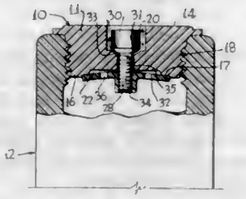


1. A molded tray for accommodating a plurality of articles, comprising a plane of reference, shallow pockets depending from said plane of reference and arranged in a plurality of spaced rows, and hollow posts extending upwardly from said plane of reference, a substantially greater distance than said pockets depend from said plane, said posts being arranged in substantially delimiting relation with respect to but spaced from the upper extremities of said shallow pockets and forming a plurality of plateaus symmetrically arranged with respect to the upper extremities of each pocket; portions separating adjacent posts and disposed within said plane of reference, said portions having elongated projections depending from said plane of reference and interconnecting adjacent pockets of a row.

3,416,696
SELF-VENTING CLOSURE

Theodore G. Alteneder, Jr., Hatboro, Pa., assignor to Theodore Alteneder and Sons, a corporation of Pennsylvania

Filed Dec. 28, 1967, Ser. No. 694,210
5 Claims. (Cl. 220—44)



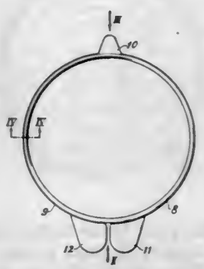
A closure device for sealing an opening in a container includes a screw element normally biased by a flexible disc element to provide a seal. When the internal pressure within the container exceeds a predetermined level, the screw element is forced out of sealing engagement to permit a venting action.

3,416,697
PACKAGE AND REMOVABLE COVER THEREFOR

Andrzej Wojciech Ledzion, La Tour-de-Peliz, Switzerland, assignor to Alupak A.G., Bern-Bumpliz, Switzerland, a corporation of Switzerland

Filed Oct. 27, 1966, Ser. No. 590,074
Claims priority, application Switzerland, May 10, 1966, 6,811/66
9 Claims. (Cl. 220—54)

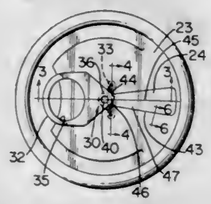
A package composed of a container and a cover having a tear-strip structure for releasing the cover. The cover rests on a lip at the open top of the container and has a pair of tear-strip means which extend along the outer periphery of the cover and are detachably connected thereto. This pair of tear-strip means respectively extend in non-overlapping relation along different peripheral portions of the cover, and the pair of tear-strip means have a total length which is at least slightly less than the length of the outer periphery of the cover. A lift tab is integral with the cover and extends from the periphery thereof between the pair of tear-strip means so that when the latter are removed the lift tab can be manipulated to remove the cover from the container.



3,416,698
OPENING MEANS FOR A CONTAINER

Horst F. W. Arfert, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,747
14 Claims. (Cl. 220—54)



This disclosure relates to easy-open opening means for outside wall means of container means wherein substantially constant depth score means is provided in such wall means to define a substantially elongated tearout strip which provides a dispensing opening for such container means and such wall means has reinforcing means across one end portion of such tearout strip which prevents blowout of such tearout strip in the event of high pressure in such container means, to an apparatus for and method of making such opening means, and to blanks for making same.

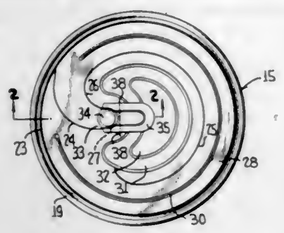
3,416,699
VENTED EASY OPENING CAN

John S. Bozek, Chicago, Ill., assignor to Continental Can Company, New York, N.Y., a corporation of New York

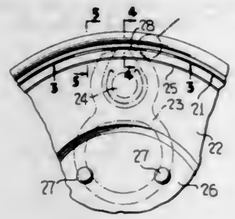
Continuation of application Ser. No. 410,868, Nov. 13, 1964. This application Sept. 5, 1967, Ser. No. 665,642
15 Claims. (Cl. 220—54)

This disclosure has to do with a can end which is particularly adapted to be utilized in conjunction with a can in which a product is packaged at a pressure other than atmospheric pressure. The can end is provided with a removable panel portion to which a pull tab is attached at one end thereof for effecting the rupture of

the can end and the tearing out of the removable panel portion. A portion of the can end which is stressed, but normally not ruptured in the opening of the can is provided with a weakening line so as to effect an initial rupture of the can end prior to the rupture thereof along the periphery of the removable panel portion whereby equalizing of the pressure within the can with atmospheric pressure will be effected before the can end is ruptured in the removal of the removable panel portion.



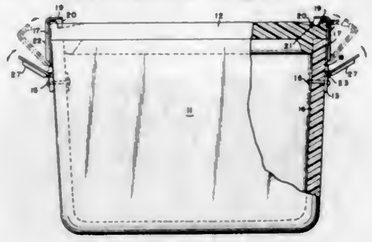
3,416,700
SAFETY DEVICE FOR EASY OPENING CONTAINER ENDS
John C. Jasper, Hinsdale, and Albert J. Holk, Frankfort, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 25, 1967, Ser. No. 678,087
10 Claims. (Cl. 220—54)



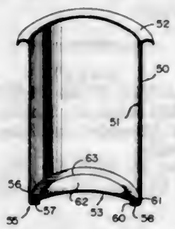
This disclosure relates to easy opening container ends of the type having a removable panel portion defined by a score line. The purpose of the invention is to prevent the sudden catastrophic implosion or explosion of container ends while being opened and subjected to varying degrees of pressure or vacuum. This failure is prevented by limiting the crack propagation along the score line to an area large enough to allow a gradual pressure equalization of the container and specifically includes two areas of different score residuals.

3,416,701
COMBINED LATCH AND HANDLE
Sol Kramer, Baltimore, Md., and Charles Gretz, Los Angeles, Calif., assignors to Life-Like Products, Inc., Baltimore, Md., a corporation of Maryland
Continuation-in-part of application Ser. No. 524,674, Feb. 3, 1966. This application Nov. 22, 1967, Ser. No. 690,693
14 Claims. (Cl. 220—55)

A combined lid latch and handle is provided for a portable chest, such as a picnic or camping chest, that has a wall structure surmounted by a lid. The device comprises a plate with means for attaching it to the wall structure below the lid. Extending upwardly from the plate and integral with it is a relatively narrow strip, the upper end of which is bent inward to form a hook for engaging the lid. The strip is stiffened by a longitudinal ridge and the tip has an enlarged area to engage a corresponding depression of the lid. At the juncture between the strip and the plate a groove is provided defining a hinge line thereby permitting the strip to be hinged into and out of engagement with the lid. Two forms of the invention are described. In one form the plate is simply provided with holes for attaching it to the wall structure by conventional means, such as rivets. In another form, the plate is provided with tubular projections that fit in holes of the wall structure. Grooved studs on another plate are inserted in these tubular projections and means are provided for snap engaging the studs with the tubular projections.

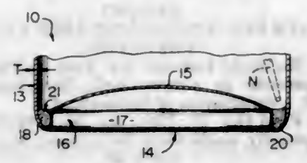


3,416,702
REINFORCED METALLIC CONTAINER
James R. Hoenig, Tinley Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 13, 1966, Ser. No. 549,907
2 Claims. (Cl. 220—70)



This disclosure relates to a one-piece extruded metallic container having reinforcing means at a juncture of the container body and an integral end closure, the reinforcing means being defined by three annular layer portions disposed in generally parallel relationship to each other and housed completely radially inboard of the container body outer circumference.

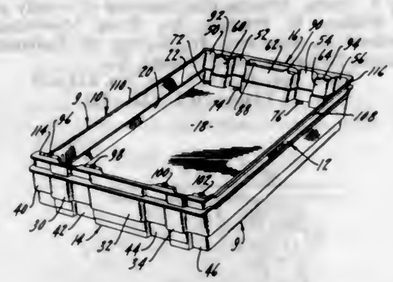
3,416,703
REINFORCED CONTAINER
Louis J. Chmielowiec, South Holland, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 24, 1966, Ser. No. 529,777
9 Claims. (Cl. 220—73)



This disclosure is directed to drawn, extruded, blow molded or similar containers in which a juncture portion

uniting an end to a container body is undesirably weakened by the flow of the material from which the container is constructed during the manufacture thereof. The invention provides a reinforcing of such containers by the application of reinforcing means consisting solely of a layer of adhesive which is adhesively compatible with the material of and adhesively bonded to the juncture portion for reinforcing the latter. The reinforcing means is preferably thermosetting cement which is adhesively compatible with the container and is non-reactive with a product adapted for packaging therein.

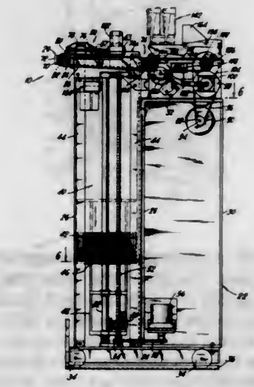
3,416,704
CONTAINER
Allen H. Frater, Watertown, Wis., assignor to G. B. Lewis Company, Watertown, Wis., a corporation of Wisconsin
Filed Sept. 29, 1966, Ser. No. 582,835
10 Claims. (Cl. 220—97)



A container for nesting and stacking both in line and offset relative to other similar containers. The container has convolutions in its end walls with saddles formed on the tops of the inward convolutions and seats formed on the bottoms of the outward convolutions which saddles and seats of similar containers fit into one another for stacking of the containers. The saddles are positioned at least as high as the top surfaces of the side walls, if side walls are provided, so that similar containers can be stacked offset to one another and at an angle to a supporting surface. For interlocking of the stacked containers, complementary projections and recesses are formed on the saddles and adjacent the seats.

3,416,705
TICKET DISPENSER WITH AUTOMATIC FEED AND SIGNAL
Albert Hohmann, Brooklyn, N.Y., assignor to Taller & Cooper, Inc., Brooklyn, N.Y., a corporation of New York
Continuation of application Ser. No. 436,573, Mar. 2, 1965. This application Jan. 26, 1967, Ser. No. 612,050
34 Claims. (Cl. 221—2)

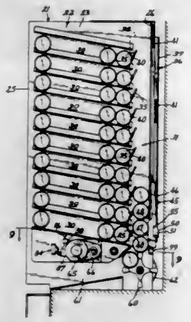
The ticket issuing machine comprises a pair of ticket dispensers. Each dispenser comprises a magazine having means for storing a stack of tickets. Each dispenser has a dispensing position. Each dispenser is provided with electrically operated means to feed the topmost ticket off the top of the stack of tickets in its associated magazine to said dispensing position thereof and partly projecting from said dispenser from where the ticket may be manually withdrawn from said dispenser. Electrically controlled means is provided to selectively enable the feed means of either one of said dispensers for operation, and to automatically disable the feed means of the other dispenser so that only one of said dispensers may be enabled at any one time. Operating means is provided common to both dispensers. There is further provided electrically controlled means controlled by and dependent upon actuation of the common operating means to cause operation of the enabled feed means only. Time delay control means is provided to automatically disable the enabled feed means and to enable to disabled feed means if the enabled feed means has not operated within a predetermined period after actuation of said common operating means, to feed a ticket to dispensing position. There is further provided means controlled by enabling of the disabled feed means for causing operation of the heretofore disabled feed means which has now become enabled upon disabling the heretofore enabled feed means, to feed a topmost ticket off the stack associated with the feed means which has now become enabled, to dispensing position. Furthermore there is provided manually controlled means independent of the time delay means to disable the feed means of an enabled dispenser and enable the feed means of a disabled dispenser at will whereby to permit selection of which dispenser is to dispense a ticket upon the subsequent actuation of the common operating means. Each magazine comprises means to move the stack of tickets stored in said magazine in a direction at right angles to the tickets of said stack. The stack moving means includes electric motive means. There is further provided means including a switch engaged by the topmost ticket of the stack to de-energize the electric motive means to stop advance of the stack moving means until the topmost ticket disengages from said switch upon said topmost ticket being moved off the stack and to again energize the electric motive means upon such disengagement to operate the stack moving means until the next topmost ticket of the stack engages the switch to thereby de-energize the electric motive means and stop advance of said stack moving means.



3,416,706
CAN DISPENSING APPARATUS
Arthur R. Gross, St. Paul, Minn., assignor to Gross-Given Manufacturing Company, St. Paul, Minn., a corporation of Minnesota
Filed Sept. 5, 1967, Ser. No. 665,315
7 Claims. (Cl. 221—11)

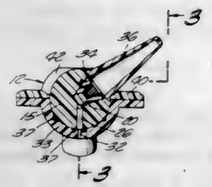
A housing having a plurality of vertically overlying magazines mounted therein, each adapted to receive a plurality of cans therein, canted toward a vertical passageway positioned in communication with one end of each of said magazines. An elongated slot through either wall of said housing adjacent the one end of each of said magazines and a bar extending through pairs of said slots and fixedly engaged in a carriage mounted for generally vertical sliding movement relative to said housing. Said bars being in magazine blocking positions once the carriage is in a first position and in passageway blocking

positions when the carriage is in a second position. Spring means biasing said carriage toward said second position and latch means attached to the housing so as to extend at least partially into the passageway. When the passageway has cans therein, the latch means is maintained in a position wherein the carriage is engaged and held in the first position, and when the cans are removed from the passageway, the latch means moves under spring bias into a position wherein the carriage is allowed to move to the second position. A star wheel mounted at the bottom of the passageway and rotated by a gear-motor ar-



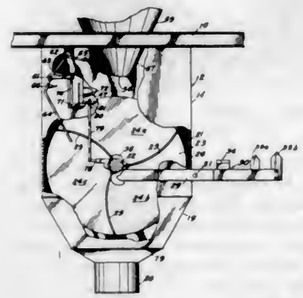
rangement which is activated by an operator. The star wheel removes one can at a time from the passageway. When the passageway is empty, the latch means allows the carriage to move to the second position which allows one can from each of the magazines to enter the passageway. The cans rest on the rods and urge the carriage toward the first position wherein the cans are free to leave the passage by means of the star wheel. The various magazines are loaded from the end opposite the passageway so that the first cans placed in the magazine are the first cans used.

3,416,707
VALVE, AEROSOL POLYMER DISPENSER, AND METHOD
Stephen L. Pollard, 405 Holly Ave., Monrovia, Calif. 91016
Continuation-in-part of abandoned application Ser. No. 568,480, July 28, 1966. This application Sept. 20, 1966, Ser. No. 587,360
14 Claims. (Cl. 222—1)



This patent describes a method of mixing complementary reactive polymer-forming materials which comprises forcing separate streams of different complementary reactive polymer-forming materials under pressure into a common zone to partially mix said materials, forcing partially mixed materials under said pressure into a second zone, subjecting said materials while in said second zone to a whirlpool-like mixing action while still under the influence of said pressure and discharging said materials to the atmosphere in a thoroughly interblended state. This patent further describes a novel valve apparatus comprising a valve seat having a hemispherical opening therein, received in said hemispherical opening a rotatable ball, said ball and said valve seat each having passages therethrough which can be brought into communication by rotation of said ball, the passages in said ball leading to the inlet of a common mixing zone, an outlet for said mixing zone for communicating with a vortex, a vortex having a plurality of similar spaced curved grooves running along the length of its interior surface, and a dispensing nozzle communicating with said vortex. This patent further describes a noval self-contained aerosol dispenser comprising an aerosol can capable of containing a pressurizing gas, two deformable containers within the can for holding complementary reactive polymer-forming ingredients. The top closure of said aerosol can is provided with the novel valve described above.

3,416,708
WEIGHING AND DISPENSING APPARATUS
Carey L. Davis, Atlanta, Ga., assignor of twenty percent to William B. Prichett, Jr., Stone Mountain, and Berthold G. Stumberg, Jr., George M. Eubanks, and Richard N. Lester, all of Atlanta, Ga.
Filed Apr. 18, 1967, Ser. No. 631,649
14 Claims. (Cl. 222—55)

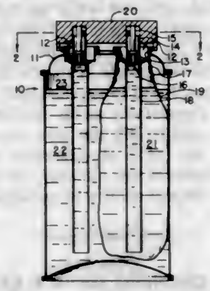


Weighing and dispensing apparatus for speedily dispensing an accurately weighed amount of substance, such as grain, or the like, comprising a three section rotatable hopper movably supported by an arm balanced by a weight. A feed hopper is positioned above the rotatable hopper to feed substance into the rotatable hopper. When a section of the rotatable hopper is filled with grain to the prescribed weight, communication between the feed hopper and the rotatable hopper is interrupted and the weight of the grain in the rotatable hopper causes the rotatable hopper to rotate and dispense the grain therein.

3,416,709
APPARATUS FOR APPLYING A PLURALITY OF FLUID MATERIALS
James H. Shultz and Clarence G. Zike, Indianapolis, Ind., assignors to Spray-Tak, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Apr. 11, 1966, Ser. No. 541,585
6 Claims. (Cl. 222—94)

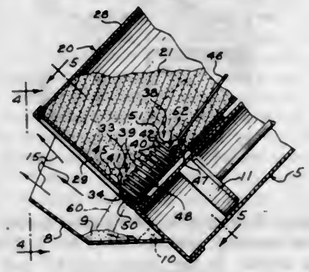
1. A portable dispenser for a plurality of fluid materials comprising, a sealed rigid container, a first fluid material within said container, a second fluid material within said container, deformable means within said container isolating said materials, first valve means sealed with said container and in comunication with said first material, second valve means sealed with said container and in communication with said second material, a propellant within said container to pressurize said container, and

a common operator to actuate said valves whereby said materials are expelled from said container by the pressure,



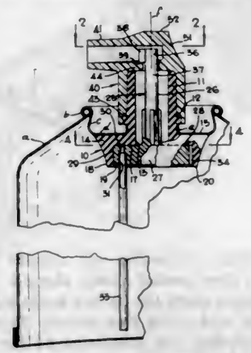
said common operator including passageways leading from said first and second valves to a disposable mixer.

3,416,710
STOP AND FEED APPARATUS
Joseph J. Roubal, 5135 W. 22nd Place, Cicero, Ill. 60650
Continuation-in-part of application Ser. No. 563,633, June 30, 1966. This application Aug. 8, 1966, Ser. No. 570,869
1 Claim. (Cl. 222—230)



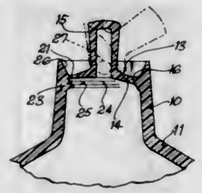
Apparatus that operates to stop granular or powder substance from passing through an outlet opening and which apparatus permits controlling to feed through the outlet opening of varying size quantities of the granular or powder substance.

3,416,711
SELF-PURGING PRESSURE DISPENSER VALVE
Jerome A. Gross, 6304 S. Rosebury, Clayton, Mo. 63105
Filed Oct. 23, 1967, Ser. No. 677,360
10 Claims. (Cl. 222—402.18)



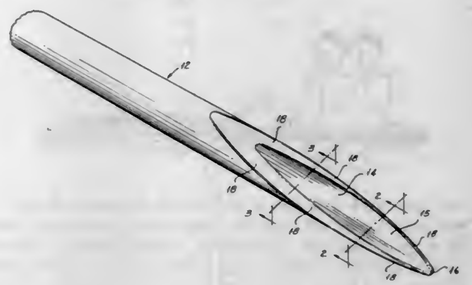
A tilt valve for pressure dispensers operates with the container in upright position, tilting in one direction for dispensing and in the opposite direction to purge the valve with gas from the container head-space. An annular, resilient valve seat has a skirt which serves as a hood around the outer edge of the valve head. On tilting, the point of pivoting will be at this edge. A dip tube is directly attached to the valve head at the side to which the head is tilted for dispensing; while resilient deformation of the seat surface at the point of pivoting maintains the purging channel closed.

3,416,712
DISPENSING CLOSURES
Eugene D. Shastal, Rte. 1, Box 125, Lake Villa, Ill. 60046
Filed Jan. 26, 1966, Ser. No. 537,582
5 Claims. (Cl. 222—541)



One piece dispensing closures in which a swingable member adapted to obturate the pouring opening of a receptacle for fluent material is molded integrally with the means defining the pouring opening. A rupturable membrane is interposed around a major portion of the boundary zone between the obturating member and the opening-defining means, the remainder of the boundary zone being a hinge for the member. Upon initial use of the closure the hinged member is forcibly swung to rupture the membrane, whereafter the member may be actuated between open and closed positions. A groove is formed on the interior of the opening-defining means to receive said major portion of the boundary zone when the obturating member is in closed position.

3, 416,713
FILAMENT INSERTING TOOL
Joseph F. Stephens, Kansas City, Mo., assignor to Stephens Industries, Inc., Kansas City, Mo., a corporation of Missouri
Filed May 28, 1965, Ser. No. 459,844
3 Claims. (Cl. 223—104)



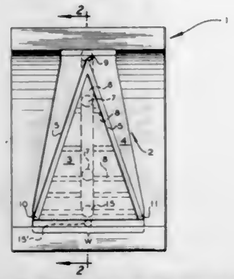
1. A filament inserting tool for advancing a filament axially through a ticket and through soft goods comprising a thin walled filament receiving tube, said tube tapering at one end to a substantially spherical point the radius of

which is substantially equal to one-half the thickness of said tube wall, and the edges of said wall in the region of said taper being rounded and forming a surface which is substantially tangential to said point.

ERRATUM

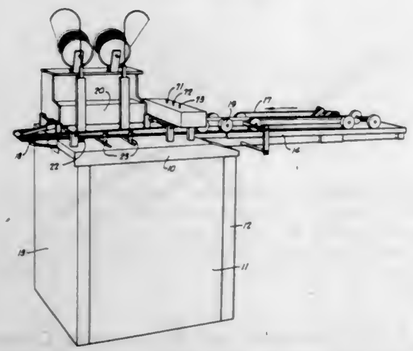
For Class 225—3 see:
Patent No. 3,416,772

3,416,714
METHOD OF FIBRILLATION
Bradley Skinner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,841
4 Claims. (Cl. 225—3)



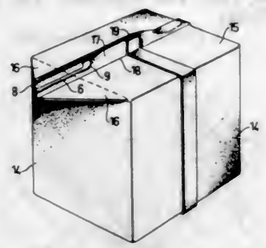
1. In a method for one of fibillating an oriented plastic film and opening out a fibrillated film, the improvement comprising impinging a high energy fluid stream on a first small, localized area of said film, said first area being substantially smaller than the length and width of said film, and gradually moving said fluid stream across a succession of similar small, localized areas until said stream has traversed substantially the entire length and width of said film, said first area is at a point away from either longitudinally side of the film and the gradual movement of the fluid stream progresses in at least two directions from said first area, said directions extending diagonally toward a single end of said film and toward both longitudinal sides of the film, the energy of said fluid being sufficient to cause fibrillation of said film.

3,416,715
STITCHING MACHINES FOR BINDING BOOKLETS
Harry L. Fenimore, % Fenimore Mfg. Inc., Box 509, Woodward, Okla. 73801
Filed Aug. 25, 1966, Ser. No. 575,178
1 Claim. (Cl. 227—44)



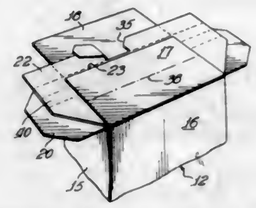
This invention relates to the binding of booklets by what is known as stitching machines. The booklets to be stitched are fed across a table on belts. They are brought to a halt, temporarily, while automatically positioned correctly, both longitudinally and transversely, of their movement, and are stitched while so halted. To do this, there is a side jogger acting intermittently in unison with the driving means for the belts. The booklets are held in position longitudinally while temporarily halted by pins projecting up through the table. The pins are mounted on a bar extending transversely under the table. A cam, with its follower, is used to lift the pins into position at the proper time in the cycle of operation of the machine. There is an adjustment for varying the angular position of the bar with respect to the longitudinal dimension of the table.

3,416,716
CONTAINER OPENING DEVICE COMPRISING A SLOT AND A STRIP PASSING THROUGH IT
Sven Olof Soren Stark, Qvantenborgsvagen 53, Hans-Georg Wilhelm Melle, Sunnanvag 180, and Thorsten Lennartson Lindh, Ferievagen 10, all of Lund, Sweden
Filed July 1, 1966, Ser. No. 562,300
Claims priority, application Sweden, July 8, 1965, 9,000/65
6 Claims. (Cl. 229—7)



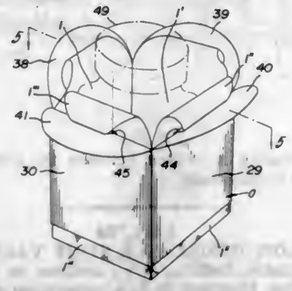
A container formed of sheet material having an opening means. The opening means comprises a U-shaped slot forming a tongue in the sheet material and a separate strip passing through the slot and being secured to one side of the tongue and to the opposite side of the sheet.

3,416,717
END CLOSURE FOR LINED CARTON
Earl H. Beck, Jr., Glen Ellyn, Ill., and Bernard J. Cimmini, Norristown, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 660,776
4 Claims. (Cl. 229—14)



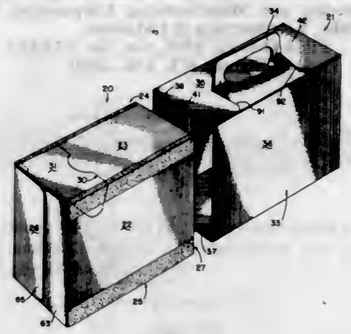
An easy open, reclosable end closure for a lined carton having a liner sealed closed along a transverse seam that is disposed, when the carton is closed, between overlapping inner and outer end closure flaps of the carton body, and locating the free edge of the inner end flap snug against the liner below the transverse seam, so that the liner is opened by pulling said seam, as a tear strip, against the inner end flap free edge.

3,416,718
CONTAINER WITH OUTER PORTION MOVABLE FOR OPENING AND CLOSING COVER FLAPS
Michiko Nakayama, Saitama-ken, Japan, assignor to Kabushiki Kaisha Kobayashi Kose, Tokyo, Japan
Filed Jan. 25, 1967, Ser. No. 611,737
Claims priority, application Japan, Sept. 8, 1966, 41/59,044
5 Claims. (Cl. 229—16)



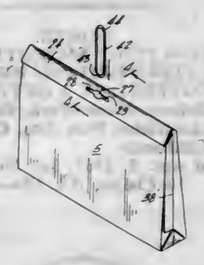
The details of construction of a container and a blank from which the container may be formed are described herein. The complete container may be cut from a single blank of material such as cardboard, paperboard, plastic and the like. The blank includes four wall-forming side panels which are hingedly connected together and which include bottom flap portions which may be juxtaposed to form a bottom wall. The side panels carry intermediate sidewall panels which are hingedly connected to narrow tips of each of the interior side panels and which are adapted to overlie a portion of the exterior of the interior side wall panels when the container is erected. Outer side wall panels are hingedly connected to the intermediate side wall panels and they may be folded upwardly from the bottom of these panels to form an exterior wall of the container. Each outer side wall panel carries a closure flap which may be folded downwardly from the outer side wall panel to form a closure of the container.

3,416,719
CONTAINER MEANS AND BLANKS FOR MAKING SAME
Nicholas J. Pilger, Thousand Oaks, Calif., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 500,103
16 Claims. (Cl. 229—20)



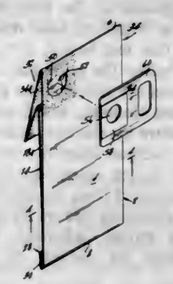
This disclosure relates to an improved dispensing container for beverage cans, or the like, and to a tubular sleeve carrier therefor in which such dispensing container is inserted and carried in a protected manner within the sleeve carrier. A friction coating such as a polyamide resin, is applied in elongated narrow strips to either the outer surface of the dispensing container or inner surface of the sleeve preferably adjacent the associated corners in each instance to prevent the dispensing container from inadvertently slipping out of its sleeve carrier during normal handling.

3,416,720
SHOPPING BAG OR THE LIKE
Samuel Kleinhaut, 104—40 Queens Blvd., Forest Hills, N.Y. 10075
Filed Oct. 17, 1967, Ser. No. 675,850
3 Claims. (Cl. 229—54)



The present invention is directed to shopping bags or the like made of flexible materials, usually paper or fabric. The bag is made of a substantially rectangular elongated sheet which is folded on itself and cemented to form the bag. Stiffening elements are provided in a plurality of areas, particularly at the top of the bag, these areas being superposed to make a strong structure. A handle is provided by inserting a suitable element through slots in the stiffeners.

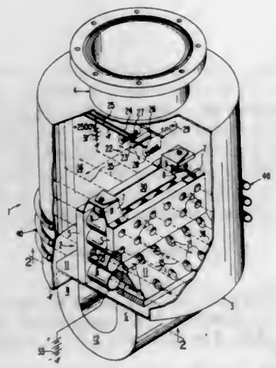
3,416,721
DISPOSABLE VACUUM CLEANER BAG
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., Far Rockaway, N.Y., a corporation of New York
Filed Jan. 31, 1967, Ser. No. 612,878
4 Claims. (Cl. 229—62.5)



This disclosure is directed to a new and improved vacuum cleaner bag particularly suitable for use in case type vacuum cleaners. More particularly, the disclosure is directed to a vacuum cleaner bag having improved and expanded capacity for dust and other material normally taken up by a vacuum cleaner. The invention is further directed to an improved vacuum cleaner filter bag constructed of air pervious paper, the bag comprising an endless bag wall, preferably consisting of pleated side walls. The bag is closed at one end as by sealing, stapling, etc. At the other end of the bag there is provided a closed

end wall which is located adjacent to a dust and air inlet and opposite thereto. The dust and air inlet is provided on the side of the bag, preferably on a corner, and is in a spaced relationship to the closed end wall such that when in operative position in a vacuum cleaner the closed end wall is moved away from the dust and air inlet providing an increased area for deposition of dust borne by air through the air pervious bag. The bag is preferably provided with a specially sized vertical pleat in the bag wall running vertically away from the closed end of the bag which in combination with the construction of the bag in the area of the dust and air inlet provides increased capacity for dust and dirt when the bag is expanded.

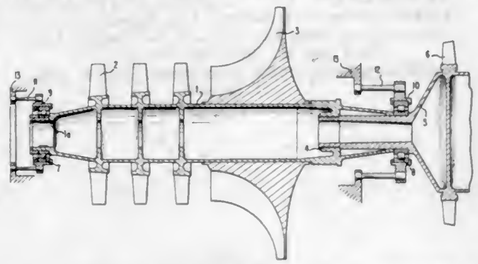
3,416,722
HIGH VACUUM PUMP EMPLOYING APERTURED PENNING CELLS DRIVING ION BEAMS INTO A TARGET COVERED BY A GETTER SUBLIMATOR
John C. Helmer, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 5, 1967, Ser. No. 628,590
10 Claims. (Cl. 230—69)



High vacuum Penning discharge pumps are disclosed wherein the cathodes of the Penning cells are apertured for passage of a beam of ions out of the Penning discharge region. The ion beams are directed into a target electrode at or below the potential of the Penning anodes such that the ions are driven into the target electrode. A getter sublimation element, which may be heated to sublimation temperature by electron bombardment, sublimates getter material, such as titanium, over the ion bombarded surfaces of the target electrode such that the ions are buried in and covered over by the sublimed getter material. Noble gas pumping occurs by means of the gas ionization and ion burial, whereas, the active gases are pumped primarily by means of the sublimed getter material.

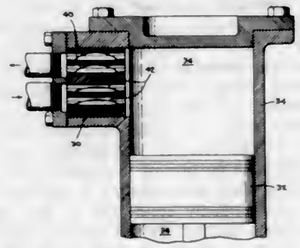
3,416,723
GAS TURBINE ROTOR
Christian Schmitz, Engelberg, Post Schorndorf, and Walter Mathieu, Oberstenfeld, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 13, 1966, Ser. No. 601,408
Claims priority, application Germany, Dec. 16, 1965, D 48,923
3 Claims. (Cl. 230—116)

A bearing support for gas-turbine rotor provided with a compressor rotor and a turbine rotor and utilizing at least two bearings elastic in the radial direction of which one bearing is located in front of the compressor rotor



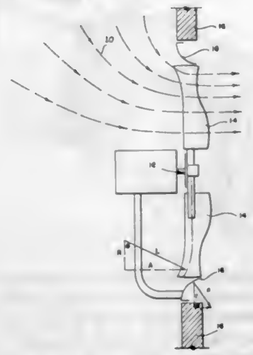
and one bearing is located between the compressor rotor and the turbine rotor.

3,416,724
LOW RESISTANCE STRIP VALVE
Andrew Lenkel, Buffalo, N.Y., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,798
4 Claims. (Cl. 230—228)



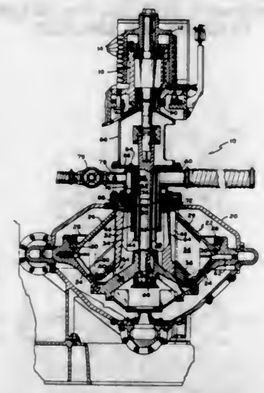
A valve is provided which comprises a flow passage extending therethrough having substantially smooth, continuous walls; and a valve means which is operative in said flow passage to regulate the flow therethrough. The valve means includes a resilient valve member which opens and closes in response to the differential pressure thereacross and which is designed to essentially preserve the continuity of the said flow passage walls to thereby minimize disturbances of the fluid flow through the valve.

3,416,725
DIHEDRAL BLADED VENTILATING FAN
Hoy R. Bohanon, Muskogee, Okla., assignor to Acme Engineering and Manufacturing Corporation, Muskogee, Okla., a corporation of Oklahoma
Filed Oct. 12, 1967, Ser. No. 674,814
8 Claims. (Cl. 230—259)



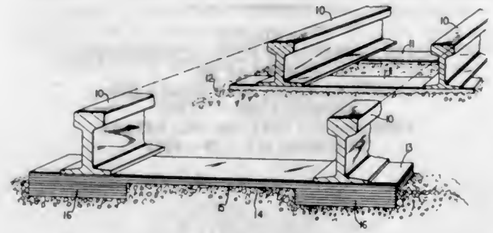
Dihedral angle on blade with respect to plane of rotation such that net lift force on blade has radial component to help turn air as well as axial component providing increase in total pressure as air passes through fan.

3,416,726
BEARING MOUNTED OVERFLOW IMPELLER
Per Nyrop, Norwalk, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,138
7 Claims. (Cl. 233—21)



The present invention relates to a stationary paring impeller for picking up and discharging centrifugally separated liquid from the rotor to the housing. The impeller is stationary relative to the rotor and is thus responsive to any shifts in position, or precessional rotation, of the rotor relative to the housing.

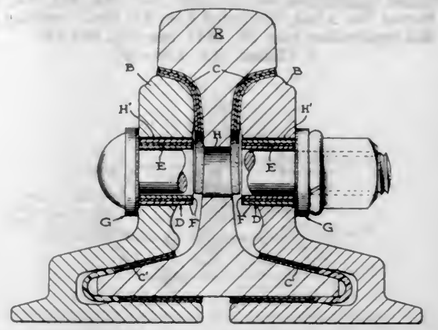
3,416,727
SYNTHETIC PLASTIC RAILROAD TIE
Benjamin P. Collins, 340 Merwins Lane, Fairfield, Conn. 06430
Filed Apr. 27, 1966, Ser. No. 552,365
2 Claims. (Cl. 238—84)



A synthetic railroad tie primarily constructed in laminations of molded shredded hardwood filler and a synthetic resin of phenol formaldehyde.

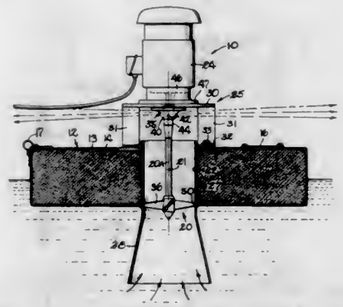
3,416,728
INSULATED RAIL JOINTS
William R. Hamilton, Jr., Fairfield, Conn., assignor to Portec, Inc., a corporation of Delaware
Filed June 17, 1965, Ser. No. 464,631
2 Claims. (Cl. 238—152)

A rail joint comprising, metal point bars retained on opposite sides of abutting rail sections by transversely disposed bolts and including a replaceable insulating component positioned between each bolt and joint bar, each



component comprising a metal core to which is bonded a thermosetting resin layer.

3,416,729
LIQUID AERATOR
Richard B. Ravitts, Rockford, and John W. Meckenstock, Ottawa, Ill., assignors to Richards of Rockford, Inc., Rockford, Ill., a corporation of Illinois
Filed Aug. 12, 1966, Ser. No. 572,018
8 Claims. (Cl. 239—16)

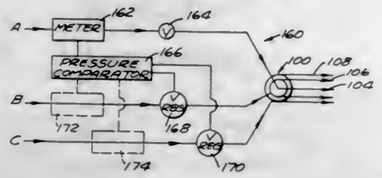


A floating liquid aerator includes an axial flow impeller rotated by an electric motor and disposed within a tubular throat to pump water from a pond upwardly through the throat and against a rotatable diffuser which slings the water outwardly for interface contact with the surrounding atmosphere. Being rotatable, the diffuser slings the water into the atmosphere with considerable turbulence thereby exposing more of the water droplets to the atmosphere and resulting in a higher transfer of oxygen to the water. The impeller comprises a series of angularly spaced blades formed with a rectangular cross-section to reduce power losses caused by drag and to increase the volume of water capable of being displaced by the impeller. Each blade is twisted longitudinally with a progressively decreasing attack angle from its root to its tip and, in addition, all of the blades are twisted identically to provide a statically, dynamically and hydrodynamically balanced impeller.

3,416,730
APPARATUS FOR PROVIDING MULTIPLE LIQUID JETS

Charles C. Perry, 9725 Waters Road, Ann Arbor, Mich. 48103

Original application June 5, 1963, Ser. No. 285,764, now Patent No. 3,368,760, dated Feb. 13, 1968. Divided and this application Aug. 30, 1967, Ser. No. 664,554
6 Claims. (Cl. 239—61)

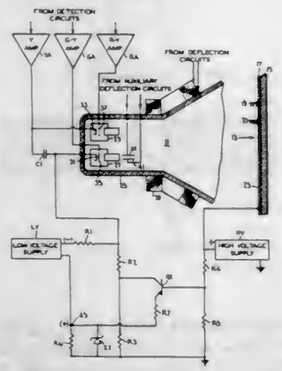


Apparatus for providing a multiple liquid jet consisting of a plurality of substantially concentric jets which are initially contacted with each other without substantial mixing of the liquids in the jets, comprising a plurality of substantally concentric nozzles, passages for supplying different liquids to the nozzles and means for regulating the velocities of the liquids issuing from the nozzles so that adjacent areas of the jets are traveling at the same velocity on initial contact with each other.

3,416,731
COLOR DISPLAY SYSTEM

Walter T. Matzen, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 30, 1965, Ser. No. 452,301
8 Claims. (Cl. 315—13)

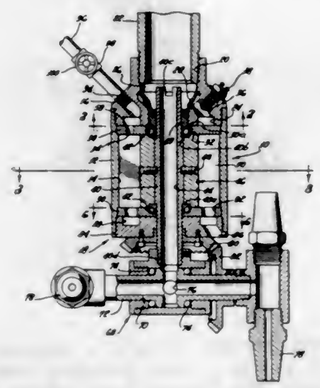


This specification discloses a combination, employed in a color display system, characterized by a viewing screen having phosphors which emit light of different colors when energized by electron beams of different energies; electron beam guns and deflection coils for scanning the screen with beams of electrons under different accelerating voltages and, hence, different velocities; high voltage supply in combination with the electron beam guns for providing a first and a second accelerating voltage; and regulator circuit for regulating the voltage differential between the first accelerating voltage and the second accelerating voltage in accord with the differential deflection force applied to the first beam of electrons and to the second beam of electrons and in response to feedback from the high voltage portion of the first accelerating voltage, such as may be applied to the screen. In this way registration is maintained between the image components provided by the beams of electrons on the screen despite variations in the absolute value of the accelerating voltages.

3,416,732
WASHING APPARATUS FOR ENCLOSED SPACES

Benjamin C. Reiter, Philadelphia, Pa., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

Filed June 5, 1967, Ser. No. 643,554
22 Claims. (Cl. 239—227)

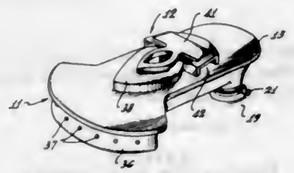


A rotating spray device is provided in which rotative and counter-rotative moments for rotation of the spray head are generated about a rotor axis within a rotor chamber, the rotor having plural circularly arranged teeth with oppositely pressure responsive surfaces so alined within the chamber that a differential moment in favor of rotation is generated, resulting in slow, pulsation-free rotation in response to circumambient uniform fluid pressure produced by fluid moving through the rotor spaces in the rotor chamber between sets of circularly distributed openings.

3,416,733
GAS BURNER AND FUEL IGNITER FOR FIREPLACES

Joseph T. Leighton, 5245 Topeka Drive, Tarzana, Calif. 91356

Filed May 31, 1967, Ser. No. 642,603
12 Claims. (Cl. 239—407)

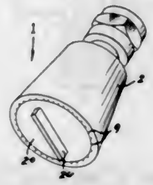


A gas burner for fireplaces, fire pits and the like which is readily convertible from a maximum temperature deep blue flame for the ignition of fuel such as logs and charcoal to a gold or yellow fire for use with simulated logs and rocks producing a desired realistic appearing flame by cutting down on the primary air mixed with the gaseous fuel within the burner. A venturi-like orifice is located in advance of the entrance for primary air into the burner and a diffusion throat is located downstream of the primary air entrance to create a desired pressure condition within the burner behind the orifices for the fuel mixture jets therefrom.

3,416,734
SHOWER HEAD

Merritt J. Nelson, 2142 Griggs SE. Grand Rapids, Mich. 49506

Filed Aug. 10, 1966, Ser. No. 571,443
4 Claims. (Cl. 239—460)

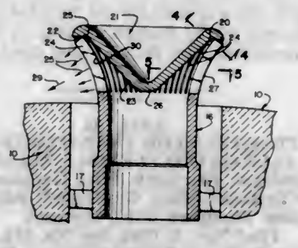


Adjustable shower head assembly having a cup-shaped shower head having a bottom with an opening for passing liquid to the head, a valve element movably associated with the head including a seat which in one position prevents liquid from passing from the head and in another position allows maximum liquid to escape from the head, the valve element including a stem extending from one side of the seat, the stem having at least one elongated groove beginning at its end and extending at least along a portion of its length, the end of the stem threaded into the opening and a handle on the opposite side of said seat for rotating the valve element and moving the seat with respect to the head, the liquid passing along the grooves in the stem into the interior of the head, the adjustability preferably accomplished through a plurality of indentations on the lip on the interior of the head.

3,416,735
BURNER ASSEMBLY PRODUCING RADIANT HEAT

Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware

Continuation of application Ser. No. 287,233, June 12, 1963. This application Apr. 18, 1967, Ser. No. 631,842
The portion of the term of the patent subsequent to May 11, 1982, has been disclaimed
2 Claims. (Cl. 239—567)

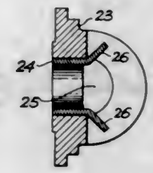


A burner assembly for producing radiant heat by discharging the gaseous fuel at an angle towards the surface of a ceramic member from which the heat radiates onto objects to be heated.

3,416,736
SPRAY NOZZLE WITH FLAT FAN PATTERN

Henry J. Marik, Youngstown, Ohio, assignor to "Automatic" Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio

Filed Feb. 17, 1966, Ser. No. 528,200
3 Claims. (Cl. 239—571)

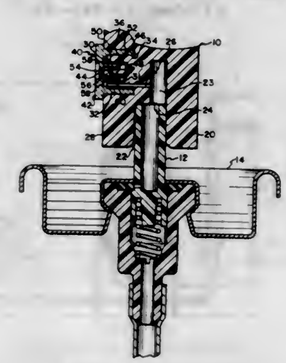


A spray nozzle having a flat fan pattern formed by a dome shaped body having a narrow slot defined by walls of relatively great uniform thickness.

3,416,737
MECHANICAL BREAK-UP SPRAY BUTTON

Frank Venus, Jr., Watertown, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut

Filed Apr. 5, 1967, Ser. No. 628,771
7 Claims. (Cl. 239—579)



A mechanical break-up spray button for aerosol or similar fluid product dispensers comprising a main body member and a separate nozzle insert, wherein the nozzle insert has an annular wall surrounding a discharge orifice on the upstream side and forming a chamber about said orifice, the wall having tangentially oriented slots therethrough for feeding fluid into the chamber to induce swirling motion prior to discharge through the orifice.

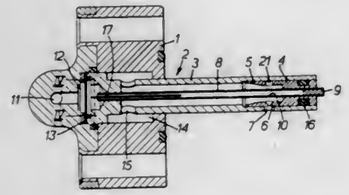
3,416,738
FUEL INJECTION NOZZLES

Harold Ernest Jackson, Plympton St. Mary, Devon, England, assignor of one-half to Petrol Injection Limited, Plympton, Plymouth, Devon, England

Filed Aug. 19, 1966, Ser. No. 573,696
Claims priority, application Great Britain, Sept. 8, 1965, 38,395/65
8 Claims. (Cl. 239—588)

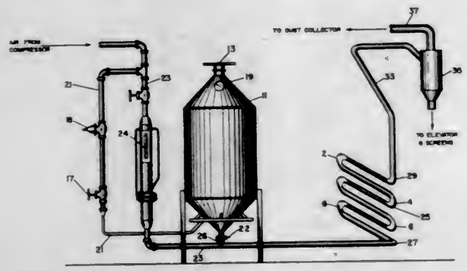
A fuel injector device for an internal combustion engine, which is a discrete unit having a nozzle (in use located in the inlet manifold of the engine) which in-

cludes a fuel tube communicating with a fuel inlet in the body of the device and, surrounding the fuel tube, a jacket which is vented to atmosphere through the body. The fuel tube has an outlet aperture aligned with an outlet orifice in the jacket, which orifice includes a funnel



shaped portion to direct all fuel from the fuel tube to the exterior of the jacket and to prevent vacuum conditions in the engine inlet manifold affecting the interior of the jacket. The fuel tube includes a flow restriction device in the form of a wire.

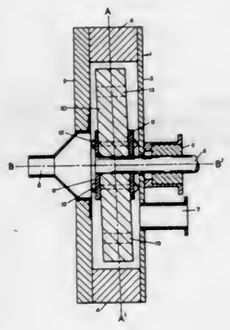
3,416,739
ATTRITION OF GRANULAR CARBON
James C. Salonish, Marshall, Tex., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,398
4 Claims. (Cl. 241—5)



The disclosed invention is directed to a process for attrition of granular carbon particles having very rough surfaces and jagged edges by fluidizing such granular carbon particles through a series of looped pipes. The granular carbon particles so processed are characterized by higher density, and relatively smooth edges and surfaces as compared to the initially charged granular carbon particles.

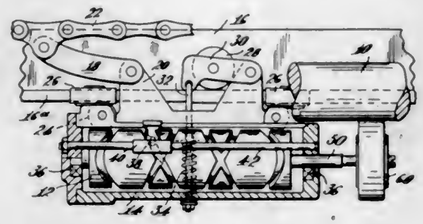
3,416,740
PROCESS AND APPARATUS FOR MILLING
John Hodgson, Chasm Creek, Burnie, Tasmania, and Robert Oswald Hall, Sulphur Creek, Burnie, Tasmania, Australia, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
Filed Aug. 3, 1965, Ser. No. 476,898
Claims priority, application Great Britain, Aug. 22, 1964, 34,441/64
5 Claims. (Cl. 241—21)

A method for milling particulate solids, for example, titanium dioxide, in a fluid medium is described. An apparatus comprising a disc impeller mounted on a rotatable shaft and contained in a closed vessel provided with inlet and outlet means can be operated with greatly enhanced effectiveness if the disc impeller is mounted at a substantial angle relative to the shaft. Upon rotation of the shaft



the impeller describes a "wobbling" motion which increases the efficiency of milling.

3,416,741
WINDING MACHINE
Samuel L. Abbott, Wilton, N.H., assignor to Abbott Machine Co., Inc., Wilton, N.H.
Filed Apr. 6, 1967, Ser. No. 628,858
11 Claims. (Cl. 242—18.1)

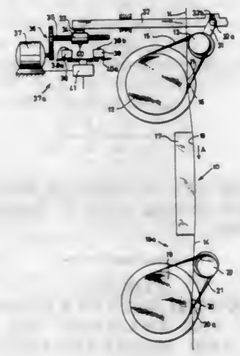


A driving connection for driving the cam shaft of the traversing mechanism of a winding machine wherein a wheel is mounted on the cam shaft, a tire is loosely mounted on the wheel so that it rotates slowly relative to the wheel when transmitting rotation to the wheel, a friction member normally transmitting rotation of the wheel to the shaft, and a cam on the tire movable therewith each time it travels by the friction member to disable it and thereby permit the cam shaft to slow down.

3,416,742
APPARATUS FOR TRANSPORTING AN ELONGATED FLEXIBLE ELEMENT
Horst Haninger, Ebersbach (Fils), Germany, assignor to Zinser-Textilmaschinen Gesellschaft mit beschrankter Haftung, Ebersbach (Fils), Germany
Filed Nov. 4, 1966, Ser. No. 592,138
Claims priority, application Germany, Nov. 5, 1965, Z 11,845
16 Claims. (Cl. 242—47.09)

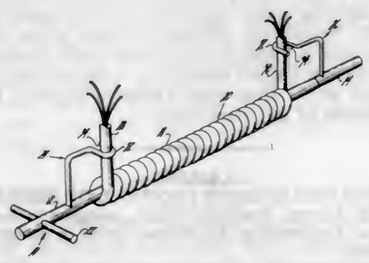
First and second transporting rollers transport a yarn which has loops supported on a control roller and on the first transporting roller. The control roller is angularly

oscillated to define different angles with the first control roller so that the loops slide on the rollers and a yarn por-



tion slides on a heater plate in a direction transverse to the direction of travel of the yarn.

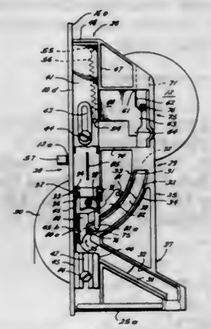
3,416,743
WINDING DEVICE FOR HEAT CURING COILED CORDS
Frank H. Harrison, Cheshire, and Ovila Gonneville, Bristol, Conn., assignors to The Smith-Gates Corporation, Farmington, Conn., a corporation of Connecticut
Filed May 11, 1967, Ser. No. 637,836
7 Claims. (Cl. 242—50)



Winding device for heat curing expandable and retractable coiled cords comprising a winding arbor and axially spaced first and second bent wire holders having U-shaped cord engaging and securing portions spaced generally radially outwardly from the arbor to limit cord deformation and to locate cord deformation judiciously for subsequent concealment.

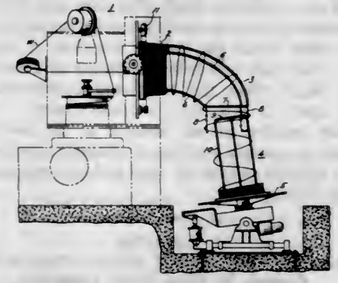
3,416,744
TISSUE ROLL DISPENSER
Ralph Beach Mott, Sr., and Ralph Beach Mott, Jr., both of P.O. Box 66069, Houston, Tex. 77006
Filed June 30, 1966, Ser. No. 561,995
9 Claims. (Cl. 242—55.3)

A tissue roll dispenser adapted to prevent misuse and mishandling of the dispenser and tissue rolls therein. The dispenser includes a frame for receiving a plurality of tissue rolls mounted on spindle means therein, means retaining the lowermost tissue roll in a dispensing position, means for actuating the retaining means when the lowermost tissue roll is depleted to remove the spindle means from the dispensing position, and means to prevent move-



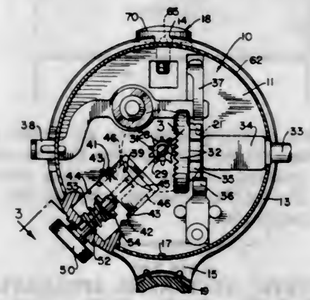
ment of the actuating means until the lowermost tissue roll is exhausted.

3,416,745
WIRE PACKAGING APPARATUS
James P. Conner and John J. Kane, Johnstown, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,121
2 Claims. (Cl. 242—83)



Apparatus for guiding wire loops onto a wire carrier comprising flexible means to prevent entanglement of the wire as it comes off of the coil transfer horn.

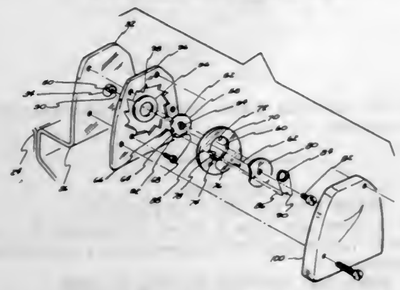
3,416,746
SPINNING REEL BRAKE
R. Dell Hull, 1131 E. Easton St., Tulsa, Okla. 74120
Filed July 28, 1965, Ser. No. 475,365
3 Claims. (Cl. 242—84.5)



A drag brake mechanism for a closed face spinning reel which includes a line spool having an annular friction surface extending into the body of the reel frame and a brake shoe supported within the frame body for controlled radial displacement into engagement with the fric-

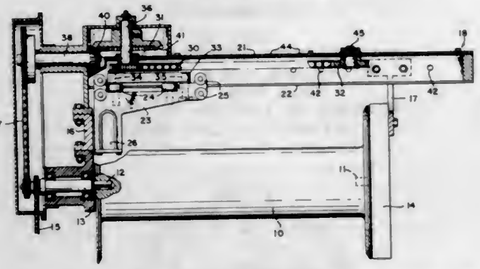
tion surface of the spool. An externally actuable screw jack actuator is arranged within the reel frame in association with the brake shoe for adjusting the degree of restraining contact between the annular surface of the line spool and the brake shoe.

3,416,747
AUTOMATIC LOCKING ROTARY RETRACTING DEVICE
Robert W. Stoffel, Ferndale, Mich., assignor to Jim Robbins Seat Belt Company, Royal Oak, Mich.
Filed June 16, 1967, Ser. No. 646,706
12 Claims. (Cl. 242—107.4)



A rotary seat belt retractor having a cam and a follower mounted on a wind-up shaft. The cam and follower have complementary cam contours formed symmetrically about an axis offset from the axis of rotation of the wind-up member. The cam and follower rotate as a unit with the wind-up shaft when the rotational acceleration of the wind-up shaft is less than a predetermined magnitude, but rotate relative to one another at the predetermined magnitude to cause a peripheral abutment on the follower to move radially outwardly into locking engagement with a circular ratchet.

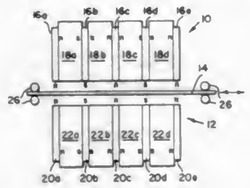
3,416,748
LEVEL-WINDING OF CABLE UPON A REEL
George N. Bliss, 8620 106th SE., Renton, Wash. 98055
Filed Nov. 22, 1966, Ser. No. 596,189
2 Claims. (Cl. 242—158)



A level-wind structure employing an endless chain to move a carriage reciprocally between the two end limits of a reel's spooling surface, with means provided to lengthen or shorten the chain in adapting the same to reels of different lengths.

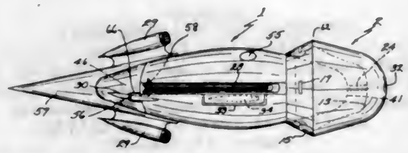
3,416,749
MAGNETIC HYSTERESIS APPARATUS
James P. O'Neill, Playa Del Rey, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed May 10, 1965, Ser. No. 454,365
10 Claims. (Cl. 244—1)

Magnetic damping is achieved when a magnetizable member having large magnetic hysteresis characteristics is moved through a magnetic field produced by poles of alternating polarity. Maximum damping action is achieved



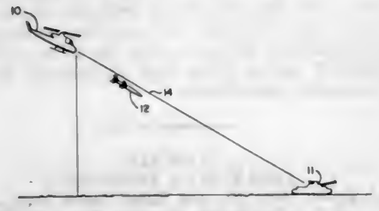
for small increments of movement of said magnetizable member and the damping effect is independent of the rate of movement.

3,416,750
APPARATUS WITH MULTIPLE PURPOSE COMPONENTS FOR ENABLING THE SERVICEABILITY AND MANEUVERABILITY OF A CRAFT
Everett C. Young, 19465 Lorain Road, Fairview Park, Cuyahoga County, Ohio 44126
Continuation-in-part of application Ser. No. 306,175, Sept. 3, 1963. This application Oct. 20, 1965, Ser. No. 498,358
31 Claims. (Cl. 244—1)



Disclosed is a spacecraft with multi-purpose components of which one in particular is an ablative protective cover comprising reentry means involving composite structures with functionally different ablation modes of the type disclosed in Patent 3,231,219 and which relates to a re-entry surface portion comprising a compartmentalized framework with various special ablative materials in the compartments of said framework.

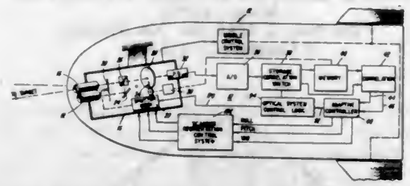
3,416,751
SYSTEM FOR REMOTE CONTROL OF MISSILES
Melvin H. Larson, Bradbury, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Continuation-in-part of application Ser. No. 538,441, Feb. 28, 1966. This application May 19, 1967, Ser. No. 646,136
10 Claims. (Cl. 244—3.13)



This disclosure relates to remote control systems and particularly to line-of-sight missile control.

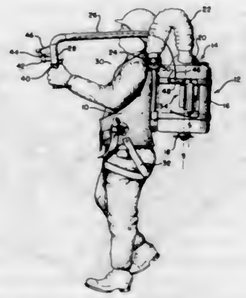
According to the present disclosure, a system is provided for controlling the direction of movement of a moving object along a prescribed path. A radiant energy beam having alternate adjacent portions of significantly different intensities is directed toward the moving object and the prescribed path. The beam is nutated about the path so that the alternate portions of the beam are swept across the object and path. Detectors are provided on the object for detecting the radiant beam. If the object is on the prescribed path, the detectors detect only the frequency of the beam portions swept across the object. If, however, the object is off the prescribed path, the detected signal is frequency-modulated by a signal at nutation frequency having a phase and amplitude dependent on the position of the object relative to the prescribed path. Means responsive to the modulation frequency is provided for relocating the object to the path.

3,416,752
CORRELATION GUIDANCE SYSTEM HAVING MULTIPLE SWITCHABLE FIELD OF VIEW
Clyde R. Hembree, Orlando, Fla., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 23, 1966, Ser. No. 536,834
10 Claims. (Cl. 244—3.17)



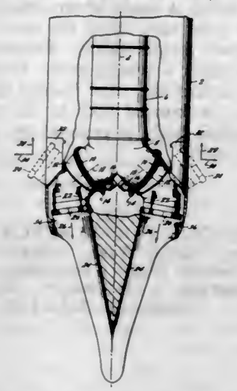
This invention relates to an optical system having a multiple field of view capability comprising a set of optical lenses, with lenses of at least two different focal lengths being employed, and with means being provided for switching one of such lenses at a time into an operative position. In this manner, various optical indications of a target area can be selectively provided. Means are also provided for generating a signal proportional to a predetermined amount of change in the appearance of the target as perceived through a lens, with a connection being provided to the switching means to accomplish a switching of lenses at a time in which the characteristics of the signal have changed to a certain value. As will be understood, my system provides an effective means for counteracting the effects of range closure on the accuracy of a correlation guidance system.

3,416,753
AUTOPILOT FOR JET BELT
John K. Hulbert, Grand Island, N.Y., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed June 22, 1966, Ser. No. 559,563
3 Claims. (Cl. 244—4)



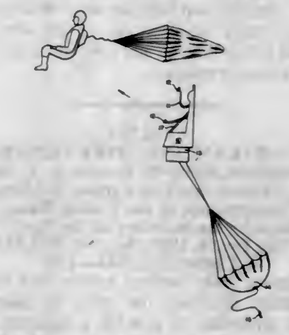
An individual propulsion device for rendering a person airborne including jet propulsion means, a gas generator for feeding the jet propulsion means, a throttle mechanism for controlling the volumetric flow of gases emanating from the jet propulsion means and a mechanism for sensing accelerations and automatically controlling the device to compensate for the accelerations. The throttle mechanism is attached to a balance piston assembly which is in turn operatively connected to a bob weight acceleration sensing device which operates to open valve means to the balance piston assembly upon any vertical acceleration.

3,416,754
VECTORABLE EXHAUST NOZZLE
Lonnie W. Pinaire, Loveland, and Alfred Lingen, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed May 19, 1966, Ser. No. 551,397
3 Claims. (Cl. 244—55)



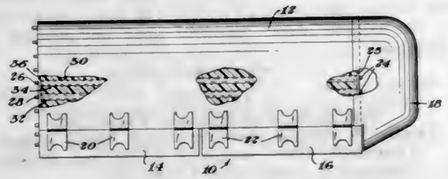
A V/STOL aircraft is provided with a propulsion system which comprises a pair of symmetrically disposed elbow-shaped nozzle structures. The nozzle structures are rotatable to provide thrust for both vertical and forward propulsion. Expansion surfaces surround each of said nozzles and are comprised of upper and lower movable flaps to accommodate rotation of the nozzles.

3,416,755
AIRCARFT EJECTION SEAT SEPARATION AND RETARDATION SYSTEM
Frederick A. Knoll, Woodmere, and Angelo C. Scandalis, Northport, N.Y., asignors to Fairchild Hiller Corporation, a corporation of Maryland
Filed Aug. 29, 1966, Ser. No. 575,785
8 Claims. (Cl. 244—122)



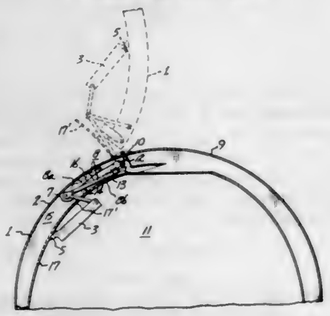
An aircraft emergency ejection system employing a forcibly deployed drogue chute attached to the ejection seat for separating the seat from the pilot after ejection and after separation of the pilot from the seat.

3,416,756
AIRFOIL STRUCTURE
Leo J. Windecker, Midland, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 569,871
18 Claims. (Cl. 244—123)



This invention relates to airfoil structures in which the body of the airfoil is made of structurally rigid foamed material. The outer surfaces of the airfoil have an array of spaced apart longitudinally disposed slots therein which each contain a spar element. Each slot is closed by a plug of structurally rigid foamed material, and the spar elements are bonded both to the slots and to the plugs. The airfoil body is covered by a skin which is bonded to the body.

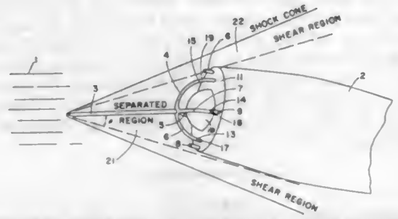
3,416,757
AIRCRAFT DOOR ACTUATOR
Alex Maraghe, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 4, 1967, Ser. No. 628,437
1 Claim. (Cl. 244—129)



An airplane cargo door hinged about a horizontal, longitudinal axis is opened and closed by a hydraulic cylinder and linkage contained entirely within the space between the exterior and interior door wall panels. Luggage racks pivotally mounted on the interior door panel are connected to the linkage and steered clear of the doorway when the door is opened.

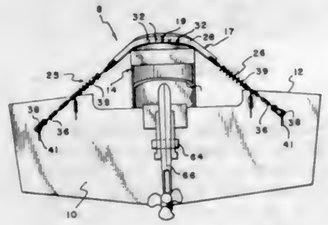
3,416,758
SELF-BALANCING SPIKE CONTROL
James E. Nicholson, Sudbury, Jacques A. F. Hill, Lincoln, and Joe C. Wilson, Jr., East Pepperell, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 4, 1967, Ser. No. 672,932
8 Claims. (Cl. 244—130)

A self-aligning spike control system has been devised to automatically maintain the spike in alignment with a supersonic airstream to provide a separated region of protection at or adjacent to the nose or leading edge of an aerodynamic structure such as an IR radome, whereby rain erosion, heat damage, drag and structural loading are minimized in the separated region. The alignment of the spike is responsive to the pressure differential between the shock wave and/or shear layer and the separation



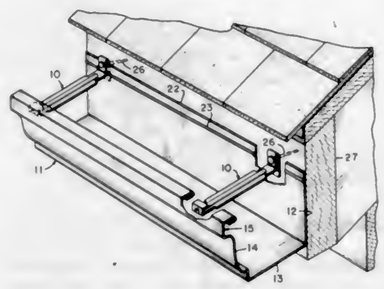
region, the control system utilizing the pressure differential both for control purposes and power means.

3,416,759
OUTBOARD MOTOR SUPPORT BRACKET MEANS
Donald C. Arnett, 216 W. Poplar, Arkansas City, Kans. 67005
Filed Nov. 2, 1966, Ser. No. 591,464
5 Claims. (Cl. 248—4)



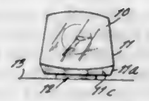
This invention is a bracket means connectible to anchor an outboard motor mounted on the stern portion of a boat. More specifically, this invention is a bracket means including a lug assembly connected to the outboard motor having a laterally extended dome-shaped head portion; a strap member engageable with head portion to restrict lateral movement therefrom; and linkage means having a chain member secured to the strap means through a spring member to bias the outboard motor in a resiliently anchored position.

3,416,760
GUTTER AND BRACKET HANGER
Gerald D. Sauder, St. Louis, Mo., assignor to Grover Machine Company, Kirkwood, Mo., a corporation of Missouri
Filed Dec. 2, 1966, Ser. No. 598,648
3 Claims. (Cl. 248—48.2)



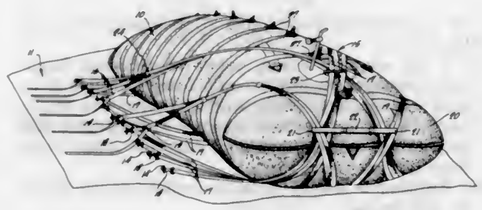
A support and bracing member interconnecting opposite side walls of a trough-shaped gutter, the member having a hooked front portion for connection to the front wall of the gutter and an inverted U-shaped rear portion for connection to the rear wall of the gutter, the mouth of the U-shaped rear portion being partially closed by crimping to allow a snap fit of the rear portion over a continuous longitudinal ridge formed along the rear wall of the gutter.

3,416,761
MAGNETIC MOUNTING DEVICE
Victor Shanok and Jesse P. Shanok, Brooklyn, N.Y., assignors to Glass Laboratories Company, a limited partnership of New York
Filed Feb. 8, 1967, Ser. No. 614,712
2 Claims. (Cl. 248—115)



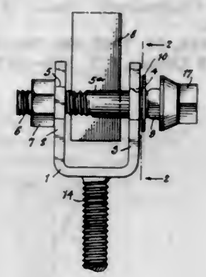
This invention is concerned with providing an improved clock supporting device adapted to be magnetically mounted upon a surface attracted by a magnetic field. Briefly, the new device comprises a housing, a clock received within the housing, the housing being removably fitted in a base provided with magnetic means exposable against a magnetic surface.

3,416,762
RESTRAINING MEANS FOR PILLOW TANKS
Richard T. Headrick, 916 Crestfield Drive, Duarte, Calif. 91010
Filed Feb. 20, 1967, Ser. No. 617,333
17 Claims. (Cl. 248—361)



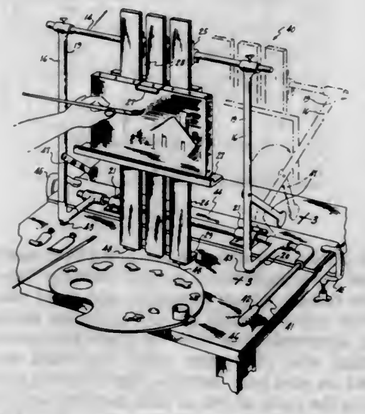
A crash harness and a surge-resisting tie-down arrangement for pillow tanks in transport vehicles. The harness includes a plurality of equi-length straps which crisscross each other from opposite sides of the tank in extending from a tank supporting bed forwardly over the tank, around the front end of the tank, and rearwardly under the tank to their other connections to the bed. The tie-down arrangement is duplicated at each of a number of stations spaced along the tank. At each station a strap is connected from the top center of the tank and is passed through a one-way pulley, connected to the bed laterally of the station, and back over the tank to an extensible strap tensioning device connected between the other end of the strap and the bed adjacent the opposite side of the tank. The tensioning device is arranged so that it is extended from its relaxed state, and thereby applies tightening tension to the strap, throughout a wide range of fullness conditions of the tank.

3,416,763
DEVICE FOR TENSIONING STRAPS, WIRES, OR LIKE FLEXIBLE ELEMENTS
Albert M. Moreno, 2601 Sea Island Drive, Fort Lauderdale, Fla. 33301
Filed Apr. 24, 1967, Ser. No. 632,977
5 Claims. (Cl. 248—361)



The device consists of a substantially U-shaped frame or yoke having means for attaching it to a support; the frame including a pair of legs in which a take-up bolt is rotatably mounted and is axially adjustable. The bolt is apertured to receive the end of the strap or wire to be tensioned and by the rotation of the bolt by the use of a suitable tool such as a wrench, the strap or wire is wound around the bolt and to an extent to place the strap or wire under the desired tension. Thereupon the bolt is shifted axially in the legs of the frame by the adjustment of a nut on it, to bring a non-round or square portion of the bolt into a complementarily-shaped opening in one of the legs of the frame, thereby holding the bolt against rotation and preventing the unwinding of the strap or wire from it.

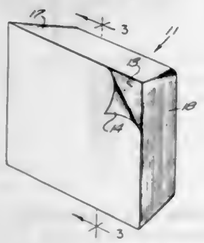
3,416,764
ARTIST'S EASEL
Edmund Bier, 210 Riverside Drive, New York, N.Y. 10025
Continuation-in-part of application Ser. No. 648,344, June 23, 1967. This application Mar. 8, 1968, Ser. No. 711,572
9 Claims. (Cl. 248—452)



An artist's easel including a forwardly pivotable easel board to which a painting canvas is secured, thereby allow-

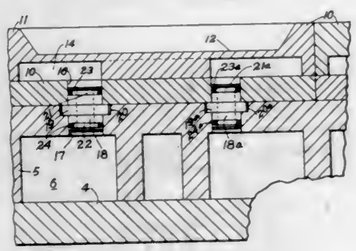
ing the artist to occasionally view the painting from a distance during the progress of the work, without the necessity of the artist taking steps backwards so to place a distance between himself and the painting.

3,416,765
PICTURE SUPPORT
Emanuel C. Ebner, Chelmsford, Mass., assignor to Foto-Cube, Inc., Chelmsford, Mass., a corporation of Massachusetts
Filed Feb. 28, 1967, Ser. No. 619,409
5 Claims. (Cl. 248—467)



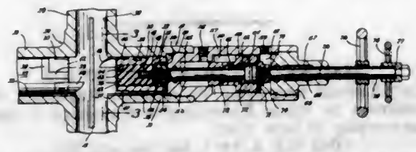
A hollow, plastic, three dimensional picture support capable of being hung on a wall, stood on a flat surface or held in one's hands. The front face of the support is adapted to adhesively receive a picture or other flat work of art which is desired to be displayed. The back of the support is smaller than the front and the sides slope at a modest angle from front to back. A snap-in base having substantial mass is provided for increased stability when the picture support is free-standing.

3,416,766
MOLD CONSTRUCTION
Frederick O. Miller, Saginaw, Mich., assignor to Miller Mold Company, Saginaw, Mich., a corporation of Michigan
Filed Nov. 25, 1966, Ser. No. 596,855
7 Claims. (Cl. 249—79)



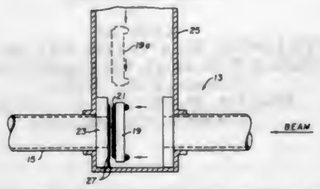
1. A mold construction comprising a base member having fluid passages therein; a mold member having fluid passages therein; means mounting said mold member on said base member, each of said members having ports therein communicating with the respective passages and registering with each other when said mold member is mounted on said base member; and coupling means supported in the ports of one of said members and extending into the registering ports of the other of said members for conducting fluid from the passages in one of said members to the passages of the other of said members.

3,416,767
BLOWOUT PREVENTER
Leon Blagg, Channelview, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Dec. 20, 1966, Ser. No. 603,200
10 Claims. (Cl. 251—1)



This disclosure describes a blowout preventer for service on high-pressure wells in which either tubing or cable-suspended tools are disposed. The disclosed blowout preventer includes a pair of opposed rams that are movably mounted on opposite sides of a pressure housing and adapted to be brought together for sealing around the opposite sides of a suspension member extending through the housing between the rams. More particularly, an inner sealing member is movably mounted within each ram and is selectively operated by either a hydraulic or a manual actuator.

3,416,768
LOW LEAKAGE CONFINED SEAL
Kimo M. Welch, Stockton, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 28, 1966, Ser. No. 597,494
6 Claims. (Cl. 251—157)



1. In a system for maintaining a low leakage seal, the combination of:
(a) a first member having a pair of retaining flange rims extending therefrom, said flanges extending at such an angle as to define with said member a cavity having an enlarged space adjacent said member and an opening smaller than said enlarged space away from said member;
(b) deformable sealing material confined in the cavity by said flanges;
(c) a second member having a sealing edge extending therefrom which fits through said opening into sealing engagement with said sealing material upon movement of said second member against said pair of retaining flanges, said retaining flanges being slightly flexible so that upon application of a sealing force to said first and second members, said retaining flanges flex to transmit the sealing force to said sealing material to cause cold flow of said sealing material against said sealing edge and all surfaces defining the cavity.

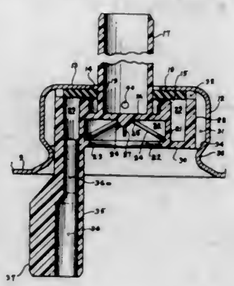
3,416,769
EXTENSION AND EXPANSION VALVES
Bruno Thomas Brigandi, 2570 Benson Ave., Brooklyn, N.Y. 11214
Filed Mar. 10, 1965, Ser. No. 438,536
5 Claims. (Cl. 251—189)

An extension and expansion valve which is adapted to be connected into the main sewer trap of a building and can be used to shut off the drainage system to prevent overflows in the external sewage system from flowing back into the building drainage system and being discharged into various plumbing appliances in the building. The



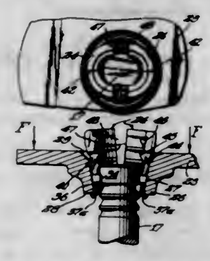
valve has an actuator adapted to be screwed into the leg of the main sewer trap cover opening which is provided with a plug member. This member is outwardly expandable after being extended to shut off position.

3,416,770
AEROSOL VALVE UNIT
Derek B. Green, Manchester, N.H., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 11, 1967, Ser. No. 608,690
6 Claims. (Cl. 251—303)



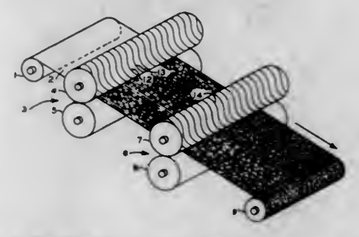
An aerosol valve unit comprising a one-piece molded plastic member including a valve head, a spring housing, and an annular fluid receiving chamber outwardly of the spring housing, with a dip tube connection.

3,416,771
UNITIZED VALVE STEM RETAINER LOCK
Stanley H. Updike, Mentor, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 3, 1965, Ser. No. 511,556
5 Claims. (Cl. 251—337)



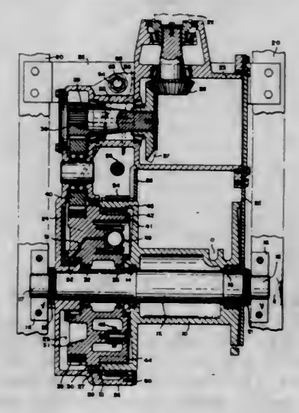
A unitized valve spring retainer and lock assembly having self-opening and closing lock segments with tapered outer walls engaging the tapered bore of the retainer to butt the segments together and provide a cylindrical passageway therethrough freely receiving the stem of a valve to accommodate rotation of the valve relative to the assembly. The segments have axially spaced inwardly projecting beads or ribs increasing in radial height successively from the bottoms to the tops of the segments for seating valve stem grooves to lock the valve stem against axial movement. The lock segments have a circumferential groove intermediate the ends thereof to accommodate wide angle tilting of the segments in the retainer for facilitating insertion of a valve stem.

3,416,772
METHOD OF FIBRILLATION
William C. Sheehan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 3, 1966, Ser. No. 555,029
7 Claims. (Cl. 225—3)



1. In a fibrillation process. the improvement comprising subjecting a fibrillatable film to at least one localized stress acting in a direction substantially parallel to the orientation direction of said film, said at least one stress being applied to a first finite portion of said film, the width of said finite portion being substantially less than the full width of said film, and progressively moving said at least one stress substantially laterally across said film until substantially the whole width of said film has been subjected to said at least one stress.

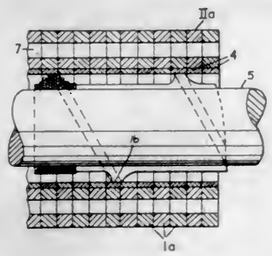
3,416,773
SKIDDER WINCH
Jarvis A. Stixrood, Mercer Island, Joseph R. Bruce, Seattle, and Edwin C. Holden, Renton, Wash., assignors to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington
Filed June 29, 1967, Ser. No. 650,118
13 Claims. (Cl. 254—166)



A winch having a non-rotary mounting shaft for the winding drum, with the two ends of the shaft anchored to

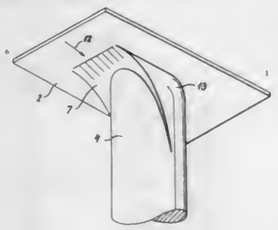
a foundation, and having a frame for the winch attached to the drum shaft and also to the foundation at a point removed a substantial distance radially from the drum shaft.

3,416,774
WORM MIXING DEVICES
Rudolf Paul Fritsch, Stuttgart-Weilimdorf, Baden-Wurttemberg, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a corporation of Germany
Filed Feb. 2, 1967, Ser. No. 613,513
Claims priority, application Germany, Feb. 11, 1966, W 40,921
4 Claims. (Cl. 259—109)



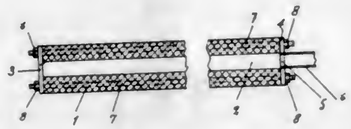
A worm mixing apparatus in which a worm and the housing therefor consist of a plurality of plates with wear resistant peripheral portions joined in face-wise relationship which ensures reliability in operation with respect to the transmission of large torques and the resistance to heat and wear.

3,416,775
COOLING TOWER PACKING MEANS
László Szücs, Csaba Tasnádi, and István Linder, Budapest, Hungary, assignors to Komplex Nagyberendezesek Export-Import Vallalata, Budapest, Hungary
Filed July 21, 1966, Ser. No. 567,011
Claims priority, application Hungary, July 28, 1965, SU-303
7 Claims. (Cl. 261—112)



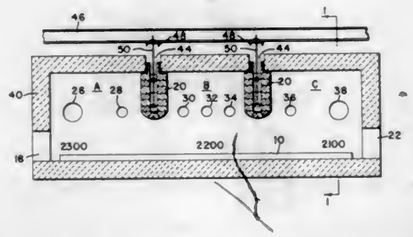
A cooling tower having cooling water distribution means which guide a stream of water in a substantially horizontal direction onto a water distributor where it forms a water film which descends due to the gravitational forces. The water distributor includes a plurality of closely spaced wires or bands the upper ends of which may be plain or curved but in any case constitute a descending guide on which the water film is retained. The water is cooled while descending on said water distributor.

3,416,776
DEVICE FOR AERATING, PREFERABLY, WASTE WATER
Sven Gustaf Yngve Gamer, Norrkoping, Sweden, assignor to Stenberg-Flygt Aktiebolag, Solna, Sweden
Filed July 9, 1965, Ser. No. 470,681
Claims priority, application Sweden, July 23, 1964, 8,951/64
3 Claims. (Cl. 261—122)



A waste water aerating device having an air chamber surrounded by a porous member of soft cellular plastic having open cells and a pair of end plates. The total weight of the device is greater than the weight of the water displaced by it.

3,416,777
ZONED REHEAT FURNACE
Frank Alexander, Jr., West Boylston, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 2, 1967, Ser. No. 657,976
6 Claims. (Cl. 263—6)

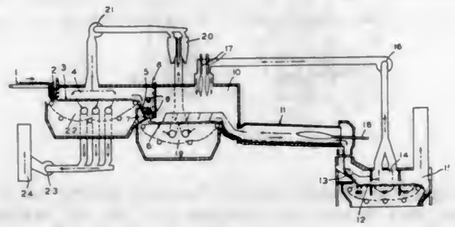


This invention relates to a furnace for reheating billets, blooms, or slabs (collectively referred to hereinafter as billets) prior to rolling in a rolling mill. The construction of the furnace makes it possible to heat each billet so that there is a controlled, substantial temperature gradient between the leading and tail ends of the billet when it leaves the reheating furnace. The presence of the predetermined temperature gradient makes it possible to have a substantially uniform billet temperature at each roll stand for the entire length of the billet as it passes therethrough.

3,416,778
APPARATUS FOR THERMAL TREATMENT OF MINERALS
Henri Fernand Chabaglian, Maisons-Laffitte, France, assignor to Polysius G.m.b.H., Neubeckum, Westphalia, Germany
Filed Mar. 29, 1967, Ser. No. 626,736
Claims priority, application France, May 6, 1966, 60,648
4 Claims. (Cl. 263—32)

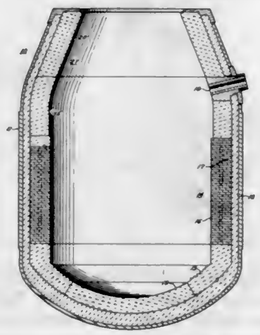
Apparatus for thermal treatment of minerals comprising a rotary kiln preceded by traveling grills, the first of which, for drying the minerals, is heated by gases which have passed through the second grill, for preheating the minerals, on which the minerals are heated partly

by gases discharged from the kiln and partly by burners which are supplied with secondary air which has been withdrawn from a cooler which follows the kiln, the



kiln also containing a burner which is supplied with secondary air that consists of another part of the air discharged from the cooler.

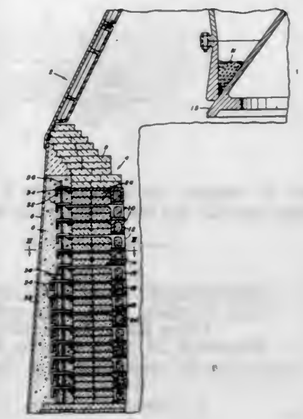
3,416,779
COMPOSITE REFRACTORY LINING FOR BASIC OXYGEN FURNACE
Frank Campbell, Jr., Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 482,680, Aug. 26, 1965. This application Mar. 15, 1966, Ser. No. 536,581
2 Claims. (Cl. 266—36)



A composite working lining for a basic oxygen furnace including a first layer of sprayable basic refractory bricks which may be one of the following types of basic refractory bricks: tempered tar-bonded, resin-bonded or coked, carbon-bonded tar impregnated; laid up against a layer of refractory material protecting the shell of the vessel and a second layer of nonsprayable basic refractory bricks which are burned and tar-impregnated laid up inwardly of said first layer of basic refractory bricks.

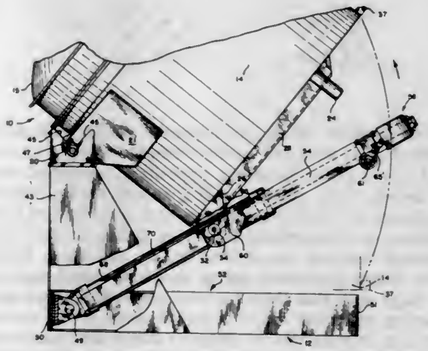
3,416,780
BLAST FURNACE STOCK LINE WALL AND METHOD OF CONSTRUCTING THE SAME
Ralph T. Hanna, Fox Chapel Borough, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,107
8 Claims. (Cl. 266—43)

A novel blast furnace stock line wall with metal wear elements, each having a horizontal plate and spaced apart, parallel vertical flanges facing the inner area of the furnace. Prior to building the wall, the area between the



flanges is filled with a castable ceramic material or with bricks of appropriate size.

3,416,781
FURNACE AND APPARATUS FOR TILTING SAME
Addison Ballard Bradley, Racine, Wis., assignor to O. H. Warwick Company
Filed Jan. 6, 1964, Ser. No. 335,976
6 Claims. (Cl. 266—39)

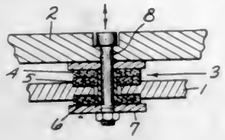


Disclosed herein is a tilting furnace arrangement including a portable ladle tilting device for tilting a combined ladle and holding furnace for molten materials which is removeably mounted on said tilting device. The tilting device includes a tilting mechanism which is disengaged from the furnace and is moveable into engagement with the lower part of the furnace to tilt the furnace.

3,416,782
MOUNTING
Glenn E. Warnaka, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed July 25, 1966, Ser. No. 567,750
11 Claims. (Cl. 267—1)

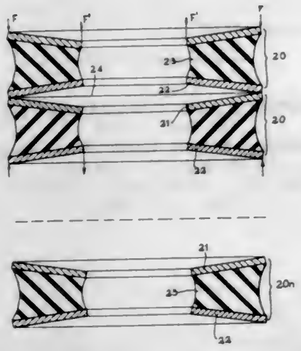
A compressed metal wire mesh mounting having an initial volume density of from 7 to 80% (7 to 80% wire; 93 to 20% voids) is improved by coating the compressed wires with a coating of viscoelastic damping material

filling from 10 to 90% of the initial void space. Preferably the coating has a permanent sticky outer surface and is



applied by dipping the mounting in a solution of the damping material and then evaporating the solvent.

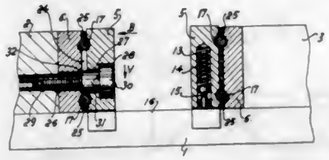
3,416,783
RUBBER-METAL SPRING DEVICE
Carlo Tondato, Turin, Italy, assignor to Firgat S.n.c., Turin, Italy
Filed Sept. 26, 1966, Ser. No. 581,878
Claims priority, application Italy, Nov. 19, 1965, 26,247/65
7 Claims. (Cl. 267—33)



A compression spring of composite rubber and metal is formed of at least one spring element having a pair of dished metal spring members oppositely positioned with their convex faces adjacent and a rubber spring component bonded to the convex faces so that compression loading forces are transmitted from one spring to the other exclusively through the rubber spring and these forces tend to flatten the metal spring members which operate on a range such that they are never completely flattened. The spring members may be coaxial discs or flat leaves. There may be a number of elements which are completely embedded in rubber or a number of elements which transmit forces from one element to the opposite edge of another element without being embedded in rubber.

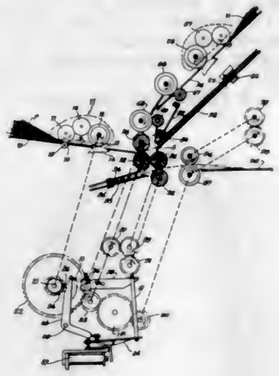
3,416,784
CLAMPING DEVICE
Charles Wermuth, Wangi, Switzerland; Heinz Wagner, Santisstr., Aadorf, Switzerland; and Franz Arnold, Spatzenweg 48, Kempten, Bavaria, Germany
Filed Sept. 16, 1965, Ser. No. 487,778
Claims priority, application Germany, Sept. 25, 1964, G 41,606
8 Claims. (Cl. 269—136)

A deep clamping jaw, especially for use on a vice, in which a bearing plate is secured to either the head or slide of the vice. A clamping jaw is arranged parallel to and spaced from the bearing plate with a pair of support members being provided therebetween so that application of pressure to the clamping jaw permits same to move in a direction substantially parallel to the bearing plate. A resilient sealing member is disposed within the space between the bearing plate and the clamping jaw and seals



the space on all sides thereof. Fastening means, such as bolts, pass through the clamping jaw and the bearing plate to connect same to the head or slide of the vice.

3,416,785
PAPER NESTING AND ENVELOPING APPARATUS
Herbert P. Sherman, Chicago, Ill., assignor, by mesne assignments, to Roneo-Neopost Limited, Croyden, Surrey, England
Filed Jan. 24, 1966, Ser. No. 522,719
5 Claims. (Cl. 270—45)



A paper nesting and enveloping apparatus including a pair of cooperating separable rollers for feeding a first sheet into a first buckle chute. At a predetermined point the leading edge of the sheet engages a control which effects separation of the rollers to stop feeding of the sheet and simultaneously actuates a holding means to hold the sheet in the chute and a second feeding means to feed a second sheet into superposed relation to the first sheet. The second sheet in its movement actuates a control which effects cooperation of the rollers and release of the holding means to buckle the first sheet into first fold means with the second sheet folded within portions of the first sheet and to feed the same into a second buckle chute. The first sheet is then buckled into second folding means which effects a second folding of the first sheet to completely envelope the second sheet.

3,416,786
BOOK COLLATING METHOD AND MEANS
Anton R. Stobb, Pittstown, N.J., assignor to Stobb, Inc., Mountainside, N.J., a corporation of New Jersey
Filed Dec. 29, 1965, Ser. No. 517,332
9 Claims. (Cl. 270—54)

A book collating method and apparatus including rollers offset from a center of planetary movement, and with the rollers supported on shafts eccentric to the axes of the rollers. The rollers carry grippers which move

along a straight line for a portion of the planetary motion A stack of signatures is disposed, and a hopper is provided for so disposing signatures, so that the base of the stack is in a flat plane along the straight line of movement of the grippers. Releasable support means are provided at the base of the stack for holding the same until a sheet



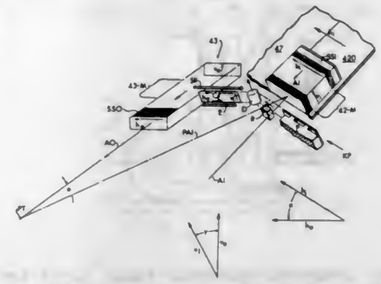
or signature is released, and signal means is provided in connection with the action of the grippers to detect such action or the failure thereof. A collector is disposed in sheet-transfer communication with the pickup means of the roller, for receiving the sheets from the pickup means.

3,416,787
TICKETMAKING MACHINE
Frederick N. Stephens, Leawood, Glenford Rowlett, Prairie Village, and Robert M. Pabodie, Overland Park, Kans., assignors to Stephens Industries, Inc., Kansas City, Mo., a corporation of Missouri
Filed July 8, 1966, Ser. No. 563,861
8 Claims. (Cl. 270—79)

A machine capable of substantially continuously drawing a web of paperboard or the like from a roll, punching the web to form severable tickets or tags with the individual tickets or tags arranged transversely of the web, advancing them through a printing station in stepwise fashion and subsequently forming the web into a fan folded stack of connected strips of multiple ticket length.

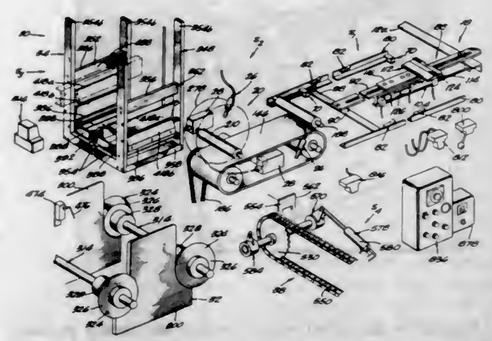
3,416,788
RECORD INPUT/OUTPUT APPARATUS
Earl E. Masterson, Newtonville, and Frank H. Schaller, Needham Heights, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 19, 1965, Ser. No. 473,120
23 Claims. (Cl. 271—3)

A card-handling machine having IN/OUT hoppers (and intermediate handling elements) arranged in "triangular relation," the hoppers being kept close to a common working level and one being tilted and converged toward the operator for better accessibility, the IN hopper being so tilted as to pre-aim cards toward an eject station, thus also shortening the inter-hopper card path, both vertically and horizontally. This arrangement also facilitates providing a document handling top surface



tilted toward the operator for easier access to more working surface.

3,416,789
BLANK FEEDER FOR A BOTTOM SEALING MACHINE
Lawrence C. Roesner, Downey, and Lenard E. Meon, Whittier, Calif., assignors, by mesne assignments, of thirty-six and one-fourth percent interest to Calavo Growers of California, a corporation of California
Original application Jan. 27, 1965, Ser. No. 428,462, now Patent No. 3,342,116. Divided and this application Aug. 3, 1967, Ser. No. 671,518
1 Claim. (Cl. 271—44)

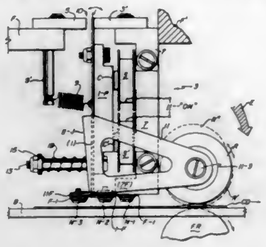


In a blank feeding station for a container assembling machine, a blank storage magazine for feeding from the bottom thereof a stack of said blanks one at a time; blank supporting means including two spaced pair of blank supporting brackets, said brackets having rear upwardly extending blank engaging extremities and forward horizontal extremities; blank ejection means below said storage magazine; and blank supporting guides disposed below said brackets whereby when said ejection means feeds the lowermost blank through an intermediate position wherein gaps between adjacent joining flaps on the sides of said blank are aligned with said rear bracket extremities, said blank drops onto said forward extremities and upon continued movement of said ejection means is cammed downwardly so as to pass between said brackets and said guides.

3,416,790
UNIT RECORD TRANSLATING MOUNTING
Wilbern F. Davis, Sharon, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,204
11 Claims. (Cl. 271—51)

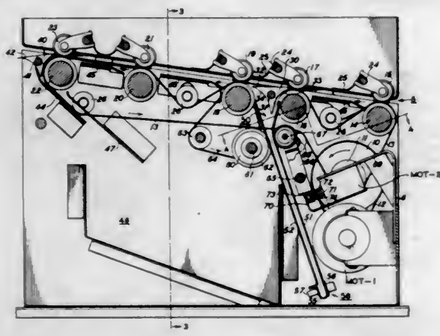
Pinch roll apparatus for selectively advancing punched cards and including a pivotable, resilient mounting assembly for the displaceable pinch roll, the assembly being

solenoid-pivoted as a unit with respect to the machine frame for card engagement; and further being internally,



and resiliently, collapsible (pivotable within itself) for accommodating variances from a nominal card thickness without disturbing solenoid engagement.

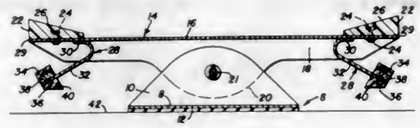
3,416,791
DOCUMENT INVERTING APPARATUS
Maynard K. Beckman, Jr., and Richard S. Muka, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 2, 1967, Ser. No. 613,487
2 Claims. (Cl. 271—65)



Apparatus for selectively inverting the facing position of a conveyed document in which a document is inserted into a receiving chute from the normal path of travel, leading edge first, and withdrawn therefrom into the normal path of travel with the trailing edge becoming the leading edge. A document thus inverted is deflected into the receiving chute by a pivotal member selectively positioned to project into the normal path of travel. The document is withdrawn from the receiving chute and inserted into the normal path of travel by a rotating friction roller which projects into the chute and contact rollers movable into the chute to hold the document in engagement with the friction roller. Movement of the contact rollers is effected by a solenoid through a linkage arrangement in response to a sensing unit detecting a leading edge of a document in the chute at a predetermined position.

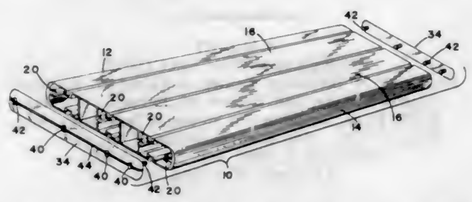
3,416,792
BALANCING EXERCISER PLATFORM WITH SHOCK ABSORBER MEANS
Robert S. Morgan, 59 7th St., North Pelham, N.Y. 10803, and James T. Williams, 25 Park Ridge Ave., New Rochelle, N.Y. 10805
Filed Feb. 4, 1966, Ser. No. 525,257
7 Claims. (Cl. 272—60)

A portable channel-shaped self-standing base unit has a flat bottoming web whose underneath side is covered by an anti-skid cushion. The vertical flanges pivotally support coordinating depending flanges on the median portion of a complemental horizontally elongated rider balancing and rocking platform. Anti-slipping inwardly



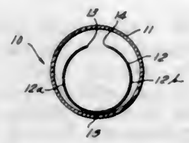
converging foot pads are mounted atop end portions of the platform, and unique limit stop leaf spring-biased shock absorbing and rebounding devices are mounted beneath the respective end portions of the platform.

3,416,793
DIVING BOARD
George C. Fox, R.D. 3, Box 438, Dover, Pa. 17315
Filed Nov. 23, 1966, Ser. No. 596,669
10 Claims. (Cl. 272—66)



This invention pertains to a composite diving board formed from a plurality of sections arranged in side-by-side relationship and readily connected to each other to form a composite diving board. The width may be varied by connecting the desired number of sections together. The particular means illustrated and described hereinafter for connecting the various sections together comprise the principal feature of the invention.

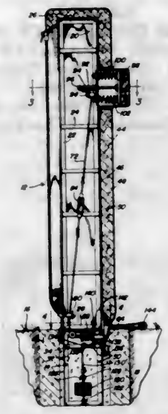
3,416,794
BRIDGE-AID DEVICE
Vincent T. Ciano, 397 6th Ave., Troy, N.Y. 12182
Filed Oct. 22, 1965, Ser. No. 501,926
8 Claims. (Cl. 273—24)



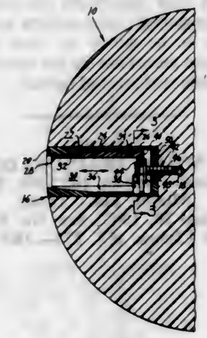
A bridge-aid device for game cues having a leaf spring member formed to partially encircle and lightly contact the tapered shank of a cue for restraining angular and radial movement while serving as a bearing member to promote unimpeded axial movement of the cue.

3,416,795
COLLAPSIBLE BLOCKING DUMMY
Hughie E. Lewis, P.O. Box 822, Warsaw, N.C. 28398, and Worth Potter, Jr., Rte. 1, Box 15, Magnolia, N.C. 28453
Filed Jan. 12, 1966, Ser. No. 520,122
5 Claims. (Cl. 273—55)

A blocking dummy for football training including a lower section and an upper section pivoted thereto. The lower section is embedded in the ground or the like and the upper section is padded and provided with a target area which, when engaged, will release a latch mechanism to enable the upper section to pivot to a generally horizontal position. Spring means is provided for returning the upper section to an upright position and a covering skirt is provided for the juncture between the upper and lower sections to prevent entry.

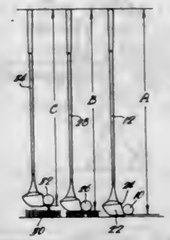


3,416,796
BOWLING BALL AND ADJUSTABLE DIAMETER FINGER RECEIVING ATTACHMENT THEREFOR
Raymond M. Ginder, 404 Sunset Drive, Salina, Kans. 67401
Filed Oct. 20, 1966, Ser. No. 588,137
5 Claims. (Cl. 273—63)



A cylindrical longitudinally-slotted finger-receiving insert is axially movable within a cylindrical sleeve secured in a bowling ball. When moved axially by a securing bolt passing through a closure member at one end of the insert and into the ball, tapered walls of the insert and sleeve coact to change the inner diameter of the insert without changing the angular relationship between the insert and its longitudinal axis. When the insert is removed from the ball, an enlargement in the insert slot permits the bolt to be slid into and out of a slot in the closure member communicating with the insert slot.

3,416,797
GOLF CLUB WOODS
Julius Henry Pfau, 465 Penllyn Road, Blue Bell, Pa. 19422
Filed June 17, 1965, Ser. No. 464,712
4 Claims. (Cl. 273—77)



A set of golf club woods wherein the length of each club is correlated with the loft angle of the club to permit a uniform address of a ball regardless of the lie of the ball, the length of the clubs increasing with increasing loft angle.

3,416,798
GOLF CLUB WITH TWO HITTING FACES
William C. Pennington, Rte. 5, Salem, Ind. 47167
Filed July 8, 1965, Ser. No. 470,510
4 Claims. (Cl. 273—80)

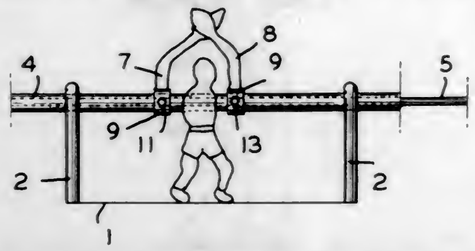


A golf club comprising a head provided with a pair of elongated hitting faces on the opposite sides thereof with their longitudinal axes transverse to each other. A pair of trapezoidal sole faces are formed on a pair of adjacent sides of the head and extend between the hitting faces. A shaft is fixedly connected to the head so that with the club in hitting position with one of the sole faces on the ground and an adjacent hitting face in operative position the handle merely need be rotated 180° about its axis to dispose the other sole face on the ground with the other hitting face in operative position. Thus, the club provides a pair of different hitting faces which can be employed without the golfer changing his stance or swing.

3,416,799
BASKETBALL GAME WHEREIN THE ARMS OF EACH PLAYER ARE ROTATABLE INDEPENDENTLY AND RELATIVE TO EACH OTHER
Cesar Numa Sande Lopez, Jackson 1372, Montevideo, Uruguay
Filed Nov. 14, 1966, Ser. No. 594,171
8 Claims. (Cl. 273—85)

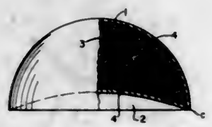
1. A game comprising a table whose upper surface defines a playing surface, means for supporting at least one dummy above said playing surface, at least one dummy mounted on said supporting means and freely rotatable thereabout, a pair of arms associated with each dummy, means mounting one end of the first arm of said pair on said supporting means on one side of said dummy,

means mounting one end of the second arm of said pair on said supporting means on the other side of said dummy, the other end of each arm being free and defining a cup-shaped hand for receiving or holding a ball, the cup-



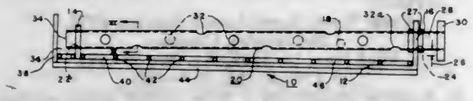
shaped hand of each pair being opposed to each other and superposable over each other to be able to grasp between them a ball, and means for independently rotating each arm of said pair so that a ball can be moved or caught with either arm separately or both arms together.

3,416,800
GAME PROJECTILES
Brian P. Randall, P.O. Box 8190, Asheville, N.C. 28804
Filed Oct. 4, 1966, Ser. No. 584,175
2 Claims. (Cl. 273—106)



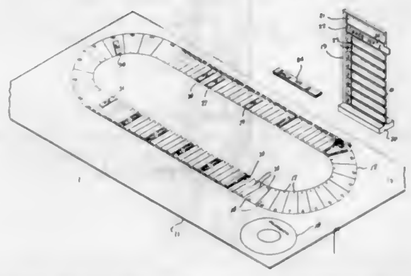
An aerodynamic game projectile of a resilient porus material. The projectile is so shaped as to have a concave lower surface having a circular periphery and an upper convex surface of revolution formed by the rotation of a curved line having one end disposed at the periphery of the concave lower surface, and the other end located at a point on the line representing an axis normal to the concave surface at its center. The diameter of the circular periphery is approximately the maximum diameter of the surface of revolution. In one embodiment the line is the arc of a circle having an extent of no more than 90°.

3,416,801
ROTATING TUBE GAME WITH ROLLING MEMBER
John P. McKeown, 215 Gates Drive, Munhall, Pa. 15120
Filed Dec. 21, 1966, Ser. No. 603,590
11 Claims. (Cl. 273—110)



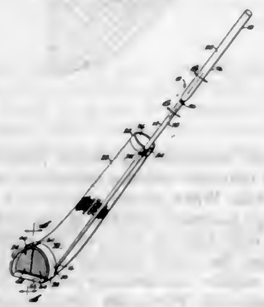
1. In a game structure, the combination comprising at least one rolling member, an elongated tube, means for supporting said tube in an inclined position thereof, said tube being rotatably mounted in said supporting means and having openings adjacent its ends to receive and to discharge said rolling member, such as a ball and said tube having a number of obstacles spaced along the length thereof and movable into and out of the path of said rolling member, and means forming at least part of the tubular wall structure of said tube for providing visual access to said rolling member as it moves along the length of said tube.

3,416,802
SIMULATED HORSE RACE BOARD GAME APPARATUS
Jose M. Garcia Montes, Don Quijote 75, 1-D, Madrid, Spain
Filed Mar. 17, 1967, Ser. No. 624,078
9 Claims. (Cl. 273—134)



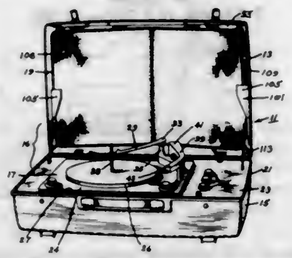
A horse racing game apparatus to closely simulate horse race handicapping conditions, consisting of a game board inscribed with an oval simulated horse race track and inscribed with numbered successive transverse spaces along the oval track, the board having recesses at the inside ends of the spaces. A plurality of numbered cards are provided having pins engageable in the recesses so that the cards can be positioned on and mechanically secured to the selected spaces. Respective combinations of settings for the cards are prescribed for simulated different length races. Game pieces in the form of simulated horses are provided. The game pieces may represent different classes of horses by pre-arrangement. The game pieces are advanced on the board along the numbered spaces in accordance with values shown on dice thrown by the associated players. The cards indicate penalty spaces to be subtracted from or advantage spaces to be added to those indicated by the dice when the game pieces are on the spaces containing the cards, for the different classes of horses.

3,416,803
GOLF SWING TRAINING DEVICE
José Hernandez Batista, 1822 SW. 99th Place, Miami, Fla. 33165
Filed Jan. 30, 1967, Ser. No. 612,510
6 Claims. (Cl. 273—186)



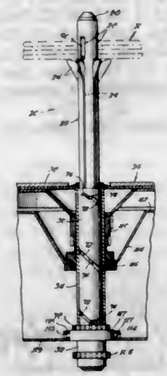
A simulated golf club shaft has an extensible gripping handle and an elongated bag connected thereto. The lower end of the bag is secured to the lower end of the shaft by a first ring forming a golf ball entrance mouth which may be swung at a golf ball. The upper end of the bag is secured to the shaft adjacent the upper end thereof and forms a golf ball exit port. The first ring includes (1) inwardly yieldable doors which prevent balls from leaving the bag through the entrance mouth and (2) a chamber in which weights may be inserted to vary the weight of the first ring.

3,416,804
STEREOPHONIC SPEAKER ARRANGEMENT FOR A PHONOGRAPH
Cornelius W. Christie, Norristown, Pa., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 320,206, Oct. 30, 1963. This application June 10, 1966, Ser. No. 562,050
3 Claims. (Cl. 274—2)



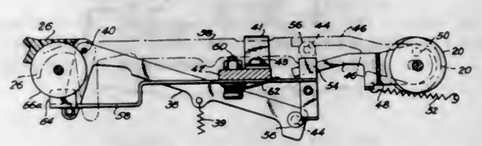
In a stereophonic device, a cushion and a plurality of loudspeakers are provided, the loudspeakers being enclosed and positioned within the cushion in such a manner as to provide a stereophonic sound effect to a person whose ears are placed in proximity to the speakers.

3,416,805
RECORD CHANGER SPINDLE
James L. D. Morrison, 2045 Mandeville Canyon Road, Los Angeles, Calif. 90049
Filed Oct. 20, 1965, Ser. No. 498,938
12 Claims. (Cl. 274—10)



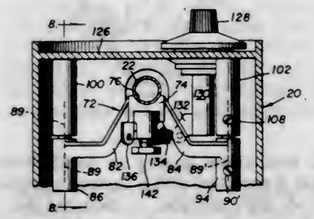
A record changer spindle of the self-supporting type having a pair of rotary cams about the lower end of the spindle beneath the turntable surface, the turntable being rotatably supported about the spindle by means of a bearing which encircles the upper one of the cams, the upper cam operating the record lowering means and having its upper edge adjacent the turntable surface, the second rotary cam which operates the record stack supporting means during the record change cycle being located immediately below the first rotary cam.

3,416,806
DICTATION APPARATUS
William E. Springer, Stratford, and Joseph A. Rescsanski, Trumbull, Conn., assignors to Dictaphone Corporation, Bridgeport, Conn.
Filed Dec. 5, 1966, Ser. No. 599,033
13 Claims. (Cl. 274—11)



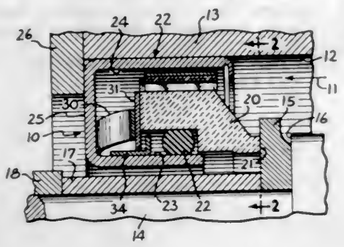
In a dictating machine in which a belt-record is supported under tension during recording by two mandrels, one of which is movable toward the other to release the tension on the record, apparatus for triggering a mechanism to move the movable mandrel away from the stationary mandrel to tension the record. The stationary mandrel has an axially movable flange against which an edge of the belt-record abuts as the record is slipped over the mandrels. The belt-record pushes the movable flange against a trigger which actuates the tensioning mechanism to tension the record.

3,416,807
PHONOGRAPH TONE ARM
John F. Arent, Benton Harbor, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Apr. 5, 1965, Ser. No. 445,525
14 Claims. (Cl. 274—23)



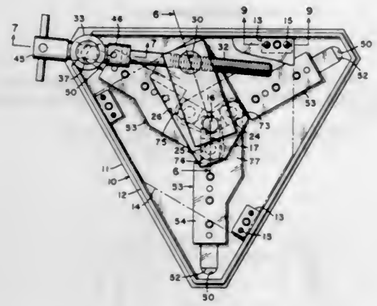
A phonograph tone arm assembly which in the illustrated embodiment includes a housing mounted on a C-yoke for conjoint rotation therewith on a vertically disposed conical bearing and a tone arm fixed to a bracket which is suspended from the housing by a pair of flexible wires or members disposed on either side of the tone arm and having their upper ends secured to the housing. The intermediate portion of the two flexible members between the secured ends is free to flex so as to define a horizontal pivot axis about which the tone arm pivots, the tone arm being mounted on the bracket above said horizontal pivot axis. A spring is disposed above and across said horizontal axis having its rear end anchored to underneath the tone arm behind the horizontal pivot axis and having its forward end anchored to the housing forwardly of the horizontal pivot axis so that the tone arm maintains a constant stylus pressure at different record heights.

3,416,808
FLOATING-ANTIROTATION DEVICE
Robert M. Voitik, Glenview, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago, trustee
Filed Feb. 9, 1967, Ser. No. 614,913
5 Claims. (Cl. 277—40)



A rotary face seal in which one of the annular sealing rings is held against rotating friction by an anchor fitting in a peripheral notch in the ring, with the anchor being mounted on a resilient member.

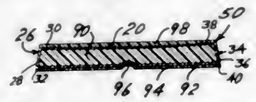
3,416,809
SELF-CENTERING CHUCK MECHANISM
Cleveland N. Cooper, Kirkwood, Mo., assignor to The Pandjiris Weldment Co., a corporation of Missouri
Filed Aug. 26, 1965, Ser. No. 482,718
10 Claims. (Cl. 279—110)



A chuck mechanism having an oscillatively mounted actuator that is provided with a keyway extending radially to an axis. A slide member is mounted for movement toward and away from such axis. Means interconnect a key block slidably mounted in the keyway and the slide member. The actuator is oriented so that the keyway extends in a direction substantially transverse to the direction of travel of the slide member and associated jaw. The key block slides in the keyway upon oscillative movement of the actuator to cause reciprocative movement of the slide member and associated jaw between limits.

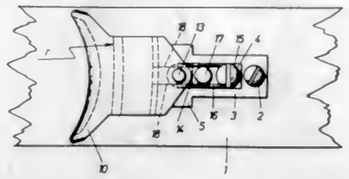
3,416,810
COMPOSITE METAL AND PLASTIC SKI AND METHOD OF MANUFACTURE FOR SAID SKI
Michael E. Kennedy III, Seattle, Wash., assignor to Peter Kennedy, Inc., Seattle, Wash., a corporation of Washington
Filed Aug. 5, 1966, Ser. No. 570,453
44 Claims. (Cl. 280—11.13)

A ski which comprises a base, side edges and a tail bridge. The lower ends of the side edges comprise the running edges. In addition to the base and the side edges there is a body portion of plastic. The plastic may be a



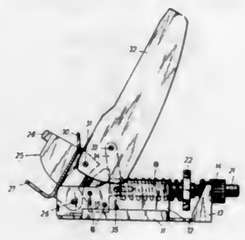
solid polymeric foam. Then, on the outside of the plastic there is a running surface such as polyethylene.

3,416,811
SAFETY TOE IRON
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany
Filed Mar. 20, 1967, Ser. No. 624,332
Claims priority, application Germany, Mar. 22, 1966, M 68,866
3 Claims. (Cl. 280—11.35)



A sole holder is slidably guided in a guide, which extends transversely to the longitudinal direction of the ski. The sole holder is movable forwardly after a predetermined transverse displacement. Resilient means tend to hold the sole holder in its normal position. The guide which extends transversely to the longitudinal direction of the ski is provided on a carriage, which is slidably guided in the longitudinal direction on a base member, which is secured to the ski. The base member comprises a restraining surface for the sole holder. This restraining surface determines the amount of the transverse displacement. The resilient means are arranged to restoring the sole holder from any displaced position to its initial position.

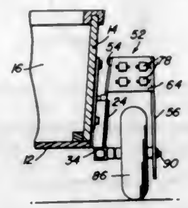
3,416,812
SAFETY HOLDER FOR HEELS IN CONNECTION WITH SKI BINDINGS
Alfred Gembruch, Jr., Ludenscheid, Germany, assignor to Alfred Gembruch, Ludenscheid, Germany
Filed July 13, 1967, Ser. No. 653,178
Claims priority, application Germany, Aug. 26, 1966, G 47,764
4 Claims. (Cl. 280—11.35)



Load reversible heel holder for skis in which a heel engaging member is pivoted to an inner frame which is adjustable in an outer frame that is adapted for mounting on a ski and with a lever pivoted to the inner frame moveable upwardly to release the heel holder and downwardly to move the heel holder into clamping position

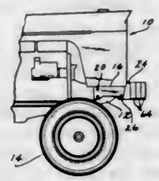
and with a spring loaded linkage connected between the inner frame and the lever which moves over center when the lever is moved to clamping position.

3,416,813
REMOVABLE WHEELS FOR BOATS
Cecil R. Sholl, P.O. Box 681, Kodiak, Alaska 99615
Continuation-in-part of application Ser. No. 402,560, Oct. 8, 1964. This application Oct. 4, 1966, Ser. No. 584,271
10 Claims. (Cl. 280—47.32)



A wheel mounting structure for a boat including a base member adapted for securement to one side of the associated boat for removably supporting a stub axle member therefrom for limited pivotal movement relative to the base or base member by a horizontal axis generally paralleling the associated boat. The wheel mounting structure includes an inverted generally U-shaped assembly adapted to embrace and bridge over the upper peripheral portions of a wheel journalled on the outer end of a stub axle with one leg supported from the base member and the free lower end of the other leg adjustably secured to the outer end of the stub axle member outwardly of the wheel journalled thereon.

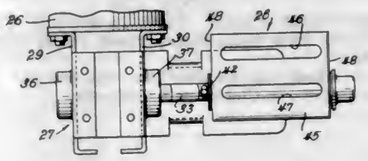
3,416,814
FRONT END WEIGHT
Norman P. Martin, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 23, 1967, Ser. No. 610,940
7 Claims. (Cl. 280—150)



A front end weight for a tractor which comprises multiple weight elements and wherein the elements include angular receiving and securing apertures for the means for attaching the weight to the tractor. The weight elements are identical units of one-piece construction and the receiving and securing apertures are angularly offset to accommodate the attaching means. The elements also include centrally positioned receiving and retaining means.

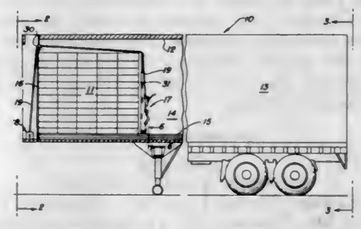
3,416,815
SEAT BELT MASSAGER
Hans R. Weiss, Niles, Ill., assignor to The Dantamor Company, Chicago, Ill., a corporation of Illinois
Filed June 29, 1967, Ser. No. 650,105
9 Claims. (Cl. 280—150)

The driving unit for a combined safety seat belt and abdominal massaging apparatus is mounted to a structural member of a vehicle by the seat belt mounting means thereby simplifying mounting and insuring correct relationship with the seat belt. Designed for directly driving



the belt, the unit is adaptable to a variety of seat belt mountings and is readily adapted for use for both the right hand and the left hand seat positions.

3,416,816
CARGO SECURING MEANS
Kenneth H. Spencer, Penryn, Calif., assignor to Beckett Manufacturing Co., Penryn, Calif., a corporation of California
Filed Mar. 10, 1967, Ser. No. 622,131
8 Claims. (Cl. 280—179)



A plurality of cables are suitably arranged to pass over a cargo of stacked boxes or the like and to be tightened against a movable wall member to secure the cargo in a transport vehicle. A cable securing and tightening means comprising a cam-type clamp and an overcenter toggle mechanism is connected to each cable and adjustably arranged in the vehicle to adapt the cables to various cargo arrangements. It should be understood that this abstract shall not be used for interpreting the scope of the invention disclosed and claimed hereinafter.

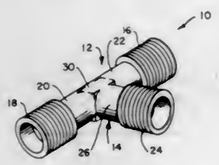
3,416,817
PAGE MARKER AND HOLDER
Daniel Gia-Quinto, 4 Rosemere Ave., Rye, N.Y. 10580
Filed May 24, 1967, Ser. No. 640,877
3 Claims. (Cl. 281—42)



This invention has to do with a combined page marker and upright inwardly directed supporting legs which will hold a page of a looseleaf book at nearly right

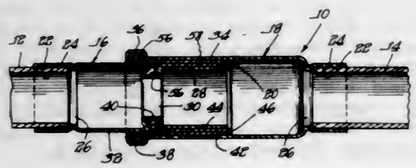
angles to an adjacent page whereby a clear, unobstructed view may be had of the adjacent exposed pages.

3,416,818
CONNECTOR
William Patrick Conlin, North Hollywood, Calif., assignor to Tech Aero, Incorporated, North Hollywood, Calif.
Filed Aug. 23, 1967, Ser. No. 662,817
4 Claims. (Cl. 285—39)



This connector fitting is characterized by a decreased intermediate wall thickness in order to decrease the weight of the connector. The wrench pads integral with the intermediate portions of the connector fittings serve to increase the strength of the connector. At the same time the pads are small in thickness so that the fittings can be installed with smaller wrenches or other tools than was heretofore possible. The edges of the wrench pads of the present connector fittings are stepped down to the arcuate rear surface of the intermediate portions of the connector fitting.

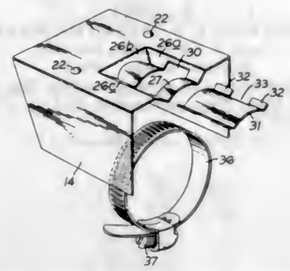
3,416,819
MOTION COMPENSATOR
Robert E. Day, Crystal Lake, Ill., assignor to Calumet & Hecla, Inc., Evanston, Ill., a corporation of Michigan
Filed Aug. 9, 1967, Ser. No. 659,420
10 Claims. (Cl. 285—302)



A motion compensator in which telescopingly interfitting tubular members are joined by a sleeve of tough, flexible material, the sleeve being folded upon itself to establish two tubular portions that are disposed in telescopingly reentrant relationship.

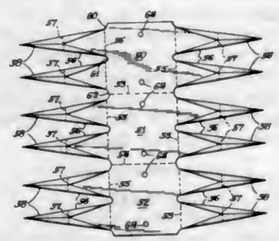
3,416,820
MOTOR VEHICLE ACCESSORY MOUNTING
David Warwick Neale, Stourport, England, assignor to Raydyot Limited, Stafford, England, a British company
Filed Jan. 10, 1967, Ser. No. 608,299
Claims priority application Great Britain, Oct. 19, 1966, 46,645/66
4 Claims. (Cl. 285—399)

Mounting of an accessory such as an exhaust attachment on a rounded component of a motor vehicle such as a tail pipe. The body of the accessory includes a component receiving socket having a curved wall formed with a slot. A component encircling, contractible band is disposed in the socket and projects outwardly through the slot. A removable bridging member is seated exteriorly on the socket wall across the slot and the projecting portion of the band extends over the bridging member so that the



latter and the socket wall are clamped against a vehicle component when the band is contracted.

3,416,821
MULTI-PURPOSE BUILDING BRACKET
Edward L. Benno, Skokie, Ill., assignor to Ray Laboratories, Inc., a corporation of Illinois
Filed Sept. 29, 1964, Ser. No. 400,187
1 Claim. (Cl. 287—20.92)



1. In a multi-purpose building bracket, a plate section, a plurality of integrally formed shank members extending from said plate section, a plurality of nail members extending from the extending ends of said shank members, said nail members being curved substantially on the circumference of a circle and the distance from the extending tips of said nail members to the point of said plate section at which a respective shank member is attached is greater than the length of each of said shank members, so that said nail members exert a longitudinal pulling force on each of said shank members contemporaneously with the driving of said nail members when said plate section is fixed against movement.

3,416,822
SYSTEM FOR COUPLING AND MUTUALLY SECURING TOGETHER TWO PARTS
Michel Zimmer, Yverdon, Vaud, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a corporation of Switzerland
Filed June 2, 1966, Ser. No. 554,807
Claims priority, application Switzerland, June 23, 1965, 8,796/65
5 Claims. (Cl. 287—20.924)

A coupling means is provided for the purpose of securing one object to another such as an accessory to a camera casing. A first plate having a plurality of openings therein is attached to the camera casing whereas a second plate which includes a plurality of studs adapted to fit into said openings carries the accessory and is secured to the first plate by positioning the studs in related openings therein. Several of the studs are mounted on spring controlled

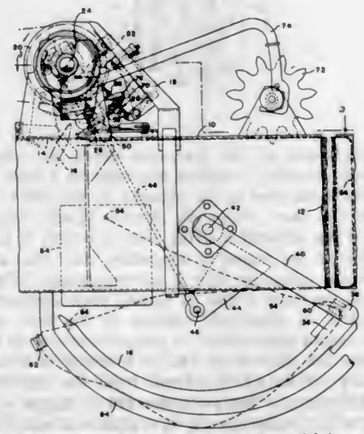
levers so that the spring action normally urges the studs into locking position.

3,416,823
HEAT SHRINKABLE LOCKING MEMBER FOR A FASTENER
Ulrich Wolfgang Auer, 5 Ave. de Cavaliers, 1224 Chene-Bougeries, Geneva, Switzerland
Filed Aug. 16, 1966, Ser. No. 572,787
Claims priority, application Germany, Aug. 16, 1965, A 50,006
6 Claims. (Cl. 287—189.36)



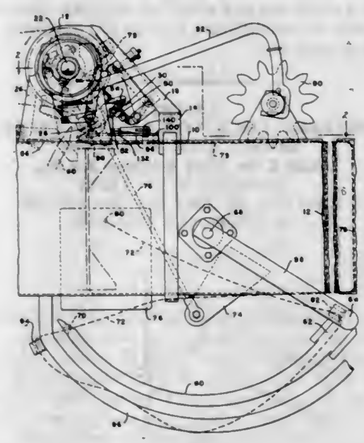
A joint for the connection of members to be joined comprising a bolt which passes through an opening in the members to be joined and a heat shrinkable member initially mounted on the bolt with clearance and having a dish-shape such that upon heating it shrinks tightly onto the bolt while also shrinking axially to clamp the members to be joined against the head of the bolt.

3,416,824
GUIDE FOR KNOTTER NEEDLE OF BALER
Edwin B. Nolt, New Holland, John H. Eberly, Lancaster, and Richard R. Eby, Ephrata, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 16, 1967, Ser. No. 661,016
7 Claims. (Cl. 289—2)



Twine knotter mechanism for a baler utilizing twine to tie bales into compressed, completed condition and including a knotter unit and a clamping unit arranged in close operative positions upon the case of a baler, an arcuate needle supported in cantilever manner upon a yoke for swinging movement of the outer end thereof from a retracted to an extended operative position adjacent said knotter to carry an elongated loop of twine thereto for tying one side of said loop to the clamped outer end of said strand, and means to actuate said units and needle in timed relationship relative to each other, in combination with guide means fixed relative to said baler case and positioned for slidable interengagement with opposed surfaces of said needle adjacent said knotter unit to insure accurate positioning of the outer end of the needle and elongated loop of twine carried thereby for positive engagement with said knotter unit and thereby insure the tying of a satisfactory knot each time the mechanism functions.

3,416,825
TWINE FINGER AND ACTUATING MEANS FOR BALER
Edwin B. Nolt, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 16, 1967, Ser. No. 661,014
12 Claims. (Cl. 289—13)

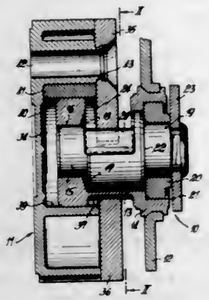


A knotter mechanism assembly for a baler of the type employing loops of twine to tie bales in finished condition and including a knotter unit operatively associated with a clamping unit, means to operate said units to effect the tying of a knot in opposite ends of said loop of twine around a bale and including a twine needle movable relative to said case to carry the trailing end of said loop of twine around the trailing end of a bale being formed to interengage said knotter unit therewith, in combination with a twine finger supported pivotally adjacent said knotter unit and having a notch therein terminating in an eye operable to receive the opposite ends of said loop of twine and momentarily hold the same while the knotter unit ties a securing knot therein, said twine finger being movable in opposite directions respectively to insure engagement of the trailing end of said loop of twine with said knotter unit and subsequently to positively pull the completed knot from the bill hook of said knotter unit, and cam means operatively interconnected to said twine finger and including means positively to move said twine finger in both of said opposite directions of movement thereof.

3,416,826
FASTENING MEANS FOR A MOTOR VEHICLE DOOR

Peter U. Putsch, Mannweiler, Pfalz, and Karl Dieter Schorken, Wuppertal-Ronsdorf, Germany, assignors to Fa. Fritz Kieper, Remscheid-Hasten, Germany

Filed Sept. 14, 1967, Ser. No. 667,717
Claims priority, application Germany, June 28, 1967, K 62,666
17 Claims. (Cl. 292—198)

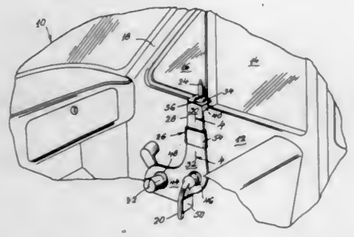


In a door fastening lock for a vehicle a bush extending around a catch pin and engaging with the catch pin in a catch plate to simplify and shorten the cantilever mounting of the catch pin.

3,416,827
PORTABLE LOCK FOR MOTOR VEHICLE DOORS AND WINDOWS

Alan Cole, 3100 Brighton 3rd St., Brooklyn, N.Y. 11235

Filed Feb. 20, 1967, Ser. No. 617,390
10 Claims. (Cl. 292—288)



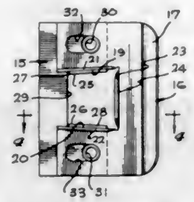
An attachment for the doors and windows of an automobile to lock the doors and windows and prevent theft of contents inside locked automobiles and unauthorized driving or unauthorized towing away of the automobile. An elongated sectional plate is provided, one section bent to interlock with the handle that manipulates the pivotal window, and the other section is bent to interlock with the handle that manipulates the door of the automobile and the handle that raises and lowers the window.

3,416,828
ADJUSTABLE STRIKE

Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Richard L. Armstrong, Santa Fe Springs, and Harold W. Falk, Inglewood, Calif.; said Armstrong and Falk assignors to said Fred J. Russell

Filed June 23, 1967, Ser. No. 648,434
6 Claims. (Cl. 292—341.18)

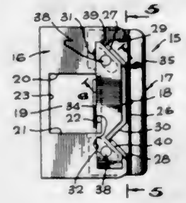
The invention relates to door lock hardware and, in particular, to an adjustable strike plate which is mounted on the door frame and which, upon installation as well as subsequent to installation, can be adjusted in a lateral or transverse direction so as to provide a snug engagement with a conventional latch bolt. Since there is a certain limit to the accuracy with which a carpenter can work when mounting a strike plate on a door frame so as to coincide with the location of a lock installed in a door, it is customary to allow for a certain amount of freedom, so that the latch bolt will enter the hole in the strike plate when the door is closed against the door stop. This means that the door might rattle slightly after closing. The invention here disclosed embodies a strike plate having two parts which can be adjusted, one with respect to the other, when the parts are mounted on a door frame. More particularly, the invention includes the provision of flanges at the transverse edges of the bolt hole in at least one of the plates which press against the edges of the bolt hole in the other plate, when the parts are drawn together by the screw which fastens them both to the door frame in their properly adjusted position with respect to the latch bolt.



3,416,829
ADJUSTABLE STRIKE

Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Richard L. Armstrong, Santa Fe Springs, and Harold W. Falk, Inglewood, Calif., said Armstrong and Falk assignors to said Fred J. Russell

Filed June 23, 1967, Ser. No. 648,433
5 Claims. (Cl. 292—341.19)

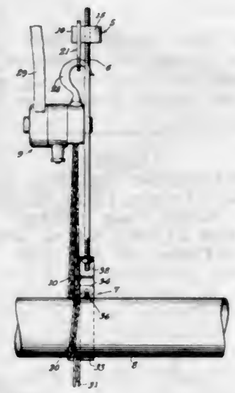


The disclosure of the invention shows an adjustable strike plate assembly which is mounted on a door frame and which is adapted to be engaged by the latch bolt of a lock in the door, when the door is closed. One plate element of the adjustable strike plate assembly is fastened immovably to the frame in a position such that a strike plate opening coincides with a corresponding strike plate opening in the door frame. A second plate element overlies the first, is adjustable relative to the first, so that it can be moved transversely to positions nearer or farther away from the door stop, and is fastened in a selected position by screws which extend from the second plate element through the first plate element to engage a fastening plate which underlies the first plate element. Oblique slots in the first plate element allow for the adjustment. The adjustment is to provide for a snug engagement between the appropriate edge of the second plate element and the flat side of a conventional latch bolt.

3,416,830
RELEASABLE HANGER FOR HOISTING EQUIPMENT

James F. Karr, 505 N. Marsalis St., Dallas, Tex. 75203

Filed Aug. 15, 1967, Ser. No. 660,668
5 Claims. (Cl. 294—5.5)

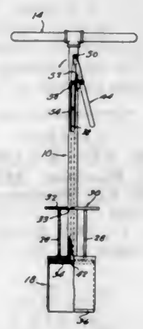


A releasable hanger for separable connection with ceiling-carried hanger rods from the lower ends of which a pipe or other member or equipment is suspended, and which serves as means from which a hand-operated hoist may be hung and which raises the pipe suspended therefrom to a position for facile connection to said lower ends of the rods.

3,416,831
GOLF CUP HOLE CUTTER

Forest M. Bishop and Roy I. Bishop, Jr., both of Rte. 2, Box 69, Olympia, Wash. 98501

Filed July 2, 1965, Ser. No. 469,180
7 Claims. (Cl. 294—50.5)

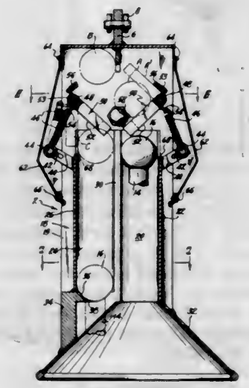


A hole cutting device for forming golf holes or the like comprising a hollow cup-shaped cutter head having an open lower end and a top wall, an upstanding tubular shaft fixed to said top wall, a vertically elongated rod having a cross-section smaller than that of the shaft throughout its length and working through an opening in the cutter head top wall and within said hollow shaft, manual operative means on the shaft and connected to the rod for moving the rod between a downwardly extended position, wherein the lower end of the rod is below the lower end of the cutter head, and an upwardly retracted position wherein the lower end of the rod is substantially at the level of the top wall of the cutter head, whereby said rod may be extended and retracted to provide a venting hole in a ground plug formed by the cutter head for preventing vacuum suction from hindering removal of the plug from the ground.

3,416,832
AUTOMATIC COUPLING

Matt F. Rice, Boise, Idaho, assignor to Morrison-Knudsen Company, Inc., Boise, Idaho, a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 668,125
15 Claims. (Cl. 294—82)



A load member has an upstanding rod with a spherical head at its upper end and a hook portion has a conical guide recess leading to a first upwardly extending passage therein. As the hook portion is lowered onto the load member the head moves up the first passage, through its upper end and engages and swings a spring-biased gate to one side. The gate deflects the head laterally to a position over a downwardly extending second passage leading to a seat for the head. By then lifting the hook portion, the seat engages the head and the load is lifted. When the hook and load are lowered and the load is deposited, the hook portion continues downwardly and the head moves through the upper end of the second passage where it engages and swings a second similar spring-biased gate which deflects the head laterally to a position over the first passage and the hook portion can then be lifted and separated from the load. A slot between the passages permits free lateral movement of the rod from one to the other.

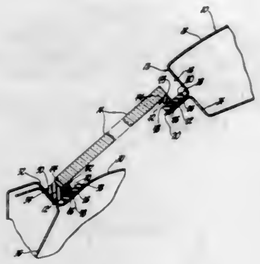
3,416,833
WINDSHIELD MOUNTING

Henry W. Griffin, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 27, 1967, Ser. No. 649,224
4 Claims. (Cl. 296—93)

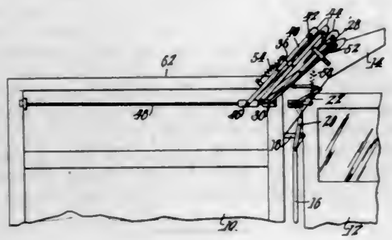
A vehicle body has a windshield opening which is defined by a continuous first body wall extending generally normal to the plane of the opening. A second continuous body wall extends generally parallel to the plane of the opening and normal to the first wall. The body walls are

formed of conventional body stampings. An elongated generally flat continuous member or strip is adhesively secured to the second body wall entirely around the opening. A second elongated continuous member or strip, narrower and harder than the first strip, is provided with a tapered free side or edge and an opposite base side or edge which is adhesively secured to the inside surface of the windshield adjacent the edge thereof. Both strips are preferably formed of butyl rubber which is deformable but self-sustaining as to form and will adhere to painted metal, glass, and to each other. The windshield is then moved



toward the second body wall to force or press the free edge of the second strip into the first strip and adhesively secure the strips to each other to mount the windshield on the body. The second strip is harder than the first strip to ensure penetration of the first strip and remains substantially undeformed as it is pressed within the first strip. Rubber blocks are provided along the lower edge of the windshield opening on the first wall either before or after the windshield is mounted within the body opening in order to support the weight of the windshield if the strips cannot support this weight.

3,416,834
COVER CONSTRUCTION FOR OPEN BODY TRUCKS
Frank E. Morse, Jr., 199 Prospect St., Auburn, Mass. 01501
Filed Apr. 3, 1967, Ser. No. 627,799
4 Claims. (Cl. 296—100)



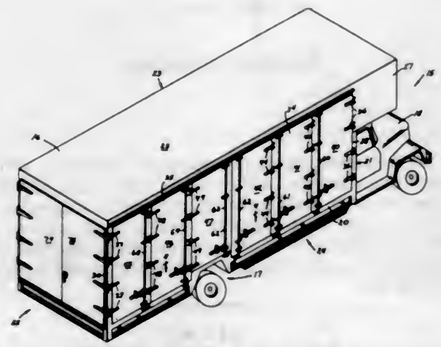
Mechanism for extending a cover over an open truck body comprising a cover-attached lazy-tongs at each side of the truck body, said lazy-tongs being mounted only at the forward end of the body and including means for extending the lazy-tongs toward the rear so as to spread the attached cover out over the body, and to fold it at the forward end thereof. The cover is attached to the lazy-tongs at various points along the lazy-tongs as well as the extreme end so that the cover is thereby held down closely and tightly onto the open top of the truck body.

3,416,835
TRUCK BODY CONVERTING APPARATUS
Harold F. Ohle, 11949 Lesser St., Norwalk, Calif. 90650
Filed Jan. 17, 1967, Ser. No. 609,803
10 Claims. (Cl. 296—100)



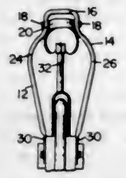
An apparatus which can be mounted to a truck, and which includes a housing and a plurality of panels slidable in tracks to overlie and cover the body, and retractable for storage in the housing in accordian fashion.

3,416,836
SIDE-LOADING MOVING VAN
Victor S. Swanby, 1603 S. 131st St., Seattle, Wash. 98168
Filed Sept. 21, 1967, Ser. No. 669,581
6 Claims. (Cl. 296—148)



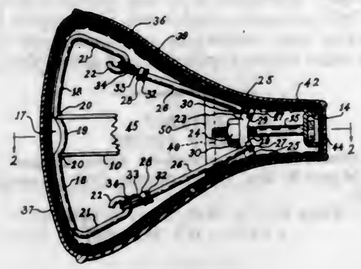
A side-loading moving van is described for permitting side access to the interior of the van along the entire side. The side is enclosed by multi-leaf doors that are hinged to the corner posts of the van. A latching bar is provided on each door leaf adjacent the hinges for the adjacent leaf for applying pressure on the outside of the leaf to hold the leaf securely against the frame of the van to provide a structurally integrated side panel for resisting the deflection and twisting of the van and for providing a rigid hinge support for the adjacent leaf.

3,416,837
BRACE FOR CYCLE SADDLE SEATS
Henry A. Saunders, Worcester, Mass., assignor to Persons-Majestic Mfg. Co., Worcester, Mass., a corporation of Massachusetts
Filed Mar. 17, 1967, Ser. No. 623,897
3 Claims. (Cl. 297—195)



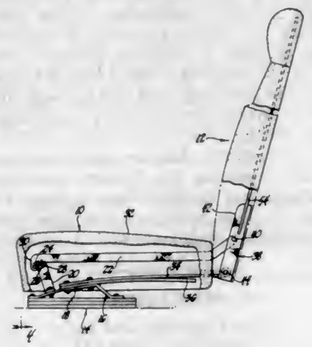
A U-shaped brace for a cycle saddle including a pair of elongated spaced legs, means to pivot the same to the saddle near the closed end of the U, the legs having portions which are bowed outwardly away from the saddle.

3,416,838
CYCLE SADDLE CONSTRUCTION
Robert H. Mesinger, Lake Crest Drive, Aunt Hack Ridge, Danbury, Conn. 06810
Filed Jan. 17, 1967, Ser. No. 609,817
10 Claims. (Cl. 297—214)



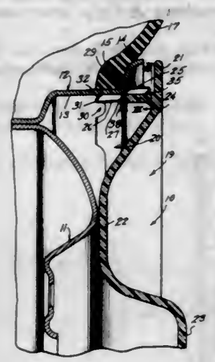
A bicycle saddle seat supporting undercarriage construction having a rigid fore and aft extending frame member securable to a seat post and a horizontally laterally extending cantle member secured at its middle to the rear of the frame member; the laterally extending portions of the cantle member being of stiff spring material to resist forward pull. Rod like members are secured between the resiliently displaceable cantle ends and the front end of the frame member. The cantle member and rod like members providing resilient suspension type support for the seat material thereon.

3,416,839
BACKREST ASSEMBLY
Hyland C. Flint, 3551 Walnut Lake Road, Orchard Lake, Mich. 48033
Filed Apr. 26, 1967, Ser. No. 638,686
15 Claims. (Cl. 297—396)



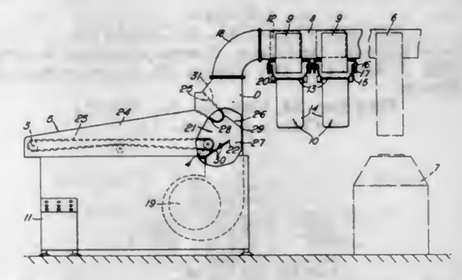
A backrest assembly for a seat structure, either reclining or fixed, in which the back assembly is in two parts. An outer peripheral part includes a headrest portion, and an inner part is so arranged as to support the major weight of the back of the occupant. U-shaped spring wire members in both parts, being of varying degrees of resilience, permit the inner part to deflect rearwardly at a greater rate than the outer part, so that the occupant's head contacts the headrest portion.

3,416,840
COVER ASSEMBLY HAVING COVER WITH A RETAINING RING
Frederick T. Gibbings, Bloomfield Hills, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,599
12 Claims. (Cl. 301—37)



A composite wheel cover assembly including a cover member and a retaining ring for securing the composite assembly on a tire rim, the cover member and the retaining ring having complementary, annularly disposed means for permitting the elements to be axially assembled and thereafter substantially preventing disassembly of the composite assembly.

3,416,841
APPARATUS FOR CONVEYING ARTICLES
Norman Stanley Valentine, Rustington, England, assignor to Polymark Limited
Continuation-in-part of application Ser. No. 528,282, Feb. 17, 1966. This application Sept. 11, 1967, Ser. No. 666,768
3 Claims. (Cl. 302—11)



Pneumatic conveying apparatus for textile articles comprising a generally vertical air duct having a lateral opening for receiving articles to be conveyed, means for forcing an air blast upwardly in the duct, a conveyor belt forming the bottom of a generally horizontal trough for delivering articles to the opening, a baffle in said duct on the upstream side of the opening creating a Venturi effect in the area of the opening, said baffle extending transversely from a point beneath the end of the conveyor belt nearest the opening to a point intermediately of the cross-section of the duct, and a guide plate in said duct downstream of the opening creating a divergent passage for progressively reducing the velocity of the air blast beyond said opening. The baffle is provided with louvre openings beneath the said end of the conveyor belt to provide an upward stream of air adjacent the said end of the

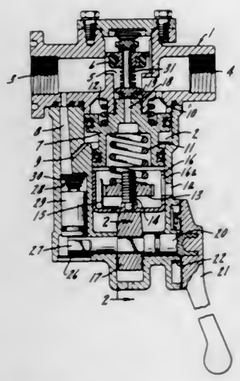
conveyor belt to promote delivery of the articles into the air blast at said lateral opening and to assist in directing the articles into said duct.

3,416,842
LOADING AND UNLOADING EQUIPMENT
Jacobus Marinus Donkers, Zaandam, Netherlands, assignor to Verschure & Co's Scheepswerf en Machinefabriek N.V.
Filed Aug. 21, 1967, Ser. No. 661,936
Claims priority, application Netherlands, Aug. 23, 1966, 6611859
10 Claims. (Cl. 302—34)



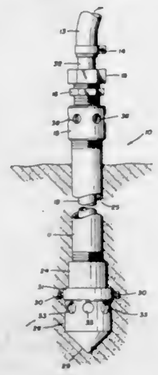
Loading and unloading equipment comprises an upright tower and a conveyor support carried by and movable on the tower. The conveyor support comprises a train of articulately interconnected members, and the tower has a guide by which these are directed laterally. The interconnected members rest on and support each other so that they extend laterally outward beyond the tower in cantilever fashion. The tower can thus have desirably small horizontal dimensions and need not have any horizontally extensible portion.

3,416,843
BRAKE PRESSURE REGULATOR
Werner Kobnick, Heidelberg, Germany, assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Dec. 14, 1966, Ser. No. 601,631
4 Claims. (Cl. 303—54)



A tractor-trailer air brake pressure regulator wherein a control piston is balanced on one side by system pressure and a control spring and on the other side by brake cylinder pressure and an exhaust spring. A variable radius cam is rotatable to vary the effect of the control spring in relation to the trailer load. The control spring can be prestressed, to adjust the regulator for use on trailers having different load and brake pressure characteristics, by manual turning of a movable control spring retainer. The exhaust spring is of sufficient predetermined force to move the control piston to exhaust position even though system pressure is present against the piston. The cam is spring-urged out of its brake-released position. A detent piston, responsive to system pressure, detains the cam in brake-released position but is overcome by said spring-urging upon connection of a tractor and resultant drop in system pressure acting on said detent piston.

3,416,844
PICKUP PROBE
Virgil Kenneth Steidley, Mansfield, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed Dec. 5, 1967, Ser. No. 688,187
8 Claims. (Cl. 302—58)



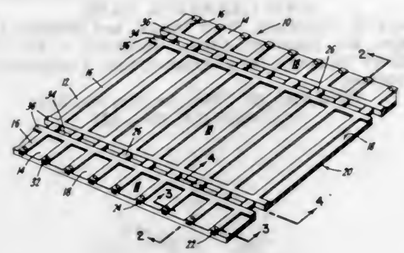
A pickup probe for fluidizing granular material and entraining it in a fluidizing medium. The pickup probe has an outer housing terminating, at one end, with an inserting head. An educting conduit is mounted within the housing to form a fluidizing chamber between the outer wall of the educting conduit and the inner wall of the housing. The inserting head and housing cooperate to provide a gate means for selectively controlling the rate of admission of the granular material into the fluidizing chamber. The fluidizing chamber communicates with the educting conduit so that the fluidized granular material can flow outwardly of the probe therethrough. The fluidizing chamber also communicates with inlet ports for admitting the fluidizing medium.

ERRATUM

For Class 303—54 see:
Patent No. 3,416,843

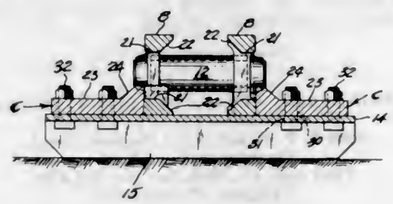
3,416,845
TRACK BELT FOR MOTOR DRIVEN VEHICLE
Joseph Eugene Scanland, Des Moines, Iowa, assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of application Ser. No. 495,958, Oct. 14, 1965. This application June 30, 1967, Ser. No. 650,549
4 Claims. (Cl. 305—38)

A track belt for a motor driven vehicle comprising a median elastomeric belt element and separate first and second outer elastomeric belt elements. A plurality of transversely disposed reinforcing rods extend through apertures in the belt element to interconnect said first and second outer belt elements. The invention also includes



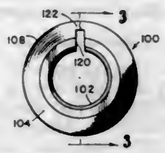
sprocket engaging elements mounted on the rods between the belt elements and means for securing the outer belt elements to the rods.

3,416,846
REVERSIBLE CRAWLER TYPE TRACTOR TRACK
Hugh Ellsworth Eastman, Rte. 1, Box 95–A, Breckenridge, Mich. 48615
Filed Sept. 22, 1966, Ser. No. 581,389
3 Claims. (Cl. 305—54)



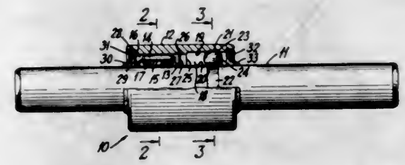
A reversible tractor rail chain with connected rail link units secured together in end-to-end relationship to form an endless chain which, when worn, can be readily disassembled and the link units turned completely over so that the lower worn face of the unit becomes the upper face of the unit, and the upper unworn face of the unit becomes the lower working face of the unit.

3,416,847
COLD-START SHAFT BEARING
Roger J. Daley and Wilfred W. Herderhorst, Fort Wayne, Ind., assignors to Tokheim Corporation, Fort Wayne, Ind., a corporation of Indiana
Filed Jan. 23, 1967, Ser. No. 610,861
10 Claims. (Cl. 308—37)



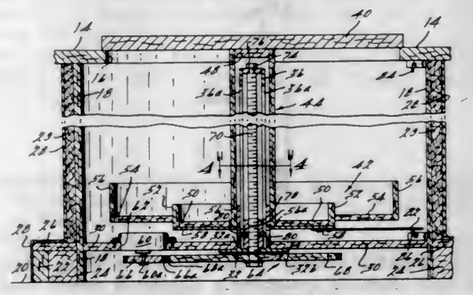
A self-aligning, oil-impregnated, sintered-bronze shaft bearing of the type used in small electric motors has its cold start and performance characteristics improved by slotting and severing the bearing ring at one point, and blocking the cut slot against compression, as by inserting a shim or by leaving an integral web which is subsequently cracked by stress.

3,416,848
COMBINATION BALL AND NEEDLE BEARING WITH MINIMUM ROLLING FRICTION
Frederick W. Recknagel, Verbank, N.Y., assignor to Federal Bearing Co., Inc., Poughkeepsie, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 375,058, June 16, 1964. This application Aug. 10, 1966, Ser. No. 571,585
9 Claims. (Cl. 308—174)



A combination ball and needle bearing is provided comprising an outer annular race member and an inner cylindrical race member passing concentrically through it, the combination of members defining a first and a second bearing compartment. The first bearing compartment has a cylindrical inner surface in the outer member which defines an annular chamber with the outer surface of the inner member, the annular chamber having confined therein less than a full complement of needle rollers spaced from each other by a cage. An annular stop means is employed intermediate the first and second compartments for confining the needle rollers in the first compartment and for inhibiting axial movement of the needle rollers to the second compartment. A raceway groove is disposed in the inner surface of the outer member and one in the outer surface of the inner member of the second compartment confining less than a full complement of balls therein spaced from each other by a cage. An annular shield is employed at the end of the first compartment to inhibit movement of the caged needle bearing out of the compartment, with bearing seal means closing the ends of the bearing.

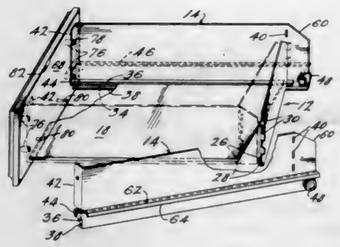
3,416,849
TABLE ASSEMBLY
Manfred W. Dube, 25396 Five Mile Road, Redford, Mich. 48219
Filed Jan. 9, 1967, Ser. No. 608,117
10 Claims. (Cl. 312—312)



A table in which a movable assembly comprising a central circular portion of the table top, a generally circu-

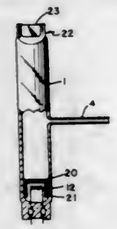
lar rack normally positioned in a storage well below the table top, and a central post interconnecting the central table top portion and the underlying rack member, is movable bodily upwardly to raise the rack member into a position within the opening in the table top created by the upward movement of the central table top portion.

3,416,850
DRAWER CONSTRUCTION
George C. Hilfinger and Xa D. Johnson, Toledo, Ohio, assignors, by direct and mesne assignments, to Wesley Industries, Inc., Toledo, Ohio, a corporation of Ohio
Filed Mar. 13, 1967, Ser. No. 622,495
12 Claims. (Cl. 312—330)



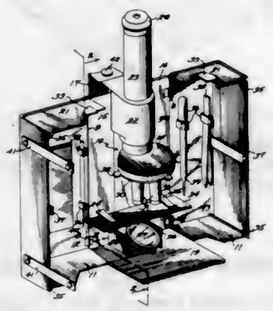
This invention relates to a drawer construction primarily intended for use in kitchens. The drawer has a metal back and sides and a front consisting of a metal frame with a central hardboard panel. As such, the drawer front can match kitchen cabinet doors constructed in a somewhat similar manner. The bottom of the drawer can be of hardboard and is received between flanges of the lower portions of the back and sides. The back and sides are assembled by a tongue and slot arrangement which eliminates the requirement for additional fasteners and speeds assembly.

3,416,851
INCANDESCENT LAMP
James J. Palermo, Salem, N.H., and Robert P. Bonazoli, Hamilton, Robert F. Scoledge, Danvers, and Emery G. Audesse, Salem, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application July 2, 1962, Ser. No. 206,881, now Patent No. 3,321,662, dated May 23, 1967. Divided and this application Jan. 3, 1967, Ser. No. 644,409
2 Claims. (Cl. 316—19)



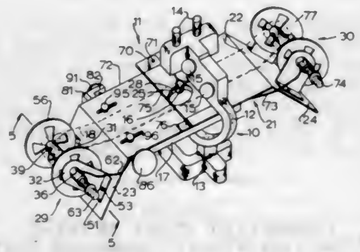
A method of making an electric lamp in which a tube of small diameter containing a filament is placed inside and joined to a tube of larger diameter with a glass disc slidable in the larger diameter tube. After exhaust the glass disc is moved near the end of the lamp over the filament and spaced therefrom and is sealed to the outer tube to form the completed device.

3,416,852
FUNCTIONALLY COMBINED MICROSCOPE AND CARRYING CASE
Bernard H. Goldbeck, West Haven, and William L. Effinger, Jr., Branford, Conn., assignors to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland
Filed May 18, 1964, Ser. No. 368,244
11 Claims. (Cl. 350—82)



A functionally combined microscope and carrying case is provided wherein the case defines the supporting standard for the microscope, and includes a handle coupled to the standard and extending externally of the case for carrying and maneuvering the same.

3,416,853
PNEUMATIC APPARATUS FOR VIEWING FILM-MOUNTED SPECIMENS
John E. P. Pickett, 3323 Pinafore Drive, Durham, N.C. 27705
Filed Aug. 15, 1966, Ser. No. 572,478
7 Claims. (Cl. 350—92)

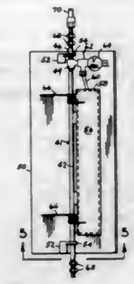


A microscope attachment for supporting a pair of film strip reels and for viewing an associated film strip mounting histological specimens incorporates a bent sheet support and on such support a pivoted cover glass and in each reel handle a pneumatic lift device allowing remote lifting of the cover glass between movements of the film.

3,416,854
REMOTELY ADJUSTABLE REAR VIEW MIRROR WITH PNEUMATIC OPERATOR
Peter Fykes, 100 SW. 6, Moore, Okla. 73060
Filed Jan. 19, 1966, Ser. No. 521,564
4 Claims. (Cl. 350—289)

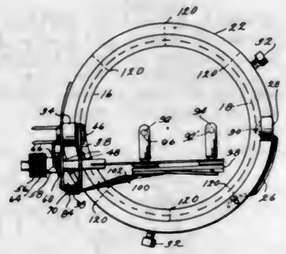
1. A rear view mirror assembly for vehicles having a mirror supporting bracket at one side thereof, comprising: a housing; shaft means extending through said housing

and rigidly connected, on a substantially vertical axis, with said mirror supporting bracket; a mirror mounted in said housing in a plane substantially vertical to the line of sight; pressure responsive means within said housing and connected with said shaft means for rotat-



ing said housing about the vertical axis of said shaft means; control means actuating said pressure responsive means; said shaft means comprising: a rod; a metallic tube; a T coaxially connecting said rod and said metallic tube; and a relief valve fitting interposed between said T and said pressure responsive means.

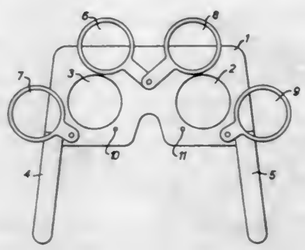
3,416,855
DEVICE FOR MEASURING THE CORNEA
Francis H. McClernon, 407 St. Louis St., Springfield, Mo. 65805
Filed Aug. 17, 1964, Ser. No. 389,898
4 Claims. (Cl. 351—6)



For mounting on the front of an ophthalometer, a pin point light source on a ring having provision for angular movement of the ring about its longitudinal axis and for movement of the light source radially on the ring.

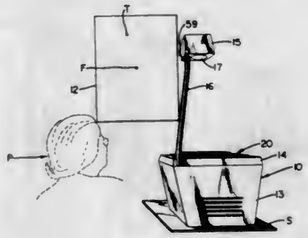
3,416,856
SUBJECTIVE SIGHT-TESTING EQUIPMENT
Deryck Humphriss, 56 Cranbourne Ave., Benoni, Republic of South Africa
Filed Apr. 11, 1963, Ser. No. 272,291
Claims priority, application Great Britain, Apr. 26, 1962, 16,022/62
6 Claims. (Cl. 351—17)

1. Sight-testing apparatus comprising a chart having a light-coloured rectangular frame on a dark background, a coloured area located on the background outside the rectangular frame and adjacent a longer axis thereof, a mask for use with the chart, said mask comprising a frame having a pair of apertures separated by approximately the interocular distance, two lenses of positive power, each lens being pivotable to cover a respective



aperture and a coloured filter pivotable over one aperture and a prism pivotable over the other.

3,416,857
METHOD AND APPARATUS FOR EXAMINING VISUAL FIELDS INCORPORATING OPTICAL LIGHT TARGET PROJECTION MEANS AND TRANSPARENT OVERLAY RECORD CHART
Robert E. Lookabaugh, P.O. Box 267, Lincoln, Nebr. 68501
Filed May 29, 1963, Ser. No. 284,142
14 Claims. (Cl. 351—31)

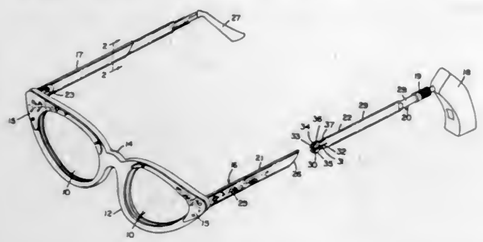


7. An optical testing device comprising, a viewing surface, a light source disposed away from the viewing surface, light control means being centered in the path of light from the light source and having at least one limited opening therein to selectively pass light from the light source therethrough, optical means for projecting the light passing through the limited opening upon the viewing surface in the form of a light target, said light control means being movable to advance the limited opening across the light path and to vary the location of the light target upon the viewing surface, a stationary transparent record chart, and means supporting said record chart and said light control means in adjacent, superimposed relation to one another transversely across the path of light from the light source to simulate on said record chart the location of the projected light target on the viewing surface and to enable marking of such location on said record chart.

3,416,858
TEMPLE
Francis J. Bowes, Winchester, Mass., assignor to Non-Slip Temple Company, Inc., Holliston, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 149,261, Nov. 1, 1961. This application Mar. 10, 1965, Ser. No. 438,601
7 Claims. (Cl. 351—118)

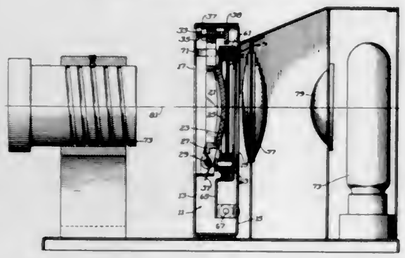
An eyeglass temple comprising front and rear sections joined together is provided with one of the sections having a wall defining an axially extending recess. A second

section comprises an elongated metallic slide constructed and arranged to be snugly received and slide within the recess. The slide has a slit extending longitudinally thereof



dividing the slide into upper and lower spring-like portions each of which carry detents for biting into portions of the recess wall to retain the sections together in a fixed position upon reciprocal sliding of the slide therein.

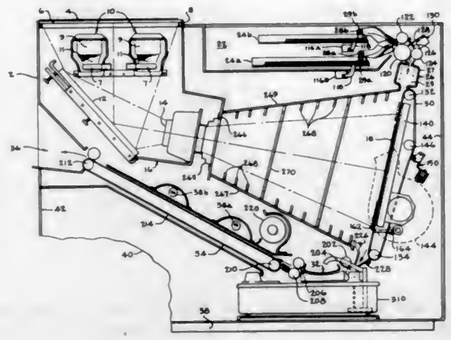
3,416,859
MECHANICAL FOCUS MAINTAINING APPARATUS FOR A SLIDE PROJECTOR
Frank C. Badalich, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 28, 1966, Ser. No. 582,714
6 Claims. (Cl. 353—69)



Apparatus for maintaining the focus of a slide projector by preventing "popping" of the film during projection. A lens is biased toward and is in contact with the film surface of a slide when the slide is in the projection station of the slide projector. At the same time, a slide holder holding the slide at the projection station biases the slide toward the lens. Hence, the film is held at a fixed position. In addition, a cam is provided for moving the lens out of contact with the slide when the slide is moved into or moved out of the projection station thereby preventing film scratching.

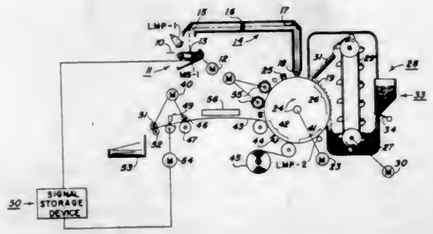
3,416,860
ELECTROSTATIC PRINTER
Steven Mihojevich, Northbrook, Arthur S. Zerfahs, Elk Grove, Ralph G. Ostensen, Morton Grove, Albin F. Berggren, Jr., Des Plaines, and Ronald A. Glaser, Arlington Heights, Ill., assignors to SCM Corporation, a corporation of New York
Filed June 11, 1965, Ser. No. 463,071
4 Claims. (Cl. 355—10)

An electrostatic printing machine having an exposure station and an imaging station, and having: illumination means adjacent the exposure station and an optical system for projecting an entire image of subject matter placed at the exposure station to the imaging station, copy sheet supply means for the storage of photoconductive copy sheets, means for moving a copy sheet from said supply means to charging means and from the charging means to the imaging station, said charging means actuatable to place an electrical charge on said copy sheet, means activated by the moving copy sheet to energize the illumination means and timing means to control the amount of illumination projected onto a copy sheet at the imaging station to selectively discharge the electrical charge thereon. The illumination means and optical system can advantageously provide a reflective image at the imaging station, where the means for moving the copy sheets is



stopped and vacuum means retain the copy sheet at the imaging station. The selectively discharged copy sheet can be advantageously developed by depositing charged coloring matter from a liquid toner system comprising a tray having a curved bottom wall a reservoir beneath said tray, means for circulating liquid toner therebetween, roller feed means, roller exit means including squeegee rollers, level indicating means and means for periodically replenishing the supply of charged coloring matter in the toner.

3,416,861
SIGNAL STORAGE DEVICE
Richard C. Hansen, Rochester, and Andrew P. Yesul, Jr., Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed July 19, 1966, Ser. No. 566,333
15 Claims. (Cl. 355—13)



8. In a xerographic reproduction apparatus including means to form reproductions of original copy during the course of its movement onto a continuously moving web and cutter means for cutting said web in spaced relation to the reproduction thereon:

a signal storage device for emitting a timed delayed output signal for the operation of said cutter from an electrical input signal generated by the movement of the original copy comprising in combination:

(a) a member mounted for movement;

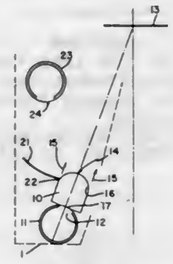
(b) drive means to continuously move said member at a rate bearing a predetermined time relation between an electrical input signal and a required corresponding output signal thereof;

(c) switch actuator means magnetically attractable to said member and supportable in a first position at which movement thereof is arrested and from which it is releasable to a second position magnetically coupled to said member for movement therewith;

(d) means operable in response to the receipt of an input signal to be stored to effect release of said switch actuator means from said first position to said second position; and

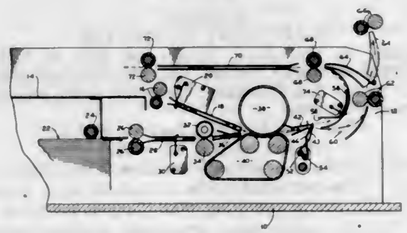
(e) switch means interposed in the path of said moving switch actuator means to emit an output signal for effecting operation of said cutter when operably engaged by said switch actuator means during the course of its movement.

3,416,862
OPTICAL SYSTEM FOR PHOTOCOPYING
Robert E. Levin, Hamilton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 1, 1966, Ser. No. 562,144
3 Claims. (Cl. 355—70)



1. An optical system for illuminating a slit, said system comprising: a tubular lamp having a fluorescent coating with a longitudinal aperture therein; an elongated lens having a concave portion fitting over the lamp and in register with said aperture, said lens and lamp being positioned to direct light onto said slit; a second tubular lamp having a fluorescent coating with an aperture therein, said aperture facing away from said slit and toward a reflector; a reflector extending to the side of the lens of said first-mentioned lamp and in position to receive light from the aperture of said second-mentioned lamp, and direct it to said slit.

3,416,863
DOCUMENT AND COPY SEPARATING SYSTEM
Robert Ralston, Willoughby, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,304
4 Claims. (Cl. 355—110)



4. A copying machine of the contact printing type for imaging a light sensitive copy sheet from an original sheet, comprising;

exposure means;

means for guiding an original and a copy sheet in superposed relationship into a common path passing adjacent said exposure means;

separating means for parting said sheets as they leave said exposure means;

guide means for directing said copy sheet after separation into a copy sheet path leading from said separating means to said treating means;

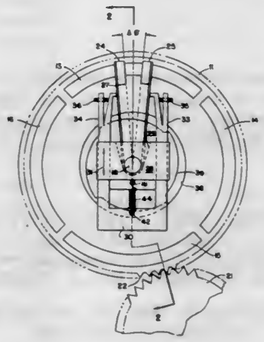
a by-pass from said copy sheet path, and a deflector means having a first position for diverting sheets from said copy sheet path to said by-pass and a second position coordinated with said path to said treating means;

guide means for directing said original sheet after separation into an original sheet path leading from said separating means in a diversion route with respect to said treating means;

detecting means for ascertaining the presence of an original sheet in said original sheet path; and

means operative in response to said detecting means for holding said deflector means in said second position only when said detector means is in the presence of sheet material.

3,416,864
CIRCULAR VARIABLE INTERFERENCE FILTER MONOCHROMATOR
Gerald T. Keahl, Fullerton, and Nico J. Van Slooten, Chino, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Apr. 29, 1965, Ser. No. 451,950
2 Claims. (Cl. 356—100)

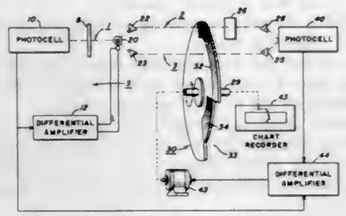


There is disclosed a monochromator utilizing a circular variable interference filter rotatable with respect to a pair of slit jaws. The slit jaws are spring mounted and moved by an actuator driven by a cam through a cam follower which moves the actuator along the length of the spring.

3,416,865
OPTICAL DENSITY MEASURING SYSTEM
Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 27, 1964, Ser. No. 414,374
4 Claims. (Cl. 356—206)

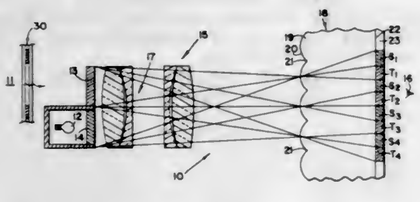
An optical density measuring system in which a light source is maintained at a constant illumination intensity and utilized to energize a pair of photocells, the outputs of which are compared and upon detection of a variation in the respective signal levels as the result of a sample interrupting at least some of the light to one of the photo-

cells, a light blocking member is adjusted to maintain the same intensity of light at each of the photocells. The



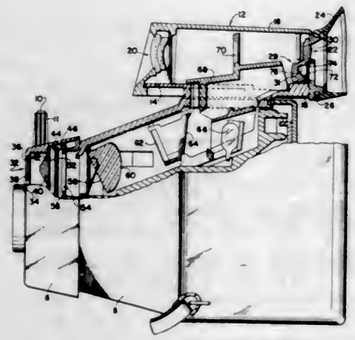
density of samples thus tested is indicated as a function of the displacement of the light blocking member.

3,416,866
COMPARISON PHOTOMETER USING LENTICULAR SCREEN
Edwin H. Land, Cambridge, and William H. Ryan, Carlisle, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,109
4 Claims. (Cl. 356—230)



A comparison photometer is described in which a lenticular screen is employed to permit light from two independent sources to be brought together in a common field of view for comparison purposes.

3,416,867
PHOTOMETER USING A PRISM WITH SURFACE LENTICULATIONS
Conrad H. Biber, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 18, 1965, Ser. No. 464,980
4 Claims. (Cl. 356—230)



1. In a comparison photometer including a transparent target having a reflective pattern thereon and a source of light for illuminating the pattern, the combination comprising:

(a) means defining an opening for admitting light from the scene to be photographed into the photometer;

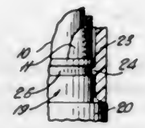
(b) a refracting prism adjacent said opening for efficiently collecting light from the scene, said prism having a base and planar surfaces sloping divergingly away from the scene, the slope of said planar surfaces and the boundaries of said opening establishing a predetermined collection angle for light entering the photometer, said base having lenticular means formed thereon and evenly spaced thereover for uniformly distributing the light collected from the scene over the area of said base;

(c) means defining a variable aperture adjacent said base, whereby varying the area of said aperture produces a proportional change in the amount of light admitted through said aperture to the target;

(d) a diffuser adjacent the target for displaying the relative level of illumination of the scene; and

(e) an eye lens to enable the user to focus on the target to compare the relative levels of illumination transmitted therethrough and reflected therefrom.

3,416,868
LIPSTICK OR THE LIKE CONTAINER
William James Landen, Cheshire, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Apr. 20, 1966, Ser. No. 544,010
3 Claims. (Cl. 401—61)



The invention contemplates a particular structural relationship, in an all-plastic construction, between the closure cap and the base of a lipstick or the like container, whereby no mechanical stress characterizes the cooperation of the parts, except for a minor localized transient stressed reaction as the cap snaps into or out of its "home" or closed position. Importantly, no stressing reaction is encountered when the container is closed, and none is encountered for susbtantially the full telescoping length of travel of the cap over the operative parts of the container. This construction makes it possible to utilize relatively thin cap materials, such as pearlescence materials, for maximum appearance effects, and stress-induced cracks are avoided.

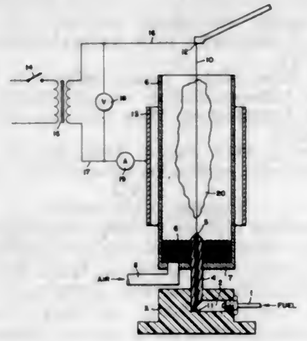
3,416,869
BALL POINT RESERVOIR
Frederick R. Wittnebert, Whitewater, Ray A. Lawton, Milton, and John J. Dyson, Janesville, Wis., assignors to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed Aug. 23, 1966, Ser. No. 574,356
8 Claims. (Cl. 401—209)

A ball point pen reservoir comprises a ball point writing tip, a tube connected to the tip and an insert disposed in the tube and cooperating with the inner wall of the tube to form a continuous, serpentine capillary passageway extending from the writing tip to a location near the rear end of the tube for the ink contained in the reservoir. The insert comprises a series of generally circular walls which are interconnected by a series of longitudinally extending spacer walls. Each circular wall includes an aperture located adjacent one side of the two adjacent spacer



walls, which extend from opposite sides of the circular wall.

3,416,870
APPARATUS FOR THE APPLICATION OF AN A.C. ELECTROSTATIC FIELD TO COMBUSTION FLAMES
Franklin J. Wright, Watchung, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 505,944
2 Claims. (Cl. 431—2)



1. Apparatus for improving the combustion of a fuel-air mixture formed into a flame having a lengthwise axis, comprising:

dielectric wall means disposed around said flame and being generally parallel to said axis,

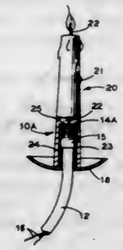
means for supplying a fuel-air mixture to the interior of said wall means,

first electrode means extending from said fuel-air supply means substantially along said axis of said flame,

second electrode means positioned exteriorly of said wall means for establishing an electrostatic field transversely across the lengthwise axis of said flame in cooperation with said first electrode, and

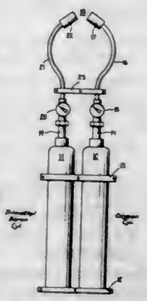
means for alternately charging said electrodes to opposite polarities at a predetermined frequency, whereby said electrostatic field enhances said combustion without the dissipation of any substantial quantity of electrical power across said electrodes.

3,416,871
READILY CONVERTIBLE LIGHT FIXTURE
William B. Dragan, R.F.D. 1, Burr St., Fairfield, Conn. 06430
Filed Feb. 23, 1967, Ser. No. 618,224
9 Claims. (Cl. 431—125)



This invention is directed to an electric light fixture which can be converted readily to a candle-burning light fixture and/or a gas or liquid fuel burning light fixture. The light fixture comprises essentially a base having an electric light socket connected thereto for receiving an electric light bulb, and a candle means constructed to be utilized in conjunction with the light socket when the light bulb is removed to convert the electric light fixture to another source of illuminating power for effecting a change in the mood and/or appearance of a room in which such electric light fixture is normally utilized.

3,416,872
CONTROLLED ENERGY RELEASE SYSTEM FOR USE IN SIGNALS, FLARES, AND OTHER HIGH ENERGY LIGHTING DEVICES
William L. Ripley, Bedford, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 14, 1967, Ser. No. 654,035
3 Claims. (Cl. 431—344)



A signal, flare, or other high energy lighting device having a container of trimethyl boron gas and a container of oxygen each conducted through metered valves to a common combustion area to ignite spontaneously and be controlled "on," "off," and in light intensity.

CHEMICAL

3,416,873

POLYESTER DYEING WITH 1-(2-METHOXY-4-NITROBENZENEAZO) - 2 - HYDROXY-11H-BENZO (a)CARBAZOLE-3-CARBOX-p-ANISIDIDE

Andrew Fono, Montclair, and Mohammad Nasimuddin Siddiqui, South Orange, N.J., assignors to Otto B. May Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 11, 1967, Ser. No. 674,660
9 Claims. (Cl. 8—21)

This disclosure relates to polyester-containing shaped articles, e.g., fibers, dyed with 1-(2-methoxy-4-nitrobenzeneazo)-2-hydroxy-11H-benzo(a)carbazole-3-carbox - p-anisidide.

3,416,874

PRODUCTION OF POLYACRYLONITRILE-BASED ARTICLES

Jean Baptiste Robin, Lyon, France, assignor to Crylor, Paris, France, a French corporation

No Drawing. Filed Oct. 21, 1964, Ser. No. 405,571
Claims priority, application France, Feb. 21, 1964, 964,740
5 Claims. (Cl. 8—52)

Polyacrylonitrile-based articles, especially, fibres, of reduced flammability are made by heating the article, previously impregnated with 0.1 to 3% of cuprous ions, to 200° to 300° C.

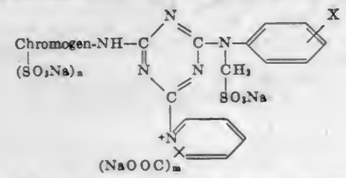
3,416,875

PROCESS FOR DYEING CELLULOSE TEXTILE MATERIALS WITH QUATERNIZED REACTIVE DYESTUFFS

Sandro Ponzini, Saronno, Paolo Castelli, Cesano Maderno, and Jean S. Lawendel, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy

No Drawing. Filed July 16, 1965, Ser. No. 472,668
Claims priority, application Italy, July 17, 1964, 15,658/64
9 Claims. (Cl. 8—54.2)

1. A process for dyeing cellulose textile materials comprising applying thereto a dyestuff having the formula



wherein X is selected from the group consisting of H, CH_3, —OCH_3, and —OC_2H_5; n is an integer from 1 to 4; m is 1 or 2 and the chromogen is selected from the group consisting of azo dyestuffs, metallized-azo-dyestuffs, anthraquinone dyestuffs, and phthalocyanine dyestuffs.

3,416,876

PADDING DRIED REACTIVE DYE IMPREGNATED CELLULOSE TEXTILES WITH SODIUM SILICATE, 48–52° BAUMÉ, FOR LOW TEMPERATURE BATCH FIXATION

Hans Ohmer, Neu-Isenburg, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 3, 1968, Ser. No. 695,337
Claims priority, application Germany, Jan. 10, 1967, F 51,213
7 Claims. (Cl. 8—54.2)

The invention includes the step of printing a sulfone ethyl sulfate ester of an azo dye on a cellulose fabric, drying the fabric, then padding the fabric with 48–52° Baumé liquid sodium silicate and then batching the fabric for a cold dwell development of 5 hours at room temperature. The fabric is washed with sodium metaphosphate solution and then soaped with a synthetic detergent. The batched fabric can be heated to 40–50° C. to facilitate dye fixation.

Other reactive types of dyes such as vinyl sulfone, chlorotriazine, dichloroquinoxaline, 2,2,3,3 - tetrafluorocyclobutane - 1 - acryloylamine and phenylsulfene propionylamine type dyes can be used in this process. Also nonreactive dyes with reactive hydrogens can be printed with reactive compounds such as 1,3,5-tri(acryloyl)hexahydro-s - triazine, methylene-bisacrylamide and 2,4,6-triethylimino-s-triazine in this process.

3,416,877

BASIC DYE DYEING OF POLYACRYLONITRILE ASSISTED BY TRIBUTYLPHOSPHATE AND A PHOSPHATE ESTER OF AN ETHYLENE OXIDE CONDENSATE

George M. Gantz, Easton, Pa., Henry R. Mautner, Leonia, N.J., and Edward J. Black, Easton, Pa., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed May 8, 1963, Ser. No. 278,980
17 Claims. (Cl. 8—55)

A method of dyeing material containing 35 to 85% by weight of acrylonitrile in aqueous medium with a basic dye and a mixture of tributylphosphate and a water-soluble phosphate ester of a nonionic surface active condensation product of ethylene oxide with an organic compound containing at least 6 carbon atoms and a reactive hydrogen atom.

3,416,878

PADDING DRIED REACTIVE DYE IMPREGNATED CELLULOSE TEXTILES WITH 48–52° BAUMÉ SODIUM SILICATE FOR STEAM FIXATION OF THE DYE

Hermann Biber, Kobe, Japan, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 3, 1968, Ser. No. 695,351
Claims priority, application Germany, Jan. 10, 1967, F 51,212
7 Claims. (Cl. 8—54.2)

The invention includes the step of printing a sulfone ethyl sulfate ester of an azo dye on a cellulose fabric, drying the fabric, then padding the fabric 48–52° Baumé liquid sodium silicate and then steaming the fabric to develop the dye on the fabric. The fabric is washed with a sodium metaphosphate and a synthetic detergent.

Other reactive dyes, such as vinylsulfone, chlorotriazine, dichloroquinoxaline, 2,2,3,3-tetrafluorocyclobutane-1-acryloylamine and β-phenylsulfone propionylamine type dyes, can be used in this process. Also, nonreactive dyes within reactive hydrogens can be printed with reactive compounds, such as 1,3,5-triacryloyl-hexahydro-s-triazine, methylene-bisacrylamide and 2,4,6-triethylamino-s-triazine, in this process.

3,416,879

HIGH TEMPERATURE BLEACHING WITH PERACETIC ACID

Arnold M. Sookne, Silver Spring, and Charles A. Rader, Laurel, Md., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 30, 1965, Ser. No. 468,601
2 Claims. (Cl. 8—115.5)

Cellulosic fabrics are bleached by impregnating the fabric with an aqueous medium containing peracetic acid

which is essentially free of mineral acids and hydrogen peroxide and thereafter contacting the impregnated fabric with saturated steam at about one atmosphere for no more than 30 minutes, preferably 5 to 10 minutes.

3,416,880

MODIFICATION OF CELLULOSIC TEXTILES WITH METHYLOLATED HYDROXYALKYL CARBAMATES

Russell M. H. Kullman, Metairie, and John G. Frick, Jr., Robert M. Reinhard, and John D. Reid, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Oct. 13, 1964, Ser. No. 403,668. Divided and this application Feb. 10, 1967, Ser. No. 634,785
6 Claims. (Cl. 8—116.3)

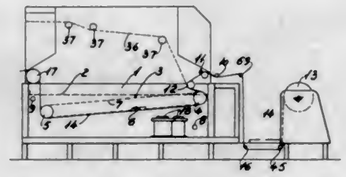
Methylol derivatives of hydroxaylkyl carbamates, produced by reacting a hydroxyalkyl carbamate with at least two molar equivalents of formaldehyde in aqueous alkaline solution, may be used as new finishing agents for cotton to produce wrinkle-resistant and wash-wear fabric. These agents have little or no adverse effect on color-fastness-to-light of dyed fabric. Hydroxyethyl carbamate is a typical example of a useful compound for making this type of agent. These finishes are very durable and cellulosic materials treated therewith may be held for substantial periods of time during which the fabrics may be converted into garments prior to the heat-setting operation.

3,416,881

PROCESS AND APPARATUS FOR TREATING A CONTINUOUS LENGTH OF SYNTHETIC TEXTILE FABRIC FOR THE PURPOSE OF MAKING THE MATERIAL SOFTER, LESS GLOSSY AND MORE VOLUMINOUS

René Nordmann, Montceau-les-Mines, France, assignor to Ultrasona A.G., Zurich, Switzerland

Filed Oct. 6, 1965, Ser. No. 493,509
Claims priority, application Denmark, Oct. 12, 1964, 5,029/64
8 Claims. (Cl. 8—130.1)



1. A process for treating a continuous length of synthetic textile fabric for the purpose of making the material softer, less glossy and more voluminous, in which process the textile fabric is subjected to treatment in a strongly attacking shrinking bath, while at the same time being subjected to ultrasonic waves, and is immediately thereafter washed with a washing liquid that may contain a neutralizing agent for the shrinking liquid, characterized in that the textile fabric is passed through the shrinking bath in a path of movement extending under a perforated belt conveyor immersed in the bath, the speeds of supply and removal of the textile fabric to and from the shrinking bath and the speed of movement of the belt conveyor being so mutually adjusted that practically no tensile stresses occur in the textile fabric, and the latter is caused to follow a path of movement extending substantially along the underside of the belt conveyor.

3,416,882

PRODUCTION OF VANADIUM VALUES FROM CRUDE OIL

William Whigham, 7780 Ave. Dumail, Ville d'Anjou, Quebec, Canada

Filed Dec. 8, 1965, Ser. No. 512,563
Claims priority, application Canada, Aug. 25, 1965, 939,105, Patent 752,773
12 Claims. (Cl. 23—15)

Process for obtaining a vanadium concentrate by desalting crude oil, fractionally distilling the desalting crude to obtain a residual oil component, from the residual oil obtaining a coke product which is ground to a fine mesh, the coke product is subsequently subjected to combustion and from the flue gas of the combustion, the solid particles are trapped and recovered to obtain a vanadium concentrate.

3,416,883

PROCESS FOR PREPARING CHEMICALLY PURE FERROUS CARBONATE

Floyd T. Gould, Wayland, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Sept. 26, 1966, Ser. No. 582,001
6 Claims. (Cl. 23—61)

1. A process for preparing chemically pure ferrous carbonate comprising the steps of exposing a container of water to a flow of carbon dioxide, placing metallic iron into said water, said carbon dioxide reacting with said water and metallic iron to form chemically pure ferrous carbonate in solution, and removing the chemically pure ferrous carbonate from the solution.

3,416,884

CRYSTALLINE ZIRCONIUM PHOSPHATES

James Albert Stynes, Lewiston, N.Y., and Abraham Clearfield, Athens, Ohio, assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 213,596, July 31, 1962. This application Nov. 4, 1966, Ser. No. 591,965
10 Claims. (Cl. 23—105)

Crystalline zirconium phosphates $Zr(HPO_4)_2$ and $Zr(HPO_4)_2 \cdot H_2O$ are produced by refluxing gelatinous zirconium phosphate with orthophosphoric acid in an aqueous solution of at least 2.5 molarity. The products, which have usefulness as ion exchange materials and catalysts, have an X-ray diffraction pattern in which there is a major reflection peak at 7.56 A.–8.0 A. and other major peaks at approximately 4.46 A. and 3.57 A., and by the half width of the first mentioned peak being not more than 1.4°.

3,416,885

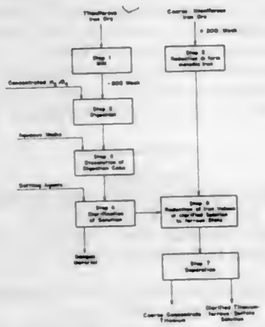
PROCESS FOR PRODUCING A TITANIUM SULFATE SOLUTION AND A TiO_2 CONCENTRATE FROM A TITANIFEROUS ORE

Andrew P. Honchar, Westfield, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 1, 1966, Ser. No. 530,985
5 Claims. (Cl. 23—117)

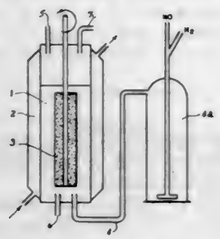
1. In a process for producing concurrently a titanium concentrate containing a high percentage of TiO_2 and a low percentage of iron, and adaptable for chlorination to produce titanium tetrachloride, and a sulfate solution of titanium and ferrous iron adaptable for the production of titanium dioxide pigments, the steps which comprise: (1) grinding a titaniferous iron ore until the particle size of said ore is substantially minus 200 mesh; (2) digesting the finely ground ore in concentrated sulfuric acid to produce a digestion cake comprising a digested portion and an undissolved gangue portion; (3) dissolving the

digested portion of the cake in an aqueous media to form a raw unreduced titanium-iron-sulfate solution containing said undissolved gangue portion as a residue; (4) clarifying said unreduced solution by removing the gangue portion from said solution; (5) separately subjecting a second titaniferous iron ore having a particle size substantially greater than 200 mesh to a reducing operation to reduce substantially all of the iron values, but not the



ttianium values, to the metallic state; (6) adding the said metallized iron ore to the said clarified, unreduced titanium ironn sulfate solution formed in step (4) to reduce substantially all of the iron values in said raw titanium-iron sulfate solution to the ferrous state producing simultaneously a reduced titanium-ferrous sulfate solution and a coarse titanium concentrate low in iron and (7) separating said clarified titanium ferrous sulfate solution from the coarse titanium concentrate.

3,416,886
PROCESS FOR THE MANUFACTURE OF HYDROXYLAMINE SULFATE SOLUTIONS
Marcel Capaul, Bonaduz, Grisons, Koichi Matsuya, Felsberg, Grisons, and Max Edinger, Chur, Switzerland, assignors to Inventa A.G. fur Forschung und Patentverwertung, Zurich, Switzerland
Filed Apr. 27, 1966, Ser. No. 545,762
Claims priority, application Switzerland, May 1, 1965, 6,170/65
5 Claims. (Cl. 23—117)



A process for the manufacture of hydroxylamine sulfate by the reduction of nitric oxide with hydrogen in aqueous sulfuric acid solution and in the presence of platinum catalysts. In order to hold the formation of by-products to a minimum, a minor quantity of preformed hydroxylamine plus ammonium sulfate is initially present, and the reaction temperature is selectively and successively varied in dependence of the molar proportions of free sulfuric acid to total hydroxylamine sulfate plus ammonium sulfate present. The process is suitable for continuous and batch production.

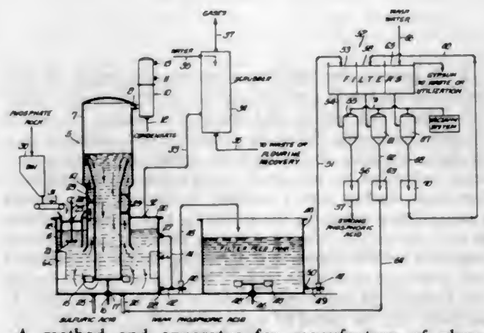
3,416,887
METHOD OF MANUFACTURING WET PROCESS PHOSPHORIC ACID
Asaichi Matsubara, Yoshito Yasutake, Kazunari Ueno, and Shisei Fujita, Yamaguchi-ken, Japan, assignors to Central Glass Co., Ltd., Yamaguchi-ken, Japan
No Drawing. Filed July 7, 1965, Ser. No. 470,233
Claims priority, application Japan, Aug. 5, 1964, 39/44,827; Feb. 2, 1965, 40/5,597
6 Claims. (Cl. 23—122)

A method of producing wet process phosphoric acid comprising a first stage wherein phosphate rock is decomposed with sulfuric acid or a mixed acid of sulfuric acid and phosphoric acid and the formed slurry is separated into product phosphoric acid and calcium sulfate dihydrate containing some phosphoric acid, and a second stage wherein the slurry-form calcium sulfate dihydrate, collected and admixed with sulfuric acid or a mixed acid of sulfuric acid and phosphoric acid, is heated in the presence of seed crystals of calcium sulfate hemihydrate to convert said dihydrate to hemihydrate which is then recovered by filtration to obtain calcium sulfate in the form of hemihydrate, while recycling the filtrate to the first stage for use in the decomposition of the phosphate rock.

3,416,888
METHOD FOR PREPARING SPHEROIDAL ALUMINA
Bruno Notari, Milan, Italy, assignor to SNAM S.p.A., Milan, Italy, a company of Italy
No Drawing. Filed Mar. 31, 1965, Ser. No. 444,369
Claims priority, application Italy, Apr. 7, 1964, 7,569/64
4 Claims. (Cl. 23—143)

A method for producing spheroidal alumina is disclosed wherein a sol of an aluminum salt, such as aluminum chlorohydroxide, is mixed in a water solution of an organic gelling material, such as guar-gum with an ammonium salt of an organic acid, such as ammonium acetate, and the resultant solution is dripped into an oil bath, or other water-immiscible medium, at an elevated temperature, to cause gelling and formation of rigid alumina spherules, which are then treated successively with gaseous ammonia, and aqua ammonia, and then dried and calcined.

3,416,889
PROCESS AND APPARATUS FOR MANUFACTURING PHOSPHORIC ACID
Harold B. Caldwell, Sarasota, Fla., assignor to Whiting Corporation, a corporation of Illinois
Continuation-in-part of application Ser. No. 377,012, June 22, 1964. This application Apr. 19, 1967, Ser. No. 632,101
38 Claims. (Cl. 23—165)



A method and apparatus for manufacture of phosphoric acid by the wet process wherein the reactants are introduced in a combination reactor and slurry cooler unit which is equipped to continuously circulate the reaction slurry contained therein in a flow pattern adapted to expose substantially the entire body of reaction slurry to a freeboard space in the unit. Subatmospheric pressures being maintained in the freeboard space for providing evaporative cooling of the body of reaction slurry at a rate which is substantially in balance with the rate at which heat is generated in said reaction slurry from exothermic reactions which occur therein. The rate of circulation of said reaction slurry being at least equal to 20% of the total mass of said reaction slurry per minute and preferably within the range of from 100% to 200% of said total mass of reaction slurry per minute. The combined effect of slurry circulation and evaporative cooling providing a substantially uniform level of calcium sulfate supersaturation throughout the body of reaction slurry enabling the production of calcium sulfate crystals which exhibit substantially improved filterability and washability characteristics.

3,416,890
PROCESS OF PRODUCING OXIDES OF METALS AND METALLOIDS
William V. Best, Independence, Mo., and Roland L. Hughes, Leawood, Kans., assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 16, 1965, Ser. No. 514,314
11 Claims. (Cl. 23—182)

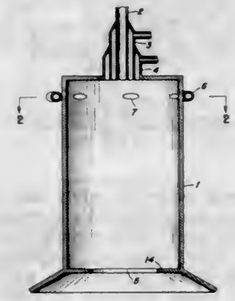
There is disclosed a process for preparing finely divided metal or metalloid oxides by the decomposition of a metal or metalloid perhalide in a flame produced by the combustion of an oxidizing gas and an auxiliary fuel consisting of a hydrogen-free compound containing sulfur bonded directly to carbon. Typical auxiliary fuels include carbon disulfide, carbon selenide sulfide, and carbon thiophosgene. The process is especially suitable for preparing finely divided silica. The prepared oxide, e.g. silica, is also suitably calcined after recovery from the flame.

3,416,891
SOLID SOLUTIONS OF THE TRANSITION METAL NITRIDES AND OXINITRIDES AND METHODS OF PREPARATION THEREOF
Marc Pierre Roubin, Jacques Maurice Pâris, and René Antoine Pâris, Lyon, France, assignors to Centre Nationale de la Recherche Scientifique, Paris, France
Filed Nov. 22, 1965, Ser. No. 509,094
Claims priority, application France, Nov. 27, 1964, 996,637
7 Claims. (Cl. 23—191)

The invention relates to a process for making solid solutions of nitrides and oxinitrides of the second to the seventh order of metals selected among Ti, Zr, Hf, V, Nb, Ta, Cr, Mo and W comprising coprecipitating hydrated metallic oxides or causing the simultaneous crystallization of isomorphous complex salts of the above ions and pyrolyzing the hydrated metallic oxides or the mixed complex salts obtained under a temperature less than 700° C. in an atmosphere of an ammonia containing gas.

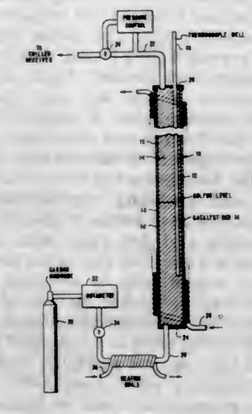
3,416,892
PROCESS AND APPARATUS FOR THE MANUFACTURE OF FINE PARTICLE SIZE TITANIUM DIOXIDE BY REACTING TITANIUM TETRACHLORIDE WITH OXYGEN
Gerhard Hitzemann, Leverkusen, Achim Kulling, Opladen, and Hans Steinbach, Bergisch-Gladbach, Germany, assignors to Titangesellschaft m.b.H., Leverkusen, Germany, a corporation of Germany
Filed Oct. 7, 1966, Ser. No. 585,064
Claims priority, application Germany, Dec. 11, 1965, T 29,994
3 Claims. (Cl. 23—202)

1. In a process for the manufacture of fine particle size titanium dioxide in which vaporous titanium tetrachloride is reacted with an oxygen containing gas in a reaction chamber in the presence of an auxiliary flame, to produce said titanium dioxide particles suspended in the gaseous reaction products, said gases being added through a burner located at one end of said reaction chamber, the improvement which comprises introducing a cooled rinsing gas through the walls of the reaction



chamber to produce a tangentially conveyed screen of cooled gas along the interior side walls of said reaction chamber to prevent the titanium dioxide from collecting along said side walls, the rinsing gas throughput per sq. m. of reaction wall surface area being at least 0.07 kg./sq. m./sec., the linear velocity of introduction of said rinsing gas being at least 20 m./sec. and the product of these two figures being at least 2.5 kg./m. sec.^{2}.

3,416,893
PREPARATION OF CARBONYL SULFIDE
Clyde E. Parish and Kenneth W. Urmy, Houston, Tex., assignors to Signal Oil and Gas Company, Los Angeles, Calif.,
Filed Mar. 16, 1966, Ser. No. 534,891
9 Claims. (Cl. 23—203)

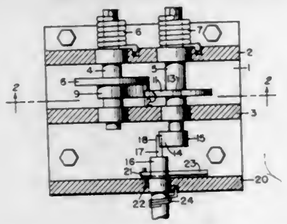


Carbonyl sulfide is prepared by reacting carbon monoxide and fluidized sulfur in the presence of a sulfided cobalt, molybdenum or cobalt-molybdenum catalyst at a temperature between about 250 and about 400° F. and at a pressure between about 100 and about 400 p.s.i.g.

3,416,894
SETBACK RESPONSIVE ARMING DEVICE

Robert B. Brooks, St. Louis Park, and Gilbert vP. Totten, Golden Valley, Minn., assignors to the United States of America as represented by the Secretary of the Army

Filed Feb. 16, 1955, Ser. No. 488,735
1 Claim. (Cl. 102—78)



1. An ordnance projectile safety and arming mechanism which is adapted to arm only in response to a predetermined acceleration characteristic, said mechanism comprising: a plate positioned perpendicularly to the longitudinal axis of the projectile in which said mechanism is placed; frame members vertically fixed to said plate; a first shaft parallel to said plate and journaled in said frame members; a first rotor fixed to said first shaft, said first rotor having a cam-like member affixed thereto, said cam-like member being displaced from the center of rotation of said first rotor; a second shaft parallel to said first shaft and journaled in said frame members; a second rotor fixed to said second shaft, said second rotor being substantially cylindrical and having an arcuate cutaway portion into which said cam-like member fits to lock said second rotor against rotation; first and second torsion springs connected to one end of said first and second shafts respectively to bias said shafts in a direction opposite to the direction of rotation which projectile acceleration acts to drive said rotors; stop means contacting said first and second rotors to prevent spring-biased rotation thereof; a substantially cylindrical hub fixed to the end of said second shaft opposite its spring end, the longitudinal axis of said hub being parallel to the axis of said second shaft, one portion of said hub being circular and the remaining portion being flat; a third shaft parallel to said first and second shafts and journaled in one of said frame members, said third shaft being adapted to arm said projectile; a third torsion spring connected to said third shaft to bias said third shaft in the same direction as said first and second shafts; stop means contacting said third shaft to prevent spring-biased rotation thereof; a flat blade extending from the end of said shaft to engage said circular portion of said hub, said blade being so constructed and arranged that it contacts said circular portion of said hub locking said third shaft against rotation in a direction opposite to the direction of bias of said third spring; a bar having one end fixed to said third shaft and the other end extending perpendicularly outward therefrom; the accelerative forces produced by projectile acceleration causing said first rotor with said cam-like member to rotate in a direction against the bias of said first spring until said second rotor is unlocked, said second rotor thereupon rotating against the bias of said second spring in response to said accelerative forces, said second rotor and second spring being so constructed and arranged that said second rotor reaches a position where said accelerative forces no longer act to cause rotation thereof at the point where projectile acceleration begins to decrease rapidly, the momentum of said second rotor thereupon rotating said second rotor through an angle such that said hub presents said flat portion to said blade unlocking said third shaft, the accelerative forces present at blade unlocking then being sufficient to act on said bar to rotate said third shaft, thereby arming the projectile.

3,416,895
METHOD OF PURIFYING GRAPHITE

Carl J. Leistner and Alton W. Radtke, Bay City, Mich., assignors to Ultra Carbon Corporation, Bay City, Mich., a corporation of Michigan

Filed Oct. 12, 1966, Ser. No. 586,294
6 Claims. (Cl. 23—209.9)

1. A method of purifying graphite comprising: inserting the graphite to be purified in a closed pure graphite container containing a carrier mix, including a particulate pure graphite and a reagent which when heated will vaporize to form a gas capable of uniting with impurities in the graphite to be purified; elevating the container to a temperature sufficient to cause the gas to be formed and the reaction of the impurities with the gas to take place to form impurity compound gases which migrate through the container to the exterior thereof; and cooling the container while removing the concentration of migrated gases outside the container so they do not reenter the interior of the container.

3,416,896
ANALYSIS OF GASES CONTAINING LOW CONCENTRATIONS OF PHOSGENE

Cornelius B. Murphy, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

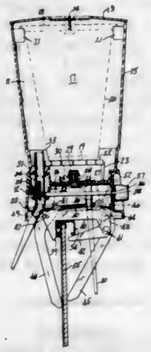
No Drawing. Filed May 5, 1965, Ser. No. 455,669
6 Claims. (Cl. 23—232)

A method is disclosed for the detection and analysis of low levels of concentration of phosgene gas in other nonreactive gases such as air is disclosed. Concentrations of phosgene as low as 0.1 part per million may be detected by exposing the gas to a source of ammonia to produce small nucleogenic solid reaction particles which may be measured in a condensation nuclei detector.

3,416,897
CHEMICAL DISSOLVER FOR FEEDING A SOLUTION

Alfred Long and Edwin S. Roth, New Haven, Phillip W. King, Cheshire, and Kenneth A. Van Dyck, Southport, Conn., assignors to Olin Mathieson Chemical Corporation

Filed Oct. 19, 1965, Ser. No. 498,047
2 Claims. (Cl. 23—267)

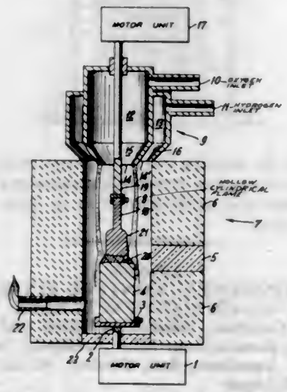


1. A feeder for preparing aqueous solutions of water-soluble solids and dispensing said solutions at controlled rates, said feeder comprising in combination:
(1) a vertically elongated container including:
(a) a removable container top, a container bottom and container sides;
(b) a first opening in said container bottom defined by a channel recessed in and extending radially across said container bottom, said channel having an inner end including the center line of said feeder and an outer end near the periphery of said container bottom; a tubular inlet communicating with said channel and extending downwardly therefrom; a cover on said channel including an upwardly extending tubular outlet near its inner end; a cap terminating and overhanging said outlet and having downwardly directed openings in its over hanging portion;
(c) a second opening in said container bottom defined by a circular projection extending above said container bottom;
(d) a foraminous pedestal supported above the level of the said first and second openings;
(2) a skirt extending below said container bottom; a horizontal partition in said skirt in contact with the outside of said container bottom; a first opening in said partition to receive said recessed channel; a second opening in said partition defined by a downwardly extending projection in vertical alignment with the projection extending above the bottom of the container; a vertically arranged tubular member mounted for limited vertical movement within said projections; a horizontally arranged manually operated shaft mounted in said skirt and having a pinion at one end thereof; a rack attached to said tubular member and operably connected to said pinion whereby the elevation of said tubular element above said container bottom is manually adjustable and
(3) a cartridge disposed in said container including:
(a) a solid catridge top;
(b) a formaminous cartridge bottom;
(c) flexible, perforated cartridge sides fixedly attached to the peripheries of said cartridge top and said cartridge bottom;
(d) said cartridge top overhanging said cartridge bottom and said cartridge sides; and
(e) projections near the top and interiorly of the container sides to provide support for said cartridge.

3,416,898
METHOD FOR GROWING HIGH-MELTING-POINT SINGLE CRYSTALS AND AN APPARATUS THEREFOR

Kenichi Shiroki and Seiichi Saito, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Minato-ku, Tokyo, Japan, a corporation of Japan

Filed July 27, 1967, Ser. No. 656,582
Claims priority, application Japan, July 30, 1966, 41/49,964
5 Claims. (Cl. 23—301)



A rod of high-melting-point substances is supported from one end thereof in the direction of its axis with the other end exposed for melting. A hollow gas flame is disposed coaxially relative to the rod, whereby the end of the flame contacts and melts the exposed end, following which a single crystal is drawn from the melted end, the single crystal being within and surrounded by the hollow flame during the drawing.

3,416,899
GEL COMPOSITIONS AND PREPARATION

Sidney Schiff, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 3, 1966, Ser. No. 583,943
7 Claims. (Cl. 44—7)

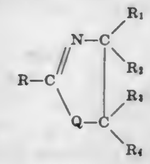
Preparation of gel compositions useful as incendiary fuels and the like by the hydrogenation of a hydrocarbon solution of an unsaturated rubbery polymer and a catalyst of a Group VIII metal salt and a reducing metal compound.

3,416,900
FUELS CONTAINING NITROGEN-PHOSPHORUS ANTI-ICING COMPOSITIONS

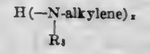
Casper J. Dorer, Jr., Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Original application Aug. 3, 1962, Ser. No. 214,491. Divided and this application Dec. 31, 1963, Ser. No. 334,919
9 Claims. (Cl. 44—63)

1. A fuel composition which comprises a major amount of liquid hydrocarbon fuel and from about 0.001% to 0.15% of an anti-icing composition prepared by reacting, for 0.5 to 8 hours at 70–150° C.,
(A) a heterocyclic compound of the formula



wherein R is an aliphatic or cycloaliphatic hydrocarbon radical containing from 1 to about 19 carbon atoms, R_1, R_2, R_3, and R_4 are each hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, haloalkyl, aminoalkyl, $H(O\text{-alkylene})_x$, or



R_5 is as indicated for R_{1-4}; x is an integer from 1 to about 10; and Q is O or NR_5; said heterocyclic compound having about 10–30 carbon atoms; with
(B) about 0.1–5.0 moles, per mole of Component A, of a compound of the formula $(RO)_2POH$, wherein R is alkyl, alkaryl, aralkyl, aryl or cycloalkyl.

3,416,901
MOTOR FUELS CONTAINING ETHER ACIDS

George W. Eckert, Wappingers Falls, and Howard V. Hess, Glenham, N.Y., assignors to Texaco Inc., a corporation of Delaware

No Drawing. Filed Dec. 2, 1957, Ser. No. 699,942
10 Claims. (Cl. 44—69)

1. A hydrocarbon fuel in the gasoline boiling range containing a tetraalkyl lead antiknock agent, substantial quantities of high octane components selected from the group consisting of olefinic hydrocarbons, aromatic hydrocarbons and mixtures thereof and an ether hydrocarbyl monocarboxylic acid in an amount sufficient to improve the octane rating of said hydrocarbon fuel.

3,416,902
FUEL ICING PREVENTION

John R. Anderson, Mount Kisco, and Edward P. Cass, Yorktown Heights, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,319
7 Claims. (Cl. 44—72)

The invention relates to a method for preventing the formation of ice in hydrocarbon fuels by substantially saturating the fuels with an excess amount of a largely insoluble additive so as to provide a separate phase between the additive and the fuel.

3,416,903
THERMALLY STABLE FUEL COMPOSITIONS

George W. Eckert and Doris Love, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

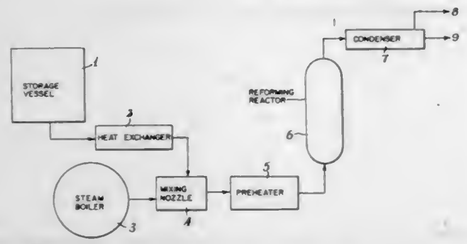
No Drawing. Filed Dec. 26, 1967, Ser. No. 693,141
6 Claims. (Cl. 44—73)

Thermally stable middle distillate or jet fuel composition containing a Mannich base from an alkylphenol sulfide, formaldehyde and alkylene diamine.

3,416,904
PROCESS FOR GENERATION OF HYDROGEN FROM LIQUID HYDROCARBONS

Amanullah R. Kahn, Chicago, Ill., assignor to Institute of Gas Technology, Chicago, Ill.

Filed Nov. 22, 1965, Ser. No. 509,096
7 Claims. (Cl. 48—214)



A one-stage process wherein hydrocarbons having an end boiling point up to 500° F. are converted by steam reforming to hydrogen-rich gas which may be used inter alia for any applicable chemical processes, or can be selectively methanated for use in an acid fuel cell. The hydrocarbon feedstocks may contain a relatively high proportion of normal olefins and cycloolefins and aromatics such as benzene. The vaporized hydrocarbons are steam reformed in a reactor in the presence of a nickel-alumina-aluminum catalyst at pressures preferably from 1–5 atmospheres, and at temperatures ranging from about 700° F. to 1100° F. The typical catalyst contains 44–56 weight percent nickel, 22–38 weight percent alumina and the remainder aluminum.

3,416,905
PROCESS FOR MANUFACTURE OF POROUS ABRASIVE ARTICLES

Arthur Waugh, Brookline, Mass., assignor to Lexington Laboratories, Inc., Cambridge, Mass., a corporation of Massachusetts

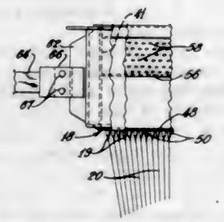
No Drawing. Filed June 25, 1965, Ser. No. 467,126
4 Claims. (Cl. 51—296)

A process for manufacturing abrasive articles of intricate shape by pouring or injection molding a fluid mixture. This mixture includes abrasive particles, glass frit and a suspending agent in a meltable binder.

3,416,906
METHOD AND APPARATUS FOR PROCESSING HEAT-SOFTENED MINERAL MATERIAL

Hellmut I. Glaser, Anderson, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Feb. 23, 1965, Ser. No. 434,525
12 Claims. (Cl. 65—1)

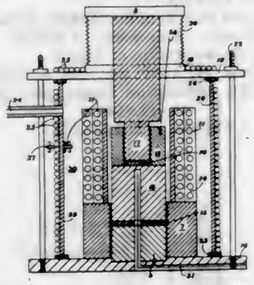


The invention disclosed embraces a method of and apparatus for flowing molten glass along a forehearth channel into stream feeders of substantial depth arranged along the forehearth channel, reheating the glass in each feeder at a region spaced from a stream flow section of the feeder to increase the temperature of the glass at said region above the temperature of the glass in the forehearth channel providing a thermal treatment for the glass in each feeder, and moving the glass away from the reheating region in each feeder and reducing the temperature of the glass as it moves from the reheating region toward the stream flow section.

3,416,907
METHOD OF FORMING ZINC OXIDE INFRARED TRANSMITTING OPTICAL ELEMENT

Edward Carnall, Jr., and Donald W. Roy, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original application Oct. 19, 1961, Ser. No. 146,186. Divided and this application June 30, 1965, Ser. No. 484,144
6 Claims. (Cl. 65—32)



A method for making infrared transmitting optical elements consisting of hot pressing homogeneous transparent polycrystalline zinc oxide powder in an inert atmosphere or in a vacuum.

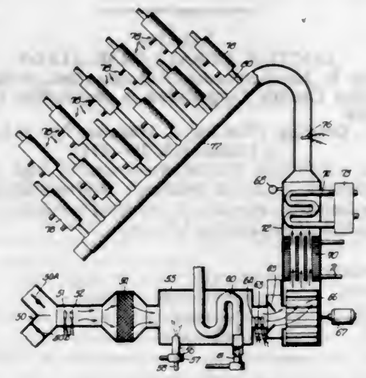
3,416,908
ENVIRONMENTAL CONTROL SYSTEM FOR GLASS MANUFACTURING

George I. Goodwin, Bloomfield Hills, and Robert C. Coblentz, Birmingham, Mich., assignors to Goodwin-Coblentz Associates, Inc., Pontiac, Mich., a corporation of Michigan

Filed Feb. 1, 1966, Ser. No. 524,285
9 Claims. (Cl. 65—162)

An environmental control system for use in the manufacture of glass in which any one or all of the variables

in controlling the temperature of glass during manufacture may be determined and regulated. Means is described to maintain control over temperature, pressure, and humidity by artificial means whereby the thermal

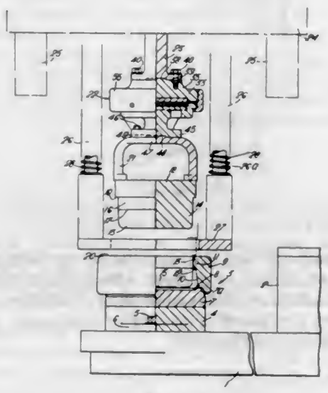


history of glass may be predetermined for consistent quality in glass manufacture. An alternate system using separately controlled convertor units for control of the cooling environment in various areas during manufacture of glass is also shown.

3,416,909
APPARATUS FOR MOULDING OF GLASS ARTICLES

John Edward Wilcock, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Apr. 12, 1965, Ser. No. 447,211
Claims priority, application Great Britain, Apr. 14, 1964, 15,426/64
4 Claims. (Cl. 65—309)



Apparatus for moulding glass articles using a mould and co-operating plunger actuated by a ram. The plunger is connected to the ram by an adaptor including two shoes having opposed flat parallel faces one shoe being connected to the ram and the other to the plunger, and a plurality of balls between said opposed faces to permit limited free sliding movement of the plunger axis in a direction transverse to the ram axis, whereby the plunger is self-aligning on entering a mould.

3,416,910
METHOD OF PREVENTING REVERSION TO CITRATE INSOLUBLE FORM

Casimer C. Legal, Jr., and Alvin Richmond, Baltimore, Md., and Anthony J. Bruno, Jr., New Canaan, Conn., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of applications Ser. No. 330,242, Dec. 13, 1963, and Ser. No. 412,243, Nov. 18, 1964. This application Oct. 28, 1965, Ser. No. 505,447
2 Claims. (Cl. 71—39)

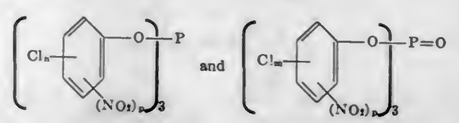
A method for preparing a slurry fertilizer comprising acidulating phosphate rock with an acid selected from the group consisting of nitric, phosphoric and sulfuric acids and mixtures thereof. A reversion inhibitor is added to the acidulate to block reversion of the phosphorus to its citrate-insoluble form. The reversion inhibitor or Ca reactant is added in an amount less than the stoichiometric amount required to react with the calcium present in the phosphate rock and in an amount not greater than that which would cause the slurry to lose its slurry characteristics. Ammonia is next added to the acidulate to neutralize the mixture and the resulting product is sprayed into the soil as a slurry.

3,416,911
METHOD OF DEFOLIATING AND DESICCATING PLANTS WITH SUBSTITUTED TRIPHENYL PHOSPHATES AND PHOSPHITES

Jack Hensel, Fairway, Kans., nad Delta W. Gier, Parkville, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 9, 1965, Ser. No. 512,778
19 Claims. (Cl. 71—71)

Triphenyl phosphites and phosphates of the general formulas



wherein n is an integer from 0 to 3, m is an integer from 1 to 3 and p is an integer from 1 to 2 and processes of defoliating and desiccating plants employing these organophosphorus compounds.

3,416,912
PROCESS OF KILLING PLANTS

Erik K. Regel, Mission, Kans., and Marion F. Botts, Independence, Mo., assignors to Chemagro Corporation, Kansas City, Mo., a corporation of New York

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,412
12 Claims. (Cl. 71—87)

S,S - dialkyl - 2 - (alkylthio) vinyl phosphonodithioates and S,S-dialkyl-1-(alkylthio) vinyl phosphonodithioates as well as the sulfinyl analogues have been found to have selective pre-emergent herbicide activity and post-emergent herbicide activity. The S,S-diaryl and haloaryl analogues show this activity to a lesser extent. The most active compound tested was S,S-dipropyl-2-(ethylthio) vinyl phosphonodithioate. The procedure for preparing the 2-alkylthio compounds is to dehydrate an alkylthioalkanol over potassium hydroxide to form an alkylvinyl sulfide, react this with phosphorus pentachloride, treat the product with sulfur dioxide and then esterify with a mercaptan in the presence of a tertiary amine.

The 1-alkylthio compounds are prepared by chlorinating an alkyl phosphonyl dichloride to form dichloroalkyl phosphonyl dichloride isomers, esterifying the mixture with alkyl mercaptan in the presence of excess teritary amine whereby the 1,2-dichloro derivatives are simultaneously dehydrohalogenated to form the S,S-dialkyl-1-

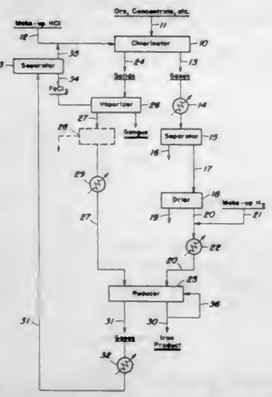
chlorovinyl phosphonodithioate which is treated with sodium mercaptide to give the desired product.

The S,S-dialkyl 1(or 2)-(alkylsulfinyl) vinyl phosphonodithioate can be prepared by oxidizing the corresponding alkylthio compounds of the invention, e.g. with hydrogen peroxide or chloroperbenzoic acid.

3,416,913
BARBAN FOR WILD OAT CONTROL
Harry C. Zeisig, Jr. and Otto L. Hoffmann, Shawnee, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed July 30, 1965, Ser. No. 476,198
17 Claims. (Cl. 71—88)

The selective herbicidal action of 4-chlorobutynyl N-(3-chlorophenyl)carbamate (barban) in control of wild oats is enhanced by combination with at least one molar equivalent of a quaternary ammonium compound selected from a limited class having molecular weights between 200 and 400 and certain specific substituents, with the result that injury to wheat is minimized.

3,416,914
CHLORIDE PROCESS FOR PRODUCING IRON FROM IRON ORE
Salvatore A. Guerrieri, Rowayton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 450,035
8 Claims. (Cl. 75—34)



Process for treating iron ore wherein the iron ore is countercurrently contacted with a gaseous mixture of hydrogen and hydrogen chloride in a single zone to convert the ferric oxide contained therein to solid ferric chloride. The solid ferric chloride is vaporized subsequently and reduced to iron with hydrogen in a reduction zone; the gaseous mixture withdrawn from the ferric chloride production zone, after drying, providing at least a portion of the hydrogen requirements. A gaseous mixture containing hydrogen and hydrogen chloride is withdrawn from the reduction zone and employed to produce the ferric chloride.

3,416,915
CORROSION RESISTANT COPPER ALLOYS
Tsuneaki Mikawa, 56—11, 1-Chome, Nakadai-cho, Itabashi-ku, Tokyo, Japan
No Drawing. Filed June 8, 1966, Ser. No. 559,957
Claims priority, application Japan, June 23, 1965, 40/37,024
3 Claims. (Cl. 75—159)

1. A corrosion resistant copper alloy having the essential composition by weight of: from 0.1 to 10 percent of aluminum; from 0.1 to 10 percent of nickel; from 0.001 to 5 percent of boron; from 0.01 to 5 percent of iron; from 0.01 to 5 percent of silicon; from 0.01 to 3 percent of titanium; from 0.001 to 1 percent of carbon; and the remainder of copper.

3,416,916
DUCTILE COBALT-BASE ALLOY
Robert B. Herchenroeder, Kokomo, Ind., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 7, 1966, Ser. No. 563,371
3 Claims. (Cl. 75—171)

1. A cobalt base alloy characterized by high temperature strength, oxidation resistance and resistance to embrittlement after exposure to elevated temperatures, said alloy consisting essentially of about:

	Percent
Chromium	18–25
Tungsten	11–15
Carbon	0.05–0.5
Nickel	16–25
Boron	0.001–0.025

Balance cobalt and incidental impurities.

3,416,917
SUPERCONDUCTOR QUATERNARY ALLOYS WITH HIGH CURRENT CAPACITIES AND HIGH CRITICAL FIELD VALUES
Warren De Sorbo, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Original application Nov. 13, 1962, Ser. No. 237,158, Divided and this application Apr. 18, 1966, Ser. No. 543,173
3 Claims. (Cl. 75—174)



New superconducting intermetallic compounds such as tin, aluminum, silicon, or gallium with niobium, titanium, tantalum or vanadium alloys containing at least two metals selected from the group consisting of zirconuim, molybdenum, uranium and rhenium.

3,416,918
PROCESS OF MAKING DISPERSION STRENGTHENED LEAD
David Henry Roberts, Harlow, England, assignor, by mesne assignments, to St. Joseph Lead Company, New York, N.Y., a corporation of New York
No Drawing. Filed May 12, 1966, Ser. No. 549,449
Claims priority, application Great Britain, May 19, 1965, 21,225/65
11 Claims. (Cl. 75—206)

The present application discloses a process for producing dispersion strengthened lead by mixing a small amount of a refractory oxide powder, such as alumina, with lead powder in an oxidizing atmosphere so as to coat the lead particles with lead oxide and thereby inhibit agglomeration thereof, while obtaining a substantially uniform dispersion of the refractory oxide. After said mixing process, the mixture may be subjected to chemical reduction of the lead oxide preferentially, while avoiding significant reduction of the refractory oxide and the so reduced powder mixture may be subjected to a forming process to amalgamate the lead particles into a coherent matrix with the refractory oxide dispersed throughout.

3,416,919
METHOD FOR FORMING ELECTRODES
Karl S. Snow, Boulder City, Nev., and Schuyler A. Herres, Murray Hill, N.J., assignors to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware
Filed Sept. 18, 1967, Ser. No. 668,464
8 Claims. (Cl. 75—208)

Method of forming an electrode from a plurality of pressed metal compacts comprising placing the compacts in a furnace in an arrangement approximating the desired electrode shape with adjacent surfaces in contact, evacuating the furnace and heating the compacts at a temperature above the sintering temperature of the compact material while maintaining the abutting surfaces of the compacts in contact for a sufficient time to sinter the compact material and join the compacts.

3,416,920
PHOTOGRAPHIC METHOD OF PRODUCING A COPY FROM AN ENDLESS SILVER SURFACE
Walter Limberger, Hamburg, Poppenbuttel, and Rudolf Wendt, Hamburg, Germany, assignors to Lumoprint Zindler K.G., a corporation of Germany
Filed Mar. 10, 1964, Ser. No. 353,015
Claims priority, application Germany, Mar. 14, 1963, L 44,359
12 Claims. (Cl. 96—27)

A method of reproducing copies in which an endless silver surface is used repeatedly by sensitizing it with iodine, bromine or chlorine and exposure to produce a visible or invisible image, and the image is transferred to a receiving layer with or without reversal by wetting the silver or receiving layer with a liquid developer and bringing the layers into contact with one another. Upon separation of the layers, the silver surface is frictionally cleaned prior to a repetition of the reproduction sequence.

3,416,921
PHOTOGRAPHIC PROCESSING USING CELLOPHANE PROCESSING SHEETS
Joseph H. Coenen, Greece, N.Y., assignor, by mesne assignments, to Minnesota Mining and Manufacturing Company, St. Paul., Minn., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,428
3 Claims. (Cl. 96—29)

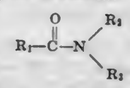
A base sheet is coated with a receiving coating of the diffusion transfer type, and over the receiving coating is a negative emulsion coating of the diffusion transfer type, a stripping layer preferably being interposed between the two coatings to facilitate separation of the coatings from each other. After a photographic exposure is made on the negative coating, a sheet of cellophane with processing solution imbibed therein is pressed against the exposed negative coating. The solution develops the latent image in the negative coating, and transfer takes place to the receiving coating (through the intermediate stripping layer, if one is used) to produce a positive image in the receiving coating. The cellophane layer is then stripped off, carrying with it the negative-emulsion coating, as the negative coating has greater affinity for the cellophane layer than for the positive or receiving coating. According to another feature of the disclosure, a cellophane sheet may also be used as a vehicle for stripping unwanted gelatin from a photographic element of a type other than a diffusion transfer element.

3,416,922
RESINOUS PRINTING PLATE COMPOSITIONS CONTAINING LIGHT-SENSITIVE NITRONES
Oskar Süs and Johannes Munder, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey
No Drawing. Filed July 2, 1964, Ser. No. 380,076
Claims priority, application Germany, July 4, 1963, K 50,128
46 Claims. (Cl. 96—33)

This invention relates to a novel light-sensitive material for use in the preparation of printing plates which comprises a support having a light-sensitive coating thereon containing a resin which is soluble in either a basic or acidic aqueous liquid and also in an organic solvent, and a light-sensitive nitrone.

3,416,923
AMIDE DISPERSANT FOR FLUORESCENT AGENTS IN PHOTOGRAPHIC ELEMENTS
John H. Van Campen and Roger B. Clark, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,786
7 Claims. (Cl. 96—74)

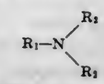
Photographic elements are provided which contain a water-insoluble, organic fluorescent agent dispersed in amide solvent having the formula:



wherin R, is alkyl, aryl or aralkyl and R_2 and R_3 each are independently selected from group consisting of hydrogen, alkyl, aryl and aralkyl, the sum of the carbon atoms in R_1, R_2, and R_3 being at least 6.

3,416,924
HEAT-DEVELOPABLE DIAZOTYPE MATERIAL
Paul Joseph Hubert Tummers, Velden, Netherlands, assignor to Van der Grinten N.V., Venlo, Netherlands, a corporation of Dutch Law
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,595
Claims priority, application Netherlands, Mar. 10, 1964, 6402452
8 Claims. (Cl. 96—75)

Heat-developable diazotype material having improved keeping quality and developable at temperatures below 150° C. contains, with a diazo compound, an azo-coupling component and an acid-reacting stabilizer, a developing agent comprising dispersed particles of a substantially water-insoluble salt of a polybasic acid having a dissociation content between 7×10^{-2} and 1×10^{-4} and an aliphatic amine of the formula



R_1 being an aliphatic hydrocarbon radical having at least 8 C atoms, R_2 and R_3 each being hydrogen or an aliphatic hydrocarbon radical, and R_1, R_2 and R_3 together comprising at least 16 C atoms. Especially suitable is di(octadecylammonium)oxalate present with oxalic acid in a light-sensitive layer containing a hydrophilic binder such as polyvinyl alcohol modified by polyvinyl pyrrolidone.

3,416,925
DIAZOTYPE REPRODUCTION MATERIAL
Oskar Süs, Wiesbaden-Biebrich, and Heinz Schäfer, Wiesbaden-Sonnenberg, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.,
No Drawing. Filed July 3, 1964, Ser. No. 380,126
Claims priority, application Germany, July 6, 1963, K 50,151
16 Claims. (Cl. 96—91)

Greater stability without loss of light-sensitivity can be obtained in p-amino diazo compound having a meta-alkoxy group by the introduction of an alkyl, alkoxy or halogen in the ortho-position located next to the alkoxy group in the diazo molecule.

3,416,926
SCRIBING FILM
Albert C. Smith, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 2, 1964, Ser. No. 401,235
5 Claims. (Cl. 96—94)

A scribing film of a type comprising a plate support having a gelatin layer thereover, wherein said gelatin layer has incorporated therein a dispersion containing a substantially pure and substantially water-insoluble, low molecular weight, organic crystalloidal material having a boiling point above about 175° C., which material has a plasticizing effect on the gelatin.

3,416,927
SILVER HALIDE EMULSIONS CONTAINING SUPERSENSITIZING COMBINATIONS OF MEROCYANINE DYES
Norman W. Kalenda, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 20, 1966, Ser. No. 598,570
16 Claims. (Cl. 96—100)

Photographic silver halide emulsions sensitized by simple merocyanines, merocarbocyanines or merodicarbocyanine dyes are advantageously supersensitized by adding at least one sulfonic acid derivative of a bis(triazinylamino)stilbene, a dibenzothiophene dioxide, a biphenyl, a terphenyl, a quaterphenyl, a phenanthrene, a pyrene, or a chrysene.

3,416,928
PELLETED RUMINANT FEEDSTUFF
Thomas E. Freese, Indianapolis, Ind., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 12, 1966, Ser. No. 520,097
4 Claims. (Cl. 99—2)

Production of a free-flowing, non-segregating, urea-feed mixture which can be pelleted more readily by employing urea prills within a size range such that at least 90% are between 12 and 30 mesh, at least 5% of the total prills being less than 20 mesh and at least 70% being greater than 20 mesh.

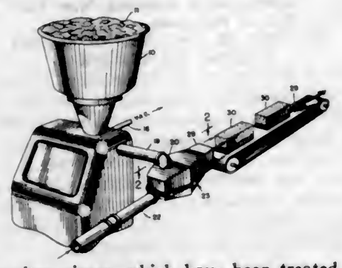
3,416,929
FOOD MATERIALS MIXING PROCESS
William M. Boushka, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,132
11 Claims. (Cl. 99—17)

Mixing heterogeneous food materials by smear mixing and subsequently aging said materials to form a homogeneous mixture, followed by smear mixing the aged mixture.

3,416,930
ACID COMPOSITIONS
Riyad R. Irani, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 28, 1965, Ser. No. 459,939
11 Claims. (Cl. 99—28)

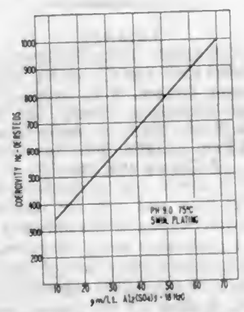
Food compositions such as beverages and gels containing as an acidulating agent an amino tri(lower alkylidene phosphonic acid).

3,416,931
PREPARING POULTRY LOAF PRODUCT
Russell W. Posegate, La Grange Park, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,729
10 Claims. (Cl. 99—107)



Raw poultry pieces, which have been treated with an edible metallic salt and agitated to extract a salt-soluble coating or binder on the pieces, are extruded through a nozzle to unite the pieces and discharge them in the form of a shape-sustaining loaf onto an open receiving surface. The extruded chamber may be divided, white meat being fed to one section at the side of the divider and dark meat pieces fed to the other section, and the two meat bodies being brought together in the nozzle to unite them in a single loaf or in an elongated body which is cut to form separate loaves for enclosure in containers.

3,416,932
MAGNETIC ALLOYS AND METHOD AND COMPOSITIONS USEFUL FOR PREPARING SAME
Joseph S. Mathias, Riverton, N.J., and Joseph J. McGee, Colwyn, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 532,945
5 Claims. (Cl. 106—1)

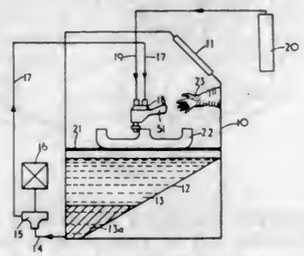


An electroless plating solution useful for the electroless deposition of a magnetic cobalt alloy comprises an aqueous solution containing cobalt ions, such as may be provided by cobalt sulfate, a reducing agent, such as may be provided by sodium hypophosphite, a pH control agent, such as Rochelle salt, together with an amount of aluminum sulfate $Al_2(SO_4)_3 \cdot 18H_2O$ or potassium titanium oxalate $K_2TiO(C_2O_4)_2 \cdot 2H_2O$ dissolved in said solution in an amount in the range 5–100 grams per liter and 4–100 grams per liter, respectively.

3,416,933
STABLE WAX EMULSIONS CONTAINING HEXAVALENT CHROMIUM
James Nicholson and Donald Poole, Pontefract, England, assignors to Hickson's Timber Impregnation Co. (G.B.) Limited, Castleford, Yorkshire, England, a British company
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,073
Claims priority, application Great Britain, Feb. 22, 1965, 7,565/65
10 Claims. (Cl. 106—15)

There are provided wood treating compositions in emulsion form containing a hydrophobic wax, a wood preservative, particularly one based on hexavalent chromium, and a nonionic surface active agent having at least one condensed ethylene oxide chain containing at least 25 ethylene oxide units and a Hydrophilic Lipophilic Balance number between 12 and 22, the surface active agent preferably being a condensate of a long chain fatty alcohol or an alkyl phenol.

3,416,934
TREATMENT OF MOULD SURFACES
James Russell Farrell McNair, Solihull, England, assignor to Abrasive Developments Limited, Solihull, England, a British company
Filed June 29, 1965, Ser. No. 467,854
Claims priority, application Great Britain, July 2, 1964, 27,283/64
5 Claims. (Cl. 106—38.24)



The specification discloses a method of simultaneously cleaning a mould surface and applying a mould release agent to the surface, the method is particularly applicable to the treatment of surfaces of moulds used for moulding rubber and synthetic resinous materials. The method comprises projecting a mixture of a mould release agent, a carrier liquid and solid particles, which are capable of effecting a cleaning action on the surface when projected thereat, at the surface so that the particles effect such cleaning action and bring the agent into intimate contact with the surface.

3,416,935
INSULATING REFRACTORIES
Edward Einstein and Donald Orr McCreight, Bethel Park, Pa., assignors to Dresser Industries, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 397,020, Sept. 16, 1964. This application July 2, 1965, Ser. No. 469,352
1 Claim. (Cl. 106—41)

Fired lightweight porous refractory insulating shape analyzing at least about 95% Al_2O_3, free of glassy and vitrified phases, being very porous and permeable.

3,416,936
ABRASION RESISTANT GLASS BEAD WITH SHARP SOFTENING RANGE AND PROCESS FOR MAKING THE SAME
James D. Sproul, Jr., House Springs, Mo., assignor, by mesne assignments, to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,296
7 Claims. (Cl. 106—52)

A glass bead having a high melting point and a relatively sharp softening range and a high degree of abrasion resistance. The bead consists essentially of 7% to 40% zirconium oxide, 10% to 32% silica, 10% to 35% sodium oxide, and 10% to 50% calcium oxide by weight.

3,416,937
GLASS COMPOSITION FOR USE AS THE FACE PLATE OF AN IMAGE ORTHICON TUBE AND THE LIKE
Goro Enomoto, Sagamihara-shi, Japan, assignor to Kabushiki Kaisha Obara Kogaku Garasu Seizosho, Sagamihara-shi, Kanagawa-ken, Japan
No Drawing. Filed Feb. 5, 1965, Ser. No. 430,755
1 Claim. (Cl. 106—54)

1. The glass, suitable for the face plate of an image orthicon tube, having a thermal coefficient of linear expansion of 45 to 54×10^{-7} cm./cm./° C. between 30° C. and 380° C., and consisting essentially of the following ingredients in percent by weight; 67 to 70% SiO_2, 9 to 12% B_2O_3, 2 to 2.3% Al_2O_3, 5 to 8% Sb_2O_3, 2.5 to 3.0% PbO, 0 to 2%, CaO, 0 to 3% ZnO, 3.0 to 4.5% Na_2O and 3.0 to 4.0% K_2O.

3,416,938
MgO-Zr-O_2 FUSED CAST REFRACTORY
Allen M. Alper and Robert N. McNally, Corning, N.Y., assignors to Corhart Refractories Company, Louisville, Ky., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 522,823, Jan. 25, 1966. This application Sept. 5, 1967, Ser. No. 665,232
8 Claims. (Cl. 106—57)

Basic fused cast refractory consisting of, analytically by weight, 1 to 30% ZrO_2, not more than 5% SiO_2, 0 to 20% FeO, 0 to 10% B_2O_3, 0 to 3% of Al_2O_3, Cr_2O_3 and mixtures thereof, and the balance being MgO in an amount of at least 70% plus incidental impurities in an amount less than 1%. Refractory useful for lining basic oxygen steelmaking furnaces or vessels.

3,416,939
ALKALI-METAL SILICATE PROTECTIVE COATING
John B. Schutt, Silver Spring, and Charles M. Shai, Gambrills, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
No Drawing. Filed May 3, 1965, Ser. No. 452,944
10 Claims. (Cl. 106—84)

An inorganic paint composition and method for processing same has been developed in which the composition is particularly resistant to ultra violet radiation and wherein the constituents include an alkali-metal silicate solution vehicle and aluminum oxide of particle size of 0.3 to 2.0 microns as a pigment and filler. The applicability of the paint is enhanced by the addition of potassium hydroxide to increase its flexibility and boric acid and/or zinc oxide to increase its hardness. The paint is formed by merely stirring the resulting mixture for a time depending on the quality desired of the paint. In addition, the time of processing can be shortened by the application of heat.

3,416,940

COATING OF THE SURFACES OF LIGHT TRANSPARENT MATERIALS ASSOCIATED WITH LIGHT SOURCES

David Graham Guthrie, Slough, England, assignor to Saunders Roe & Nuclear Enterprises Limited, Hayes, England

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,938
Claims priority, application Great Britain, Nov. 20, 1963, 45,735/63
8 Claims. (Cl. 117—8.5)

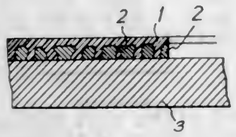
Discontinuous phosphor coatings are applied to the inner surfaces of containers, such as cathode ray tubes, by providing a coating of an adhesive on an inner surface of the container, heating selected areas of the outer surface of the body to render the adjacent inner surface non-adhesive, and applying phosphor particles to the inner surface which will adhere only to non-heated areas.

3,416,941

PROCESS FOR THE MANUFACTURE OF A BEARING SURFACE ON A STEEL ARTICLE INCLUDING A SINGLE SINTERED LAYER OF BRONZE PARTICLES AND A LAYER OF POLYTETRAFLUOROETHYLENE

Koichi Mizuno, Tokyo, Japan, assignor of one-half to Daikin Kogyo Company Limited, Osaka, Japan, a corporation of Japan

Filed May 11, 1964, Ser. No. 366,249
Claims priority, application Japan, May 16, 1963, 38/25,784; Dec. 7, 1963, 38/65,693
7 Claims. (Cl. 117—22)



A process for the manufacture of a bearing surface on a steel article, comprising the steps of forming a rough keying surface on the article by sintering a monoparticle layer of bronze alloy particles scattered thereon at a temperature between 750° C. to 950° C. while using an ammonium halide aqueous solution as a binder to hold the particles on the steel article, and applying an anti-abrasive bearing layer on the rough keying layer by depositing a layer of an aqueous solution of polytetrafluoroethylene containing CdO and/or Al_2O_3 thereon and heating this deposited layer at a temperature between 300° C. to 430° C.

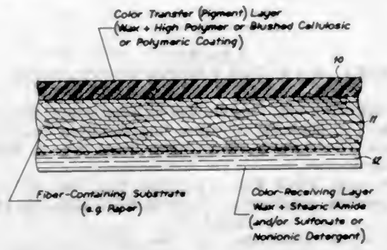
3,416,942

DIRECT-TRANSFER COPY SHEET

Walter Schutzner and Franz Mock, Vienna, Austria, assignors to W. Koreska, Vienna, Austria, a corporation of Austria

Continuation-in-part of application Ser. No. 500,187, Oct. 21, 1965. This application June 12, 1967, Ser. No. 645,265
Claims priority, application Austria, Oct. 11, 1961, 7,624/61; Jan. 31, 1962, 809/62; Feb. 1, 1962, 850/62
12 Claims. (Cl. 117—36.3)

A direct-transfer copy sheet having an under surface constituting a color-transfer layer and consisting of a pigment dispersed in a matrix of waxy material or of a blushed cellulosic or polymeric material, and a color-receiving layer upon the other side of the substrate adapted to preferentially receive pigment from a similar color-transfer layer of an overlying sheet, the color-receiving layer consisting of a waxy matrix containing one or more surface-active agents facilitating absorption of writing inks by the color-receiving layer and selected from the group of water-free wax-dispersible surface-active agents



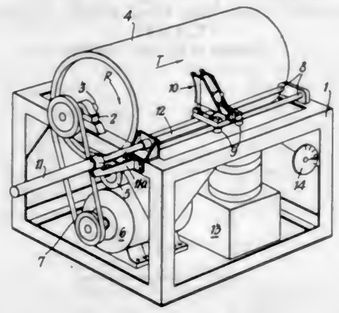
such as stearic acid amides and alkali-metal salts of stearic and other fatty acids, alkylaryl sulfates or sulfonates, and polyglycol ethers or esters.

3,416,943

COATING OF PAPER AND THE LIKE

Norman Owen Clark and William Windle, Cornwall, England, assignors to English Clays Lovering Pochin & Company Limited, Cornwall, England, a British company

Filed Apr. 29, 1965, Ser. No. 451,877
Claims priority, application Great Britain, May 4, 1964, 18,510/64
5 Claims. (Cl. 117—44)



An apparatus for coating sample sheet material comprises a backing roll for a sample sheet which is rotated to produce a peripheral speed equal to the linear speed at which the sheet material will travel in a full scale coating apparatus. A coating head with a reservoir for a coating composition and a flexible blade for applying the coating composition to a sample sheet on the backing roll moves parallel to the axis of rotation of the backing roll with the blade in contact with the sheet material in such a manner that a sample sheet material mounted on the backing roll is coated with a coating composition in the form of a helical strip of coated sheet material having uncoated gaps left between successive turns of said helical strip.

3,416,944

ABLATIVE PRODUCT AND METHOD FOR ITS MANUFACTUR

Paul F. Pirrung and Donald L. Schmidt, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,623
5 Claims. (Cl. 117—46)

An ablative product and the method of making the same comprising the steps of impregnating a pyrolyzed graphite fabric with a phenolic resin, heat drying said impregnated fabric, pyrolyzing said fabric over a gradual temperature

rise from room temperature to 1900° F. in a period of 18 hours, cooling said fabric to room temperature, heating said fabric up to 4600° F. in about one hour, maintaining the fabric at 4600° F. for four hours, and forming a pyrolytic graphite deposit on said fabric by contacting said fabric with a mixture of 20–70 percent volume of propane in a carrier gas at a temperature of 3500–4500° F. for a period of time until the requisite pyrolytic deposit is obtained on the fabric.

3,416,945

PROCESS FOR THE OPTICAL BRIGHTENING OF FIBERS CONTAINING TEREPHTHALIC ACID POLYESTERS

Reinhard Zweidler and Max Keller, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed May 24, 1965, Ser. No. 458,448
Claims priority, application Switzerland, May 29, 1964, 7,060/64, 7,061/64
13 Claims. (Cl. 117—33.5)

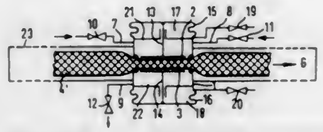
An improved pad dyeing process for the optical brightening of terephthalic acid polyster fibers is disclosed. The process comprises impregnating the fiber at room temperature with either 2-[4'''-chlorine-2'''-cyanostilbyl-4'']-(naphtho-1',2':4,5)-1,2,3-triazole alone or in a weight ratio of 1:5 to 2:1 with at least one other brightener compound which forms colorless blue fluorescent solutions and contains no stilbene groups and has at least one hetero atom fused with a benezene ring selected from coumarin, benzoxazole or naphthalic acid amides. After impregnation the fiber is squeezed out and heated at preferably 180–220° C. to achieve a white to reddish-white whiter-white effect.

3,416,946

METHOD AND APPARATUS FOR COATING THE INNER SURFACE OF A CAPILLARY SYSTEM

Hermann J. Schladitz, Munich, Germany, assignor to Schladitz-Whiskers A.G., Zug, Switzerland, a company of Switzerland

Filed Dec. 1, 1965, Ser. No. 510,874
11 Claims. (Cl. 117—61)



1. A process for the coating of the inner surface of a capillary system by the decomposition products of a thermally decomposable compound, comprising admitting a heating medium into the capillary system prior to admittance of the thermally decomposable heating compound, admitting into and removing the heating medium at least one time until all points of the capillary system have reached the decomposition temperature of the thermally decomposable compound, whereupon said compound is admitted into and removed out of the capillary system at least one time.

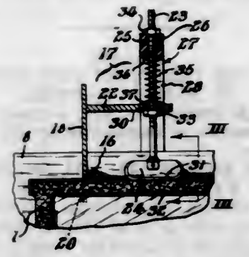
3,416,947

METHOD OF TROWELLING A COATING MATERIAL ONTO A BUILDING BLOCK

Earl C. Hall, Broomall, Pa., assignor to M. A. Bruder & Sons Incorporated, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 25, 1965, Ser. No. 435,308
2 Claims. (Cl. 117—64)

The method used is to measure continuously the surface contour of building blocks and relative heights of succesive blocks prior to the arrival of such blocks at the trowel, and transmitting such measurements to adjust the height of the trowel over each block so measured as it



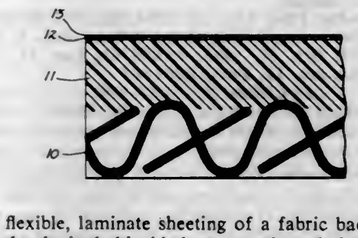
arrives under the trowel, thereby to compensate for irregularities in the surface of individual blocks so as to provide a smooth coating of uniform thickness upon each block.

3,416,948

HAIR OIL-RESISTANT TOP COATING FOR PLASTICIZED POLYVINYL CHLORIDE SHEETING

Francis J. Maurer, Tallmadge, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio

Filed Apr. 21, 1965, Ser. No. 449,758
2 Claims. (Cl. 117—76)



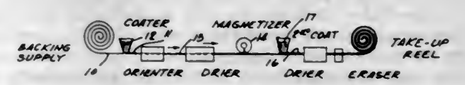
A flexible, laminate sheeting of a fabric backing, plasticized polyvinyl chloride layer, a polymethylmethacrylate barrier layer and a top layer of polyesterurethane.

3,416,949

LOW NOISE RECORD MEDIUM AND METHOD FOR PRODUCING THE SAME

Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, Chicago, Ill., a corporation of Illinois

Filed Aug. 2, 1965, Ser. No. 476,378
7 Claims. (Cl. 117—93.2)



A method for reducing the noise level of a magnetic record medium to reduce the noise level thereof and to applying a second coat of magnetizable material to the active surface of the tape, and fixing the second coat after it has had an opportunity to neutralize any leakage fields from the tape.

3,416,950

METHOD OF IMPROVING THE BONDING CHARACTERISTICS OF GLASS SURFACES

Malcolm E. Schrader, Brooklyn, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,086
3 Claims. (Cl. 117—106)

Glass fibers are modified to improve their bonding characteristics for resinous materials. Glass fibers are

treated with organophosphorous compounds, such as triethyl phosphate and tricresyl phosphate, which react with the silanol groups on the glass fiber surface to form a surface compound of the type Si—O—P.

3,416,951
METHOD FOR THE PYROLYTIC DEPOSITION OF SILICON CARBIDE
Ralph L. Hough, Springfield, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed July 28, 1965, Ser. No. 475,609
6 Claims. (Cl. 117—106)

A pyrolytic method for uniformly depositing SiC on a metal substrate, such as a W filament, comprising the steps of (1) bubbling a carrier gas, such as H, through a selected liquid, such as methyltrimethoxysilane, which is the source of the SiC, so as to vaporize said silane in part, and (2) contacting said substrate heated at a temperature from 1200–1800° C. under a pressure of one atmosphere and less with said vapor.

3,416,952
SURFACE MODIFYING TREATMENT OF SHAPED ARTICLES MADE FROM POLYESTERS
James Eric McIntyre and Michael Mundie Robertson, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 25, 1964, Ser. No. 370,068
Claims priority, application Great Britain, June 5, 1963, 22,323/63; Oct. 31, 1963, 43,055/63; Oct. 31, 1963, 43,056/63; Jan. 10, 1964, 1,231/64
14 Claims. (Cl. 117—118)

A process for the treatment of the shaped articles, made from an essentially linear crystallisable polyester, with a water-insoluble crystallisable polymeric compound, wherein said crystallisable polymeric compound contains within a single molecule (A) sufficient repeat units identical with those forming the crystallisable portions of the polyester to confer crystallisability on the compound and (B) at least one active group serving to modify the surface of the shaped article, the said active group being selected from at least one of the following: an acidic group, a basic group, an ionisable salt group, a water-solvatable polymeric group as defined, an anti-oxidant group, a group which absorbs ultra-violet light of wavelength 290–400 mμ and dissipates it in a manner harmless to the shaped article, a group which contains silicon- or fluorine-based water-repellent groups, a dyestuff group, a polymeric group containing a plurality of alcoholic hydroxyl radicals, and a polymeric group containing a plurality of —CO—NH— radicals, the said crystallisable polymeric compound having a melting point above 100° C., measured by the temperature of disappearance of birefringence, and the said treatment being carried out by applying the crystallisable polymeric compound to the surface of the shaped article and subjecting the shaped article with the compound to a thermal treatment at a temperature above 90° C.

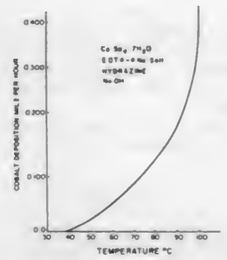
3,416,953
REFRACTORY FIBERS AND METHOD OF PREPARING SAME
Carlos L. Gutzeit and Henry J. Brown, Long Beach, Calif., assignors to Hitco, a corporation of Delaware
No Drawing. Filed Jan. 23, 1964, Ser. No. 339,614
32 Claims. (Cl. 117—126)

Improved zirconia, zircon and silica fibers having increased wettability and bondability with resinous bonding agents and high temperature stability are prepared by treating the fibers with an agent selected from the group consisting of chromic acid, phosphoric acid and mixtures thereof and heat treated at a temperature of at least about 1450° F. for a time sufficient to cause the formation of an improved surface layer on the fibers.

3,416,954
PROCESS FOR THE DURABLE CREASING OR OTHER PERMANENT SETTING OF TEXTILE MATERIALS CONTAINING WOOL OR OTHER KERATIN FIBRES
Jack Delmenico, Belmont, Geelong, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate
No Drawing. Filed Oct. 5, 1964, Ser. No. 401,662
Claims priority, application Australia, Oct. 10, 1963, 36,328/63
4 Claims. (Cl. 117—141)

Rendering a textile material selected from the group consisting of wool and other keratin fibers heat settable in which the material is impregnated with a solution containing (1) at least one compound which acts as a setting agent by increasing the number of ionized thiol groups in the fibers but not being a reducing agent and (2) at least one compound which acts as a hygroscopic substance having the capacity for increasing the moisture content of the fibers during heating of the material in a subsequent permanent heating step and drying the material.

3,416,955
ELECTROLESS COBALT PLATING BATH
Mieczyslaw Paul Makowski, Willowick, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed Jan. 13, 1965, Ser. No. 425,277
13 Claims. (Cl. 117—160)

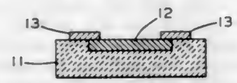


An electroless plating bath for depositing cobalt in which the water base bath contains a hydrazine base reducing agent, a solution of ethylenediamine derivatives for complexing the cobalt ions, an alkali agent for controlling the hydrogen ion concentration.

3,416,956
PROCESS FOR FORMING A BARRIER IN A CADMIUM SULFIDE SOLAR CELL
Basilio G. Keramidas, Cleveland, and James C. Schaefer, North Royalton, Ohio, assignors to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,196
14 Claims. (Cl. 117—200)

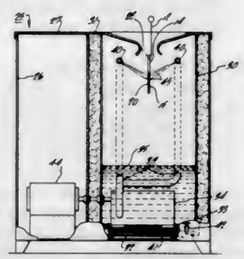
This invention comprises a process for forming the barrier layer in a CdS solar cell by depositing a copper sulfide barrier layer on the CdS of the voltaic cell by immersing the CdS into a solution of a cuprous compound, preferably cuprous chloride, at a temperature of 25–97° C., the solution concentration of cuprous compound being 5–20 percent by weight and the total period of immersion being not more than the maximum value indicated by a chart having time in minutes plotted against temperatures in ° C.

3,416,957
RESISTANCE ELEMENT UTILIZING GROUP III OR V–B METAL
Maggio P. Pechini, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 10, 1965, Ser. No. 454,487
19 Claims. (Cl. 117—212)



Forming a resistance device by applying to the surface of a porous titanate body, a pattern of an organic solvent-soluble amorphous organometallic compound. Firing the body to cause decomposition of the organometallic compound to the metal oxide and cause the oxide to enter the titanate lattice. A resistance device such as that formed by this process is presented.

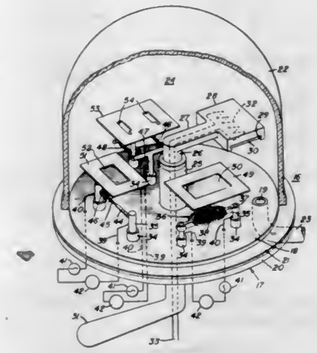
3,416,958
ALLOY COATING FOR ELECTRICAL CONDUCTORS
Keith Eric Oxford, San Diego, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,168
10 Claims. (Cl. 117—212)



1. A process for forming an alloy coating on an electrically conductive metal, said process comprising the steps of:
(a) submerging the electrically conductive metal in a molten alloy having the characteristic of interacting with the metal to form a surface bond therewith, said surface bond characterized by a melting temperature higher than the melting temperature of the alloy;
(b) heating an alloy-immiscible fluid to a predetermined temperature higher than the melting temperature of said alloy and lower than the melting temperature of the metal and alloy surface bond; and
(c) applying said fluid at said predetermined temperature to said alloy on said conductive metal to melt and flush away alloy material in excess of a uniform coating including at least the surface bond.

3,416,959
METHOD OF FORMING CARBON RESISTOR FILMS
Robert L. Cormia, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 26, 1965, Ser. No. 435,546
4 Claims. (Cl. 117—213)

Carbon films having a resistance of 5000 ohms per square with less than .3% change in permanent resistance after a 10 minute heat treatment at 400° C. are formed by successive depositions in a pressure range between 1×10^{-9} to 5×10^{-5} millimeters of mercury of a silicon monoxide layer, a carbon layer, metallic contacts, and a silicon monoxide overcoating atop a non-conductive substrate. The substrate preferably is heated to a temperature between 200° to 600° C. during the depositions and all depositions are effectuated without a breaking of the vacuum of the chamber. Resistors of a desired ohmic value are obtained either by a careful monitoring of the deposition rate or by a selective oxidation of a portion of the carbon film prior to the deposition of the silicon monoxide overlayer.



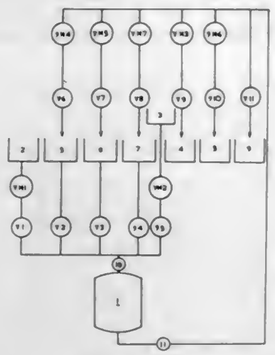
3,416,960
CERMET RESISTORS, THEIR COMPOSITION AND METHOD OF MANUFACTURE
William Thomas Kelly, Garden Grove, Leon Bruce Hornberger, Corona, and Milton John Strief, Riverside, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed May 9, 1966, Ser. No. 548,660
2 Claims. (Cl. 117—224)

A cermet material and method of firing such material onto a nonconductive substrate to produce a resistance layer having high power stability. The material includes a mixture of finely divided particles of glass and particles of a filler material, such as ground steatite, alumina, calcium silicate, barium silicate and lead zirconate, which are mixed together with a noble metal in the form of a dissolved metal solution. The mixture is heated to drive off the volatile materials, mixed with a suitable liquid carrier, applied to the substrate and then heated to the fusion temperature of the glass but less than the melting temperature of the noble metal.

3,416,961
PROCESS FOR THE SEPARATION OF FRUCTOSE AND GLUCOSE
Cyril Benjamin Mountfort, Pymble, New South Wales, Beverly Cortis-Jones, Seaforth, New South Wales, and Richard Thomas Wickham, Lakemba, New South Wales, Australia, assignors to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales
Filed Dec. 22, 1964, Ser. No. 420,319
Claims priority, application Australia, Jan. 7, 1964, 39,494/64
7 Claims. (Cl. 127—46)

Process for separating fructose and glucose in which a syrup containing a mixture of fructose and glucose is admitted to a column charged initially with a water-immersed bed of an alkaline earth metal salt of a suitably cross-linked nuclearly sulphonated polystyrene cation exchange resin, whereby the fructose is preferentially absorbed by the resin and is subsequently washed therefrom after displacing the surrounding glucose-enriched solu-

tion. The effluent from the column is divided into at least six fractions, at least two of which are then recycled to



the column in a specified sequence with respect to additional syrup feed and water feed.

3,416,962

PREPARING ETCHED SUBSTANCES FOR VACUUM DEPOSITION OF A METAL THEREON

Richard H. Storck, Telford, and Alfred A. Adomines, Wayne, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 5, 1964, Ser. No. 387,759
4 Claims. (Cl. 134—26)

An etched copper substrate prior to the vapor deposition thereon of a metal, such as aluminum or chromium, is treated by rinsing the copper substrate with a low molecular weight alcohol, such as methyl alcohol, followed by a water rinse, then by dipping the copper substrate in a 0.5% by weight aqueous potassium cyanide solution followed by rinsing with water and then dipping the resulting treated copper substrate in a series of about three actetone baths of increasing purity and then drying in a dust-free atmosphere.

3,416,963

ELECTROCHEMICAL CELL

Herbert F. Hunger, Long Branch, Nunzio J. Sanfilippo, West Long Branch, and James E. Wynn, Neptune, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed Oct. 6, 1965, Ser. No. 493,588
2 Claims. (Cl. 136—6)

1. An electrochemical cell for producing pulsating voltage, current, and power outputs, said electrochemical cell comprising a cathode compartment and an anode compartment separated by a cation exchange resin membrane separtor, said cathode compartment including a lead dioxide electrode in sulfuric acid electorlyte and said anode compartment including a platinized platinum electrode in sulfuric acid electrolyte containing a formaldehyde as an electrolyte soluble reagent.

3,416,964

FUSION-SEALED METAL-ENCLOSED RECHARGEABLE BATTERY CELLS

Ignatius Michalko, Ossining, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 478,813, Aug. 11, 1965. This application Jan. 17, 1966, Ser. No. 521,007
3 Claims. (Cl. 136—6)

A sealed metallic casing of a rechargeable battery cell has a metallic terminal connected at least to one of the enclosed electrodes and spaced and joined by an insulating ceramic from a surrounding casing passage. The ceramic collar has two spaced metallic coatings affixed with tight metallic fusion joints to the surrounding casing passage and to a section of the surrounded terminal. A more inward glass sealing member overlaps the inward surfaces of the ceramic collar and its two-spaced metallic coatings and fusion joints and is sealed with two spaced glass-fusion joints to more inward overlapping surfaces of the metallic casing and the passing terminal to suppress electrolyte passage to the ceramic collar metal seals. The seal may include a more outward glass sealing member similarly overlapping the outward surfaces of the ceramic collar and similarly fused to more outward surfaces of the terminal and its surrounding metal casing surfaces. The casing opening is formed by a transverse strong casing neck having a lateral rib to suppress deformation thereof and of its composite seals by abnormal forces.

3,416,965

FUEL CELL INCLUDING CHLORITE CONTAINING ELECTROLYTE AND METHOD OF OPERATION

David B. Boles, Chicago, and Andrew Dravnieks, Park Forest, Ill., assignors, by mesne assignments, to K. W. Battery Company, and to Joslyn Manufacturing & Supply Company, both of Chicago, Ill., both corporations of Illinois

Filed Aug. 9, 1963, Ser. No. 301,004
8 Claims. (Cl. 136—86)

1. A fuel cell having a fuel electrode system containing an alcohol as a fuel and an oxidant electrode system having an alkaline sodium chlorite solution and a porous silver electrode.

8. A method of operating a fuel cell comprising in combination an anode, a porous cathode spaced apart from said anode containing a substantial quantity of silver, an anolyte compartment adapted to retain liquid extending between and communicating with said anode and one side of a porous dialysis membrane, a catholyte compartment adpated to retain liquid extending between and communicating with said cathode and the other side of said membrane, an aqueous alkaline soluble chlorite catholyte in ionic communication with said cathode and one side of said membrane, an aqueous alkaline anolyte in ionic communication with said catholyte and the other side of said membrane, said catholyte and said anolyte providing means for ionic conductance between said anode and said cathode, which comprises passing an organic fluid fuel whose molecule has an oxygen atom bonded to a carbon atom into dual contact with said anode and said anolyte, passing said soluble chlorite into dual contact with said cathode and said catholyte, and establishing electrical connection between said anode and said cathode external to said cell.

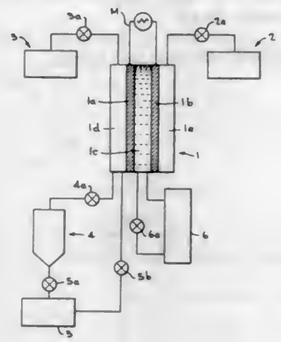
3,416,966

POWER SYSTEM FUNCTIONING ALTERNATELY FOR PRODUCING OR CONSUMING ELECTRICAL ENERGY

Harry G. Oswin, Chauncey, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Nov. 9, 1964, Ser. No. 409,783
4 Claims. (Cl. 136—86)

A power system capable of even operation throughout periods of peak and low consumption is described. The power system comprises a primary power source for producing electrical energy and a secondary unit for selectively producing electrical energy and consuming electrical energy and means for electrically connecting and placing the primary power source and secondary unit in operable association. The secondary unit comprises an electrochemical device comprising an anode, a cathode, and an electrolyte spaced therebetween. The anode is capable of consuming hydrogen when placed on load and capable of producing hydrogen when electrical current is applied thereto. Accordingly, during operation of the power system at peak loads, the secondary unit is utilized to produce electrical energy by consuming hydrogen from a hydrogen-rich material which supplements the electrical output of the primary power source. The hydrogen-



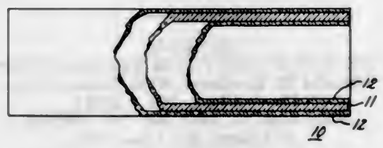
depleted material is recovered and stored. In periods of low consumption, the secondary unit is selectively operated to withdraw current from the primary power source with the withdrawn current being utilized to electrolytically produce hydrogen which is absorbed by the hydrogen-depleted material to form a hydrogen-rich material which is again utilized as the fuel of the electrochemical cell during periods of peak loads.

3,416,967

ELECTRICAL DEVICE COMPRISING METAL OXIDE CONTAINING SOLID ELECTROLYTE AND ELECTRODE

Donald W. White, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 10, 1965, Ser. No. 462,849
2 Claims. (Cl. 136—86)



1. In an electrical device for operation at temperatures in excess of about 600° C., said device comprising a solid anode layer and a solid cathode layer as the electrodes separated by and in direct contact with a layer of a sintered solid-oxide ion electrolyte selected from the group consisting of stabilized zirconia and doped thoria, the improvement wherein at least one electrode is (a) substantially non-porous (b) tightly adherent to the electrolyte layer and (c) consists of a solid oxide ion electrolyte selected from the above mentioned group having at least partially dissolved therein, 2 weight percent to 40 weight percent of uranium dioxide, said mixture exhibiting both ionic and electronic conductivity.

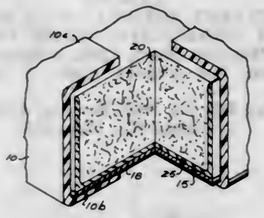
2. In a fuel cell for operation at temperatures in excess of about 600° C., said fuel cell comprising a solid anode layer and a solid cathode layer as the electrodes separated by and in direct contact with a layer of a sintered solid-oxide-ion electrolyte selected from the group consisting of stabilized zirconia and doped thoria, the improvement wherein at least one electrode is (a) substantially non-porous (b) tightly adherent to the electrolyte layer and (c) consists of a solid oxide-ion electrolyte selected from the above mentioned group having at least partially dissolved therein, 2 weight percent to 40 weight percent of uranium dioxide, said mixture exhibiting both ionic and electronic conductivity.

3,416,968

PRIMARY CELL

Abraham Banks, 18710 Paseo Nuevo Drive, Tarzana, Calif. 91356

Filed Oct. 24, 1965, Ser. No. 504,882
11 Claims. (Cl. 136—102)



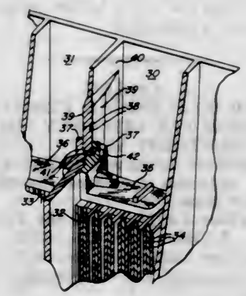
The invention relates to improved primary dry cells and is particularly characterized in that the electrolyte mixture thereof contains a substantial amount of ammonium bifluoride as a constituent thereof. In amounts above twenty-five percent, by volume, the novel dry cell provides substantial improvement in the form of higher open circuit voltage and short circuit current and increased ampere-hour capacity and length of operating life.

3,416,969

BATTERY CONSTRUCTION

Vincent Michael Halsall, Bayside, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 593,910
15 Claims. (Cl. 136—134)



1. In a battery having at least two cells, a battery case having a wall separating said cells, said wall including at least one buttress, a hole in said wall extending through said buttress, first and second electrically conductive members having faces lying against opposite sides of said wall and being electrically connected through said hole.

3,416,970
METHOD OF ASSEMBLING BATTERY CASINGS

Anthony Sabatino, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

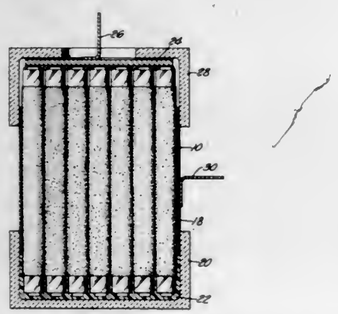
Filed Jan. 24, 1964, Ser. No. 339,962
5 Claims. (Cl. 136—176)

1. A method of assembling a battery casing including a cover and an open top casing body having a plurality of vertical walls and containing a plurality of electrode assemblies having terminal members designed to extend outwardly from said casing body beyond said cover, comprising the steps of positioning the casing body in an inverted position, lowering said casing body into a supply of cement to wet the free edges of said walls with cement while maintaining said terminal members out of contact with said cement, withdrawing said casing body from said cement, and placing said cover in fitting engagement with said edges.

3,416,971
FILAMENTARY THERMAL CELL WITH IONICALLY CONDUCTIVE GLASS COATING

Irving J. Hutkin, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

Filed July 26, 1965, Ser. No. 475,022
4 Claims. (Cl. 136—205)



A filamentary thermal cell having a solid metallic core, a glass coating disposed on the core and a metallic sheath disposed on the glass coating, the metals of which the core and sheath are composed being dissimilar. The glass coating is ionically conductive at the operating temperature range so that when the cell is heated to within this range electrical energy is generated.

3,416,972
INSULATED ELECTRICAL CONDUCTOR OR THERMOCOUPLE ASSEMBLY WITH A MEMBRANE GAS-TIGHT SEAL

Thomas P. Haselton, Lynn, and Robert A. Pustell, Melrose, Mass., assignors to General Electric Company, a corporation of New York

Filed Dec. 14, 1964, Ser. No. 418,139
7 Claims. (Cl. 136—230)

1. A device for conducting electricity under conditions of high pressure and temperature comprising a metallic sheath,

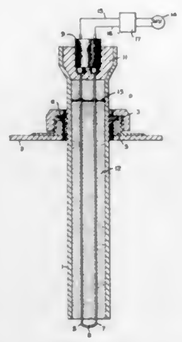
a conductor extending longitudinally through said sheath,

a thin, resilient sealing membrane generally transversely positioned at an intermediate point in said sheath and having an aperture for receiving said conductor, said membrane having portions lapped up and in contact with said metallic sheath and said conductor, and

refractory insulating powder filling the remainder of said sheath on both sides of said membrane and being in intimate contact with said membrane, said powder being held in a highly compacted state by said sheath so as to place said membrane in compression and bring it into sealing engagement with said conductor, said sheath, and said powder to prevent gas leakage in a longitudinal direction within said sheath under the applied pressure.

2. A thermocouple for measuring fluid temperatures under conditions of high pressure and temperature comprising a metallic sheath,

a pair of conductors of dissimilar metals extending longitudinally through said sheath,



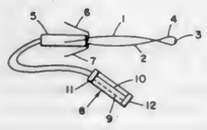
a thin, resilient sealing membrane generally transversely positioned at an intermediate point in said sheath and having a pair of apertures for receiving said conductors, said membrane having portions lapped up and in contact with said metallic sheath and said conductors, and

refractory insulating powder filling the remainder of said sheath on both sides of said membrane and being in intimate contact with said membrane, said powder being held in a highly compacted state by said sheath so as to place said membrane in compression and bring it into sealing engagement with said conductors, said sheath, and said powder to prevent gas leakage in a longitudinal direction within and sheath under the applied pressure.

3,416,973
QUICK DISCONNECT FOR THERMOCOUPLES

Theodor H. Benzinger, 8730 Preston Place, Chevy Chase, Md. 20015

Filed Sept. 27, 1965, Ser. No. 490,748
10 Claims. (Cl. 136—235)



This invention discloses an electrical connector which may be advantageously utilized with a disposable clinical ear thermometer of the type having as its temperature sensitive element a thermocouple. The male element of this connector is a deformable strip of dielectric material, and the ends of the thermocouple wires are secured to opposite sides of this strip in a parallel, offset manner. Thus, the terminal portions of the thermocouple serve as the contact elements of the male connector. The female connector has a pair of hinged jaws of insulating material, and its contacts are strips of bared conductors which extend completely across each jaw. When the male member is inserted in the female member, each pair of contacts has a right-angle relationship and, consequently, the position of the male member within the female member is not critical.

3,416,974
INHIBITION OF CORROSION

Robert H. Scott, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Jan. 25, 1966, Ser. No. 522,816
10 Claims. (Cl. 148—6.15)

A process for inhibiting corrosion of metals by liquids containing acetic acid comprising adding to the liquids a phophorus compound.

3,416,975
ETCHING OF ALUMINUM FOR BONDING

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Isidore Pollack, Westminster, and Wendall D. Emde, Garden Grove, Calif.

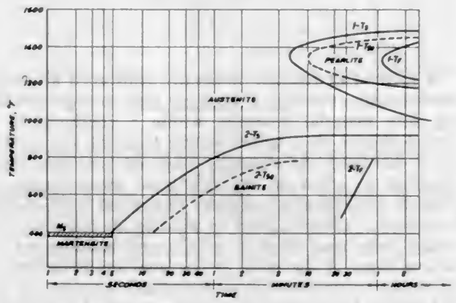
No Drawing. Filed May 4, 1965, Ser. No. 453,229
4 Claims. (Cl. 148—6.20)

Aluminum and aluminum-base alloys are treated by etching with an aqueous solution containing sulfuric acid, hydrofluoric acid and an alkali metal dichromate. This treatment prepares the surface of the metal for adhesive bonding.

3,416,976
METHOD FOR HEAT TREATING TITANIUM CARBIDE TOOL STEEL

Harry Walter Brill-Edwards, London, England, assignor to Chromalloy American Corporation, West Nyack, N.Y., a corporation of New York

Filed Nov. 16, 1965, Ser. No. 508,043
4 Claims. (Cl. 148—12.4)

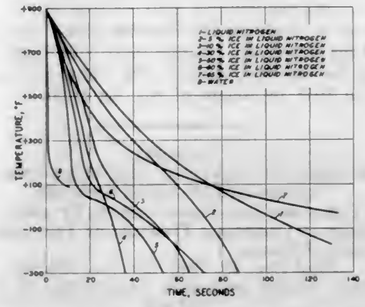


A method is provided for inhibiting cracking and/or distortion in the heat treatment of a refractory carbide tool steel comprising 30 to 60% by volume of primary carbide grains based on titanium carbide dispersed through a steel matrix making up the balance, the matrix comprising by weight about 0.3% to 0.8% C, 1% to 6% Cr, 0.3% to 6% Mo, and the remainder substantially iron. The tool steel is heated to an austenitizing temperature exceeding 1600° F. for a time sufficient to insure transformation to austenite throughout, followed by quenching the austenitized refractory carbide tool steel to an austenite bay soaking temperature ranging from about 925° F., to 1050° F. and holding it at the soaking temperature until the tool steel has reached uniform temperature throughout. The soaked steel is then rapidly cooled to room temperature.

3,416,977
CRYOGENIC COOLING

Richard H. Rein, North Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Filed Apr. 1, 1966, Ser. No. 539,429
11 Claims. (Cl. 148—20.6)



A method for controllably extracting heat from a material over a predetermined temperature range by contacting said material with a fluid dispersion comprising at least one cryogenic fluid which is at its boiling point, and at least one finely divided solid additive, characterized by having its melting point and at least a portion of its stable liquid phase within the temperature range formed by the boiling point of the cryogenic fluid and the temperature of the material from which heat is to be extracted.

3,416,978
MAGNESIUM BASE ALLOYS

Edward Frederick Emley and Peter Clive Meredith, Clifton Junction, near Manchester, England, assignors to Magnesium Elektron Limited, Clifton Junction, near Manchester, England, a British company

No Drawing. Continuation of application Ser. No. 613,967, Feb. 3, 1967, which is a continuation of application Ser. No. 352,322, Mar. 16, 1964. This application Mar. 19, 1968, Ser. No. 714,359
Claims priority, application Great Britain, Apr. 3, 1963, 13,197/63
1 Claim. (Cl. 148—32.5)

1. A solution heat treated and precipitation heat treated cast article consisting essentially of 5 to 7% zinc, 1.5 to 4% silver, 0.4 to 1% zirconium, balance magnesium.

3,416,979
METHOD OF MAKING A VARIABLE CAPACITANCE SILICON DIODE WITH HYPER ABRUPT JUNCTION

Takeshi Onuma, Kadoma-shi, and Takeshi Terasaki, Neyagawa-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

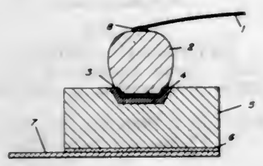
Filed Aug. 13, 1965, Ser. No. 479,572
Claims priority, application Japan, Aug. 31, 1964, 39/50,070; Dec. 19, 1964, 39/73,711
5 Claims. (Cl. 148—178)

A hyper abrupt junction silicon diode comprising a silicon wafer—of p-type silicon and with a specific resistivity of 9 to 30 ohm-cm.—and an alloy dot

(Sn:Sb:Al=300–800:25–65:1)

alloyed thereto via an interposed diffusion layer, is made by heating superposed silicon wafer and alloy dot in vac-

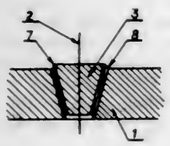
uum at 400° C. to 850° C. and then heating the obtained wetted combination of alloy dot and wafer in a non-oxidizing atmosphere at 900° to 1100° C. to achieve diffusion of Al from the dot into the silicon with production of the interposed diffusion layer, and finally furnace cooling the resultant product. The alloy may also contain 1 to 10% by weight of Au, Ag or Si.



3,416,980
METHOD OF SEALING FRUSTO-CONICAL LEAD-THROUGH ELEMENTS

Roger Cahen and Jean-Pierre Driffort, Levallois, France, assignors to Compagnie Francaise de Television, a corporation of France

Filed Dec. 23, 1963, Ser. No. 332,594
Claims priority, application France, Dec. 26, 1962, 919,660
3 Claims. (Cl. 156—89)

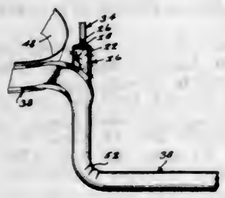


Sealing of a frusto-conical lead-through element into a frusto-conical aperture formed in a glass wall, in which surfaces of the element and aperture are coated with a fusible sealing substance and the element is partially inserted in the aperture. Then, in the presence of heat, a mechanical force is applied to effect movement of the element to its ultimate positions in the aperture, while the sealing substance coatings are fused together.

3,416,981
METHOD OF COVERING AN AUTOMOBILE DOOR TRIM BEAD

Vincent S. Figaro, Davidson, N.C., assignor to Bridgeport Fabrics, Incorporated, Davidson, N.C., a corporation of Connecticut

Filed Apr. 19, 1967, Ser. No. 631,936
2 Claims. (Cl. 156—94)

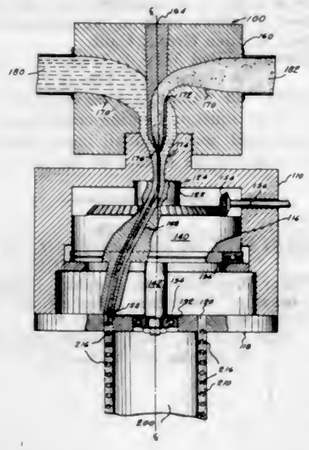


A door trim bead installed in the body frame around a door opening in an automobile and having a generally cylindrical exposed portion covered after such installation by providing a strip of covering material that has a width which exceeds that required to wrap the exposed portion of the door trim bead and that has a pressure-sensitive adhesive backing, by wrapping the central portion of the strip of covering material about the exposed portion of the door trim bead and fixing the same thereto, and by tucking the free edges of the strip of covering material within the body frame of the automobile.

3,416,982
METHOD OF FORMING A REINFORCED SEAMLESS TUBULAR ELEMENT

Aristovoulos George Petzetakis, Thessaloniki and Chandri Sts., Moschaton, Piraeus, Greece

Continuation-in-part of applications Ser. No. 220,291, Aug. 29, 1962, and Ser. No. 337,692, Dec. 18, 1963. This application Oct. 24, 1966, Ser. No. 588,914
Claims priority, application Greece, Sept. 5, 1961, 24,307
14 Claims. (Cl. 156—193)



A method of forming integrally reinforced articles by continuously extruding a relatively high strength reinforcing core material coaxially within a continuously extruded stream of a softer matrix material and continuously extruding the coaxially disposed core and matrix materials to effect an intimate bond therebetween and provide a continuous integrally reinforced strip. A tubular element is then formed by winding the integrally reinforced strip upon itself in a helix and bonding the successive loops of the helix to one another. If desired, intermediate materials can be interposed between the core and matrix materials and coaxially extruded therewith.

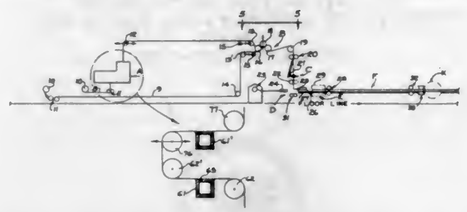
3,416,983
METHOD AND APPARATUS FOR MAKING HONEYCOMB

Roger C. Steele, Lafayette, Calif., assignor to Hexcel Corporation, Berkeley, Calif.

Filed Mar. 16, 1964, Ser. No. 352,049
16 Claims. (Cl. 156—197)

A method and apparatus for making honeycomb including one or more webs continuously driven through the machine, periodically interrupted adhesive lines applied to the web, the leading end web stopped, a ribbon of desired honeycomb thickness cut from the web along

the interruptions in the adhesive lines, and the ribbons stacked and adhered together in face-to-back relationship. The web is held against a shearing bar by vacuum ports in the shearing bar and a wobble action is provided to the

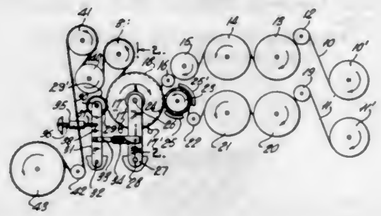


shearing bar progressively to shear the web and clear the stationary and movable shear blade parallel to one another for immediate advance of the web.

3,416,984
METHOD AND APPARATUS FOR MAKING CELLULAR MATERIAL FROM THERMOPLASTIC SHEETS

Marc A. Chavannes, New York, N.Y., and Alfred W. Fielding, Wayne, N.J., assignors to Sealed Air Corporation, Hawthorne, N.J.

Continuation of abandoned application 324,718, Nov. 19, 1963. This application Nov. 13, 1967, Ser. No. 682,687
10 Claims. (Cl. 156—209)

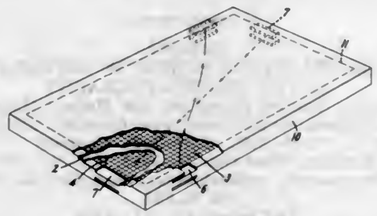


Method and apparatus for manufacturing cellular plastic material, including improved method for heating the plastic sheets for embossing and laminating and apparatus including an improved resilient laminating roller and mounting means for the laminating and embossing rollers.

3,416,985
METHOD FOR MAKING A GAS TRANSFER DEVICE

Angelo Dounoucos, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 482,770, Aug. 26, 1965. This application June 30, 1967, Ser. No. 650,465
6 Claims. (Cl. 156—289)

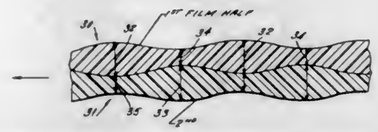


A soluble coating is put into a wire screen at a location on the edge where it is desired to have a flow passage. The wire screen is then disposed between permselective membranes contiguous therewith so that after the sandwich arrangement of screen and membranes is bonded at its edges to form a sealed composite layered exchanger, the coating can be washed out to leave a passage through the sealed edges into the woven screen.

3,416,986
METHOD OF LAMINATING AN EXTRUDED PLASTIC SHEET

Emilie Lucille Carley, Trumbull, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed June 28, 1965, Ser. No. 467,588
6 Claims. (Cl. 156—244)

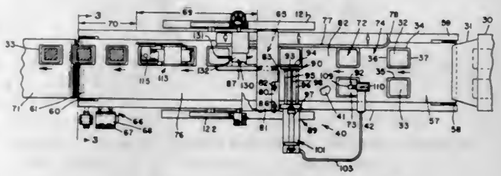


A process of laminating a plastic sheet comprising the longitudinal cutting of the sheet and the superposition of the slit halves atop one another, with one sheet advanced with respect to the other so that the transverse gauge bands of the two sheet halves nest with respect to one another.

3,416,987
APPARATUS FOR ALIGNING AND LABELING LIMP PACKAGES

James G. Keramas, 57 Kilby St. Woburn, Mass. 01801

Filed Dec. 8, 1965, Ser. No. 512,336
10 Claims. (Cl. 156—363)



This invention relates to an improved untimed aligner apparatus especially for use with a two-lane packaging machine to divert packages into a single lane for the action of a single labeling machine.

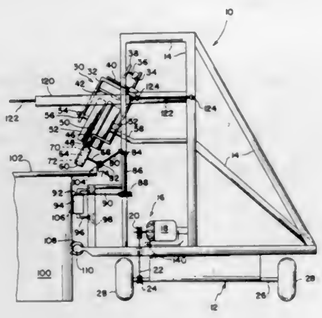
3,416,988
TRAVELING SEALER FOR CONTOURED TABLE

Hugh L. Dryden, deputy administrator of the National Aeronautics and Space Administration with respect to an invention of Austin D. McHatton and Bert C. Deis, Hampton, Va., and Sigvard Stenlund and Richard J. Slater, Northfield, Minn.

Filed Oct. 20, 1965, Ser. No. 499,122
35 Claims. (Cl. 156—545)

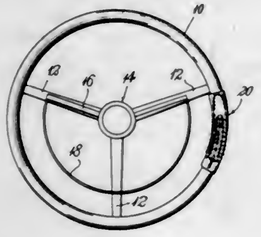
1. In a machine for securing two pieces of material the combination comprising: carriage means for transporting one of the pieces of material and the equipment for sealing the pieces together; support means for a second piece of material; sealing means for applying and secur-

ing the adjacent edges of the material; belt means for cooperative action with said sealing means and supporting



the two pieces of material with their adjacent edges abutting one another; and means for rotating said belt means.

3,416,989
DEVOTIONAL ARTICLE
Daniel Francis Lawler, Newton, Conn., assignor to The Wheel Rosary Co. Inc., Bridgeport, Conn., a corporation of Connecticut
Filed Dec. 4, 1964, Ser. No. 416,073
6 Claims. (Cl. 161—8)



A compact rosary device for steering wheels to extend over only a short segment of the rim of the wheel so as to be used by one hand in the recitation of the rosary without interference with the usual rim of the steering wheel and in which the device is molded to provide four decades of the rosary disposed in nested side by side rows on the upper surface of the device and the fifth decade extending across the ends of the rows and connects the ends of the outside rows with the usual pendant portion nested within the inner pair of the rows and the device being preferably of flexible plastic to conform to steering wheel rims of different diameters and readily snapped in place thereon.

3,416,990
GLASS FIBER-REINFORCED POLYMERS
Anderson E. Robinson, Jr., Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Aug. 6, 1965, Ser. No. 477,922
20 Claims. (Cl. 161—93)

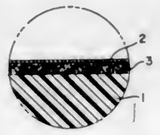
13. A laminate comprising layers of glass fabric laminated in a matrix of crystalline polypropylene modified by chemical reaction with about 0.15 to 5% maleic anhydride.

3,416,991
ELONGATE PLASTIC ARTICLES AND METHOD OF MAKING SAME
Shohei Yoshimura, Shiga-gun, Shiga-ken, Japan, assignor to Toyobo Co., Ltd., Osaka, Japan
Filed Sept. 22, 1965, Ser. No. 489,153
Claims priority, application Japan, Sept. 22, 1964, 39/54,666
4 Claims. (Cl. 161—101)



A structure composed of a tape made up of a laminate of two different polymeric materials, characterized by differential transverse shrinkage following longitudinal stretching, and provided with curled longitudinal edges is obtained by laminating the materials, then cutting the laminate longitudinally to provide elongated tapes, and then stretching the latter. Cores may be inserted into the curled portions. The resultant structures find applications such as wrappers, in handicrafts, as ornaments, and as tire cords.

3,416,992
MOLDED PLASTIC ARTICLE
James L. Amos, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,730
8 Claims. (Cl. 161—185)



The molded plastic article disclosed herein comprises a main body of plastic having a metal plating on at least a portion of the outer surface and having expanded graphite embedded at least in the outer region of the molded article adjacent to the metal plating. The expanded graphite has a bulk density per se of less than 2 pounds per cubic foot and is incorporated in the outer region of the molded article in the range of 0.05–40% by weight of expanded graphite based on the combined weight of plastic and graphite. The molded article can be prepared by incorporating the expanded graphite in at least the outer region of the composition to be molded and adjacent to the area in which the metal plating is to be positioned. Then after the article is molded, it is placed in a plating bath with appropriate electrical connections and the metal plating deposited thereon.

3,416,993
USE OF CELLULOSE ETHERS IN PREPARATIVE LAYER CHROMATOGRAPHY
Dietrich Heusser, Darmstadt, and Herbert Halpaap, Jugenheim an der Bergstrasse, Germany, assignors to E. Merck A.G., Darmstadt, Germany
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,867
Claims priority, application Germany, Oct. 24, 1964, M 62,887
26 Claims. (Cl. 161—193)

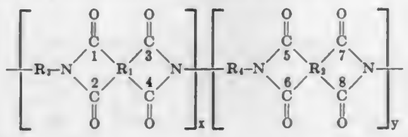
1. An adsorbent composition for layer chromatography comprising an intimate mixture of, in percent by weight, 0.005–1% of a water soluble or water swellable cellulose ether and substantially the remainder of said composition being a chromatography adsorbent selected from the group consisting of silica gel, kieselguhr, and magnesium silicate, aluminum oxide, and cellulose.

3. A composition as defined by claim 1 wherein the cellulose ether is methylcellulose, methylhydroxyethylcellulose, methylethylcellulose, ethylhydroxyethylcellulose, sodium carboxymethylhydroxyethylcellulose or sodium carboxymethylcellulose.

4. A chromatographic plate comprising a support plate and superimposed thereon a uniform layer of about up to 3 mm. in thickness of a composition as defined by claim 3.

3,416,994
CROSS-LINKED POLYIMIDE
John R. Chalmers, Wallingford, and Claus Victorius, Media, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 320,937, Nov. 1, 1963. This application Jan. 12, 1967, Ser. No. 608,735
16 Claims. (Cl. 161—227)

New polyimides having the structural formula,



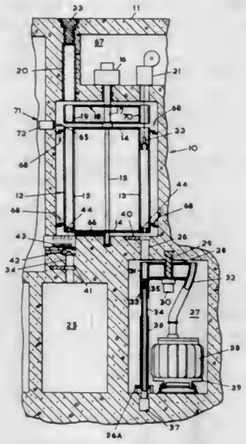
which are cross-linked at R_1, R_2, R_3 or R_4, and a process for producing them which comprises reacting a diamine and a dianhydride of a tetracarboxylic acid, the diamine or diester containing an aromatic keto group, and the diamine being present in an amount of at least 15% molar excess.

3,416,995
APPARATUS FOR LOOSENING CEMENTITIOUS WATER-LAID PIPE FROM A MANDREL
Charles George Stelchek, Denison, Tex., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Sept. 13, 1965, Ser. No. 486,879
4 Claims. (Cl. 162—284)

Apparatus for loosening wet cementitious pipe from a mandrel wherein an electrically conductive, non-metallic, non-corrosive cloth is positioned between and in contact with a metal mesh screen and the wet cementitious pipe so as to provide passage for the electric current used to loosen the pipe from the mandrel.

3,416,996
FUEL HANDLING SYSTEMS ASSOCIATED WITH A NUCLEAR REACTOR
John Cornelius Burton and Frank Charles Long, Whetstone, and Desmond John Walker, Poole, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Apr. 3, 1967, Ser. No. 627,711
Claims priority, application Great Britain, Apr. 1, 1966, 14,466/66
6 Claims. (Cl. 176—30)

In a combined dry-store and fuel-handling facility for a nuclear reactor, a carousel is rotatable on a vertical axis so that its tubes can communicate variously with (1) a fueling machine above the facility, (2) means below the carousel for cutting up used fuel-stringer tie-rods for disposal to a closed void, (3) a space below the carousel containing means for removing spent fuel elements and means for loading new fuel elements and/or tie-rods into the carousel, and (4) handling means above the carousel for moving fuel element components about as appropriate with the facility, which is isolated from the outside

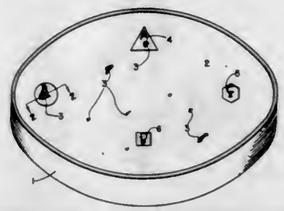


atmosphere and has its own common protective atmosphere.

3,416,997
PROCESS FOR PURIFICATION OF FUNGAL ALPHA AMYLASE
Richard Russell Barton, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Nov. 1, 1965, Ser. No. 506,011
3 Claims. (Cl. 195—66)

Fungal alpha amylase containing impurities, such as amyloglucosidase, protease and non-enzymatic proteins, can be purified by contacting a weakly-basic anionic ion-exchange material with a solution of fungal alpha amylase containing impurities to selectively adsorb the impurities by the anionic ion-exchange material without adsorbing any appreciable amount of fungal alpha amylase.

3,416,998
METHOD OF DETECTING OR CLASSIFYING MICROORGANISMS USING AGAR REAGENT SHEETS
Murray M. Streitfeld, Coral Gables, Fla., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Continuation-in-part of application Ser. No. 542,978, Mar. 4, 1966, which is a continuation-in-part of Ser. No. 286,532, June 10, 1963. This application Oct. 11, 1967, Ser. No. 687,405
5 Claims. (Cl. 195—103.5)

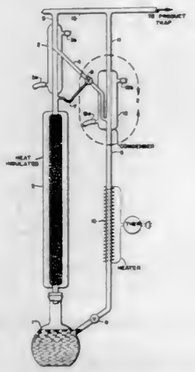


A dried transparent agar sheet having a test reagent responsive to some product elaborated by the microorganism to be detected incorporated therein. The test sheet is used as such, or attached to a sheet of transparent film, or by placing on conventional agar plates having colonies of microorganisms growing thereon.

3,416,999
DISTILLATION AND FRACTIONATION OF DICHLOROBORANE

Joseph L. Shepherd, Sunland, and Thomas M. Cromwell, Covina, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Original application Mar. 23, 1959, Ser. No. 801,395, now Patent No. 3,334,966. Divided and this application Feb. 27, 1967, Ser. No. 646,768
3 Claims. (Cl. 202—161)

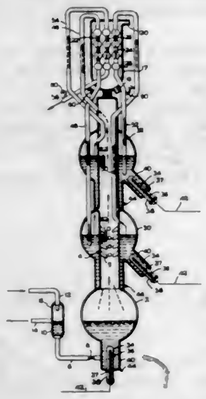


An apparatus for effecting disproportionation of dichloroborane to diborane and boron trichloride made up of a boiler for effecting disproportionation of dichloroborane, a fractionating column in open communication with the boiler, and a particular arrangement of condensers and auxiliary lines to facilitate separation of diborane from boron trichloride.

3,417,000
MULTI-STAGE STILL

Peter G. Chaconas, 4977 Battery Lane, Bethesda, Md. 20014

Continuation-in-part of application Ser. No. 503,105, Oct. 23, 1965. This application Nov. 13, 1967, Ser. No. 682,052
5 Claims. (Cl. 202—174)

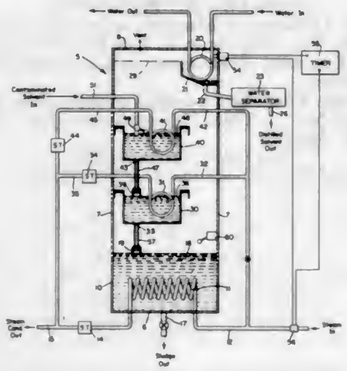


A distillation apparatus having a first distillation container with a column communicative therewith and a plurality of succeeding distillation containers disposed around the column in direct heat exchange relationship therewith. Each distillation container is communicative with a condenser through a conduit which is in heat exchange relationship with the column. The condensers are, in turn, communicative with the next succeeding container. The conduits communicating with the condensers are vented to the atmosphere to preclude vapor lock between the distillation containers.

3,417,001
PLURAL STAGE DISTILLATION PROCESS AND SYSTEM WITH FOAM CONTROL

Calvert Hugh Fletcher, Bowling Green, Ky., assignor to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan

Filed Mar. 15, 1967, Ser. No. 623,409
5 Claims. (Cl. 203—20)



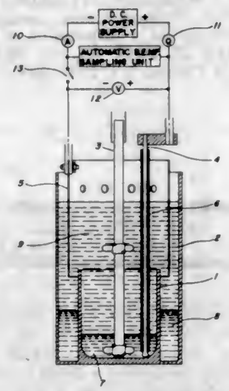
A distillation system or still is disclosed having a multi-level evaporation system with continuously self-adjusting liquid level control and control of foaming. The system has particularly application to reclaim of solvent in dry cleaning systems. Two auxiliary evaporation pans are mounted, one above the other, within the vapor zone of the main boil chamber of the still, below the condenser. The contaminated solvent is fed to the upper auxiliary pan for partial evaporation. Liquid from the upper auxiliary pan is discharged to the lower auxiliary pan for further partial evaporation. Similarly, liquid from the lower auxiliary pan is discharged to the main boil chamber. Float control valves are provided to control the liquid level in each vessel. At start up, the main boil chamber fills first to the float-controlled level, the liquid passing through the two auxiliary pans. Next, the lower auxiliary pan, and finally the upper auxiliary pan, fills to the float-controlled level. When the still is operating at its maximum production rate, the liquid levels in the main boil chamber and in both auxiliary boil pans are automatically maintained at their float-control levels. Residue accumulates only in the main boil chamber. No residue collects in the auxiliary pans. The system permits distillation to be carried out at a high rate without encountering uncontrolled foaming.

3,417,002
METHOD AND APPARATUS FOR IMPROVING RECOVERY OF PLUTONIUM-GALLIUM ALLOYS BY ELECTROREFINING

Joseph A. Leary, Lawrence J. Mullins, Jr., and John F. Buchen, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed June 15, 1965, Ser. No. 464,250
5 Claims. (Cl. 204—1.5)

A device and method for recovering plutonium from plutonium-gallium alloys by an electro-refining process in which the said alloy is the anode of the electrorefining cell and the E.M.F. of the said cell reaction between the cathode and anode supplies the voltage to drive a control circuit, and said method consists of adding to the anode



iron, cobalt, or nickel in an amount equal to about 25 weight percent of the gallium present.

3,417,003
POLYMER DEPOSIT ELECTROCHEMICALLY

Sidney D. Ross and Raymond C. Petersen, Williamstown, and Manuel Finkelstein, North Adams, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,804
10 Claims. (Cl. 204—14)

1. A method of electrochemically depositing on a metal surface a polymer having the formula:

$(—CHR—Ar—CH_2—)_n$ where n is greater than 10; R is hydrogen or a monovalent hydrocarbon; and Ar is a divalent aromatic radical, the two valences of which are located on each terminal carbon atom of a chain of 2 or 4 of the ring atoms, said chain having one unit of aromatic unsaturation for each two ring atoms, comprising: making said metal the cathode in a solution of a solvent containing a mono- or bis-onium salt selected from the group consisting of

$Z(—CH_2—\overset{+}{N}R_1R_2R_3)_mX^{-}{}_m$; $Z(—CH_2—\overset{+}{P}R_1R_2R_3)_mX^{-}{}_m$ and

$Z(CH_2—\overset{+}{S}R_1R_2)_mX^{-}{}_m$

wherein m is 1 or 2; R_1, R_2 and R_3 are C_1–C_{18} hydrocarbyl groups; Z is a substituted or unsubstituted aromatic ring; and X is the anion of a strong inorganic acid; and when m is 1, the methylene radical is attached to a carbon atom of said aromatic ring so as to be separated by a chain of 2 or 4 ring atoms from an unsubstituted hydrocarbyl group attached to another ring carbon atom; and when m is 2, the methylene radicals are attached to different carbon atoms of the aromatic ring so as to be separated by a chain of 2 to 4 ring atoms; immersing an anode in said solution and subjecting said solution to electrolysis, whereby said polymer deposits on said cathode.

3,417,004
PRODUCTION OF ALUMINUM, MAGNESIUM, AND NICKEL FLUORIDE FILMS BY ANODIZATION

Charles C. Houtz, Bernardsville, and William McMahon, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 24, 1966, Ser. No. 536,977
1 Claim. (Cl. 204—14)

1. A method for forming a fluoride film of a metal selected from the group consisting of aluminum, nickel and magnesium on a substrate of the same metal which comprises anodizing the metal substrate in a substantially non-aqueous solution of pyridine-hydrofluoride and pyridine at a current density in the range of .01 ma./cm.^{2} to 2 ma./cm.^{2}.

3,417,005
NEUTRAL NICKEL-PLATING PROCESS AND BATH THEREFOR

Muhammad L. Baig, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,761
22 Claims. (Cl. 204—32)

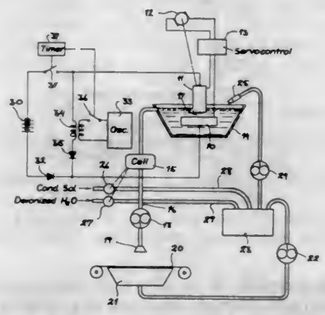
1. An aqueous bath for the electrodeposition of nickel having a pH of 5.0–9.5 and comprising a nickel ion concentration of at least about 0.53 mole per liter, a citrate ion concentration of at least about 0.45 but less than about 0.54 mole per liter, a gluconate ion concentration of at least about 0.023 mole per liter, at least one ion for inducing anode corrosion from the group consisting of chloride and fluoride, and at least one additive for reducing stress in the deposit from the group consisting of ammonium ions and triethonalamine.

22. A process for the electrodeposition of nickel comprising the steps of preclaiming a part to be plated: immersing said part into an aqueous bath having a pH of 5.0–9.5 and comprising a nickel ion concentration of at least about 0.53 mole per liter of solution produced from at least one salt from the group consisting of nickel sulfate, nickel chloride, nickel fluoborate, nickel sulfamate and nickel acetate, a citrate ion concentration of at least about 0.45 but less than about 0.54 mole per liter of solution, a gluconate ion concentration of at least about 0.023 mole per liter of solution, at least one ion for inducing anode corrosion from the group consisting of chloride and fluoride, and at least one additive for reducing stress in the deposit from the group consisting of ammonium ions and triethanolamine, and at least one additive from the group consisting of 2-butene-1,4-diol, 2-butyne-1,4-diol, sodium allyl sulfonate, coumarin, hydrolyzed coumarin, saccharin (sodium salt) and allyl quinaldinium bromide, applying to said bath and said part a voltage such as to effect a current density of 10–150 amps/ft.^{2}, removing and rinsing said part.

3,417,006
METHOD OF AND APPARATUS FOR ELECTRICAL MACHINING OF METALLIC WORKPIECES

Kiyoshi Inoue, 182 3-chome, Tamagawayoga-machi, Setagaya-ku, Tokyo-to, Japan

Filed Jan. 19, 1966, Ser. No. 535,268
Claims priority, application Japan, Jan. 20, 1965, 40/2,947, 40/2,948
7 Claims. (Cl. 204—143)



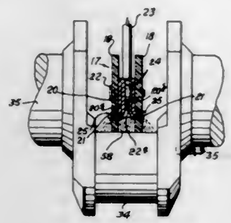
1. A method of electrically removing material from a conductive workpiece, comprising the steps of:

juxtaposing an electrode with said workpiece to form confronting surfaces of said electrode and workpiece;

supplying between said surfaces a liquid machining medium having a specific resistivity between substantially 10^{-1} and 10^{2} ohm-cm.; and

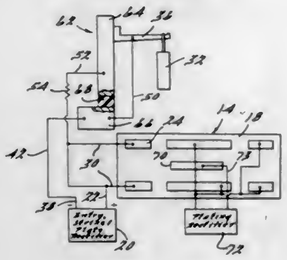
applying across said surfaces an electric current having a pulsating component of a magnitude sufficient to effect spark discharge between said surfaces capable of eroding said surface of said workpiece in a first operation, and a unidirectional component poled to erode electrochemically said surface of said workpiece in a second operation at least partly overlapping said first operation.

3,417,007
MEANS FOR ELECTRO-PLATING CRANKSHAFTS
James B. Robinette, Pacolet, S.C., assignor to Storm-Vulcan, Inc., Dallas, Tex., a corporation of Minnesota
Filed Feb. 24, 1966, Ser. No. 529,695
8 Claims. (Cl. 204—212)



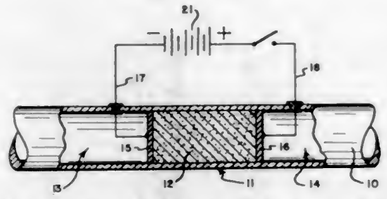
A device for plating crankshafts including a plurality of anode assemblies individually pivotally carried on a frame, each anode assembly including spaced bars of nonconductor material with anode conductor material between the sides wherein the lower edges of the nonconductor bars slidably contact the crankshaft journal and space the anode material therefrom.

3,417,008
SWITCH FOR ELECTROCHEMICAL PROCESSES
Michael A. Koltuniak, Warren, Mich., assignor to The Udylite Corporation, Warren, Mich., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,905
17 Claims. (Cl. 204—225)



A switch assembly in an electroplating processing system to selectively, through operation of a slidably movable contact, perform switching functions for electroplating voltages.

3,417,009
ELECTROCHEMICAL DEVICE FOR TRANSFERRING HYDROGEN
Robert B. Holden, Orange, Conn., assignor to United Nuclear Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,138
14 Claims. (Cl. 204—299)

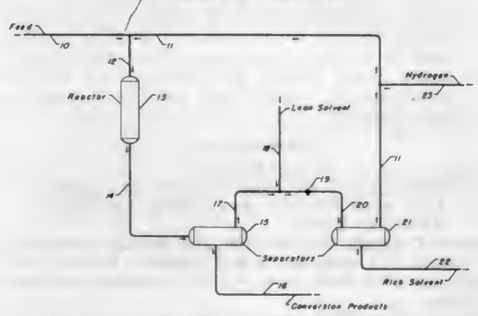


1. An electrochemical device for removing hydrogen from a hydrogen-containing material and for introducing hydrogen into a second material which comprises an electrolyte chamber containing a saline hydride electrolyte which conducts electricity by the movement of hydride ions therethrough, a cathode in electrical contact with one surface of said saline hydride electrolyte, said cathode comprising an electrically conductive material which is permeable with respect to hydrogen and which is inert with respect to the saline hydride electrolyte with which it is in contact, an anode in electrical contact with a second surface of the saline hydride electrolyte, said anode being formed from an electrically conductive material which is permeable with respect to hydrogen and which is inert with respect to the saline hydride electrolyte with which it is in contact, and a source of electric current electrically connected to said cathode and to said anode.

3,417,010
WAX CRYSTAL MODIFIER COMPOSITION
Richard O. Henselman, North Plainfield, and Norman Jacobson, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 27, 1966, Ser. No. 553,279
9 Claims. (Cl. 208—28)

A dewaxing mixture of a combination of (a) a Friedel-Crafts condensation product of a halogenated paraffin with an aromatic hydrocarbon and (b) an oil soluble polymer of a 1,2-epoxy alkane.

3,417,011
HYDROCARBON CONVERSION PROCESS EMPLOYING PURIFIED RECYCLE HYDROGEN
Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 607,029
7 Claims. (Cl. 208—108)



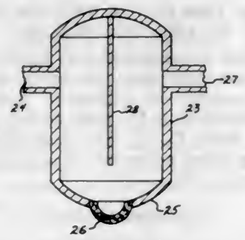
Process for hydrocracking hydrocarbons to lower

molecular weight materials in the presence of recycle hydrogen which has been purified by high pressure absorption using a mixture of polyalkylpolyethylene glycol ethers containing from 2 to 6 ethylene units per molecule as the main component of the absorbent composition and a C_8–C_{12} paraffin hydrocarbon. The contacting between the impure hydrogen stream and the absorbent is performed, preferably, as a single stage using an in-line mixer device at a locus between two high pressure separators.

3,417,012
METHOD OF REGENERATING USED LUBRICATING OIL
Mario Morace, Via Freguglia 2, Milan, Italy
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,631
1 Claim. (Cl. 208—181)

Method of regenerating used lubricating oil, including the steps of adding to a used lubricating oil water containing sulphuric acid, zinc chloride and if desired a compound such as perborate, persulphate and permanganate, heating the mixture while stirring initially at atmospheric pressure and then under vacuum, increasing the vacuum and the temperature up to limits required by the desired characteristics of the finished product, cooling down the mixture and leaving it to settle for decantation.

3,417,013
WATER REMOVAL AND DEVICE
John H. Roberts, 4833 Holbird Drive Charleston Heights, S.C. 29405
Filed Oct. 22, 1965, Ser. No. 501,501
15 Claims. (Cl. 208—187)

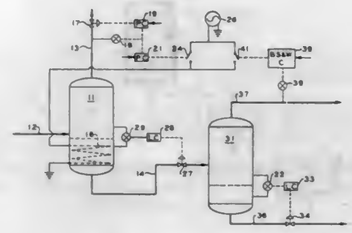


This invention pertains to the separation of water from substances which are insoluble in water. This is accomplished by providing a specially constructed resin sheet which is essentially impermeable to the passage of water insoluble substances, including gases and liquids, but which will permit the passage of water. By contacting one surface of this special sheet with the water contained in a mixture of water and a water insoluble substance the water will be selectively passed through the sheet thereby separating it from the water insoluble substance.

In addition to its impermeability to water insoluble substances the special resin sheet is characterized by having from 25 to 90% of high moisture regain fibers embedded therein with a portion of these fibers being exposed at both surfaces of the sheet and with these exposed fibers on opposite sides of the sheet being connected together by a continuous fiber linkage through the sheet.

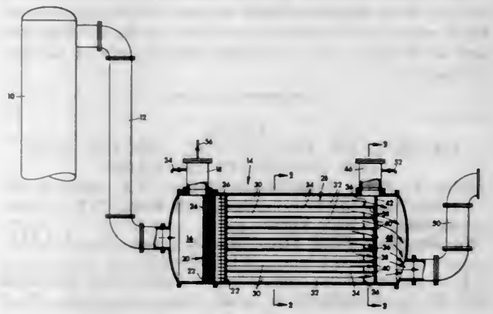
3,417,014
METHOD AND APPARATUS FOR EMULSION CONTROL
William B. Lumpkin, Caracas, Venezuela, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,263
9 Claims. (Cl. 208—187)

Oil-water emulsion can be prevented by maintaining the temperature and pressure within a liquid-vapor separator at optimum levels by measuring the pressure in the liquid-vapor separator and measuring the water content of the oil phase after the liquid has separated in another vessel. A heating element in the liquid-vapor vessel is



operated in response to a pressure controller and an aqueous phase detector, simultaneously, thus preventing emulsion on the basis of one of several criteria, such as pressure, BS & W concentration, temperature, gas-to-oil ratio, water-to-oil ratio, etc.

3,417,015
COALESCER AND SEPARATOR FOR OILY WATER
Gerard P. Canevari, Cranford, and Robert J. Fiocco, Springfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 596,185
11 Claims. (Cl. 210—23)

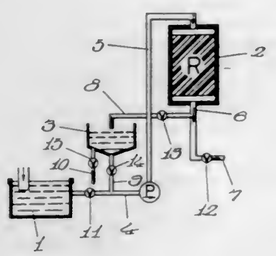


A separator employing a coalescing cartridge having a low pressure drop transforms small diameter oil droplets into larger droplets capable of gravity separation in an adjacent downstream honeycomb of further coalescing and settling ducts. A bubble rupturing screen is positioned between the coalescing cartridge and the ducts.

3,417,016
ION EXCHANGE PROCESS FOR TREATMENT OF INDUSTRIAL WASTES
Aisaburo Yagishita, 5–2, Shinpo-cho 4-chome, Chigusa-ku, Nagoya, Japan
Filed Oct. 4, 1966, Ser. No. 584,208
Claims priority, application Japan, Mar. 11, 1966, 41/14,605
2 Claims. (Cl. 210—34)

For treating industrial wastes containing chromic acid, the wastes are passed through an ion exchange resin until the resin becomes so saturated with chromic acid as no longer to be efficient. Then supply of the wastes to the

resin is shut off, and the wastes, after passage through the resin, are discharged into a tank into which is also charged a reducing agent, such as sodium bisulfite, and the mixture of reducing agent and discharge is circulated



through the resin and back to the tank to regenerate the resin and convert the chromic acid into a harmless trivalent chromium ion. The process of treating the wastes may be resumed after proper regeneration of the resin.

3,417,017
DRILLING FLUID

Jack H. Kolaian and Jack H. Park, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 510,085, Nov. 26, 1965. This application Dec. 18, 1967, Ser. No. 691,239

16 Claims. (Cl. 252—8.5)

An aqueous drilling fluid containing an oxidized starch drilling fluid dispersant that imparts improved dispersibility and high temperature stability to the drilling fluid and an oxidized starch drilling fluid dispersant additive composition.

3,417,018
METHOD OF THICKENING LIQUIDS AND THE PRODUCTS THEREOF

Allan F. Burns, Whitehouse Station, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,393

6 Claims. (Cl. 252—13)

1. A composition comprising a liquid base thickened with fibrous loughlinite in an effective amount of at least about 0.5% by weight of said fibrous loughlinite based upon the weight of said liquid base.

3,417,019
XEROGRAPHIC DEVELOPMENT

George L. Beyer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,525

11 Claims. (Cl. 252—62.1)

1. A liquid xerographic developer comprising a high resistance liquid vehicle, and fusible toner particles of an average size from 0.1 to 30 microns dispersed in said liquid vehicle, said particles comprising:

(1) from 40 to 90 weight percent of a thermoplastic polymer having a fusion point in the range from about 50° C. to about 200° C.

(2) from 5 to 30 weight percent of compatible coloring matter, and

(3) from 5 to 30 weight percent of a charge agent selected from the group consisting of

(a) soaps of magnesium and heavier metals, and

(b) cationic, anionic and non-ionic surface active agents.

3,417,020
CARBONYLATED ALIPHATIC POLYMERS

Albert F. Preuss, Willow Grove, and Robert Winslow White, Jenkintown, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Original application Apr. 18, 1963, Ser. No. 273,837. Divided and this application Mar. 8, 1967, Ser. No. 621,411

3 Claims. (Cl. 252—52)

This invention concerns oil-soluble aliphatic hydrocarbon polymers having a carbonyl group, a method for their preparation, and lubricating compositions containing them. As olefinic polymers there may be used any of the polymers formed from olefins containing three to twelve carbon atoms. The process for preparing the oil-soluble saturated aliphatic hydrocarbon polymers of this invention comprises (1) reacting an olefinic polymer of a molecular weight of about 300 to 5,000 with ozone, the polymer being in a liquid state, whereby an ozonolysis product is formed, and (2) reducing the resulting ozonolysis product until a carbonyl group is formed thereon.

3,417,021
MINERAL LUBRICATING OIL CONTAINING A POLYESTER POUR DEPRESSANT

John E. Engelhart, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1966, Ser. No. 606,054

9 Claims. (Cl. 252—56)

This disclosure is concerned with lubricating oils containing polymers comprised of esters prepared from ethylenically unsaturated carboxylic acids and linear C_{16}–C_{18} oxo alcohols. It has been found that polyesters prepared from linear C_{16}–C_{18} oxo alcohols have improved pour point depressing properties when added to wax-containing lubricating oils.

3,417,022
ETCHING COMPOSITION AND METHOD

Abraham I. Sherer, Clifton, N.J., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 98,015, Mar. 24, 1961. This application Nov. 15, 1965, Ser. No. 507,708

5 Claims. (Cl. 252—79.4)

This invention concerns an additive for an etching bath which includes sulfated castor oil, an organic solvent, and a fatty acid sulfonated surfactant. The invention also relates to an etching bath including the additive and too, a method of etching utilizing such bath.

3,417,023
DETERGENT SPOTTING STICK

Walter Anthony Di Salvo, North Arlington, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,354

13 Claims. (Cl. 252—118)

A detergent composition in stick form for treating heavily soiled areas of textile materials. The composition contains a gel-forming salt or soap, a synthetic detergent and an optical brightener.

3,417,024
TREATED PHOSPHATES

Seymore Goldwasser, Teaneck, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Continuation of application Ser. No. 334,734, Dec. 31, 1963. This application Mar. 24, 1967, Ser. No. 625,884

11 Claims. (Cl. 252—135)



NEEDLE-LIKE CRYSTALS (ABOUT 200X MAGNIFICATION)



PLATE-LIKE CRYSTALS (ABOUT 200X MAGNIFICATION)

This disclosure is concerned with a detergent tablet which has a high strength after compression. This detergent tablet contains a synthetic organic nonionic detergent, a phosphate, 0.48% to 2.6% sodium hydroxide, potassium hydroxide or silicates as a source of Na_2O or K_2O for forming a solution in water with a concentration based on equivalents of Na_2O of at least 23.5% as NaOH and 2% to 11% water.

3,417,025
PAINT STRIPPING COMPOSITION

Joseph Cooper and William J. Corbett, Cincinnati, Ohio, assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 20, 1966, Ser. No. 566,468

4 Claims. (Cl. 252—152)

1. A process for stripping a synthetic resin finish, comprising the steps of contacting the finish with an aqueous solution consisting essentially of water, between about 50 and 70 weight percent of an alkali metal hydroxide, and between about 5 and 20 weight percent of 2-(2-aminoethoxy) ethanol for a time sufficient to loosen the finish from the surface, and thereafter removing said loosened finish completely from said surface.

3,417,026
GLASS STANDARD FOR FLUORESCENCE

Edwin P. Arthur, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Mar. 17, 1964, Ser. No. 352,548

4 Claims. (Cl. 252—301.6)

A glass having a natural fluorescence on the order of 10 parts per billion quinine sulfate equivalent or less which may be utilized as a standard for comparisons with unknown liquid samples in an analytical instrument. The glass is preferably a zinc-barium-silicate composition with the barium provided in the prefusion mixture as a plurality of barium compounds well known in the glass-making art.

3,417,027
EUROPIUM ACTIVATED YTTRIUM AND GADOLINIUM VANADATE-PHOSPHATE AND VANADATE-ARSENATE PHOSPHORS

Willen Lambertus Wanmaker and Johannus Godefridus Verlijsdonk, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 20, 1966, Ser. No. 521,854

Claims priority, application Netherlands, Feb. 13, 1965, 6501838

3 Claims. (Cl. 252—301.4)

1. A red luminescent substance particularly suitable for use in a luminescent screen, said luminescent component being a europium activated vanadate phosphor of the formula:

$$(Y+Gd)_2O_3 \cdot (1-X)V_2O_5 \cdot x(As+P)_2O_5 : pEu_2O_3$$

wherein

$$0.1 < x < 0.8$$

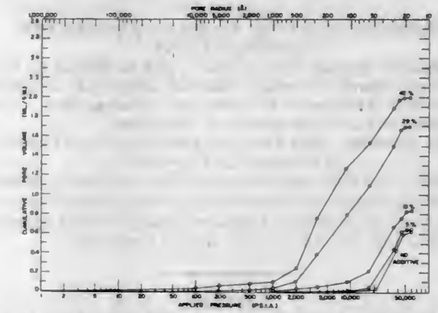
$$0.02 < p < 0.18$$

3,417,028
PROCES FOR THE PREPARATION OF AN INORGANIC GEL HAVING A PREDETERMINED PORE STRUCTURE

Douglas Sargent Montgomery, 101 Broadway, Ottawa, Ontario, Canada, and Basil Ian Parsons, R.R. 1, Kars, Ontario, Canada

Continuation of application Ser. No. 121,549, July 3, 1961. This application Feb. 10, 1967, Ser. No. 615,263

13 Claims. (Cl. 252—317)



At least one water dispersible, organic polymer selected from the group consisting of polyvinyl alcohols, polyethylene glycols, polyethylene oxides, methyl celluloses and polyacrylamides is incorporated into a hydrous gel of alumina, silica or an alumina-silica, in an amount of not less than 30% based on the weight of the anhydrous alumina or silica present. The mixture is calcined to remove the polymer completely, resulting in an inorganic produce of increased pore volume and pore size.

3,417,029
CATALYST COMPOSITION

Joseph F. McMahon, Iselin, N.J., assignor to Pullman Incorporated, a corporation of Delaware

Application Jan. 31, 1961, Ser. No. 86,045, now Patent No. 3,119,667, dated Jan. 28, 1964, which is a continuation-in-part of application Ser. No. 11,952, Mar. 1, 1960. Divided and this application Apr. 5, 1963, Ser. No. 270,892

14 Claims. (Cl. 252—455)

1. A catalyst composition consisting essentially of between about 4 and about 40 weight percent nickel, at least 2 and less than 20 weight percent of an alkali metal compound, calculated as the metal, and a difficultly reducible refractory support consisting essentially of alumina, magnesia and calcium oxide.

3,417,030
HIGH SURFACE AREA ALUMINA AND CATALYST COMPOSITE

Mark J. O'Hara, Prospect Heights, and William K. T. Gleim, Island Lake, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,272

9 Claims. (Cl. 252—455)

Preparation of high surface area alumina by heating an aluminum alkoxide at a temperature intermediate its melting and boiling points in an oxygen-containing atmosphere to form an alumina hydrate and calcining the alumina hydrate thus formed.

3,417,031
PROCESS FOR THE PRODUCTION OF IRON OXIDE CATALYSTS
Helmut Hinrichs, Leonding, near Linz, and Franz Thoma, Linz, Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,601
Claims priority, application Austria, Oct. 23, 1964, A 8,989/64
1 Claim. (Cl. 252—472)

According to this invention superior results are achievable in the catalytic synthesis of ammonia by subjecting the sharp crushed material—resulting from the melting of a mixture of iron oxides, allowing the melt to cool, and crushing the cooled melt—to a rolling motion in a drum or the like to round off sharp edges and corners of the crushed material while retaining the rounded surfaces in rough state.

3,417,032
SEMICONDUCTING NIOBATE TANTALATE COMPOSITIONS
William A. Bonner, Scotch Plains, and Le Grand G. Van Uitert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 10, 1965, Ser. No. 513,085
6 Claims. (Cl. 252—518)

Singe crystalline and polycrystalline sodium/potassium niobate/tantalate of increased electronic conductivity results from the addition of divalent ions of barium, strontium, calcium, or lead as solute during formation.

3,417,033
1,4-ENDOXACYCLOHEXANE POLYETHERS AND PROCESS FOR PREPARING THEM
Klaus Weissermel, Frankfurt, and Klaus Kullmar, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 28, 1964, Ser. No. 363,268
Claims priority, application Germany, May 3, 1963, F 39,649
1 Claim. (Cl. 260—2)

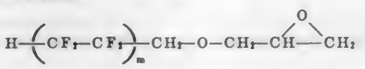
Polyethers of 1,4 endooxacyclohexane and polyethers which are copolymers of 1,4-endooxacyclohexane with other cyclic ethers such as an oxacyclobutane, an oxacyclopentane, and a 1,3,6-trioxacyclooctane are prepared by utilizing a catalyst system of an organo aluminum compound and an organic halogen containing oxygen compound. The halogen of the latter compound has a certain required mobility as measured by solvolysis speed in methanol. Polyethers which fall within the group exhibit a high thermostability as well as dimensional stability at elevated temperatures. These polymers can be used as bearing materials as well as for purposes of forming sheets, films and shaped articles. A representative polyether copolymer is a condensate of 1,4-endoxacyclohexane and 3,3-bis(chloromethyl)-oxacyclobutane.

3,417,034
POLYMERIZATION PROCESS FOR MANUFACTURING POLYCYCLIC POLYETHER POLYOLS OF CONTROLLED MOLECULAR WEIGHT
Kenneth L. Hoy, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,127
27 Claims. (Cl. 260—2)

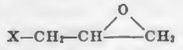
A process for the production of polymeric polycyclic polyether polyols of controlled average molecular weight and functionality which involves the reaction of (a) a polycarbocyclic compound having at least one cyclic vicinal epoxy group and at least one hydroxyl equivalent, with (b) an alcoholic hydroxyl-containing compound or water, and an acidic catalyst, under carefully defined conditions of (a) and (b) above.

3,417,035
TRIHYDROPOLYFLUOROALKYLENE GLYCIDYL ETHERS, METHODS FOR MAKING SAID ETHERS, AND POLYMERS AND COPOLYMER OF SAID ETHERS
Otto C. Elmer and Charles E. Greene, Akron, and Arden E. Schmucker, Hartville, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 8, 1965, Ser. No. 438,060
8 Claims. (Cl. 260—2)

Trihydropolyfluoroalkylene glycidyl ethers having the general formula



where m is an integer of from 1 to 7 are prepared by the reaction of a trihydropolyfluoroalcohol of the general formula $H(CF_2—CF_2)_mCH_2OH$ where m is an integer of from 1 to 7 and an epihalohydrin,



where x is chlorine or bromine in an aqueous alkaline system. The resulting monomers can be homo-polymerized, or copolymerized with other saturated or unsaturated epoxide monomers, using suitable metal containing catalysts to yield polymeric materials having improved resistance to solvents, oils, chemicals and water.

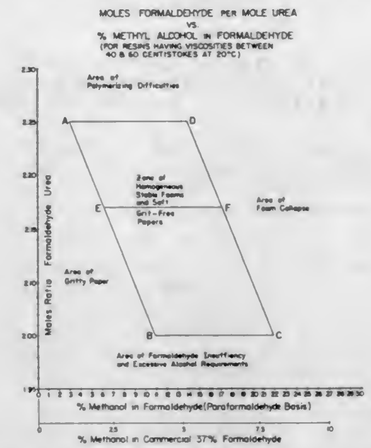
3,417,036
POLYETHERS CONTAINING POLAR GROUPS OBTAINED FROM POLYMERS OF EPIHALOHYDRINS REACTED WITH NUCLEOPHILIC REAGENTS
Edwin J. Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 7, 1967, Ser. No. 658,656
10 Claims. (Cl. 260—2)

Polyethers containing pendant polar groups such as carboxyl, carboxylate, sulfoxide or phosphorus ester groups are prepared by reacting a polymer of an epihalohydrin with a metal salt of an α-alkali metallocarboxylic acid, a mercaptocarboxylic acid, an alkyl sulfinyl carbanion, and alkane sulfenate or a mercaptophosphorus compound. Said polyethers are useful as primers for metals and other substrates or as dispersing agents, protective colloids, thickeners, textile sizes, paper additives and flocculating agents.

3,417,037
SHEET OF CELLULOSIC FIBER AND UREA-FORMALDEHYDE RESIN AND PROCESS OF MANUFACTURE THEREOF
John W. Eastes, Brevard, N.C., and Robert W. Faessinger, Media, Pa., assignors to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 563,617, July 7, 1966, which is a continuation of application Ser. No. 275,079, Apr. 23, 1963, which is a continuation-in-part of application Ser. No. 861,435, Dec. 23, 1959. This application Dec. 6, 1967, Ser. No. 688,624
3 Claims. (Cl. 260—2.5)

An improved method of preparing urea-formaldehyde resins which are particularly suitable for use in preparing disintegrated particulate urea-formaldehyde foam filler materials for paper and paper-like products. Controlling the amount of alcohol present in relation to the ratio of formaldehyde to urea in the urea-formaldehyde condensation reaction provides a urea-formaldehyde resin

prepolymer which, when subsequently foamed and disintegrated, results in a filler material which is particular-



ly suitable for use in preparing filled, grit-free sheets of paper and paper-like products.

3,417,038
PLASTIC FOAM PRODUCTION
Kenneth J. Soltys, Secane, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Apr. 6, 1965, Ser. No. 446,073
The portion of the term of the patent subsequent to Aug. 30, 1983, has been disclaimed
2 Claims. (Cl. 260—2.5)

Plastic foams are prepared from precursors comprising blowing agents adapted to pre-distribute the foaming gas for a potential expansion from 4 to 40 times the unexpanded volume, the uniformity of cell size being enhanced by use of a terpolymer comprising vinyl pyrrolidone as the surfactant.

3,417,039
CHLORINE CONTAINING RESINS STABILIZED WITH MIXTURES COMPRISING NOT MORE THAN TWO METAL SALTS, A POLYOL AND A SULFUR CONTAINING COMPOUND
Richard J. Penneck, Colchester, England, assignor to Bakelite Xylonite Limited, a British corporation
No Drawing. Filed Apr. 23, 1965, Ser. No. 450,527
Claims priority, application Great Britain, Apr. 25, 1964, 17,263/64
17 Claims. (Cl. 260—23)

Stabilizing compositions that contain not more than two metal salts of organic acids, a polyhydric alcohol, an organic sulfur containing compound and optionally in addition an epoxy compound are disclosed. These compositions are useful as stabilizers for chlorine containing polymers.

3,417,040
WAX-POLYMER COMPOSITIONS AND METHOD OF MAKING SAME
Charles J. Kremer, Brookhaven, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 457,218, May 19, 1965. This application June 16, 1966, Ser. No. 557,901
17 Claims. (Cl. 260—27)

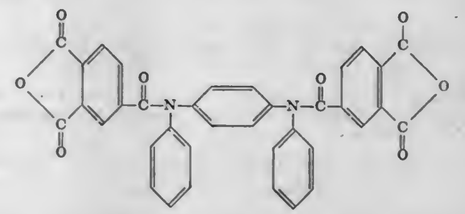
This invention relates to wax compositions containing an ethylene-vinyl acetate copolymer and an acid component. The acid component must contain at least 35 percent by weight acid and at least 5 percent by weight liquid. The acid can be a liquid and thus satisfy both requirements. If it is a solid, however, it must be utilized in combination with either a liquid acid or a liquid selected from the group consisting of a hydrocarbon oil or a low molecular weight liquid polymer of either styrene, butene or propene. Preferred combinations include wax, ethylene-vinyl acetate copolymer, a liquid styrene polymer, and either rosin acid or dimerized fatty acid. The wax compositions of this invention have improved physical properties especially in the area of tensile, elongation and flex strength.

3,417,041
POLISH COMPOSITIONS CONTAINING A COPOLYMER OF VINYL TOLUENE AND ISOBUTYL METHACRYLATE
George L. Brown, Swampscott, and Harry Silverstein, Beverly, Mass., assignors to Polyvinyl Chemicals, Inc., Peabody, Mass., a corporation of Massachusetts
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,946
4 Claims. (Cl. 260—28.5)

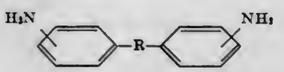
A film forming solution, for use in the formulation of polishing compositions, containing as a solvent an aliphatic naphthenic petroleum fraction containing about ten percent by weight of aromatic hydrocarbons and as the film forming agent a solution in the solvent of a copolymer of vinyl toluene and isobutyl methacrylate, and polishing compositions formulated from the film forming solution and further including a hydrocarbon soluble waxy material and a hydrocarbon soluble hydrocarbon resin.

3,417,042
PROCESS FOR PREPARING A POLYAMIDE ACID SOLUTION
Richard F. Gaertner, Rexford, and Fred F. Holub, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed June 24, 1966, Ser. No. 560,087
11 Claims. (Cl. 260—30.2)

Polyamide acid solutions are produced by reacting (a) a dianhydride of the class consisting of benzophenone dianhydride, pyromellitic dianhydride, ethyleneglycol bis-trimellitate dianhydride, and a dianhydride of the formula



with (b) at least one diamine of the class consisting of C_2–C_8 alkylenediamine, m-phenylenediamine and diamines having the formula



where R is a divalent radical of the class consisting of C_{1-3} alkylene,



—O—, and



in an anhydrous solvent mixture of (i) a non-reactive non-hydroxylic organic solvent and (ii) a phenolic body selected from the class consisting of phenol and cresol and mixtures thereof, said phenolic body present in amounts of about from 35 to 60 weight percent of the total weight of the solvent mixture while maintaining the temperature from 20° C. to 40° C. The polyamide acid solutions find use as bonding agents for glass fibers, for coating metal substrate and electrical insulating films.

3,417,043

EXTRUDABLE STABILIZED ELASTOMERIC POLYESTER SPINNING SOLUTIONS

Walter J. Polestak, Summit, N.J., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,705

19 Claims. (Cl. 260—33.4)

An amino compound of a particular kind is incorporated into an extrudable liquid composition, specifically a spinning solution comprising a substantially linear, segmented elastomeric copolymer, e.g., a polyurethane, which is dissolved in a solvent such as a halogenated hydrocarbon or a mixture of a halogenated hydrocarbon and a lower aliphatic alcohol, in order to stabilize the said copolymer against degradation in the aforesaid solvent. The amino compound is at least one member of the group consisting of the following:

(a) alkanoltertiary-amines, e.g., N,N-diiospropylethanolamine, tri-isopropanolamine, and N-phenyldiethanolamine;
(b) tertiary-amine oxides, e.g., cetyl dimethylamine oxide and lauryldimethylamine oxide;
(c) cyclic tertiary-aminoethers, e.g., N-methylmorpholine, N-ethylmorpholine and N-phenylmorpholine; and
(d) cyclic ethers containing secondary- or tertiary-alkylamines, e.g., N-methylfurfurylamine, N-methyltetrahydrofurfurylamine, N,N-dimethylfurfurylamine and N,N-dimethyltetrahydrofurfurylamine.

The stabilized solutions are useful in making spandex fibers.

3,417,044

BLEND OF BUTADIENE-STYRENE BLOCK COPOLYMER AND POLYCHLOROPRENE

Edward F. Ross and Joseph F. Svetlik, Akron, Ohio, assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,829

3 Claims. (Cl. 260—33.6)

An elastomeric composition having improved low temperature flexibility properties containing from 25 to 75 parts by weight of a solution-polymerized, butadiene-styrene block copolymer and from 75 to 25 parts by weight of neoprene rubber.

3,417,045

POLYMER COMPOSITION

Walter A. Henson and Robert L. Zimmerman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 97,730, Mar. 23, 1961. This application Aug. 19, 1966, Ser. No. 573,486

16 Claims. (Cl. 260—33.6)

This application relates to epoxy compositions containing homogenous copolymers of vinyl aromatic compounds and an α,β-unsaturated dicarboxylic acid or anhydride which are useful in coatings and laminates.

3,417,046

RELEASE OF CURING AGENTS FOR VICINAL EPOXIDES FROM MOLECULAR SIEVES USING A POLYALKYLENE GLYCOL AS RELEASE AGENT

Santo Giambra, Kenmore, and Donald J. Waythomas, Lancaster, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 11, 1962, Ser. No. 201,334

2 Claims. (Cl. 260—37)

1. Method for curing an epoxy compound having at least one vicinal epoxide group per molecule comprising the steps of providing a crystalline zeolitic molecular sieve containing a curing agent within its inner adsorption region; providing in a reaction zone at below curing temperature a mixture comprising: (1) the said epoxy compound having at least one vicinal epoxide group per molecule; (2) the curing agent-containing molecular sieve; and (3) as a release agent, a polyethylene glycol of about 400 average molecular weight; storing said mixture until curing is desired; thereafter heating said reaction zone to a curing temperature at which said curing agent is displaced from the molecular sieve; and thereafter maintaining said epoxy compound in contact with said curing agent until the desired degree of cure is attained.

3,417,047

ROOM TEMPERATURE VULCANIZING ORGANOPOLYSILOXANE COMPOSITION

Dietrich Golitz, Cologne-Stammheim, Klaus Damm, Cologne-Flittard, Richard Muller, Leverkusen, and Walter Noll, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

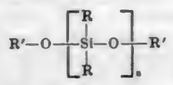
No Drawing. Filed Jan. 26, 1965, Ser. No. 428,209

Claims priority, application Germany, Feb. 6, 1964, F 41,926

12 Claims. (Cl. 260—37)

Organo-polysiloxane compositions are disclosed which are capable of being plastically shaped and which are storable in the absence of water and are convertible into the solid elastic state in the presence of water including the humidity of the atmosphere at a temperature of from room to 50° C. The compositions comprise:

(1) a base siloxane of the formula:

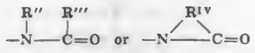


wherein n has a value of at last 1, R′ is hydrogen or alkyl (C_{1-4}) and R′ is hydrogen, alkyl, alkenyl or aryl, with at least half of the R groups being methyl, and

(2) an organo-silicon cross-linking agent having the formula



wherein X is hydrogen, alkyl or aryl, m is at least 1 but does not exceed 4, b has a positive value equal to at least 3 substituents Y per molecule of organisilicon compound and Y is a Si—N bonded carboxylic acid amide radical i.e., either



wherein R″ is alkyl or aryl, R‴ is hydrogen, alkyl or aryl and R^{IV} is alkylene or alkarylene.

3,417,048

MASS-COLORATION PROCESS FOR POLYESTER RESINS

Albert Charles Cooper, David Frederick White, and Donald Graham Wilkinson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 21, 1966, Ser. No. 535,663

Claims priority, application Great Britain, Mar. 26, 1965, 12,959/65

6 Claims. (Cl. 260—40)

Process for mass-coloring polyesters with quinaphthalone dyestuffs containing one or two carboxylic acid groups or esters thereof.

3,417,049

STABILIZATION OF POLYACRYLONITRILE

Eric McPherson Grant, Coventry, England, assignor to Courtaulds Limited, London, England, a British company

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,207

Claims priority, application Great Britain, May 3, 1965, 18,462/65

5 Claims. (Cl. 260—45.85)

A composition which comprises polyacrylonitrile and a stabilising agent which comprises maleamic acid or an N-substituted maleamic acid in which the N-substituents are methyl, ethyl and phenyl groups or the amide group; or the alkali metal salts of such acids.

3,417,050

EPOXIDE RESIN PROCESS

Herbert P. Price and David A. Shimp, Louisville, Ky., assignors to Celanese Coatings Company, a corporation of Delaware

No Drawing. Filed May 4, 1965, Ser. No. 453,205

8 Claims. (Cl. 260—47)

A one step process for preparing low residual chlorine containing glycidyl polyethers of polyhydric phenols by reacting a solution of a polyhydric phenol in excess epichlorohydrin with a dispersion of finely divided alkali metal hydroxide suspended in an inert organic medium while simultaneously distilling water formed in the reaction from the reaction mixture during the addition of the alkali metal hydroxide dispersion.

3,417,051

POLYETHERS AND PROCESS FOR THEIR MANUFACTURE

Gunter Messwarb, Kelkheim, Taunus, Walter Luders, Neu-Isenburg, and Fritz Erdmann and Hartmut Steppan, Wiesbaden, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning

No Drawing. Filed Jan. 3, 1967, Ser. No. 606,539

Claims priority, application Germany, Jan. 7, 1966, F 48,110

7 Claims. (Cl. 260—47)

Light-sensitive polyethers produced by copolymerization of an oxirane group containing compounds in the presence of ionic catalysts and suitable for the manufacture of films, sheetings, coatings and shaped articles which can be cross-linked under the action of light.

3,417,052

POLYETHERS AND PROCESS FOR THEIR MANUFACTURE

Gunter Messwarb, Kelkheim, Taunus, Walter Luders, Neu-Isenburg, and Johannes Munder and Hartmut Steppan, Wiesbaden, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

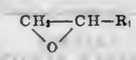
No Drawing. Filed Jan. 3, 1967, Ser. No. 606,540

Claims priority, application Germany, Jan. 7, 1966, F 48,111

7 Claims. (Cl. 260—47)

7. Copolymers from

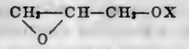
(a) compounds of Formula I



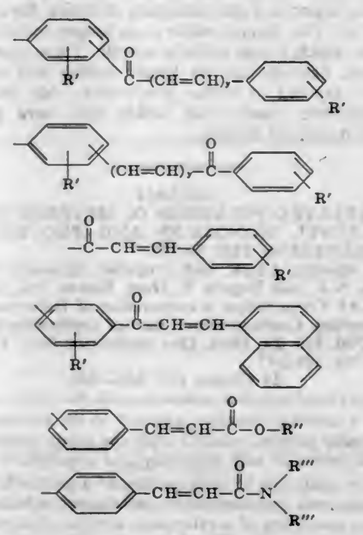
in which

R_1 stands for hydrogen, methyl, ethyl, phenyl, ethylphenyl, halogenophenyl, $-(CH_2)_nCl$ or $-(CH_2)_nF$, n being 1 or 2, $-CHCl_2$, $-CHF_2$, $-(CH_2)_mCCl_3$ or $-(CH_2)_mCF_3$, m being zero or 1, $-CHCl-CH_2Cl$, $-CHF-CH_2F$, or $-CH_2-OR_2$, R_2 being alkyl with 1 to 5 carbon atoms, allyl, vinyl, phenyl or alkylphenyl in which the alkyl group has 1 to 5 carbon atoms,

(b) compounds of Formula II



in which X stands for a radical of one of the following formulae



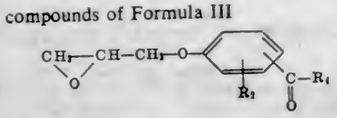
in which formulae

R′ represents hydrogen, alkyl with 1 to 5 carbon atoms, alkoxy with 1 to 5 carbon atoms or halogen and may occur several times and the alkyl and alkoxy radicals may be members of a 5 membered ring,

R″ represents alkyl with 1 to 5 carbon atoms, phenyl or or alkylphenyl in which the alkyl group has 1 to 5 carbon atoms,

R‴ represents alkyl with 1 to 5 carbon atoms and y is a whole number in the range of from 1 to 4, and,

(c) compounds of Formula III



(2)

in which

R_3 stands for hydrogen, methyl, ethyl, methoxy, ethoxy, chlorine or bromine and

R_4 stands for alkyl with 1 to 5 carbon atoms, phenyl, alkylphenyl in which the alkyl group has 1 to 5 carbon atoms, alkoxyphenyl in which the alkoxy group has 1 to 5 carbon atoms, or halogenophenyl.

(3)

(4)

3,417,053
MOISTURE-CURABLE ALKOXYSILYL SUBSTITUTED POLYPHENYLENE ETHERS

Alan J. Chalk, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 5, 1967, Ser. No. 672,960
9 Claims. (Cl. 260—47)

Alkali metal-substituted polyphenylene ethers react readily with alkoxymonohalosilanes to produce polyphenylene ethers having alkoxysilyl substituents. These alkoxysilyl substituted polyphenylene ethers are very sensitive to water or water vapor even at ambient temperatures forming cross-linked, cured polymers. These compositions therefore form a new class of what is known in the art as room-temperature vulcanizable (RTV) compositions. Since the alkoxysilyl substituted polyphenylene ethers are solids at room temperature, they are used in solution in an anhydrous solvent to form films, fibers, foils or coatings which on evaporation of the solvent rapidly cure on exposure to water either in the form of liquid or vapor or a gas containing moisture, for example, humid air. The shaped article is no longer soluble in solvents in which it was initially soluble. These cured compositions, likewise, are no longer fusible and therefore may be exposed to higher temperature than the initial polyphenylene ethers from which they were prepared without danger of flowing.

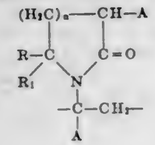
3,417,054
ALKYLATED POLYMERS OF HETEROCYCLIC N-VINYL MONOMERS AND PROCESS OF PREPARING THE SAME

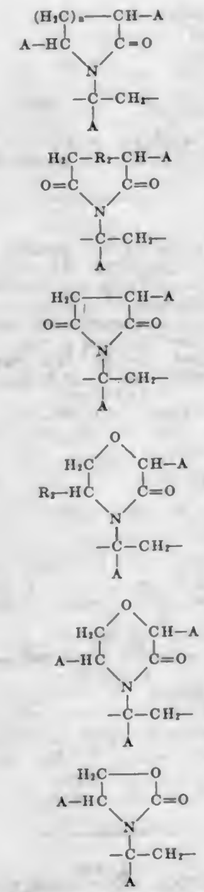
Ashot Merijan, Clark, and Frederick Grosser, Midland Park, N.J., and Eugene V. Hort, Easton, Pa., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 340,786, Jan. 28, 1964. This application Nov. 18, 1965, Ser. No. 508,547
25 Claims. (Cl. 260—66)

1. Alkylated polymer of heterocyclic N-vinyl monomer, having a carbonyl function adjacent to the nitrogen in its heterocyclic moiety, selected from the group consisting of homopolymers of said monomer and copolymers of said monomer with 1 to 95 mole percent of a monoethylenically unsaturated polymerizable comonomer selected from the class consisting of acrylamides, acrylic acid and acrylic acid esters, acrylonitrile and methacrylonitrile, methacrylic acid and methacrylic acid esters, vinyl esters, vinyl ketones, vinyl pyridine, vinyl cyclohexane and styrene, the said polymer having an N-vinyl heterocyclic moiety selected from the class consisting of those having the following formulae:

(1)





(5)

(6)

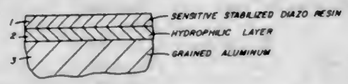
(7)

wherein R and R_1 are selected from the class consisting of hydrogen, methyl and ethyl, R_2 is selected from the group consisting of oxygen atom and CH_2 group, R_3 is selected from the class consisting of methyl and ethyl, *n* is an integer of from 1 to 3, and wherein at least 5% of the said heretocyclic moieties in said polymer are substituted by the A's which are independently selected from the group consisting of hydrogen and alkyl of from 6 to about 180 carbon atoms and wherein at least one of the A's in said heterocyclic moiety in said polymer is alkyl of from 6 to about 180 carbon atoms.

3,417,055
PROCESS FOR PREPARATION AND SEPARATION OF LIGHT SENSITIVE STABILIZED DIAZO RESINS

James F. Houle and Gilden R. Van Norman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 347,931, Feb. 27, 1964, now Patent No. 3,342,601, dated Sept. 19, 1967. This application June 22, 1967, Ser. No. 648,036
4 Claims. (Cl. 260—72.5)



Stabilized diazo compositions for use in preparing lithographic printing plates are described. The compositions

are particularly useful for coating on hydrophilic layers containing certain titanium complexes.

3,417,056
METHOD OF IMPROVING THE PROPERTIES OF MACROMOLECULAR POLYMERS BY REACTION WITH POLYFUNCTIONAL ALDEHYDES

Christian P. Pinazzi, René Pautrat, Roland Cheritat, and Paul Branlard, Paris, France, assignors, by mesne assignments, to Societe Nationale des Petroles d'Aquitaine Tour Aquitaine (France)

No Drawing. Filed Feb. 27, 1964, Ser. No. 347,704
Claims priority, application France, Feb. 27, 1963, 926,208
5 Claims. (Cl. 260—73)

Natural and synthetic rubber is modified by reaction with a polyfunctional aldehyde, that is an aldehyde containing an electro negative group such as a halogen. The thus modified rubber products have improved resistance to solvents, improved compatibility with polymer modifiers, and changed chemical reactivity which permits reticulation of the modified polymer by means of multifunctional reagents such as diamines and disocyanates. Modified rubber which is substantially incombustible is also made by this process.

3,417,057
RAPID PRODUCTION OF LINEAR POLYESTERS BY TRANSESTERIFICATION

Johannes R. L. Heinze, Rudolstadt-Schwarza, and Hellmut A. Ramm and Hans G. Richardt, Rudolstadt, Germany, assignors to Veb Chemiefaserwerk Schwarza "Wilhelm Pieck," Rudolstadt, Germany

No Drawing. Filed July 15, 1965, Ser. No. 472,360
2 Claims. (Cl. 260—75)

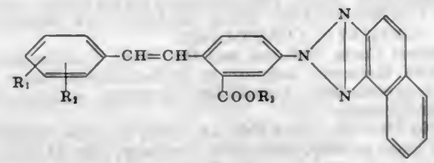
Rapid production of linear polyesters and copolyesters by transesterification of dialkyl esters of aromatic dicarboxylic acids with glycols comprising the improvement of discontinuing the transesterification reaction when at least 50%, preferably 75–95%, of the ester used as starting material has been converted, by sealing off the access to the refluxing column and thereby causing alcohol formed in the transesterification reaction to be distilled directly together with the glycol, the temperature rising simultaneously to about 240° C. By the process a time-saving of about one fifth up to one third can be effected over the known processes.

3,417,058
BRIGHTENED FINE FABRICS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,813
10 Claims. (Cl. 260—75)

1. A composition comprising an organic carrier selected from the group consisting of polyesters, polyamides, polyacrylonitrile and in brightening amounts a fluorescent naphthotriazole compound having the following formula:



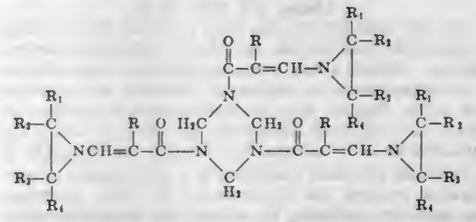
wherein R_1 and R_2 represent a member selected from the class consisting of hydrogen, chlorine, bromine and fluorine, lower alkyl and lower alkoxy, and R_3 represents a member selected from the class consisting of alkyl, hydroxyalkyl, dihydroxyalkyl, trihydroxyalkyl, dialkylaminoalkyl, morpholino-N-alkyl and piperidino-N-alkyl wherein the alkyl group contains from 1 to 4 carbon atoms, and hexamethyleneimino-N-ethyl.

3,417,059
1,3,5 - TRIS - [(B - AZIRIDINYL)ACRYLYL] - HEXAHYDRO-s-TRIAZINE AND PROCESS FOR MAKING; THE CURED CARBOXY - TERMINATED POLYMER AND PROCESS FOR MAKING

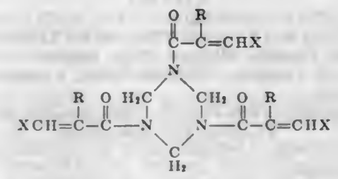
Joseph Adrian Hoffman, Bridgewater Township, Somerset County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,921
5 Claims. (Cl. 260—78.4)

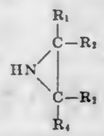
A class of compounds represented by the formula:



wherein R is either hydrogen, lower alkyl, fluorine, chlorine or bromine, and R_1, R_2, R_3 and R_4 are individually hydrogen or lower alkyl. These compounds are prepared by reacting one mole of a hexahydro-s-triazine of the formula:



with three moles of an ethyleneimine of the formula:



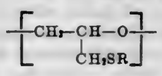
The products of this invention are useful as cross-linking agents in the preparation of plastics and resins, textiles, varnishes, paper and the like.

3,417,060
POLYETHERS CONTAINING THIOETHER SIDE CHAINS

David S. Breslow, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 7, 1967, Ser. No. 658,617
8 Claims. (Cl. 260—79)

High molecular weight polyethers of improved stability contain ether units with thioether side chains, i.e.,



units where R is an alkyl, aryl, alkenyl, etc. radical. These polyethers are prepared by reacting a polymer of an epihalohydrin such as, for example, poly(epichlorohydrin) or epichlorohydrin-ethylene oxide copolymers with a metal salt of a mercapto compound RSH (where R is as above)

which is typically methyl mercaptan, thiophenol, 4-tert-butylthiophenol, etc.

3,417,061

PROCESS FOR PREPARING POLYOLEFIN SULFONAMIDES SOLUBLE IN CHLOROHYDROCARBONS

Claus Beermann, Neu-Isenburg, and Franz Landauer and Erwin Schmidt, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,852
Claims priority, application Germany, Apr. 25, 1964, F 42,725
3 Claims. (Cl. 260—79.3)

An improved process has been provided for preparing a polyolefin sulfonamide soluble in chlorinated hydrocarbons wherein a low pressure polyolefin sulfochloride is sulfochlorinated by reacting a polyolefin with chlorine and sulfur dioxide in a chlorohydrocarbon solution in which the reaction is carried out as well as in which the sulfochloride is in solution and wherein the polyolefin is a polyolefin produced according to a low pressure polymerization process, the improvement of which comprises the steps of: amidating by mixing said polyolefin sulfochloride with ammonia and a primary or secondary amine while said polyolefin sulfochloride is still in its sulfochlorination process solution.

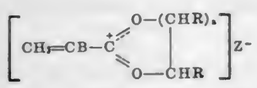
3,417,062

2-ALKENYL-1,3-DIOXOLENIUM AND 1,3-DIOXENIUM SALTS AND POLYMERS THEREOF

Donald A. Tomalia, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 11, 1966, Ser. No. 564,044
9 Claims. (Cl. 260—79.3)

1. A 2-alkenyl-1,3-dioxolenium or 1,3-dioxenium salt of the formula:



wherein B is H, Cl or a C_1–C_4 alkyl group,
each R individually is H or a C_1–C_4 alkyl group,
a is 1 or 2, and
Z is an anion selected from the group consisting of perchlorate, chlorate, bisulfate, fluorosulfate, tetrafluoroborate and hexafluoroantimonate.

3,417,063

POLYMERIC COMPOSITIONS OF MATTER FORMED BY THE REACTION OF PREPOLYMERS WITH POLYHALOPOLYHYDRODIMETHANONAPHTHALENEDICARBOXYLIC ACIDS AND ANHYDRIDES THEREOF

Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,551
18 Claims. (Cl. 260—78.4)

1. A composition of matter comprising the polymeric reaction product of a polymer containing at least one reactive functional group and selected from the group consisting of epoxy resins, urethanes, polyamides, polyamines, polyols and polyesters with a compound selected from the group consisting of polyhalopolyhydrodimethanonaphthalenedicarboxylic acids and anhydrides thereof in sufficient amount to impart flame retardancy to the composition.

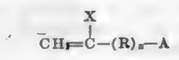
3,417,064

POLYMERS OF 1,2-ALKYLENE OXIDES

Frederick E. Bailey, Jr., Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 188,879, Apr. 19, 1962. This application May 27, 1963, Ser. No. 283,613
The portion of the term of the patent subsequent to Apr. 24, 1979, has been disclaimed
13 Claims. (Cl. 260—79.5)

1. A solid elastomeric vulcanizate obtained by sulfur curing the pendant terminal alkenyl groups which are contained in a copolymer having a reduced viscosity value of at least 0.5 as measured at a concentration of 0.2 gram of said copolymer in 100 milliliters of benzene at 30° C., said copolymer resulting from the polymerization of an admixture containing a major proportion by weight of 1,2-alkylene oxide and a minor proportion by weight of a vinyl epoxy monomer through the vicinal epoxy groups thereof, said vinyl epoxy monomer having the formula:



wherein *n* is an integer which has a value of from 0 to 1, wherein X is selected from the group consisting of hydrogen, halogen, and alkyl, wherein R is a divalent saturated aliphatic hydrocarbon radical, and wherein A is selected from the group consisting of vicinal-epoxyalkyl, vicinal-epoxyalkoxy, vicinal-epoxycycloalkoxy, vicinal-epoxycycloalkylalkoxy, vicinal-epoxyalkylaryl, and vicinal-epoxyalkylsulfonyl.

3,417,065

CIS-1,4 COPOLYMERS OF BUTADIENE AND 2-PHENYL-BUTADIENE

Walter Marconi, San Donato Milanese, Milan, Alessandro Mazzei and Mario Araldi, Milan, and Mario Bruzzone, San Donato Milanese, Milan, Italy, assignors to SNAM-S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed May 13, 1964, Ser. No. 367,213
Claims priority, application Italy, May 15, 1963, 10,084/63; Oct. 2, 1963, 20,156/63
14 Claims. (Cl. 260—83.7)

Copolymers of butadiene and 2-phenyl-butadiene in which at least 90% of the butadiene units are 1,4-cis enchained have a workability superior to that of 1,4-cis polybutadiene and better dynamic properties than butadiene-styrene copolymers. The products may be made by copolymerization in the presence of an iodine-containing catalyst comprising a compound of a transition metal of Group IV*a*, V*a*, VI*a* or VIII, and a reducing compound of a metal of group I, II or III.

3,417,066

PROCESS FOR CHLOROMETHYLATING AND CROSSLINKING HIGH MOLECULAR WEIGHT AROMATIC COMPOUNDS

Herbert Corte, Opladen, and Otto Netz, Cologne-Ehrenfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 24, 1965, Ser. No. 435,026
Claims priority, application Germany, Apr. 11, 1964, F 42,598
13 Claims. (Cl. 260—88.1)

A reaction mixture of equimolar quantities of methylal and chlorosulphonic acid formed at a temperature below 40° C. is employed, preferably at temperatures from 0 to 60° C., for chloromethylating and crosslinking high molecular weight aromatic polymers.

3,417,067

PREPARATION OF FREELY-SOLUBLE POLYMERS OR TRINITRATOPENTAERYTHRITYL ACRYLATE

George Bond Lucas, Golden, Colo., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 610,439, Sept. 7, 1956. This application Aug. 19, 1958, Ser. No. 757,174
12 Claims. (Cl. 260—89.5)

1. A process for preparing a freely-soluble polymer of trinitratopentaerythrityl acrylate which comprises dissolving said acrylate in a polar organic solvent for this acrylate and its linear polymer which is at least partially miscible with water, and which boils between about 75° C. and 150° C., emulsifying the resulting solution in water with the aid of a water-soluble emulsifying agent, polymerizing the emulsified acrylate between 20° and about 100° C., under the influence of a free radical initiator having at least partial solubility in water, precipitating the resultant polymer with a water-soluble lower alkanol, and separating the precipitated polymer.

3,417,068

METHOD OF CURING A NITROSO RUBBER CONTAINING CARBOXYLIC ACID GROUPS WITH CHROMIUM TRIPERFLUOROACETATE OR CHROMIC ACETATE AND PRODUCTS RESULTING THEREFROM

Nicholas Knoll, St. Paul, Minn., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,944
10 Claims. (Cl. 260—92.1)

A polymeric product comprising monomeric units having nitroso groups substituted therein, having carboxylic acid groups along the chain thereof, and having chromium atoms coordinated with the carboxylic acid groups to form Werner-type chromium complexes; and a method of curing a polymer comprising nitroso groups in the main chain thereof and having carboxylic acid groups along the chain thereof comprising reacting the polymer with a Werner-type complex forming chromium salt.

3,417,069

POLYHALOGENOUS EPOXY COPOLYMERS

Pauls Davis, Gibraltar, and Herwart C. Vogt, Grosse Ile, Mich., assignors to Wyandotte Chemical Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,353
The portion of the term of the patent subsequent to Oct. 24, 1984, has been disclaimed
35 Claims. (Cl. 260—92.3)

An epoxy copolymer formed by reacting a copolymer of an alkylene oxide, containing three to four carbon atoms, inclusive, with an ethylenically-unsaturated compound having a plurality of polymerizable carbon-to-carbon double bonds, and subsequently reacting the product with an epoxidizing agent to cause at least some of the double bonds to be converted to pendant epoxy groups, the resulting compound being curable with standard epoxy curing agents.

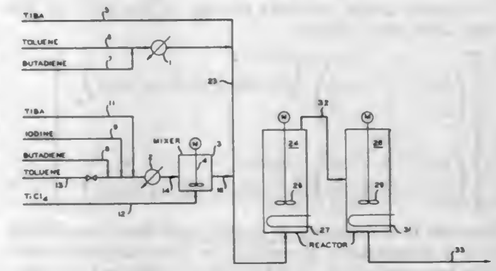
3,417,070

POLYMERIZATION PROCESS USING A MULTI-FEED CATALYST IN ORDER TO CREATE A MORE ACTIVE CATALYTIC SPECIES

Robert A. Hinton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 10, 1964, Ser. No. 417,411
5 Claims. (Cl. 260—943)

In a continuous process for polymerizing a conjugated diene with a catalyst which forms on mixing (a) an organometal compound, (b) a titanium halide, and (c) at least one component selected from the group consisting of iodine, 1,4-diiodo-2-butene and the monomethyl and dimethyl homologs thereof, all the recycle hydrocarbon diluent, most of the conjugated diene, and a substantial portion of the compound of Group (a) are mixed to provide a first stream; the remainder of the conjugated diene, the remainder of the compound of Group (a) and all of



the compound of Group (c) are mixed to provide a second stream; this second stream is mixed with a stream carrying the titanium halide to provide a third stream; the first and third streams are then mixed to provide a fourth stream which carries the catalyst, reactants, and diluent into a reaction zone before there has been any substantial formation of polymer in any of the streams.

3,417,071

BLEACHING AND STABILIZING ROSIN COMPOUNDS WITH 1,3,4-THIADIAZOLE POLYSULFIDES

Charles Glenn Wheelus, Panama City, Fla., assignor, by mesne assignments, to Arizona Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1966, Ser. No. 605,959
6 Claims. (Cl. 260—108)

Method of bleaching and stabilizing tall oil rosin and derivatives by heating in the presence of a 1,3,4-thiadiazole polysulfide, typically 2,5-bis(tert.-octyldithio)-1,3,4-thiadiazole.

3,417,072

INTERMEDIATES IN THE SYNTHESIS OF SECRETIN

Miklos Bodanszky, Princeton, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,956
30 Claims. (Cl. 260—112.5)

This invention relates to novel peptides, and more particularly, to peptide intermediates and their salts utilized in the preparation of the gastrointestinal hormone, secretin. Porcine secretin has the formula:

His-Ser-Asp-Gly-Thr-Phe-Thr-Ser-Glu-Leu-Ser-Arg-Leu-Arg-Asp-Ser-Ala-Arg-Leu-Glu(NH_2)-Arg-Leu-Leu-Glu(NH_2)-Gly-Leu-Val-NH_2

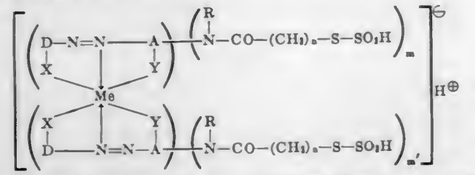
In accordance with the process of this invention, secretin is prepared synthetically beginning with L-valinamide and adding the remaining amino acids, one at a time, to the peptides formed. The intermediates thus formed comprise the novel peptides of this invention.

3,417,073
METAL MONOAZO DYESTUFFS

Fritz Meininger and Ernst Hille, Frankfurt am Main, and Fritz Osterloh, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,105
Claims priority, application Germany, Dec. 24, 1964, F 44,805
7 Claims. (Cl. 260—145)

Complex metal dyestuffs having, in the form of the free acids, the formula



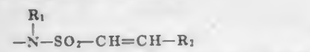
in which D is a benzene or naphthalene diazo component, A is a naphthalene, pyrazolone or acetoacetylaminobenzene azo component, X is hydroxyl or carboxyl in ortho-position to the azo-linkage, Y is hydroxyl or amino in ortho-position or in vicinal position to a carbon atom attached to the azo linkage, R is hydrogen or lower alkyl, Me is chromium or cobalt, *n* and *m* stands for 1 or 2, and *m'* stands for 0, 1 or 2.

3,417,074
METALLIFEROUS MONO AZO DYESTUFFS

Rudolf Kühne and Fritz Meininger, Frankfurt am Main, Walter Noll, Bad Soden, Taunus, and Helmut Rinno and Siegfried Schiessler, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 219,137, Aug. 24, 1962. This application May 4, 1965, Ser. No. 453,201
Claims priority, application Germany, Aug. 26, 1961, F 34,783
6 Claims. (Cl. 260—151)

Fibre-reactive copper, cobalt, nickel and chromium monoazo- and disazo dyestuffs containing, as reactive moieties, one grouping of the formula



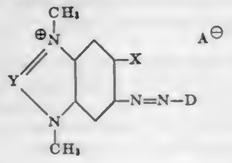
wherein R_1 is alkyl of 1 to 5 carbon atoms or cyclohexyl, and R_2 is hydrogen or alkyl of 1 to 5 carbon atoms, said dyestuffs being suitable for the dyeing or printing of textile fibrous materials consisting of cellulose, wool, silk or polyamides.

3,417,075
BASIC MONOAZO DYESTUFFS

Georges Henry Raymond Mingasson, Paris, Robert Frederic Michel Sureau, Enghien-les-Bains, and Victor Marie Dupré, Louvres, France, assignors to Etablissements Kuhlmann, Paris, France

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,947
Claims priority, application France, Oct. 17, 1963, 950,890
6 Claims. (Cl. 260—162)

Dyestuffs of the formula:



in which X represents a member selected from the group consisting of hydrogen, chlorine and the methyl group, Y represents a member selected from the group consisting of the nitrogen atom and the



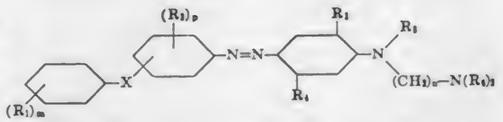
group wherein R represents a member selected from the group consisting of the hydrogen atom, the methyl group and the unsubstituted phenyl group, D represents a member selected from the group consisting of 3-methyl-5-pyrazolon-4-yl, 3-methyl-1-phenyl-5-pyrazolon-4-yl, 4-dialkylamino-phenyl, 2-acetylamino-4-amino-phenyl, 2,5-dimethoxy-4-amino-phenyl, 2-methoxy-5-methyl-4-amino-phenyl, 2,5-dimethoxy-4-dialkylamino-phenyl, 2-amino-1-naphthyl, 2-hydroxy-1-naphthyl, 2-alkylamino-1-naphthyl, 1-amino-4-naphthyl, 2-phenylamino-1-naphthyl, said alkyl groups having 1 and 2 carbon atoms, and A represents a monovalent anion.

3,417,076
YELLOW AND ORANGE MONOAZO DYES

Mario Francesco Sartori, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 490,053, Sept. 24, 1965. This application Jan. 31, 1968, Ser. No. 701,851
6 Claims. (Cl. 260—205)

Yellow and orange monoazo dyes of the formula



and quaternary salts wherein X is SO_2 or CO and R_1, R_2, R_3, R_4, R_5 and R_6 are substituents commonly substituted on dyestuffs thereof are useful for dyeing anionic fibers such as acid-modified nylon and acid-modified acrylic fibers.

3,417,077
ERYTHROMYCIN DERIVATIVE AND PROCESS FOR THE PREPARATION THEREOF

Hubert W. Murphy, Verlin C. Stephens and James W. Conine, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed May 16, 1966, Ser. No. 550,276
9 Claims. (Cl. 260—210)

A cyclic carbonate ester of erythromycin prepared by the reaction of erythromycin with ethylene carbonate in an inert solvent medium, optionally and preferably in the presence of an inorganic base or an alkali metal cyanide, cyanate, thiocyanate, chloride, bromide, or iodide.

The instant esters of erythromycin are very active antibiotic agents.

3,417,078
CATIONIC STARCH

Chim P. Patel and Ronald E. Pyle, Granite City, Ill., assignors to Union Starch & Refining Co., Inc., Columbus, Ind., a corporation of Indiana

No Drawing. Filed Dec. 9, 1966, Ser. No. 600,378
6 Claims. (Cl. 260—233.3)

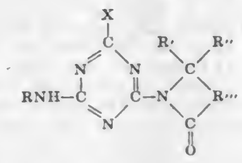
A cationic starch especially useful in the manufacture of paper is prepared by reacting starch in the form of a slurry, for example, with the reaction product of 1D(2-hydroxyethyl), 2Dn-heptadecenyl-2 imidazoline and a cross-linking agent such as dichlorobutene.

3,417,079
2-ALKYLAMINO-4-HALOGENO-6-N-LACTAM-s-TRIAZINE DERIVATIVES

David I. Randall and Harlan B. Freyermuth, Easton, Pa., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed Oct. 19, 1966, Ser. No. 587,686
6 Claims. (Cl. 260—239.3)

1. A compound having the following structure:



wherein R represents an alkyl group of from 1 to 8 carbon atoms, R· and R·· are members selected from the class consisting of hydrogen and alkyl of from 1 to 4 carbon atoms, R··· represents an alkylene group furnishing 2 to 4 carbon atoms between the



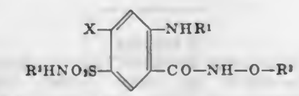
and the carbonyl group and having a total of from 2 to about 10 carbon atoms, and X represents a halogen atom selected from the class consisting of chlorine and bromine.

3,417,080
SULFAMYLANTHRANILIC ACID AMIDES AND PROCESS FOR PREPARING THEM

Karl Sturm, Frankfurt am Main, Walter Siedel, Bad Soden, Taunus, and Rudi Weyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,330
Claims priority, application Germany, Dec. 8, 1964, F 44,629
7 Claims. (Cl. 260—239.6)

Diuretically, saluretically and hypotensively active compounds of the formula



wherein R^1 represents benzyl, furfuryl or thenyl-(2), R^2 represents hydrogen or alkyl with 1 to 3 carbon atoms which may be straight-chained or branched, R^3 represents hydrogen or methoxy and X represents chlorine or bromine.

3,417,081
SYNTHESIS OF GON-5(6) AND 5(10)-ENES

Gordon Alan Hughes, Haverford, Pa., and Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087, said Hughes assignor to said Smith

Continuation-in-part of aplication Ser. No. 228,384, Oct. 4, 1962. This application Apr. 7, 1966, Ser. No. 540,922
8 Claims. (Cl. 260—239.55)

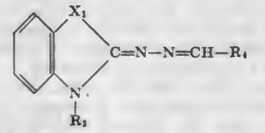
1. The composition of matter consisting of 13β-ethyl-3,3-ethylendioxygon-5-en-17β-ol in admixture with its 5(10)-isomer.

3,417,082
NOVEL CHEMICAL COMPOUNDS AND SYNTHESES

Lloyd D. Taylor, Everett, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,160
6 Claims. (Cl. 260—240)

Novel compounds particularly adapted for employment as spectral radiation filtering agents are represented by the formula:



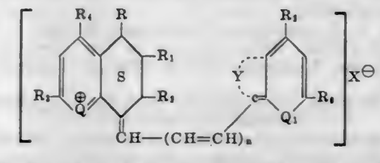
wherein X_1 is sulfur or selenium, R_3 is a lower alkyl group comprising from 1 to 5 carbon atoms; and R_4 is a mono-, bis-, or tri-lower alkoxy phenyl or naphthyl group.

3,417,083
POLYMETHINE PYRYLIUM COMPOUNDS AND PROCESS FOR THEIR PREPARATION

George A. Reynolds and James A. Van Allan, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,626
16 Claims. (Cl. 260—240)

1. A pyrylium compound having the formula:



wherein Q and Q_1 each represents the same or different member selected from the group consisting of oxygen and sulfur, *n* represents a whole number selected from 1 and 2, R, R_1 and R_2 each represents a member selected from the group consisting of hydrogen, an alkyl group having 1 to 4 carbon atoms, an alkoxy group having 1 to 4 carbon atoms and a phenyl nucleus, R_3, R_4, R_5 and R_6 each represents a phenyl nucleus, Y represents the necessary atoms to complete a cyclopentenyl or a cyclohexenyl ring and wherein said cyclohexenyl ring can be substituted with an alkyl group having 1 to 4 carbon atoms, an alkoxy group having 1 to 4 carbon atoms, and a phenyl nucleus, $X^{\ominus}$ represents the anion of a strong acid and S means that the ring in which it appears is saturated and wherein the term a phenyl nucleus represents a member selected from the group consisting of phenyl, chlorophenyl, (low carbon alkyl)phenyl, (low carbon alkoxy) phenyl, a phenyl radical substituted with the amino group and a phenyl radical substituted with the amido group.

3,417,084
LIGHT ABSORBING DYES DERIVED FROM BARBITURIC AND 2-THIOBARBITURIC ACID COMPOUNDS USEFUL FOR PHOTOGRAPHY AND THEIR PREPARATION

Joseph Bailey, Harrow, Middlesex, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 13, 1963, Ser. No. 287,530
15 Claims. (Cl. 260—240.2)

Process for preparing novel light absorbing dyes useful, for example, in light absorbing filter layers in photography by reacting a barbituric acid or a 2-thiobarbituric acid with ethyl orthoacetate or ethyl orthopropionate, for

example. Complex dyes are obtained by condensing the dyes formed as indicated above with cyanine or merocyanine dye intermediates. Derivatives are readily prepared by heating the first formed dyes with a reactant such as a primary amine, piperidine, ammonia, fuming sulfuric acid or bromine, for example.

3,417,085

3,1-BENZOTHIAZINES AND 3,1-BENZOXAZINES

Heinz Kuch and Günther Seidl, Frankfurt am Main, and Irmgard Hoffmann, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 24, 1966, Ser. No. 552,416
Claims priority, application Germany, June 3, 1965, F 46,229; Mar. 18, 1966, F 48,687; Mar. 22, 1966, F 48,726; Mar. 23, 1966, F 48,738; Mar. 23, 1966, F 48,739
14 Claims. (Cl. 260—243)

3,1-benzothiazines and 3,1-benzoxazines substituted in the 4-position by lower alkyl, benzyl, unsubstituted aryl of 6 to 10 carbon atoms, or phenyl substituted by halogen, methoxy, trifluoromethyl or nitro, and acid addition salts thereof. The products of the invention have valuable pharmacological properties, in particular, centrally depressive action.

3,417,086

2,6-DIALKYL MORPHOLINOTHIO CARBONYL-AMINO SULFIDES AND AMINO THIOCARBONYL - 2,6-DIALKYLAMINO MORPHOLINO-SULFIDES

George E. P. Smith, Jr., Akron, and Wendell S. Cook, Canal Fulton, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,085
6 Claims. (Cl. 260—247.1)

2,6-dialkylmorpholino thiocarbonylamino sulfides and aminothio carbonyl-2,6-dialkylmorpholino sulfides are useful as vulcanization accelerators of rubber. The compounds are prepared by oxidizing with an oxidizing agent a mixture of a dithiocarbamate salt and an amine having a hydrogen atom attached to the nitrogen.

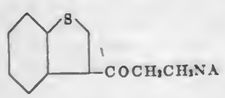
3,417,087

3(AMINOPROPIONYL)BENZOTHIOPHENES

Ernest E. Campaigne, Bloomington, Ind., and Edward S. Neiss, Willingboro, N.J., assignors to Research Corporation, New York, N.Y., a non-profit corporation of New York

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,703
2 Claims. (Cl. 260—247.1)

Novel Mannich compounds of the formula



wherein A forms with the nitrogen atom an organic ring system, have been prepared. Such compounds exhibit antimicrobial activity.

3,417,088

METHOD FOR PRODUCING 9,10-DIAZAPHENANTHRENE

James E. Kmiecik, Lake Charles, La., assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,830
1 Claim. (Cl. 260—250)

High pressure ring closure of dinitrobiphenyls in the presence of carbon monoxide and metal carbonyl catalysts is described.

3,417,089

ENOL BETAINES AND PROCESS FOR PREPARING THE SAME

Frederic Houghton Megson, Bridgewater Township, Somerset County, Michael Thomas Beachem, Franklin Township, Somerset County, and Richard Frederick Stockel, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 16, 1964, Ser. No. 383,210
11 Claims. (Cl. 260—286)

This invention relates to a new class of enol betaines and more particularly to enol betaines of 1-halo-2(linear) alkoxyhexafluoro-1-cyclopentene and their process of preparation. The enol betaines are useful as ultraviolet light absorbers and brighteners and have antifungal properties.

3,417,090

REDUCTION OF NITRO COMPOUNDS TO AMINES

Heinrich Pelster, Leverkusen, Claus Konig, Leverkusen-Schlebusch, and Rolf Putter, Dusseldorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 470,211, July 7, 1965. This application Sept. 15, 1965, Ser. No. 487,574
10 Claims. (Cl. 260—288)

Organic nitro compounds are reduced to the corresponding primary amino compounds with sulphur dioxide in a sulphuric acid medium in the presence of a catalyst, preferably hydriodic acid or a compound which forms hydriodic acid under the reaction conditions.

3,417,091

NITRO IMIDAZOYL ETHYL PYRIDINES AND QUINOLINES

Siegfried Pickholz and Maurice Shapero, London, England, assignors to Ward Blenkinsop & Company Limited, London, England, a British company

No Drawing. Filed May 4, 1966, Ser. No. 547,413
Claims priority, application Great Britain, May 10, 1965, 19,718/65
11 Claims. (Cl. 260—288)

Mononitro imidazoyl ethyl pyridines and quinolines, useful as anti protozooans, and alternative processes for obtention are described.

3,417,092

METHOD FOR PRODUCING PYRIDINE

Tetsuro Matsumoto and Akira Tamano, Niigata-shi, Japan, assignors to Japan Gas-Chemical Company, Inc., Tokyo, Japan, a corporation of Japan

No Drawing. Continuation of application Ser. No. 313,735, Oct. 4, 1963. This application June 29, 1966, Ser. No. 561,647
Claims priority, application Japan, Oct. 5, 1962, 37/44,213
1 Claim. (Cl. 260—290)

This application relates to the selective synthesis of pyridine in high yields and accompanied by little or no production of picolines. The process comprises reaction of an aliphatic aldehyde having four carbon atoms in a straight chain with ammonia in the presence of methanol, formaldehyde, trioxane, paraformaldehyde or mixtures thereof on a condensation catalyst and at a temperature of from 300° to 600° C. More specifically, this application discloses addition of a promoter, which may be a halide or sulfate of zinc or cadmium, to the catalyst in the reaction mixture.

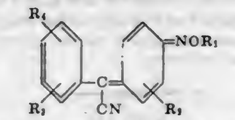
3,417,093

α-PHENYL-α(4-TERTIARY AMINO ALKOXYIMINO-2,5 - CYCLOHEXADIENE - 1 - YLIDENE)ACETONITRILES AND PROCESS FOR PREPARING THEM

Gunther Seidl, Frankfurt am Main, and Georg Nesemann, Lorsbach, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,197
Claims priority, application Germany, Feb. 18, 1964, F 42,032
8 Claims. (Cl. 260—294.7)

Compounds of the formula



wherein R_1 is a tertiary aminoalkyl and R_2, R_3 and R_4 are chlorine or methyl, said compounds having fungicidal and parasiticidal properties.

3,417,094

OPTICALLY ACTIVE 1,2,3,4,5,6-HEXAHYDRO-6-PHENYL - 2,6 - METHANO - 3 - BENZAZOCINES AND PROCESS

Martin Dexter, Briarcliff Manor, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed May 5, 1965, Ser. No. 453,474
4 Claims. (Cl. 260—294.7)

Racemic d,l-1,2,3,4,5,6-hexahydro-2,6-methano-3-benzazocines are resolved through use of one-half equivalent of an optically active isomer of mandelic acid and one-half equivalent of an optically inactive carboxylic acid.

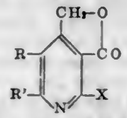
3,417,095

METHOD OF PRODUCING PYRIDOXINE BY REDUCING A PRECURSOR GAMMA LACTONE WITH A COMPLEX BOROHYDRIDE

Aldo Fabrucci, Anacleto Gianantonio, and Sergio Sacerdoti, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,030
Claims priority, application Great Britain, Mar. 8, 1965, 9,732/65
2 Claims. (Cl. 260—296)

Improved yields (as high as 97%) of a pyridoxine, its hydrochloride, and some of its known intermediates are obtained by gradually adding a solution of 1–2 moles of sodium borohydride in a lower alkanol to a mixture, in a lower alkanol, of about 0.5–1 mole of $CaCl_2$ and one mole of a compound of the general formula



wherein R represents hydroxy, acyloxy or amino, R' is a lower alkyl radical and X is hydrogen or halogen, at a temperature of 10–60° C., $Ca(BH_4)_2$ being formed in situ.

3,417,096

CERTAIN 5(1-BENZOYL-3-INDOLYLMETHYL) TETRAZOLES

Peter Frederick Juby, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 1, 1965, Ser. No. 468,917
5 Claims. (Cl. 260—308)

1. 5-[(4-chlorobenzoyl)-3-indolylmethyl]tetrazole.

3,417,097

ROTATIONAL MOLDING OF LARGE HOLLOW OBJECTS

Frank P. Downing, Succasunna, John M. Kolyer, Convent, and John H. Chen, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Mar. 29, 1966, Ser. No. 538,309
6 Claims. (Cl. 264—308)

Provide a mold for large articles containing an inert atmosphere and a liquid charge of desired viscosity profile consisting of e-caprolactam, anionic polymerization catalyst and promoter. Heat to a temperature between melting point of lactam and melting point of resulting polymer and rotate at 1–20 r.p.m. until the charge is completely distributed over the inner mold surface. Continue heating the mold (150–175° C.) to obtain at least 20% crystallization of resulting polymer, then repeat process with second liquid charge to provide final hollow object with wall thickness of 10–100 mils.

3,417,098

PHOSPHORYL DERIVATIVES OF 4-IMIDAZOLIDONES

Jésus Anatol, Paris, France, assignor to Etablissements Kuhlmann, Paris, France

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,068
Claims priority, application France, Mar. 13, 1964, 967,305
4 Claims. (Cl. 260—309.7)

Compounds related to phosphocreatine and phosphocreatinine, having anti-fatigue properties.

3,417,099

PRODUCTION OF EPISULPHIDES

Friedrich K. Lautenschlaeger, Toronto, Ontario, Canada, assignor to The Dunlop Company Limited, a British company

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,739
Claims priority, application Great Britain, Mar. 14, 1964, 10,887/64; May 1, 1964, 18,119/64
12 Claims. (Cl. 260—327)

Preparation of monomeric vicinal episulphides by reducing a chloropolysulphide, being the reaction product of a hydrocarbon olefin with a sulphur chloride compound having a mol ratio of sulphur to chlorine of at least 0.5:1 in a nonacidic reducing system, e.g., aluminum amalgam and water; nascent hydrogen; lithium aluminum hydride; glucose in a basic medium; and sodium hydrosulphide and/or sodium sulphite. These episulphides may be polymerized or copolymerized to form polymers useful, for example, in adhesive compositions.

3,417,100

8,(9)-DEHYDRO-6-THIAESTRONE-3-METHYL ETHER

Henderikus O. Huisman, Amstelveen, Johannes Gerardus Westra, Amsterdam-Osdorp, Willem Nico Speckamp, Amstelveen, and Upendra K. Pandit, Amsterdam, Netherlands (all % Laboratory for Organic Chemistry University of Amsterdam, Nieuwe Achtergracht 129, Amsterdam, Netherlands)

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,167
2 Claims. (Cl. 260—327)

Disclosed is the preparation of dehydro-6-thiaestrone-3-methyl ethers useful as antifertility agents by reaction of 7-methoxythiachroman-4-one with a vinyl magnesium halide, reaction of the resulting 4-vinyl-4-hydroxy compound with 2-methyl-1,3-cyclopentadione and cyclization of the product obtained thereby.

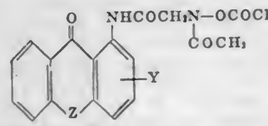
3,417,101
FUSED RING COMPOUNDS

Stanley C. Bell and Scott J. Childress, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Original application Nov. 9, 1964, Ser. No. 409,818, now Patent No. 3,329,676, dated July 4, 1967. Divided and this application Jan. 10, 1967, Ser. No. 656,974

3 Claims. (Cl. 260—328)

This invention relates to fused ring compounds of the formula:



wherein Y is selected from the group of hydrogen, halogen, (lower) alkyl, and halo (lower) alkyl; Z is selected from the group consisting of a direct bond, a sulfur atom, an oxygen atom, the imino radical, methylene, ethylene, and ethylidene, which are intermediates to 5-phenyl-1,4-benzodiazepine compounds having central nervous system activity.

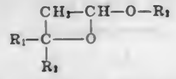
3,417,102
OXETANE COMPOUNDS

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

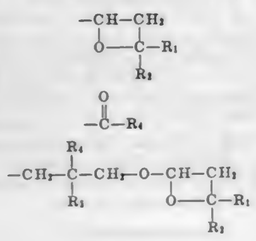
No Drawing. Filed May 19, 1965, Ser. No. 457,210

12 Claims. (Cl. 260—333)

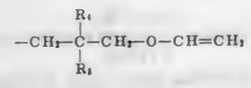
Oxetane compounds having the general structural formula:



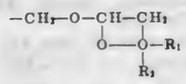
in which R_1 and R_2 are C_1 to C_5 perfluoroalkyl, chlorodifluoromethyl or fluorodichloromethyl radicals; R_3 is a C_1 to C_6 alkyl substituted with one cyano, C_1 to C_5 alkoxy, acrylyloxy, or methacrylyloxy radical; C_2 to C_5 alkenyl; C_2 to C_5 alkenyl substituted with one cyano or C_1 to C_5 alkoxy radical; or has the structural formula:



or



in which R_4 and R_5 are C_1 to C_5 alkyl, C_2 to C_5 alkenyl or radicals having the structural formulas:



or

are provided for use as flame resistant liquids, films and coatings.

3,417,103
PRODUCTION OF SULFOLANE

Paul F. Warner, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 21, 1966, Ser. No. 595,903

6 Claims. (Cl. 260—332.1)

Sulfur dioxide is removed from a solution of a sulfolene compound by subjecting the solution to a partial vacuum, adding a treating agent selected from the group consisting of calcium oxide, calcium hydroxide, magnesium oxide, magnesium hydroxide, and admixtures thereof to convert any remaining sulfur dioxide to the corresponding sulfite salt, the treating agent and the corresponding sulfite salt being insoluble in said solution, and filtering the thus treated solution to remove said sulfite salt. The solution is then subjected to hydrogenation conditions to convert the sulfolene compound to the corresponding sulfolane compound.

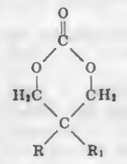
3,417,104
CYCLIC CARBONATES

Fritz Hostettler and Eugene F. Cox, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,673

7 Claims. (Cl. 260—340.2)

1. A compound of the formula



wherein R is nitro, and wherein R_1 is of the group consisting of alkenyl of up to 8 carbon atoms; alkenyloxymethyl, the alkenyl moiety of which contains up to 8 carbon atoms; cycloalkenyloxymethyl, the cycloalkenyl nucleus of which contains from 5 to 6 carbon atoms; and alkenylbenzyloxymethyl, the alkenyl moiety of which contains from 2 to 5 carbon atoms.

3,417,105
9,10-SECOGONENES

Gordon Alan Hughes, Haverford, Pa., and Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087; said Hughes assignor to said Smith

Continuation-in-part of application Ser. No. 228,384, Oct. 4, 1962. This application Apr. 7, 1966, Ser. No. 540,923

21 Claims. (Cl. 260—340.9)

A 2-alkyl-2-(6-phenyl-3-oxohexyl)-1,3 - cyclopentanedione having an activating group on the phenyl substituent and at least one position ortho to the position of chain attachment free of substituent groups is cyclized under aldol conditions to give a 4-phenethyl-5,6,7,8-tetrahydroindane-1,5-dione which upon hydrogenation to the corresponding saturated indane and cyclodehydration forms a gona-1,3,5(10),9(11)-tetraene nucleus convertible upon reduction to gona-1,3,5(10)-trienes having the natural steroid configuration.

3,417,106
4-OXA-19-NOR-$\Delta^{1,5(10)}$-PREGNADIENE-3,20-DIONE STEROIDS AND THEIR PREPARATION

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,554

10 Claims. (Cl. 260—340.5)

Novel 4 - oxa - 19 - norpregna-1,5(10)-diene-3,20-dione steroids which are, inter alia, progestational and corticoidal agents and processes for the preparation of such compounds.

3,417,107
NAPHTHOSPIROFURAN COMPOUND

Saul Chodroff, Brooklyn, and Ram S. Vazirani, New York, N.Y., assignors to Norda Essential Oil and Chemical Co., Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 17, 1966, Ser. No. 572,896

8 Claims. (Cl. 260—346.1)

A new olfactive type of compound or mixture of isomers which is characterized by a dimethyl perhydronaphthospiro furan structure having a unique woody-ambergris note and valuable fixative properties is made starting from myrcene and a lower dialkyl itaconate. The compound or mixture of isomers of this invention is unusually tenacious, softens harsh notes in perfumes and allows the perfumes to diffuse uniformly over a longer period than other similar products.

3,417,108
PRODUCTION OF DICARBOXYLIC ACID ANHYDRIDES BY CATALYTIC OXIDATION

Walter J. Stefaniak, Cheektowaga, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 80,995, Jan. 6, 1961. This application Aug. 25, 1965, Ser. No. 482,614

13 Claims. (Cl. 260—346.4)

Production of dicarboxylic acid anhydrides by vapor phase catalytic oxidation of an organic compound in the presence of a catalyst comprising essentially a vanadium oxide and, as a modifier therefor, silver phosphate in an amount equal to at least 2% of the weight of the vanadium oxide, calculated as vanadium pentoxide. The catalyst may optionally include molybdenum oxide and/or uranium oxide, and preferably also contains silver nitrate as an auxiliary promoter.

3,417,109
PREPARATION OF MONO-TERPENOID PRODUCTS

Govindan Velayudhan Nair and Gopalkrishna Dattaram Pandit, Bandra, Bombay, India, assignors to Lever Brothers Company, New York, N.Y., a corporation

No Drawing. Filed May 23, 1966, Ser. No. 551,898

Claims priority, application Great Britain, May 24, 1965, 21,805/65

9 Claims. (Cl. 260—347.8)

The specification discloses the preparation of linalool oxide by contacting a 2,3-epoxy ester of a 2,6-dimethyloctadien-8-ol with an acid catalyst in the presence of an inert solvent at a temperature between 0° C. and the reflux temperature of the solvent.

3,417,110
PROCESS FOR THE PRODUCTION OF 3-(LOWER) ALKOXY - ESTRA - 1,3,5(10) - TRIEN-17β-YLOXY-(LOWER)ALKYL CARBOXYLIC ACID

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 7, 1965, Ser. No. 454,195

1 Claim. (Cl. 260—397.1)

Lower alkyl carboxylic acid esters of 3-methoxyestradiol are prepared by reaction of a 3-alkyl ether of estradiol with potassium tetriary butoxide and a selected lower alkyl ester reactant, for example, an alkylbromacetate or an unsaturated fatty acid ester. The products formed have estrogenic and antilipemic activity.

3,417,111
10-FORMYL FLUORIDE AND -ACETYL STEROIDS AND PROCESSES FOR THEIR PREPARATION

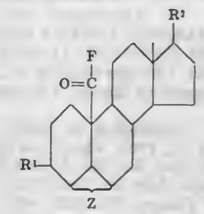
Lawrence H. Knox, deceased, late of Mexico City, Mexico, by Anne A. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Mar. 29, 1966, Ser. No. 539,257

Claims priority, application Mexico, Apr. 2, 1965, 81,886

17 Claims. (Cl. 260—397.1)

1. Steroids of the formula:



wherein R^1 is an oxygen atom or the group



in which R^3 is hydrogen or a hydrocarbon carboxylic acyl group; R^2 is an oxygen atom or the group



in which R^4 is hydrogen or a hydrocarbon carboxylic acyl group and R^5 is hydrogen, (lower)alkyl, (lower)alkenyl, or (lower)alkynyl; and Z is a carbon-carbon double bond between C–4 and C–5 or between C–5 and C–6 or a carbon-carbon single bond between each of C–4 and C–5 and C–5 and C–6.

3,417,112
15-OXYGENATED DERIVATIVES OF 9β,10α-PREGNA-3,20-DIONE COMPOUNDS

Engbert Harmen, Reerink, Pieter Westerhof, and Hendrik Frederik Louis Schöler, Van Houtenlaan, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y.

No Drawing. Continuation-in-part of application Ser. No. 343,233, Feb. 7, 1964. This application July 9, 1965, Ser. No. 470,893

Claims priority, application Great Britain, Sept. 14, 1964, 37,443/64

3 Claims. (Cl. 260—397.4)

15 hydroxy, alkoxy or alkoxy derivatives of 9β,10α-pregna-3,20-dione compounds. Examples are 15α-hydroxy - 9β,10α - pregn - 4 - ene-3,20 - dione, 15α,17α - dihydroxy-9β,10α-pregn-4-ene-3,20 dione and the diacetates thereof. The compounds have in general anti-inflammatory activities. This abstract is not intended to be a description of the invention defined by the claims.

3,417,113
CERTAIN MONOARYLLEAD TRISACYLATES AND A PROCESS FOR PREPARING THEM

Henricus G. J. Overmars, Zeist, Netherlands, assignor, by mesne assignments, to International Lead Zinc Research Organization, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,670

Claims priority, application Netherlands, Mar. 2, 1964, 6402097

16 Claims. (Cl. 260—408)

The present application discloses monoaryllead trisacylates in which at least one of the acyl radicals is halogen substituted with a halogen of the group consisting of chlorine and bromine. It also discloses a process

for making such compounds by reacting an alkylplumbonic acid with a monohalogen substituted alkylmonocarboxylic acid in a common solvent with heat. The application also discloses a process for making thermostable polyurethane foams by the reaction of at least one polyfunctional isocyanate, and at least one polyhydroxy compound in cooperation with a blowing agent, by using as a catalyst one of the halogenated monoaryllead trisacylates as disclosed herein.

3,417,114
METHOD OF MAKING AMIDES FROM MOISTURE AND ACID-GAS CONTAINING ESTERS

Vincent P. Kuceski, Chicago Heights, Ill., assignor to The C. P. Hall Company of Illinois, Chicago, Ill., a corporation of Ohio

No Drawing. Continuation of application Ser. No. 209,309, July 12, 1962, which is a continuation-in-part of application Ser. No. 55,850, Sept. 14, 1960. This application July 20, 1965, Ser. No. 473,522

6 Claims. (Cl. 260—404)

Amides are produced by reacting an ester of a carboxylic acid with an amine, using as catalyst an alkoxide of an alkali metal. The ester is first heated to at least 75° C. under a pressure of no more than 500 mm. of mercury to remove moisture and acid gases which would prevent the reaction, and then converted to an amide without heating to initiate the reaction.

3,417,115
PROCESS OF PREPARING ORGANOMETALLIC ISOCYANATES

Walter Stamm, Tarrytown, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,182

12 Claims. (Cl. 260—429.7)

A process for preparing organometallic isocyanates by reacting isocyanic acid with an organometallic oxide. The metallic elements are selected from Groups IV and V of the Periodic System. The organic substituents attached to the metallic atom are relatively inert hydrocarbon radicals.

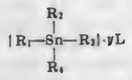
3,417,116
OMEGA-CYANO-POLYMETHYLENETIN LEWIS ACID COMPLEXES AND THE PREPARATION THEREOF

William J. Considine, Somerset, and Gerald H. Reifenberg, Plainfield, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

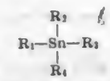
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,938

19 Claims. (Cl. 260—429.7)

1. A method for preparing an organotin complex of the general formula:



in which R_1 is $NC(CH_2)_m$—, m is an integer at least about 2, R_2, R_3, and R_4 each is an alkyl radical, an aryl radical or $NC(CH_2)_m$—, y is 1 or 2, and L is a Lewis acid which comprises reacting (i) a first compound of the formula:



with (ii) a Lewis acid in an inert non-donor solvent, and recovering said complex.

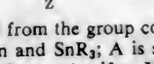
3,417,117
ORGANOTIN CARBONATES, THEIR THIO-ANALOGS AND THE PREPARATION THEREOF

Alwyn George Davies, London, England, assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 26, 1964, Ser. No. 406,570

6 Claims. (Cl. 260—429.7)

In accordance with certain of its aspects, this invention relates to novel compounds and to a process for preparing a novel compound having the general formula



in which R' is selected from the group consisting of alkyl, aryl, alkenyl, hydrogen and SnR_3; A is selected from the group consisting of carbon and sulfur; X is selected from the group consisting of oxygen and peroxide; Z is selected from the group consisting of oxygen and sulfur; Z is different from A; R is selected from the group consisting of alkyl, aryl, alkenyl, and n is 0, 1, 2 or 3, which method comprises reacting together Z=A=Z with an organotin compound having the formula $R_nSn(XR')_{4-n}$ or

$$(R_3Sn)_2O$$

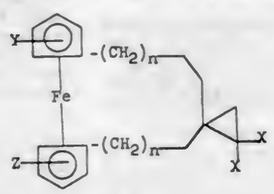
3,417,118
BICYCLIC FERROCENES

Richard A. Schnettler, Milwaukee, and John T. Suh and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

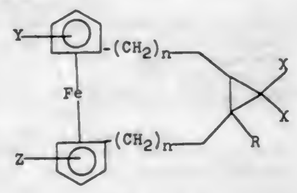
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,735

6 Claims. (Cl. 260—439)

1. A compound selected from the class consisting of compounds of the formulae



Formula 1



Formula 2

wherein R is hydrogen, an alkyl of 1 to 8 carbon atoms, an aryl or an aralkyl; X is hydrogen, bromo or chloro, n is 0 to 1; and Y and Z are hydrogen, halo, trifluoromethyl or lower alkyl.

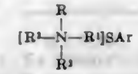
3,417,119
PREPARATION OF QUATERNARY AMMONIUM ALUMINUM HYDRIDES

Robert Ehrlich, Morristown, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed May 9, 1963, Ser. No. 280,495

13 Claims. (Cl. 260—448)

1. The process for preparing quaternary ammonium aluminohydrides comprising contacting an alkali metal aluminum hydride with a quaternary ammonium thioaryloxide of the formula:



wherein R, R^1, R^2 and R^3 are alkyl radicals and Ar is selected from the group consisting of aryl and substituted aryl radicals.

3,417,120
PREPARATION OF ORGANOSILICON COMPOUNDS BY REACTION OF HYDROGENO-ORGANOSILICON COMPOUNDS WITH HYDROXYL-GROUP-CONTAINING ORGANIC COMPOUNDS

Jean Boissieras and Marcel Joseph Lefort, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed July 9, 1965, Ser. No. 470,928

Claims priority, application France, July 16, 1964, 981,903, Patent 1,411,228; May 18, 1965, 17,464

6 Claims. (Cl. 260—448.2)

Hydroxylamine and N-substituted hydroxylamines are useful catalysts in the reaction of hydrogeno-organosilicon compounds with hydroxy-group-containing organic compounds.

3,417,121
SUBSTITUTED 1,2-SILTHIACYCLOPENTANES AND PROCESS FOR PRODUCING THE SAME

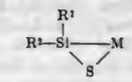
Götz Koerner, Mulheim (Ruhr), Germany, assignor to Th. Goldschmidt A.-G., Essen, Germany

No Drawing. Filed June 1, 1966, Ser. No. 554,326

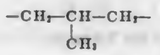
Claims priority, application Germany, June 10, 1965, G 43,836

10 Claims. (Cl. 260—448.2)

1. 1,2-silthiacyclopentanes of the formula

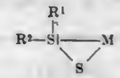


wherein M stands for $—(CH_2)_3—$ or



and R^1 and R^2 are alkyl or alkoxy of at the most 6 carbon atoms or phenyl.

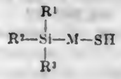
5. A process of preparing 1,2-silthiacyclopentanes of the general formula



wherein

M is a hydrocarbon which connects the silicon and the sulphur atoms through three carbon atoms; and

R^1 and R^2 stand for alkyl or alkoxy of at the most six carbon atoms or phenyl, which comprises heating mercaptans of the general formula



wherein M, R^1 and R^2 have the indicated meaning and R^3 is alkoxy of at the most three carbon atoms, to a temperature of above 150° C. and removing the alcohol R^3H thus formed by distillation.

3,417,122
IMIDATE ESTERS AND AMIDINES AND THE SALTS THEREOF

James M. McManus, Gales Ferry, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 7, 1963, Ser. No. 300,690, now Patent No. 3,344,138, dated Sept. 26, 1967. Divided and this application July 27, 1966, Ser. No. 576,167

5 Claims. (Cl. 260—453)

1. A compound selected from the group consisting of organic bases of the formula:



and the acid addition salts thereof wherein R is selected from the group consisting of lower alkenyl, lower fluoroalkyl, lower chloroalkyl, cycloalkyl containing up to 6 carbon atoms, monochlorobenzyl, mono-(lower alkoxy) benzyl and β-phenylethyl, n is an integer of from 1 to 3 inclusive and X is selected from the group consisting of amino and lower alkoxy.

3,417,123
HETEROAROMATIC BORON COMPOUNDS AND THEIR PREPARATION

Robert D. Offenhauer, Hopewell Township, Mercer County, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,625

11 Claims. (Cl. 260—462)

5,12-dibora-6,13-dioxarodibenz-(a,h)-anthracenic compounds are prepared by reacting 2,5-diphenylhydroquinone with boron trichloride followed by heating in the presence of aluminum chloride as a catalyst to form heteroaromatic rings. Polymers of high heat resistance are obtained by the condensation polymerization of dihydroxy derivatives of the monomers.

3,417,124
PREPARATION OF AROMATIC NITRILES BY THE LIQUID PHASE DEHYDRATION OF AMIDES

Charles F. Kohll and Nanno Fekkes, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,094

Claims priority, application Netherlands, Apr. 23, 1965, 6505181

7 Claims. (Cl. 260—465)

Dehydration of aromatic mono- and di-carboxamides to aromatic mono- and di-nitriles by liquid phase reaction with an anhydride of an alkane or monochloroalkane mono- or di-carboxylic acid in the presence of a metal salt of a weak organic acid, preferably in the presence of a weak organic acid.

3,417,125
PROCESS FOR PREPARING UNSATURATED NITRILES BY CATALYTIC AMMOXIDATION OF OLEFINS

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 483,797, Aug. 30, 1965, and Ser. No. 663,558, Aug. 28, 1967. This application Nov. 1, 1967, Ser. No. 679,648

17 Claims. (Cl. 260—465.3)

Unsaturated nitriles such as acrylonitrile and methacrylonitrile are prepared in excellent yields by the ammoxidation of propylene or isobutylene in the presence of a catalyst containing (I) molybdenum oxide, tellurium oxide and a Group IIA alkaline earth metal phosphate or (II) a Group IIA alkaline earth metal molybdate, tellurium oxide and phosphorus pentoxide.

3,417,126

METHOD OF PRODUCING MALONONITRILE

Michiichi Taguchi and Susumu Shoji, Neigun, Toyama, Japan, assignors to Nissan Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 14, 1966, Ser. No. 520,652
4 Claims. (Cl. 260—465.8)

The method of producing malononitrile which comprises the step of reacting cyanogen chloride with a stoichiometrically excessive amount of acetonitrile, both in the gaseous phase, at a temperature between 700 and 950° C. in the presence of chlorine for from 1 to 15 seconds.

3,417,127

NITRATION OF HYDROCARBONS WITH HNO_3-$(CF_3CO)_2O$ MIXTURE

Richard D. Smetana, Beacon, and Harry Chafetz, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1967, Ser. No. 644,783
4 Claims. (Cl. 260—466)

A method of nitrating alkanes and cycloalkanes of from 2 to 50 carbons to form nitrate and nitro derivatives comprising contacting said alkanes and cycloalkanes with a mixture of nitric acid (HNO_3) and trifluoroacetic anhydride ($(CF_3CO)_2O$). The trifluoroacetic anhydride functions in combination with the nitric acid to accelerate the rate and extent of nitration and direct the reaction towards the formation of nitrate products and trifluoroacetate by-products. By standard hydrogenation procedures the nitrates in the resultant nitration product can be readily converted to their corresponding alkanol and cycloalkanol and the nitro products therein can be converted to their corresponding alkyl and cycloalkyl amines. The trifluoroacetate by-products can be hydrolyzed to their corresponding alcohols.

3,417,128

METHOD OF PREPARING ACRYLONITRILE OR METHACRYLONITRILE BY CATALYTIC AMMOXIDATION OF PROPYLENE OR ISOBUTYLENE

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,799
10 Claims. (Cl. 260—465.3)

Propylene or isobutylene, ammonia and oxygen at an elevated temperature are passed over a catalyst containing molybdenum oxide, tellurium oxide and a copper phosphate to form acrylonitrile or methacrylonitrile.

3,417,129

PROCESS FOR THE MANUFACTURE OF ACETOACETIC ACID METHYL ESTER AND ACETOACETIC ACID ETHYL ESTER

Otto Probst and Lothar Hörnig, Frankfurt am Main, and Lothar Hirsch, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 22, 1965, Ser. No. 466,114
Claims priority, application Germany, June 26, 1964, F 43,266
3 Claims. (Cl. 260—483)

A process has been provided for producing acetoacetic acid methyl ester and acetoacetic acid ethyl ester by reacting a diketene with methyl alcohol or ethyl alcohol in the presence of specific amines to produce the acid ester. Of the various advantages accruing by the use of the specific amines as an esterification catalyst, the ease of separation, the reduction of the distillation requirements and a more easily handled residual sump product are only a few. A continuous process has provided especially attractive advantages.

3,417,130

OLIGOMERIZATION

Roy L. Pruett, Charleston, and William R. Myers, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 24, 1964, Ser. No. 377,481
7 Claims. (Cl. 260—485)

A process for oligomerizing a conjugated diene, alone or in conjunction with other ethylenically unsaturated compounds, which comprises contacting the conjugated diene with a di-indenyl nickel catalyst. The products produced by the process possess ethylenic unsaturation which represents functional moieties susceptible to additional reactions.

3,417,131

METHOD FOR THE PREPARATION OF HYDROXY ESTERS

Joseph B. Mettalia, Jr., Southampton, and Edward H. Specht, Huntingdon Valley, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 25, 1966, Ser. No. 522,836
10 Claims. (Cl. 260—484)

A process for preparing alkyl 7-hydroxy-2,5-heptadienoates by reacting butadiene monoxide, acetylene, nickel carbonyl, an alkanol of 1 to 8 carbon atoms and an acid that in the reaction system forms a salt with nickel carbonyl that establishes a buffered system.

3,417,132

4,7-METHANOINDENE DERIVATIVES

Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,090
5 Claims. (Cl. 260—488)

1. A compound selected from the group consisting of 3a,4,5,6,7,7a-hexahydro-4,7-methanoindene and 2,3,3a,4,5,6,7,7a-octahydro-4,7-methanoindene which is substituted in one of the 5 and 6 positions with both a radical of the formula:

X—O

and with a radical of the formula:

Z—

wherein X is a member selected from the group consisting of hydrogen and an acyl group derived from a lower alkanoic acid having 1 to 7 carbon atoms group, O is oxygen and Z is an alkyl group having 1–8 carbon atoms.

3,417,133

OXIDATION OF ETHYLENE OR PROPYLENE WITH A GROUP VIII NOBLE METAL COMPOUND, OXYGEN AND AN AMINE CARBOXYLATE

Brian Walton Harris, Carshalton, Surrey, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,883
Claims priority, application Great Britain, Nov. 9, 1963, 44,308/63
9 Claims. (Cl. 260—497)

1. In the process for the production of esters of unsaturated alcohols which comprises reacting ethylene or propylene with an oxidizing agent in a medium comprising and organic carboxylic acid and the carboxylate ion of said acid, and a catalyst which is a compound of a metal of the platinum group, the improvement which comprises reacting said ethylene or propylene with oxygen

or air, in a reaction zone in the absence of a redox system, with a salt of said organic carboxylic acid and an amine which is a member of the group consisting of diethylamine, triethylamine, diisopropylamine, ethylene diamine, cyclohexylamine, benzylamine and piperidine, at a temperature of between 30° C. and 200° C. and at a pressure of 2 to 100 atmospheres recovering said ester, substantially removing the water formed and recycling the unreacted ethylene or propylene into said reaction zone.

3,417,134

UNSATURATED SULFONIC ACIDS

Heinrich Rinkler and Gunther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,412
Claims priority, application Germany, Aug. 7, 1965, F 46,844
9 Claims. (Cl. 260—506)

Olefinically unsaturated amidomethylene-N-carboxylic acid amide sulfonic acids and salts thereof, useful in the copolymerization with styrene and divinyl benzene are prepared and have the formula

$$R—CO—NH—CH_2—NH—CO—(CH_2)_x—SO_3Me$$

in which R—CO— is acryl, methacryl, crotonyl or cinnamyl x is an integer from 1 to 4, and Me is hydrogen or an alkali metal.

3,417,135

CONVERSION OF PYRIDINE TO BENZOIC ACID

Louis Schmerling, Riverside, and Walter G. Toekelt, Downers Grove, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,776
12 Claims. (Cl. 260—515)

Conversion of pyridine, or similar heterocyclic compounds characterized by an aromatic heterocyclic ring containing a tertiary amino nitrogen, to a carbocyclic aromatic carboxylic acid by reacting the heterocyclic compound with potassium acetate in the presence of an alkaline catalyst at a temperature of 150°–300° C., then hydrolyzing and acidifying the resultant product.

3,417,136

AMINOCARBOXYLIC ACIDS AND SALTS THEREOF

Robert A. Hovden, Wayzata, Minn., assignor to Cargill, Incorporated, a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,334
8 Claims. (Cl. 260—534)

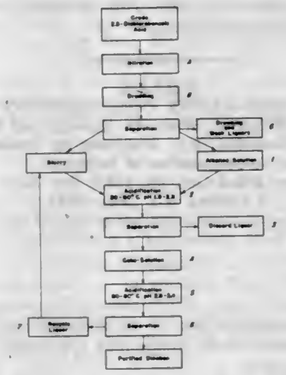
Amphoteric aminocarboxylic acids and salts having desirable surfactant properties, good color and increased wetting power and water solubility when compared to known aminocarboxylic acid surfactants, of the formula $RO[CH_2]_3N[H_n][R_1COOX]_{2-n}$ where R is an alkyl radical of from 6 to 24 carbon atoms and, in addition, may contain olefin oxide, R_1 is a straight or branched chain alkyl radical of from 1 to 3 carbon atoms, X is hydrogen or a positively charged salt forming radical, and n is 0 or 1. The method for the manufacture of these compounds includes cyanoethylation of long chain alkyl alcohols having from 6 to 24 carbon atoms with acrylonitrile in the presence of an alkaline catalyst. The resulting β-alkoxypropionitrile is hydrogenated in the presence of a catalyst to γ-alkoxypropylamine. The γ-alkoxypropylamine is subsequently reacted with either 1 or 2 moles of a suitable acid forming reactant.

3,417,137

PROCESS FOR THE PURIFICATION OF CRUDE 2,5-DICHLORO-3-NITROBENZOIC ACID (DINOBEN)

David E. Graham, Westfield, N.J., assignor to GAF Corporation, a corporation of Delaware

Filed Mar. 3, 1966, Ser. No. 531,422
4 Claims. (Cl. 260—525)



1. A process for purifying 2,5-dichloro-3-nitrobenzoic acid from a crude nitration admixture thereof, which comprises mixing the crude nitration admixture with a solution selected from the group consisting of water and aqueous alkaline solutions and adjusting the conditions of temperature and pH range in a series of slurry and precipitation steps, each succeeding adjustment of at least one of the conditions of temperature and pH being higher than in the immediately preceding precipitation step beginning with a temperature in the range of about 20–60° C. and a pH in the range of about 1.8 to 2.8 and ending with a temperature of about at least 50° C. up to below the boiling point of the 2,5-dichloro-3-nitrobenzoic acid solution and a pH of about at least 2.4 to about 4 and separating and recovering the precipitated purified 2,5-dichloro-3-nitrobenzoic acid from the final step, the liquors of each precipitation step after the initial precipitation step being recycled to slurries of preceding precipitation steps.

3,417,138

PURIFICATION OF DODECANEDIOIC ACID

Emanuel M. Amir and James K. Nickerson, Baytown, Tex., assignors to Esso Research and Engineering Company

Filed June 13, 1966, Ser. No. 556,985
8 Claims. (Cl. 260—537)

1. A method for purifying crude dodecanedioic acid obtained by nitric acid oxidation of cyclododecanol which comprises

dissolving said crude dodecanedioic acid in a sufficient amount of a polyethylene glycol dialkyl ether, said polyethylene glycol dialkyl ether having 1–4 ethylene groups and each alkyl group of said ether having 1–5 carbon atoms at a temperature sufficiently high to form a solution within the range of 50° to about 250° C.;

cooling said solution to a temperature sufficient to crystallize dodecanedioic acid from said solution within the range of 15° to about 30° C.; and

recovering said crystallized dodecanedioic acid.

3,417,139
COUPLING COMPONENTS FOR AZO DYESTUFFS

Jack L. Towle, East Cleveland, and William H. Meek, Jr., Sagamore Hills, Ohio, assignors to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,554
6 Claims. (Cl. 260—558)

This invention comprises new organic compounds useful as coupling components in the syntheses of azo disperse dyes. They can be prepared by reacting primary or secondary aliphatic amines with variously substituted N-β-carboalkoxyethylanilines.

3,417,140
AMIDO-AMINE COMPOSITIONS

Wayne F. McWhorter, Harry O. Kirwan, and Charles E. Banfield, Louisville, Ky., assignors to Celanese Coating Company, a corporation of Delaware

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,072
5 Claims. (Cl. 260—561)

Amido-amine compositions are prepared by reacting a mixture of a fatty amine and a polyalkylene polyamine with an alpha-beta unsaturated carbonylic compound through the Michael addition of an amine group across the unsaturated group of the carbonylic compound and through the condensation of an amine group with the carbonylic group. Such compounds are useful as epoxy resin curing agents.

3,417,141
PROCESS FOR SEPARATING MONOAMINES FROM DIAMINES BY LIQUID-LIQUID EXTRACTION

Julian Feldman and Jay K. Seyler, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 25, 1965, Ser. No. 467,113
17 Claims. (Cl. 260—563)

A process for the separation of monoamines from diamines having at least six carbon atoms per molecule by liquid-liquid extraction. A mixture of the monoamines and diamines is contacted with a polar solvent, e.g., a lower alkanol, and a non-polar solvent, e.g., a hydrocarbon having from 4 to 18 carbon atoms per molecule, and an extract phase containing the monoamines and the non-polar solvent is recovered.

3,417,142
MANUFACTURE OF ACETONE-DIPHENYLAMINE CONDENSATION PRODUCT

Morley Morgana, Baton Rouge, La., assignor to Grant Chemical Company, Inc., Baton Rouge, La., a corporation of Louisiana

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,772
3 Claims. (Cl. 260—576)

A process for the manufacture of acetone-diphenylamine condensation product adaptable to a continuous operation, which by control of the reaction variables such as temperature, residence time, reactant ratios and catalyst ratios, provides a product suitable as an anti-oxidant, having desirable low viscosity characteristics.

3,417,143
IRRADIATION OF β,γ-UNSATURATED BICYCLIC-CYCLOHEXENONES TO FORM β,γ-UNSATURATED BICYCLIC-CYCLOBUTANONES

Herbert C. Kretschmar, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 13, 1966, Ser. No. 556,861
8 Claims. (Cl. 260—586)

Process for the preparation of bicyclic-cyclobutanones by irridiating bicyclic-cyclohexenones with ultraviolet light. The novel bicyclic-cyclobutanones are useful as perfume compositions.

3,417,144
NOVEL OXIDATION PROCESSES

Roger P. Cahoy, Merriam, and Donald M. Coyne, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 224,848, Sept. 19, 1962. This application Dec. 19, 1966, Ser. No. 603,059
5 Claims. (Cl. 260—604)

1. A process for manufacturing methacrolein by contacting a gaseous stream of isobutylene and from about 5 to 0.5 moles of oxygen per mole of isobutylene at a temperature within the range of about 350° to 650° C. for a period of about 0.1 to 20 seconds with an oxidation catalyst prepared by coating a support selected from silica, alumina and silicon carbide with an aqueous solution of a water-soluble chromium compound which is capable of thermal decomposition to chromium oxide and a compound selected from phosphomolybdic acid, silicomolybdic acid, ammonium phosphovanadate and phosphotungstic acid, drying and heating to about 1000° C. to produce a mixed oxide catalyst composition which contains from about 5 to 15 atoms of chromium for every 12 atoms of a metallic element selected from molybdenum, vanadium and tungsten.

3,417,145
METHOD FOR THE PREPARATION OF ACROLEIN

Joseph W. Nemec, Rydal, Pa., and Francis W. Schlaefer, Pennsauken, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,329
4 Claims. (Cl. 260—604)

1. A method for the production of acrolein comprising reacting propylene, oxygen and water in the range of about 300° to about 500° C. in the presence of a catalyst consisting essentially of calcined copper molybdate, in which the range of propylene to oxygen is about 1:0.2 to 1:2 and water to propylene is about 1:1 to 15:1.

3,417,146
PREPARATION OF NITRATED AROMATIC ETHERS

Carl B. Linn, Prairie Village, Kans., and Jerome A. Vesely, Park Ridge, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 511,996, Dec. 6, 1965. This application Mar. 31, 1967, Ser. No. 627,304
7 Claims. (Cl. 260—609)

Aromatic compounds which contain various substituents on the ring thereof are treated with a nitrogen acid in the presence of a hydrogen fluoride catalyst to prepare aromatic compounds containing nitro substituents on the ring without destroying the original compound.

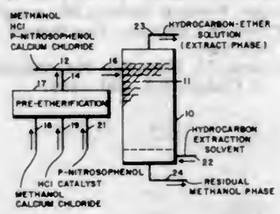
3,417,147
MANUFACTURE OF p-NITROSOPHENYLMETHYL AND p-NITROSOPHENYLETHYL ETHERS

Frederick E. Williams, Newark, Del., assignor to Hercules Incorporated, a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,377
13 Claims. (Cl. 260—612)

1. An etherification process which comprises introducing p-nitrosophenol and an alcohol selected from the group consisting of methanol and ethanol into liquid phase admixture in an alcohol to p-nitrosophenol mole ratio up to 100:1 and in stoichiometric excess of that required for reaction of said alcohol with said p-nitrosophenol to form the corresponding p-nitrosophenylalkyl ether, and then reacting alcohol with p-nitrosophenol, in

said liquid phase, in the presence of an acid as a catalyst, to form said p-nitrosophenylalkyl ether; contacting resulting ether-containing reaction mixture, in the presence of an inorganic halide dissolved therein, with an organic solvent at a temperature of from 0–60° C.; said organic solvent, when said alcohol is methanol, being selected from the group consisting of (1) an aromatic hydrocarbon of the group of benzene and methyl benzenes and (2) an organic halide of the group of isopropyl chloride, isopropyl bromide, n-amyl bromide, n-amyl chloride, and phenyl monochloride, and when said alcohol is ethanol said organic solvent being that above described but with said aromatic hydrocarbon additionally containing from 35–65 volume percent of a saturated hydrocarbon selected from the group consisting of paraffins containing from 5–10 carbon atoms and single ring cycloparaffins containing from 5–7 carbon atoms in the ring and said or-



ganic halide additionally containing from 35–65 volume percent of paraffin hydrocarbon containing from 5–10 carbon atoms; said inorganic halide being selected from the group consisting of calcium chloride, magnesium chloride, lithium chloride, cobalt chloride, nickel chloride, calcium bromide, and sodium iodide, and present in said ether-containing reaction mixture in an amount of from about 12 weight percent up to saturation, based upon said alcohol introduced into said liquid phase admixture whereby said solvent, which exhibits high solvent action for the ether product but is normally completely miscible with the ether-forming reaction mixture is caused by the presence of said inorganic halide to form a liquid phase separate from said reaction mixture and the resulting solvent phase retains the high solvent action of said solvent for said ether product to function as a highly selective solvent therefor, and recovering resulting extract phase as product of the process.

3,417,148
ALKYLATION PROCESS

Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed June 30, 1967, Ser. No. 650,248
10 Claims. (Cl. 260—671)

An alkylatable aromatic compound is alkylated with an olefin-acting compound utilizing a catalyst comprising a crystalline aluminosilicate chemically combined with a metal subfluoride vapor.

3,417,149
TRANSMETHYLATION OF METHYL-SUBSTITUTED PHENOLS

Martin B. Neuworth, Pittsburgh, Eneo C. Moroni, Bethel Park, and Elsio Del Bel, Library, Pa., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 534,810, Mar. 16, 1966. This application Dec. 4, 1967, Ser. No. 687,680
7 Claims. (Cl. 260—621)

A process for the transfer of methyl groups from a phenol containing two or more methyl groups to either phenol itself or a cresol, wherein a catalyst consisting essentially of 100 to 75 percent by weight of alumina and 0 to 25 percent by weight of silica is used at a temperature between 350 and 500° C.

3,417,150
POLYHALOPHENOLS

Herbert F. Bondy, Chesterfield, and James E. F. Williams, Hasland, Chesterfield, England, and Peter Geoffrey Kirk, Oakleigh, Victoria, Australia, assignors to Coalite and Chemical Products Limited, Bolsover, near Chesterfield, Derbyshire, England, a British company

No Drawing. Filed June 28, 1965, Ser. No. 467,695
12 Claims. (Cl. 260—623)

1. A process for the production of a polychlorophenol comprising subjecting a polychlorobenzene having at least three chlorine atoms in the molecule to hydrolysis with an alkali metal hydroxide in an aliphatic diol having up to four carbon atoms, at elevated temperature and in the presence of an amount, sufficient to hinder sublimation of the polychlorobenzene, of a chlorobenzene having fewer chlorine atoms in the molecule than the said polychlorobenzene.

3,417,151
PROCESS FOR REDUCING THE 2,4-DIALKYLPHENOL CONTENT IN THE MANUFACTURE OF MONOALKYLPHENOL

Edward R. Riener, Cinnaminson, N.J., and Thomas J. Durkin, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 142,789, Oct. 4, 1961. This application Sept. 29, 1964, Ser. No. 400,215
5 Claims. (Cl. 260—624)

Process for separating monoalkylphenol and 2,4-dialkylphenol from a mixture of the two which results from the alkylation of phenols. The separation is accomplished by adding boric acid to form a borate ester with the 2,4-dialkylphenol, then distilling off the monoalkylphenol along with some non-esterified products.

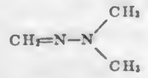
3,417,152
METHOD OF STABILIZING TRICHLOROETHYLENE

Germano Patron, Milan, Italy, Ottavio Merluzzi, Toronto, Ontario, Canada, and Antonio Ferri, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Continuation of application Ser. No. 420,852, Dec. 4, 1964. This application May 31, 1966, Ser. No. 554,220
Claims priority, application Italy, Mar. 11, 1960 1,675/60
1 Claim. (Cl. 260—652.5)

1. A method of stabilizing trichloroethylene containing hydrogen, chloride, and phosgene, comprising the steps of admixing thymol in an amount ranging between substantially 0.001% and 0.01% by weight of the trichloroethylene, or p-tertiaryamyl phenol in an amount ranging between substantially 0.01 and 0.001% by weight of the trichloroethylene, or hydroquinone monomethyl ether present in an amount ranging between substantially 0.001 and 0.1% by weight of the trichloroethylene with at least one epoxide selected from the group consisting of propylene oxide and butylene oxide, said epoxide being present in an amount ranging between substantially 0.05% and 0.3% by weight of the trichloroethylene; dispersing the resulting mixture in said trichloroethylene by repeatedly pumping the trichloroethylene with said mixture added thereto along a recycling path; adding gaseous ammonia to the resulting composition and precipitating therefrom ammonia salts while neutralizing acidity of the composition; adding to said composition between substantially

0.001% and 1% by weight of the trichloroethylene of formaldehyde dimethylhydrazone having the formula



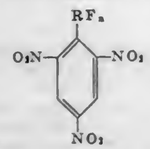
and thereafter filtering said ammonia salts from the composition, the composition being recycled by a circulating pump having an inlet side and an outlet side, said hydrazone being added to said composition at said inlet side of said pump.

3,417,153
POLYNITROBENZOFLUORIDES AND THE METHOD OF PREPARATION THEREOF

Don N. Gray, Josef J. Schmidt-Collerus, and Claibourne D. Smith, Denver, Colo., assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Apr. 26, 1961, Ser. No. 127,759
17 Claims. (Cl. 260—646)

1. An explosive composition consisting essentially of a polynitrobenzofluoride of the general formula:



wherein R is selected from the group consisting of a fluorine substituted alkyl, a fluorine substituted aryl and a fluorine substituted alkylene radical containing from 1 to 18 carbon atoms and *n* is a number from 1 to 3.

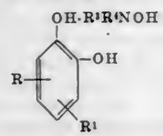
11. A method of producing a polynitrobenzotrifluoride by reducing a halopolynitrobenzotrifluoride with a compound from the group consisting of hydroiodic acid and the reaction product of an alkali metal iodide with an aliphatic mono-carboxylic acid containing 2 to 8 carbon atoms and recovering a polynitrobenzotrifluoride as the product of said reaction.

3,417,154
PROCESS FOR RETARDING THE FORMATION OF POPCORN POLYMER FORMATION IN OLEFIN MONOMER RECOVERY SYSTEM

Harry Elmer Albert and Paul Gordon Haines, Lafayette Hill, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 25, 1966, Ser. No. 522,850
4 Claims. (Cl. 260—666.5)

1. A process for retarding the formation of popcorn polymers in olefin monomer recovery systems, which comprises contacting said monomer with an inhibiting amount of a compound having the structure



where R is selected from the group consisting of hydrogen, hydroxyl, and lower alkyl having from one to five carbon atoms, R′ is selected from the group consisting of hydrogen, a hydrocarbon group containing one to nine carbon atoms, and —COOR² where R² is an alkyl group containing from one to five carbon atoms, R³ and R⁴ are the same or different alkyl or substituted alkyl groups containing from one to seven carbon atoms and which may together with the nitrogen atom form a five or six-membered ring.

3,417,155
SELECTIVE RECOVERY OF DIOLEFINIC HYDROCARBONS

Joseph T. Arrigo, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

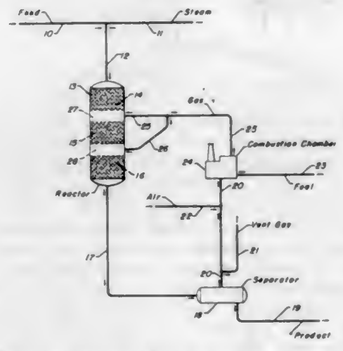
No Drawing. Filed Aug. 11, 1967, Ser. No. 659,861
4 Claims. (Cl. 260—666)

The selective recovery of cyclodecadienic hydrocarbons from a mixture of cyclodecadienic, decatrienic and cyclododecatrienic hydrocarbons is accomplished by treating the mixture with silver nitrate and recovering the diolefinic hydrocarbons from the resulting diolefinic hydrocarbon-silver nitrate complex which is formed thereby.

3,417,156
ENDOTHERMIC CATALYTIC CONVERSION OF ETHYLBENZENE TO STYRENE

Charles V. Berger, Western Springs, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 23, 1966, Ser. No. 581,542
6 Claims. (Cl. 260—669)



Styrene is prepared by the dehydrogenation of ethylbenzene in a plurality of catalytic reaction zones. A normally gaseous hydrocarbon fraction occurring as part of the reaction effluent is separated and burned. The combustion gases from the burning of the gaseous hydrocarbons is admixed with the effluent from at least one of the reaction zones to supply at least part of the heat required in the following reaction zone in the series.

3,417,157
TRANSALKYLATION OF TOLUENE AND CATALYST THEREFOR

Ernest L. Pollitzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,061
6 Claims. (Cl. 260—672)

Toluene is transalkylated utilizing a catalyst comprising a crystalline aluminosilicate, a Group VIII metal and and additional component selected from the group consisting of arsenic, antimony, bismuth, selenium, tellurium and compounds thereof.

3,417,158
METHOD OF INHIBITING AUTOOXIDIZABLE AROMATIC COMPOUNDS

Milton G. Forry, Jr., and Robert J. Agnew, Fishkill, and Kenneth L. Dille, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

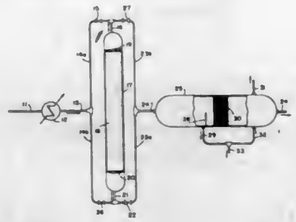
No Drawing. Filed Sept. 9, 1965, Ser. No. 486,190
7 Claims. (Cl. 260—674)

Degradation of an autooxidizable aromatic hydrocarbon, particularly isopropylbenzenes, such as cumene, is inhibited by storing the hydrocarbon in contact with an acidic heterogenous catalyst. Such catalyst, as a sulfonic acid cation exchange resin or silica gel will, when contacted with cumene, cause the splitting of oxidation products such as cumene hydroperoxide to produce phenol which in turn inhibits further degradation of cumene.

3,417,159
SEPARATION OF HYDROCARBONS FROM PLANT PROCESS WASTE WATER

Lawrence R. Ffrench and John R. Strausser, Baytown, Tex., and John L. Thompson, La Porte, Ill., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 7, 1966, Ser. No. 592,459
10 Claims. (Cl. 260—677)



Aromatic and olefinic hydrocarbons which are dissolved and entrained in plant process waste water are contacted with crystalline silica, quartz or high purity sand to coalesce or agglomerate the hydrocarbons and form a separate phase. The crystalline silica has a particle size of 8–20 mesh. The waste water becomes reusable in the plant process and the hydrocarbon constituents are easily recovered.

3,417,160
DIMERISATION PROCESS

James Keith Hambling, Frimley, near Aldershot, and John Robert Jones, Walton-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British company

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,195
8 Claims. (Cl. 260—683.15)

Olefin dimers are prepared by contacting an alpha olefin with a catalyst comprising a nickel acetyl actonate, aluminum dilthyl monochloride and a methylene halide at a temperature in the range −40° to +200° C. under such conditions of pressure that the reactants are maintained in the liquid or partially condensed phase.

3,417,161
COATING COMPOSITION OF A CARBOXYLIC ACID AMIDE POLYMER AND A CONDENSATE OF AN ORGONOPOLYSILOXANE AND AN ORGANOALKOXYSILANE

Robert G. Douds, Lower Burrell, and John Ostrowski, Pittsburgh, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,667
11 Claims. (Cl. 260—825)

An improvement of a composition of an interpolymer of a polymerizable unsaturated carboxylic acid amide monomer, an organopolysiloxane resin, and at least one other polymerizable unsaturated monomer comprises using as the organopolysiloxane resin a condensate formed by reaction of an organoalkoxysilane and an organopolysiloxane. The resin may be used as a coating composition.

3,417,162
EPOXY MODIFIED VINYL COPOLYMERS OF α,β-UNSATURATED DICARBOXYLIC ACID PARTIAL ESTERS

Robert L. Zimmerman and Lieng-Huang Lee, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 97,725, Mar. 23, 1961. This application Nov. 28, 1966, Ser. No. 597,234
10 Claims. (Cl. 260—837)

This application relates to epoxy compositions containing homogeneous, non-equimolar copolymers of styrene compounds and partial esters of α,β-unsaturated dicarboxylic acid anhydrides. The compositions are useful as coatings and in making laminates.

3,417,163
PROCESS FOR THE MANUFACTURE OF COPOLYMERS OF β-LACTAMS

Claus Beermann, Neu-Isenburg, Erwin Schmidt, Frankfurt am Main, and Walter Rupp, Niederhofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 6, 1966, Ser. No. 518,998

Claims priority, application Germany, Jan. 7, 1965, F 44,891

7 Claims. (Cl. 260—857)

A process for making block copolymers of beta-lactams is disclosed. The beta-lactams used have a hydrogen atom at the nitrogen atom thereof and from 0 to 4 substituents on the alpha and/or beta carbon atoms thereof. The substituents may contain a total of up to 12 aliphatically bound carbon atoms or an aromatic radical and up to 9 aliphatically bound carbon atoms. The substituent carbon chains may be arranged in a ring including the alpha and beta carbon atoms.

Polymerization may be effected at a temperature of −15° to 120° C. by anionic polymerization in a polymerization reaction mixture containing a basic catalyst. It has been found that by feeding 2 or more such beta-lactams alternately to the polymerization mixture, the desired block polymers are formed. The lactams may be fed alternately to a solution or dispersion of the basic catalyst in an inert solvent, or to a solution of the basic catalyst which is emulsified in a second solvent with which it is miscible to only a limited extent or to a dispersion of the basic catalyst which is emulsified in a solvent with which the dispersion is miscible to only a limited extent. The beta-lactam mixture to be polymerized may be miscible with either solvent.

3,417,164
POLYMERIC PHOSPHORUS-CONTAINING COMPOUNDS

John T. Patton, Jr., Wyandotte, and Robert J. Hartman, Southgate, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Oct. 2, 1964, Ser. No. 401,232
8 Claims. (Cl. 260—926)

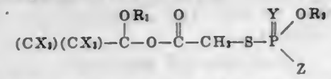
Polymeric phosphorus-containing compounds are prepared by the self-transesterification of essentially neutral phosphate polyols obtained by the reaction of an alkylene oxide with an acid of phosphorus corresponding to a P_2O_5 equivalency of from about 72 to 95 percent.

3,417,165
FLUOROKETONE HEMIKETAL ESTER PHOSPHATES AND PHOSPHONATES

Peter E. Newallis, Morris Plains, and Pasquale Lombardo, East Hanover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 24, 1965, Ser. No. 466,803
10 Claims. (Cl. 260—941)

1. A compound of the formula:

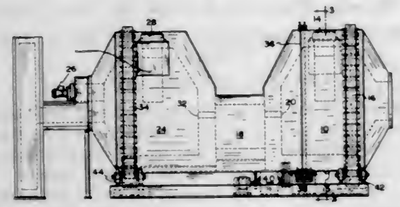


in which Y is a chalcogen selected from the group consisting of oxygen and sulfur, X is a halogen selected from the group consisting of chlorine and fluorine with the proviso that at least three of the X's are fluorine, R_1 is an alkyl radical having from 1 to 12 carbons, R_2 is an alkyl radical having from 1 to 6 carbons and Z is a member selected from the group consisting of alkyl and alkoxy having from 1 to 6 carbons.

3,417,166
MELTING FURNACE METHOD

Thomas W. F. Foster, Walnut Creek, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 536,510
5 Claims. (Cl. 263—52)



1. A method of melting metal material comprising the steps of:

(a) providing a body of molten salt material in a first chamber, the salt having a density less than that of the metal to be melted and being at a temperature sufficient to melt the metal;

(b) cascading the molten salt out of the first chamber into a trough so as to create agitation therein;

(c) introducing the metal to be melted into the agitated molten salt in the trough;

(d) cascading the agitated molten salt and metal mixture from the trough into a second chamber so as to achieve intimate contact and mixing of the molten salt and the metal;

(e) cascading the mixture of molten salt and metal from the second chamber into the trough, through the trough and into the first chamber;

(f) continuing the cascading movement of the mixture between the chambers via the trough until the metal has melted; and

(g) collecting the molten metal below the molten salt in one of the chambers.

3,417,167
METHOD OF PREPARING SPHERICAL URANIUM NITRIDE PARTICLES HAVING A POROUS INTERIOR

Donald E. Kizer and Donald E. Lozier, Columbus, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission

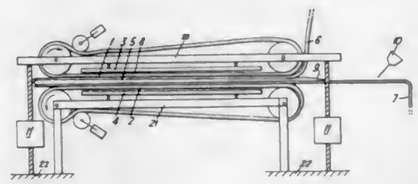
No Drawing. Filed Feb. 2, 1968, Ser. No. 702,538
4 Claims. (Cl. 264—.5)

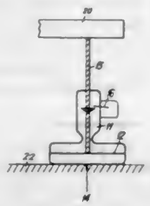
A method of preparing spherical uranium nitride particles having a porous interior surrounded by a gas-tight casing comprising melting irregular particles of uranium nitride in a high-temperature plasma flame in a nitrogen atmosphere to partially convert the uranium nitride to uranium, heating the particles thus obtained at a temperature between 700° C. and the melting point of uranium for one to two hours in nitrogen at a pressure lower than that at which U_2N_3 is formed, and then heating at about 1400°–1600° C. in nitrogen for a time sufficient to completely nitride the particles.

3,417,168
PRODUCTION OF LAMINATES

Donald George Keith, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed May 12, 1967, Ser. No. 638,147
Claims priority, application Great Britain, May 17, 1966, 21,816/66
13 Claims. (Cl. 264—40)





In continuously producing laminates having a foamed plastics or resinous core sandwiched between and bonded to two outer facing materials not necessarily the same, which comprises providing two cooperating substantially parallel conveying surfaces disposed one above the other and forming within supporting platens an extended longitudinal nip, pressure required to hold one platen a fixed distance from the other is measured and fed back to alter the rate of lay-down of the foam-forming mixture and/or the speed of the conveying of the facing material to provide a uniform rate of lay-down of foam-forming mixture per unit area of facing material.

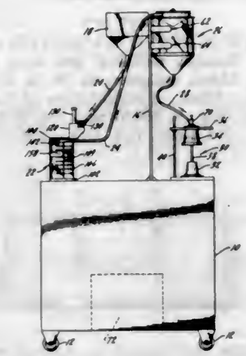
3,417,169
METHOD AND APPARATUS FOR AUTOMATICALLY MOLDING FOAM PLASTIC ARTICLES

James M. Harrison and Daniel R. Gaul, Fort Worth, Tex., assignors to Crown Machine & Tool Co., Arlington, Tex., a corporation of Texas

Filed Nov. 26, 1965, Ser. No. 509,994
13 Claims. (Cl. 264—51)

This is concerned with an integral foam molding machine and method in which the material is prefoamed and supplied to a molding mechanism, each of which operates on a cycle basis with the rate of supply of the prefoamed material being related to the rate of consumption

by the molding mechanism such that the prefoamed material is consumed rapidly and the various operations are

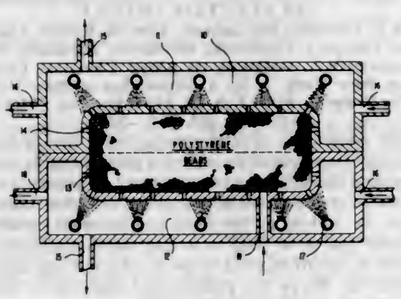


fully coordinated. The supply arrangement functions as a part of the control between the prefoaming arrangement and the molding arrangement.

3,417,170
REDUCTION OF CYCLE TIME BY THE USE OF HEATED EXPANDED POLYSTYRENE BEADS

Eugene J. Knapp, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Aug. 27, 1964, Ser. No. 392,525
3 Claims. (Cl. 264—51)



A method of molding resinous, cellular shaped articles comprising preheating thermoplastic resin beads containing a blowing agent to a temperature higher than the vaporization temperature of the blowing agent but lower than the fusion temperature of the resin prior to fusion of the beads in a mold to produce a molded cellular article.

3,417,171
METHOD OF PRODUCING A FOAMED SOIL-IMPROVING MATERIAL

Hans Eberle, Ludwigshafen (Rhine), and Gerhard Wuttke, Neubofen, Pfaltz, Germany, assignors to Gruenzweig & Hartmann AG, Ludwigshafen, Germany

No Drawing. Filed Feb. 9, 1965, Ser. No. 431,438
Claims priority, application Germany, Feb. 12, 1964, G 39,829
13 Claims. (Cl. 264—51)

A substantially closed-cell, cellular mass containing soil-improving material is produced by forming a mixture of a thermoplastic material, a foaming agent therefor and soil-improving material, subjecting the mixture to a sufficiently high temperature to activate the foaming agent and to an elevated pressure sufficient to cause gelatinization of the thermoplastic material at such temperature while preventing foaming of the foaming agent due to the elevated pressure, the temperature being below the flow point of the thermoplastic material, and extruding the thus-formed mass under simultaneous release of elevated pressure so as to activate the foaming agent due to the release of pressure and to cause thereby foaming of the mass simultaneously with extrusion thereof, whereby an extruded, substantially closed-cell mass is formed which consists essentially of foamed thermoplastic material having the soil-improving material incorporated in the closed cells thereof.

3,417,172
METHOD OF MAKING SYNTHETIC MARBLE

David Rostoker, Tioga, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,573
7 Claims. (Cl. 264—77)

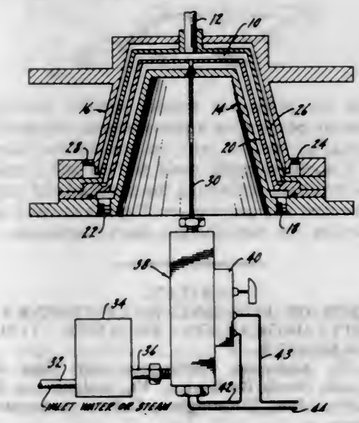
A method of making a synthetic marble product comprising pressing finely ground calcite particles in a carbon dioxide atmosphere at a temperature of 775–1000° C. and a pressure of 1,000–3,000 p.s.i. for a time sufficient to form a coherent body capable of taking a polish.

Optionally, chemically compatible coloring agents are added to the calcite particles to make colored synthetic marble.

3,417,173
METHOD AND APPARATUS FOR FOAM MOLDING

James M. Harrison, Fort Worth, Tex., assignor to Crown Machine & Tool Co., Arlington, Tex., a corporation of Texas

Filed Jan. 10, 1966, Ser. No. 519,722
1 Claim. (Cl. 264—53)



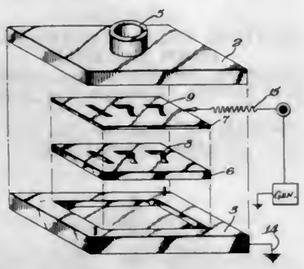
A method and apparatus for molding a plastic part from finely divided foamable plastic material which has been impregnated with a foaming agent; the apparatus includes means forming a mold cavity, means forming a first and second heating chamber adjacent the mold cavity, means for generating dry superheated steam, a conduit to direct the dry superheated steam into the mold cavity, and valve means to deliver a metered amount of water to the superheated steam generator. The method includes the steps of introducing the foamable plastic material into the mold cavity and then introducing relatively low temperature steam into the heating chambers while introducing a metered amount of dry superheated steam, which has been heated to a temperature substantially higher than

the relatively low temperature steam, into the mold cavity.

3,417,174
PROCESS OF PREPARING YARN AND KNITTING HOSE
Otto Jack Matray, Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 26, 1964, Ser. No. 406,566
2 Claims. (Cl. 264—78)

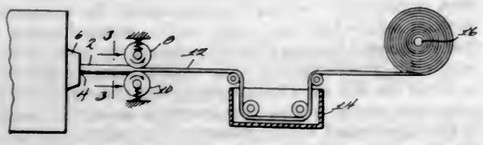
A process for preparing women's hose by preparing the leg yarn from a first copolyamide which has been treated to reduce the shrinkage to the range of 10 to 13% and preparing the welt yarn from a second copolyamide having the same polymer units as the first copolyamide but in different proportions and the second copolyamide having been treated to reduce the shrinkage to the range of 4 to 8% has been found to produce hose having the desired shrinkage and dyeing characteristics.

3,417,175
METHOD FOR RELIEF DECORATING PLASTIC MOLDED ARTICLES
George T. Brown, Walter L. Hochner, and Frederick T. Marston, Wilmington, Del., assignors to Kaumagraph Company, Wilmington, Del., a corporation of Delaware
Filed July 15, 1965, Ser. No. 472,263
14 Claims. (Cl. 264—220)



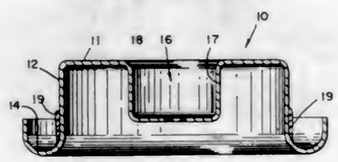
Method for producing molded articles having relief decoration by positioning a nonadherent, strippable sheet conforming, at least in part, to the desired decoration between a nondeformable mold surface and a polymeric moldable material, contacting the material and mold surface under heat and pressure, cooling the molded material and removing the nonadherent sheet therefrom.

3,417,176
PROCESS OF FORMING HEAT SHRINKABLE PERFLUOROCARBON POLYMER TUBING AND SHAPES
Robert W. Anderson, Burlington, and Alme Joseph Perreault, South Burlington, Vt., assignors to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Dec. 24, 1964, Ser. No. 420,939
14 Claims. (Cl. 264—230)



Perfluorocarbon or polytrifluorochloroethylene tubing is stretched by flattening the tubing under pressure to form a tape and reduce the cross sectional area of the tubing while simultaneously elongating the tubing. The tubing is reheated, an electrical conductor is inserted into the tubing and the tubing is shrunk into tight engagement with the conductor.

3,417,177
METHOD OF MAKING GASKETED CLOSURES
Charles W. Simons, Bedford, and Joel A. Gribens, Methuen, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Mar. 9, 1966, Ser. No. 533,066
7 Claims. (Cl. 264—230)



Sealing gaskets are formed on aerosol mounting cups by positioning a circular band of heat-shrinkable material over a portion of the skirt of the cup and thereafter heating the cup to shrink the band of material into frictional contact with the skirt. Suitable heat-shrinkable materials include stretch-oriented polyolefins, vinyl resins, polyester resins, and natural and synthetic rubber.

ERRATUM

For Class 264—308 see:
Patent No. 3,417,097

3,417,178
CASTING PROCESS FOR FORMING A SOLID POLYLACTAM ARTICLE
Frank P. Downing, Succasunna, John M. Kolyer, Convent, and Vincent J. Opalewski, Rockaway Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,372
8 Claims. (Cl. 264—331)

Solid polylactam articles substantially free of internal voids may be prepared by adding a polymerizable mixture comprising the lactam, a promoter and an anionic catalyst to a mold at a rate such that polymerization concludes first in the bottom of the mold and proceeds upward toward the source of feed at a rate substantially equal to the rate of rise of mixture in the mold and there is present immediately above the polymerized material a layer of substantially unpolymerized mixture.

3,417,179
DEVICE FOR GINGIVAL RETRACTION AND HEMOSTATIC ACTION
Lester Hugh Roth, 3401 5th Ave., Medical Bldg., Pittsburgh, Pa. 15213
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,929
1 Claim. (Cl. 424—28)

Retraction and hemostasis of gingival tissues are effected with a cotton twine impregnated with 10 to 15 percent by weight of a gel of synthetic calcium hydroxyapatite.

3,417,180
HYDROLYZED POLYVINYL ACETATE RESIN HAIR SPRAYS
Julius Sirota, South Plainfield, and Albert L. Micchelli, Middletown, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 18, 1966, Ser. No. 521,420
3 Claims. (Cl. 424—47)

An aerosol formulation suitable for use as a hair spray lacquer comprising an organic solvent solution of a hydrolyzed polyvinyl acetate resin hydrolyzed to the extent that from about 15 to 60% of its acetate groups are converted into hydroxyl groups, in admixture with an aerosol propellant therefor.

3,417,181
METHOD FOR DISPERSING TOXICANTS TO KILL DISEASE-SPREADING WATER-SPAWNED LARVA, TREMATODES, MOLLUSKS AND SIMILAR ORGANISMS, AND PRODUCTS USED IN SUCH METHOD
Nathan F. Cardarelli, Copley, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 528,785, Feb. 21, 1966. This application Feb. 15, 1967, Ser. No. 616,187
5 Claims. (Cl. 424—229)

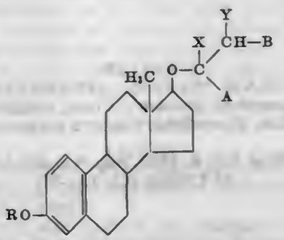
To kill water-spawned or water-carried disease-transmitting organisms such as mosquitos, midges, black flies, schistosome cercariae and their snail hosts, other gastropods and insect pests, all without rendering the water toxic to humans, animals and fish, a toxicant such as the organotin compounds and alkanolamine salts of salicyl anilides is dissolved into a vulcanizable elastomeric matrix and the resulting vulcanized or vulcanizable toxicant composition is immersed in the pest-ridden water. The toxicant content of such composition in vulcanized form is released slowly and at a controlled rate such that toxicant content in the water is maintained for a greatly extended period of many months and even years at a level fatal to pests but not to humans, animals and fish. Neoprene is a preferred elastomer and nitrile, butyl, and styrene-butadiene rubbers may also be employed. The vulcanized toxicant composition can be dispersed in either stagnant or running water in the form of pellets, pieces, chunks, tapes, or sheets, etc., as is most convenient.

3,417,182
COMPOSITIONS AND TREATMENTS USING 6-METHYL - 16 - METHYLENE - 17α - HYDROXY-4,6-PREGNADIENE-3,20-DIONE 17-ACETATE
John C. Babcock and J. Allan Campbell, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 852,981, Nov. 16, 1959, and Ser. No. 267,776, Mar. 25, 1963. This application June 17, 1964, Ser. No. 375,916
17 Claims. (Cl. 424—243)

Pharmaceutical preparations and processes utilizing 6-methyl-16-methylene - 17α-hydroxy - 4,6 - pregnadiene-3,20-dione 17-acetate as essential active ingredient. Effective amounts of this ingredient are utilized in pharmaceutical compositions and treatments for human and veterinary applications. Ingestible pre-mixes, suspensions, feed compositions, control of estrual periods, stimulation of growth, and the like, utilizing effective amounts of 6-methyl-16-methylene-17α - hydroxy - 4,6 - pregnadiene-3,20-dione 17-acetate as essential active ingredient.

3,417,183
17-ETHERS OF ESTRADIOL
Alberto Ercoli, Milan, and Rinaldo Gardi, Carate Brianza, Milan, Italy, assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed May 2, 1966, Ser. No. 546,506
Claims priority, application Italy, June 4, 1965, 12,593/65
17 Claims. (Cl. 424—243)

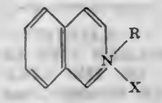
14. A pharmaceutical composition in dosage unit form comprising in admixture with a pharmaceutical acceptable carrier, from 0.01 mg. to 100 mg. of a compound having the formula:



in which R is selected from the group consisting of hydrogen and alkanoyl radicals up to 10 carbon atoms; A and B are selected from the group consisting of hydrogen, lower alkyl, cycloalkyl of from 5 to 6 carbon atoms, aralkyl of from 7 to 9 carbon atoms, phenyl, and, together with each other, 1,3-propylene and 1,4-butylene; X is lower alkoxy; Y is hydrogen and X and Y together form a C—C bond.

3,417,184
BIOCIDAL COMPOSITIONS CONTAINING QUATERNARY AMMONIUM PHENATES AND METHODS OF USE
Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors to Millmaster Onyx Corporation, Jersey City, N.J., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 292,764, July 3, 1963. This application Oct. 18, 1966, Ser. No. 587,415
9 Claims. (Cl. 424—258)

A method and compositions for external biocidal use, such as in shampoos and the like, which utilizes an effective amount of a quaternary ammonium phenate having the chemical structure:



wherein R is an alkyl having 8 to 18 carbon atoms, and X is a residue of either phenol or substituted phenol whose only acidic group is at least one hydroxyl group, the water solubility of the quaternary ammonium phenate being no greater than 3 parts by weight per 100 parts by weight of solution at room temperature.

3,417,185
SYNERGISTIC BIOCIDAL COMPOSITIONS AND METHODS
Robert John Herschler, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
No Drawing. Continuation of application Ser. No. 443,083, Mar. 26, 1965. This aplication Feb. 13, 1967, Ser. No. 617,012
The portion of the term of the patent subsequent to Sept. 27, 1983, has been disclaimed
14 Claims. (Cl. 424—287)

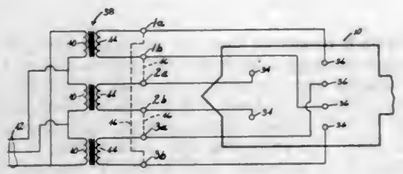
Synergistic biocidal compositions comprising (1) chlorinated and brominated levulinic acid compounds (with up to four halogen substitutions), including the free acid, alkali metal salts, alkaline earth metal salts, ammonium salts, heavy metal salts, amine salts, phenyl and lower alkyl amides, and alkyl esters thereof; and (2) monohydric phenols and dihydric phenols with and without nitro, halo, alkyl, and/or phenol substitutions in ratios of between about 1/20 and 20/1. The use of such combinations in slime control, wood preservation, industry and agriculture is described.

ELECTRICAL

3,417,186
GLASS MAKING APPARATUS

John F. Blumenfeld, Simsbury, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed July 6, 1965, Ser. No. 469,460
15 Claims. (Cl. 13—6)

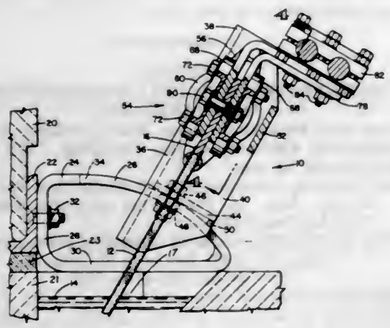


In a continuous production glass making furnace a group of six electrodes are provided for heating, by Joule effect currents, the glass contained in the furnace tank. Two of the electrodes are located in the melting zone and the other four in the fining zone. A three-phase transformer providing a source of three-phase electrical power has three secondary windings each having two terminals connected to an exclusively associated pair of electrodes, the secondary windings being electrically unconnected to one another except through the molten glass. The glass may be additionally heated by other sources of heat and when this is the case the four electrodes in the fining zone are preferably located near the hot spot produced by such other heat sources.

3,417,187
ELECTRODE HOLDER FOR GLASS FURNACES OR THE LIKE

John F. Blumenfeld, Simsbury, and George F. Hanks, Avon, Conn., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Dec. 5, 1966, Ser. No. 599,088
16 Claims. (Cl. 13—6)

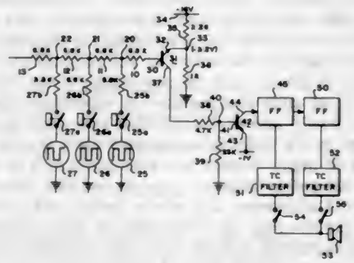


An electrode holder for use with an electrode inserted through the top surface of a body of material contained in a glass melting furnace or the like consists of a base, adapted to be fixed to the furnace above the top level of the material, and an electrode carrying frame connected with the base for angularly adjustable movement about a virtual pivot axis located a substantial distance below the base and possibly within the body of material. The parts which actually engage the electrode are supported by and electrically insulated from the frame by load carrying electrical insulators connected between the frame and the electrode engaging parts in such a manner as to allow for thermal expansion and contraction of the insulators.

3,417,188
PREFERENCE CIRCUIT FOR ELECTRONIC MUSICAL INSTRUMENT UTILIZING PULSE AMPLITUDE DISCRIMINATION AND ZERO-CROSSING DETECTOR

Walter Munch, Jr., Park Hills, Ky., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 23, 1965, Ser. No. 466,170
4 Claims. (Cl. 84—1.01)



4. In a root tone generating system,
a plurality of musical tone generators of progressively decreasing tone frequencies,
switch means for at will selecting combinations of said tone frequencies, and
means for generating a single tone octavely related to the lowermost frequency of the selected tone frequencies to the exclusion of the remaining selected tone frequencies, said last means comprising
means for relatively decreasing the amplitudes of the musical tones as a function of increasing frequency to form leveled tone signals,
means for additively combining said leveled tone signals into a composite wave form,
said composite wave form having zero crossings corresponding in time with the zero crossings of only that one of said leveled tone signals having the lowest frequency, and
means responsive to the zero crossings of said composite wave form for generating said root tone.

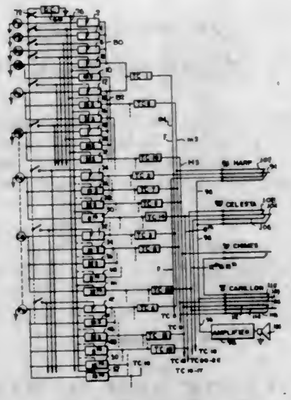
3,417,189
KEYING SYSTEM FOR ELECTRONIC MUSICAL PERCUSSION SIMULATOR

Frank J. Kramer, Jr., Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 29, 1965, Ser. No. 443,354
17 Claims. (Cl. 84—1.19)

16. In a percussive tone generating system,
a gamut of sources of complex tone signals having fundamentals arranged in frequency according to a chromatic scale,
a plurality of key switches,

a plurality of percussive gates selectively rendered conductive in groups in response to actuation of each of said key switches, each group responsive to one key switch being connected to certain of said signal sources selected to provide all partials of one desired percussive output tone in terms of fundamentals of the selected tone sources,

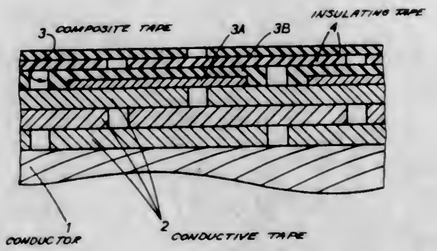


means for filtering from the signals called fourth by all said gates all harmonics contained in said complex tone signals, and
tone color switch means connected to and following said means for filtering for at will selecting a desired combination of said partials conforming to a desired percussive tone color.

3,417,190
ELECTRIC CABLES

Richard Sidney Body, Kent, Donald John Skipper, Isleworth, and John Alan Macdonnell Gibbons, Woking, England, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed Nov. 28, 1966, Ser. No. 597,391
Claims priority, application Great Britain, Dec. 3, 1965, 51,420/65
5 Claims. (Cl. 174—36)

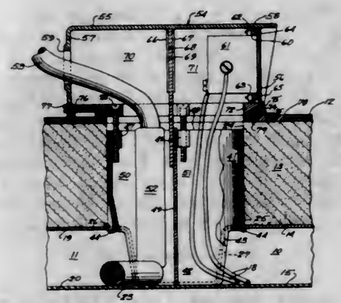


Electric cable of the gas-filled type, particularly for 132 kv. and above, having a conductor screen or dielectric screen which includes a conductive layer provided in the form of tape having at least one edge which could have given rise to a concentration of electric stress in insulating gas in contact therewith, wherein such edge is overlapped by composite tape consisting of a layer or film of conductive material bonded at least at its edges to one side of a layer of insulating material which overreaches these edges, this conductive layer or film overlapping said edge of the first-mentioned tape and being in electrical contact with the first-mentioned layer so as to constitute part of the screen. Various forms of, and materials for, the composite tape, the rest of the screen and adjacent insulation are described with particular reference to the problem of differential thermal expansion and consequent electrical stress-raising effects which have been found to occur in known cables with lapped high-density polythene insulation.

3,417,191
DUAL FUNCTION ELECTRICAL OUTLET AND ELECTRICAL DISTRIBUTION SYSTEM UTILIZING THE SAME

Frank W. Fork, Allison Park, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 14, 1966, Ser. No. 535,282
7 Claims. (Cl. 174—49)

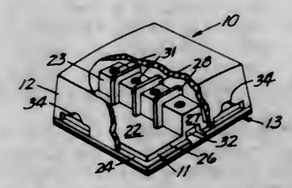


An electrical outlet unit including an improved base cup and a coordinated duel outlet fitting. The base cup is adapted to extend between arcuate openings provided in each of two adjoining electrical raceways. Separator means divide the interior of the base cup into two chambers each communicating with one of the adjacent raceways. The dual outlet fitting is secured to the base cup and is disposed above the floor. Separator means within the dual outlet fitting divides the interior of the fitting into two enclosed chambers communicating with the chambers of the base cup. Separate transmission of the electrical wiring from the adjacent cells through the two enclosed chambers to the outlet unit is possible.

3,417,192
JUNCTION BOX

Robert A. Elm, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 23, 1967, Ser. No. 611,138
3 Claims. (Cl. 174—59)



A two piece injection molded insulating plastic junction box consisting generally of a base member and a cover which when removed exposes a connector platform divided into equal portions by thin walls, the top of one or more of such portions having stamped, bent, and folded, spring metal, insulation piercing, high contact pressure producing, V-shaped connector elements secured thereto.

3,417,193
ELECTRICAL MODULE HAVING TERMINALS MADE FROM SEMICIRCULAR WIRE AND METHOD OF MAKING THE SAME

Bernard Arthur Cole, Bradwell, Great Yarmouth, Norfolk, England, assignor to Erie Resistor Limited, South Denes, Great Yarmouth, Norfolk, England, a British company

Filed Feb. 17, 1966, Ser. No. 528,315
Claims priority, application Great Britain, Aug. 23, 1965, 36,008/65
4 Claims. (Cl. 174—68.5)



This invention relates to a module for electric circuits comprising a substrate and wire terminals attached to the substrate, each of the wired terminals being formed by wire having a semicircular cross-sectional shape with the flat section of one portion of the wire engaging one face of the substrate and the flat section of another portion of the wire engaging the opposite face of the substrate, the wire portions projecting away from the substrate being secured together at their flat surfaces to form a circular in cross-section wire terminal. The substrate may be completely incapsulated with electrical insulating material.

3,417,194
COUPLING T FOR VACUUM CLEANER HOSE ASSOCIATED WITH ELECTRIC HAIR CLIPPERS

Roy E. Meyer and John F. Wahl, Sterling, Ill., assignors to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois

Filed Aug. 22, 1966, Ser. No. 574,189
6 Claims. (Cl. 174—71)

1. A coupling T for vacuum cleaner hose associated with electric hair clippers comprising:

a pair of generally like members adapted on assembly to form a hollow T having a stem portion and a head portion, the junction of the assembled members lying on a plane which contains the axis of the stem portion and is normal to the axis of the head portion;

said stem portion is tubular and adapted to telescope in sealing manner over one end of a vacuum pipe;

means securing said pair of members together in sealed relation;

said head portion terminating at each end in a tubular coupling portion, each coupling portion having a longitudinal slit adapted to receive an electrical conductor extending from the outside to inside of the coupling T and thence to an electric hair clipper through a hose connected between a coupling portion and the clipper; and

a coupling member on the end of each hose telescoping a coupling portion in sealing manner and closing that part of a slit unoccupied by an electrical conductor.

3,417,195
STRIP AND NONSTRIP ELECTRICAL CONNECTION

Bernard Edward Shlesinger, Jr., Annandale, Va., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation-in-part of application Ser. No. 556,112, June 8, 1966. This application Mar. 6, 1968, Ser. No. 710,873
33 Claims. (Cl. 174—84)



The combination of an electrical connection including a connector receptacle having a pair of insulated conductors sealed in the receptacle and each having a conductive end face; and, a flowable conductive material in the receptacle in contact with the end faces, and the receptacle having permanently, radially contracted, crimped, sealing, clamping and positive positioning means for preventing pull-out of the conductors; and a packaged insert for said flowable conductive material having an inert material in association with the conductive material.

3,417,196
ELECTRONIC COLOR VIEWER AND PRINT TIMER

Alex W. Dreyfoos, Jr., Port Chester, N.Y., and George W. Mergens, Wilton, Conn., assignors to Photo Electronics Corporation, Byram, Conn., a corporation of New York

Continuation-in-part of application Ser. No. 453,144, May 4, 1965. This application Feb. 17, 1966, Ser. No. 528,175
The portion of the term of the patent subsequent to Nov. 7, 1984, has been disclaimed
18 Claims. (Cl. 178—5.2)

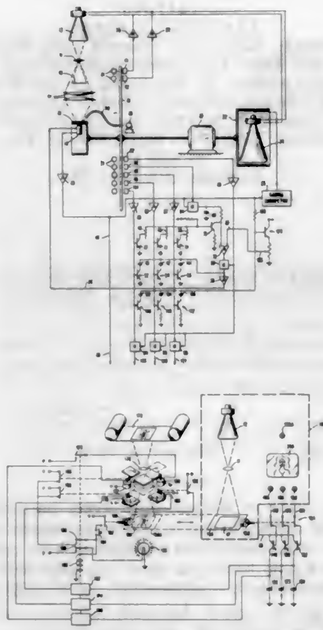
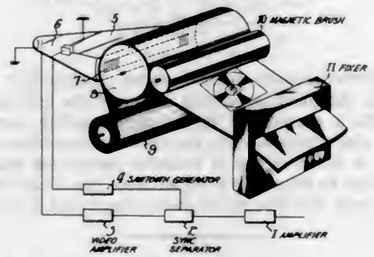


FIG. 1 shows a flying spot scanner **12** which scans color negative **10** to provide optical signals to photomultiplier **16**. These signals are amplified at **32** and **34** for display on picture tube **24**. Photo-optical switches controlled by aperture disc **30** provide synchronizing and switching signals for operation of the single channel ampifier system in sequence for three different colors and for gating color adjustment signals from amplifier connection **86** to capacitors **122**, **123**, **124** (FIG. 3). These stored color adjustment signals are available for control of print timer apparatus of FIG. 3.

3,417,197
HIGH SPEED RECORDING APPARATUS FOR TELEVISION IMAGES AND THE LIKE

Noboru Masuda, Ota-ku, Tokyo-to, Japan, assignor to Denki-Onkyo Kabushiki-Kaisha, Tokyo-to, Japan

Filed Mar. 24, 1965, Ser. No. 442,414
4 Claims. (Cl. 178—6.6)

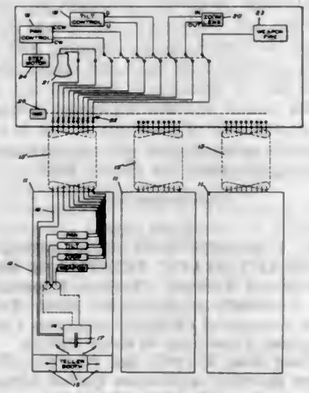


1. A high speed recording apparatus for television images and the like comprising a thermoplastic film recording medium formed of a transparent thermoplastic unilayer film, means for advancing said medium, a needle-shaped electrode, a revolving back electrode synchronized with the advance rate of said medium, said medium being inserted between said two electrodes for passage therebetween, means including said electrodes for depositing a static electric charge on said medium by impressing a high voltage thereon and a colored substance is deposited in accordance with said charge on said medium rendering a visible image, and means for subjecting said medium having said visible image to a fixing solvent vapor through which said medium is passed by said advancing means.

3,417,198
REMOTE CONTROL WEAPON SYSTEM

William E. Loyd, 605 N. Sycamore Ave., Hollywood, Calif. 90036

Filed Sept. 10, 1965, Ser. No. 486,440
6 Claims. (Cl. 178—6.8)

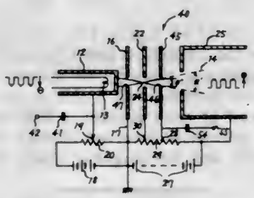


A system is disclosed for automatically detecting the presence of an intruder or criminal in a certain area, the system having provisions for apprehending the criminal upon detection during or immediately subsequent to the commiting of the crime. A closed circuit television camera is provided at each of a plurality of locations and interconnected to a central station comprising a television receiver via a time multiplexing means which couples each of the television cameras at the plurality of the locations one at a time, in a predetermined sequence, for a predetermined time duration to the central station. While each television camera is connected to the central station, an automatic panoramic scanning of the same takes place. Associated with each of the television cameras is an energy releasing means capable of immobilizing a human. The system is operated such that when a criminal or intruder is detected by the television camera at a specific location, the automatic panoramic scan and the multiplex switching of the system is temporarily terminated and the operator at the control station would then cause a signal to be sent to the energy releasing means at the particular location to disable the criminal found thereat.

3,417,199
CATHODE RAY DEVICE

Susumu Yoshida, Senri Miyaoka, and Hiroshi Sahara, Tokyo, Japan, assignors to Sony Corporation, Shinagawa-ku, Tokyo, Japan, a corporation of Japan

Filed Oct. 22, 1964, Ser. No. 405,743
Claims priority, application Japan, Oct. 24, 1963, 38/56,941
10 Claims. (Cl. 178—7.2)

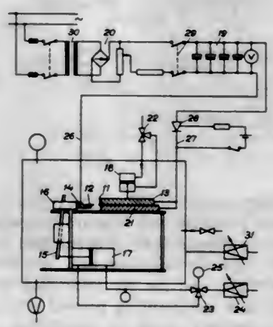


A system for improving the focusing of an electron beam in a cathode ray tube which decreases the divergence of the beam by the use of an auxiliary grid upon which is placed a video signal which is out of phase with the signal on the control grid.

3,417,200
PROCEDURE FOR WELDING METAL PIECES TO POROUS MATERIAL AND DEVICE FOR CARRYING OUT THIS PROCEDURE

Rune Persson, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

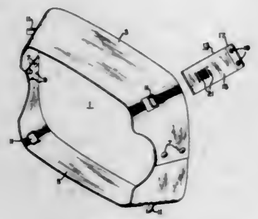
Filed Oct. 2, 1964, Ser. No. 401,102
Claims priority, application Sweden, Oct. 7, 1963, 10,944/63
5 Claims. (Cl. 219—113)



A method of welding fuel cell electrodes comprising nickel and other substances and having a porosity of at

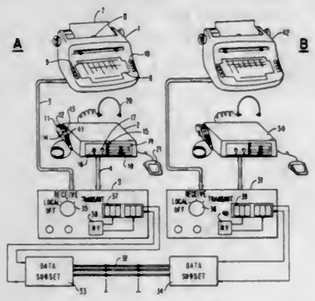
least 10% to metal pieces constituting conductors includes pressing the parts together with a uniform pressure and discharging a condenser quickly across the parts to be welded together.

3,417,201
MAGNETIC SHIELD FOR CATHODE RAY TUBE
Raymond S. Joseph, Syracuse, and Robert B. Ashley, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 1, 1965, Ser. No. 468,834
5 Claims. (Cl. 178—7.82)



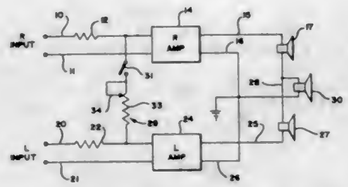
A magnetic shield of a generally truncated pyramidal shape encircles the funnel portion of a cathode ray tube. The shield includes a plurality of integral spaced tabs, each of which is inserted into a slot in a corresponding bracket. One end of each bracket is then secured to the front of the television receiver cabinet enclosing the cathode ray tube and the magnetic shield structure.

3,417,202
SYSTEM FOR RECORDING, REPRODUCING AND COMMUNICATING DIGITAL AND AUDIO SIGNALS WITH CONTROL ADJUNCTS FOR OPERATOR USE
Robert A. Kolpek, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,386
7 Claims. (Cl. 178—31)



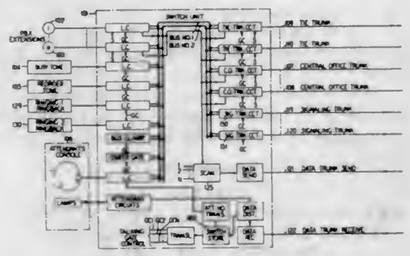
The invention relates to an office typewriter (printer) and a magnetic recorder unit that are interconnected with auxiliary control apparatus for independent operation as a typewriter and an audio dictation unit, respectively, in one mode of operation, and for the recording and reproduction of digital data representing printed characters on the typewriter, in another mode of operation. Two similar terminals are arranged in a communication network for the transmission and reception of digital data.

3,417,203
TWO-CHANNEL STEREO SYSTEM WITH DERIVED CENTER CHANNEL
David Hafler, Merion Station, Pa., assignor to Dynaco, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 13, 1965, Ser. No. 447,705
6 Claims. (Cl. 179—1)



A derived center channel stereo reproduction system wherein the signal appearing in one of the left and right channels is reproduced by its corresponding transducer and is also reproduced by the opposite transducer out-of-phase. A blend circuit is included before the amplification stage to introduce a signal from one channel to the other, such that the out-of-phase component is cancelled.

3,417,204
TELEPHONE TRUNK CIRCUIT
Philip C. Richards, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 25, 1964, Ser. No. 413,900
37 Claims. (Cl. 179—18)

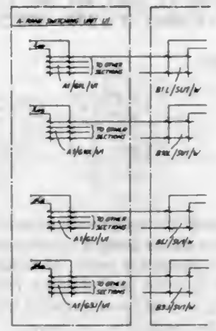


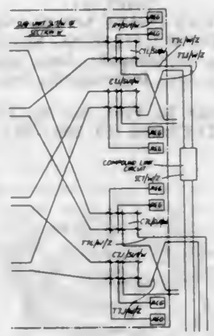
In a time division telephone switching system individual switch units are connected to a common control unit and to a central office. However, tie trunks are provided between a switch unit and a particular distant PBX. The tie trunk circuit includes E and M signaling with the distant PBX and is controlled by seize and release signals from the control unit. A plurality of registers are included in the tie trunk circuit and are sequenced through various call states as required of the trunk circuit in response to the successively received seize and release signals and the supervisory signals from the distant PBX.

3,417,205
LINKING CIRCUITS FOR SWITCHING EQUIPMENT IN AUTOMATIC TELEPHONE SYSTEMS
Bloomfield James Warman, Charlton, London, and John Herbert Marshall, Bexleyheath, Kent, England, assignors to Associated Electrical Industries Limited, London, England, a company of Great Britain
Filed June 8, 1965, Ser. No. 462,179
Claims priority, application United Kingdom, June 17, 1964, 25,080/64
4 Claims. (Cl. 179—22)

In an automatic telephone exchange system in which interconnections between lines are established through switching equipment by means of communication paths

each comprising an outgoing portion extending between one line through the switching equipment to one side of a link circuit and an incoming portion which extends from the other side of the link circuit back through the switching equipment to another line, the provision of a plurality of link circuit means each comprising a plurality of in-

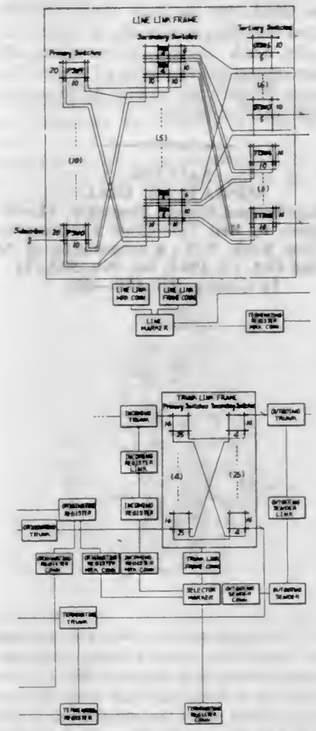




dividual but dissimilar link circuits together with switching means for selectively connecting an individual link circuit of said link circuit means to the incoming and outgoing portions of a communication path, the particular link circuit chosen being determined by the type of call for which the communication path is taken into use.

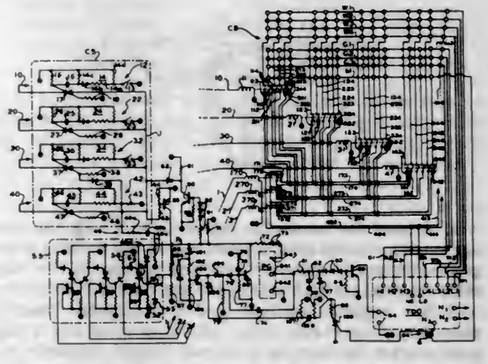
3,417,206
CROSSBAR SWITCHING SYSTEM PROVIDING AN INCREASED NUMBER OF POSSIBLE PATHS TO A SELECTED REGISTERED GROUP
Kazuhiko Wakabayashi, Chiaki Ii, Toru Ohno, and Kazuo Ito, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 342,631, Feb. 5, 1964. This application Sept. 14, 1967, Ser. No. 667,862
Claims priority, application Japan, Feb. 8, 1963, 38/5,525
10 Claims. (Cl. 179—22)

A telephone switching system including a multi-frame switching frame having a plurality of switch units in each frame and links connecting each switch unit of the first stage to each switch unit of the last stage, the outlets of each switch unit of the last stage being subdivided into first and second sub-groups with each sub-group of a switch unit being connected along with a sub-group of another switch unit to a respective group of registers to thereby increase the number of possible paths between a



subscriber and a selected group of registers through said switching frame.

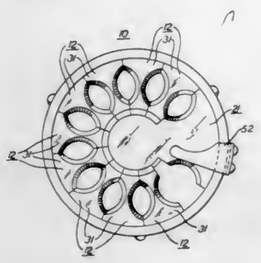
3,417,207
AUTOMATIC DIALING APPARATUS
Walter Pecota, Mountain Lakes, N.J., assignor to G-V Controls Inc., Livingston Township, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 382,040, July 13, 1964. This application Nov. 18, 1964, Ser. No. 414,496
16 Claims. (Cl. 179—90)



A plurality of digit conductors (*d* in number) and a plurality of address conductors (*c* in number) control an array of *ncd* normally open electric paths, each combina-

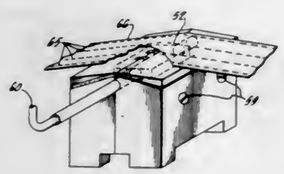
tion of one digit conductor and one address conductor when contemporaneously activated effecting the closure of a respective *n* of the paths. As an incident to activation of an address conductor the digit conductors are successively activated thereby successively to close, *n* at a time, *nd* of the paths. Such closures render means effective to variously interconnect the terminals of an electrical system which transmits integer-representing signals as determined by the terminal interconnection.

3,417,208
MINIATURE DIAL
David W. Hagelbarger, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,121
16 Claims. (Cl. 179—90)



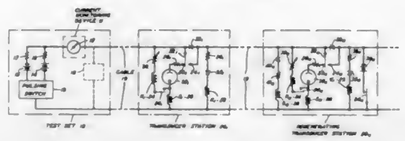
A space saver telephone dial which is arranged so as to allow the finger-hole opening being used, to expand, to accommodate the dialing finger, while the rest of the finger holes remain in their elliptical form. Three embodiments of the invention show three mechanical ways to obtain a small dial by having the finger holes initially in an elliptical form each of which changes to a substantially circular form upon the urging of a dialing finger into the finger recess of the dial.

3,417,209
HIGH FREQUENCY MAGNETIC HEAD
Robert A. Schneider, Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Oct. 11, 1965, Ser. No. 494,765
4 Claims. (Cl. 179—100.2)



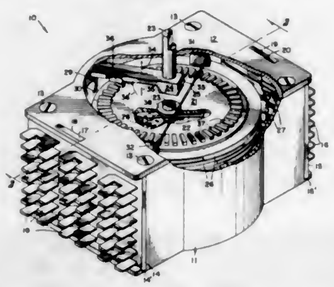
1. A head for recovering signals from a magnetic storage medium comprising support means for holding a first gapped magnetic material with one portion of the magnetic material on each side of the gap exposed for contact with the magnetic medium, said first magnetic material extending downwardly from said support means, a support bracket for housing a second gapped magnetic material with edges exposed in an upper surface plane of the bracket, said edges being aligned for contact with said downwardly extending first magnetic material, and bonding means joining only the lower surface of the support means to the upper surface of the housing bracket for completing a unitary magnetic circuit free of any of said bonding material.

3,417,210
CONDITION TESTING ARRANGEMENT
Daryl M. Chapin, Basking Ridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 12, 1965, Ser. No. 432,112
16 Claims. (Cl. 179—175.3)



In an arrangement for selectively monitoring a condition at a plurality of locations along a transmission cable pair, a terminal station transmits a series of unidirectional pulses to establish lockup paths and thereby connect successive variable resistance condition-responsive transducers across the cable pair at the respective locations.

3,417,211
INTERMITTENT DRIVE MECHANISM AND A TIMER UTILIZING SUCH
Joseph E. Wiser, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,034
23 Claims. (Cl. 200—38)

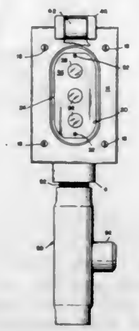


An intermittent drive mechanism and a timer utilizing such, said mechanism including a rotatable member having inner and outer peripheral rings of spaced stop means staggered with respect to each other, means to alternately intercept the rotating path of the inner and outer rings of stop means, and means to advance the rotary member along its rotating path as the said means alternately intercept the inner and outer rings of the stop means. The rotatable member is connected to cam means of the timer to advance the cam means as the rotatable member is advanced.

3,417,212
SELECTIVELY OPERABLE CONTROL STATION AND ENCLOSURE
Neil J. Driscoll, Los Angeles, Calif.
(20980 Costanso St., Woodland Hills, Calif. 91364)
Filed Apr. 5, 1967, Ser. No. 628,777
1 Claim. (Cl. 200—42)

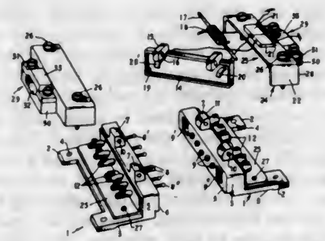
A pushbutton control station is disclosed to provide switching means and enclosure useful in outdoor locations where the station is subject to varying climatic conditions.

The station comprises a weatherproof enclosure having a cover with a central cavity receiving pushbuttons from an internal switching device. A boss above the cavity pivotally mounts a spring-loaded cover, the latter being normally biased to a closed cavity sealed position. The cover is manually raised to expose the buttons for actuation. The enclosure containing the switching device is provided with an extension defining a secondary housing. This housing has a boss on one side which mounts a key-operated switch. Terminal elements of the switch project within the secondary housing for electrical lead connection there-



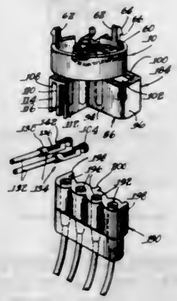
to. One lead may be connected to a current-carrying wire at station installation and the other lead may be connected to a terminal on the switching device in the primary enclosure. The station is normally mounted on an outdoor wall surface with the cover facing forwardly. An access opening to the secondary housing is directed oppositely from the face of the cover. A plate closes this opening. This opening and cover plate are therefore locked against the mounting wall surface after installation, thus preventing access to the terminals of the key switch. With the key switch open, power to the station is interrupted and the station is inoperative.

3,417,213
PLUG AND SOCKET CONNECTOR FOR ELECTRIC CIRCUITS
Stanley Bryant, 221 Victoria St., Taree, New South Wales, Australia
Filed Dec. 30, 1966, Ser. No. 606,469
Claims priority, application Australia, Apr. 5, 1966, 3,873/66
9 Claims. (Cl. 200—51)



A plug and socket connector for connecting electrical circuits on a towing vehicle to corresponding circuits on a trailing vehicle to be towed by said towing vehicle. The plug and socket are substantially the same shape. The socket is mounted on the towing vehicle and has a hinged lid which acts as a switch and in a closed position, where it prevents the engagement of the plug in the socket, it connects a resistor into a circuit of the towing vehicle to be connected to the trailing vehicle. With the lid in the raised position the plug can be engaged in the socket and the resistor is switched out of said circuit.

3,417,214
SWITCH CONNECTOR
John H. Krehbiel, Downers Grove, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 396,631, Sept. 15, 1964. This application Mar. 16, 1965, Ser. No. 440,075
7 Claims. (Cl. 200—51)

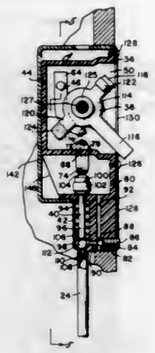


A switch-connector combination comprising a molded plastic housing adapted to be secured to a base plate as of a phonograph record changer by means of integral bayonet arms. The housing carries three pins in a straight line array, the butt ends of two of the pins serving as fixed switch contacts. A movable shorting bar moves in and out of engagement with these two pins as a result of movement of a switch actuator. The extending ends of all three pins serve as male connectors for receipt of a complementary plug having female connectors. The housing includes a skirt into which a fourth grounding pin secured to the base plate extends in parallel straight line array with the first three pins. The housing skirt provides a pair of laterally extending chutes for receipt of motor leads having terminals thereon which slip over two of the pins.

3,417,215
ELECTRIC SWITCH
Thomas Corona, Pleasantville, and Le Roy J. Kelly, Egg Harbor Township, N.J., assignors of fifty percent to Thomas Corona, Pleasantville, and fifty percent to Le Roy J. Kelly, Egg Harbor Township, N.J.
Filed June 22, 1966, Ser. No. 559,551
10 Claims. (Cl. 200—86)

1. In combination with a control mat comprising an imperforate deformable envelope confining a cushion of air, a pressure responsive electric switch, said switch comprising a manually movable member, a slidable member controlled by said mat, a pair of conductive strips and a pair of wipers, said switch enabling energization of an electrical load when a closed circuit is made between said conductive strips, one of said wipers being connected to one of said strips and the other of said wipers being mounted adjacent the other of said strips, said movable member having a first conductive member which is adapted to make a closed circuit between said strips when said movable member is in a first position and a second conductive member which is adapted to make a closed circuit between said other wiper and said other strip when said movable member is in a second position, said movable member adapted to be placed in a third position which

prevents making a closed circuit between said strips, said slidable member having a head including a conductive surface so that said slidable member when activated by

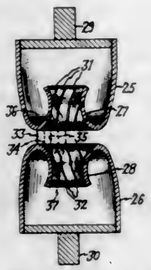


said mat makes a closed circuit between said wipers which in turn makes a closed circuit between said conductive strips when said movable member is in its said second position.

3,417,216
ARC CONTROLLING ELECTRODES FOR SWITCHES AND GAPS

Sidney R. Smith, Jr., Myrtle Beach, S.C., assignor to General Electric Company, a corporation of New York

Original application Apr. 16, 1965, Ser. No. 448,787, now Patent No. 3,366,762, dated Jan. 30, 1968. Divided and this application Oct. 6, 1967, Ser. No. 673,426
6 Claims. (Cl. 200—144)



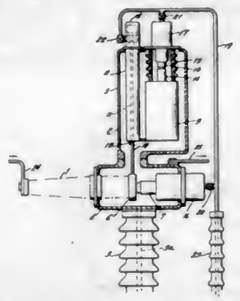
The electrodes are cup shaped with spirally slotted inturned or reentrant lip portions in mouth to mouth relation for electromagnetically driving an arc between them toward their common axis and rotating it about that axis.

3,417,217
AIR BLAST CIRCUIT BREAKER

Haakon Forwald, Walter Pucher, and Karl Gustav Sindahl, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Apr. 14, 1966, Ser. No. 542,685
Claims priority, application Sweden, Apr. 14, 1965, 4,890/65
6 Claims. (Cl. 200—148)

1. An interrupter structure for air blast circuit breakers comprising a conductive housing filled with high pressure gas; first, second and third pairs of contacts supported within said interrupter; first and second resistors supported within said conductive housing; said second pair of contacts being connected in series with said first resistor; said second pair of contacts and said first resistor being connected in parallel with said first pair of contacts; said third pair of contacts being connected in series with said second resistor; said third pair of contacts and said second resistor being connected in parallel with said first resistor; one contact of each said first, second and third pairs of contacts being movable between an engaged and disengaged position with respect to the other

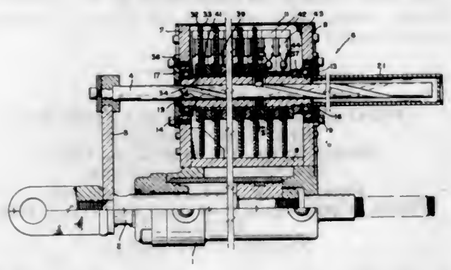


contact of each pair; and first, second and third operating mechanisms connected to each of said movable contacts of each of said first, second and third pairs of contacts; each of said operating mechanisms having a conductive housing; each of said conductive housings of said first, second and third operating mechanisms being mounted on the exterior of said conductive housing of said interrupter structure.

3,417,218
SWITCH ACTUATING APPARATUS UTILIZING A RECIPROCAL ROD WITH HELICAL GROOVES TO IMPART ROTATIONAL MOVEMENT TO CAMS

Glen A. Norwood, Kent, Wash. 98031

Filed Jan. 11, 1967, Ser. No. 608,591
15 Claims. (Cl. 200—153)



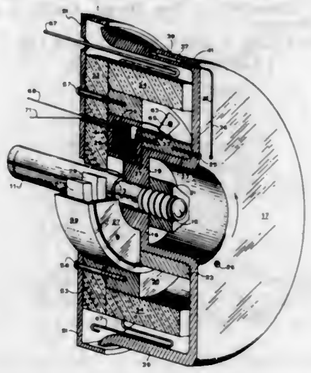
Apparatus for moving and accurately positioning an element such as a cutter head, machine tool or the like in a predetermined position by hydraulic power. An electrical switching unit is mechanically linked to the piston rod of a hydraulic cylinder for performing a programmed switching operation determined by a manually set selector switch and the position of the piston rod. The piston rod is mechanically connected to a control rod which includes helical cam grooves. Linear movement of the control rod is used to operate multiple switch operating cams. The cams are in the form of disk members so mounted as to be rotatable relative to each other for adjusting the extent of the cam lobes carried thereby. Selector switches in the electrical circuit determine a "set" position at which the piston of the hydraulic cylinder will stop and hold when a cam switch is operated. The control rod is provided with two helical cam grooves with the follower means comprising spring pressed ball detents mounted in a surrounding tubular sleeve. The detents are caused to follow the grooves as the rod is reciprocated and are

located a very slight distance off center so as to bear on one side of the grooves. The off center positioning of the ball detents eliminates back lash and provides for accurate positioning of the piston rod since little or no play is normally allowed between the control rod and the surrounding tubular sleeve which mounts the switch operating cam disks.

3,417,219
ROTATING TRANSFORMER STRUCTURE

Francis M. Bailey, Roanoke, Va., assignor to General Electric Company, a corporation of New York

Filed Mar. 15, 1966, Ser. No. 534,516
2 Claims. (Cl. 219—10.61)

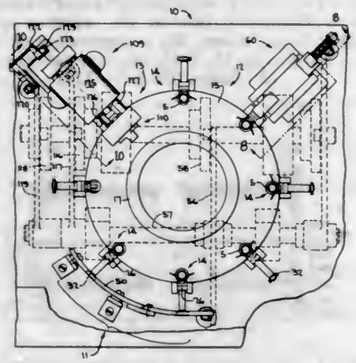


A rotating transformer structure in combination with a roll heater for providing an accurate reflection of the true temperature of the heater roll wherein the output of a thermocouple associated with the heater is fed into the primary of the rotary transformer and the secondary winding of the transformer provides an output representative of the temperature of the roll heater.

3,417,220
AUTOMATIC WELDING MACHINE

Chester O. Merchant, Owensboro, Ky., assignor, by mesne assignments, to Kentucky Electronics Inc., Owensboro, Ky., a corporation of Delaware

Filed Jan. 28, 1966, Ser. No. 523,714
12 Claims. (Cl. 219—80)

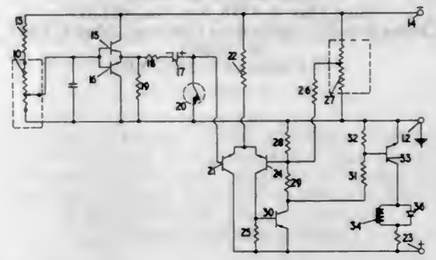


Automatic means and methods are disclosed for welding together in precise locations two parts to an electron gun. An indexing turret table has stations for receiving one part, receiving the other part, clamping the second part in place for rotation with the turret table, welding the parts together and discharging the welded piece. A special spring and plunger assembly works with a welding head to adjust pressure, and a fork assembly unloads the welded pieces at an unloading station so that they may be blown away from the support.

3,417,221
DISPLACEMENT MEASURING APPARATUS

Brian Phillip Hayward, Sheldon, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Nov. 15, 1965, Ser. No. 507,735
1 Claim. (Cl. 219—109)



A displacement measuring apparatus for use with an electric welding machine having a pair of movable electrodes and apparatus associated with the electrodes to produce a signal which is indicative of the relative position of the electrodes. A comparator compares this signal with a signal that was generated and stored before the welding current was initiated. When the difference between the two signals attains a predetermined value, the welding operation is terminated.

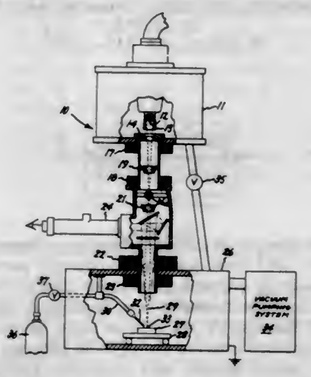
ERRATUM

For Class 219—13 see:
Patent No. 3,417,200

3,417,222
APPARATUS FOR HOLDING ELECTRICALLY NON-CONDUCTIVE MATERIAL AND IMPROVING ELECTRON BEAM CUTTING THEREOF

Peter Cannon, Alplaus, William R. Grams, Ballston Spa, and William L. Mowrey, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

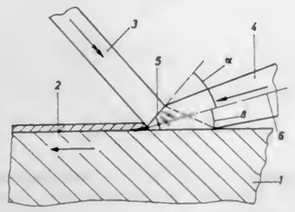
Filed Mar. 1, 1965, Ser. No. 436,009
5 Claims. (Cl. 219—121)



An apparatus is described for controlled cutting or drilling of a hard non-conducting material such as, for

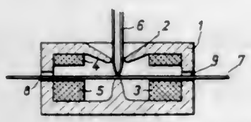
example, diamond by the use of a high energy beam of electrons focused in a vacuum work chamber. The workpiece is supported and enclosed by an adjustable vise member made of a metal having a high rate of thermal and electrical conductivity. The vise includes a cavity within a base portion thereof which serves as an effective electron-trapping cage. A very small expansion nozzle is mounted in the work chamber for accurately impinging flow of an appropriate gas upon the focal point of the electron beam upon the workpiece.

3,417,223
WELDING PROCESS USING RADIANT ENERGY
Karl Heinz Steigerwald, Schubertstrasse 8, Heidenheim, Germany
Filed May 4, 1965, Ser. No. 453,013
Claims priority, application Germany, May 6, 1964, St 22,089
17 Claims. (Cl. 219—121)



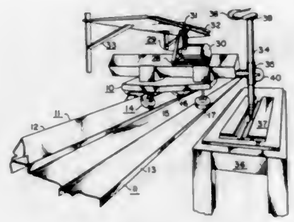
A welding process is described wherein an energized beam such as a beam of electrons is used to weld a material with a preheated filler material. The filler material is supplied to the welding zone but without heat-conducting relationship therewith. The preheating of the filler material is obtained by either an independent supply of heat or by the energized beam in a controllable manner. The filler material is preferably so positioned relative to the weld and the energized beam to partially intersect the beam whereby the preheated portions of the filler material are permitted to merge into the weld area to provide a weld free from irregularities such as voids, cracks and the like.

3,417,224
METHOD AND DEVICE FOR WORKING MATERIAL BY MEANS OF A CORPUSCULAR BEAM
Karl H. Steigerwald, Wasseralfingen, and Edgar Meyer, Gilching, Germany, assignors to K. H. Steigerwald G.m.b.H., Wasseralfingen, Germany
Filed Aug. 5, 1965, Ser. No. 477,486
Claims priority, application Germany, Aug. 5, 1964, St 22,502
19 Claims. (Cl. 219—121)



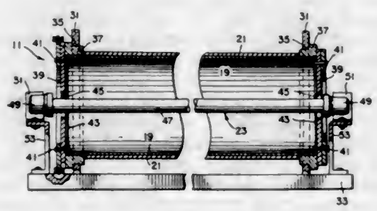
An apparatus is described wherein an unusual magnetic lens is used with a beam of charged particles such that the beam is focused at a point located within the active region of the magnetic lens. Workpiece passages are provided in the side of the lens so as to permit machining of a workpiece inserted through the passages at a point of greatest power density and minimum spherical aberration. The magnetic lens includes either a single or plurality of pin portions opposite the pole shoes of the lens. The pins may be threadedly secured to the lens to provide axial adjustment thereof such that the focal length of the lens may be varied. Further, the pins may include an eccentric point such that upon rotation thereof, a deflecting effect is produced on the beam. Also, the pins may include a bore therein containing a collecting electrode for generating a desired signal in response to impingement of the beam. Further, the pin may be divided into four sectors each sector having an auxiliary winding so as to compensate for astigmatism of the beam.

3,417,225
AUTOMATIC FRICTIONLESS GUIDED WELDING APPARATUS
Earl L. Christian, San Diego, Calif., assignor to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,105
9 Claims. (Cl. 219—125)



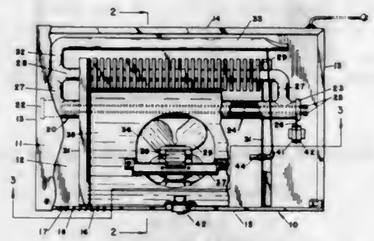
A welding apparatus horizontally movable in two directions; one at right angles to the other. A carriage is supported on air bearings for movement in a longitudinal direction. A vertically disposed welding torch mounted on a cross bar is supported for movement in a transverse direction on air bearings fixed to the carriage. A motor mounted on the cross bar rotates a magnetic tracing wheel engaged with a template. Transverse movement of the cross bar and its associated welding torch is effected by the force of the tracing wheel in magnetic contact with the contoured edge of the template. A welding wire spool and motor assembly journalled on the welding torch, feeds and directs weld wire to the workpiece at the torch tip.

3,417,226
TEMPERATURE RESPONSIVE APPARATUS
Hubert J. Thomiszer, Skokie, Ill., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 449,095
11 Claims. (Cl. 219—216)



A stationary heat sensor for a traveling heat-containing body comprising a resilient blade of heat-conducting material carrying a heat sensitive element secured in direct heat exchange contact with one side of the blade, so that the moving body may be thermally monitored by stationarily mounting the blade for the sliding engagement of its other side with the body, vertically opposite the sensitive element.

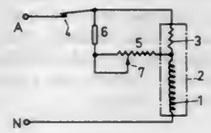
3,417,227
UNDERCABINET ELECTRIC SPACE HEATER UNIT
Jean Y. Barbier and Elizabeth J. Papke, St. Louis, Mo., assignors to International Oil Burner Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 4, 1966, Ser. No. 539,989
5 Claims. (Cl. 219—365)



1. An undercabinet hot water heater of the type utilizing forced air flow over a heat exchanger in which electrical heating induces the circulation of heated liquid, comprising
a cabinet having top and bottom horizontal walls and whose height is its least dimension,
a first lateral horizontal tube supported therein spacedly above the bottom and below the top of the frame,
an electrical resistance heater within said first tube,
means providing a path for the flow of liquid through said tube and around said heater, said means including
a second lateral horizontal tube of smaller diameter and whose tube axis is above the level of said first tube, and aft-extending, upward-sloping tubular connections between said first and second tube adjacent to their ends,
heat-conductive vertical fins affixed to and along the length of said second tube intermediate said tubular connections,
air-impelling means,
and means to laterally confine the air impelled thereby to the finned length of the second tube,
whereby to define, in part, walls of a plenum chamber in which the finned length of the second tube is at the outlet and the first tube extends across the entire length thereof,
the cabinet further having a front register-containing wall including an inlet register communicating to the air-impelling means, and an outlet register sideward of the inlet register, and
an outlet passage from the finned tube to the outlet register.

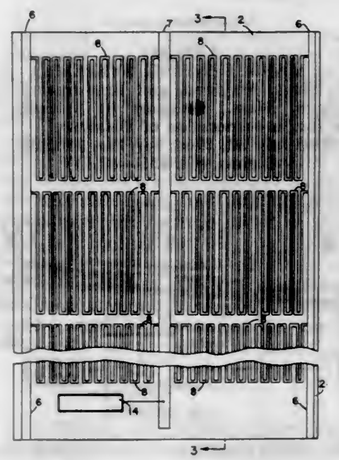
3,417,228
OVERLOAD CONTROL FOR ELECTRIC HEATER ELEMENTS
Lindsay Sydney Little, 34 Ewan St., Mascot, New South Wales, Australia
Filed Nov. 17, 1966, Ser. No. 595,075
Claims priority, application Australia, Nov. 23, 1965, 66,909/65
5 Claims. (Cl. 219—504)

1. Overload control for electric heaters circuits including a heater element enclosed in a tubular sheath characterised by a heat-variable resistor enclosed in said tubular sheath together with said heater element and electrically connected in series therewith, a further resistor substantially immune to temperature changes electrically connected parallel to said heat-variable



resistor and a contact device connected to said further resistor and sensible to changes in current flow through said further resistor to interrupt the operating circuit of said heater element, when the temperature within said sheath exceeds a predetermined limit.

3,417,229
ELECTRICAL RESISTANCE HEATING ARTICLES
George J. Shomphe, Robert W. Tabor, and Harold W. Lalmond, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 496,021
8 Claims. (Cl. 219—528)



Articles which provide uniform emission of heat from the surfaces thereof utilizing thin, flexible resistive strips as heating elements. The element strips are encapsulated within electrical, flame-retardant flexible material which may be covered with decorative type materials. The heating circuit having a plurality of heating elements connected in parallel between a power bus and a ground bus. Each heating element has a thermal-link fuse as an integral part thereof and a detachment of one element will not affect the operation of the other elements.

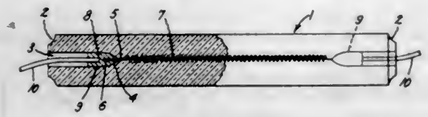
3,417,230
ELECTRIC HEAT LAMP AND ELECTRIC DEVICES
Roger C. Millikan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 15, 1966, Ser. No. 601,929
4 Claims. (Cl. 219—553)

1. An electric heat emitting device comprising:
(A) A support member of vitreous, light-transmissive material capable of withstanding temperatures of at least 1000° C. without softening;

(B) A coiled refractory metal wire incandescable filament hermetically sealed and fully imbedded within the volume of said support member and extending outward through the ends thereof;

(B1) The material of said support member being in intimate contact with said wire along the entire length thereof which is imbedded therein;

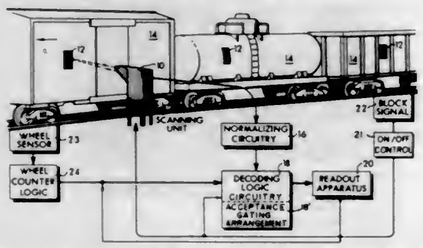
(C) A mass of metallic material moulded about the outwardly extending ends of said filament and making good electrical contact and a strong mechanical supporting contact thereto;



(D) Contact means in electrical contact with said metallic mass for supplying an operating voltage to said filament; and

(E) said support member being an elongated tubulation of high silica content quartz-like material and the filament being a refractory metal wire having a melting point in excess of 2500° C. and an electrical resistivity at room temperature at least as high as 4.5×10^{-6} ohm cm.

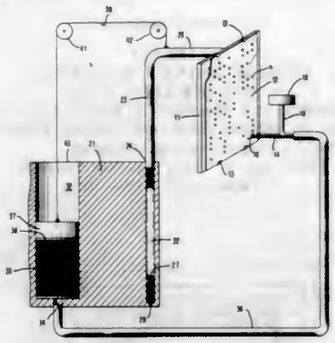
3,417,231
MARK SENSING SYSTEM
Francis H. Stites, Wayland, and Bradstreet J. Vachon, Framingham, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,328
9 Claims. (Cl. 235—61.11)



A coded vehicle identification system including a acceptance gating arrangement for preventing signals other than those derived as a result of scanning a retroreflective data-encoded label affixed to a vehicle from being processed. The signals derived from the scanning operation are stored in storage registers and then tested by the acceptance gating arrangement to determine whether they were derived from the label alone. More particularly, the signals are tested to determine whether they occur within a predetermined period of time which is substantially equal to the expected duration of signals derived from a properly-scanned label. If the signals do occur within the predetermined duration, they are transferred from the storage registers to appropriate output apparatus.

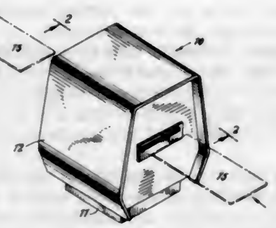
3,417,232
PNEUMATIC CARD READER
Herman Lukoff, Philadelphia, and Arnold Schonfeld, Levittown, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1964, Ser. No. 378,792
12 Claims. (Cl. 235—61.11)

A pneumatic reader for a perforated record is provided wherein a manually controlled transport device is operated to move the record past a pneumatic sensing head. The pneumatic sensing head is powered by an air source



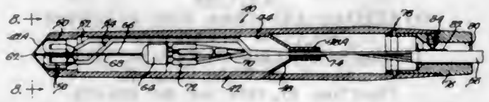
which in turn is powered by the motion of the transport device.

3,417,233
CARD READER
Alfred W. Stewart, New Paltz, N.Y., assignor to Datron Systems, Inc., Mountain Lakes, N.J., a corporation of New Jersey
Filed Sept. 21, 1964, Ser. No. 397,929
7 Claims. (Cl. 235—61.11)



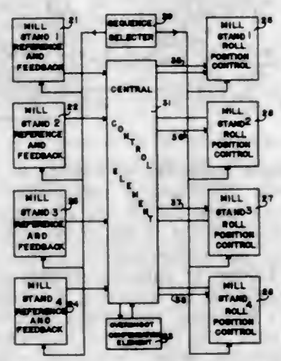
A card reader for reading punched tabulated cards comprising a continuous drive for inlet and outlet drive rolls on opposite ends of the card reader with card reading means interposed between the inlet and outlet drive rolls for continuously sensing information on the card.

3,417,234
RECORD READING APPARATUS AND METHOD
Gunnar E. Sundblad, Bromma, Sweden, assignor to Svenska Dataregister AB, Solna, Sweden, a corporation of Sweden
Continuation-in-part of applications Ser. No. 288,997 and Ser. No. 289,103, both June 19, 1963. This application June 27, 1967, Ser. No. 654,944
Claims priority, application Sweden, June 21, 1962, 6,949 and 6,950
9 Claims. (Cl. 235—61.11)



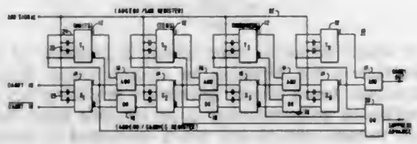
A portable record reader and reading method for records coded with parallel and greatly elongated areas of different reflectivity. A hollow pencil-like housing with an opening in the tip contains an electric lamp and a photocell spaced along the housing axis. Optical rods extending generally along the axis of the housing and smaller than the opening extend between a light transmitting, record contacting element at the opening and the photocell to transmit reflected light. Incident light from the lamp passing through the element around the rods forms a scanning spot smaller than the widths of the code areas and permits the record to be correctly read if the operator wipes the tip across all of the coded area with the housing inclined at any angle to the record.

3,417,235
SYSTEM TO REGULATE POSITION OF A PLURALITY OF OBJECTS WITH CENTRAL TIME SHARED CONTROL
Robert C. Clark and Kenneth R. Thompson, Roanoke, Va., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 262,154, Mar. 1, 1963. This application Apr. 4, 1967, Ser. No. 628,782
4 Claims. (Cl. 235—151.11)



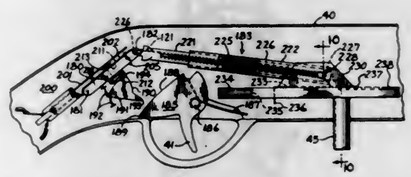
A position regulating system is described with means associated with each object to be positioned for indicating a desired position and the actual position of the object. A selection element selects the desired and actual position indicating means for each object to be positioned in a predetermined order. After selection of the object to be positioned by selection of the desired and actual position indicating means, a central calculation element takes the desired and actual position indications and calculates the difference. The calculated difference is then used to move the object towards the desired position. When the difference between the selected and actual position of the object approaches a predetermined value, this fact is so indicated. An automatic overshoot compensation factor is provided to compensate for the overshoot that may result.

3,417,236
PARALLEL BINARY ADDER UTILIZING CYCLIC CONTROL SIGNALS
Brian G. Utley, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,568
11 Claims. (Cl. 235—175)



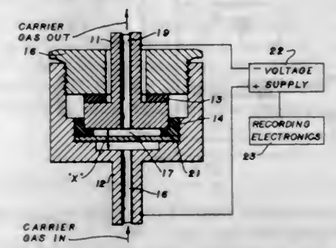
1. A parallel binary adder comprising first and second registers for storing two binary numbers, means for generating a partial sum of two binary numbers stored in said registers with said partial binary sum being stored in said first register, means for generating carries left from a partial summing operation with the carries being stored in said second register, means for applying repetitive Add Signals to control said adder to repeat the partial summing operation until blocked, and means for providing a blocking signal to the Add Signal applying means when all of the carries are zero.

3,417,237
INTERVAL CONTROL MECHANISM FOR LIGHT GUN OR THE LIKE
Russell S. Fenton, 308 Eaton St., Northfield, Ill. 60093
Original application Feb. 5, 1965, Ser. No. 430,553, now Patent No. 3,376,039, dated Apr. 2, 1968. Divided and this application May 19, 1967, Ser. No. 639,818
9 Claims. (Cl. 240—10.62)



A gun providing a light beam of variable duration. A pair of spring type contacts are connected in series with a lamp and normally biased open by a mechanism formed by a pair of telescoping tubes, one of which is movable in response to operation of a trigger and the other of which is stationary, separated by a thin viscous film and interconnected at their respective remote ends by a bias spring. One of the contacts is connected to the movable tube of the bias mechanism and thus urged toward the other contact when the trigger is pulled. A trigger operated plunger is forced against the other contact as the trigger is pulled to prevent actuation of the lamp until trigger pressure is released. The duration of engagement of the contacts is governed by the preset position of the stationary tube which predetermines the bias force applied to return the one contact to its normal disengaged position.

3,417,238
GAS CHROMATOGRAPHIC DETECTOR UTILIZING RADIOACTIVITY
Charles H. Hartmann, Moraga, Calif., assignor, by mesne assignments, to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 6, 1965, Ser. No. 446,050
2 Claims. (Cl. 250—44)



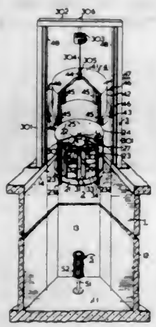
A gas chromatographic detector in which the sample gas is ionized by metastable atoms of the carrier gas. An electric field strength in the range 2500 to 3800 volts per centimeter is maintained in the electrode gap. The high field strength increases the detector's sensitivity through

a combination of avalanche excitation of the carrier gas atoms and acceleration of secondary electrons to energies sufficient to directly ionize sample gas atoms. Detector sensitivity is in the range 1 to 10 parts per billion of O_2, CO_2, and CO.

3,417,239
METHOD AND APPARATUS FOR UNDERWATER IRRADIATION OF SUBSTANCES

Francis M. Blache-Fraser, David R. Cowper, and Eric K. Curnow, Ottawa, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a company

Filed May 7, 1965, Ser. No. 454,149
Claims priority, application Canada, Mar. 5, 1965, 924,809
17 Claims. (Cl. 250—52)

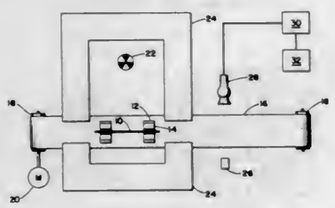


Method and apparatus for the irradiation of substances wherein the substances are placed on a platform with a hole in it. and an air bubble surrounds the platform. The assembly of air bubble, platform and substances thereon are lowered into a pool of water which contains a radioactive source. In the operative position, the radioactive source reaches through the hole in the platform into the air bubble to irradiate the substances.

3,417,240
METHOD OF TESTING TRANSPARENT MATERIALS

Irvin E. Lamb, Berkeley, and Randall W. Harman, Pleasanton, Calif., assignors, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Aug. 20, 1964, Ser. No. 390,920
4 Claims. (Cl. 250—71)



1. A non-destructive method of examining transparent material for imperfections, comprising

subjecting the transparent material to penetrating ionizing radiation so as to fill any lattice imperfections in the transparent material with trapped electrons,

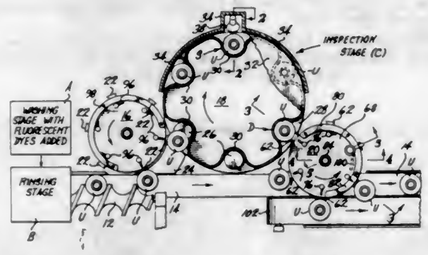
exposing the transparent material to an electron-excitation source capable of exciting any electrons trapped in lattice imperfections therein so as to cause light photons to be emitted from such electrons, and

determining any areas of lattice imperfections in the transparent material by detecting any light photons emitted by electrons excited by the electron-excitation source to which the transparent material is exposed.

3,417,241
EMPTY BOTTLE INSPECTION METHOD AND APPARATUS UTILIZING BOTH WATER SOLUBLE AND OIL SOLUBLE FLUORESCENT DYES

Ronald E. Davis, 3211 W St., Vancouver, Wash. 98663

Filed Dec. 7, 1965, Ser. No. 512,161
17 Claims. (Cl. 250—71)

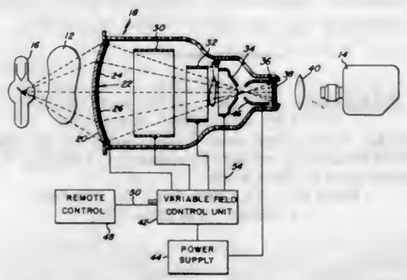


Empty bottle inspection by washing in a hot caustic wash solution containing a combination of environmentally stable water soluble and oil soluble fluorescent dyes to provide exhaust of one or the other of the dyes, or both, onto any unremoved contaminate or debris in the bottle, whether of animal, vegetable or mineral oil origin. Inspection is by conveying a washed and rinsed bottle into a light tight shroud and illuminating it with ultra-violet light, with light sensor means being arranged to detect spectrally shifted energy emanating from the bottle while in the shroud and controlling "accept" and "reject" bottle handling mechanism responsive to the level of such detected energy.

3,417,242
IMAGE INTENSIFICATION SYSTEM COMPRISING REMOTE CONTROL MEANS FOR VARYING THE SIZE OF THE OUTPUT IMAGE

Robert W. Windebank, Fairfield, Conn., assignor to The Machlett Laboratories, Incorporated, Springdale, Conn., a corporation of Connecticut

Filed Sept. 20, 1965, Ser. No. 488,638
4 Claims. (Cl. 250—83.3)

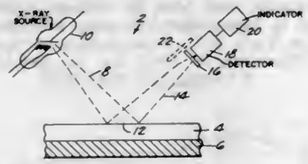


An image intensifier tube having a plurality of electrodes therein for directing an electron beam from an input screen to an output screen for providing a visible output image corresponding to an invisible input image, a high voltage control unit being connected to the electrodes for varying the voltages applied thereto and consequently varying the sizes of the portion of the input image which is reproduced at the output screen, and remote low voltage control means which may be safely handled by an operator for independently and individually controlling portions of the high voltage unit whereby voltages to the intensifier tube electrodes may be individually varied in a continuous and safe manner.

3,417,243
METHOD AND APPARATUS FOR X-RAY FLUORESCENCE GAUGING OF A HIGHER ATOMIC NUMBER SELECTED ELEMENT IN A COATING ON A BASE

Robert C. Hill, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 28, 1965, Ser. No. 505,479
13 Claims. (Cl. 250—83.3)

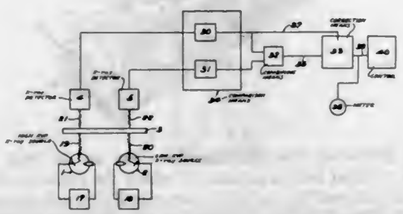


A method and apparatus for X-ray fluorescence gauging of a selected element in a coating having an atomic number higher than the atomic number of any other element in a coating and base is shown. The nondispersive X-ray fluorescence gauge shown herein irradiates a localized area of a coating on the base with an X-ray beam having an excitation potential sufficient to excite the coating element to emit fluorescent radiation at its characteristic wavelengths together with background radiation and backscattered X-ray beam radiation, uses a single passive filter having a predetermined thickness and X-ray absorption wavelength which is slightly shorter than at least one of the characteristic wavelengths of the fluorescent radiation of the selected element for selectively transmitting all of the radiation and which uses a detector positioned relative to the filter for receiving the selectively transmitted fluorescent radiation and for producing an output signal which is substantially proportional to the intensity of the fluorescent radiation intensity of the coating element.

3,417,244
X-RAY THICKNESS GAUGE WITH CORRECTION FOR SPECIMEN COMPOSITION

Max J. Kramer, Parma, Ohio, assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 10, 1966, Ser. No. 571,477
7 Claims. (Cl. 250—83.3)

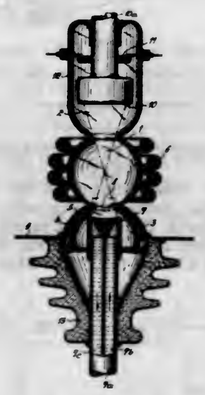


An apparatus for measuring the thickness of a metal specimen has two X-ray sources operating at different kilowatt peaks to emit X-ray beams of different wavelengths which are directed at the specimen, and the unabsorbed portions of the two beams are measured and compared to determine the deviation in specimen composition from that of a standard specimen, and to compute the thickness value corrected for alloy composition deviation.

3,417,245
NEUTRON GENERATING APPARATUS

Albrecht Carl Schmidt, Karlsruhe, Germany, assignor to Gesellschaft fur Kernforschung m.b.H., Karlsruhe, Germany, a corporation of Germany

Filed Apr. 22, 1963, Ser. No. 274,763
9 Claims. (Cl. 250—84.5)



1. A neutron generating apparatus comprising:

(a) A sealed casing for containing a gas under low pressure;

(b) An electrically heatable wire disposed within said casing for releasing a gas including at least one isotope of hydrogen, such gas being occluded in said wire for release upon the heating thereof;

(c) Means for applying high frequency electromagnetic energy to such released gas to convert a portion thereof into a plasma having a predetermined boundary;

(d) A target electrode disposed within said casing, said target including a plurality of segments defining a chamber for substantially containing the plasma, said target being disposed in predetermined spaced relation to the boundary of said plasma, said target having an exposed surface of material capable of occluding a quantity of such released gas;

(e) an anode electrode disposed within said casing for extension into said plasma chamber; and

(f) Voltage pulse generating means operatively connected to said target and anode electrodes for applying an electric potential difference therebetween to generate and accelerate a beam of ions flowing from the plasma boundary and striking the target whereby the impact of said ions produces nuclear reactions in the target material to generate neutrons.

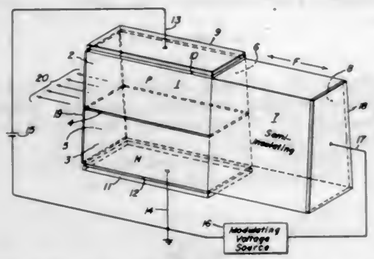
3,417,246
FREQUENCY MODULATED SEMICONDUCTOR JUNCTION LASER

Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 26, 1965, Ser. No. 474,800
10 Claims. (Cl. 250—199)

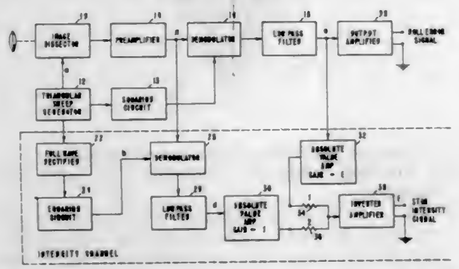
A semiconductor junction laser diode and a body of semi-insulating semiconductor material are joined to form a resonant cavity wherein the resonant frequency is shifted by varying the refractive index of the semi-insulat-

ing material with intensity of an applied electric field. The field is applied parallel to the direction of light emission,



with the laser diode surface at the interface forming a radio frequency ground plane for the field.

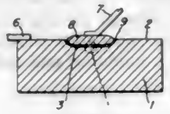
3,417,247
RADIANT ENERGY INTENSITY MEASUREMENT SYSTEM
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Edgar S. Davis, La Canada, Calif.
Filed June 29, 1966, Ser. No. 562,445
6 Claims. (Cl. 250—203)



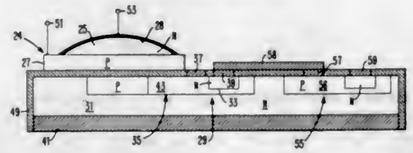
1. In apparatus wherein a source of light in a field is viewed by an image dissector camera wherein the electron image of the field of view is deflected past a slit aperture onto a target by a triangular sweep signal, means for producing a signal representative of the average intensity of said source of illumination regardless of its position within the said scanned field of view, said means comprising first and second demodulators, means for applying the output from said image dissector camera to said first and second demodulators, means for generating a first harmonic reference signal responsive to said triangular sweep signal, means for applying said triangular sweep signal to said first demodulator, means for applying said first harmonic reference signal to said second demodulator, and summing network means for adding the outputs of said first and second demodulators to provide a signal representative of the average intensity of the source of illumination regardless of its position within said scanned field of view.

3,417,248
TUNNELING SEMICONDUCTOR DEVICE EXHIBITING STORAGE CHARACTERISTICS
Robert N. Hall, Schenectady, N.Y., and Nick Holonyak, Jr., Urbana, Ill., assignors to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 182,775, Mar. 27, 1962. This application Apr. 26, 1965, Ser. No. 453,876
10 Claims. (Cl. 250—211)

A semiconductor device containing a narrow P-N junction which exhibits tunneling has deep-level trapping states formed within the space charge region of the junction. The device exhibits an enduring change in its tunneling current-voltage characteristics in response to applied energy in the form of a short duration voltage pulse or incident radiation.

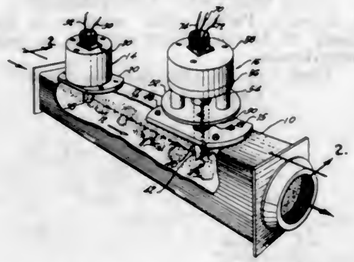


3,417,249
FOUR TERMINAL ELECTRO-OPTICAL LOGIC DEVICE
Ivars G. Akmenkalns, Endicott, Raymond J. Wilfinger, Poughkeepsie, and Alan D. Wilson, Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,419
5 Claims. (Cl. 250—217)



This invention is directed to a light operated switch wherein the input circuit is electrically isolated from the output circuit. The input circuit comprises a GaAs diode radiating photons in an energy band or radiation photons within a frequency spectrum. Said energy band or frequency spectrum overlapping with the energy absorption band or absorption frequency spectrum of a silicon transistor which comprises the output circuit.

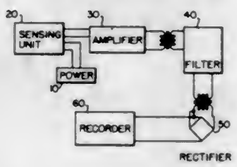
3,417,250
OIL MIST PARTICLE DENSITY DETECTION METHOD AND APPARATUS UTILIZING A STABLE OIL COATING AND A UNIJUNCTION OSCILLATOR CIRCUIT
Norman H. Kadivnik, Morton Grove, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 22, 1965, Ser. No. 450,155
11 Claims. (Cl. 250—218)



The following specification describes an oil mist detection method and apparatus in which the ratio of oil to air is determined by the light transmitted through the mist between optical surfaces located in the mist and having a stable coating of oil. The stable coating permits the apparatus to be calibrated with reference to a constant condition at the optical surfaces, while a known ratio of oil to air is transmitted, whereafter variation in the ratio can be unambiguously detected.

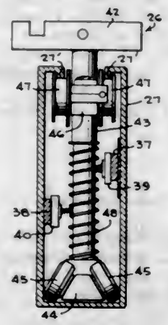
The detection apparatus comprises a pair of photocell elements one of which is temporarily connected to a known resistance and the light adjusted for selecting the photocell resistance. Each photocell controls a respective temperature stable unijunction oscillator for firing a respective silicon controlled rectifier as long as light of a selected intensity is transmitted to maintain a high and low light level alarm, respectively, turned off. When a high or low light variation exceeding a predetermined magnitude and duration occurs the corresponding oscillator terminates oscillation to operate the respective alarm.

3,417,251
TOWED INSTRUMENT FOR CONTINUOUS MEASUREMENT OF OCEAN TURBIDITY
John M. Leonard, Chevy Chase, and John D. Bultman, Oxon Hill., Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 20, 1965, Ser. No. 499,110
6 Claims. (Cl. 250—218)



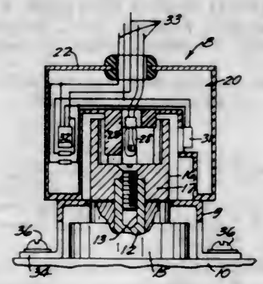
An improved instrument for measuring the turbidity of fluid media. The device may include a towable vessel of streamlined configuration to prevent light reflecting cavitation and within which are located a light source, a light beam chopper, means to direct and focus the light in a zone exterior of the vessel, and a light detecting element positioned within the vessel to measure backscattered light as a function of turbidity.

3,417,252
FABRIC FLAW DETECTING APPARATUS USING PHOTOELECTRIC SENSING HEAD TRAVELING ON A TROLLEY WITH BRUSHES ENGAGING A CONDUCTIVE STRIP
Lawrence Creigh Nickell and Raymond Baines Fertig, Ronceverte, and Curtis Lee Perkins, Frankford, W. Va., assignors to Appalachian Electronic Instruments Incorporated, Ronceverte, W. Va., a corporation of West Virginia
Filed Dec. 15, 1966, Ser. No. 602,021
20 Claims. (Cl. 250—219)



A fabric flaw detecting apparatus having a detector head of either the reflective or retroreflective type including a pair or a single phototransistor, and an amplifier unit, both mounted on a trolley movable back and forth on a horizontal rail of upwardly opening channel-shaped configuration, the trolley having upper and lower wheels tracking in the interior of the rail and having contact brushes in sliding contact with a contact strip within the rail spanning the path of trolley travel. The traveling subassembly includes a lamp regulator which normally draws current through the brush and contact strip arrangement and through a relay coil in a relay and resistor arrangement in a stationary circuit subassembly to maintain a relay in a condition preventing production of stop signals for stopping a knitting machine or visual alarm signals. Upon detection of a fabric flaw by the detector head a silicon controlled switch is activated to cut off or drastically reduce current drawn by the lamp regulator and lamp controlled thereby to reduce current drawn through the relay coil to a level causing it to drop out and produce stop and/or alarm signals.

3,417,253
COMPACT PULSE GENERATING DEVICE UTILIZING A TRANSLUCENT EPOXY RESIN ENCAPSULATED TRANSISTOR
Hassan B. Kadah, Manlius, and Marcel B. Hoste, Syracuse, N.Y., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 23, 1965, Ser. No. 450,365
9 Claims. (Cl. 250—233)

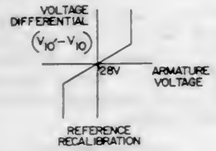


A small compact pulse generating device adapted for driving coupling relation to a driven shaft is shown wherein the device includes an annular-shaped member having at least one aperture extending between its inner and outer sides and the member is adapted for rotation about its axis in response to the rotations of the driven shaft. The member is located with a housing which supports a light source on one side of the member and a translucent epoxy resin encapsulated transistor on the other side of the member such that when the aperture is radially aligned between the light source and the encapsulated transistor, light energy from the light source impinges upon the base of the transistor whereby application of a potential across the collector and emitter of the transistor results in an abrupt change in the transistor's conductive characteristics in response to the absence and presence of light impinging upon the transistor base.

3,417,254
SOLID-STATE OVERVOLTAGE PROTECTION CIRCUIT
David L. Plette and Robert R. White, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed Mar. 14, 1966, Ser. No. 534,123
3 Claims. (Cl. 307—29)

1. An overvoltage protection circuit for a generator having an on-off voltage regulator which couples generator armature voltage to the generator field when said armature voltage is less than a reference voltage established by said voltage regulator and interrupts this con-

nection when said armature voltage exceeds said reference voltage, said overvoltage protection circuit comprising sensing means coupled to sense the instantaneous voltage on said generator field and develop a voltage proportional thereto, means for establishing a switch triggering voltage level proportional to an armature voltage which exceeds the armature voltage level established by the reference

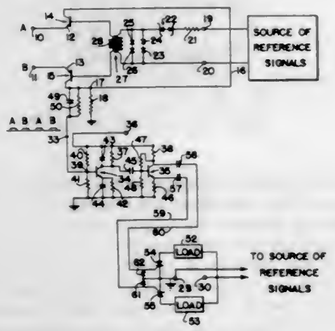


voltage of said voltage generator, switch means responsive to the sensing voltage and said triggering voltage level, said switch means being triggered on whenever said sensing voltage exceeds said triggering voltage level, and means controlled by said switch means to interrupt the coupling between the armature of said generator and its field whenever said switch means is on.

3,417,255
THRESHOLD SERVO CONTROL SYSTEM

John A. Kuecken, Pittsford, N.Y., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 497,116
14 Claims. (Cl. 307—39)

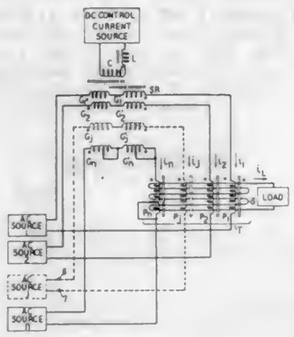


This is a servo control system in which the dead space and cross-over characteristics are controlled with precision, to prevent overshooting and hunting. Command voltages are applied to the input terminals of a chopper amplifier. Reference signals are also applied to the chopper amplifier. Between the chopper amplifier and the reference signal source is a means for shaping each sine wave of the reference signal into truncated half wave forms separated by a lead space. The spaced pulses in the output of the chopper amplifier have amplitudes alternately representative of the command voltages. By a means having a single ended input and a double ended output these pulses are amplified and phase inverted so that there appear at one terminal of the double-ended output an amplified component which is in phase with the reference signal, and at the other output terminal an amplified component which is out of phase with the reference signal. The respective voltage levels at the input terminal determine that one of the output terminals in which the in-phase component appears. The output terminals are coupled to two normally non-conductive load circuits, provided with gate elements and so arranged in relationship to the source of reference signals that the load circuit which is coupled to the output terminal producing the in-phase component is rendered conductive.

3,417,256
REGULATED POWER SUPPLY COMPRISING A PLURALITY OF ISOLATED SYSTEMS

Fred V. Kadri, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 31, 1966, Ser. No. 554,092
7 Claims. (Cl. 307—43)

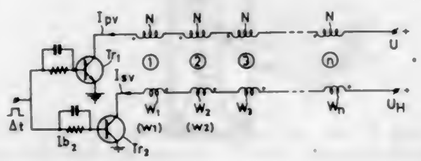


1. A power supply comprising n alternating current input sources, a saturable reactor having a control winding and $2n$ gate windings, an output transformer having n primary windings each wound on an individual core and a secondary winding wound on each of said individual cores, a control signal source connected to said control winding, a load connected to said secondary winding, an n individual serial paths each including an individual one of said input sources, an individual two of said gate windings, and an individual one of said primary windings, whereby a series connection of said input sources is simulated while maintaining electrical isolation between said input sources.

3,417,257
VOLTAGE-CONTROLLED MAGNETIC COUNTING CHAINS

Horst Michaelis, Quickborn, Holstein, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 11, 1964, Ser. No. 417,587
Claims priority, application Germany, Jan. 30, 1964, P 33,494
11 Claims. (Cl. 307—88)



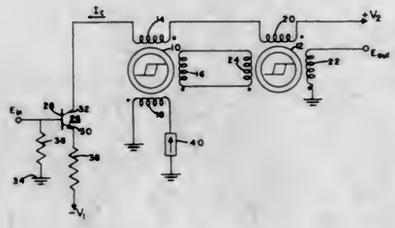
1. A magnetic counting circuit comprising a plurality of magnetic cores composed of material having a substantially rectangular hysteresis loop, primary and secondary windings inductively coupled to each of said cores, all primary windings having the same number of turns,

each secondary winding having a number of turns greater than the preceding one, said primary windings being connected in series, said secondary windings being connected in series, and means for applying successive voltage pulses to the series arrangement of primary windings, whereby the state of magnetization of the cores may be sequentially changed.

3,417,258
MAGNETIC CORE BIPOLAR PULSE DISCRIMINATOR

Robert B. Jaeger, St. Petersburg, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 18, 1964, Ser. No. 368,095
5 Claims. (Cl. 307—88)

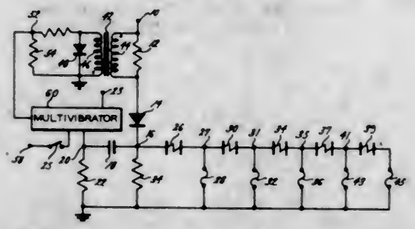


A magnetic circuit for discriminating between bipolar pulses is disclosed wherein a pulse which goes positive before it goes negative causes an output signal to be produced, but a pulse which goes negative first does not produce an output signal.

3,417,259
CONTROL SYSTEMS FOR SEQUENTIALLY ACTUATING A PLURALITY OF LOADS

Yasuto D. Nozawa, St. Ann, and Roger M. Nasser, Vinita Park, Mo., assignors to Conductron Corporation, St. Charles, Mo., a corporation of Delaware

Filed Oct. 26, 1966, Ser. No. 589,560
26 Claims. (Cl. 307—108)



1. A control system that can sequentially actuate a plurality of loads and that comprises:
a plurality of voltage actuated switches,
each of said voltage actuated switches normally having a relatively high impedance but responding to a predetermined voltage to become actuated and thereby irreversibly change to a relatively low impedance,
an energy-storing element,
said voltage actuated switches being connected in series with each other and said series-connected voltage actuated switches being connected to one terminal of said energy-storing element,
a plurality of loads,
each of said loads normally having a low impedance but responding to a predetermined current flowing therethrough to become actuated and thereby irreversibly change to a high impedance.
said loads being connected to said voltage actuated switches so any given load of said plurality of loads has at least one voltage actuated switch interposed between it and said one terminal of said energy-storing element,
said one voltage actuated switch initially acting to substantially keep current from flowing through said given load, but responding to the actuation thereof to permit current to flow through said given load,
said energy-storing element normally having a voltage thereacross which is lower than said predetermined voltage, and
means adapted to add a voltage to said voltage across said energy-storing element to develop a total voltage which exceeds said predetermined voltage,
said total voltage acting to actuate the unactuated voltage actuated switch which is closest to said one terminal of said energy-storing element, thereby causing said voltage actuated switch to irreversibly change from a relatively high impedance to a relatively low impedance, and thereby enabling said predetermined current to flow through the unactuated load which is closest to said voltage actuated switch,
said unactuated load responding to said predetermined current to become actuated and thereby irreversibly change from a low impedance to a high impedance,
said means being adapted to add a second voltage to said voltage across said energy-storing element to develop a second total voltage which exceeds said predetermined voltage,
said second total voltage acting to actuate the unactuated voltage actuated switch which is closest to said one terminal of said energy-storing element, thereby causing said voltage actuated switch to irreversibly change from a relatively high impedance to a relatively low impedance, and thereby enabling said predetermined current to flow through the unactuated load which is closest to said voltage actuated switch,
said unactuated load responding to said predetermined current to become actuated and thereby irreversibly change from a low impedance to a high impedance.

3,417,260
MONOLITHIC INTEGRATED DIODE-TRANSISTOR LOGIC CIRCUIT HAVING IMPROVED SWITCHING CHARACTERISTICS

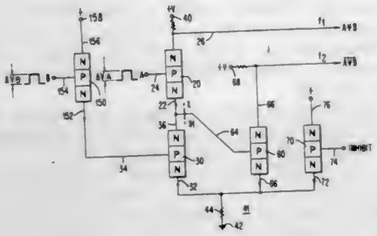
John C. Foster, Jr., Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 24, 1965, Ser. No. 457,976
5 Claims. (Cl. 307—213)



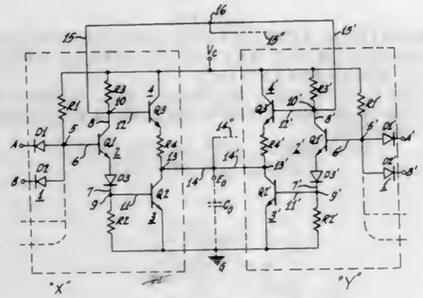
A monolithic integrated diode-transistor logic circuit including one or more offset diodes serially connected to the input of a transistor output device. The logic circuit further includes a speedup diode connected in parallel with the offset diode(s) and poled opposite to the offset diode(s) to thereby decrease the base discharge time of the transistor output device and increase the switching speed of the logic circuit.

3,417,261
LOGIC CIRCUIT
James L. Walsh, Hyde Park, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 189,163, Apr. 20, 1962. This application Dec. 27, 1965, Ser. No. 516,440
6 Claims. (Cl. 307—216)



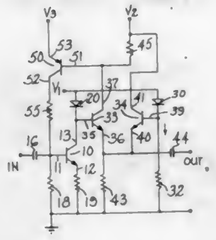
One or more current paths are connected to a current source, the current paths being suitably interconnected to permit the combination to perform various logic functions, i.e. AND/OR, Exclusive OR. Each current path includes at least one transistor, input signals being supplied to one or more transistors in each path. Normally current flows in one path only, and when a suitable signal is applied to a transistor in the other path, current flow commences therein and the crosscoupling permits the one path to turn off. Outputs are taken from both paths. Exclusive OR and AND operation may be obtained depending upon the choice of outputs from the circuit.

3,417,262
PHANTOM OR CIRCUIT FOR INVERTERS HAVING ACTIVE LOAD DEVICES
Ying-Luh Yao, Manville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 19, 1965, Ser. No. 426,489
7 Claims. (Cl. 307—218)



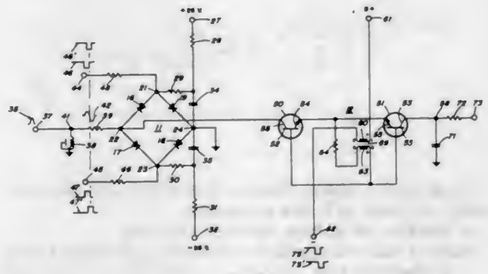
Phantom OR connection of inverting type switching elements having active load devices: Two or more diode-transistor logic elements having active collector loads are interconnected in a phantom OR arrangement. Each element includes an inverter transistor, an active collector load transistor and a level control circuit responsive to an applied input signal being at one and the other of two digital levels to cause the inverter and load transistors, respectively, to control the significance of an output voltage at an output connection. The phantom OR circuit is obtained by directly connecting the output of each element together and by directly connecting the bases of all the active load transistors together for commonly controlling the conductivities of all the load transistors in response to any of the input signals changing from the one to the other of the digital levels.

3,417,263
LOGARITHMIC AMPLIFIER
Edward W. Thomas, Cheshire, Conn., assignor to Ansitron, Inc., a corporation of Connecticut
Filed Mar. 18, 1965, Ser. No. 440,827
4 Claims. (Cl. 307—229)



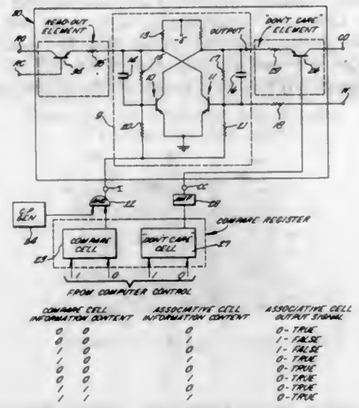
This invention is directed to a logarithmic amplifier using a first diode having a logarithmic current voltage characteristic. In particular, this invention is concerned with compensating for the effect of high repetition rate monopolar pulse input signals on the average direct current biasing the diode. In the preferred embodiment, a DC bias current is established through a reference diode having substantially the same characteristic as the first diode. The voltage drops across both diodes are sensed and thereafter these voltages are compared to develop an error signal to control the DC bias current through the first diode.

3,417,264
TIME DISCRIMINATOR
William B. Crittenden, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 30, 1965, Ser. No. 492,363
7 Claims. (Cl. 307—232)



There is disclosed a time discriminator comprising a diode switch and chopper switch in combination which can be used as either a target or error detector in a pulse tracking radar and which operates with low voltage power to contribute very low drift to the overall tracking loop.

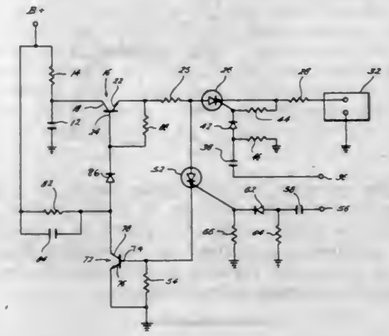
3,417,265
MEMORY SYSTEM
Edwin S. Lee III, Altadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 8, 1962, Ser. No. 236,310
8 Claims. (Cl. 307—247)



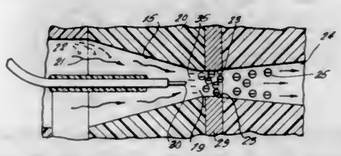
1. An associative memory comprising an associative switching element having two storage states and switchable therebetween, said associative switching element including output means for indicating the actual storage state of the element and input circuit means responsive to an input signal for complementing the actual state thereof, controllable circuit means having two conductive conditions and switchable therebetween connected to said output means for transmitting and indicating the actual storage state of the element when it is in one controlled conductive condition and indicating a preselected storage state irrespective of the actual storage state of the element when it is in the other conductive condition and a compare register having a compare cell coupled to the associative switching element for applying an interrogation signal thereto causing the associative switching element to apply a signal to the controllable circuit element indicative of a correspondence between the storage content thereof and the compare cell, the compare register including a "don't care" cell corresponding to the compare cell and coupled to the controllable circuit means for causing the other conductive condition thereof when the "don't care" cell contains a predetermined storage condition.

3,417,266
PULSE MODULATOR PROVIDING FAST RISE AND FALL TIMES
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Martin G. Woolfson, Baltimore, Md.
Filed Dec. 23, 1965, Ser. No. 516,155
4 Claims. (Cl. 307—263)

A pulse generator comprising a storage capacitor charged from a source of positive voltage and connected in series with the collector and emitter of an input switching transistor, and a silicon controlled rectifier which provides a current path to a load impedance. A second silicon controlled rectifier is connected between the emitter of the input transistor and ground to provide an alternate current path. A second switching transistor is coupled to the cathode of the second silicon rectifier and the base of the input switching transistor. A voltage "start" pulse source is coupled to the gate of the first silicon rectifier, whereupon a "start" pulse applied to the first SCR gate causes the capacitor to discharge through the input transistor, the first silicon rectifier, and the load. A "stop" pulse voltage source is coupled to the gate of the second silicon rectifier whereupon the application of a "stop pulse" to the second SCR gate causes the current to be diverted from the load to turn "on" the second switching transistor. When the switching transistor turns on, the input transistor is turned off which removes the anode currents from the silicon rectifiers and rendering the silicon rectifiers and the switching transistor nonconductive, thereby reducing power consumption to zero during quiescent conditions.



3,417,267
HEAT-ELECTRICAL POWER INTERCONVERSION DEVICES
Alvin M. Marks, 153—16 10th Ave., Whitestone, N.Y. 11357
Filed Oct. 2, 1964, Ser. No. 401,142
20 Claims. (Cl. 310—6)

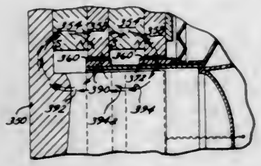


Apparatus and method for converting the heat-kinetic power of a charged aerosol gas into electrical power in which a mixture of a gas and a condensable vapor is made to condense in a corona field to form a charged aerosol having droplets of low mobility and submicron radius. The charged aerosol is directed through a nozzle downstream of the corona field into a conversion chamber against a high intensity force field where it is discharged by a charge collector to change the heat/kinetic power of the gas into electrical power. The methods of forming the charged aerosol in the corona field by condensation provide a useful working substance.

3,417,268
MOVING COIL ELECTRO-MECHANICAL DEVICE
Donald A. Lace, Long Beach, Calif. (5041 Galway Circle, Huntington Beach, Calif. 92642)
Filed Aug. 25, 1964, Ser. No. 391,840
8 Claims. (Cl. 310—27)

A linear oscillatory motion device in which a spider-like member is mounted to a shaft and carries a power coil arranged to reciprocate within a permanent magnet

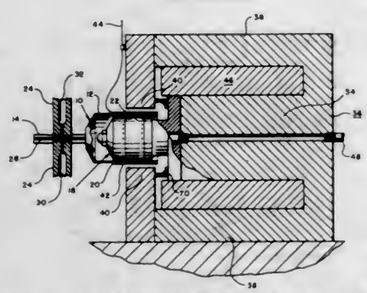
created flux field. The coil is alternately energized by electric current in such manner that it is repelled from the field periodically. In the case of DC actuation, the shaft carries switching means to make and break the circuit. In the case of AC actuation the reversal of current flow energizes the coil. Spring means are provided to restore the spider-shaft to its static position while effecting the power stroke. As applied to a speaker the spider function is performed by the speaker diaphragm and the power coil function is performed by the voice coil which is mounted to the diaphragm.



3,417,269
POSITIONING SYSTEM WITH GAS BEARING MOVING COIL

Stanley Heller, Philadelphia, Pa., William F. Anderson, Peekskill, and Robert B. Berlin, Yorktown Heights, N.Y., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed Dec. 15, 1965, Ser. No. 523,821
8 Claims. (Cl. 310—27)



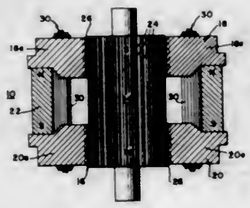
The disclosure is drawn to a frictionless precision positioning system for the relative motion of two or more mechanical devices on a single axis in a single plane. The devices are separated and constrained by bearing surfaces lubricated by a film of gas under pressure.

3,417,270
STEPPING MOTOR AND CONTROL MEANS

James H. Koegel, Placentia, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Feb. 11, 1966, Ser. No. 526,829
17 Claims. (Cl. 310—49)

1. A rotary stepping motor comprising a rotor; a stator including first and second pole pieces and permanent magnet means interconnecting said pole pieces, said pole pieces and said magnet means being mutually concentric with said rotor; a plurality of symmetrically spaced, axially extending radial rotor teeth on the periphery of said rotor; an even number of radial salient poles arranged in diametrically opposed complementary pairs on each of said pole pieces, similar complementary pairs in respective ones of said pole pieces being in axial alignment; first and second pole groups comprising, respectively, alternate ones of said complementary pairs of salient poles on each of said pole pieces; a like plurality of radial, axially extending stator teeth on each of said pole pieces having the same relative symmetrical spacing as said rotor teeth on each of said pole pieces; said stator teeth and said rotor teeth being adjacently and oppositely located to form an air gap therebetween; first and second winding means on said first and second pole pieces, each of said winding means comprising first and second pole pieces, each of said winding means comprising first and second winding portions associated, respectively, with a like one of the said pole groups, respectively, on said first and second pole pieces, the said like pole groups on said pole pieces being respectively wound in magnetic opposition; both said

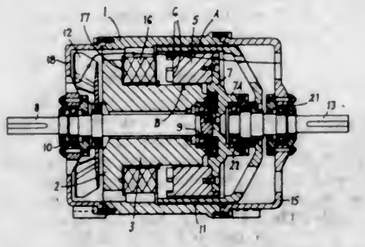


winding means having a mutually common input terminal and first and second selective input terminals for said first and second winding portions thereof, respectively; and said complementary pairs of salient poles being positioned on said stator such that the stator teeth on at least one of said complementary pairs on each pole piece are aligned with the respectively adjacent rotor teeth, the stator teeth on at least a second of said complementary pairs on each pole piece are out of alignment with the respectively adjacent rotor teeth and the stator teeth on at least a third of said complementary pairs on each pole piece are partially aligned with the respectively adjacent rotor teeth.

3,417,271
ELECTROMAGNETIC COUPLING DEVICES

Jonathan Reed, Cambridge, England, assignor to Pye Limited, Cambridge, England

Filed Mar. 21, 1966, Ser. No. 535,917
Claims priority, application Great Britain, Mar. 25, 1965, 12,781/65
2 Claims. (Cl. 310—103)



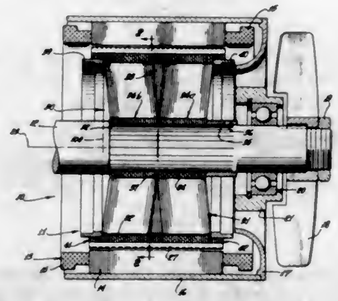
An electromagnetic coupling device for transmitting torque from a driving shaft to a driven shaft comprising a stator consisting of an inner and outer spaced concentric axially extending portions and a radial interconnecting portion, a first shaft carrying a rotor of magnetic material surrounding one end of said inner axial portion of the stator positioned to define a wider primary air gap between the rotor and the outer axial portion of the stator and a narrower secondary air gap between the rotor and the inner axial portion of the stator, a

second shaft carrying a rotatable member which is coaxial with the rotor and the stator which has a cylindrical portion of electrically conductive non-magnetic material located in the primary air gap, means on said stator for producing a toroidal magnetic field which confers the same polarity on all of the rotor pole pieces on said rotor, and separate bearing assemblies for said first and second shafts.

3,417,272
TENSIONED ROTOR CONSTRUCTION FOR DYNAMOELECTRIC MACHINES

Charles D. Hoy, Anaheim, Calif., assignor to Task Corporation, Anaheim, Calif., a corporation of California

Filed June 16, 1966, Ser. No. 558,094
10 Claims. (Cl. 310—261)

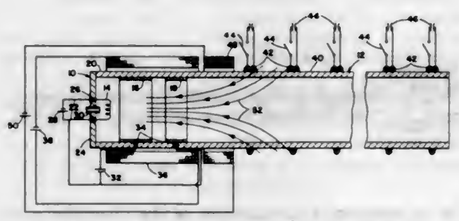


1. A stabilized rotor construction for an electrical machine, comprising stacked laminations defining an axis and having inner and outer portions extending about said axis and tensioned spokes integral with said portions and directed inwardly toward said axis in angular relation to a plane normal to said axis.

3,417,273
APPARATUS FOR ACCELERATING PLASMA BY A STATIC MAGNETIC FIELD AND A TRAVELING WAVE

Duane C. Gates, Walnut Creek, Calif., and John F. Detko, Bayside, N.Y., assignors, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Jan. 7, 1965, Ser. No. 424,050
3 Claims. (Cl. 313—63)

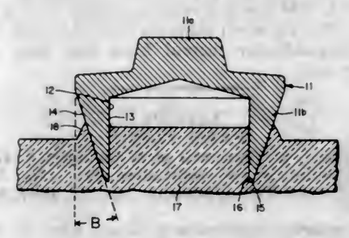


This disclosure concerns an apparatus for accelerating a plasma of electrically charged particles along an elongated acceleration path. The apparatus or plasma accelerator comprises an elongated tubular member defining an axially extending acceleration path therewithin. The tubular member has a plasma-providing source at one end thereof. A magnetic coil is arranged about the same end of the tubular member so as to be concentrically disposed to the plasma-providing source within the tubular member. The magnetic coil is energized to establish a static magnetic field in the region where the plasma-providing source is located so that magnetic flux from the static magnetic field is established within the plasma as it is provided. A travelling magnetic wave generator is mounted about the tubular member and comprises a plurality of magnetic field coils extending axially in surrounding relation to the tubular member. The magnetic field coils of the magnetic wave generator are sequentially energized in succession to produce a magnetic field travelling along the acceleration path defined by the tubular member and accelerating the plasma therealong. The magnetic flux from the static magnetic field which has been established in the plasma is first compressed, then severed from the magnetic coil generating the static magnetic field, and finally reversed so as to be trapped within the plasma during its acceleration—all by the action of the travelling magnetic field—thereby being effective to substantially eliminate slippage between the plasma and the travelling magnetic field. A field shaping magnetic coil may be arranged about the tubular member adjacent to the magnetic coil establishing the static magnetic field so as to control the shape and extend of the static magnetic field just before the plasma with the magnetic flux established therein is discharged from the plasma-providing source into the region of the tubular member surrounded by the travelling magnetic wave generator.

3,417,274
METALLIC MEMBERS FOR INSERTION INTO GLASS

Robert W. Bennett, Corning, and Lloyd G. Sprague, Bath, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Sept. 27, 1966, Ser. No. 582,282
5 Claims. (Cl. 313—89)



A metallic member for insertion into a glass body for support of a load. Such body and load may, for example, be the skirt portion of a glass television picture tube viewing panel and a part of an aperture mask for such a panel, respectively.

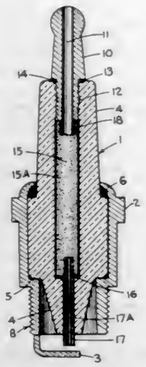
3,417,275
SPARK PLUG HAVING A SECTIONAL CENTER ELECTRODE AND A THIN METALLIC SLEEVE SURROUNDING THE LOWER PORTION THEREOF

George Forbes Taylor, Vancouver, British Columbia, Canada, assignor to Fay Dyn Products Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia

Continuation of application Ser. No. 165,625, Jan. 11, 1962, which is a continuation of application Ser. No. 566,386, July 19, 1966. This application May 22, 1967, Ser. No. 640,426
1 Claim. (Cl. 313—136)

1. A spark plug having a hollow electrically insulating body, a sectional electrode formed in said body including at least an upper electrode section, a central electrode section and a lower electrode section, said upper section be-

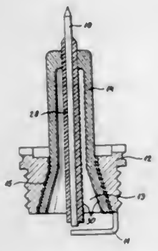
ing a connecting cap and having means for carrying current therethrough to the central section and being in electrical connection with said central section, the central section being positioned within said insulating body and packed with a porous electrically conducting material and said lower electrode section having an inner end located within said insulating body and an outer end positioned near a ground electrode of the plug, said lower electrode section comprising a rod of electrically conducting material and a thin metallic sleeve of electrically conducting material surrounding the rod and adjacent thereto from said inner end to said outer end, the inner ends of both the rod and the sleeve being in electrical contact with the said porous electrically conducting material of the central section, said lower electrode section having a plurality of relatively small channels formed therein and extending longitudinally thereof from said inner end to said outer end.



3,417,276
SPARK PLUGS

Istvan Szilagyi, 8 Nagymezo utca, Budapest 6, Hungary

Continuation-in-part of application Ser. No. 391,905, Aug. 25, 1964. This application May 31, 1967, Ser. No. 649,777
Claims priority, application Hungary, Sept. 17, 1963, SI-860
1 Claim. (Cl. 313—143)

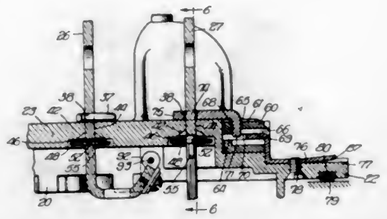


A spark plug has a middle electrode having a hot end and a cold end and a casing having a counter electrode at the hot end, and an insulating shell holding and surrounding the middle electrode but leaving an interstice therearound. The shell is fixed to the casing by a bonding layer, along a conical surface that converges toward the cold end. This shell is a part cylindrical and part conical tubular body of constant wall thickness, and the middle electrode is fixed in the shell at the cold end. The interstice is unobstructed along its whole length, thereby to provide a long creeping path between the electrodes. An insulating layer covers the middle electrode up to its hot end.

3,417,277
PROTECTIVE MEANS FOR ELECTRIC METER CIRCUITS

Dale F. Becker, Springfield, Ill., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,300
14 Claims. (Cl. 313—325)

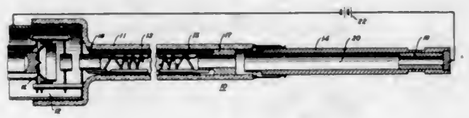


Protective arcing apparatus for electric meters wherein the arcing electrodes for establishing the arc-gaps and the arcing chamber blocks in which said electrodes are mounted, are readily removable and replaceable without requiring disassembly of the meter. Also, wherein the direction of gaseous discharge from these arc-gaps is towards the side against the socket enclosure which is at ground potential so that the ionized gas does not go back toward the terminals where it might introduce power follow-ups with great damage to the installation. The venting of the arc-chamber in this way tends to avoid a sustained arc and encourages blow-out.

3,417,278
APPARATUS FOR OUTGASSING ELECTRON TUBE ELEMENTS

Laird K. S. Haas, Orefield, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 15, 1965, Ser. No. 487,366
4 Claims. (Cl. 315—3.5)

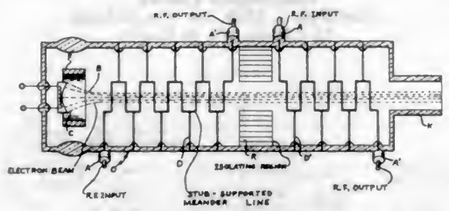


In an illustrative embodiment of the invention a conductive sleeve is slideably mounted within the cylindrical bore of the collector of a traveling wave tube. During evacuation, the tube is mounted collector end up so that the conductive sleeve slides down to interconnect the helix of the traveling wave tube with the collector. Electrical current is passed through the helix, the conductive sleeve and the collector to heat the helix and outgas it during the evacuation process. After evacuation, the tube is reoriented so that the sleeve drops back into the collector. The collector is then crimped to compress and contain the sleeve permanently.

3,417,279
PLANAR SLOW-WAVE CIRCUIT

Marvin Chodorow, Menlo Park, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 4, 1964, Ser. No. 394,643
1 Claim. (Cl. 315—3.6)

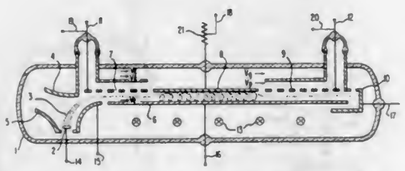


A traveling wave tube with a source of electrons at one end and first and second slow transmission lines axially separated by an isolation region. Electrons are focused and pass along the entire length of the transmission lines to a collector. Radio frequency inputs are provided for each of the slow transmission lines at the end nearest the electron beam source with output means located at the opposite end.

3,417,280
TRAVELING WAVE TIME DELAY DEVICE HAVING A MAGNETIC FIELD IN THE DRIFT REGION DIFFERENT FROM THAT IN THE DELAY LINE REGIONS

Gerard Kantorowicz, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Mar. 31, 1967, Ser. No. 627,472
Claims priority, application France, Mar. 31, 1966, 55,770
5 Claims. (Cl. 315—3.6)



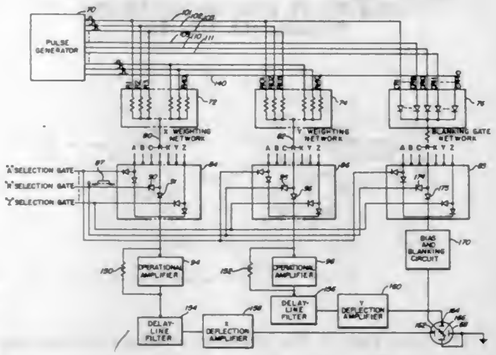
An electronic delay line with distributed input and output couplers and with a drift space therebetween, wherein crossed electric and magnetic fields are established along the path of a beam propagating in coupled relationship with the couplers and through the drift space, and wherein magnetic pole-pieces for producing said magnetic field are provided with either protrusions or depressions facing said drift space, thereby operating said drift space with a magnetic field having a strength different from the field operating said couplers, whereby insertion loss of the device is minimized.

3,417,281
CURSIVE CHARACTER GENERATOR

Franklin K. Stauffer, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Nov. 19, 1963, Ser. No. 324,707
16 Claims. (Cl. 315—18)

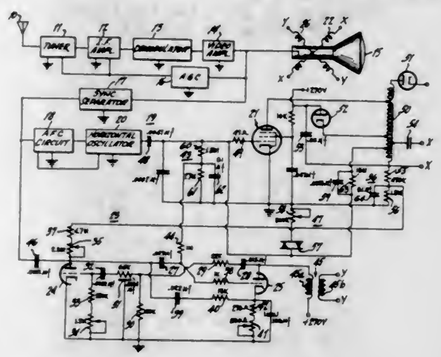
1. A generator of characters for display on the face of a cathode ray tube comprising means for forming a time function waveform in both horizontal and vertical coordinates of segments forming a continuous trace of the outline of the character on the face of said cathode ray tube including a weighting element for each segment, means for applying pulses sequentially to said weighting elements, means for combining the outputs of said weighting elements to provide x and y waveforms which move the electron beam cursively on the face of said tube to form the outline of said character, and means for blanking undesirable portions of said character.



3,417,282
MEANS FOR STABILIZING TELEVISION DEFLECTION CIRCUITS

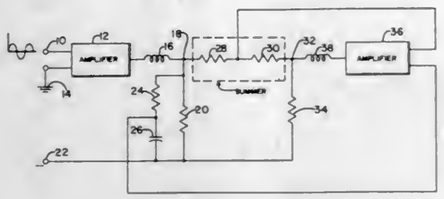
Cyril John Hall, Horgen, Switzerland, assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 12, 1965, Ser. No. 447,144
6 Claims. (Cl. 315—24)



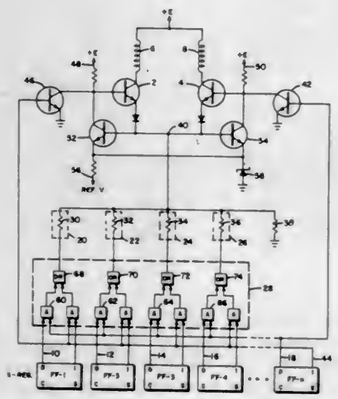
Television deflection circuits are stabilized against variations in width, height and linearity resulting from line voltage variations. A voltage dependent resistor (VDR) is coupled in circuit with the horizontal flyback winding to develop a compensating voltage which is applied to the input of the horizontal output stage so as to maintain image width constant as line voltage varies. A portion of the compensating voltage is applied to the input of the vertical output stage to maintain substantially constant average output current. Furthermore, a portion of the B boost voltage is supplied to the output of the vertical oscillator setage so as to maintain the peak-to-peak output current of the vertical output stage substantially constant as line voltage varies.

3,417,283
APPARATUS TO PRODUCE PUSH-PULL ELECTRON BEAM DEFLECTION SIGNALS FROM A SINGLE INPUT SIGNAL
John C. Freeborn, West Covina, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,238
9 Claims. (Cl. 315—26)



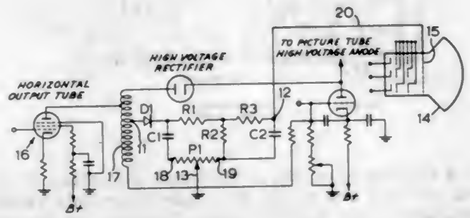
The apparatus of this invention produces substantially equal magnitude and opposite direction currents which are applied to each part of a two part deflection coil of a cathode ray tube deflecting system. A single input signal is applied to one of said parts by an amplifier, whereas, the output of the junction of two series resistors, which are connected between both parts, is applied by a second amplifier as an input to the second part. The D.C. level in both parts is maintained equal by resistor and capacitor connections.

3,417,284
ELECTROMAGNETIC GROSS BEAM POSITIONING SYSTEM
Mauritz L. Granberg, Minneapolis, and Jerome J. Stoffel, Farmington Township, Dakota County, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,276
9 Claims. (Cl. 315—27)



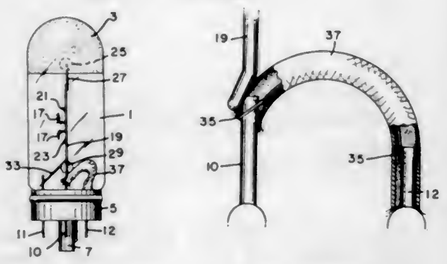
An electromagnetic beam positioning system for a cathode ray tube which has a push-pull deflection circuit having first and second yoke coils, and a logic circuit which initially couples an analog output signal representative of the beam position to a first one of the yoke coils for causing the beam to step in increments from one extreme edge of the tube toward the center and subsequently to the second yoke coil for causing the beam to step in a direction away from the center to the other extreme edge of the tube in response to changes in the analog output signal.

3,417,285
VARIABLE VOLTAGE NETWORKS
John J. Sennik, Kitchener, Ontario, Canada, assignor to Electrohome Limited
Filed Feb. 7, 1966, Ser. No. 525,488
11 Claims. (Cl. 315—31)



A variable voltage network for supplying focus voltage to cathode ray tubes. Periodic voltage pulses are applied to a circuit including a rectifier, resistor, capacitor and potentiometer, with the slider of the potentiometer being connected to a terminal at a reference potential to enable complementary AC and DC impedance variations.

3,417,286
FUSED PROJECTOR LAMP
Richard E. Smith and Conrad D. Holmes, Lexington, and Charles E. Henkel, Winchester, Ky., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 546,035
6 Claims. (Cl. 315—74)

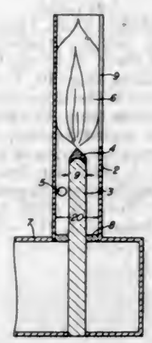


A fused projector lamp in which the fuse wire is provided with a sleeve of fiber glass tubing which encircles it and both are curved to lengthen the arc and lessen the violence of arcing by channeling the arc in a direction of lesser field intensity.

3,417,287
LOW POWER HIGH FREQUENCY DISCHARGE PLASMA GENERATOR
Seiichi Murayama, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 28, 1966, Ser. No. 582,699
Claims priority, application Japan, Oct. 8, 1965, 40/81,593
8 Claims. (Cl. 315—111)

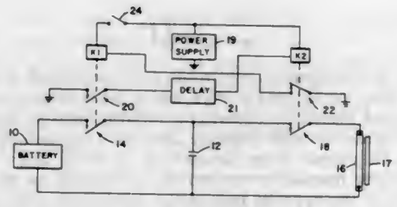
A high frequency discharge generator including a coaxial waveguide wherein the outer conductor thereof has an inner diameter which is less than 30 mm., the outer conductor of the coaxial waveguide extending beyond the

end of the inner conductor so as to cover a high frequency plasma produced at the top of the inner conductor, and characterized in that carrier gas and a sample to be an-



alyzed are introduced between the outer and inner conductor of the waveguide and a high frequency electric field is applied to the waveguide.

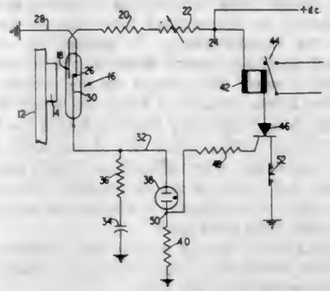
3,417,288
PULSE POWER SUPPLY FOR DEFINED QUANTITIES OF ENERGY
Charles M. Cason III, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 8, 1966, Ser. No. 541,397
6 Claims. (Cl. 315—241)



A high voltage power supply and switching circuit for supplying high electrical power pulses of specified quantities of energy to energize a laser flash tube. A high voltage transportable battery is connected though a switching circuit to a flash tube for a controlled period of time. The switching circuit may apply the power first to a capacitance and from the capacitance to the flash tube; or the switching circuit may apply the power directly through a fuse or electronic switch to the flash tube. In all cases a delay circuit is utilized to rapidly remove the pulse from the flash tube after the desired time period has lapsed.

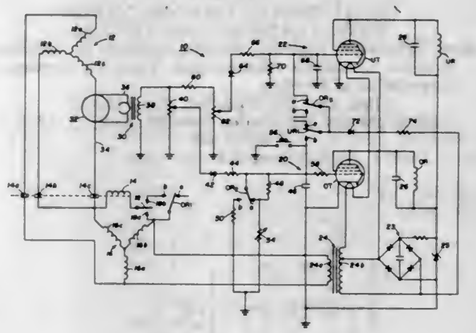
3,417,289
SPEED SENSING SWITCH FOR ROTARY DRUMS AND THE LIKE
James N. Jensen, Davenport, Iowa, assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,318
9 Claims. (Cl. 317—5)

1. In a speed sensing device for a machine having a moving member, the combination of a magnetic means carried by said moving member for movement therewith, a reed-type switch having a pair of normally open contacts mounted on a stationary part of said machine in a position to be swept by said magnetic means, a capacitor, charging circuit means connected through the normally open contacts of said reed-type switch for charging said capacitor at a predetermined time constant upon closing of said contacts, circuit means for discharging said capacitor when said contacts are open, a second discharge circuit



means including a discharge element adapted to fire upon said capacitor reaching a predetermined charge connected across said capacitor, a control circuit means including a relay means and a semiconductor switching means connected in series, and circuit means for applying a switching signal to said semiconductor switching means upon operation of said discharge element.

3,417,290
OIL WELL PUMPING UNIT CONTROL CIRCUIT
Mike Craddock, 1804 Dixie, Big Spring, Tex. 79720
Filed Oct. 24, 1966, Ser. No. 589,076
10 Claims. (Cl. 317—13)



1. A control circuit for the electric motor of an oil well pumping unit comprising:
sensing circuit means for sensing the current level to the motor and producing a first electrical signal representative of the current level,
first filter circuit means including a first capacitor for integrating the first electrical signal over a period of time exceeding the load cycle of the motor and storing a voltage on the first capacitor representative of the average of the first electrical signal during the time period,
first control circuit means including a voltage controlled first amplifier means for driving the coil of a first relay, the first amplier means being connected to the first filter circuit means such that the first voltage is applied to control the first amplifier means whereby the first relay is pulled in when the voltage on the first capacitor reaches a low value and drops out when the voltage reaches a high value,

second filter circuit means including a second capacitor for integrating the first electrical signal over a period of time exceeding the load cycle of the motor and storing a second voltage on the second capacitor representative of the average of the first electrical signal during the time period,

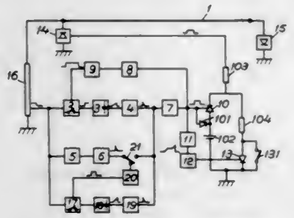
second control circuit means including a voltage controlled second amplifier means for driving the coil of a second relay, the second amplifier means being connected to the second filter circuit means such that the second voltage is applied to control the second amplifier means whereby the second relay is pulled in when the voltage on the second capacitor reaches a low value and drops out when the voltage on the second capacitor reaches a high level,

the first relay having a first set of normally open contacts connected, when closed, to supply power to the motor, and a second set of normally closed contacts connected, when closed, to charge the second capacitor to the high level, and

the second relay having a third set of normally open contacts connected, when closed, to charge the first capacitor to the high level,

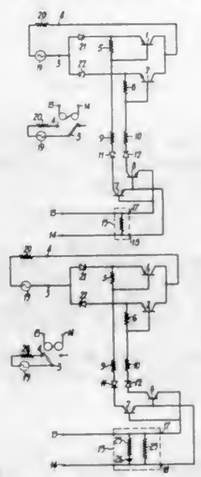
whereby when the current to the motor exceeds a predetermined maximum, the first relay will drop out to stop the motor and charge the second capacitor and insure that the second relay remains dropped out, and will remain dropped out until the first capacitor is discharged sufficiently for the first relay to be pulled in, and when the current to the motor falls below a predetermined minimum after the motor has started, the second relay will pull in, and the first capacitor will be charged until the first relay drops out to stop the motor until the first capacitor is discharged to the low level.

3,417,291
RELAY PROTECTION MEANS FOR HVDC-TRANSMISSION SYSTEM
Arne Johansson, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Apr. 22, 1966, Ser. No. 544,472
Claims priority, application Sweden, Apr. 23, 1965, 5,277/65
5 Claims. (Cl. 317—33)



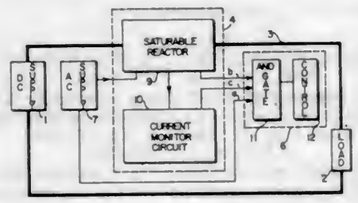
A HVDC-transmission system has a rectifier station and an inverter station connected by a D.C. link. For protecting the D.C. link, an undervoltage sensitive means connected to the link gives a control signal upon a drop in the voltage below a certain limit which in turn controls an arrangement for giving a releasing signal to the rectifier station. A time derivative means sensitive to negative time derivatives of the voltage of the D.C. link is arranged in parallel to the undervoltage sensitive means between the D.C. link and the means for giving the releasing signal. This time derivative means supplies a signal to the undervoltage sensitive means which lasts for a certain length of time to prevent the continuance of the releasing signal for a long enough time to allow the current to build up in the D.C. link. Counting means is provided which after a certain number of successive interruptions will maintain the releasing signal.

3,417,292
TRANSISTORIZED ELECTRONIC RELAY
Alain M. Dupont, Issy-les-Moulineaux, Jacques L. Normand, Paris, Pierre E. Moch, Sucy-en-Brie, and Claude G. Rousseau, Joinville, France, assignors to Societe Mixte pour le Development de la Technique de la Commutation dans le Domaine des Telecommunications, styled Socotel, Issy-les-Moulineaux, France, a body corporate of France
Filed Dec. 2, 1966, Ser. No. 598,686
Claims priority, applications France, Dec. 4, 1965, 40,982; Nov. 29, 1966, 85,383
4 Claims. (Cl. 317—31)



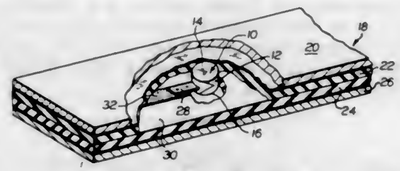
1. A two-terminal electronic relay composed of an input stage comprising a PNP and a NPN control transistors and means for applying a control signal to said control transistors with opposite directions for each of them, and an output stage comprising a NPN and a PNP switching transistors respectively controlled by the transistor of the opposite type in the input stage, said switching transistors having their emitters and their collectors connected in parallel to one another and to the terminals of said relay whereby the same is equivalent to an electromechanical relay having a movable contact and a fixed contact.

3,417,293
REVERSE CURRENT INDICATING CIRCUIT
Lawrence R. Peaslee and David L. Lafuze, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,434
6 Claims. (Cl. 317—43)



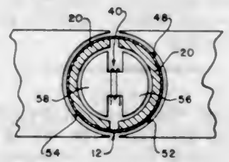
1. In a system for monitoring the amplitude of direct current flowing in a line of the type in which the sensing element coupled to said line is a saturable reactor having one or more cores wherein each core has a winding, and including a source of excitation applied to said saturable reactor to derive an output therefrom that is indicative of the characteristics of said direct current, a circuit for indicating the direction of current flow comprising a gate circuit, means coupled to said source of excitation for deriving sampling pulses as a first input to said gate circuit, means coupling the voltage across one winding of said saturable reactor to said gate circuit as a second input, said gate circuit including means for establishing a threshold voltage for said second input so that an output indication of the direction of current flow is obtained from said gate circuit when a sampling pulse is at said first input and the voltage at said second input exceeds said threshold voltage.

3,417,294
MOUNTING CIRCUIT ELEMENTS IN PRINTED CIRCUIT BOARDS
Mark Steidlitz, Cherry Hill, N.J., assignor to EMC Technology, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1966, Ser. No. 602,956
5 Claims. (Cl. 317—101)



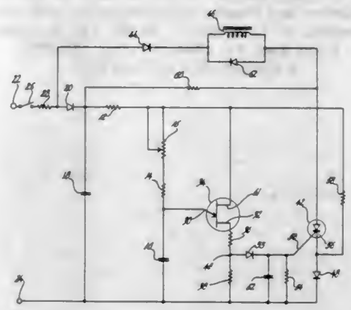
A printed circuit board is drilled with holes that are complementary to a circuit element having a tab type terminal to thereby receive the element within the hole with the tab in conducting relation with the printed circuit on the board. This assembly is then sandwiched between other boards such as conductive ground plane boards to make a complete circuit package.

3,417,295
APPARATUS FOR AND METHOD OF MAGNETIZING CIRCUMFERENTIAL MEMBERS
Arthur K. Littwin, Lincolnwood, Ill., assignor to Arthur K. Littwin, Robert L. Littwin, Donald F. Littwin and Horace A. Young, Chicago, Ill., as trustees under trust dated Jan. 2, 1951, known as Littwin Family Trust No. 1
Filed June 8, 1966, Ser. No. 556,142
15 Claims. (Cl. 317—123)



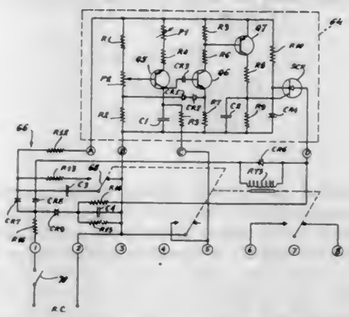
Magnetizing means including an outer magnet having inwardly directed opposed poles, an inner magnet between said poles and itself having poles opposite to and directed toward the poles of the outer magnet but with gaps between the opposed poles, the gaps receiving elements to be magnetized.

3,417,296
ELECTRONIC TIMER CIRCUIT
Klaus Wallentowitz, Waterbury, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 405,503, Oct. 21, 1964. This application Oct. 25, 1966, Ser. No. 589,336
3 Claims. (Cl. 317—142)



An electronic timer circuit for energizing a relay from half-wave rectified unfiltered current. A first rectifier and filter provides continuous direct current for energizing a timer producing a positive output pulse. A second circuit including a separate rectifier in series with the relay winding and a controlled rectifier is connected across the AC supply terminals, to provide half-wave rectified unfiltered energization of the winding. An oppositely poled diode is shunted across the winding to provide holding current during the missing half cycles. The positive timing pulse is applied to the trigger electrode of the controlled rectifier. A separate connection from the filtered direct current supply to the anode of the controlled rectifier provides a small holding current during the missing half cycles.

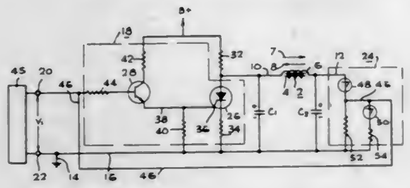
3,417,297
ELECTRONIC TIMER CIRCUITS
Klaus D. Wallentowitz, Waterbury, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 405,503, Oct. 21, 1964. This application Oct. 31, 1966, Ser. No. 591,016
8 Claims. (Cl. 317—142)



A timer circuit energized from an alternating voltage source. One branch of a bridge includes a rectifier and filter to provide a direct reference voltage at a point therein. The other branch includes a rectifier but no filter, to charge the timing capacitor therein with pulsating direct current. When the voltage across the capacitor equals the

voltage at the point, a detector energizes a load device with half-wave direct current. Means are provided for increasing the threshold signal voltage level required for energization of the load.

3,417,298
POLARITY SENSITIVE CIRCUIT
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of Lawrence S. Smith, Los Angeles, Calif.
Filed Aug. 11, 1964, Ser. No. 388,967
8 Claims. (Cl. 317—148.5)



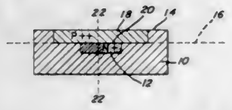
1. In a circuit for providing impulses of current through an impedance in selected directions, the combination comprising:

an impedance;

first switch means having two input terminals, said switch means being connected to said impedance and operative in response only to a voltage pulse of positive polarity on said terminals to provide an impulse of current through said impedance in a first direction; and

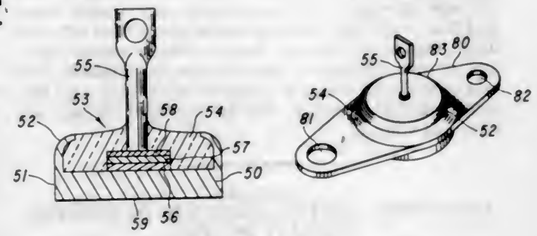
second switch means having the same two input terminals, said second switch means also being connected to said impedance and being operative only in response to a voltage pulse of negative polarity on said terminals to provide an impulse of current through said impedance in a direction opposite to said first direction said first and second switch means being constructed to operate in random order depending on the sequence and polarity of the voltage pulses applied to said two input terminals.

3,417,299
CONTROLLED BREAKDOWN VOLTAGE DIODE
Alan F. Dixon, Palo Alto, and Leopoldo B. Valdes, Portola Valley, Calif., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed July 20, 1965, Ser. No. 473,359
7 Claims. (Cl. 317—234)



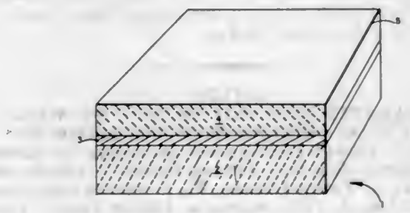
A controlled breakdown voltage diode comprising a body of semiconductor material having completely enclosed therein a first region of the same conductivity type as said body but having an impurity concentration density in excess of the body, and a second region of opposite conductivity type which is of greater diametric size than said first region and which extends from a surface of the body to said first region and forms with said first region a P-N junction which is completely enclosed within said body and which forms with the remaining portion of the body a second P-N junction which has its edges exposed, whereby transition from said first region to said second region is more abrupt than from said second region to the remainder of the body.

3,417,300
ECONOMY HIGH POWER PACKAGE
John E. Kauffman, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 514,015
3 Claims. (Cl. 317—234)



Disclosed is a semiconductor device encapsulated in an economic package. The package comprises, in addition to the semiconductor device, one member forming the actual enclosure of the device and the second member serving the multiple purposes of mounting, heat sinking and completing the header outline. For flexibility and economy, the first enclosure member is only press fitted into the second mounting member such that a mounting member which is in the shape of a TO–3 header or a stud header can be used.

3,417,301
COMPOSITE HETEROEPITAXIAL STRUCTURE
Guido Galli, Orange, Fred L. Morritz, Fullerton, and Carl A. Wiley, Corona Del Mar, Calif., assignors to North American Rockwell Corporation
Filed Sept. 20, 1966, Ser. No. 580,818
10 Claims. (Cl. 317—237)

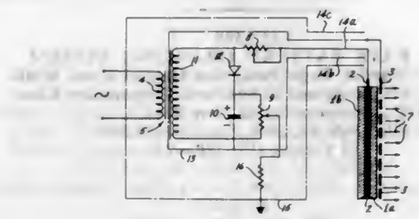


A composite heteroepitaxial structure comprises a single crystal constituted of an electrically insulating substrate, a metal layer epitaxially disposed on the substrate and a layer of semiconductor material epitaxially disposed on the metal layer.

3,417,302
APPARATUS FOR THE PRODUCTION OF UNIPOLAR IONS IN THE AIR OF A ROOM
Holger George Lueder, Gustrasse 55, Winterthur, Switzerland
Original application Feb. 5, 1963, Ser. No. 256,413, now Patent No. 3,337,784, dated Aug. 22, 1967. Divided and this application June 27, 1967, Ser. No. 649,205
Claims priority, application Switzerland, Feb. 9, 1962, 1,641/62
12 Claims. (Cl. 317—262)

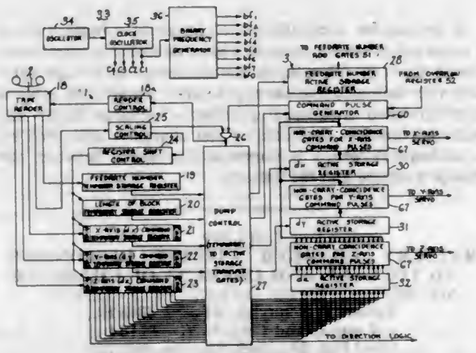
An ion generating arrangement in a room having an exposed electrode electrically connected to the ceiling

and mounted on a thin dielectric plate with a counter electrode on the other side of the plate. A controlled



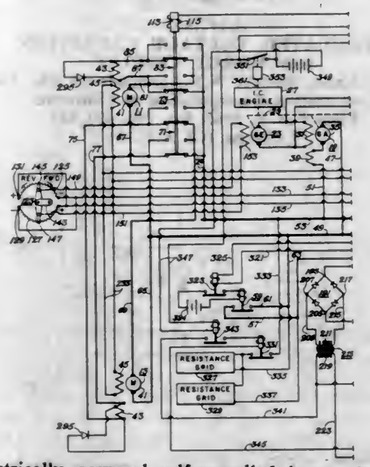
corona discharge is produced while no more than $30 \cdot 10^{-12}$ grams of ozone per cubic cm. of air is produced.

3,417,303
NUMERICAL CONTROL SYSTEM
Johann F. Reuteler, Elmwood, Conn., assignor to Pratt & Whitney, Inc., West Hartford, Conn.
Filed Mar. 4, 1964, Ser. No. 349,215
53 Claims. (Cl. 318—18)



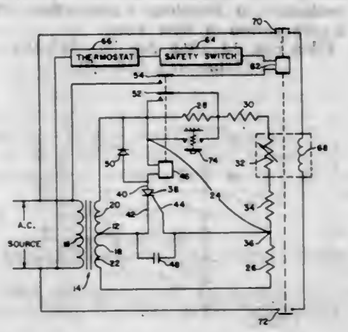
This disclosure relates to a numerical control system for moving an object along a predetermined path. An interpolation system including a command counter is provided to gate command pulses to various servo systems, which is preset in the most significant bits in accordance with the longest distance instruction so that the command counter overflows when feedrate pulses applied thereto are summed in a magnitude of substantially the same binary length as the longest distance command to inhibit further interpolation and reduce interpolation time between successive instructions. Also disclosed is an acceleration control which generates pulses as a third order function of the setting of a selection means to prevent undue acceleration forces on the controlled parts. Further disclosed is a feedrate control in which feedrate pulses are generated at a rate proportional to a programmed feedrate number and a generated feedrate override pulse train. The feedrate number is multiplied at a rate determined by the override frequency. The result of this multiplication provides the feedrate pulses. Further provided are means for limiting the rate of change of the feedrate pulses to avoid undesired acceleration stress. Further disclosed are controls for manually selecting different objects for movement along an axis, the direction thereof, and automatic limiting of movement thereof during jog control.

3,417,304
CONTROL SYSTEM FOR ELECTRICALLY POWERED VEHICLES
Robert G. LeTourneau, P.O. Box 2307, Longview, Tex. 75601
Filed Sept. 21, 1965, Ser. No. 488,981
15 Claims. (Cl. 318—149)



Electrically powered self-propelled heavy duty type work vehicles wherein vehicle wheels are driven by electric motors which are supplied power from 1 or more generators which in turn are powered by 1 or more internal combustion engines. Arrangements provide improved performance under the dynamic braking condition. Where 2 or more generators are used, they are automatically paralleled in driving condition and separated under dynamic braking condition. Various vehicle load conditions are sensed and dynamic braking automatically applied accordingly to meet optimum braking requirements and also to prevent vehicle overspeed.

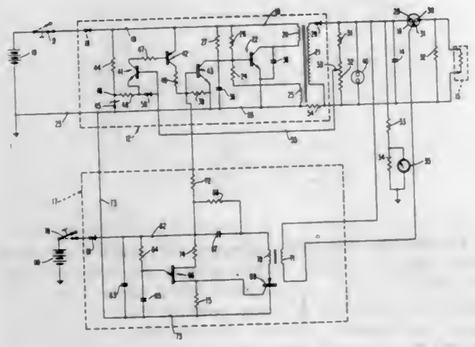
3,417,305
THERMALLY RESPONSIVE CONTROL CIRCUIT WITH MANUAL RESET
William J. Russell, Malvern, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,995
18 Claims. (Cl. 318—473)



An alternating current bridge circuit output signal which varies in accordance with a temperature responsive resistance directly controls the operation of a SCR. The SCR controls the operation of a relay which in turn operates to connect and remove resistance from the bridge circuit to determine the set point and reset

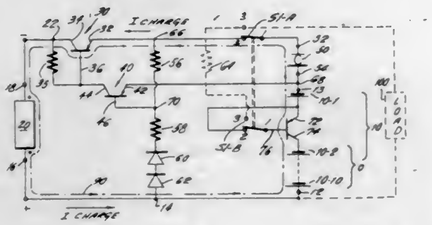
point temperatures for the bridge circuit. The resistance change introduced by the relay operation is selected to place the reset point temperature beyond the temperature range the bridge circuit is expected to sense so the circuit will not automatically reset. Provision is made to manually reset the bridge circuit.

3,417,306
REGULATED VOLTAGE CAPACITOR DISCHARGE CIRCUIT
James L. Knak, Sidney, N.Y., assignor to The Bendix Corporation, a corporation of California
Filed Feb. 9, 1965, Ser. No. 431,418
7 Claims. (Cl. 320—1)



Electrical system for firing an explosive bridge wire device or the like comprising an arming circuit capable of charging and maintaining a predetermined maximum charge on a storage capacitor and a triggering circuit with time delay means for releasing the charge on the capacitor for discharge across the bridge wire device or other load.

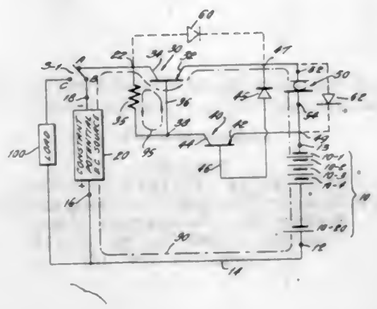
3,417,307
BATTERY CHARGING AND DISCHARGING CONTROL SYSTEM
Gabriel Kosa, White Plains, and Edward Peitry, Harrison, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York
Filed Feb. 14, 1966, Ser. No. 527,245
3 Claims. (Cl. 320—9)



A system for controlling either or both the rate of battery charge and discharge in accordance with the state of battery charge, as measured by a charge totalizing device (e.g., coulometer). During battery charge, the input energy for the charging source is appreciably reduced once the battery reaches a predetermined condition of charge.

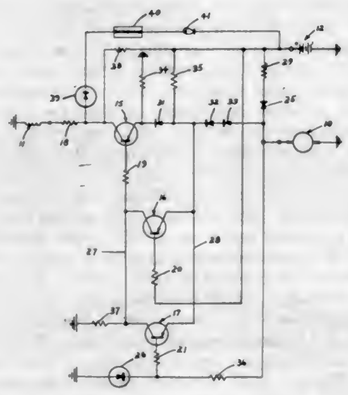
During battery discharge, the energy supplied by the battery is stopped when the coulometer senses that the battery has discharged to a predetermined state.

3,417,308
DUAL RATE BATTERY CHARGING SYSTEM
Lazaro J. Mandel, Rego Park, and Gabriel Kosa, White Plains, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York
Filed Feb. 14, 1966, Ser. No. 527,275
13 Claims. (Cl. 320—23)



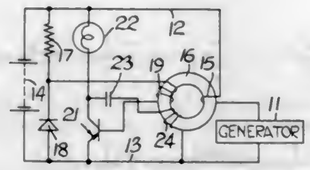
A system for controlling the charge of a battery from a constant potential source, which includes an electronic circuit to: (a) provide an initial charge at a high rate; and (b) followed by an appreciably lower rate after a predetermined measured quantity of charge input has been delivered to the battery. The charge is measured by a coulometer which is connected in series between the charging source and the battery.

3,417,309
BATTERY CHARGER CIRCUIT RESPONSIVE TO VOLTAGE AND CURRENT OF CHARGING SOURCE
Robert F. Schuyler, 43—17 48th St., Long Island City, N.Y. 11104
Filed Oct. 23, 1965, Ser. No. 503,168
1 Claim. (Cl. 320—32)



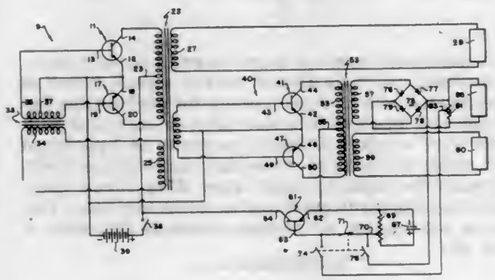
An automobile electrical system control in which transistors are employed to control the current and voltage outputs of the system D.C. generator. Two of the transistors act to control a third transistor which is connected with the generator field winding. Diodes are connected to the emitters of the current and voltage responsive transistors so that the transistors are utilized as solid state switches to control current input to the field.

3,417,310
OSCILLATOR-CONTROLLED INDICATOR FOR BATTERY CHARGER SYSTEM
William Frank Hill, Stafford, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Nov. 10, 1966, Ser. No. 593,409
Claims priority, application Great Britain, Jan. 14, 1966, 1,830/66
2 Claims. (Cl. 320—48)



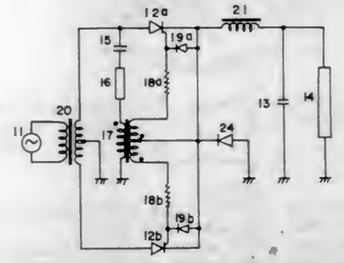
1. A battery charging system for use in a road vehicle, comprising in combination a pair of terminals between which in use the battery of a vehicle is connected, a generator for providing power to said pair of terminals, a warning lamp connected in series with an oscillator between said pair of terminals, and magnetic means operated by the output current from the generator for preventing the oscillator from oscillating when the current flowing from the generator to the battery reaches a predetermined value, the arrangement being such that the lamp is illuminated until said predetermined value of curernt is reached.

3,417,311
STATIC CONVERTER WITH LOAD POTENTIAL CONTROL
Frank G. Logan, Bowie, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 28, 1966, Ser. No. 523,802
2 Claims. (Cl. 321—2)



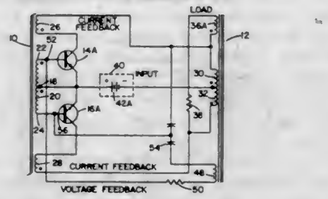
A source of D.C. voltage fed via a potentiometer to a control transistor provides control of reference voltage for a transistor amplifier transformer-coupled to a prior oscillator stage and to an output stage. The voltage/current of the output may be varied without affecting oscillator characteristics including frequency.

3,417,312
CONSTANT OUTPUT VOLTAGE RECTIFYING SYSTEMS
Sadamichi Someda, Hirakata-shi, Osaka-fu, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Jan. 10, 1966, Ser. No. 519,764
Claims priority, application Japan, July 30, 1965, 40/46,228
4 Claims. (Cl. 321—18)



A constant output voltage rectifying system comprising at least one rectifier having a controlling electrode, said rectifier being triggered through a phase shift circuit. The phase shift circuit comprises a nonlinear resistor, the electric resistance of which varies with a variation in the A.C. source voltage so that the output voltage of said rectifier is kept substantially constant.

3,417,313
TWO-CORE SOLID STATE VOLTAGE INVERTER SYSTEMS
Lawrence M. Palmer, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 21, 1966, Ser. No. 580,944
2 Claims. (Cl. 321—18)

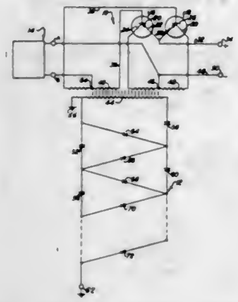


A two-core inverter circuit wherein feedback from an output linear-core transformer to a saturable-core transformer includes both voltage and current feedback. Transistor devices are utilized as switching units in the circuit. In one circuit configuration, voltage feedback is applied directly to the base control electrodes of the transistors rather than through a separate winding on the saturable transformer. In another circuit configuration the voltage feedback is impressed across the control electrodes through windings on the saturable-core transformer.

3,417,314
APPARATUS FOR GENERATING HIGH VOLTAGES
Franz Menke, Neckargemund, Heidelberg, Germany, assignor to Eltro G.m.b.H. & Co., Heidelberg, Germany
Filed July 23, 1962, Ser. No. 211,743
Claims priority, application Germany, July 22, 1961, E 21,418
1 Claim. (Cl. 321—44)

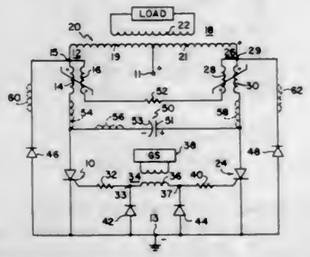
1. A direct-current converter comprising an oscillator comprising first and second transistors each having an

emitter, a collector and a base, a transformer including first and second center-tapped windings and an output winding, a direct-current potential source including first and second terminals, means for connecting said emitters to said first terminal, means for connecting said collectors respectively to the ends of said first center-tapped winding, means for connecting said bases respectively to the



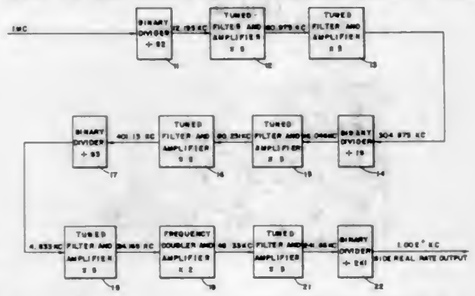
ends of said second center-tapped winding, means for connecting the center tap of said first winding and the center tap of said second winding to said second terminal; a gating current control means connected between the center taps of said first and second windings for controlling the voltage applied to said bases, said gating means including an astable multivibrator; and a rectifier means connected to said output winding.

3,417,315
STATIC INVERTER
Philip D. Corey, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed June 8, 1962, Ser. No. 200,986
17 Claims. (Cl. 321—45)



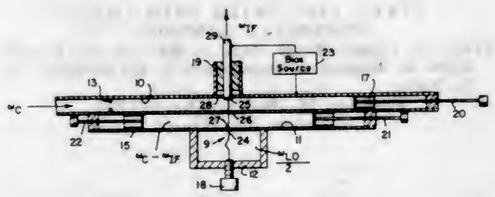
1. A circuit for converting the output from a DC source to an AC power output comprising a first series arrangement of a first gate controlled rectifier and a first saturable device connected across said source, a second series arrangement of a second and complementary gate controlled rectifier and a second saturable device connected across said source, said first and second saturable devices respectively presenting a low impedance when said first and second gate controlled rectifiers are correspondingly respectively conductive, a commutating capacitance connected between said gate controlled rectifiers, and signal generating means in circuit with said gate controlled rectifiers for alternately gating into conductivity said gate controlled rectifiers during successive half cycles of output from said signal generating means, said capacitance charging in a polarity during the conductive period of one of said gate controlled rectifiers such as to apply reverse voltage thereto to render it nonconductive when the other of said gate controlled rectifiers is gated into conductivity, the saturable device in series arrangement with said other gate controlled rectifier presenting a high impedance when said other gate controlled rectifier is initially gated into conductivity.

3,417,316
SIDEREAL FREQUENCY GENERATOR
Paul F. McCaul, Mount Rainier, and Raymond L. Granata, Hyattsville, Md., assignors to the United States of America as represented by the administrator of the National Aeronautics and Space Administration
Filed Sept. 28, 1965, Ser. No. 491,054
2 Claims. (Cl. 321—60)



Apparatus for the generation of sidereal frequency signals from signals of standard solar frequency utilizing only multiplying and dividing means arranged in a serial manner.

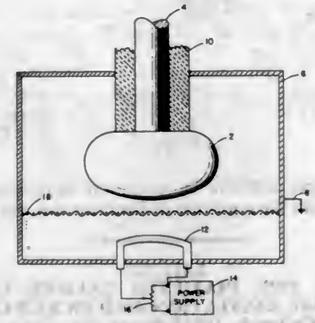
3,417,317
MICROWAVE HARMONIC GENERATOR AND MIXER WITH IDLING CIRCUIT
Irving Kaufman, Tempe, Ariz., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Nov. 3, 1966, Ser. No. 591,855
4 Claims. (Cl. 321—69)



A microwave harmonic generator and frequency mixer. A nonlinear reactance element such as a diode is used in combination with a resonant cavity for doubling the frequency of a local oscillator wave. This doubled local oscillator wave is mixed or heterodyned with an input signal at a higher frequency to obtain the frequency sum or difference. The resonant cavity is an idling circuit solely tuned to twice the frequency of the oscillatory wave. This device will operate at ultramicrowaves of the order of 100 gHz.

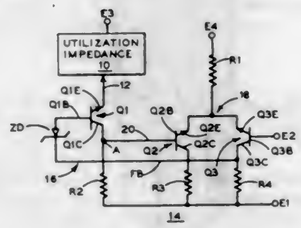
3,417,318
METHOD AND APPARATUS FOR REGULATING HIGH VOLTAGE IN ELECTROSTATIC GENERATORS
Bobby J. Farmer, Fort Worth, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,782
9 Claims. (Cl. 322—2)

This invention relates to a technique for regulating the voltage of Van de Graaff generators and the like by enclosing the high voltage electrode in an atmosphere of



insulating gas, irradiating the gas with ionizing radiation, and controlling the intensity of the ionizing radiation.

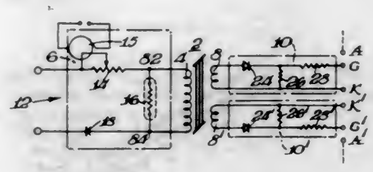
3,417,319
CONSTANT CURRENT APPARATUS
William J. Shaughnessy, Basking Ridge, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,172
8 Claims. (Cl. 323—4)



A regulating circuit arrangement for supplying substantially constant direct current to a load, the arrangement being controlled so that amplitude of the current to the load will be negligibly affected by changes in the characteristics of the load or by changes in such parameters as temperature or age. The current supplied to the load is fed through a regulating transistor. The current through that transistor is maintained substantially constant by virtue of a feed-back control circuit which modulates the voltage applied to the control terminal of the regulating transistor to compensate for changes in the load or in certain characteristics of the transistor. The feed-back control circuit compares the current through a resistor with the current supplied to a reference point, and the arrangement acts in a way so as to reduce any changes to zero or a negligible magnitude.

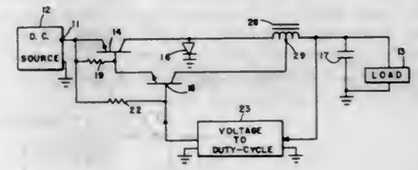
3,417,320
LOW NOISE CONTROL CIRCUIT
Nicholas G. Muskovac, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Mar. 31, 1966, Ser. No. 539,022
13 Claims. (Cl. 323—22)

A gate pulse which leads the applied alternating current in phase is elongated or shortened to move its trailing end into or back out of conductive half-cycles of the AC for low noise triggering of a thyristor at the commencement of these half-cycles. A temperature sensistive element con-



trols the temperature of the environment surrounding a heating element by shortening or elongating the gate pulse.

3,417,321
INCREASING EFFICIENCY OF SWITCHING-TYPE REGULATOR CIRCUITS
William M. Clapp, Nashua, N.H., assignor, by mesne assignments, to the United States of America as represented by the National Aeronautics and Space Administration
Filed July 13, 1966, Ser. No. 564,919
6 Claims. (Cl. 323—22)

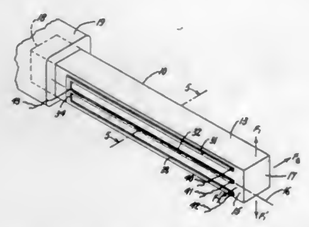


Constant voltage is applied to a load from a regulated power supply via a transistor switch in series connection with the primary winding of a transformer which directly couples the switch between the source and the load. A gating control network for the transistor series switch is connected by the transformer secondary to provide a DC path so that substantially all the current applied to the control network from the input power source is fed to the load. The control network includes a Schmitt trigger which, with its input connected across the load, selectively drives the emitter-collector path of the switching transistor between conducting and nonconducting states with periods varying in response to the magnitude of the input voltage applied thereto. The voltage across the switching transistor when it is conducting remains substantially constant despite variations in load current since the current in the control network is responsive to load current. The transformer inductive network functions as a current transformer to supply load current to the gating network. Efficiency is increased since the control network is in series with the source and the load.

3,417,322
SIMPLIFIED PIEZORESISTIVE FORCE SENSING DEVICE
Gunther E. Fenner, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 29, 1966, Ser. No. 561,472
12 Claims. (Cl. 323—75)

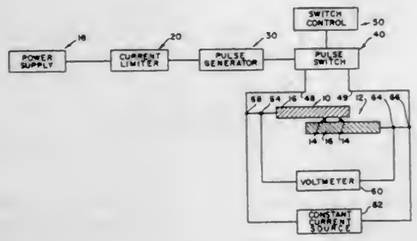
A transducer comprising a single semiconductor crystal having at least two parallel piezoresistive elements formed on a single face lying in a plane which is both perpendicular to the direction of a first of two forces applied to the crystal and parallel to the direction of the second

of these forces. The elements are situated with respect to the longitudinal axis of the face such that they are



affected identically in response to the first force and differently in response to the second force.

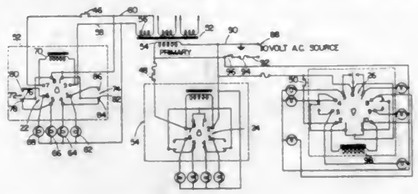
3,417,323
METHOD AND APPARATUS FOR DETERMINING CONSTRICTION RESISTANCE OF ELECTRICAL CONTACT INTERFACES
John B. P. Williamson, Wilton, Conn., assignor to Burndy Corporation, a corporation of New York
Filed June 14, 1965, Ser. No. 463,518
8 Claims. (Cl. 324—28)



A method and apparatus for determining the electrical constriction resistance present in a test circuit at the interface formed between two contacting bodies of known materials. Electrical pulses of short duration are employed for the purpose of producing electrical resistance heating at the interface during a time period substantially shorter than the thermal response time of the bulk resistance of the bodies. The current amplitude of the pulse which first causes a change in the constant current potential drop across the test circuit can be related to the known melting voltage of the two bodies to establish the constriction resistance. A suitable apparatus is disclosed as employing: a source of constant current for producing a potential drop across the test circuit; a potential measuring means for detecting when changes occur in the potential drop across the test circuit; and a pulse generator for applying pulses of known amplitude which cause electrical resistance heating at the interface of the test circuit to alter the constriction resistance.

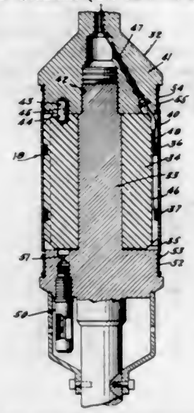
3,417,324
SWITCH CONTROLLED APPARATUS FOR TESTING THE COIL AND CONTACTS OF A RELAY
Gerry J. Bredemeyer, Fort Wayne, Ind., assignor of five percent to Leonard F. Mentzer, Fort Wayne, Ind.
Filed Apr. 6, 1966, Ser. No. 540,640
6 Claims. (Cl. 324—28)

A relay testing apparatus having a voltage source and plug-in type socket having terminal means for applying energizing voltage to the relay under test. In series with some of the terminal means are current indicating lamps. By manipulation of a testing switch associated with the



voltage source selective indicators are illuminated in accordance with the condition of the relay coil and contacts.

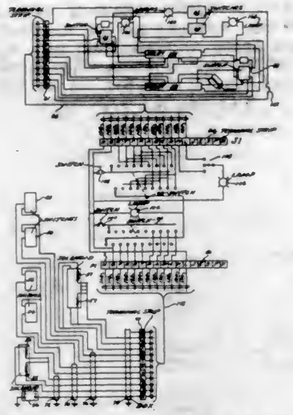
3,417,325
INSIDE PIPE DIAMETER CALIPER USING COAXIAL EXCITATION AND PICKUP COILS
Ira J. McCullough, 10845 Sunset Blvd., Los Angeles, Calif. 90024, and Stanley G. Stroud, 2109 Summerland, San Pedro, Calif. 90731
Continuation of application Ser. No. 626,358, Mar. 7, 1967, which is a continuation of application Ser. No. 422,175, Dec. 30, 1964. This application Feb. 15, 1968 Ser. No. 705,860
5 Claims. (Cl. 324—34)



A device for electronically determining the inside diameter of a metallic pipe in which an exciter coil and pickup coil are supported in a cylindrical housing or an exploration unit for oil well casings and the like, in coaxially aligned spaced apart relation upon a core of insulating material, the exciter coil being energizable with electric oscillations of the order of 10 to 50 kilocycles per second, and of sufficiently high frequency that the exciter coil forms a first source of electromagnetic radiations into space that will produce a skin effect in the circumferentially surrounding inner wall of the associated pipe so as to develop eddy currents in the inner surface of the pipe and thus provide a second source of electromagnetic radiations into space, the radiations from these two sources being received by the pickup coil wherein they are combined to produce signal currents indicative of the average inside diameter of the pipe being measured.

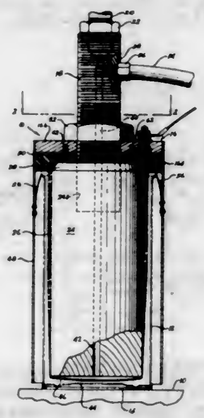
3,417,326
TEST UNIT FOR CHECKING ELECTRIC CIRCUITRY OF A PUMPING MACHINE
John D. Harris, Union Grove, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed June 22, 1966, Ser. No. 559,455
3 Claims. (Cl. 324—51)

An electric test unit for a pumping machine which has electric circuits in a control panel and which has electrically operative means. The control panel and the electrically operative means are electrically connected by releasable connection means, and the test unit is likewise electrically connected to the control panel and to the electrically operative means. Thus the arrangement is such that the test unit can be inserted in elec-



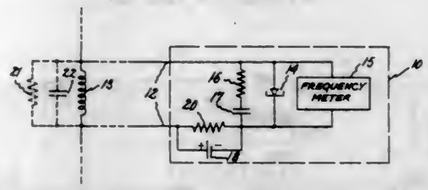
tric series between the control panel and the electrically operative means, and it can also be readily removed from its inserted position when the test is completed. Selective electric switches and test lamps are employed for making electric connection and for indicating completion of circuits in the respective control panel and in the respective electrically operative means.

3,417,327
METHOD AND APPARATUS INCLUDING AN EXPANDABLE ELECTRICALLY CONDUCTIVE BOOT FOR TESTING INTERIOR COATINGS OF METAL CANS OR THE LIKE
Victor S. Breidenbach, Dayton, Ohio, assignor to Hyde Park Electronics, Dayton, Ohio, a corporation of Ohio
Filed Mar. 8, 1966, Ser. No. 532,808
14 Claims. (Cl. 324—54)



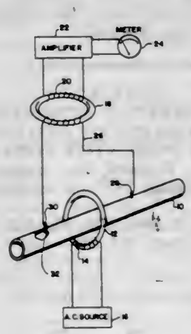
Electrically insulating coatings of metal cans are treated by applying an electrical potential across the coating between the metal can and a hollow cylindrical conductive rubber boot. The boot is mounted on a mandrel and expanded by air under pressure into intimate contact with the can coating. A grounded cylindrical sheath concentric with the boot surrounds the can under test and carries contacts engaging the can metal. The sheath is supported on a cap through which electrical connection is made to the boot.

3,417,328
IN-CIRCUIT INDUCTANCE MEASURING CIRCUIT
Jerome J. Tiemann, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 21, 1966, Ser. No. 536,002
7 Claims. (Cl. 324—59)



Apparatus for measuring inductance of a circuit component without removing the component from the circuit in which it is connected. The measuring apparatus comprises a tunnel diode and series resistive load for connection across the circuit component so as to form a relaxation oscillator, together with a frequency meter in shunt with the tunnel diode. Oscillation frequency, as displayed on the meter, is thus dependent on the inductance of the component being measured, and is essentially independent of any capacitance or resistance in shunt with the component.

3,417,329
TOROIDAL CONDUCTIVITY MEASURING SYSTEM
David M. Landis, La Habra, and Gerald A. Rost, Yorba Linda, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 25, 1965, Ser. No. 467,046
9 Claims. (Cl. 324—62)



A conductivity measuring system of the toroid type having an input toroid comprising a core and a coil located around a conduit carrying a solution whose conductivity is to be measured. An A.C. signal is applied to the coil and induces an A.C. current in the solution. Located at a distance from the solution carrying conduit so as to be substantially unaffected by the magnetic field of the input toroid is an output toroid comprising a second core and a second coil. An indicating meter is connected to the second coil while a conductor connects the second core with the solution so that the A.C. current of the solution sets up another changing magnetic

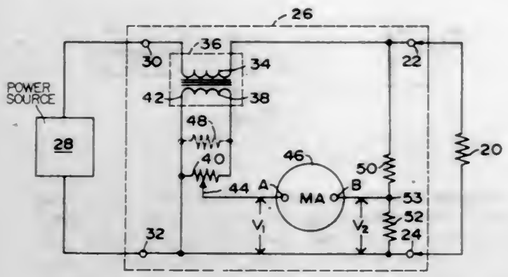
field in the second core which in turn induces an A.C. current in the second coil and the meter. The last mentioned A.C. signal is a function of the conductivity of the solution.

3,417,330

ELECTRICAL CIRCUIT FOR DETERMINING THE RESISTANCE AND TEMPERATURE OF A RESISTIVE ELEMENT

Frank E. Murphy, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Dec. 21, 1965, Ser. No. 515,423
6 Claims. (Cl. 324—62)



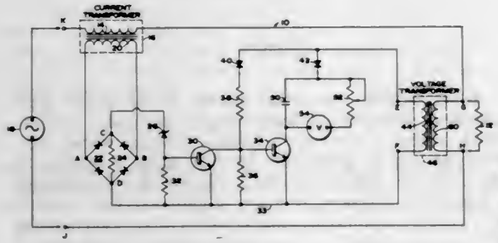
An electrical circuit having a pair of input terminals and a pair of output terminals wherein one input and output terminal are commonly connected and the primary winding of an instrument transformer is connected between the other input and output terminals. An adjustable resistance element is connected across the secondary of the transformer with its adjustable tap connected to one terminal of a current indicating device. The other terminal of the current indicating device is connected to the common connection between a pair of resistors serving as a voltage dividing network. The network is connected between the output terminals of the circuit. As the temperature of a resistive element being measured changes the current drawn by the element changes thus unbalancing the voltage drops between the terminals of the current indicating device in proportion to the change of resistance and temperature of the element.

3,417,331

RESISTANCE MEASURING APPARATUS INCLUDING VOLTAGE CHARGING AND DISCHARGING MEANS IN THE INDICATOR PORTION

Louis H. Gauss, Jr., Penndel, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 4, 1966, Ser. No. 518,625
7 Claims. (Cl. 324—62)



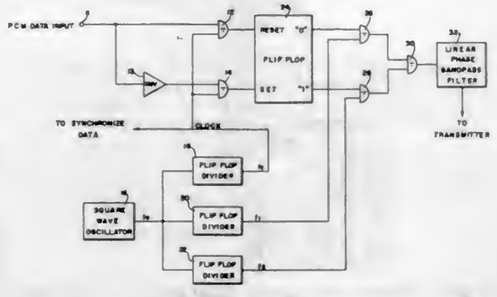
An electrical circuit for determining the resistance of an electrically-powered resistance element in order to derive its temperature. The circuit includes a voltage detector, a means for sampling the voltage appearing across the resistance element at an instant when current flow through the element has a predetermined value, and a means for applying the voltage to the detector whereby the resistance and temperature of the element is determined.

3,417,332

FREQUENCY SHIFT KEYING APPARATUS

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of David P. Mikszan, Glen Burnie, Md.

Filed Feb. 11, 1965, Ser. No. 432,026
8 Claims. (Cl. 325—163)



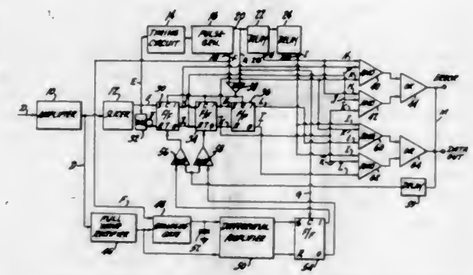
Apparatus for the generation of frequency shifted output signals having no phase discontinuity between the shifted frequency signals. Two squarewave signals having an integral relationship to a clock signal are sequenced to produce one squarewave output signal. The transition from one squarewave signal to the other is made to occur at the end of a whole cycle of the first and at the beginning of a whole cycle of the second resulting in a phase continuous output signal.

3,417,333

ERROR CORRECTOR FOR DIPHASE MODULATION RECEIVER

Charles R. Atzenbeck, Cranford, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 22, 1965, Ser. No. 465,906
8 Claims. (Cl. 325—320)



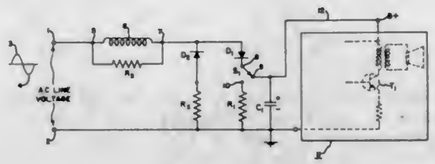
In a diphase communication system, a cycle, occurring in a bit interval, is reversed in phase at the middle thereof to indicate a mark, and another cycle, also occurring in a bit interval, continues without phase reversal to indicate a space. In such a system, in the absence of mutilation during transmission, the last half of one cycle (the last half of one bit interval) and the first half of the next cycle (the first half of the next bit interval) must be of opposite polarity. If they are of the same polarity, a high probability of error exists. It is assumed that the smaller in magnitude of the two half cycles of the same polarity that should be of opposite polarity is in error. Means are provided to detect the probable error by noting the occurrence of two half cycles of the same polarity that should be of opposite polarity and to reverse the polarity of the one of these two half cycles that is smaller in magnitude, whereby the received message is corrected.

3,417,334

POWER SUPPLY FOR TRANSISTORIZED CLOCK RADIO

Frank J. Banovic, Utica, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 5, 1967, Ser. No. 636,337
7 Claims. (Cl. 325—492)



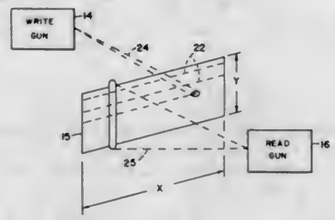
A power supply for transistorized clock radio wherein the clock motor field winding and the radio circuitry are connected in series across a source of AC line voltage during half cycles of a desired polarity of the line voltage.

3,417,335

METHOD OF RADAR RETURN INTEGRATION USING A DUAL-GUN, WRITE-READ, RECORDING-STORAGE TUBE

Roy C. Wilcox, Seattle, Wash., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed July 15, 1965, Ser. No. 472,373
1 Claim. (Cl. 328—124)



Radar range gate returns are stored in successive parallel lines. The lines are all read simultaneously to give an integrated output signal.

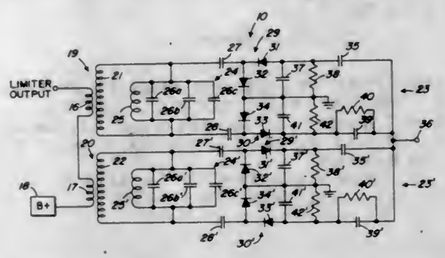
3,417,336

RECTIFIER FREQUENCY SHIFT KEYER (FSK) CONVERTER AND FILTER CIRCUIT

Robert D. Cribbs, Mount Vernon, George E. Venzke, Cedar Rapids, and Ernest J. Moes, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed May 7, 1965, Ser. No. 454,114
14 Claims. (Cl. 328—140)

A rectifier-filter circuit with at least one tuned subcircuit having dual A.C. signal output paths signal input coupled to the respective voltage doubler, of two, with each A.C. signal capacitor coupled to common output means and with one of the two doublers having a D.C. circuit signal output path in parallel with the A.C. signal output coupling capacitor of that doubler.

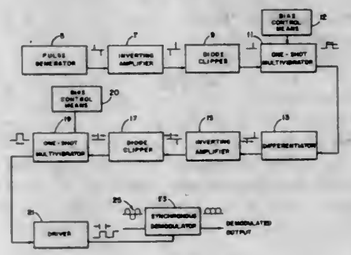


3,417,337

HOMODYNE REFERENCE GENERATOR HAVING VOLTAGE CONTROLLED PHASE

Anthony J. G. Prasil, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed July 30, 1965, Ser. No. 476,215
5 Claims. (Cl. 329—50)



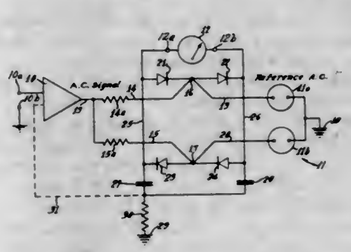
A device for producing a phase-adjustable square wave wherein a positive pulse spike is used to key a first monostable multivibrator whose pulse duration may be varied. The output of the multivibrator is then differentiated, the variable component of the differentiated output being used to key a second monostable multivibrator whose pulse duration may also be varied. The output of the second multivibrator is a phase-adjustable square wave.

3,417,338

PHASE-SENSITIVE GATED SWITCHING MEANS

Norman J. Anderson, Boonton, N.J., assignor to North Atlantic Industries, Inc., Plainview, N.Y., a corporation of New York

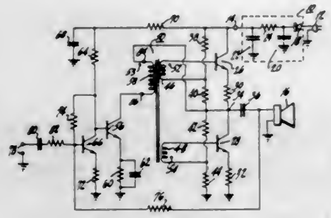
Continuation of application Ser. No. 334,817, Dec. 31, 1963. This application May 15, 1967, Ser. No. 638,669
8 Claims. (Cl. 329—132)



A signal gating circuit for gating a signal to a load in synchronism with another signal, such as a reference sig-

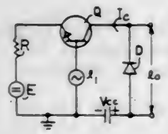
nal, making possible phase sensitive modulation or demodulation. The reference signal is preferably a constant current source and the signal feedback is provided around the gating means.

3,417,339
PUSH-PULL TRANSISTOR AMPLIFIERS WITH TRANSFORMER COUPLED DRIVER
Jack C. Sondermeyer, Morris County, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,863
11 Claims. (Cl. 330—15)



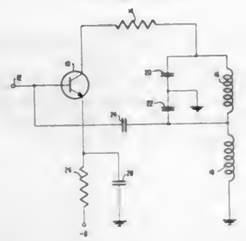
A power amplifier having a pair of output transistors serially connected across a source of operating potential, with signals being applied to the bases thereof in push-pull fashion by means of the secondary windings of a transformer having primary winding coupling the collector of a driver transistor to an output terminal at the junction of the pair of transistors, and with the energization potential for the driver transistor being so provided and the polarities of the transformer windings so polarized that the voltage swing at the aforementioned collector is substantially less than the voltage swing across the primary winding.

3,417,340
VARIABLE GAIN CIRCUIT
Gilles Jozias Overtveld, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Mar. 4, 1965, Ser. No. 437,137
7 Claims. (Cl. 330—24)



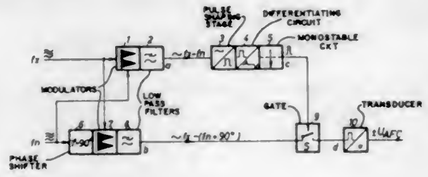
The invention relates to a transistorized variable gain circuit comprising a transistor and a junction diode connected in series with the emitter-collector electrodes of the transistor. A source of input signal is applied to the base electrode of the transistor and a source of control voltage for controlling the A.C. impedance of the diode is connected to the emitter electrode. The output of the variable gain circuit is taken from across the diode and may be varied in accordance with the control current applied to the diode. Because the output impedance of the transistor is high attenuations of 20 db per decade of control current have been obtained. Also a fairly high control current through the diode can be obtained readily with small values of control voltage.

3,417,341
COMPOSITE AM-FM INTERMEDIATE FREQUENCY AMPLIFIER
William H. Elias, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed June 13, 1967, Ser. No. 645,713
3 Claims. (Cl. 330—28)



A composite IF amplifier for both AM and FM signals in which the output circuit includes a pair of series connected capacitors grounded at their junction in parallel with a first coil to tune the FM signal and in series with a second coil to tune the AM signal.

3,417,342
AUTOMATIC FREQUENCY CONTROL SYSTEM
Klaus Kocher, Ditzingen, Germany, assignor to International Standard Electric Corporation
Filed May 29, 1967, Ser. No. 641,974
Claims priority, application Germany, June 3, 1966, St 25,486
5 Claims. (Cl. 331—12)

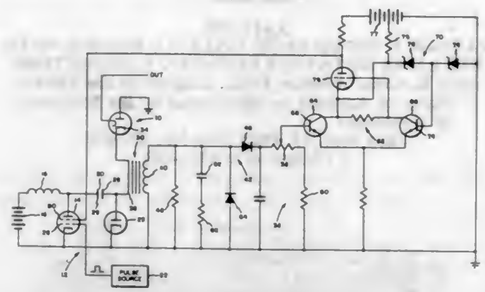


An automatic frequency control system for maintaining the integrity of carrier frequencies. The controlled frequency is compared first to a standard frequency and then to the standard frequency phase shifted 90°. The comparison provides a two phase rotating field. The direction of rotation indicates the direction of frequency deviation. A transfluxor and varactor are used to restore the controlled frequency responsive to a D.C. voltage obtained from the rotating field.

3,417,343
MAGNETRON PULSE CURRENT REGULATOR
Charles R. Kenny, Somers, N.Y., assignor to General Precision Systems Inc., a corporation of Delaware
Filed Aug. 9, 1967, Ser. No. 659,380
10 Claims. (Cl. 331—87)

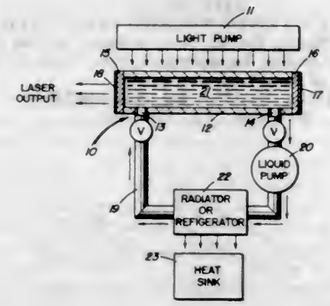
The amplitude of the pulse current to a magnetron load is sensed and utilized to establish a potential which is proportional thereto. A fixed reference potential is established and compared with the first-mentioned potential, and the difference therebetween utilized to control

the screen grid voltage of a shunt switch tube in such manner that the peak forward current applied to the



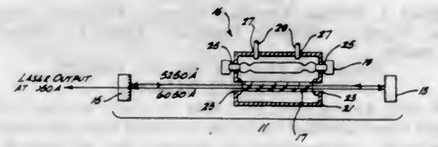
magnetron maintains a substantially constant magnetron peak current output.

3,417,344
LASER EMPLOYING A LIQUID SOLUTION OF CHROME ALUMINUM
Rodney E. Grantham, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 14, 1963, Ser. No. 302,217
1 Claim. (Cl. 331—94.5)



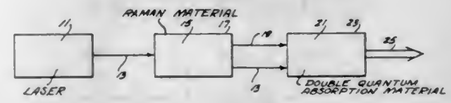
A laser wherein the active material is a liquid solution (such as chrome alum in water) containing laserable ions. By utilizing this liquid active material and circulating it through a cooling system during continuous operation, heating of the active material is controlled, thereby resulting in higher repetition rates of pulsing and higher output power.

3,417,345
HIGH RADIANCE LASER
Amado Y. Cabezas, Los Angeles, and Larry G. de Shazer, Westchester, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 21, 1964, Ser. No. 391,165
3 Claims. (Cl. 331—94.5)



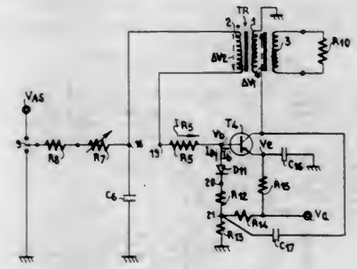
This is a high radiance laser wherein a source of optical frequency exciting energy is coupled to an ion doped glass laser element disposed in a regenerative cavity. The laser element contains primary and secondary ions and the exciting energy pumps the primary ion to a superfluorescence state and thereby produces superfluorescent radiative energy. This radiative energy is absorbed by the secondary ion in the laser element and excites the secondary ion to a laser state to thereby produce coherent light energy at a wavelength characteristic of the secondary ion.

3,417,346
LASER UTILIZING A RAMAN ACTIVE MATERIAL FOR DOUBLE QUANTUM ABSORPTION
Shaul Yatsiv, Santa Monica, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,394
9 Claims. (Cl. 331—94.5)



1. A laser having resonant double-quantum pumping, comprising a tuned giant pulse laser generating a first energy radiation having a frequency ω_L, a Raman cell coupled to said tuned laser and excited thereby to generate a second energy radiation having a frequency ω_s, and a material having an energy level separation of ΔE intercepting said first and second energy radiations wherein said radiations are combined and satisfy the relation $h\omega_L+h\omega_s=\Delta E$.

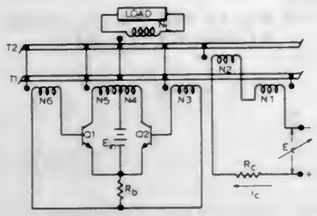
3,417,347
BLOCKING OSCILLATOR CIRCUIT AND SWEEP SYSTEM USING THE SAME
Claude Claverie, Asnieres, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Filed Aug. 15, 1967, Ser. No. 660,821
Claims priority, application France, Aug. 23, 1966, 73,834
13 Claims. (Cl. 331—112)



The blocking oscillator includes a transistor (T4) having a transformer-coupled collector-to-base feedback loop and a chargeable capacitor (C6) which discharges through selectively switchable resistance (R7, R8) during a relaxation phase and charges through resistance (R5) from the transistor base during a regeneration phase. An auxiliary circuit branch including a diode (D11) and series resistance (R12, R13) having a junction (21) biased through capacitance (C17) from the collector serves to derive a strong constant current from said base during the regeneration phase, rendering the timing of the oscillator output signal immune to variations in transistor characteristics. The emitter is biased through resistance (R15) and a decoupling capacitor (C16) where-

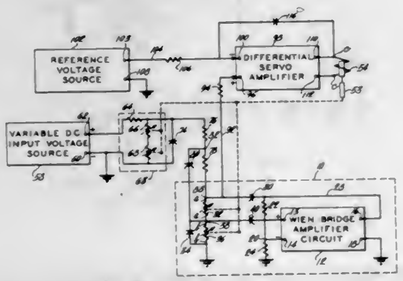
by the output current applied to a sweep transistor (T23) during said relaxation phase of the first transistor can be rendered independent of said output timing.

3,417,348
FREQUENCY CONTROL FOR MAGNETICALLY COUPLED OSCILLATORS
Edward T. Moore, Durham, N.C., assignor to Wilmore Electronics Company, Inc., Durham, N.C., a corporation of North Carolina
Filed Apr. 5, 1967, Ser. No. 628,626
2 Claims. (Cl. 331—113)



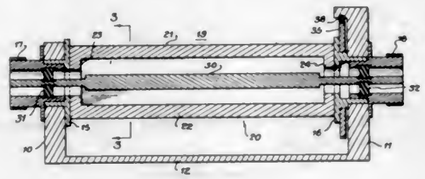
Frequency control of a magnetically coupled oscillator is obtained by utilizing two magnetic paths within a saturable frequency determining element, encircling both of the paths with a control winding configuration and applying a DC voltage across the control winding. The rate of switching and thus the oscillator frequency is determined by the value of the applied voltage.

3,417,349
VOLTAGE-CONTROLLED WIEN BRIDGE OSCILLATOR WITH SERVO-CONTROLLED STRAIN-SENSITIVE RESISTANCES
Robert M. Schneider, Lake Success, N.Y., assignor to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York
Filed Oct. 5, 1967, Ser. No. 673,065
10 Claims. (Cl. 331—141)



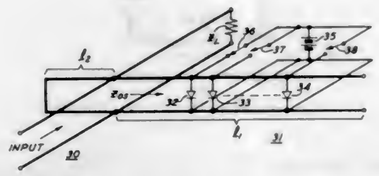
A voltage-to-frequency converter in which a variable control voltage is caused to vary the frequency of a Wien bridge oscillator in direct substantially linear proportion to the control voltage. Strain-sensitive resistors on a deflectable beam are used as the frequency-controlling resistances of the Wien bridge, an additional resistance element is connected in series with the frequency-controlling resistors, and the control voltage is applied across this series combination. The beam is deflected by an electro-mechanical servo system in a manner such that the resultant changes in resistance of the strain-sensitive resistors cause the voltage across the strain-sensitive resistors to remain constant despite changes in the control voltage.

3,417,350
VARIABLE IMPEDANCE COAXIAL DEVICE WITH RELATIVE ROTATION BETWEEN CONDUCTORS
Jose E. Cruz, Boulder, Colo., assignor to the United States of America as represented by the Secretary of Commerce
Filed Sept. 13, 1965, Ser. No. 487,099
3 Claims. (Cl. 333—35)



This is a variable impedance coaxial line in which the inner and outer conductors have noncircular cross sections. Relative rotation between the conductors varies the impedance of the line over a selected range.

3,417,351
DIGITALLY TUNED MICROWAVE FILTER
Gerald C. di Piazza, Dover, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 27, 1964, Ser. No. 406,739
5 Claims. (Cl. 333—73)



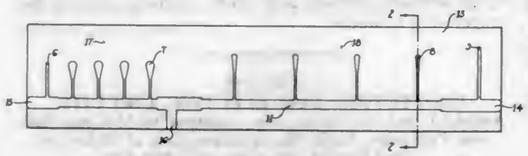
This application describes tunable band-reject and band-pass filters.

A tunable band-reject filter in accordance with the invention comprises an open-circuited stub across which there are connected one or more switching elements for selectively changing the electrical length of the stub.

A tunable band-pass filter is realized by the addition of a short-circuited stub across the open-circuited stub. Switching means can be included in either or both stubs.

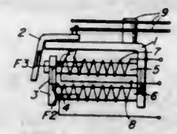
3,417,352
CORONA REDUCTION ON PRINTED CIRCUIT TUNING STUBS
Milford J. Waller, Foxboro, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Canada
Filed Dec. 21, 1964, Ser. No. 419,872
3 Claims. (Cl. 333—84)

A strip transmission line filter in which quarter wavelength open-circuited stubs are modified from the normal rectangular configuration to prevent the occurrence of corona discharge at peak power of the order of 1 kw. caused by the high voltages at the open-circuited end of the resonant line. The modification consists of augmenting the area at the open-circuited end of the stub to form a substantially rounded or pear-shaped configuration,



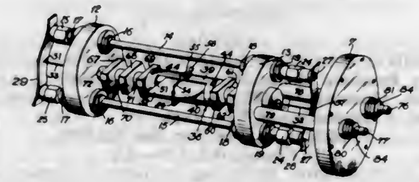
thereby altering the characteristic impedance of the stub and reducing the voltage at the open-circuited end.

3,417,353
SELECTORS OF THE COORDINATE SELECTOR TYPE
Sten Daniel Vigren, Mosebacke Torg 16–18, Stockholm, Sweden, Rolf Albin Zander, Storhagsvagen 28, Alvsjo, Sweden, and Per Harry Elias Claesson, Osterhagens Gard, Drevviken, Sweden
Continuation of application Ser. No. 472,170, July 15, 1965. This application Nov. 15, 1967, Ser. No. 683,412
Claims priority, application Sweden, July 23, 1964, 8,991/64; Nov. 10, 1964, 13,519/64
12 Claims. (Cl. 335—112)



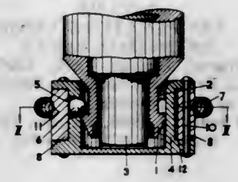
A shuntfield relay having an armature and two electromagnetic devices respectively forming first and second air gaps with the armature. When the electromagnetic devices are energized, one electromagnetic device produces a magnetic flux in a first direction across the first air gap and in a first direction across the second air gap, and the second electromagnetic device produces a magnetic flux across the second air gap in a direction opposite to the aforesaid first direction in addition to producing a magnetic flux across the first air gap in the aforesaid first direction, whereby energization of either of the electromagnetic devices alone results in a magnetic flux across the first air gap and the second air gap, while simultaneous energization of the electromagnetic devices results in addition of aiding flux in the first air gap and cancellation of opposing flux in the second air gap.

3,417,354
MAGNETIC CIRCUIT CLOSER
Frank Wenner, Washington, D.C., and Alvin G. McNish, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed July 23, 1947, Ser. No. 763,056
5 Claims. (Cl. 335—205)



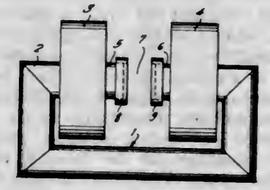
1. A circuit closer comprising a hub mounted for pivotal movement about an axis, first and second contacts carried by said hub offset from, and spaced in a plane normal to said axis, an inertia vane independently mounted for pivotal movement about said axis and having a portion interposed between said contacts, tensioned filaments mounting said hub and vane for pivotal movement, an electric circuit adapted to be closed by engagement of said vane with one of said contacts only, said circuit including said filaments.

3,417,355
RETAINING MEMBER WITH A FORCE THRESHOLD
Jan Christiaan Clason, Hengelo, Netherlands, assignor to N.V. Fabriek Van Electrische Apparaten Voorheen F. Hazemeijer & Co., Hengelo, Netherlands, a corporation of the Netherlands
Filed Feb. 10, 1967, Ser. No. 615,176
Claims priority, application Netherlands, Feb. 15, 1966, 6601931
4 Claims. (Cl. 335—296)



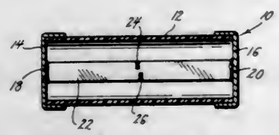
A retaining member with a force threshold applicable to an electric switch and comprising stub and cup-shaped members relatively movable with retaining elements and surrounded by spring and magnetic action.

3,417,356
DEVICE FOR THE INFINITELY VARIABLE CORRECTION OF THE MARGINAL FIELD OF A MAGNET
Peter Tschopp, Zurich, Switzerland, assignor to Maschinenfabrik Oerlikon, a corporation of Switzerland
Filed Feb. 13, 1967, Ser. No. 615,785
Claims priority, application Switzerland, Feb. 15, 1966, 2,196/66
7 Claims. (Cl. 335—298)



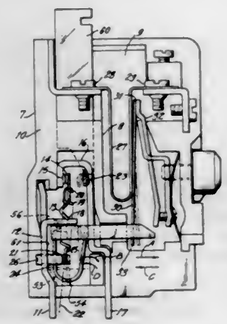
Hollow magnetic elements are placed around the opposed poles of a magnet to permit correction of the field gradient at the edge of the magnetic field in the air gap between the poles. Elements are adjustable axially of the poles by sliding or screw thread engagement therewith. The longitudinal cross-sectional profile of the element may vary, and more than one element may be concentrically arranged on each pole. The element may be a cylinder or a rectangular frame. The frame may comprise several parts, some of which may be non-magnetic.

3,417,357
PROTECTORS FOR ELECTRIC CIRCUITS
John S. Withers, Dellwood, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 604,015
14 Claims. (Cl. 337—295)



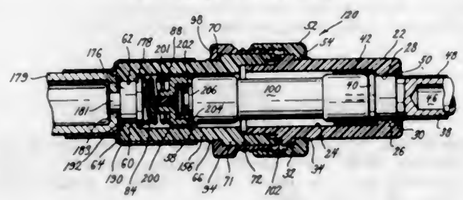
The "weak spots" in the fusible elements of electric fuses are formed so the effective lengths thereof are zero—to minimize the electrical resistances of those fusible elements and to keep those "weak spots" relatively cool which those electric fuses carry their rated currents.

3,417,358
AMBIENT TEMPERATURE COMPENSATED OVERLOAD RELAY
Bernard Di Marco, Lincoln Park, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 22, 1966, Ser. No. 581,246
8 Claims. (Cl. 337—99)



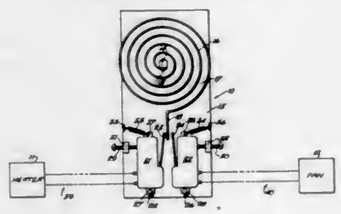
In an overload relay employing a primary bimetallic element for tripping the contacts of the relay open in the event of a current overload, the primary bimetal operates upon a motion translator bar which is also acted upon by one leg of a U-shaped ambient temperature compensating auxiliary bimetal; the auxiliary bimetal is mounted by the web of its U to a pivotal mounting which permits pivoting of the bimetal with respect to the housing; upon an increase in the ambient temperature in the housing, the auxiliary bimetal legs deflect outward, and the second leg strikes an abutment on the housing, whereby only the first leg thereof can deflect outward and the deflection of the second leg is absorbed by the pivoting of the auxiliary bimetal around its pivot mounting; upon a decrease in the ambient temperature, the legs of the auxiliary bimetal move inward, until the second leg of the auxiliary bimetal contacts the over center spring of the movable contact operating mechanism; thereafter, the second leg is held stationary while the first leg continues to deflect inward, the deflection of the second leg being absorbed through the pivoting of the auxiliary bimetal around its pivot; upon translation of the translator bar due to deflection of the primary bimetal as a result of an overload, the auxiliary bimetal is pivoted by the movement of the translator bar and the second leg of the auxiliary bimetal strikes and pulling the operating mechanism of the movable contact over center, thereby opening the cooperating contacts.

3,417,359
PROTECTORS FOR ELECTRIC CIRCUITS
Angelo Urani, St. Louis, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,370
10 Claims. (Cl. 337—201)



An insulating member adjacent the "line" contact of a holder for electric fuses keeps the terminal of an electric fuse from electrically engaging that contact until that terminal has moved the forward face of that insulating member rearwardly relative to that contact.

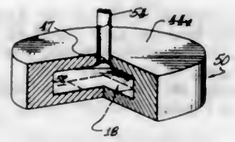
3,417,360
THERMOSTATIC CONTROL FOR HEATING AND COOLING
Lee G. Eggers, 3907 Liberty Ave., Sarasota, Fla. 33581
Filed Jan. 31, 1967, Ser. No. 612,915
1 Claim. (Cl. 337—339)



A thermostat for alternately switching on and off a pair of electric switches controlling the energization of heating and cooling devices in response to temperature change in order to maintain substantially constant room temperature. A helically-coiled bi-metallic member has one end fixed and its other end, in its movement in response to temperature change, actuates one or the other of the switches depending upon the direction of temperature change. Positional adjustment of the electric switches with respect to the free end of the bi-metallic element allows for independent control of the temperature range of operation of the device.

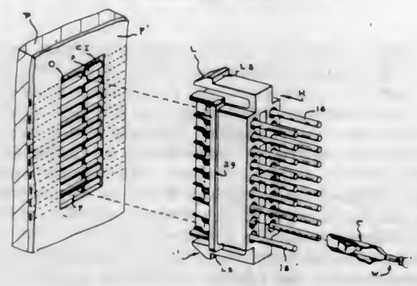
3,417,361
SEMICONDUCTIVE PRESSURE TRANSDUCER
Henry Bernhard Heller, Pasadena, and Robert C. Abraham, Monrovia, Calif., assignors to Conrac Corporation, a corporation of New York
Filed Mar. 7, 1966, Ser. No. 532,290
12 Claims. (Cl. 338—42)

A semiconductive anchoring formation is grown as a single crystal to a peripheral region of a stress-sensitive element. The grown support formation typically holds the periphery of the element essentially rigidly, isolating it from spurious forces. Direct crystal growth of the support formation to the sensing element avoids the mechanical damage and the dimensional limitations associated with machining a comparable structure from a conventional single crystal.



The directly grown single-crystal support formation may form with the sensing element a fluid-tight enclosure responsive to pressure differentials between the interior and exterior. Such an enclosure may be formed directly with its interior evacuated.

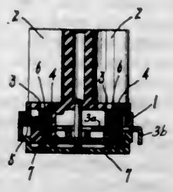
3,417,362
ELECTRICAL CONNECTOR AND ELECTRICAL TERMINALS THEREFOR
Charles Edward Reynolds, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 467,372, June 28, 1965. This application June 20, 1967, Ser. No. 647,538
17 Claims. (Cl. 339—17)



An electrical connector for connection to conductive means of a flexible cable means mounted on a panel having an opening provided with wall means along opposing sides and the flexible cable means being split and stripped at the opening to bear sections of the conductive means, the electrical connector comprises a dielectric housing having cavities extending therethrough corresponding to the number of conductive means, electrical contact members securely disposed in the cavities and including spring contact means projecting from at least one side of the housing for electrical engagement with respective bared sections of the conductive means when the housing is securely positioned within the opening thereby forcing the split flexible cable means against the wall means.

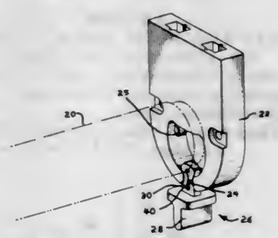
3,417,363
ROTARY SOCKET FOR PHOTOGRAPHIC FLASH LAMP
Okuzo Terazaki, No. 12, 2-chome, Chofu Minemachi Ota-ku, Tokyo, Japan
Filed Apr. 4, 1966, Ser. No. 539,884
3 Claims. (Cl. 339—45)

A photographic flash bulb holder which has a housing with a plurality of stationary gripping members positioned around the housing. A plate having a plurality of movable bulb gripping members thereon is linearly slidable in the housing with the movable bulb gripping members opposed to the corresponding stationary bulb gripping members. The housing has slidable bulb ejecting members between the bulb gripping members and spring loaded in the bulb ejecting direction, so that when the plate is moved



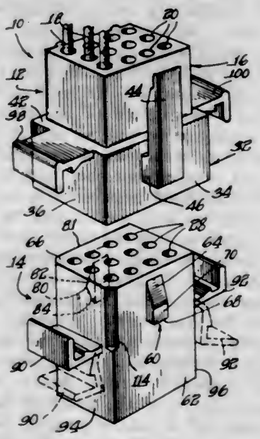
so as to separate the bulb gripping members, the bulb ejecting members will eject bulbs.

3,417,364
FLUORESCENT TUBE SOCKET SAFETY LOCK
John Philip Kunkle and William Joseph Garver, Harrisburg, and Harry John Dell, Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 7, 1967, Ser. No. 614,444
4 Claims. (Cl. 339—54)



Means to prevent the accidental removal of a fluorescent tube from its socket. A plug-like member is provided for closing the entry port through which the tube prongs pass while inserting the tube in its socket.

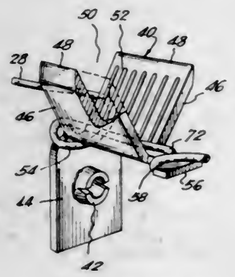
3,417,365
ELECTRICAL CONNECTOR
John H. Krehbiel, Downers Grove, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Filed Aug. 29, 1966, Ser. No. 575,696
14 Claims. (Cl. 339—91)



1. An electrical connector comprising: a receptacle element adapted to encase terminal ends of a first group of wires, said receptacle element having a front end and

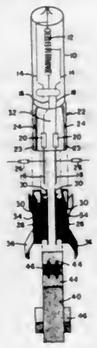
including a side wall having an aperture therein adjacent said front end, said side wall providing a latch bar between said aperture and said front end; latch release lever means connected to said side wall adjacent said aperture and extending outwardly therefrom and longitudinally away therefrom, said latch release lever means being manually movable trasnversely of the side wall resiliently to flex the side wall latch bar outwardly; a plug element adapted to encase terminal ends of a second group of wires, said plug element having an end portion adapted to be inserted in said receptacle element, said plug element including a wall means adapted for sliding engagement with an inner surface of the side wall of said receptacle; and latch lug means projecting outwardly from the wall means of said plug element and receivable in said aperture to engage the latch bar to interlock said plug element and said receptacle element, said latch release lever means being manually movable transversely of the side wall to deform said side wall and move said latch bar outwardly of said side wall to disengage said latch lug from said latch bar to enable said plug element to be withdrawn from said receptacle element.

3,417,366
ELECTRICAL TERMINAL DEVICE AND METHOD OF FORMING THE SAME
Morris J. Holton, Morton Grove, and Sol Hasson, Skokie, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 4, 1966, Ser. No. 570,305
4 Claims. (Cl. 339—96)



An electrical terminal junction between a fine wire internal lead and a relatively heavy stranded wire external lead and a method of making said junction, which method comprises the steps of laying the fine wire within the notch of a V-shaped terminal member, soldering said fine wire in place therein, coating the soldered connection and terminal member with an electrical insulating compound, as by vacuum impregnation with an asphaltic based compound, placing the external lead in the notch of the thus treated V-shaped terminal member and then crimping the arms of said terminal member in a reverse inward curl with the external lead therein and by means of a shaping die or punch to form the novel electrical junction, said junction having the solder functioning as a malleable matrix or cushion for the fine wire embedding same to prevent fracture thereof and the insulating compound protecting both the fine and the stranded wire against entry of moisture. A particular electrical terminal member is disclosed as formed as a unitary sheet metal structure having a V-shaped portion and a body portion normal disposed relative to the notch of the V and extending from one end of said V portion, means integral with the other ends of the V portion for securing a wire thereto, the inner surface of said V portion having a plurality of irregularities, such as scores, therein, the V portion capable of receiving a fine wire within the notch thereof and covered with electrical insulating material and a stranded wire lead thereover the arm of said V portion arranged to be crimped in an inward curl to form a cushioned, moisture-protected terminal junction.

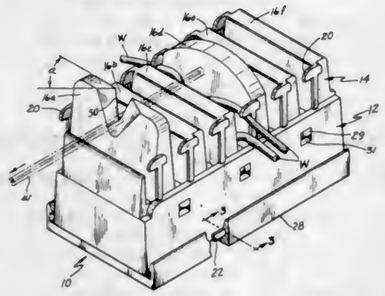
3,417,367
INCANDESCENT LAMP BASE
David R. Dayton, Beverly, and Albert H. Nimblett, Jr., Salem, Mass., assignors to Sylvania Electric Products, Inc., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,579
4 Claims. (Cl. 339—145)



A snap-on base and socket arrangement that can be used with tubular incandescent lamps which have press seal ends. The glass press seal of the lamp is provided with formed notches for locating and retaining a pair of electrical side runners thereon. Filament lead-in wires of the lamp are electrically connected to the inside of the runners prior to sliding a ceramic yoke over the runners thereby bridging them together. A pair of ears extending from the lower edges of the runners are bent over the base of the yoke securing it to the lamp seal.

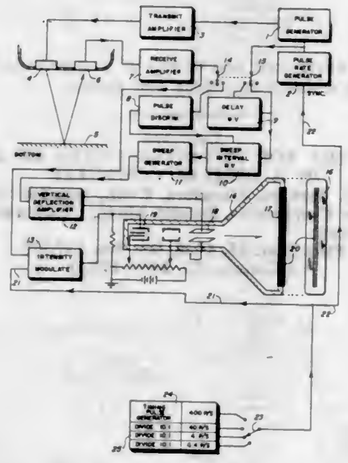
This completed lamp base can then be snap-fitted into a ceramic socket the interior of which is provided with a pair of spring-metal electrical connectors. A bent detent protrusion on the spring connectors mates with the notches of the side edges of the lamp base, thereby retaining the lamp within the socket.

3,417,368
WIRE TERMINALS
Alexander R. Norden, 350 Central Park W., New York, N.Y. 10025
Filed July 6, 1966, Ser. No. 563,248
24 Claims. (Cl. 339—147)



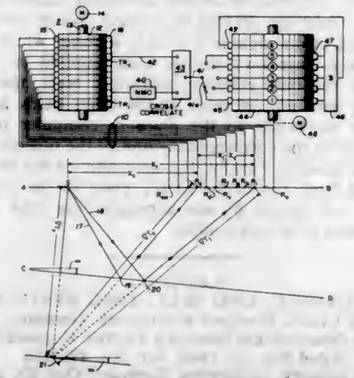
A wire stripper is provided having cutting edges of a plastic, especially nylon, that is harder than polyvinylchloride insulation but softer than wire to avoid making a nick in the wire; and to special advantage the plastic of the wire stripper forms part of the electrical insulation in an electrical device having at least one wire-securing terminal.

3,417,369
PULSE ECHO RECORDING
Joseph D. Richard, 3613 Loquat Ave., Miami, Fla. 33133
Continuation-in-part of application Ser. No. 353,171, Mar. 19, 1964. This application Aug. 23, 1967, Ser. No. 662,629
4 Claims. (Cl. 340—3)



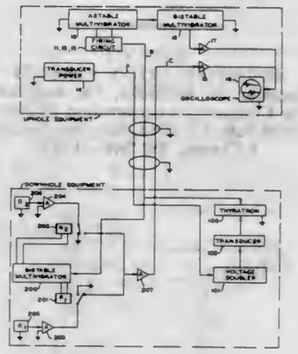
Apparatus for graphically recording pulse echo signals wherein a fiber optic cathode ray tube and direct print photosensitive paper are used in place of the conventional mechanical stylus system. The high writing speed and random triggering capabilities make possible several unique applications.

3,417,370
SEISMIC VELOCITY CORRELATION
James Robert Brey, Irving, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,434
6 Claims. (Cl. 340—15.5)



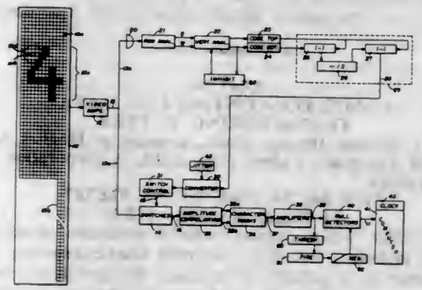
Related seismic traces with differential horizontal offset are cross-correlated in pairs where the traces in each pair with greatest offset are corrected successively for normal moveout where different selected values of seismic velocity is the variable in the correlation. A resultant velocity correlation function has a maximum amplitude at a velocity which is an index to the actual velocity of the formations through which the seismic energy on said traces has passed.

3,417,371
ACOUSTICAL LOGGING APPARATUS
Dan G. Sterry, Seabrook, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,803
3 Claims. (Cl. 340—18)



In an acoustical velocity well logging system a sonic generator and two geophones are positioned in a logging sonde. A first multivibrator located in the sonde operates relays to alternately connect the geophones through the cable to an oscilloscope at the surface. An astable multivibrator actuates a firing circuit to produce a firing signal and a bistable multivibrator to alternately apply one of two voltage levels to a vertical input of the oscilloscope. The firing signal actuates the sonic generator and the first multivibrator. The firing circuit comprises a differentiating network and a rectifier to eliminate peaks of one polarity.

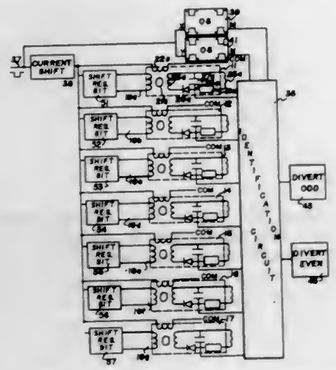
3,417,372
CHARACTER IDENTITY DECISION GENERATION
Albert H. Bieser, Garland, Tex., assignor to Recognition Equipment, Incorporated, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,721
7 Claims. (Cl. 340—146.3)



A reading system wherein analog signals, in number corresponding with the number of characters to be identi-

fied, appear on separate input channels leading to a set of decision generators. Each decision generator includes means for storing a condition voltage representative of the degree to which each of the analog signals exceeds a threshold level. A staircase voltage is then synchronously added to each of the storage voltages, beginning at a predetermined time after the largest of the analog signals first exceeds the threshold level. When the combination of the largest stored voltage and the staircase voltage reaches a predetermined level, an output signal is produced. If a like output signal is produced within a predetermined number of steps of the staircase voltage after production of the first output signal, the utilization of any output signal is inhibited.

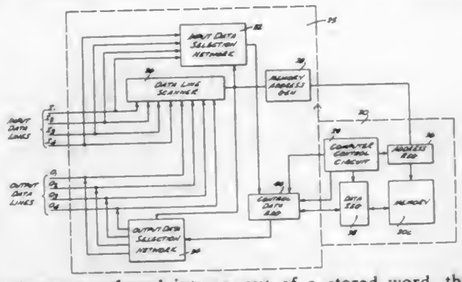
3,417,373
IDENTIFICATION CIRCUIT
John O. Lampkin, Jr., Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Feb. 12, 1964, Ser. No. 344,357
3 Claims. (Cl. 340—172.5)



A circuit for identifying one of a pair of predetermined binary numbers in a magnetic core shift register where the numbers differ by one bit. Identification circuits are connected to all bits except the differing bit. A resetting circuit is connected to the differing bit and to the identification circuits. Following the shift of a binary number into the register, a shift-responsive circuit briefly connects the register to the identification circuits which may set in response to the predetermined configuration of all bits except the differing bit. The resetting circuit responds to the value of the differing bit to reset the first or the second identification circuit accordingly.

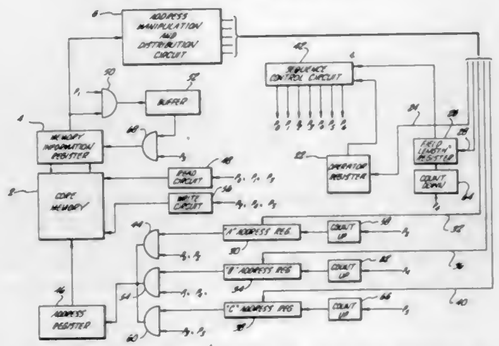
3,417,374
COMPUTER-CONTROLLED DATA TRANSFERRING BUFFER
Jack J. Pariser, Orange, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,787
13 Claims. (Cl. 340—172.5)

A buffer, which operates with a minimum of equipment, including a scanner, whereby lines connecting the computer to a plurality of terminal devices are scanned to sense which of the input devices has data to be transferred to the compter and which of the output devices is to receive data from the computer. When the scanner stops in response to an input or output data signal, an address is generated and the byte is inserted into memory or applied to the output line. A portion of each word is used as a counter to provide control of the number



of bytes transferred into or out of a stored word, thus providing message unpacking and packing.

3,417,375
CIRCUITRY FOR ROTATING FIELDS OF DATA IN A DIGITAL COMPUTER
Roger E. Packard, Glendora, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 25, 1966, Ser. No. 537,379
5 Claims. (Cl. 340—172.5)

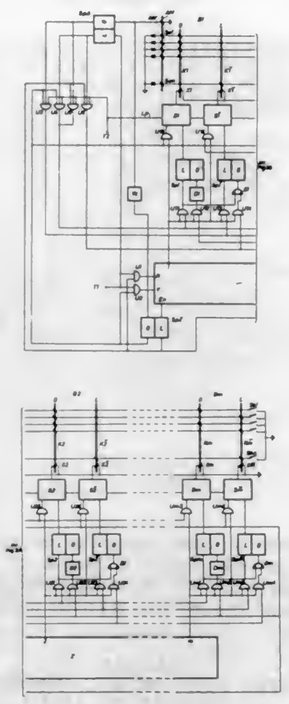


A plurality of fields having an identical number of units of data are rotated responsive to a single instruction. During the operation, an address register individual to each field stores its address including a count of the units of data within the field and a computer memory address register addresses the computer memory responsive to the information in the individual address storing registers. Fields are rotated in location unit by unit. First, a data unit of one field is moved to a buffer which serves as the only temporary storage area required in connection with the field rotation operation. Next, the corresponding data unit in each of the other fields is transferred in succession to the place in computer memory left vacant by the corresponding unit of the preceding field in the succession. Finally, the data unit of the first field is moved from the buffer to the place in the computer memory left vacant by the corresponding data unit of the last field in the succession.

3,417,376
SCANNING AND SELECTING SYSTEMS
Friedrich Ulrich, Stuttgart-Weilimdorf, Germany, assignor to International Standard Electric Corporation
Filed Oct. 15, 1965, Ser. No. 496,276
Claims priority, application Germany, Oct. 23, 1964, St 22,848; Oct. 31, 1964, St 22,884
9 Claims. (Cl. 340—172.5)

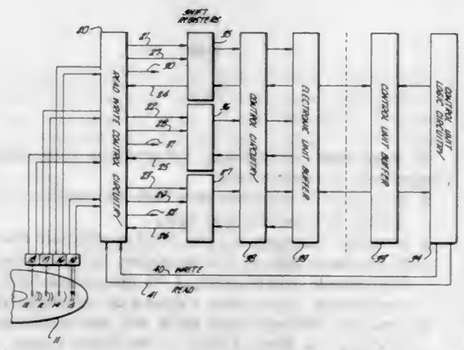
Scanning and selecting systems using a minimum of decoupling elements and central storage units. Magnetic

blocking techniques are employed to perform the selection by blocking elements not marked. The arrangement



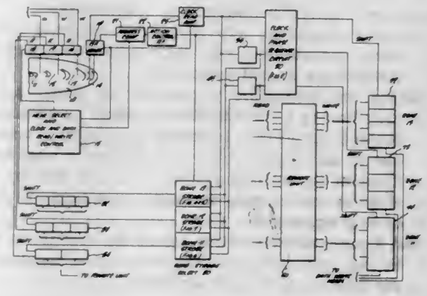
automatically investigates in sequence only marked information sources.

3,417,377
SHIFT AND BUFFER CIRCUITRY
Charles A. Vietor, Westminster, and Norman S. Blessum, Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 13, 1966, Ser. No. 579,118
21 Claims. (Cl. 340—172.5)



1. A digital data processing system comprising:
digital data storage media;
a plurality of shift registers; each of the shift registers being coupled to the storage media by a transmission media channel;
means for presenting clock signals to the shift registers over the transmission channels, the clock signals presented over each channel being asynchronous with the clock signals presented over the remaining channels;
means for serially transmitting information signals between the storage media and the shift registers, over the channels associated with the respective shift registers, responsive to the clock signals presented to the respective shift registers;
a remote register;
control means for determining the coincident presence of particular conditions in each of the shift registers; and
means responsive to such determination for effecting a simultaneous parallel transfer of information signals between the plurality of shift registers and the remote register.

3,417,378
MULTIPLE FREQUENCY DATA HANDLING SYSTEM
Richard C. Simonsen, South Pasadena, Norman S. Blessum, Covina, and John A. Hibner, Sierra Madre, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 13, 1966, Ser. No. 579,119
16 Claims. (Cl. 340—172.5)

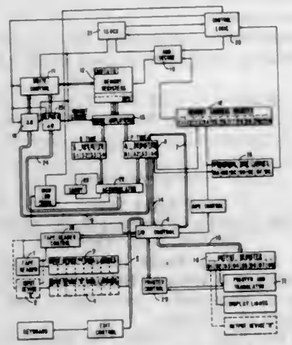


1. A system for timing the flow of data relative to a storage media comprising:
a digital data storage media having stored thereon binary data in the form of bits having a predetermined bit frequency, said storage media having at least two distinct bit frequencies stored in at least two distinct data storage sections of the media,
a clock track having repetitive binary bits corresponding in bit frequency to the frequency of bits stored in one of the data storage sections on said media,
means for recovering said clock track of one bit frequency from said media and for providing a first train of clock pulses having a pulse repetition rate equal to the bit frequency of said one data storage section,
means utilizing said first train of clock pulses for transferring binary bits of said one bit frequency relative to its distinct associated storage section on said storage media,
means for converting said first train of clock pulses into a second train of clock pulses having a pulse repetition rate equal to the bit frequency of said other storage section on said storage media, and
means utilizing said second train of clock pulses for transferring binary bits of said other bit frequency relative to its distinct associated storage section on said storage media.

3,417,379
CLOCKING CIRCUIT FOR MEMORY ACCESSING AND CONTROL OF DATA PROCESSING APPARATUS

Roderick S. Heard and Louis M. Hornung, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 15, 1966, Ser. No. 594,542
17 Claims. (Cl. 340—172.5)



1. Apparatus for processing data according to selected programed instruction sequences, comprising:

clocking means for providing predetermined clocking signal sequences to time the execution of programed instructions in said apparatus;

means for generating a plurality of signal patterns, each having a predetermined unique combination of control signals for accessing data in said apparatus one of said signal patterns including at least one redundant control signal interval that is thereby available for use in data accessing operations or control of said apparatus;

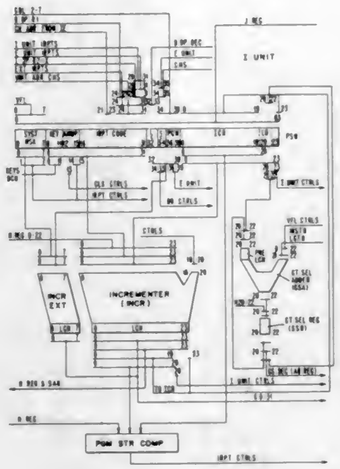
and signal pattern control means for selectively establishing said signal pattern sequences as required during operation of said apparatus.

3,417,380
INSTRUCTION SELECTION APPARATUS

Leo J. Hasbrouck, Saratoga, Calif., and Edward J. Ossolinski and Gordon L. Smith, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 445,324, Apr. 5, 1965. This application Jan. 13, 1967, Ser. No. 609,248
6 Claims. (Cl. 340—172.5)

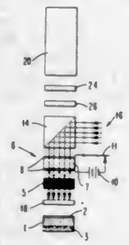
The specification discloses an illustrative embodiment for the invention comprising a large scale data processing system of the type which is composed of a plurality of quasi-independent units. The environmental data processing system includes a central processing unit or portion, which is herein referred to as a CPU, a plurality of storage units, a plurality of input/output control devices referred to herein as channels, as well as control and maintenance facilities which are found in a power distribution unit, herein referred to as a PDU. The CPU of the environmental system includes a control or instruction unit hereinafter referred to as an I unit, and an arithmetic and logic or execution unit, hereinafter referred to as an E unit. The I unit includes controls for instruction fetching, branching, interruption handling, communication with the input/output channels, and other related functions. The E unit of the environmental system can perform algebraic and logical operations, moving, shifting, and other functions. Instruction buffers and an instruction operand register are also provided. The instruction operand register is of a size which is greater than the smallest instruction but less than the longest instruction of a variable length instruction set. However, the instruction operand register is capable of manifesting the full length of instructions, including the operand portion and the address portion, and other portions thereof.



3,417,381
APPARATUS FOR WRITING INFORMATION IN MEMORY BY LIGHT

Glenn T. Sincerbox, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 21, 1965, Ser. No. 465,527
5 Claims. (Cl. 340—173)



1. Apparatus for writing information into memory comprising, in combination:

a photographic emulsion in which information may be written by exposing it to light,

a normally transparent plate of photochromic material at the input side of said emulsion, said plate becoming opaque when exposed to ultraviolet light and transparent again when exposed to infrared light,

an analyzer between said plate and said emulsion for blocking the flow of light to the latter except when it is polarized in a given direction,

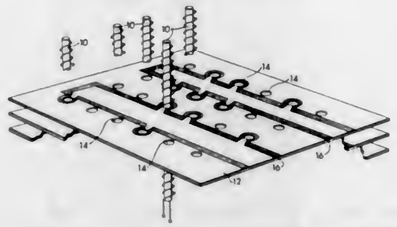
means for exposing said plate to ultraviolet light and infrared light in such a way that selected areas are transparent while the remaining areas are opaque, said ultraviolet and infrared light being polarized in a direction to be blocked by said analyzer,

and means for exposing said plate to light at a selected frequency and polarized in a direction to pass through said analyzer to said photographic emulsion.

3,417,382
FERRITE CORE HAVING DIFFERENT REGIONS OF VARYING PERMEABILITY

Allan W. Snyder, Waltham, and George G. Pick, Lexington, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 1, 1964, Ser. No. 393,524
5 Claims. (Cl. 340—174)

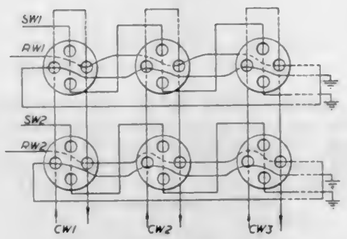


A solenoid having a ferrite core in which the permeability of the two end sections is higher than that of the central section.

3,417,383
TRANSFLUXOR STORAGE MATRIX

Desmond Sydney Ridler, Roger George, John Anthony Weeks Butcher, and Ryszard Kitajewski, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 838,727, Sept. 8, 1959. This application May 20, 1964, Ser. No. 371,868
Claims priority, application Great Britain, Sept. 15, 1958, 29,453/58
2 Claims. (Cl. 340—174)



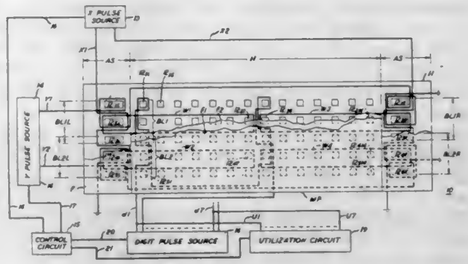
A coordinate array of rows and columns of ferromagnetic units are provided for the storage of intelligence. Each unit comprises a piece of ferromagnetic material having a substantially rectangular hysteresis loop and having four holes to form two storage cells and two reading cells.

3,417,384
MAGNETIC MEMORY

Donald E. Blahut, Irvington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 20, 1964, Ser. No. 383,747
7 Claims. (Cl. 340—174)

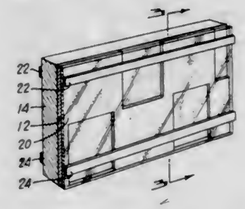
The variety of different amplitude and polarity pulses necessary for operation of some magnetic memories is provided herein by a two-core-per-bit access switch in which only enabled ones of the cores of each location in the access switch are switched. A priming circuit arrangement enables the cores of a selected location to switch in series or individually and a following sequential switching operation resets so enabled cores. The access switch is shown in the form of a waffle iron arrangement integral with a nondestructive read waffle iron memory.



3,417,385
THIN FILM SHIFT REGISTER

Irving William Wolf, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 4, 1964, Ser. No. 387,427
10 Claims. (Cl. 340—174)

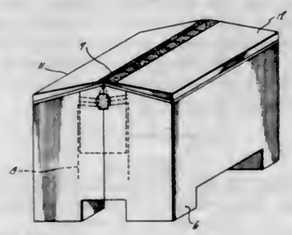


Thin magnetic film memory with a checkerboard or multi-level array of magnetic sites which are magnetically coupled to one another within a common plane and having a shifting or propagating coil coupled to each level of sites. The geometrical arrangement of the multi-level array of sites enables one site to nucleate an adjacent site utilizing relatively low values of magnetic propagation fields in the propagating coils.

3,417,386
MAGNETIC HEAD ASSEMBLY

Robert A. Schneider, Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

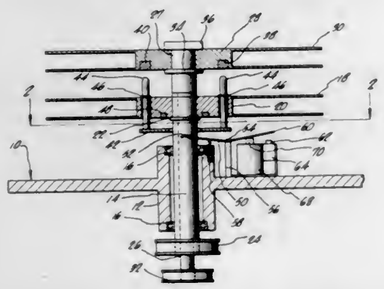
Filed Oct. 11, 1965, Ser. No. 494,475
12 Claims. (Cl. 340—174.1)



A method and apparatus is disclosed for fabrication of a magnetic head which includes high permeability sendust tips housed in slots in the undersurface of tip support plates. The tip support plates are beveled along

one length to a depth which exposes a portion of the slots at the upper surface of the plates. The sendust tips are contoured at these exposed portions of the slots for contact with the magnetic tip. Another housing bracket of non-magnetic material is arranged with magnetic circuits housed therein to join with the sendust tips and complete a signal recording and signal recovery magnetic circuit. In one embodiment the undersurface of the support plates is plated with an alloy having wear and abrasive characteristics substantially matched to those of the sendust material. This plated area is located between the adjacent channels formed by sendust tip pairs, and it is also exposed and contoured for contact with the magnetic medium. In another embodiment the entire plate is formed from an alloy having substantially the same wear and abrasive characteristics as the sendust tips.

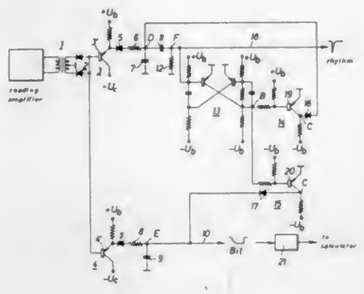
3,417,387
ERASURE PREVENTION CONTROL FOR COAXIALLY MOUNTED TAPE SUPPLY AND TAKE-UP REELS
Harry F. Rayfield, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,959
5 Claims. (Cl. 340—174.1)



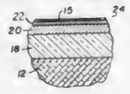
1. In a tape transport having a pair of coaxially mounted reels, apparatus for detecting the presence of a "write" lock-out ring inserted in a groove in a first reel, the groove being concentrically positioned on the face of the reel closest to the second reel, said apparatus comprising a plurality of pins extending through holes in the second reel directly opposite the groove in the first reel, means for supporting the pins with limited movement of the pins parallel to the axis of rotation of the reels, magnetic means for normally holding the pins and supporting means in position such that the pins project into the groove when the first reel is in position without the "write" lock-out ring, means engaging the pin supporting means for normally urging the supporting means towards the magnetic means, the lock-out ring when in position contacting the pins and forcing the supporting means away from the magnetic means, a switch, means for actuating the switch when the supporting means is moved away from the magnetic means, and solenoid means controlled by the actuating of the switch for withdrawing contact of said urging means with the pin supporting means.

3,417,388
BINARY MAGNETIC REPRODUCING CIRCUITRY
Heinz Timm, Regensburg, Germany, assignor to Diehl, Nuremberg, Germany
Filed Nov. 8, 1965, Ser. No. 506,638
Claims priority, application Germany, Nov. 14, 1964, D 45,855
5 Claims. (Cl. 340—174.1)

Arrangement for reading a magnetic storage member having information binarily coded thereon in bit periods in the form of "0" and "1" values in the form of alternating pulses of respective duration and in which the read values are rectified and are employed to charge capacitors, one of which is fully charged during each bit period and the other of which is fully charged only when a "1" value is recorded in the respective bit period, together with a time control element in the form of a monostable multivibrator which is triggered by the charge on the one capacitor and which is effective for discharging both capacitors while supplying information to a succeeding processing station only if a "1" value has been stored in said other capacitor.

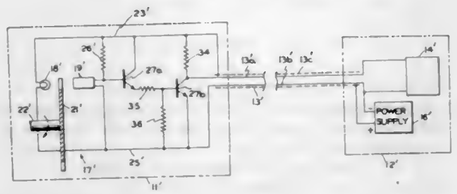


3,417,389
MAGNETIC RECORD MEDIUM
Melville A. Dike, Los Altos, Calif., assignor to Pioneer Electroform Mfg. Co., a corporation of California
Original application Nov. 21, 1962, Ser. No. 239,173, now Patent No. 3,319,315, dated May 16, 1967. Divided and this application Nov. 23, 1966, Ser. No. 605,117
15 Claims. (Cl. 340—174.1)



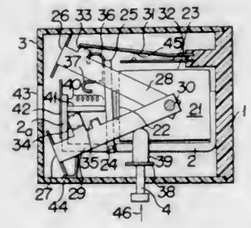
A magnetic memory device, such as a magnetic disc or drum, which has a deposition formed surface structure including a plated magnetic coating layer, and a rigid substrate for support to which the formed surface structure is bonded.

3,417,390
TELEMETERING
Quentin C. Turtle, Cranston, R.I., assignor to General Signal Corporation, a corporation of New York
Filed Oct. 12, 1965, Ser. No. 495,106
3 Claims. (Cl. 340—207)



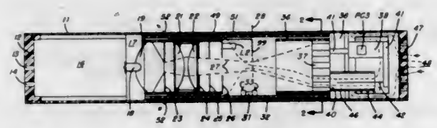
Electrical telemetering systems employing a three-conductor cable which transmits D.C. power from a receiver to a remotely located transmitter and also transmits signal pulses in the opposite direction. The cable consists of two inner leads which form the pulse-transmitting circuit, and an encircling shield which, with at least one of the inner leads, serves as the power supply circuit.

3,417,391
ELECTROMAGNETICALLY OPERATED MULTISTAGE FLAG INDICATOR
Fumio Ando, Hidekazu Okada, and Tooru Mogi, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Aug. 15, 1966, Ser. No. 572,510
Claims priority, application Japan, Aug. 20, 1965, 40/50,792
6 Claims. (Cl. 340—376)



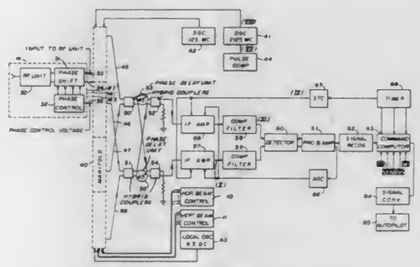
1. A multistage flag target comprising a base, an electromagnet supported by said base and adapted to be energized by signals from a controlled means, an armature located on said base to be attractable by said electromagnet, a first flag movable substantially in the vertical direction, a second flag located under said first flag and movable substantially in the vertical direction, means to support said first flag on said armature when said electromagnet is deenergized and cause said first flag to disengage said armature and drop when said electromagnet is energized, confirming means which when actuated operates to push up both of said flags and means to support said second flag on said armature when said second flag is pushed up by said confirming means during the period of energization of said electromagnet whereby the position of said flags indicates the condition of said controlled means or the confirmation of said condition.

3,417,392
FIRE DETECTOR
Julian E. Hansen, Sr., 6142 Loukelton Circle, San Diego, Calif. 92120 and Julian E. Hansen, Jr., 7025 Boulevard Drive #5, La Mesa, Calif. 92041
Filed Oct. 23, 1965, Ser. No. 503,421
8 Claims. (Cl. 340—409)



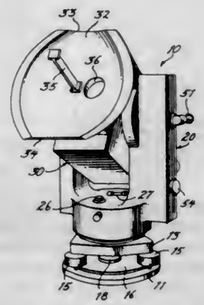
A smoke detector having a cylindrical housing for shielding ambient light with a lighted light bulb located within the housing and a light collimating lens system positioned in front of the light, a light-sensitive transducer located within the housing in proximity to the collimated light, an air intake in the housing with a light absorbing mesh in proximity with the air intake, an air pump between the light absorbing mesh and the air intake, an exhaust located on the other side of the light-sensitive transducer from the air intake, an electronic indicating threshold detector connected to the light-sensitive transducer for indicating relative intensity of light impinging on the transducer and a monitoring light-sensitive transducer positioned within the housing and in the light path for indicating the condition of the light source.

3,417,393
INTEGRATED CIRCUIT MODULAR RADAR ANTENNA
Harry F. Cooke, Richardson, and Tom M. Hyltin and Britton T. Vincent, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 397,491, Sept. 18, 1964. This application Oct. 18, 1967, Ser. No. 676,362
11 Claims. (Cl. 343—5)



A phased array radar system including an array of transmit-receive modules, and manifold structure for providing AC and DC power to the array and for summing output signals from each of the modules, each module including a radiation element and capable of providing power amplification, phase shifting, mixing, and frequency multiplication of a transmitted and/or received signal in the module. Included also is a solid state mixer, frequency multiplier, phase shifter, power amplifier, and scan control system for the radar.

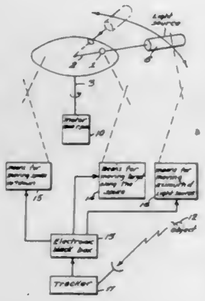
3,417,394
GEODETIC INSTRUMENT
Gerhard P. Sauberlich, St. Louis, Mo., assignor to Elgeo Instruments of America, Inc., a corporation of Florida
Continuation-in-part of application Ser. No. 389,128, Aug. 12, 1964. This application Feb. 20, 1967, Ser. No. 617,246
2 Claims. (Cl. 343—6)



This invention is concerned with a geodetic instrument wherein a leveling head is adjustably mounted on a base and a hollow housing rests on the leveling head including a pair of laterally spaced upstanding hollow arms, and

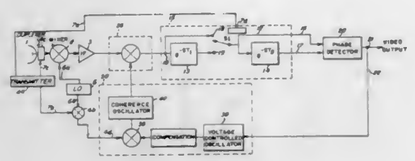
wherein shaft means extend between the arms for swingably supporting a telescope and electronic distance-measuring apparatus arranged in substantial axial alignment with the telescope. The housing is provided with simple and highly efficient optical means for illuminating and observing horizontal and vertical angles of housing and telescope adjustment.

3,417,395
VOLUMETRIC DISPLAY
Richard W. Bullard, Las Cruces, N. Mex., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 9, 1966, Ser. No. 571,685
6 Claims. (Cl. 343—7.9)



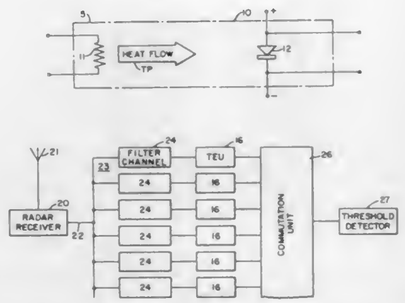
The disclosure sets forth a procedure for the controlled movement and illumination of linearly and rotatably positionable targets through the cooperative employment therewith of rotatable light beams and mirrors, all programmed to operate in a proper time sequence to effect a synchronized illustration in three dimension.

3,417,396
MOVING TARGET INDICATION SYSTEM USING A STAGGERED REPETITION RATE
Francis J. Stifter, Natick, and William W. Shrader, West Newton, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,911
6 Claims. (Cl. 343—7.7)



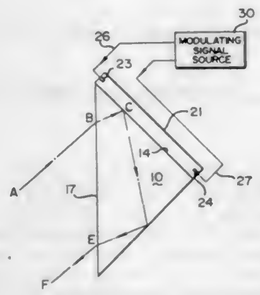
A moving target indication system including a radar receiver operable with a transmitter which radiates pulses at staggered repetition rates. The receiver includes a delay line canceller operative in the intermediate frequency stages. The receiver further includes a first mixing arrangement for rephasing the system by generating a frequency difference signal between each radar return signal and a reference signal. The multiple delay line canceller forms a phase difference signal between each frequency difference signal and a frequency difference signal delayed by at least one transmitter interpulse interval. A second mixing arrangement, also in the receiver, keeps the reference signal coherent in phase with each transmitted pulse and the phase difference signal so that the system is automatically rephased.

3,417,397
SIGNAL DETECTION INTEGRATION AND LEVEL SENSING SYSTEM USING THERMAL EFFECT DEVICES
William F. List, Linthicum, Md., Alan J. Demco, Portage, Pa., and Jerry D. Donaldson, Glen Burnie, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1967, Ser. No. 632,785
6 Claims. (Cl. 343—8)



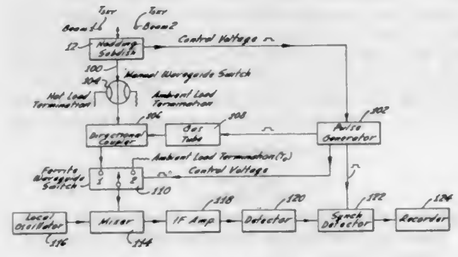
Signal retrieval system for detecting a coherent signal immersed in a wide band spectrum including random noise quantizes the spectrum by contiguous filter channels, each of which includes a thermal electrical unit which utilizes both the thermal and electronic properties of semiconductor material to perform a circuit function of signal detection, integration and automatic threshold level control, usually performed by a combination of electrical components. Two main embodiments are illustrated, one providing a threshold reference voltage based on an amplitude comparison and the other utilizing an automatic threshold reference based on spectral density in the echo spectrum.

3,417,398
MODULATED RETRODIRECTIVE CORNER REFLECTOR
Bernard L. Lewis, Satellite Beach, and Le Roy Pietsch, Palm Bay, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Apr. 12, 1966, Ser. No. 542,063
7 Claims. (Cl. 343—18)



1. A retrodirective corner reflector for modulating high frequency R-F waves reflected therefrom, said corner reflector comprising a polyhedron composed of dielectric material having a preselected dielectric constant greater than that of the surrounding medium in which said reflector is to be used, said polyhedron having a plurality of intersecting faces forming the corner from which incident R-F waves are to be reflected interiorly of said dielectric material, and an enclosed gaseous ionizable medium disposed adjacent at least one of said intersecting faces and an opposing relation thereto.

3,417,399
MILLIMETER-WAVE RADIOMETER FOR RADIO-ASTRONOMY
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Anthony Giandomenico, San Gabriel, and Willard Van Tuyl Rusch, Pasadena, Calif.
Filed Apr. 18, 1967, Ser. No. 632,163
10 Claims. (Cl. 343—100)



Block Diagram of Nodding Subdish Calibration System

A synchronous detection system capable of detecting exceptionally weak radio-astronomical signals, the system including a Cassegrainian type microwave antenna having a mechanical switching assembly whereby the antenna beam may be periodically switched from a distant source of radio-astronomical signals to a position in space adjacent to but displaced from the source so as to permit the detection system to distinguish an actual signal from background noise. Mechanical switching within the system is achieved by a periodically tilting or "nodding" of the auxiliary hyperboloidal reflecting subdish which forms a part of the Cassegrainian antenna. The synchronous detection system also includes means for thermal noise calibration of the system.

3,417,400
TRIAXIAL ANTENNA
Woodrow W. Black, Los Angeles, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 25, 1966, Ser. No. 544,895
9 Claims. (Cl. 343—771)

9. A transversely polarized triaxial antenna, comprising:

a shorted coaxial TEM mode transmission line including an inner elongated conductor, a tubular intermediate conductor substantially coaxial with and receiving said inner conductor, and first electrical short means adjacent a first end of said intermediate conductor and between said intermediate and inner conductors responsive to electrical energy applied to a second end of said line for setting up a standing wave pattern in said coaxial line including separate series of half wavelength spaced maximum current and voltage regions;

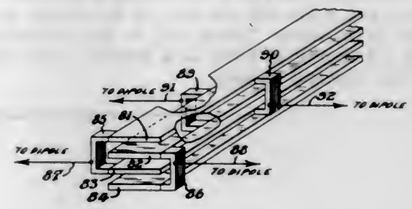
said intermediate conductor including a complex feed slot substantially one-half wavelength long and having an axial portion substantially parallel to said inner conductor and a transverse portion connecting to said axial portion and lying immediately adjacent a maximum current region;

a tubular outer conductor substantially coaxial with and receiving said intermediate conductor and having an axial radiating slot substantially parallel to said inner conductor, said radiating slot being substantially a multiple of one-half wavelength long;



and second and third short means adjacent first and second ends of said outer conductor and between said outer and intermediate conductors to define a chamber around said intermediate conductor, said chamber being substantially a multiple of one-half wavelength long and said second short means being substantially a multiple of one-half wavelength beyond the center of said feed slot.

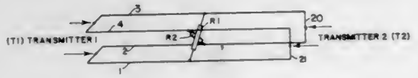
3,417,401
LOW INPUT IMPEDANCE DIPOLE ANTENNA ARRAY
Albert C. Veldhuis, West Chester, Pa., assignor to Trylon Incorporated, Elverson, Pa., a corporation of Pennsylvania
Filed Dec. 7. 1965, Ser. No. 512,181
7 Claims. (Cl. 343—792.5)



A low input impedance antenna is disclosed having dipole elements and at least four transmission line conductors disposed in stacked relationship. Alternate transmission line conductors are connected together at opposite and spaced points along the stack. The dipoles are connected to the connections. Preferably, at least one

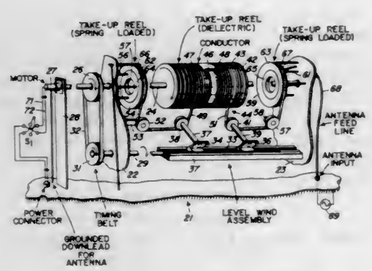
transmission line conductor is of circular cross section, the remainder being preferably flat strips.

3,417,402
COMBINING NETWORK FOR RADIO FREQUENCY POWER SOURCES
Perry W. Esten, Burlingame, Calif.
(1 English Garden, 8000 Munich 22, Germany)
Filed Jan. 11, 1967, Ser. No. 608,556
7 Claims. (Cl. 343—852)



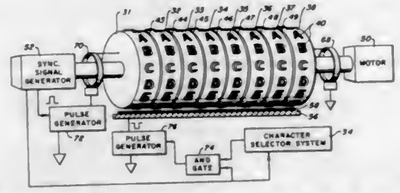
The present invention provides a system or means of coupling two transmitters or other radio frequency power sources which may operate over a broad frequency range to feed into a common load thereby combining the power sources in a manner so that no malfunction or mis-adjustment or operating condition of either power source can adversely affect the other power source or the system.

3,417,403
ELECTRICALLY SMALL SPIRAL ANTENNA TUNABLE OVER A WIDE BAND
Richard C. Fenwick, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 18, 1965, Ser. No. 508,482
4 Claims. (Cl. 343—877)



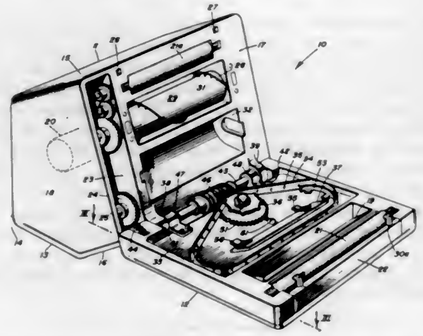
A tunable electrically-small antenna which minimizes spacial requirements may be formed of a solenoid winding operating at or near first resonance, the winding having a length corresponding to one half the wavelength of an energizing signal. One end of the winding is grounded and the other end is fed with the sense of the winding being reversed at the center. Tuning may be accomplished by varying the number of turns on a dielectric drum upon which the winding is formed.

3,417,404
ELECTROSTATIC DRUM PRINTER
Albert Macovski, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Nov. 22, 1965, Ser. No. 509,102
3 Claims. (Cl. 346—74)



A printing drum for electrostatic printing is constructed of a plurality of adjacent cylindrical segments, which are insulated from one another, each segment carrying on the periphery a plurality of spaced conductive type characters. A conductive back bar is positioned adjacent to the drum and substantially parallel to the axis of the drum. A web on which printing is desired is moved between the back bar and drum periphery. An electrostatic image of a character is provided by applying a pulse between each disc segment carrying a desired character and a back bar, when the segment is opposite the back bar.

3,417,405
RECORDER
Milton Alden, Needham, Mass., assignor to Alden Research Foundation, Brockton, Mass., a trust of Massachusetts
Filed Nov. 21, 1966, Ser. No. 595,723
9 Claims. (Cl. 346—145)

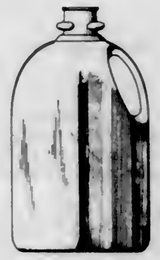


This invention relates to a recorder using electro-sensitized paper and, more particularly, to such a recorder in which the movable electrode is carried in a cover which is hingedly attached to a main body and in which the motor is mounted in the body and the movable electrode is driven by a shaft extending through the hinge.

DESIGNS

DECEMBER 17, 1968

212,932
JUG
Victor F. Anderson, 13 W. Mantua Ave.,
Wenonah, N.J. 08090
Original design application Oct. 24, 1967, Ser. No. 9,132. Divided and this application Apr. 19, 1968, Ser. No. 11,742
Term of patent 14 years
(Cl. D9—39)



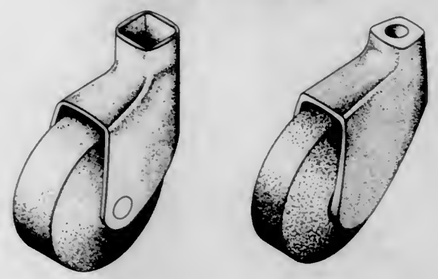
212,933
MOLDED TRAY FOR A BADMINTON SET OR THE LIKE
Ajit Singh, 179 Sawmill Road,
Scarsdale, N.Y. 10583
Filed July 7, 1967, Ser. No. 8,118
Term of patent 3½ years
(Cl. D9—185)



212,934
CONTAINER EDGE SUPPORTABLE PAINT BRUSH HOLDER
Anthony Cortina, 56 Huntington St.,
New London, Conn. 06320
Filed Feb. 27, 1967, Ser. No. 5,971
Term of patent 14 years
(Cl. D9—289)



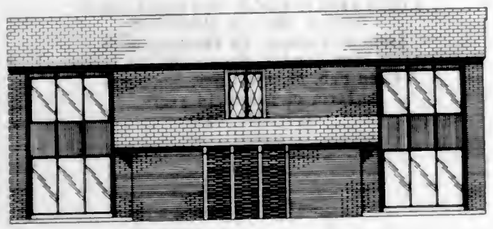
212,935
CHAIR CASTER
David R. Appel, Grand Rapids, Mich., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 18, 1968, Ser. No. 11,007
Term of patent 14 years
(Cl. D10—6)

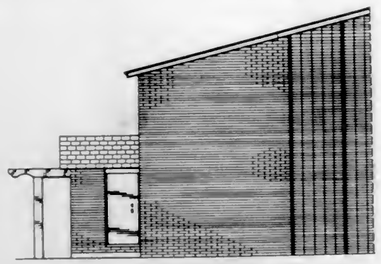


212,936
BUILDING STRUCTURE
Ralph Robert Knapp, Evansville, Ind., assignor, by mesne assignments, to Farmer's Daughter, Inc., Evansville, Ind., a corporation of Indiana
Filed Jan. 4, 1968, Ser. No. 10,046
Term of patent 14 years
(Cl. D13—1)



212,937
MULTIPLE FAMILY DWELLING
John M. La Fata, Warren, Mich., assignor to Karem Brothers, Inc., Warren, Mich., a corporation of Michigan
Filed Feb. 15, 1968, Ser. No. 10,583
Term of patent 14 years
(Cl. D13—1)



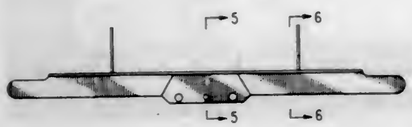


212,938
GEAR SHIFT LEVER EXTENSION
James M. Dudley, 2220 Southside Blvd., Jacksonville, Fla. 32216
Filed Jan. 19, 1968, Ser. No. 10,220
Term of patent 14 years
(Cl. D14—6)

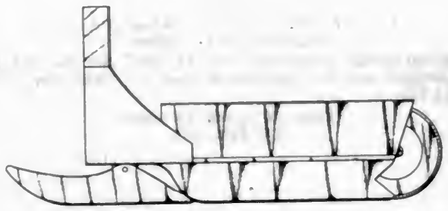




212,939
TRUCK BUMPER
Paul B. Nunn, 3200 SW. 59th St., Oklahoma City, Okla. 73119
Filed Dec. 4, 1967, Ser. No. 9,629
Term of patent 14 years
(Cl. D14—6)



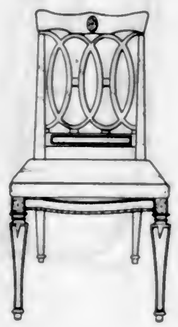
212,940
SLED VEHICLE
Leonard Erickson, Bergland, Mich. 49910
Filed Sept. 28, 1967, Ser. No. 8,773
Term of patent 14 years
(Cl. D14—24)



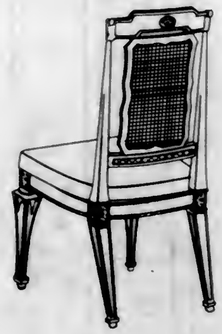
212,941
WHEEL
Friedrich H. Van Winsen, Kirchheim (Teck), Arthur Mahler, Feilbach, Wurttemberg, and Stefan Heiliger, Waiblingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 21, 1967, Ser. No. 8,676
Claims priority, application Germany Mar. 21, 1967
Term of patent 7 years
(Cl. D14—30)



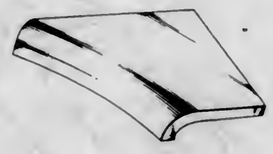
212,942
CHAIR
Wayland B. Parker, South Boston, Va., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed Jan. 10, 1968, Ser. No. 10,112
Term of patent 14 years
(Cl. D15—1)



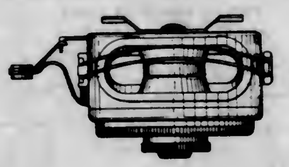
212,943
CHAIR
Wayland B. Parker, South Boston, Va., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed Jan. 10, 1968, Ser. No. 10,108
Term of patent 14 years
(Cl. D15—1)



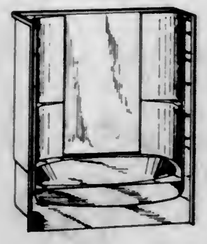
212,944
CERAMIC TILE
Joseph Stephen Wheeler, Jr., % Huntington Tile, Inc., 9223 Bolsa Ave., San Diego, Calif. 92683
Filed Feb. 17, 1967, Ser. No. 5,849
Term of patent 14 years
(Cl. D18—2)



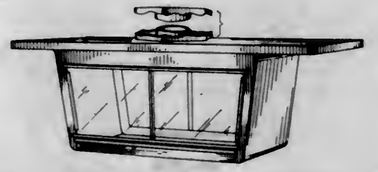
212,945
LEVEL WIND AUTOMATIC TROUT REEL
Earle D. Clickner, Kalamazoo, Mich., assignor to Shakespeare Company, Kalamazoo, Mich., a corporation of Michigan
Filed Sept. 15, 1967, Ser. No. 8,606
Term of patent 14 years
(Cl. D22—25)



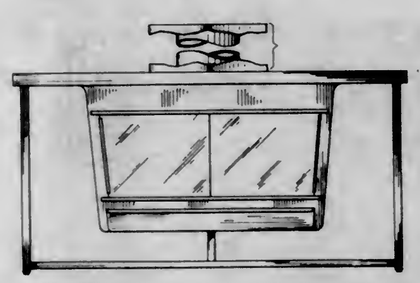
212,946
COMBINATION BATHTUB AND SHOWER STALL
Jeri O. Clark, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 9,974
Term of patent 14 years
(Cl. D23—49)



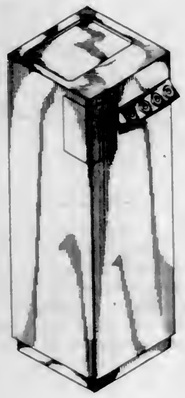
212,947
FIREPLACE
Fred L. Toerge, Stamford, Conn., and George C. Hoehne, Bellerose, N.Y., assignors to The Donley Brothers Company, Cleveland, Ohio, a corporation of Ohio
Filed May 26, 1967, Ser. No. 7,272
Term of patent 14 years
(Cl. D23—97)



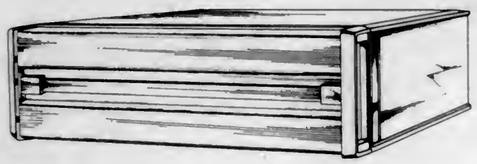
212,948
FIREPLACE
Fred L. Toerge, Stamford, Conn., and George C. Hoehne, Bellerose, N.Y., assignors to The Donley Brothers Company, Cleveland, Ohio, a corporation of Ohio
Filed May 31, 1967, Ser. No. 7,306
Term of patent 14 years
(Cl. D23—97)



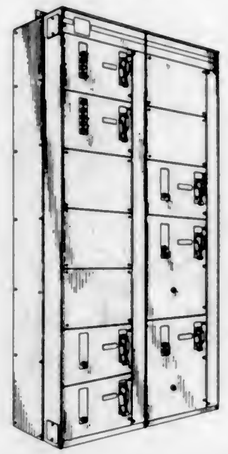
212,949
DENTAL INSTRUMENT SUPPORTING UNIT
Charles M. Weiss and David Harold Linn, New York, N.Y., assignors to S. S. White Company, Philadelphia, Pa., a corporation of Pennsylvania
Original design application May 1, 1967, Ser. No. 6,906, now Patent No. 210,126, dated Feb. 13, 1968. Divided and this application Sept. 1, 1967, Ser. No. 8,563
Term of patent 14 years
(Cl. D24—1)



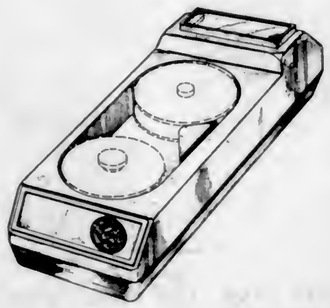
212,950
ELECTRONIC INSTRUMENT ENCLOSURE AND COVER THEREFOR
Dale W. Gruyé, Sunnyvale, Calif., Edwin J. Sommers, East Paterson, N.J., and Noland E. Vogt, Menlo Park, and Dennis J. McCroskey, Redwood City, Calif., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Mar. 8, 1967, Ser. No. 6,123
Term of patent 14 years
(Cl. D26—5)



212,951
ELECTRICAL CONTROLS CABINET
Kenneth L. Paape, Mequon, Wis., and David E. Scott, Royal Oak, Mich., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 11, 1967, Ser. No. 9,730
Term of patent 14 years
(Cl. D26—5)



212,952
PORTABLE DICTATING MACHINE
Harry M. Billings, 546 Bryant St., San Francisco, Calif. 94107
Filed Nov. 20, 1967, Ser. No. 9,472
Term of patent 3½ years
(Cl. D26—14)



212,953
HEARING AID
Manfred J. Pollak, 1115 Michigan, Evanston, Ill. 60621
Filed Sept. 15, 1967, Ser. No. 8,599
Term of patent 14 years
(Cl. D26—14)

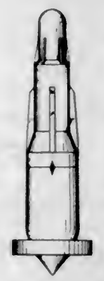


212,954
MINIATURE SHRINE OR THE LIKE
John T. Torlone, 37 Orchard St., Englewood, Ohio 45322
Filed Sept. 22, 1966, Ser. No. 3,967
Term of patent 14 years
(Cl. D29—23)

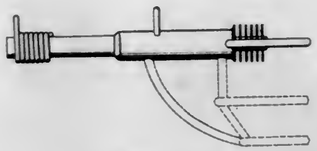


212,955
TOE CLAMP FOR SKI BINDING
Bernard E. Berlenbach, 15 Middle Court, Mill Valley, Calif. 94941
Filed Dec. 28, 1967, Ser. No. 9,961
Term of patent 14 years
(Cl. D34—14)

212,956
SPINNING TOY
Raymond J. Lohr, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 29, 1968, Ser. No. 11,207
Term of patent 14 years
(Cl. D34—15)



212,957
SIMULATED SPACE GUN OR SIMILAR ARTICLE
Ronald W. Zick, Torrance, Calif., assignor to Jamison, Inc., Torrance, Calif., a corporation of California
Filed May 1, 1967, Ser. No. 6,915
Term of patent 14 years
(Cl. D34—15)



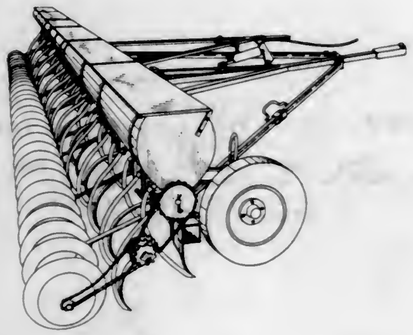
212,958
COMBINED SNOW PLOW AND HANDLE THEREFOR OR SIMILAR ARTICLE
Jeffrey Douglas Golenski, Sacramento, Calif. (405 Smith Neck Road, South Dartmouth, Mass. 02748)
Filed Sept. 1, 1967, Ser. No. 8,472
Term of patent 14 years
(Cl. D35—2)



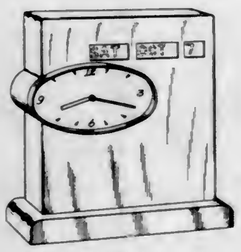
212,959
COMBINED FLOWER POT HOLDER AND BRACKET THEREFOR
William H. Michaels, 3568 Independence Road, Cleveland, Ohio 44105
Filed Feb. 27, 1968, Ser. No. 10,743
Term of patent 14 years
(Cl. D35—3)



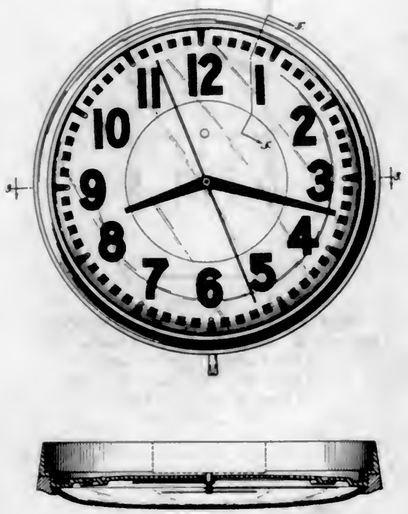
212,960
GRAIN DRILL
Michael C. Hornung and Everett J. Tasset, Spearville, Kans., assignors to American Products, Inc., Spearville, Kans.
Filed Jan. 29, 1968, Ser. No. 10,349
Term of patent 14 years
(Cl. D40—1)



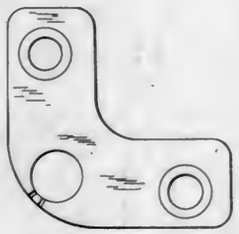
212,961
COMBINED CLOCK AND CALENDAR
John Satrazemis, 1254 Emilie St., and George D. Bielinski, 443 Floral Drive, both of Green Bay, Wis. 54301
Filed Feb. 9, 1968, Ser. No. 10,514
Term of patent 14 years
(Cl. D42—7)



212,962
CLOCK
Charles A. McLeod, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 4, 1967, Ser. No. 8,134
Term of patent 14 years
(Cl. D42—7)



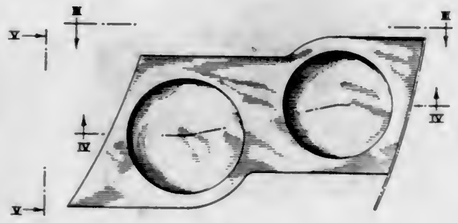
212,963
COMBINED COASTER AND ASHTRAY ATTACHMENT FOR A TABLE
Marshall D. Payn, 3007 Nanette Drive, St. Joseph, Mo. 64506
Substituted for abandoned design application Ser. No. 3,915, Sept. 19, 1966. This application Feb. 9, 1968, Ser. No. 10,852
Term of patent 14 years
(Cl. D44—10)



212,964
SERVING TRAY
William F. Hamilton and Stuart R. Scheyer, Mundelein, Ill., assignors to Decorel Corporation, Mundelein, Ill., a corporation of Illinois
Filed Jan. 29, 1968, Ser. No. 10,343
Term of patent 14 years
(Cl. D44—10)



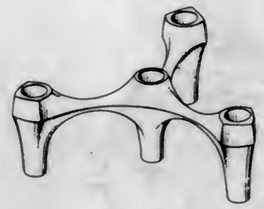
212,965
COASTER OR SIMILAR ARTICLE
Richard P. Du Pont, Box 222, Bethayres, Pa. 19006
Filed Jan. 9, 1968, Ser. No. 10,105
Term of patent 14 years
(Cl. D44—10)



212,966
FINGER RING
Coralynn Pence, 5009 48th Ave. NE., Seattle, Wash. 98105
Filed Feb. 12, 1968, Ser. No. 10,538
Term of patent 14 years
(Cl. D45—10)



212,967
CANDLE HOLDER
Kenneth Glenn, Los Alamitos, Robert McKay, Glendale, and John L. McCarthy, Palos Verdes Peninsula, Calif., assignors to La Cresta Manufacturing Company, La Crescenta, Calif., a corporation of California
Filed Feb. 28, 1968, Ser. No. 10,761
Term of patent 14 years
(Cl. D48—2)



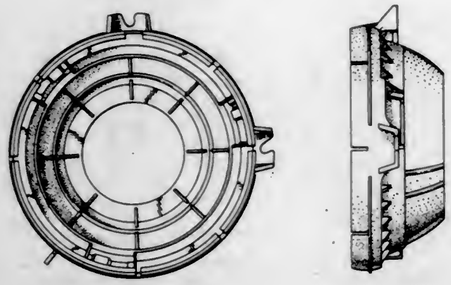
212,968
LIGHTING FIXTURE OR SIMILAR ARTICLE
Werner W. Schwartz, Jackson Heights, N.Y., assignor to Consolidated Sewing Machine Corp., New York, N.Y., a corporation of New York
Filed Feb. 14, 1968, Ser. No. 10,576
Term of patent 14 years
(Cl. D48—20)



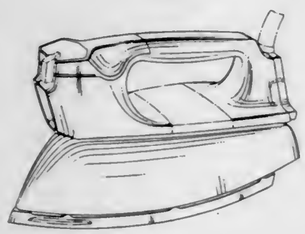
212,969
PORTABLE LAMP
Stephen W. Morris, 1300 Fernside Blvd., Alameda, Calif. 94501
Filed Dec. 11, 1967, Ser. No. 9,732
Term of patent 14 years
(Cl. D48—20)



212,970
HOUSING FOR MOUNTING A SEALED BEAM HEADLAMP
Peter Hedgewick, Windsor, Ontario, Canada, and Jay E. White, Jr., Bloomfield Hills, Mich., assignors to Reflex Corporation of Canada Limited, Amherstburg, Ontario, Canada, a corporation of Ontario
Filed Apr. 29, 1968, Ser. No. 11,677
Term of patent 14 years
(Cl. D48—32)



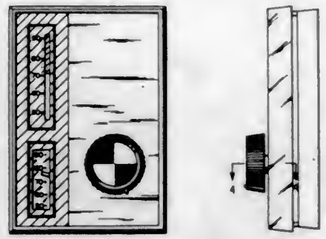
212,971
IRON
Walton E. Sparks, Lexington, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Nov. 30, 1967, Ser. No. 9,600
Term of patent 14 years
(Cl. D49—6)



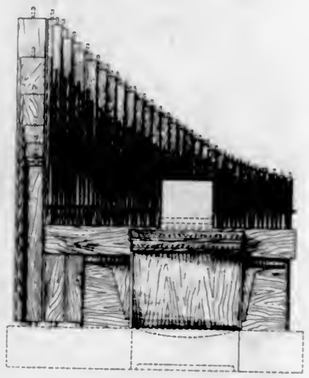
212,972
SHOP-TYPE VACUUM CLEANER
James F. Mariol, Cincinnati, Ohio, assignor to Vernco Corporation, Columbus, Ind., a corporation of Indiana
Filed Apr. 16, 1968, Ser. No. 11,482
Term of patent 14 years
(Cl. D49—14.1)



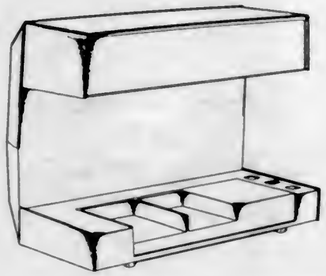
212,973
WALL THERMOSTAT
Frederick M. Hill, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio
Original design application May 6, 1966, Ser. No. 2,191, now Patent No. 210,803, dated Apr. 16, 1968. Divided and this application Aug. 3, 1967, Ser. No. 8,603
Term of patent 14 years
(Cl. D52—7)



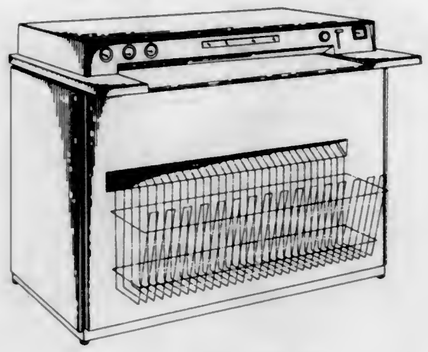
212,974
PIPE ORGAN
Don Marshall Stone, 4 Potomac Court, Alexandria, Va. 22314
Original design application Jan. 30, 1967, Ser. No. 5,607. Divided and this application Oct. 10, 1967, Ser. No. 10,467
Term of patent 14 years
(Cl. D56—2)



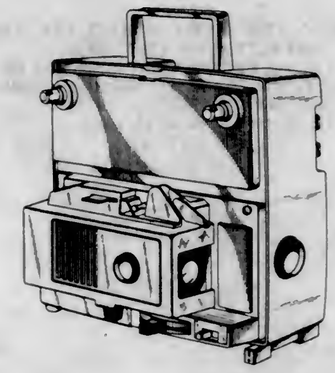
212,975
PHOTOGRAPHIC COPYING APPARATUS
Kenneth W. Scott, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 15, 1967, Ser. No. 8,604
Term of patent 14 years
(Cl. D61—1)



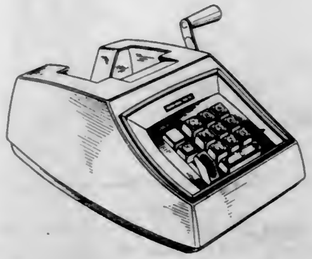
212,976
PHOTOGRAPHIC FILM PROCESSOR OR SIMILAR ARTICLE
Ralph M. Vigna, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 15, 1967, Ser. No. 8,602
Term of patent 14 years
(Cl. D61—1)



212,977
COMBINED MOTION PICTURE PROJECTOR AND CARRYING CASE
Peter T. Quinn, Arthur H. Crapsey, and Richard J. Olson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 21, 1967, Ser. No. 7,544
Term of patent 14 years
(Cl. D61—1)



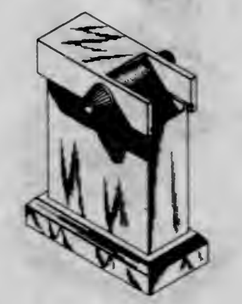
212,978
MANUALLY OPERATED ADDING MACHINE
Thomas McGourty, P.O. Box 134, Norfolk, Conn. 06058
Filed Oct. 24, 1967, Ser. No. 9,145
Term of patent 3½ years
(Cl. D64—11)



212,979
ELECTRIC ADDING MACHINE
Thomas McGourty, P.O. Box 134, Norfolk, Conn. 06058
Filed Oct. 24, 1967, Ser. No. 9,144
Term of patent 14 years
(Cl. D64—11)



212,980
ADDRESS LABEL DISPENSER
John W. Desmond, 104 Walter Drive, R.D., Media, Pa. 19063
Filed July 25, 1967, Ser. No. 7,971
Term of patent 14 years
(Cl. D74—1)



212,981
WRITING INSTRUMENT
Sidney Laybourne, 2642 64th Ave., Oakland, Calif. 94605
Filed Nov. 25, 1966, Ser. No. 4,805
Term of patent 14 years
(Cl. D74—17)



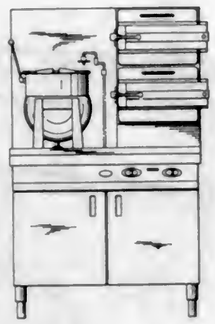
212,982
DISPLAY STAND FOR JEWELRY
Helen Zolkower, 13342 Hart, Huntington Woods, Mich. 48070, and Norman G. Wachler, 19384 James Couzens, Detroit, Mich. 48235
Filed Nov. 16, 1967, Ser. No. 9,435
Term of patent 14 years
(Cl. D80—9)



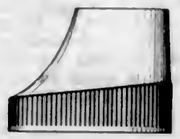
212,983
COOKING STOVE
Lewis H. Herr, Allentown, and Peter L. Helgeson, Macungie, Pa., assignors to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed May 12, 1967, Ser. No. 7,098
Term of patent 14 years
(Cl. D81—4)



212,984
APPLIANCE FOR PREPARING FOOD AND THE LIKE
James R. Mecredy, Lakewood, Ohio, assignor to The Cleveland Range Company, Cleveland, Ohio, a corporation of Ohio
Continuation of design applications Ser. No. 1,939, and Ser. No. 1,945, Apr. 20, 1966. This application June 30, 1967, Ser. No. 8,205
Term of patent 14 years
(Cl. D81—10)



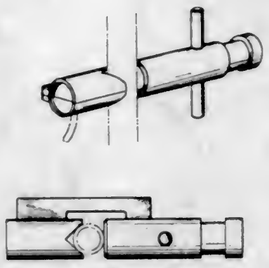
212,985
BABY BOTTLE WARMER
Lawrence Katzman and Edward Briggin, New York, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 25, 1968, Ser. No. 10,309
Term of patent 14 years
(Cl. D81—10)



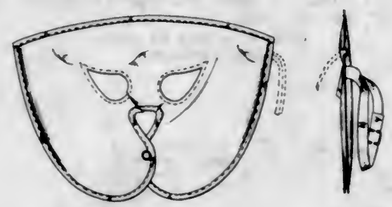
212,986
MONITOR FOR INTRAVENOUS FEEDING SYSTEMS OR THE LIKE
Richard A. Cramer, La Jolla, Calif., assignor to Life Electronics, Inc., La Jolla, Calif., a corporation of California
Filed Nov. 27, 1967, Ser. No. 9,554
Term of patent 14 years
(Cl. D83—1)



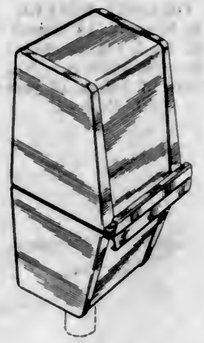
212,987
DROP RATE SENSOR FOR INTRAVENOUS FEEDING SYSTEMS OR THE LIKE
Richard A. Cramer, La Jolla, Calif., assignor to Life Electronics, Inc., La Jolla, Calif., a corporation of California
Filed Nov. 27, 1967, Ser. No. 9,555
Term of patent 14 years
(Cl. D83—1)



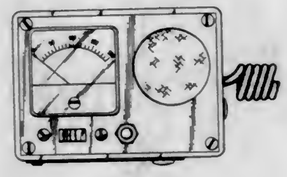
212,988
FACIAL HEATING PAD
Lawrence Katzman and Robert Dublirer, New York, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 10,014
Term of patent 14 years
(Cl. D83—1)

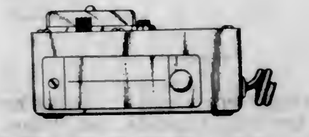


212,989
WALL MOUNTED POWER AND CONTROL UNIT FOR AN AERATED BATH MAT
Willis A. Stageberg, St. Louis Park, Minn., assignor to Louise Ideas, Inc., St. Paul, Minn., a corporation of Minnesota, and C. Verner Gustafson, St. Paul, Minn.
Filed Feb. 5, 1968, Ser. No. 10,441
Term of patent 14 years
(Cl. D83—1)

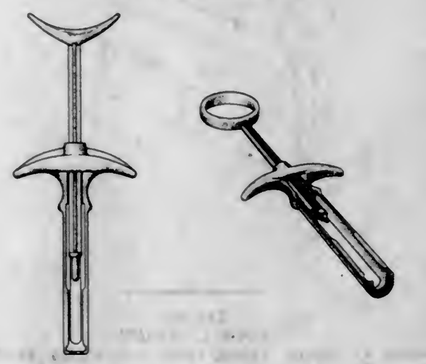


212,990
PULSE RATE INDICATOR FOR BODY FUNCTIONS
Carl A. Budde, Los Angeles County, Calif. (8427 Balboa Blvd., Northridge, Calif. 91324)
Filed Apr. 17, 1967, Ser. No. 6,722
Term of patent 14 years
(Cl. D83—1)

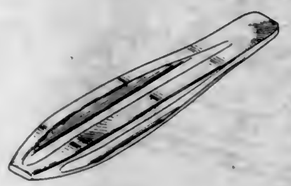




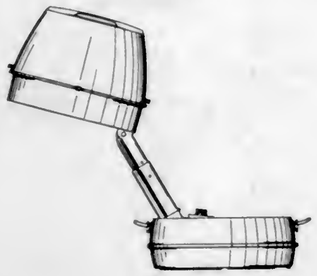
212,991
HYPODERMIC SYRINGE BODY
Hans Christer Arvid Evers and Hans Gösta Enström, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden
Filed Dec. 11, 1967, Ser. No. 9,725
Term of patent 14 years
(Cl. D83—12)



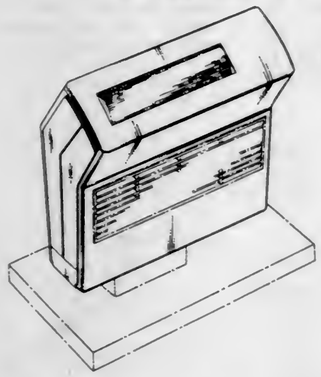
212,992
COMBINED TONGUE DEPRESSOR AND MOUTH BLOCK
Frank Scaler, Jr., 243 Mangels Ave., San Francisco, Calif. 94131
Filed Feb. 28, 1968, Ser. No. 10,776
Term of patent 14 years
(Cl. D83—12)



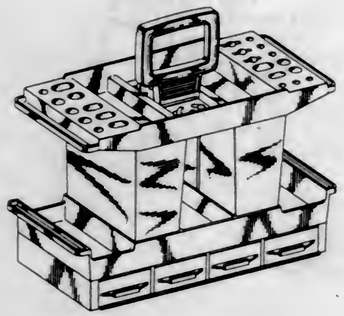
212,993
HAIR DRYER
Austin E. Cox, Rustic Hills, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Oct. 24, 1967, Ser. No. 9,138
Term of patent 14 years
(Cl. D86—10)



212,994
BATTERY-POWERED CLOTHES BRUSH
Peter N. Ryckman, Mansfield, and Walton E. Sparks, Lexington, Ohio, assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Nov. 30, 1967, Ser. No. 9,589
Term of patent 14 years
(Cl. D86—13)



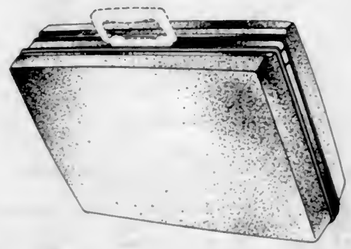
212,995
TOOL CARRIER
Isidore C. Myers, Akron, Ohio, assignor to Akro-Mils, Inc., Akron, Ohio, a corporation of Ohio
Filed Feb. 8, 1968, Ser. No. 10,509
Term of patent 14 years
(Cl. D87—1)



212,996
COIN DISPLAY CASE
Carlos Sierra-Franco, King of Prussia, Pa., assignor to The Franklin Mint, Inc., a corporation of Pennsylvania
Filed Nov. 30, 1967, Ser. No. 9,588
Term of patent 14 years
(Cl. D87—3)



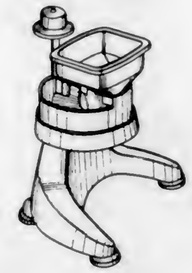
212,997
ATTACHE CASE
Raymond P. Stoy, White Plains, N.Y., assignor to The Leather Specialty Company, Cincinnati, Ohio, a corporation of Ohio
Continuation-in-part of design application Ser. No. 87,717, Oct. 21, 1965. This application June 12, 1967, Ser. No. 7,452
Term of patent 14 years
(Cl. D87—5)



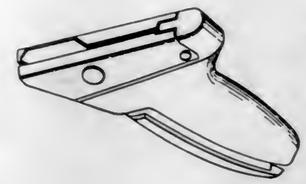
212,998
ORANGE PEELER
Dean R. Kempf, 714 Heinel Drive, St. Paul, Minn. 55113
Filed July 18, 1966, Ser. No. 3,249
Term of patent 14 years
(Cl. D89—1)



212,999
ICE CRUSHER OR THE LIKE
Eiichi Sugiyama, 3 2-chrome, Shintomi-cho, Shizuoka, Japan
Filed Oct. 19, 1967, Ser. No. 9,070
Term of patent 14 years
(Cl. D89—1)



213,000
HAND OPERATED CUTTING TOOL
Anthony Goss, 113 High St., Montlake, London SW. 13, England
Filed Mar. 8, 1968, Ser. No. 10,896
Claims priority, application Great Britain Sept. 13, 1967
Term of patent 14 years
(Cl. D95—3)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF DECEMBER, 1968

NOTE.--Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Cancrinus, Hendrik, to Inpower Works (Proprietary) Ltd. Torque transmission by inertia. Re. 26,507, 12–17–68, Cl. 74—752.

Inpower Works (Proprietary) Ltd.: *See*—
Cancrinus, Hendrik. Re. 26,507.

Park, Dan M.: *See*—
Stavenau, Harold L., and Park. Re. 26,508.

Polaroid Corp.: *See*—
Rogers, Howard G. Re. 26,506.

Rogers, Howard G., to Polaroid Corp. Multilayer lenticular light polarizing device. Re. 26,506, 12–17–68, Cl. 350—157.

Stavenau, Harold L., and D. M. Park, to Truth Tool Co. Closure operator. Re. 26,508, 12–17–68, Cl. 49—324.

Thompson, James R., to Washington Iron Works. Interlocking yarder. Re. 26,505, 12–17–68, Cl. 254—185.

Truth Tool Co.: *See*—
Stavenau, Harold L., and Park. Re. 26,508.

Walton, William M. Pulsation type pumps. Re. 26,509, 12–17–68, Cl. 103—148.

Washington Iron Works: *See*—
Thompson, James R. Re. 26,505.

LIST OF DESIGN PATENTEES

Akro-Mils, Inc.: *See*—
Myers, Isidore C. 212,995.

Aktiebolaget Astra: *See*—
Evers, Hans C. A., and Enstrom. 212,991.

American Products, Inc.: *See*—
Hornung, Michael C., and Tasset. 212,960.

Anderson, Victor F. Jug. 212,932, 12–17–68, Cl. D9—39.

Appel, David R., to Steelcase, Inc. Chair caster. 212,935, 12–17–68, Cl. D10—6.

Berlenbach, Bernard E. Toe clamp for ski binding. 212,955, 12–17–68 Cl. D34—14.

Bielinski, George D.: *See*—
Satrazemis, John, and Bielinski. 212,961.

Billings, Harry M. Portable dictating machine. 212,952, 12–17–68, Cl. D26—14.

Briggin, Edward: *See*—
Katzman, Lawrence, and Briggin, 212 985.

Budde, Carl A. Pulse rate indicator for body functions. 212,990, 12–17–68, Cl. D83—1.

Caloric Corp.: *See*—
Herr, Lewis H., and Helgeson. 212,983.

Clark, Jerl O., to Owens-Corning Fiberglas Corp. Combination bathtub and shower stall. 212 946, 12–17–68, Cl. D23—49.

Cleveland Range Co., The: *See*—
Mecredy, James R. 212,984.

Clickner, Earle D., to Shakespeare Co. Level wind automatic trout reel. 212,945, 12–17–68, Cl. D22—25.

Consolidated Sewing Machine Corp.: *See*—
Schwartz, Werner W. 212,968.

Cortina, Anthony. Container edge supportable paint brush holder. 212,934 12–17–68, Cl. D9—289.

Cox, Austin E., to Dominion Electric Corp. Hair dryer. 212,993, 12–17–68, Cl. D86—10.

Cramer, Richard A., to Life Electronics, Inc. Monitor for intravenous feeding systems or the like. 212,986, 12–17–68, Cl. D83—1.

Cramer Richard A., to Life Electronics, Inc. Drop rate sensor for intravenous feeding systems or the like. 212,987, 12–17–68, Cl. D83—1.

Crapsey, Arthur H.: *See*—
Quinn, Peter T., Crapsey, and Olson. 212,977.

Daimler-Benz Aktiengesellschaft: *See*—
Van Winsen, Friedrich H., Mahler, and Helliger. 212,941.

Decorel Corp.: *See*—
Hamilton William F., and Scheyer. 212,964.

Desmond, John W. Address label dispenser. 212,980, 12–17–68, Cl. D74—1.

Dominion Electric Corp.: *See*—
Cox, Austin E. 212,993.

Donley Bros. Co., The: *See*—
Toerge, Fred L., and Hoehne. 212,947.

Donley Bros. Co., The: *See*—
Toerge, Fred L., and Hoehne. 212,948.

Dublirer, Robert: *See*—
Katzman, Lawrence, and Dublirer. 212,988.

Dudley, James M. Gear shift lever extension. 212,938, 12–17–68, Cl. D14—6

Du Pont, Richard P. Coaster or similar article. 212,965, 12–17–68, Cl. D44—10.

Enstrom, Hans G.: *See*—
Evers, Hans C. A., and Enstrom. 212,991.

Erickson, Leonard. Sled vehicle. 212,940, 12–17–68, Cl. D14—24.

Evers, Hans C. A., and H. G. Enstrom, to Aktiebolaget Astra. Hypodermic syringe body. 212,991, 12–17–68, Cl. D83—12.

Farmer's Daughter, Inc.: *See*—
Knapp, Ralph R. 212,936.

Franklin Mint, Inc., The: *See*—
Sierra-Franco, Carlos. 212,996.

Glenn, Kenneth, R. McKay, and J. L. McCarthy, to La Cresta Mfg. Co. Candle holder. 212,967, 12–17–68, Cl. D48—2.

Golenski, Jeffrey D. Combined snow plow and handle therefore or similar article. 212,958, 12–17–68, Cl. D35—2.

Goss, Anthony. Hand operated cutting tool. 213,000, 12–17–68, Cl. D95—3.

Gruye, Dale W., E. J. Sommers, N. E. Vogt, and D. J. McCroskey, to Monsanto Co. Electronic instrument enclosure and cover therefor. 212,950, 12–17–68, Cl. D26—5.

Hamilton, William F., and S. R. Scheyer, to Decorel Corp. Serving tray. 212,964, 12–17–68, Cl. D44—10.

Hedgewick, Peter, and J. E. White, Jr., to Reflex Corp. of Canada Ltd. Housing for mounting a sealed beam headlamp. 212 970, 12–17–68, Cl. D48—32.

Helliger, Stefan: *See*—
Van Winsen, Friedrich H., Mahler, and Helliger. 212,941.

Helgeson, Peter L.: *See*—
Herr, Lewis H., and Helgeson. 212,983.

Herr, Lewis H., and P. L. Helgeson, to Caloric Corp. Cooking stove. 212 983, 12–17–68, Cl. D81—4.

Hill, Frederick M., to Ranco Inc. Wall thermostat. 212,973, 12–17–68, Cl. D52—7.

Hoehne, George C.: *See*—
Toerge, Fred L., and Hoehne. 212,947.
Toerge, Fred L., and Hoehne. 212,948.

Hornung, Michael C., and E. J. Tasset, to American Products, Inc. Grain drill. 212,960, 12–17–68, Cl. D40—1.

Jamison, Inc.: *See*—
Zick, Ronald W. 212,957.

Karem Bros., Inc.: *See*—
La Fata, John M. 212,937.

Katzman, Lawrence, and E. Briggin, to Kaz Mfg. Co., Inc. Baby bottle warmer. 212,985, 12–17–68, Cl. D81—10.

Katzman, Lawrence, and R. Dublirer, to Kaz Mfg. Co., Inc. Facial heating pad. 212,988, 12–17–68, Cl. D83—1.

Kaz Mfg. Co., Inc.: *See*—
Katzman, Lawrence, and Briggin. 212,985.
Katzman, Lawrence, and Dublirer. 212,988.

Kempf, Dean R. Orange peeler. 212,998, 12–17–68, Cl. D89—1.

Knapp, Ralph R., to Farmer's Daughter, Inc. Building structure. 212,936, 12–17–68, Cl. D13—1.

La Cresta Mfg. Co.: *See*—
Glenn, Kenneth, McKay, and McCarthy. 212,967.

La Fata, John M., to Karem Bros., Inc. Multiple family dwelling. 212 937, 12–17–68, Cl. D13—1.

Laybourne, Sydney C. Writing instrument. 212,981, 12–17–68, Cl. D74—17.

Leather Specialty Co., The: *See*—
Stoy, Raymond P. 212,997.

Life Electronics, Inc.: *See*—
Cramer, Richard A. 212,986.
Cramer, Richard A. 212,987.

Linn, David H.: *See*—
Weiss, Charles M., and Linn. 212,949.

Lohr, Raymond J., to Louis Marx & Co., Inc. Spinning toy. 212,956, 12–17–68, Cl. D34—15.

Mahler, Arthur: *See*—
Van Winsen, Friedrich H., Mahler, and Helliger. 212,941.

Marlol, James F., to Vernco Corp. Shop-type vacuum cleaner. 212,972, 12–17–68, Cl. D49—14.1.

Marx, Louis, & Co., Inc.: *See*—
Lohr, Raymond J. 212,956.

McCarthy, John L.: *See*—
Glenn, Kenneth, McKay, and McCarthy. 212,967.

McCroskey, Dennis J.: *See*—
Gruye, Dale W., Sommers, Vogt, and McCroskey. 212,950.

McGourty, Thomas. Manually operated adding machine. 212,978, 12–17–68, Cl. D64—11.

McGourty, Thomas. Electric adding machine. 212,979, 12–17–68, Cl. D64—11.
McKay, Robert: *See*—
Glenn, Kenneth, McKay, and McCarthy. 212,967.
McLeod, Charles A., to Sunbeam Corp. Clock. 212,962, 12–17–68, Cl. D42—7.
Mecredy, James R., to The Cleveland Range Co. Appliance for preparing food and the like. 212,984, 12–17–68, Cl. D81—10.
Michaels, William H. Combined flower pot holder and bracket therefor. 212,959, 12–17–68, Cl. D35—3.
Monsanto Co.: *See*—
Gruye, Dale W., Sommers, Vogt, and McCroskey. 212,950.
Morris, Stephen W. Portable lamp. 212,969, 12–17–68, Cl. D48—20.
Myers, Isidore C., to Akro-Mils, Inc. Tool carrier. 212,995, 12–17–68, Cl. D87—1.
Nunn, Paul B. Truck bumper. 212,939, 12–17–68, Cl. D14—6.
Olson, Richard J.: *See*—
Quinn, Peter T., Crapsey, and Olson. 212,977.
Owens-Corning Fiberglas Corp.: *See*—
Clark, Jeri O. 212,946.
Paape, Kenneth L., and D. E. Scott, to Square D Co. Electrical controls cabinet. 212,951, 12–17–68, Cl. D26—5.
Parker, Wayland B., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 212,942, 12–17–68, Cl. D15—1.
Parker, Wayland B., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 212,943, 12–17–68, Cl. D15—1.
Payn, Marshall D. Combined coaster and ashtray attachment for a table. 212,963, 12–17–68, Cl. D44—10.
Pence, Coralynn. Finger ring. 212,966, 12–17–68, Cl. D45—10.
Pollak, Manfred J. Hearing aid. 212,953, 12–17–68, Cl. D26—14.
Quinn, Peter T., A. H. Crapsey, and R. J. Olson. Combined motion picture projector and carrying case. 212,977, 12–17–68, Cl. D61—1.
Ranco Inc.: *See*—
Hill, Frederick M. 212,973.
Reflex Corp. of Canada Ltd.: *See*—
Hedgewick, Peter, and White. 212,970.
Ryckman, Peter N., and W. E. Sparks, to Westinghouse Electric Corp. Battery powered clothes brush. 212,994, 12–17–68, Cl. D86—13.
Satrazemis, John, and G. D. Bielinski. Combined clock and calendar. 212,961, 12–17–68, Cl. D42—7.
Scaler, Frank, Jr. Combined tongue depressor and mouth block. 212,992, 12–17–68, Cl. D83—12.
Scheyer, Stuart R.: *See*—
Hamilton, William F., and Scheyer. 212,964.
Schlumberger Ltd. (Schlumberger N.V.): *See*—
Parker, Wayland B. 212,942.
Parker, Wayland B. 212,943.
Schwartz, Werner W., to Consolidated Sewing Machine Corp. Lighting fixture or similar article. 212,968, 12–17–68, Cl. D48—20.
Scott, David E.: *See*—
Paape, Kenneth L., and Scott. 212,951.
Scott, Kenneth W. Photographic copying apparatus. 212,975, 12–17–68, Cl. D61—1.
Shakespeare Co.: *See*—
Clickner, Earle D. 212,945.
Sierra-Franco, Carlos, to The Franklin Mint, Inc. Coin display case. 212,996, 12–17–68, Cl. D87—3.
Singh, Ajit. Molded tray for a badminton set or the like. 212,933, 12–17–68, Cl. D9—185.
Sommers, Edwin J.: *See*—
Gruye, Dale W., Sommers, Vogt, and McCroskey. 212,950.
Sparks, Walton E.: *See*—
Ryckman, Peter N., and Sparks. 212,994.
Sparks, Walton E., to Westinghouse Electric Corp. Iron. 212,971, 12–17–68, Cl. D49—6.
Square D Co.: *See*—
Paape, Kenneth L., and Scott. 212,951.
Stageberg, Willis A. Wall mounted power and control unit for an aerated bath mat. 212,989, 12–17–68, Cl. D83—1.
Steelcase, Inc.: *See*—
Appel, David R. 212,935.
Stone, Don M. Pipe organ. 212,974, 12–17–68, Cl. D56—2.
Stoy, Raymond P., to The Leather Specialty Co. Attache case. 212,997, 12–17–68, Cl. D87—5.
Suglyama, Eiichi. Ice crusher or the like. 212,999, 12–17–68, D89—1.
Sunbeam Corp.: *See*—
McLeod, Charles A. 212,962.
Tasset, Everett J.: *See*—
Hornung, Michael C., and Tasset. 212,960.
Toerge, Fred L., and G. C. Hoehne, to The Donley Brothers Co. Fireplace. 212,947, 12–17–68, Cl. D23—97.
Toerge, Fred L., and G. C. Hoehne, to The Donley Brothers Co. Fireplace. 212,948, 12–17–68, Cl. D23—97.
Torlone, John T. Miniature shrine or the like. 212,954, 12–17–68, Cl. D29—23.
Van Winsen, Friedrich H., A. Mahler, and S. Heiliger, to Daimler-Benz Aktiengesellschaft. Wheel. 212,941, 12–17–68, D14—30.
Vernco Corp.: *See*—
Mariol, James F. 212,972.
Vigna, Ralph M. Photographic film processor or similar article. 212,976, 12–17–68, Cl. D61—1.
Vogt, Noland E.: *See*—
Gruye, Dale W., Sommers, Vogt, and McCroskey. 212,950.
Wachler, Norman G.: *See*—
Zolkower, Helen, and Wachler. 212,982.
Weiss, Charles M., and D. H. Linn, to S. S. White Co. Dental instrument supporting unit. 212,949, 12–17–68, Cl. D24—1.
Westinghouse Electric Corp.: *See*—
Ryckman, Peter N., and Sparks. 212,994.
Sparks, Walton E. 212,971.
Wheeler, Joseph S., Jr. Ceramic tile. 212,944, 12–17–68, Cl. D18—2.
White, Jay E., Jr.: *See*—
Hedgewick, Peter, and White. 212,970.
White, S. S., Co.: *See*—
Weiss, Charles M., and Linn. 212,949.
Zick, Ronald W., to Jamison, Inc. Simulated space gun or similar article. 212,957, 12–17–68, Cl. D34—15.
Zolkower, Helen, and N. G. Wachler. Display stand for jewelry. 212,982, 12–17–68, Cl. D80—9.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 17TH DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Penta: *See*—
Bergstedt, Karl A. 3,416,483.
AB Skanska Cementgjuteriet: *See*—
Ahlgren, Hans H. 3,416,616.
ACF Industries, Inc.: *See*—
Anderson, Clifford E. 3,416,566.
Works, Madden T. 3,416,558.
AMP Inc.: *See*—
Basler, Willard L., and Phillips. 3,416,212.
Cootes, Harold E. 3,416,213.
Kunkle, John P., Garver, and Dell. 3,417,364.
Reynolds, Charles E. 3,417,362.
Schlesinger, Bernard E., Jr. 3,417,195.
AREF Fribourg: *See*—
Fournier, Henri. 3,416,573.
Abbott Machine Co., Inc.: *See*—
Abott, Samuel L. 3,416,741.
Abbott, Samuel L., to Abbott Machine Co., Inc. Winding machine. 3,416,741, 12–17–68, Cl. 242—18.1.
Abfalter, Duane R. Tailgate lift device. 3,416,677, 12–17–68, Cl. 214—73.
Abraham, Robert C.: *See*—
Heller, Henry B., and Abraham. 3,417,361.
Abrasive Developments Ltd.: *See*—
McNair, James R. F. 3,416,934.
Acme Engineering and Mfg. Corp.: *See*—
Bohanon, Hoy R. 3,416,725.
Adamczyk, Edward S. Indexing grinding feature. 3,416,264, 12–17–68, Cl. 51—216.
Adams, Arthur H., and M. Bozocos, deceased by H. B. McKinney, and T. B. Fasano, A. Bozocos, by H. McKinney, and Z. H. Astor, executor of said A. H. Adams. Automatic shampoo apparatus. 3,416,517, 12–17–68, Cl. 128—65.
Adamski, Max, Jr.: *See*—
Johnson, Bernard A., and Adamski. 3,416,376.
Addiego, Joseph, to Diamond International Corp. Pilfer-proof package. 3,416,656, 12–17–68, Cl. 206—78.
Addressograph-Multigraph Corp.: *See*—
Maul, John A., Porter, and Nantz. 3,416,441.
Ralston, Robert. 3,416,863.
Adler, Felix M. Method for constructing a building including feeding a plurality of end connected column sections upwardly through a jack system. 3,416,284, 12–17–68, Cl. 52—745.
Adomines, Alfred A.: *See*—
Storck, Richard H., and Adomines. 3,416,962.
Advance Transformer Co.: *See*—
Holton, Morris J., and Hasson. 3,417,366.
Aerojet-General Corp.: *See*—
Gates, Duane C., and Detko. 3,417,273.
Lamb, Irvin E., and Harman. 3,417,240.
Larson, Melvin H. 3,416,751.
Shepherd, Joseph L., and Cromwell. 3,416,999.
Steele, Robert D., and Farris. 3,416,233.
Afico S.A.: *See*—
Wyss, Hans. 3,416,476.
Agfa-Gevaert Aktiengesellschaft: *See*—
Biedermann, Friedrich, Von Wasielewski, and Von Albedyll. 3,416,421.
Agnew, Robert J.: *See*—
Forry, Milton G., Jr., Agnew, and Dille. 3,417,158.
Ahlen, Karl G., to S.R.M. Hydromekanik AB. Remote control arrangement for power transmission. 3,416,636, 12–17–68, Cl. 192—57.
Ahlgren, Hans H., to AB Skanska Cementgjuteriet. Deep drills with eccentric bits. 3,416,616, 12–17–68, Cl. 175—258.
Ahlman, Sven R., to The Torrington Co. Method of punch-forming windows in bearing retainers. 3,416,211, 12–17–68, Cl. 29—148.4.
Air Products and Chemicals, Inc.: *See*—
Soltys, Kenneth J. 3,417,038.
Airequipt Inc.: *See*—
Schweers, Karl D. 3,416,250.
Akerhielm, George J., and J. W. Endress, to Carrier Corp. Refrigeration machine. 3,416,327, 12–17–68, Cl. 62—115.
Akmenkalns, Ivars G., R. J. Wilfinger, and A. D. Wilson, to International Business Machines Corp. Four terminal electro optical logic device. 3,417,249, 12–17–68, Cl. 250—217.
Aktiebolaget Gotaverken: *See*—
Nordh, Ulf S. I., and Olsson. 3,416,590.
Aktiebolaget Karlstads Mekaniska Werkstad: *See*—
Larsson, John. 3,416,660.
Albert, Harry E., and P. G. Haines, to Pennsalt Chemicals Corp. Process for retarding the formation of popcorn polymer formation in olefin monomer recovery system. 3,417,154, 12–17–68, Cl. 260—666.5.
Alden, Milton, to Alden Reseach Foundation. Recorder. 3,417,405, 12–17–68, Cl. 346—145.
Alden Research Foundation: *See*—
Alden, Milton. 3,417,405.
Alessandro, Joseph P. Strap for limiting the expansion of the bellows of an accordion. 3,416,400, 12–17–68, Cl. 84—376.
Alexander, Frank, Jr., to Morgan Construction Co. Zoned reheat furnace. 3,416,777, 12–17–68, Cl. 263—6.
Alexander, Larry G., to Catalysts and Chemicals, Inc. Sulfur adsorption. 3,416,293, 12–17–68, Cl. 55—73.
Alimanestrianu, Mihai, to Speed-Park, Inc. Transfer device with independently movable load supporting means. 3,416,685, 12–17–68, Cl. 214—730.
Allen, Clifford W., to Westinghouse Air Brake Co. Solenoid actuated valve with manual override. 3,416,381, 12–17–68, Cl. 74—89.15.
Allen, Edwin T., to P. R. Mallory & Co., Inc. Automatic anode winding machine. 3,416,215, 12–17–68, Cl. 29—204.
Allen, Frederick C., to British Nylon Spinners Ltd. Means for localizing tension in running yarn. 3,416,206, 12–17–68, Cl. 28—71.3.
Allied Chemical Corp.: *See*—
Downing, Frank P., Kolyer, and Chen. 3,417,097.
Downing, Frank P., Kolyer, and Opalewski. 3,417,178.
Freese, Thomas E. 3,416,928.
Newallis, Peter E., and Lombardo. 3,417,165.
Stefaniak, Walter J. 3,417,108.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Forwald, Haakon, Pucher, and Sindahl. 3,417,217.
Johansson, Arne. 3,417,291.
Persson, Rune. 3,417,200.
Allsports & Marine of Michigan, Inc.: *See*—
Johnson, John D. 3,416,255.
Almasy, David M. Corner clip for use with package strapping. 3,416,652, 12–17–68, Cl. 206—60.
Alper, Allen M., and R. N. McNally, to Corhart Refractories Company. MgO-ZrO_2 fused cast refractory. 3,416,938, 12–17–68, Cl. 106—57.
Alteneder, Theodore, and Sons: *See*—
Alteneder, Theodore G., Jr. 3,416,696.
Alteneder, Theodore G., Jr., to Theodore Alteneder and Sons. Self-venting closure. 3,416,696, 12–17–68, Cl. 220—44.
Alter, Soloman: *See*—
Greenberg, Malvin, Alter, and Belanich. 3,416,243.
Alterman, Iosif Ilich: *See*—
Gutnikov, Eduard J., Melnikov, Matjunin, and Alterman. 3,416,433.
Aluminum Co. of America: *See*—
Kramer, Max J. 3,417,244.
Alupak A.G.: *See*—
Ledzion, Andrzej W. 3,416,697.
American Bosch Arma Corp.: *See*—
Schneider, Robert M. 3,417,349.
American Cyanamid Co.: *See*—
Hoffman, Joseph A. 3,417,039.
Megson, Frederic H., Beachem, and Stockel. 3,417,089.
American Home Products Corp.: *See*—
Bell, Stanley C., and Childress. 3,417,101.
Wendt, Gerhard R., and Ledig. 3,417,110.
American Machine & Foundry Co.: *See*—
Hollenton, Frank. 3,416,841.
Scanland, Joseph E. 3,416,845.
American Radiator & Standard Sanitary Corp.: *See*—
Weller, Peter A., and Grubb. 3,416,330.
American Standard Inc.: *See*—
Ozenne, Gilbert J., and Stephen. 3,416,203.
Shaughnessy, William J. 3,417,319.
Ametek, Inc.: *See*—
Jensen, James N. 3,417,289.
Amir, Emanuel M., and J. K. Nickerson, to Esso Research and Engineering Co. Purification of dodecanedioic acid. 3,417,138, 12–17–68, Cl. 260—537.
Amos, James L., to The Dow Chemical Co. Molded plastic article. 3,416,992, 12–17–68, Cl. 161—185.
Ampex Corp.: *See*—
Wolf, Irving W. 3,417,385.
Anastasiu, Eugeniu, and T. Margarit. Packer thermally tripped. 3,416,607, 12–17–68, Cl. 166—57.
Anatol, Jesus, to Etablissements Kuhlmann. Phosphoryl derivatives of 4-imidazolidones. 3,417,098, 12–17–68, Cl. 260—309.7.
Anchor Hocking Glass Corp.: *See*—
Ochs, Charles S. 3,416,360.
Anderson, Buddy W.: *See*—
Young, Bill M., and Anderson. 3,416,601.
Anderson, Clifford E., to ACF Industries, Inc. Valve operating mechanism. 3,416,566, 12–17–68, Cl. 137—554.
Anderson, Harold N.: *See*—
Woserau, Otto, and Anderson. 3,416,434.
Anderson, John R., and E. P. Cass, to Union Carbide Corp. Fuel icing prevention. 3,416,902, 12–17–68, Cl. 44—72.
Anderson, Norman J., to North Atlantic Industries, Inc. Phase-sensitive gated switching means. 3,417,338, 12–17–68, Cl. 329—132.

Anderson, Robert W., and A. J. Perreault, to Haveg Industrird, Inc. Process of forming heat shrinkable perfluorocarbon polymer tubing and shapes. 3,417,176, 12–17–68, Cl. 264—230.

Anderson, William F.: *See*—
Heller, Stanley, Anderson, and Berlin. 3,417,269.

Ando, Fumio, H. Okada, and T. Mogi, to Tokyo Shibaura Electric Co., Ltd. Electromagnetically operated multistage flag indicator. 3,417,391, 12–17–68, Cl. 340—376.

Ansitron, Inc.: *See*—
Thomas, Edward W. 3,417,263.

Anson, Howard G.: *See*—
Long, George E., and Anson. 3,416,416.

Appalachian Electronic Instruments, Inc.: *See*—
Nickell, Lawrence C., Fertig, and Perkins. 3,417,252.

Applied Power Industries, Inc.: *See*—
Hare, Richard C. 3,416,457.

Araldi, Mario: *See*—
Marconi, Walter, Mazzei, Araldi, and Bruzzone. 3,417,-065.

Arent, John F., to V-M Corp. Phonograph tone arm. 3,416,-807. 12–17–68, Cl. 274—23.

Arfert, Horst F. W., to Reynolds Metals Co. Opening means for a container. 3,416,698, 12–17–68, Cl. 220—34.

Arion, Henri G. Retromammary prosthesis. 3,416,160, 12–17–68, Cl. 3—36.

Arizona Chemical Co.: *See*—
Wheelus, Charles G. 3,417,071.

Armenoff, Carl T., and E. L. Reed, to North American Rockwell Corp. Method of forming an expandable metallurgically bond aluminum cellular core. 3,416,218, 12–17–68, Cl. 29—470.9.

Armour Industrial Chemical Co.: *See*—
Marsh, Byron E., and Betty. 3,416,605.

Armour and Co.: *See*—
Posegate, Russell W. 3,416,931.

Armstrong, Richard L.: *See*—
Russell, Fred J., Armstrong, and Falk. 3,416,828.
Russell, Fred J., Armstrong, and Falk. 3,416,829.

Armstrong, William J., A. M. Healy, and M. C. Duffy, to International Business Machines Corp. Integrated semiconductor devices and fabrication methods therefor. 3,416,224, 12–17–68, Cl. 29—580.

Arnaud, Fabian. Container. 3,416,687, 12–17–68, Cl. 215—39.

Arnett, Donald C. Outboard motor support bracket means. 3,416,759, 12–17–68, Cl. 248—4.

Arnold, Franz: *See*—
Wermuth, Charles, Wagner, and Arnold. 3,416,784.

Arrigo, Joseph T., to Universal Oil Products Co. Selective recovery of diolefinic hydrocarbons. 3,417,155, 12–17–68, Cl. 260—666.

Arrington, Thomas B., to Calumet & Hecla, Inc. Method and apparatus for reducing the wall thickness of metal tubing. 3,416,346, 12–17–68, Cl. 72—189.

Arthur, Edwin P., to Beckman Instruments, Inc. Glass standard for fluorescence. 3,417,026, 12–17–68, Cl. 252—301.6.

Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Fukuma, Norboru, Jono, Kihara, and Midorikawa. 3,416,-188.

Asher, William J., to Esso Research and Engineering Co. Turbo-jet propulsion method using emulsified fuels and demulsification. 3,416,320, 12–17–68, Cl. 60—208.

Ashley, Robert B.: *See*—
Joseph, Raymond S., and Ashley. 3,417,201.

Asnes, Marvin A., and R. K. Bernstein, to Clay-Adams, Inc. Microhematocrit tube. 3,416,361, 12–17–68, Cl. 73—61.

Associated Electrical Industries Ltd.: *See*—
Warman, Bloomfield J., and Marshall. 3,417,205.
Rody, Richard S., Skipper, and Gibbons. 3,417,190.

Atlantic Richfield Co.: *See*—
Kremer, Charles J. 3,417,040.

Atlas Chemical Industries, Inc.: *See*—
Salonish, James C. 3,416,739.

Atomic Energy of Canada Ltd.: *See*—
Blache-Fraser, Francis M., Cowper, and Curnow. 3,417,-239.

Atwood, Hyatt B., and J. N. McLean, to Herr Mfg. Co., Inc. Means for preventing leakage of lubricant from spinning ring mounting. 3,416,303, 12–17–68, Cl. 57—120.

Atzenbeck, Charles R., to Radio Corp. of America. Error corrector for diphase modulation receiver. 3,417,333, 12–17–68, Cl. 325—320.

Audesse, Emery G.: *See*—
Palermo, James J., Bonazoli, Scoledge, and Audesse. 3,416,851.

Auer, Ulrich W. Heat shrinkable locking member for a fastener. 3,416,823, 12–17–68, Cl. 287—189.36.

"Automatic" Sprinkler Corp. of America: *See*—
Marik, Henry J. 3,416,736.

Avco Corp.: *See*—
Kuecken, John A. 3,417,255.

Aziende Colori Nazionali Affini ACMA S.p.A.: *See*—
Ponzini, Sandro, Castelli, and Lawendel. 3,416,875.

Azoplate Corp.: *See*—
Süs, Oskar, and Munder. 3,416,922.

Babcock, John C., and J. A. Campbell, to The Upjohn Co. Compositions and treatments using 6-methyl-16-methylene-17-hydroxy-4,6-pregnadiene-3,20-dione 17-acetate. 3,417,-182, 12–17–68, Cl. 424—243.

Babel, Louis, and P. Peytavin, to Societe Civile dite: Societe Civile d'Etudes de Centrifugation. Process for effecting the continuous rotary casting of hollow steel blanks. 3,416,591, 12–17–68, Cl. 164—85.

Bach, Lloyd G., and W. B. Claxton, to The Bendix Corp. High pressure release valve. 3,416,548, 12–17–68, Cl. 137—68.

Badalich, Frank C., to Bell & Howell Co. Mechanical focus maintaining apparatus for a slide projector. 3,416,859, 12–17–68, Cl. 353—69.

Baig, Muhammad L., to General Motors Corp. Neutral nickel-plating process and bath therefor. 3,417,005, 12–17–68, Cl. 204—32.

Bailey, Francis M., to General Electric Co. Rotating transformer structure. 3,417,219, 12–17–68, Cl. 219—10.61.

Bailey, Frederick E., Jr., to Union Carbide Corp. Polymers of 1,2-alkylene oxides. 3,417,064, 12–17–68, Cl. 260—79.5.

Bailey, Joseph, to Eastman Kodak Co. Light absorbing dyes derived from barbituric and 2-thiobarbituric acid compounds useful for photography and their preparation. 3,417,084, 12–17–68, Cl. 260—240.2.

Bakelite Xylonite Ltd.: *See*—
Penneck, Richard J. 3,417,039.

Baker, Thomas R.: *See*—
Hittenberger, William H., Gobalet, and Baker. 3,416,411.

Balashkand, Mikhail I., G. S. Evdokimov, B. L. Kaplan, S. A. Loviya, L. N. Solodilov, and O. L. Chen. Acoustic wave producing device. 3,416,621, 12–17–68, Cl. 181—.5.

Baldoni, Giovanni E. Reinforced guitar neck. 3,416,399, 12–17–68, Cl. 84—293.

Baldwin, D. H., Co.: *See*—
Kramer, Frank J., Jr. 3,417,189.
Munch, Walter, Jr. 3,417,188.

Baldwin-Lima-Hamilton Corp.: *See*—
Kent, Francis J., and Hammon. 3,416,349.

Baldwin, Richard E., to English Numbering Machines Ltd. Printing mechanisms for printing on pages of a book. 3,416,446. 12–17–68, Cl. 101—287.

Ball Bros. Co. Inc.: *See*—
Sherer, Abraham I. 3,417,022.

Ballard, Robert T. Collapsible and expansible rotatable tie rack. 3,416,673, 12–17–68, Cl. 211—115.

Ballreich, Kurt, A. Ketterl, and W. Spranger, to Dynamit Nobel Aktiengesellschaft. Friction ignitor. 3,416,450, 12–17–68, Cl. 102—70.

Banfield, Charles E.: *See*—
McWhorter, Wayne F., Kirwan, and Banfield. 3,417,140.

Banks, Abraham. Primary cell. 3,416,968, 12–17–68, Cl. 136—102.

Banovic, Frank J., to General Electric Co. Power supply for transistorized clock radio. 3,417,334, 12–17–68, Cl. 325—492.

Barber, Alfred W. Electronic symbols combining functional capabilities with symbolic graphic representation. 3,416,240, 12–17–68, Cl. 35—19.

Barber, Stanley F., to C.A.V. Ltd. Fluid control valves. 3,416,-505, 12–17–68, Cl. 123—139.

Barbier, Jean Y. and E. J. Papke, to International Oil Burner Co. Undercabinet electric space heater unit. 3,417,227, 12–17–68, Cl. 219—365.

Barney, Walter. Magnet controlled apparatus. 3,416,335, 12–17–68, Cl. 70—134.

Barrera, Jose M. Combination drain and trap unit. 3,416,559, 12–17–68, Cl. 137—247.13.

Barrera, Jose M. Mixing faucet. 3,416,569, 12–17–68, Cl. 137—606.

Barry, Leonard D. Transfer device. 3,416,684, 12–17–68, Cl. 214—516.

Barton, Richard R., to Miles Laboratories, Inc. Process for purification of fungal alpha amylase. 3,416,997, 12–17–68, Cl. 195—66.

Bauer, Kurt: *See*—
Deutscher, Hans-Christian, Bauer, and Kohler. 3,416,180.

Beachem, Michael T.: *See*—
Megson, Frederic H., Beachem, and Stockel. 3,417,089.

Beaujard, Louis, and J. Mondot, to Institut de Recherches de la Siderurgie Francaise. Variable size ultrasonic beam producing transducer. 3,416,366, 12–17–68, Cl. 73—71.5.

Bebb, Richard H., to Rollnx Ltd. Bottle crates. 3,416,694, 12–17–68, Cl. 220—21.

Beck, Earl H., Jr., and B. J. Cimmini, to Container Corp. of America. End closure for lined carton. 3,416,717, 12–17–68, Cl. 229—14.

Beck, Ernst: *See*—
Stier, Otto, and Beck. 3,416,394.

Becker, Dale F., to Sangamo Electric Co. Protective means for electric meter circuits. 3,417,277, 12–17–68, Cl. 313—325.

Beckett Mfg. Co.: *See*—
Spencer, Kenneth H. 3,416,816.

Beckman Instruments, Inc.: *See*—
Arthur, Edwin P. 3,417,026.
Keahl, Gerald T., and Van Slooten. 3,416,864.
Kelly, William T., Hornberger, and Strief. 3,416,960.
Landis, David M., and Rost. 3,417,329.

Beckman, Maynard K., Jr., and R. S. Muka, to Xerox Corp. Document inverting apparatus. 3,416,791, 12–17–68, Cl. 271—65.

Beermann, Claus, F. Landaner, and E. Schmidt, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brunning. Process for preparing polyolefin sulfonamides soluble in chlorohydrocarbons. 3,417,061, 12–17–68, Cl. 260—79.3.

Beermann, Claus, E. Schmidt, and W. Rupp, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brunning. Process for the manufacture of copolymers of β-lactams. 3,417,163, 12–17–68, Cl. 260—857.

Belanich, John M.: *See*—
Greenberg, Malvin, Alter, and Belanich. 3,416,243.

Bell Aerospace Corp.: *See*—
Hulbert, John K. 3,416,753.

Bell & Howell Co.: *See*—
Badalich, Frank C. 3,416,859.

Bell, Stanley C., and S. J. Childress, to American Home Products Corp. Fused ring compounds. 3,417,101, 12–17–68, Cl. 260—328.

Bell Telephone Laboratories, Inc.: *See*—
Blahut, Donald E. 3,417,384.
Bonner, William A., and Van Uitert. 3,417,032.
Chapin, Daryl M. 3,417,210.
Di Piazza, Gerald C. 3,417,351.
Haas, Laird K. S. 3,417,278.
Hagelbarger, David W. 3,417,208.
Houtz, Charles C., and McMahon. 3,417,004.
Kadri, Fred V. 3,417,256.
Richards, Philip C. 3,417,204.

Beloit Corp.: *See*—
Dahl, Carl B., and Justus. 3,416,435.

Bemis Co., Inc.: *See*—
Woserau, Otto, and Anderson. 3,416,434.

Bendix Corp., The: *See*—
Bach, Lloyd G., and Claxton. 3,416,548.
Cripe, Maxwell L. 3,416,314.
Kasten, Walter. 3,416,665.
Kasten, Walter. 3,416,666.
Knak, James L. 3,417,306.
Lewis, Richard L. 3,416,316.
Ritsema, Irving R. 3,416,331.
Shutt, Paul B. 3,416,317.
Wortz, Harvey E. 3,416,315.

Bennett, Robert W., and L. G. Sprague, to Corning Glass Works. Metallic members for insertion into glass. 3,417,274, 12–17–68, Cl. 313—89.

Benzinger, Theodor H. Quick disconnect for thermocouples. 3,416,973, 12–17–68, Cl. 136—235.

Berg Mfg. & Sales Co.: *See*—
Kobnick, Werner. 3,416,843.

Berger, Charles V., to Universal Oil Products Co. Endothermic catalytic conversion of ethylbenzene to styrene. 3,417,156, 12–17–68, Cl. 260—669.

Berggren, Albin F.: *See*—
Mihojevich, Steven, Zerfahs, Ostensen, Berggren, and Glaser. 3,416,860.

Bergstedt, Karl A., to AB Penta. Brake mechanism for tiltable propeller units. 3,416,483, 12–17–68, Cl. 115—41.

Berlin, Robert B.: *See*—
Heller, Stanley, Anderson, and Berlin. 3,417,269.

Bernard, George G., to Union Oil Co. of California. Consolidation of subterranean formations. 3,416,603, 12–17–68, Cl. 166—33.

Bernstein, Richard K.: *See*—
Asnes, Marvin A., and Bernstein. 3,416,361.

Berry, Jean-Luc: *See*—
Dardaine, Edgar J. M., and Berry. 3,416,675.

Bessett, Clifford H., and J. W. Boyd, to Packaging Corp. of America. Tray construction. 3,416,695, 12–17–68, Cl. 220—23.8.

Best, William V., and R. L. Hughes, to Owens-Illinois, Inc. Process of producing oxides of metals and metalloids. 3,416,890. 12–17–68, Cl. 23—182.

Bethlehem Steel Corp.: *See*—
Campbell, Frank, Jr. 3,416,779.
Conner, James P., and Kane. 3,416,745.
List, Harold A. 3,416,339.
Strohmeier, Daniel D. 3,416,479.

Betty, Roy J., Jr.: *See*—
Marsh, Byron E., and Betty. 3,416,605.

Beyer, George L., to Eastman Kodak Co. Xerographic development. 3,417,019. 12–17–68, Cl. 252—62.1.

Beyerle, Konrad. Mounting for gyros. 3,416,377, 12–17–68, Cl. 74—5.

Biber, Conrad H., to Polaroid Corp. Photometer using a prism with surface lenticulations. 3,416,867. 12–17–68. Cl. 356—230.

Biedermann, Friedrich, E. von Wasielewski, and J. von Albedyll, to Agfa-Gevaert Aktiengesellschaft. Exposure control for photographic cameras. 3,416,421, 12–17–68. Cl. 95—10.

Bier, Edmund. Artist's easel. 3,416,764, 12–17–68. Cl. 248—452.

Bieser, Albert H., to Recognition Equipment, Inc. Character identity decision generation. 3,417,372, pub. 12–17–68, Cl. 340—146.3.

Bintzek, Gerhard: *See*—
Richter, Henning, Büttner, and Bintzek. 3,416,191.

Bird Machine Co.: *See*—
Packard, Thomas D. 3,416,192.

Bishop, Forest M., and R. I. Bishop, Jr. Golf cup hole cutter. 3,416,831, 12–17–68, Cl. 294—50.5.

Bishop, Roy I., Jr.: *See*—
Bishop, Forest M., and R. I. Bishop, Jr. 3,416,831.

Blache-Fraser, Francis M., D. R. Cowper, and E. K. Curnow, to Atomic Energy of Canada Ltd. Method and apparatus for underwater irradiation of substances. 3,417,239, 12–17–68, Cl. 250—52.

Black, Edward J.: *See*—
Gantz, George M., Mautner, and Black. 3,416,877.

Black, Woodrow W., to United States of America, National Aeronautics and Space Administration. Triaxial antenna. 3,417,400. 12–17–68, Cl. 343—771.

Blagg, Leon, to Schlumberger Technology Corp. Blowout preventer. 3,416,767, 12–17–68, Cl. 251—1.

Blahut, Donald E., to Bell Telephone Laboratories, Inc. Magnetic memory. 3,417,384, 12–17–68, Cl. 340—174.

Blake, Howard C., and J. F. McClelland, Jr. Article conveying apparatus for automatic warehousing. 3,416,644, 12–17–68, Cl. 198—43.

Blake, John, Ltd.: *See*—
Wilmot, Kenneth. 3,416,499.

Blenkinsop, Ward & Co. Ltd.: *See*—
Pickholz, Siegfried, and Shapero. 3,417,091.

Blessum, Norman S.: *See*—
Vletor, Charles A., and Blessum. 3,417,377.
Simonsen, Richard C., Blessum, and Hibner. 3,417,378.

Bliss, George N. Level-winding of cable upon a reel. 3,416,748, 12–17–68, Cl. 242—158.

Blocker, Andrew R., to L. C. Line. Catapulting casting rod. 3,416,256, 12–17–68, Cl. 43—19.

Bionsky, Joseph E., to West Virginia Pulp and Paper Co. Side unloading device for logs. 3,416,678, 12–17–68, Cl. 214—82.

Bluhm, Joseph I. Picture frame layout jig. 3,416,234, 12–17–68, Cl. 33—174.

Blumenfeld, John F., to Emhart Corp. Glass making apparatus. 3,417,186, 12–17–68, Cl. 13—6.

Blumenfeld, John F., and G. F. Hanks, to Emhart Corp. Electrode holder for glass furnaces or the like. 3,417,187, 12–17–68, Cl. 13—6.

Bodanszky, Miklos, to E. R. Squibb & Sons, Inc. Intermediates in the synthesis of secretin. 3,417,072, 12–17–68, Cl. 260—112.5.

Bodine, Albert G. Sonic method and apparatus for implanting underground concrete walls. 3,416,322, 12–17–68, Cl. 61—35.

Bodine, Albert G., Jr. Sonic cutting apparatus. 3,416,398. 12–17–68, Cl. 83—523.

Bodine, Albert G., Jr. Beat frequency sonic technique and apparatus for use in seismic surveys. 3,416,632, 12–17–68, Cl. 181—.5.

Boeing Co., The: *See*—
Chaney, Harold K., and Strandrud. 3,416,549.
Maraghe, Alex. 3,416,757.

Bohanon, Hoy R., to Acme Engineering and Mfg. Corp. Dihedral bladed ventilating fan. 3,416,725, 12–17–68, Cl. 230—259.

Boles, David B., and A. Dravnieks, to K.W. Battery Co., and Joslyn Mfg. & Supply Co. Fuel cell including chlorite containing electrolyte and method of operation. 3,416,965, 12–17–68, Cl. 136—86.

Boissieras, Jean, and M. J. Lefort, to Rhone-Poulenc S.A. Preparation of organosilicon compounds by reaction of hydrogeno-organosilicon compounds with hydroxyl-group-containing organic compounds. 3,417,120, 12–17–68, Cl. 260—448.2.

Bonazoli, Robert P.: *See*—
Palermo, James J., Bonazoli, Scoledge, and Audesse. 3,416,851.

Bondy, Herbert F., J. E. F. Williams, and P. G. Kirk, to Coalite and Chemical Products Ltd. Polyhalophenols. 3,417,150, 12–17–68, Cl. 260—623.

Bonner, William A., and L. G. Van Uitert, to Bell Telephone Laboratories, Inc. Semiconducting niobate/tantalate compositions. 3,417,032, 12–17–68, Cl. 252—518.

Boone, William D., to Westinghouse Air Brake Co. Tram drive unit for mining machine. 3,416,623, 12–17–68, Cl. 180—6.48.

Boos, Hermann, W. Post, and H. Malinowski. Process for cooling and transverse conveyance of metal sheets. 3,416,646, 12–17–68, Cl. 198—219.

Boothe, Willis A., to General Electric Co. Fluid temperature controls particularly for gas turbine engines. 3,416,310, 12–17–68, Cl. 60—39.28.

Bordner, Lee T., to Sierra Electric, Inc. Electrically illuminated face plate insignia. 3,416,251, 12–17–68, Cl. 40—132.

Bornzin, Verl J. Sonic fishing lure. 3,416,254, 12–17–68, Cl. 43—17.1.

Borthwick, Theodore H. Floral corsage and fastener. 3,416,-195, 12–17–68, Cl. 24—5.

Bottomley, Anthony, to Phillips Petroleum Co. Pile fabrics from nonwoven fabrics. 3,416,299, 12–17–68, Cl. 57—31.

Botts, Marion F.: *See*—
Regel, Erik K., and Botts. 3,416,912.

Boughton, Lowell D., to The Dow Chemical Co. Hydraulic bond between casing and formation wall. 3,416,602, 12–17–68, Cl. 166—29.

Boushak, William M., to General Mills, Inc. Food materials mixing process. 3,416,929, 12–17–68, Cl. 99—17.

Bowes, Francis J., to Non-Slip Temple Co., Inc. Temple. 3,416,858, 12–17–68, Cl. 351—118.

Boyd, James W.: *See*—
Bessett, Clifford H., and Boyd. 3,416,695.

Bozek, John S., to Continental Can Co. Vented easy opening can. 3,416,699, 12–17–68, Cl. 220—54.

Bozocos, Alexander: *See*—
Adams, Arthur H., and Bozocos. 3,416,517.

Bozocos, Mary: *See*—
Adams, Arthur H., and Bozocos. 3,416,517.

Bradley, Addison B., to O. H. Warwick Co. Furnace and apparatus for tilting same. 3,416,781, 12–17–68, Cl. 266—39.

Branlard, Paul: *See*—
Pinazzi, Christian P., Pautrat, Cheritat, and Branlard. 3,417,056.

Braun, G. A., Inc.: *See*—
Drace, Lawrence V., and Weatherly. 3,416,437.

Braun, Robert A., to E. I du Pont de Nemours and Co. Oxetane compounds. 3,417,102, 12–17–68, Cl. 260—333.

Brede, Erwin C., to Texas Instruments Inc. Method of moving a seismic cable in unnavigable waters. 3,416,629, 12–17–68, Cl. 181—.5.

Bredemeyer, Gerry J., 5% to L. F. Mentzer. Switch controlled apparatus for testing the coil and contacts of a relay. 3,417,324, 12–17–68, Cl. 324—28.

Breidenbach, Victor S., to Hyde Park Electronics. Method and apparatus including an expandable electrically conductive boot for testing interior coatings of metal cans or the like. 3,417,327, 12–17–68, Cl. 324—54.

Breslow, David S., to Hercules, Inc. Polyethers containing thioether side chains. 3,417,060, 12–17–68, Cl. 260—79.
Brey, James R., to Texas Instruments Inc. Seismic velocity correlation. 3,417,370, 12–17–68, Cl. 340—15.5.
Bricker, Melvin E. Vegetable cutter apparatus. 3,416,583, 12–17–68, Cl. 146—115.
Bridgeman, Richard C., to Vapor Corp. Dew point hygrometer. 3,416,356, 12–17–68, Cl. 73—17.
Bridgeport Fabrics, Inc.: *See*—
Figaro, Vincent S. 3,416,981.
Brigandi, Bruno T. Extension and expansion valves. 3,416,769, 12–17–68, Cl. 251—189.
Brill-Edwards, Harry W., to Chromalloy American Corp. Method for heat treating titanium carbide tool steel. 3,416,976, 12–17–68, Cl. 148—12.4.
Bristol-Myers Co.: *See*—
Juby, Peter F. 3,417,096.
British Hovercraft Corp. Ltd.: *See*—
Francis, Frank P. G., and Watts. 3,416,627.
British Iron and Steel Research Association, The: *See*—
Pearson, John. 3,416,222.
British Nylon Spinners Ltd.: *See*—
Allen, Frederick C. 3,416,206.
British Petroleum Co. Ltd., The: *See*—
Hambling, James Keith, and Jones. 3,417,160.
British Telecommunications Research Ltd.: *See*—
Davis, John C., and Davies. 3,416,358.
British Titan Products Co. Ltd.: *See*—
Hodgson. John, and Hall. 3,416,740.
Britz, Ernesto. Devices for securing hoops. 3,416,578, 12–17–68, Cl. 140—93.2.
Brooks, Alden W.: *See*—
Jensen, Howard J., Richmond, Brooks, and Waugh. 3,416,383.
Brooks & Perkins, Inc.: *See*—
Pozniak, Norman J. 3,416,447.
Brooks, Robert B., and G. P. Totten, to United States of America, Army. Setback responsive arming device. 3,416,894. 12–17–68, Cl. 102—78.
Brothers, Jack, to United States of America, Army. Control system for stand-off functioning of a projectile in flight over a target area. 3,416,448, 12–17–68, Cl. 102—56.
Brothers, Jack, to United States of America, Army. Tandem effect anti-tank projectile. 3,416,449, 12–17–68, Cl. 102—56.
Brown, Edgar A., and A. S. Chou, to International Business Machines Corp. Selective hammer actuating means in chain printers. 3,416,442, 12–17–68, Cl. 101—93.
Brown, George L., and H. Silverstein, to Polyvinyl Chemicals, Inc. Solvent polish compositions containing a copolymer of vinyl toluene and isobutyl methacrylate. 3,417,041, 12–17–68, Cl. 260—28.5.
Brown, George T., W. L. Hochner, and F. T. Marston, to Kaumagraph Co. Method for relief decorating plastic molded articles. 3,417,175, 12–17–68, Cl. 264—220.
Brown, Henry J.: *See*—
Gutzeit, Carlos L., and Brown. 3,416,953.
Brown, Hugh O. Apparatus for stripping brussels sprouts. 3,416,536, 12–17–68, Cl. 130—30.
Bruce, Joseph R.: *See*—
Stixrood, Jarvis A., Bruce, and Holden. 3,416,773.
Bruder, M. A., & Sons Inc.: *See*—
Hall, Earl C. 3,416,947.
Bruno, Anthony J., Jr.: *See*—
Legal, Casimer C., Jr., Richmond, and Bruno. 3,416,910.
Bruno, Peter. Fluid leak monitoring apparatus. 3,416,560, 12–17–68, Cl. 137—456.
Brunswick Corp.: *See*—
Crimmins, William M. 3,416,443.
Bruzzone, Mario: *See*—
Marconi, Walter, Mazzei, Araldi, and Bruzzone. 3,417,065.
Bryant, Stanley. Plug and socket connector for electric circuits. 3,417,213. 12–17–68, Cl. 200—51.
Bschorr, Oskar, and J. F. Neumair, to Entwicklungsring Sud G.m.b.H. Shock wave generator. 3,416,628, 12–17–68, Cl. 181—.5.
Buchen, John F.: *See*—
Leary, Joseph A., Mullins, and Buchen. 3,417,002.
Buck, Richard D. Corrosion resistant carrier roller for belt conveyors. 3,416,638, 12–17–68, Cl. 193—37.
Buehler, William J.: *See*—
Goldstein, David, Buehler, and Wiley. 3,416,342.
Bullard, Richard W., to United States of America, Army. Volumetric display. 3,417,395, 12–17–68, Cl. 343—7.9.
Bultman, John D.: *See*—
Leonard, John M., and Bultman. 3,417,251.
Burck, Werner: *See*—
Pohl, Ernst J., Schmitt-Thomas, and Burck. 3,416,630.
Burlington Industries, Inc.: *See*—
Tate, Howell M. 3,416,574.
Burndy Corp.: *See*—
Williamson, John B. P. 3,417,323.
Burns, Allan F., to Johns-Manville Corp. Method of thickening liquids and the products thereof. 3,417,018. 12–17–68, Cl. 252—13.
Burroughs Corp.: *See*—
Lee, Edwin S., III. 3,417,265.
Packard, Roger E. 3,417,375.
Rayfield, Harry F. 3,417,387.
Simonsen, Richard C., Blessum, and Hibner. 3,417,378.
Vietor, Charles A., and Blessum. 3,417,377.
Burton, John C., C. Frank and D. J. Walker, to The English Electric Company Ltd. Fuel handling systems associated with a nuclear reactor. 3,416,996, 12–17–68, Cl. 176—30.
Busler, Willard L., and H. C. Phillips, to AMP Inc. Apparatus for applying insulating housings to electrical terminals. 3,416,212, 12–17–68, Cl. 29—203.
Butcher, John A.: *See*—
Ridler, Desmond S., George, Butcher, and Kitajewski. 3,417,383.
Bintzek, Gerhard: *See*—
Richter, Henning, Büttner, Karl H., and Bintzek. 3,416,191.
Butz, C. F., Engineering: *See*—
Muller, Donald C. 3,416,642.
C. A. V. Limited: *See*—
Barber, Stanley F. 3,416,505.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Kantorowicz, Gerard. 3,417,280.
C.T. & R.E., Inc.: *See*—
Young, Vera E. 3,416,177.
Cabbage, John T., to Phillips Petroleum Co. Pressure relief system. 3,416,667, 12–17–68, Cl. 210—104.
Cabezas, Amado Y., and L. G. De Shazer, to Hughes Aircraft Co. High radiance laser. 3,417,345, 12–17–68, Cl. 331—94.5.
Cahen, Rober, and J. Driffort, to Compagnie Francaise de Television. Method of sealing frusto-conical lead-through elements. 3,416,980, 12–17–68, Cl. 156—89.
Cahn, Leon J., to Lee Machinery Corp. Web registry for flexographic presses. 3,416,444, 12–17–68, Cl. 101—181.
Cahoy, Roger P., and D. M. Coyne, to Gulf Oil Corp. Novel oxidation proceses. 3,417,144, 12–17–68, Cl. 260—604.
36¼% interest to Calavo Growers of California: *See*—
Roesner, Lawrence C., and Meon. 3,416,789.
Caldwell, Harold B., to Whiting Corp. Process and apparatus for manufacturing phosphoric acid. 3,416,889, 12–17–68, Cl. 23—165.
Calumet & Hecla, Inc.: *See*—
Arrington, Thomas B. 3,416,346.
Day, Robert E. 3,416,819.
Campaigne, Ernest E., and E. S. Neiss, to Research Corp. 3(aminopropionyl) benzothiophenes. 3,417,087, 12–17–68, Cl. 260—247.1.
Campass Container Co., Inc.: *See*—
Turpen, Russell L. 3,416,465.
Campbell, Frank, Jr., to Bethlehem Steel Corp. Composite refractory lining for basic oxygen furnace. 3,416,779, 12–17–68, Cl. 266—36.
Campbell, J. Allan: *See*—
Babcock, John C., and Campbell. 3,417,182.
Camras, Marvin, to IIT Research Institute. Low noise record medium and method for producing the same. 3,416,949, 12–17–68, Cl. 117—93.2.
Candor, James T.: *See*—
Candor, Robert R., and J. T. 3,416,334.
Candor, Robert R., and J. T., to Whirlpool Corp. Washing and/or drying machine. 3,416,334, 12–17–68, Cl. 68—20.
Canevari, Gerard P., and R. J. Fiocco, to Esso Research and Engineering Co. Coalescer and separator for oily water. 3,417,015, 12–17–68, Cl. 210—23.
Cannon, Peter, W. R. Grams, and W. L. Mowrey, to General Electric Co. Apparatus for holding electrically non-conductive material and improving electron beam cutting thereof. 3,417,222, 12–17–68, Cl. 219—121.
Capaul, Marcel, K. Matsuya, and M. Edinger, to Inventa A.G. fur Forschung und Patentverwertung. Process for the manufacture of hydroxylamine sulfate solutions. 3,416,886, 12–17–68, Cl. 23—117.
Caputo. Arnold P., M. Schupack, and A. D. McDonald, to Intercon Research, Inc. Masonry walls and partitions and method of fabricating same. 3,416,276, 12–17–68, Cl. 52—293.
Cardarelli, Nathan F., to The B. F. Goodrich Co. Method for dispersing toxicants to kill disease-spreading water-spawned larva, trematodes, mollusks and similar organisms; and products used in such method. 3,417,181, 12–17–68 Cl. 424—229.
Cardinal Extrusions Co.: *See*—
Daugherty, Benjamin E. 3,416,282.
Cargill, Inc.: *See*—
Hovden, Robert A. 3,417,136.
Carley, Emile Lucille, to National Distillers and Chemical Corp. Method of laminating an extruded plastic sheet. 3,416,986, 12–17–68, Cl. 156—244.
Carlson Tool & Machine Co.: *See*—
Hazelton, Harold J. 3,416,262.
Carnall, Edward, Jr., and D. W. Roy, to Eastman Kodak Co. Method of forming zinc oxide infrared transmitting optical element. 3,416,907, 12–17–68, Cl. 65—32.
Carpenter, William T. Power-operated crutch. 3,416,546, 12–17–68, Cl. 135—49.
Carrier Corp.: *See*—
Akerhielm, George J., and Endress. 3,416,327.
Carson, Don B., to Universal Oil Products Co. Hydrocarbon conversion process employing purified recycle hydrogen. 3,417,011, 12–17–68, Cl. 208—108.
Carter, Henry G., Jr., and J. H. Gifford, to Westinghouse Electric Corp. Flat-pack lead bending device. 3,416,348, 12–17–68, Cl. 72—220.
Case, J. I., Co.: *See*—
Harris, John D. 3,417,326.
Martin, Norman P. 3,416,814.
Schenk, Erwin L. 3,416,385.
Cason, Charles M., III, to United States of America, Army. Pulse power supply for defined quantities of energy. 3,417,288, 12–17–68, Cl. 315—241.
Cass, Edward P.: *See*—
Anderson, John R., and Cass. 3,416,902.

Castelli, Paolo: *See*—
Ponzini, Sandro, Castelli, and Lawendel. 3,416,875.
Castoe, John H. Motor vehicle wheel suspension ball joint installing tool. 3,416,216, 12–17–68, Cl. 29—261.
Catalysts and Chemicals, Inc.: *See*—
Alexander, Larry G. 3,416,293.
Caterpillar Tractor Co.: *See*—
Goloff, Alexander, and Feucht. 3,416,391.
Kokaly, Joseph. 3,416,561.
Catino, Sigmund C.: *See*—
Strobel, Albert F., and Catino. 3,417,058.
Celanese Coating Co.: *See*—
McWhorter, Wayne F., Kirwan, and Banfield. 3,417,140.
Price, Herbert P., and Shimp. 3,417,050.
Celanese Corp.: *See*—
Polestak, Walter J. 3,417,043.
Scott, Robert H. 3,416,974.
Central Glass Co., Ltd.: *See*—
Matsubara, Asaichi, Yasutake, Ueno, and Fujita. 3,416,887.
Centre Nationale de la Recherche Scientifique: *See*—
Roubin, Marc P., Paris, J. M., and R. A. 3,416,891.
Chabaglian, Henri F., to Polysius G.m.b.H. Apparatus for thermal treatment of minerals. 3,416,778, 12–17–68, Cl. 263—32.
Chaconas, Peter G. Multi-stage still. 3,417,000, 12–17–68, Cl. 202—174.
Chafetz, Harry: *See*—
Smetana, Richard D., and Chafetz. 3,417,127.
Chalk, Alan J., to General Electric Co. Moisture-curable alkoxysilyl substituted polyphenylene ethers. 3,417,053, 12–17–68, Cl. 260—47.
Chalmers, John R., and C. Victorius, to E. I. du Pont de Nemours and Co. Cross linked polyimide. 3,416,994, 12–17–68. Cl. 161—227.
Chaney, Harold K., and H. T. Strandrud, to The Boeing Co. Electric fluid valve. 3,416,549, 12–17–68, Cl. 137—81.5.
Chapin, Daryl M., to Bell Telephone Laboratories, Inc. Condition testing arrangement. 3,417,210, 12–17–68, Cl. 179—175.3.
Chapman, Rick. Parking stall fender. 3,416,484, 12–17–68, Cl. 116—67.
Chapou, Yves. Reversing cocks for distributing water. 3,416,555. 12–17–68, Cl. 137—119.
Chartier, Rene A. Patty molding machine. 3,416,187, 12–17–68, Cl. 17—32.
Chavannes, Marc A., and A. W. Fielding, to Sealed Air Corp. Method and apparatus for making cellular material from thermoplastics sheets. 3,416,984, 12–17–68, Cl. 156—209.
Chemagro Corp.: *See*—
Hensel, Jack, and Gier. 3,416,911.
Regel, Erik K., and Botts. 3,416,912.
Chen, Cheng-Lin, to United States of America, Navy. Corrosive liquid-metal-level gauge. 3,416,872, 12–17–68, Cl. 73—304.
Chen, John H.: *See*—
Downing, Frank P., Kolyer, and Chen. 3,417,097.
Chen, Oleg L.: *See*—
Balashkand, Mikhail I., Evokimov, Kaplan, Lovlya, Solodilov, and Chen. 3,416,621.
Cheritat, Roland: *See*—
Pinazzi, Christian P., Pautrat, Cheritat, and Branlard. 3,417,056.
Childress, Scott J.: *See*—
Bell, Stanley C., and Childress. 3,417,101.
Chilpan, Kurt C., to Maremont Corp. Spinning ring with indented surface. 3,416,301, 12–17–68, Cl. 57—119.
Chmielowiec, Louis J., to Continental Can Co., Inc. Reinforced container. 3,416,703, 12–17–68, Cl. 220—73.
Chocquet, Achille E. J., to Universal Desalting Corp. Evaporating apparatus. 3,416,318, 12–17–68, Cl. 60—67.
Chodorow, Marvin, to United States of America, Air Force. Planar slow-wave circuit. 3,417,279, 12–17–68, Cl. 315—3.6.
Chodroff, Saul, and R. S. Vazirani, to Norda Essential Oil and Chemical Co., Inc. Naphthospirofuran compound. 3,417,107, 12–17–68, Cl. 260—346.1.
Chou, Albert S.: *See*—
Brown, Edgar A., and Chou. 3,416,442.
Christian, Earl L., to General Dynamics Corp. Automatic frictionless guided welding apparatus. 3,417,225, 12–17–68, Cl. 219—125.
Christie, Cornelius W., to General Electric Co. Stereophonic speaker arrangement for a phonograph. 3,416,804, 12–17–68, Cl. 274—2.
Chromalloy American Corp.: *See*—
Brill-Edwards, Harry W. 3,416,976.
Ciano, Vincent T. Bridge-aid device. 3,416,794, 12–17–68, Cl. 273—24.
Ciccone, Jack M., to F. L. Smithe Machine Co., Inc. Banding machine and method. 3,416,286, 12–17–68, Cl. 53—3.
Cimmini, Bernard J.: *See*—
Beck, Earl H., Jr., and Cimmini. 3,416,717.
Claesson, Per H. E.: *See*—
Vigren, Sten D., Zander, and Claesson. 3,417,353.
Clapp, William M., to United States of America, National Aeronautic and Space Administration. Increasing efficiency switching-type regulator circuits. 3,417,321, 12–17–68, Cl. 323—22.
Clark, Ernest E. Diode installation and removal apparatus. 3,416,214, 12–17–68, Cl. 29—203.
Clark, Norman O., and W. Windle, to English Clays Lovering Pochin & Co. Ltd. Coating of paper and the like. 3,416,943, 12–17–68, Cl. 117—44.
Clark, Robert C., and K. R. Thompson, to General Electric Co. System to regulate position of a plurality of objects with central time shared control. 3,417,235, 12–17–68, Cl. 235—151.11.
Clark, Roger B.: *See*—
Van Campen, John H., and Clark. 3,416,923.
Clason, Jan C., to N.V. Fabriek Van Electrische Apparaten Voorheen F. Hazemeijer & Co. Retaining member with a force threshold. 3,417,355, 12–17–68, Cl. 335—296.
Claverie, Claude, to Compagnie Francaise Thomson Houston-Hotchkiss Brandt. Blocking oscillator circuit and sweep system using the same. 3,417,347, 12–17–68, Cl. 331—112.
Clay-Adams, Inc.: *See*—
Asnes, Marvin A., and Bernstein. 3,416,361.
Claxton, William B.: *See*—
Bach, Lloyd G., and Claxton. 3,416,548.
Clearfield, Abraham: *See*—
Stynes, James A., and Clearfield. 3,416,884.
Clevite Corp.: *See*—
Makowski, Mieczyslaw P. 3,416,955.
Cline, Delbert C., and G. B. Harr, to Firestone Tire & Rubber Co. Shipping container. 3,416,692, 12–17–68, Cl. 220—9.
Coalite and Chemical Products Ltd.: *See*—
Bondy, Herbert F., Williams, and Kirk. 3,417,150.
Coates, Joseph F.: *See*—
Wakeman, Reginald L., and Coates. 3,417,184.
Cobb, David A., to International Harvester Co. Heat exchanger rotor and method for making same. 3,416,595, 12–17–68, Cl. 165—8.
Coblentz, Robert C.: *See*—
Goodwin, George I., and Coblentz. 3,416,908.
Coenen, Joseph H., to Minnesota Mining and Mfg. Co. Photographic processing using cellophane processing sheets. 3,416,921, 12–17–68, Cl. 96—29.
Cohen, David D., and A. F. Du Fresne, to Dupaco, Inc. Blood pressure cuff transducer. 3,416,516, 12–17–68, Cl. 128—2.05.
Cole, Alan. Portable lock for motor vehicle doors and windows. 3,416,827, 12–17–68, Cl. 292—288.
Cole, Bernard A., to Erie Resistor Ltd. Electrical module having terminals made from semicircular wire and method of making the same. 3,417,193, 12–17–68, Cl. 174—68.5.
Colgate-Palmolive Co.: *See*—
Di Salvo, Walter A. 3,417,023.
Marder, Herman L., Grippo, and Tundermann. 3,416,157.
Schnettler, Richard A., Suh, and Judd. 3,417,118.
Collins, Benjamin P. Synthetic plastic railroad tie. 3,416,727. 12–17–68, Cl. 238—84.
Collins Radio Co.: *See*—
Fenwick, Richard C. 3,417,403.
Cribbe, Robert D., Venzke, and Moes. 3,417,336.
Colonial Sugar Refining Co. Ltd., The: *See*—
Mountfort, Cyril B., Cortis-Jones, and Wickham. 3,416,961.
Columbian Carbon Co.: *See*—
Kmiecik, James E. 3,417,088.
Combustion Engineering, Inc.: *See*—
Lyons, Donald E. A. 3,416,500.
Commonwealth Scientific and Industrial Research Organization: *See*—
Delmonico, Jack. 3,416,954.
Compagnie Francaise de Television: *See*—
Cahen, Rober, and Driffort. 3,416,980.
Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See*—
Claverie, Claude. 3,417,347.
Concrete Pipe Machinery Co.: *See*—
Waddington, Philip L. 3,416,204.
Conductron Corp.: *See*—
Nozawa, Yasuto D., and Nasser. 3,417,259.
Cone Mills Corp.: *See*—
Lilly, William N. 3,416,368.
Conine, James W.: *See*—
Murphy, Hubert W., Stephens, and Conine. 3,417,077.
Conlin, William P., to Tech Aero, Inc. 3,416,818, 12–17–68, Cl. 285—39.
Conner, James P., and J. J. Kane, to Bethlehem Steel Corp. Wire packaging apparatus. 3,416,745. 12–17–68, Cl. 242—83.
Conrac Corp.: *See*—
Heller, Henry B., and Abraham. 3,417,361.
Conrad, Winthrop B., and A. E. Tschanz, to Teleflex Inc. Motion-transmitting remote control assembly. 3,416,389, 12–17–68, Cl. 74—502.
Considine, William J., and G. H. Reifenberg, to M & T Chemicals, Inc. Omega-cyano-polymethylenetin Lewis acid complexes and the preparation thereof. 3,417,116, 12–17–68, Cl. 260—429.7.
Consolidated Electrodynamics Corp.: *See*—
Schneider, Robert A. 3,417,209.
Schneider, Robert A. 3,417,386.
Consolidation Coal Co.: *See*—
Nenworth, Martin B., Moroni, and Del Bel. 3,417,149.
Contamination Control Corp.: *See*—
Hambien, Milton W. 3,416,162.
Container Corp. of America: *See*—
Beck, Earl H., Jr., and Cimmini. 3,416,717.
Continental Can Co.: *See*—
Bozek, John S. 3,416,699.
Continental Can Co., Inc.: *See*—
Chmielowiec, Louis J. 3,416,703.
Henchert, John. 3,416,221.
Hoenig, James R. 3,416,702.
Jasper, John C., and Holk. 3,416,700.
Continental Illinois National Bank and Trust Company of Chicago: *See*—
Voitik, Robert M. 3,416,808.
Contrucci, Raymond J., W. H. Kelm, and H. M. Schrier, to General Electric Co. Cutting tool. 3,416,209, 12–17–68, Cl. 29—96.
Cook, Wendell S.: *See*—
Smith, George E. P., Jr., and Cook. 3,417,086.

Cooke, Harry F., T. M. Hyltin, and B. T. Vincent, Jr., to Texas Instruments Inc. Integrated circuit modular radar antenna. 3,417,393, 12–17–68, Cl. 343—5.

Coons, Everett A., to Olinkraft, Inc. Method of shrink-packaging utilizing a self-erecting pallet. 3,416,288, 12–17–68, Cl. 53—27.

Cooper, Albert C., D. F. White, and D. G. Wilkinson, to Imperial Chemical Industries Ltd. Mass-coloration process for polyester resins. 3,417,048, 12–17–68, Cl. 260—40.

Cooper, Cleveland N., to The Pandjiris Weldment Co. Self-centering chuck mechanism. 3,416,809, 12–17–68, Cl. 279—110.

Cooper, Joseph, and W. J. Corbett, to W. R. Grace & Co. Paint stripping composition. 3,417,025, 12–17–68, Cl. 252—152.

Cootes, Harold E., to AMP Inc. Crimping apparatus for electrical terminals. 3,416,213, 12–17–68, Cl. 29—203.

Corbett, William J.: *See*—
Cooper, Joseph, and Corbett. 3,417,025.

Corey, Philip D., to General Electric Co. Static inverter. 3,417,315, 12–17–68, Cl. 321—45.

Corhart Refractories Co.: *See*—
Alper, Allen M., and McNally. 3,416,938.

Cormia, Robert L., to General Electric Co. Method of forming carbon resistor films. 3,416,959, 12–17–68, Cl. 117—213.

Corning Glass Works: *See*—
Bennett, Robert W., and Sprague. 3,417,274.
Gauss, Louis H., Jr. 3,417,331.
Knapp, Eugene J. 3,417,170.
Murphy, Frank B., Jr. 3,417,330.
Rostoker, David. 3,417,172.

Corona, Thomas, and L. R. J. Kelly, 50% to C. Thomas, and 50% to L. R. J. Kelly. Electric switch. 3,417,215, 12–17–68, Cl. 200—86.

Corte, Herbert, and O. Netz, to Farbenfabriken Bayer Aktiengesellschaft. Process for chloromethylating and cross-linking high molecular weight aromatic compounds. 3,417,066, 12–17–68, Cl. 260—88.1.

Cortis-Jones, Beverly: *See*—
Mountfort, Cyril B., Cortis-Jones, and Wickham. 3,416,961.

Courtaulds Ltd.: *See*—
Grant, Eric McP. 3,417,049.

Covington, George D., and J. R. De Haan, to Cryogenic Engineering Co. Refrigeration shielded dewar vessel. 3,416,693, 12–17–68, Cl. 220—9.

Cowley, William E., to Vermont American Corp. Hacksaw blade. 3,416,579, 12–17–68, Cl. 143—133.

Cowper, David R.: *See*—
Blache-Fraser, Francis M., Cowper, and Curnow. 3,417,239.

Cox, Eugene F.: *See*—
Hostettler, Fritz, and Cox. 3,417,104.

Coyne, Donald M.: *See*—
Cahoy, Roger P., and Coyne. 3,417,144.

Craddock, Mike. Oil well pumping unit control circuit. 3,417,290, 12–17–68, Cl. 317—13.

Creager, Paul, Jr., to Parke, Davis & Co. Surgical drape. 3,416,520, 12–17–68, Cl. 128—132.

Cribbs, Robert D., G. E. Venzke, and E. J. Moes, to Collins Radio Co. Rectifier frequency shift keyer (FSK) converter and filter circuit. 3,417,336, 12–17–68, Cl. 328—140.

Crimmins, William M., to Brunswick Corp. Selectively positionable print heads for scorer printer. 3,416,443, 12–17–68, Cl. 101—93.

Cripe, Maxwell L., to The Bendix Corp. Hydraulic pressure hold-off and booster means. 3,416,314, 12–17–68, Cl. 60—54.5.

Crittenden, William B., to United States of America, Navy. Time discriminator. 3,417,264, 12–17–68, Cl. 307—232.

Cromwell, Thomas M.: *See*—
Shepherd, Joseph L., and Cromwell. 3,416,999.

Cross, Alexander D., to Syntex Corp. 4-oxa-19-nor-Δ1,5, (10)-pregnadiene-3,20-dione steroids and their preparation. 3,417,106, 12–17–68, Cl. 260—340.5.

Croswhite, Larry N. Cigarette extinguisher. 3,416,538, 12–17–68, Cl. 131—237.

Crow, Morgan L., M. D. Kilgore, and R. C. Pumpelly, to Dresser Industries, Inc. Retrievable well packer. 3,416,608, 12–17–68, Cl. 166—129.

Crown Machine & Tool Co.: *See*—
Harrison, James M. 3,417,173.
Harrison, James M., and Gaul. 3,417,169.

Crown Zellerbach Corp.: *See*—
Herschler, Robert J. 3,417,185.

Cruz, Jose E., to United States of America, Commerce. Variable impedance coaxial device with relative rotation between conductors. 3,417,350, 12–17–68, Cl. 333—35.

Crylor: *See*—
Robin, Jean B. 3,416,874.

Cryogenic Engineering Co.: *See*—
Covington, George D., and De Haan. 3,416,693.

Culp, John F. Cotton pickup unit. 3,416,296, 12–17–68, Cl. 56—28.

Curnow, Eric K.: *See*—
Blache-Fraser, Francis M., Cowper, and Curnow. 3,417,239.

Cutter Laboratories, Inc.: *See*—
Kahn, Paul. 3,416,528.

Czech, Henry J.: *See*—
Fisher, David C., and Czech. 3,416,533.

D. & S. Engineering International Ltd.: *See*—
Lobley, Derek G. 3,416,668.

Daddona, Domenic J., Jr., to Scovill Mfg. Co. Permanently locking snap fastener. 3,416,200, 12–17–68, Cl. 24—208.

Dahl, Carl B., and E. J. Justis, to Beloit Corp. Roller press. 3,416,435, 12–17–68, Cl. 100—170.

Dahlgren, Wallace L. Animal trap. 3,416,257, 12–17–68, Cl. 43—87.

Daikin Kogyo Co. Ltd.: *See*—
Mizuno, Koichi. 3,416,941.

Daimler-Benz Aktiengesellschaft: *See*—
Schmitz, Christian, and Mathieu. 3,416,723.

Daley, Roger J., and W. W. Herderhorst, to Tokheim Corp. Cold-start shaft bearing. 3,416,847, 12–17–68, Cl. 308—37.

Dallen, John A., to The Standard Products Co. Resilient corner gasket. 3,416,279, 12–17–68, Cl. 52—400.

Dantamor Co., The: *See*—
Weiss, Hans R. 3,416,815.

Dardaine, Edgard J. M., and J.-L. Berry, to E. P. Remy et Cie. Machine for automatically packing things in overlying tiers. 3,416,675, 12–17–68, Cl. 214—16.4.

Datron Systems, Inc.: *See*—
Stewart, Alfred W. 3,417,233.

Daugherty, Benjamin E., to Cardinal Extrusions Co. Elongate panel edging strip of the prefabricated type. 3,416,282, 12–17–68, Cl. 52—627.

Davey, Trevor B.: *See*—
Smeloff, Edward A., Davey, and Kaufman. 3,416,159.

David, Edgar S.: *See*—
Webb, James E. 3,417,247.

Davies, Alwyn G., to M & T Chemicals, Inc. Organotin carbonates, their thio-anologs and the preparation thereof. 3,417,117, 12–17–68, Cl. 260—429.7.

Davis, Carey L., 20% each to W. B. Pritchett, Jr., B. G. Stumberg, Jr., G. M. Eubanks, and R. N. Lester. Weighing and dispensing apparatus 3,416,708, 12–17–68, Cl. 222—55.

Davies, Guy E.: *See*—
Davis, John C. H., and Davies. 3,416,358.

Davis, John C. H., and G. E. Davies, to British Telecommunications Research Ltd. Fluid sensors. 3,416,358, 12–17–68, Cl. 73—37.

Davis, Noel, and C. E. Merchant, to Integrated Development and Mfg. Co. Method and apparatus for controlling the operation of an environmental growth chamber. 3,416,328, 12–17–68, Cl. 62—118.

Davis, Pauls and H. C. Vogt, to Wyandotte Chemical Corp. Polyhalogenous epoxy copolymers. 3,417,069, 12–17–68, Cl. 260—92.3.

Davis, Ronald E. Empty bottle inspection method and apparatus utilizing both water soluble and oil soluble fluorescent. 3,417,241, 12–17–68, Cl. 250—71.

Davis, Wilbern F., to Honeywell Inc. Unit record translating mounting. 3,416,790, 12–17–68, Cl. 271—51.

Day, Robert E., to Calumet & Hecla, Inc. Motion compensator. 3,416,819, 12–17–68, Cl. 285—302.

Dayco Corp.: *See*—
Jensen, Howard J., Richmond, Brooks, and Waugh. 3,416,383.

Dayton, David R., and A. H. Nimblett, Jr., to Sylvania Electric Products, Inc. Incandescent lamp base. 3,417,367, 12–17–68, Cl. 339—145.

Deadrick, James R., to Stewart-Warner Corp. Furniture handle assembly. 3,416,184, 12–17–68, Cl. 16—112.

De Coye de Castelet, Gaetan, to Regie Nationale des Usines Renault. Internal-combustion engines. 3,416,501, 12–17–68, Cl. 123—30.

De Haan, James R.: *See*—
Covington, George D., and De Haan. 3,416,693.

Deis, Bert C.: *See*—
Dryden, Hugh L. 3,416,988.

Del Bel, Elsio: *See*—
Neuworth, Martin B., Moroni, and Del Bel. 3,417,149.

Dell, Harry J.: *See*—
Kunkle, John P., Garver, and Dell. 3,417,364.

Delmonico, Jack, to Commonwealth Scientific and Industrial Research Organization. Process for the durable creasing or other permanent setting of textile materials containing wool or other keratin fibres. 3,416,954, 12–17–68, Cl. 117—141.

Demco, Alan J.: *See*—
List, William F., Demco, and Donaldson. 3,417,397.

Denki-Onkyo Kabushiki-Kaisha: *See*—
Masuda, Noboru. 3,417,197.

De Shazer, Larry G.: *See*—
Cabezas, Amado Y., and De Shazer. 3,417,345.

De Sorbo, Warren, to General Electric Co. Superconducts quaternary alloys with high current capacities and high critical field values. 3,416,917, 12–17–68, Cl. 75—174.

Detko, John F.: *See*—
Gates, Duane C., and Detko. 3,417,273.

Detrex Chemical Industries, Inc.: *See*—
Fletcher, Calvert H. 3,417,001.

Deutsche Babcock & Wilcox-Dampfkessel-Werke Aktiengesellschaft: *See*—
Hey, Ernst F., Kuipers, Schiel, Hermann, Von Hoffmann, Hinte, and Braun. 3,416,470.

Deutsche Edelstahlwerke Aktiengesellschaft: *See*—
Richter, Henning, Büttner, and Bintzek. 3,416,101.

Deutscher, Hans-Christian, K. Bauer, and A. Kohler, to SWF-Spezialfabrik für Autozubehor Gustav Rau G.m.b.H. Windshield wiper supporting joint construction. 3,416,180, 12–17–68, Cl. 15—250.32.

Dexter, Martin, to Geigy Chemical Corp. Optically active 1,2,3,4,5,6 - hexahydro - 6 - phenyl - 2,6 - methano - 3-benzazocines and process. 3,417,094, 12–17–68, Cl. 260—294.7.

Dey, Chester, and A. D. Smith, to Kaiser Aluminum & Chemical Corp. Rolling mill control system. 3,416,341, 12–17–68, Cl. 72—20.

Diamond International Corp.: *See*—
Addiego, Joseph. 3,416,650.

Dickow, Frederick P., to The Eastern Co. Anchor having a pivotable stock. 3,416,482, 12–17–68, Cl. 114—207.

Dictaphone Corp.: *See*—
Springer, William E., and Rescsanski. 3,416,806.

Diehl: *See*—
Timm, Heinz. 3,417,388.

Dietrich, Rolf, H. Ruhle, and H. Ebertz, to Zeiss-Ikon Aktiengesellschaft. Photographic camera with flash unit. 3,416,422, 12–17–68, Cl. 95—11.

Dietzgen, Eugene, Co.: *See*—
Thomiszer, Hubert J. 3,417,226.

Dike, Melville A., to Pioneer Electroform Mfg. Co. Magnetic record medium. 3,417,389, 12–17–68, Cl. 340—174.1.

Dille, Kenneth L.: *See*—
Forry, Milton G., Jr., Agnew, and Dille. 3,417,158.

Di Marco, Bernard, to I-T-E Circuit Breaker Co. Ambient temperature compensated overload relay. 3,417,358, 12–17–68, Cl. 337—99.

Di Piazza, Gerald C., to Bell Telephone Laboratories, Inc. Digitally tuned microwave filter. 3,417,351, 12–17–68, Cl. 333—73.

Di Salvo, Walter A., to Colgate-Palmolive Co. Detergent spotting stick. 3,417,023, 12–17–68, Cl. 252—118.

Distillers Co. Ltd., The: *See*—
Harris, Brian W. 3,417,133.

Dixon, Alan F., and L. B. Valdes, to Raytheon Co. Controlled breakdown voltage diode. 3,417,299, 12–17–68, Cl. 317—234.

Dohet, Pierre E. Extensible-collapsible structure. 3,416,170, 12–17–68, Cl. 9—2.

Donaldson, Jerry D.: *See*—
List, William F., Demco, and Donaldson. 3,417,397.

Donkers, Jacobus M., to Verschure & Co.'s Scheepswerf EN Machinefabriek N.V. Loading and unloading equipment. 3,416,842, 12–17–68, Cl. 302—34.

Donner, Mark R., to The Richmark Co. Gummed label strip punch cutting machine. 3,416,396, 12–17–68, Cl. 83—9.

Dorer, Casper J., Jr., to The Lubrizol Corp. Fuels containing nitrogen-phosphorus anti-icing compositions. 3,416,900, 12–17–68, Cl. 44—63.

Dorn, Rolf K., to The Lummus Co. Inlet device and method for preventing coke build-up. 3,416,598, 12–17–68, Cl. 165—134.

Dorr-Oliver Inc.: *See*—
Hubbard, Peter J. 3,416,669.
Nyrop, Per. 3,416,726.

Dorsett, James P., and C. R. Smith, to Vend-A-Matic, Inc. Coin-actuated vending control apparatus. 3,416,639, 12–17–68, Cl. 194—10.

Douds, Robert G., and J. Ostrowski, to IPG Industries, Inc. Coating composition of a carboxylic acid amide polymer and a condensate of an organopolysiloxane and an organoalkoxysilane. 3,417,161, 12–17–68, Cl. 260—825.

Dounoucos, Angelo, to General Electric Co. Method for making a gas transfer device to more specifically indicate the elected invention. 3,416,985, 12–17–68, Cl. 156—289.

Dow Chemical Co., The: *See*—
Amos, James L. 3,416,992.
Boughton, Lowell D. 3,416,602.
Henson, Walter A., and Zimmerman. 3,417,045.
Tomalia, Donald A. 3,417,062.
Windecker, Leo J. 3,416,756.
Zimmerman, Robert L., and Lee. 3,417,162.

Dowdican, Franklin W. Check valve. 3,416,454, 12–17–68, Cl. 103—103.

Dowers, David J. Animal splint. 3,416,519, 12–17–68, Cl. 128—87.

Downing, Frank P., J. M. Kolyer, and J. H. Chen, to Allied Chemical Corp. Rotational molding of large hollow objects. 3,417,097, 12–17–68, Cl. 264—308.

Downing, Frank P., J. M. Kolyer, and V. J. Opalewski, to Allied Chemical Corp. Casting process for forming a solid polylactam article. 3,417,178, 12–17–68, Cl. 264—331.

Dowty Rotol Ltd.: *See*—
Elmes, Robert T., and Lane. 3,416,309.

Drace, Lawrence V., and E. E. Weatherly, to G. A. Braun, Inc. Laundry loaders. 3,416,437, 12–17–68, Cl. 100—218.

Drace, Lawrence V.: *See*—
Weatherly, Earl E., and Drace. 3,416,438.

Dragan, William B. Readily convertible light fixture. 3,416,871, 12–17–68, Cl. 431—125.

Dravnieks, Andrew: *See*—
Boles, David B., and Dravnieks. 3,416,965.

Dresser Industries, Inc.: *See*—
Crow, Morgan L., Kilgore, and Pumpelly. 3,416,608.
Einstein, Edward, and McCreight. 3,416,935.
Kilgore, Marion D. 3,416,609.
Kunnemann, Elmer A. 3,416,618.

Dreyfoos, Alex W., Jr., and G. W. Mergens, to Photo Electronics Corp. Electronic color viewer and print timer. 3,417,196, 12–17–68, Cl. 178—5.2.

Driffort, Jean-Pierre: *See*—
Cahen, Robert, and Driffort. 3,416,980.

Driscoll, Neil J. Selectively operable control station and enclosure. 3,417,212, 12–17–68, Cl. 200—42.

Dryden, Hugh L., Deputy Administrator of the National Aeronautics and Space Administration with respect to an invention of A. D. McHatton, B. C. Deis, S. Stenlund, and R. J. Slater. Traveling sealer for contoured table. 3,416,988, 12–17–68, Cl. 156—545.

Dube, Manfred W. Table assembly. 3,416,849, 12–17–68, Cl. 312—312.

Duffy, Michael C.: *See*—
Armstrong, William J., Healy, and Duffy. 3,416,224.

Du Fresne, Armand F.: *See*—
Cohen, David D., and Du Fresne. 3,416,516.

Dunkel, Morris, to Universal Oil Products Co. Polymeric compositions of matter formed by the reaction of prepolymers with polyhalopolyhydrodimethanonaphthalenedicarboxylic acids and anhydride thereof. 3,417,063, 12–17–68, Cl. 260—78.4.

Dunkel, Morris, to Universal Oil Products Co. 4,7-methanoindene derivatives. 3,417,132, 12–17–68, Cl. 260—488.

Dunlop Co. Ltd., The: *See*—
Lautenschlaeger, Friedrich K. 3,417,099.

Dupaco, Inc.: *See*—
Cohen, David D., and Du Fresne. 3,416,516.

Dupont, Alain M., J. L. Normand, P. E. Moch, and C. G. Rousseau, to Societe Mixte pour le Development de la Technique de la Commutation dans le Domaine des Telecommunications. Transistorized electronic relay. 3,417,292, 12–17–68, Cl. 317—33.

Du Pont de Nemours, E. I., and Co.: *See*—
Braun, Robert A. 3,417,102.
Chalmers, John R., and Victorius. 3,416,994.
Knospe, Robert H. 3,416,302.
Matray, Otto J. 3,417,174.
Sartori, Mario F. 3,417,076.

Dupre, Victor M.: *See*—
Mingrasson, Georges H. R., Sureau, and Dupre. 3,417,075.

Durbin, Hairrel A., and T. R. Pledger, to Texas Instruments Inc. Method and apparatus for testing hermetically sealed transistor devices. 3,416,359, 12–17–68, Cl. 73—40.7.

Durkin, Thomas J.: *See*—
Riener, Edward F., and Durkin. 3,417,151.

Dvirka, Miro, and A. B. Zanft, to Hagan Industries, Inc. Incinerator. 3,416,469, 12–17–68, Cl. 110—7.

Dwyer, F. W., Mfg. Co.: *See*—
Locke, John P. 3,416,371.

Dynaco, Inc.: *See*—
Hafler, David. 3,417,203.

Dynamit Nobel Aktiengesellschaft: *See*—
Ballreich, Kurt, Ketterl, and Spranger. 3,416,450.

Dyna-Quip, Inc., The: *See*—
Frohnauer, Franklin M., Jr. 3,416,418.

Dyson, John J.: *See*—
Wittnebert, Frederick R., Lawton, and Dyson. 3,416,869.

EMC Technology, Inc.: *See*—
Steidlitz, Mark. 3,417,294.

E. P. Remy et Cie: *See*—
Dardaine, Edgar J. M., and Berry. 3,416,675.

Eagleson, Thomas N., and G. A. Windish, to Martin-Marietta Corp. Gripping structure. 3,416,350, 12–17–68, Cl. 72—293.

Eastern Co., The: *See*—
Dickow, Frederick P. 3,416,482.

Eastes, John W., and R. W. Faessinger, to Scott Paper Co. Sheet of cellulosic fiber and urea-formaldehyde resin and process of manufacture thereof. 3,417,037, 12–17–68, Cl. 260—2.5.

Eastman, Hugh E. Reversible crawler type tractor track. 3,416,846, 12–17–68, Cl. 305—54.

Eastman Kodak Co.: *See*—
Bailey, Joseph. 3,417,084.
Beyer, George L. 3,417,019.
Carnall, Edward, Jr., and Roy. 3,416,907.

Eastman Kodak Co.: *See*—
Harvey, Donald M. 3,416,424.
Houle, James F., and Van Norman. 3,417,055.
Kalenda, Norman W. 3,416,927.
Reynolds, George A., and Van Allan. 3,417,083.
Robinson, Geen H., and Rodenberg. 3,416,493.
Smith, Albert C. 3,416,926.
Van Campen, John H., and Clark. 3,416,928.

Eberle, Hans, and G. Wuttke, to Gruenzweig & Hartmann AG. Method of producing a foamed soil-improving material. 3,417,171, 12–17–68, Cl. 264—51.

Eberly, John H.: *See*—
Nolt, Edwin B., Eberly, and Eby. 3,416,824.

Ebertz, Helmut: *See*—
Dietrich, Rolf, Ruhle, and Ebertz. 3,416,422.

Ebner, Emanuel C., to Foto-Cube, Inc. Picture support. 3,416,765, 12–17–68, Cl. 248—467.

Eby, Richard R.: *See*—
Nolt, Edwin B., Eberly, and Eby. 3,416,824.

Eckert, George W., and H. V. Hess, to Texaco Inc. Motor fuels containing ether acids. 3,416,901, 12–17–68, Cl. 44—69.

Eckert, George W., and D. Love, to Texaco Inc. Thermally stable fuel compositions. 3,416,903, 12–17–68, Cl. 44—73.

Eden, Jamal S., to The B. F. Goodrich Co. Method of preparing unsaturated nitriles by catalytic ammoxidation of olefins. 3,417,125, 12–17–68, Cl. 260—465.3.

Eden, Jamal S., to The B. F. Goodrich Co. Method of preparing acrylonitrile or methacrylonitrile by catalytic ammoxidation of propylene or isobutylene. 3,417,128, 12–17–68, Cl. 260—465.3.

Edex Corp.: *See*—
Nisbet, Thomas R. 3,416,242.

Edinger, Max: *See*—
Capaul, Marcel, Matsuya, and Edinger. 3,416,886.

Edoco Technical Products, Inc.: *See*—
Worson, Lee. 3,416,415.

Edouard Dubied & Cie. (Societe Anonyme): *See*—
Joseph, Pierre. 3,416,332.

Edwards, Miles L. Catheter. 3,416,531, 12–17–68, Cl. 128—348.

Effinger, William L., Jr.: *See*—
Goldbeck, Bernard H., and Effinger. 3,416,852.

Eggers, Lee G. Thermostatic control for heating and cooling. 3,417,360, 12–17–68, Cl. 337—339.

Ehrlich, Robert, to Thiokol Chemical Corp. Preparation of quaternary ammonium aluminum hydrides. 3,417,119, 12–17–68, Cl. 260—448.

Eickmann, Karl. Fluid handling device including endwalls on a trochoid curved body. 3,416,460, 12–17–68, Cl. 103—126.

Einaudi, Giacomo, to RIV-SKF Officine Di Villar Perosa S.p.A. Method of manufacturing needle bearing cages. 3,416,210, 12–17–68, Cl. 29—148.4.

Einstein, Edward, and D. O. McCreight, to Dresser Industries, Inc. Insulating refractories. 3,416,935, 12–17–68, Cl. 106—41.

Eisen- und Drahtwerk Erlau A.G.: *See*—
Schurle, Werner, and Mueller. 3,416,587.

Ekrut, Hans G. Portable waste disposal unit. 3,416,164, 12–17–68, Cl. 4—142.

Elcon A.G.: *See*—
Stucky. Fritz C., and Meuli. 3,416,273.

Electrohome Ltd.: *See*—
Sennik, John J. 3,417,285.

Elenburg, Wayland D., to Walker-Neer Mfg. Co., Inc. Drill bit. 3,416,617, 12–17–68, Cl. 175—339.

Elgeo Instruments of America, Inc.: *See*—
Sauberlich, Gerhard P. 3,417,394.

Elias, William H., to General Electric Co. Composite AM-FM intermediate frequency amplifier. 3,417,341, 12–17–68, Cl. 330—28.

Ellis, Bobby R. Stator coiler. 3,416,575, 12–17–68, Cl. 140—92.1.

Ellison, Ronald, N. Pickles, J. Pritchard, and L. Taylor, to Ellison Tufting Machinery Ltd. Yarn tensioning apparatus for tufting machines capable of making pile with repeat patterns thereon of loops of varying lengths. 3,416,471, 12–17–68, Cl. 112—79.

Ellison Tufting Machinery Ltd.: *See*—
Ellison, Ronald, Pickles, Pritchard, and Taylor. 3,416,471.

Elm, Robert A., to Minnesota Mining and Mfg. Co. Junction box. 3,417,192, 12–17–68, Cl. 174—59.

Elmer, Otto C., C. E. Greene, and A. E. Schmucker, to The General Tire & Rubber Co. Trihydropolyfluoroalkylene glycidyl ethers, methods for making said ethers, and polymers and copolymer of said ethers. 3,417,035, 12–17–68, Cl. 260—2.

Elmes, Robert T., and A. H. Lane, to Dowty Rotol Ltd. Engine installations and starting means therefor. 3,416,309, 12–17–68, Cl. 60—39.15.

Eltro G.m.b.H. & Co.: *See*—
Menke, Franz. 3,417,314.

Emde, Wendall D.: *See*—
Webb, James E. 3,416,975.

Emery, William M. Inflated bath or boudoir pillow. 3,416,619, 12–17–68, Cl. 5—337.

Emhart Corp.: *See*—
Blumenfeld, John F. 3,417,186.
Blumenfeld, John F., and Hanks. 3,417,187.

Emley, Edward F., and P. C. Meredith, to Magnesium Elektron Ltd. Magnesium base alloys. 3,416,978, 12–17–68, Cl. 148—32.5.

Endress, James W.: *See*—
Akerhielm, George J., and Endress. 3,416,327.

Engelhart, John E., to Esso Research and Engineering Co. Mineral lubricating oil containing a polyester pour depressant. 3,417,021, 12–17–68, Cl. 252—56.

English Clays Lovering Pochin & Co. Ltd.: *See*—
Clark, Norman O., and Windle. 3,416,943.

English Electric Co. Ltd., The: *See*—
Burton, John C., Frank, and Walker. 3,416,996.

English Numbering Machines Ltd.: *See*—
Baldwin Richard E. 3,416,446.

Enomoto, Goro, to Kabushiki Kaisha Obara Kogaku Garasu Seizosho. Glass composition for use as the face plate of an image orthicon tube and the like. 3,416,937, 12–17–68, Cl. 106—54.

Enstrom, Hans G.: *See*—
Von Dardel, Georges O., Enstrom, and Tauberman. 3,416,567.

Entwicklungsring Sud G.m.b.H.: *See*—
Bschorr, Oskar, and Neumair. 3,416,628.

Ercoli, Alberto, and R. Gardi, to Warner-Lambert Pharmaceutical Co. 17-ethers of estradiol. 3,417,183, 12–17–68, Cl. 424—243.

Erdman, Paul. Crop harvesting machine. 3,416,298, 12–17–68, Cl. 56—327.

Erdmann, Fritz: *See*—
Messwarb, Gunter, Luders, Erdmann, and Steppan. 3,417,051.

Erie Resistor Ltd.: *See*—
Cole, Bernard A. 3,417,193.

Ernst, Alfred. Hardness measuring apparatus. 3,416,367, 12–17–68, Cl. 73—83.

Eron, Robert E. Poly-sonic mechanical pest deterrent. 3,416,266, 12–17–68, Cl. 52—101.

Essex Wire Corp.: *See*—
Mertler, Charles S. 3,416,515.

Esso Research and Engineering Co.: *See*—
Amir, Emanuel M., and Nickerson. 3,417,138.
Asher, William J. 3,416,320.
Canevari, Gerard P., and Flocco. 3,417,015.
Engelhart, John E. 3,417,021.
Henselman, Richard O., and Jacobson. 3,417,010.
Wright, Franklin J. 3,416,870.

Esten, Perry W. Combining network for radio frequency power sources. 3,417,402, 12–17–68, Cl. 343—852.

Etablissements Kuhlmann: *See*—
Anatol, Jesus. 3,417,098.
Mingasson, Georges H. R., Sureau, and Dupre. 3,417,075.

Evans, John L., H. E. Riordan, and H. J. Straut, to General Precision System Inc. Free-rotor gyro. 3,416,378, 12–17–68, Cl. 74—5.6.

Evdokimov, Georgy S.: *See*—
Balashkand, Mikhail I., Evdokimov, Kaplan, Loviya, Solodilov, and Chen. 3,416,621.

Fabrucci, Aldo, A. Gianantonio, and S. Sacerdoti, to Lepit S.p.A. Method of producing pyridoxime by reducing a precursor gamma lactone with a complex borohydride. 3,417,095, 12–17–68, Cl. 260—296.

Faessinger, Robert W.: *See*—
Eastes, John W., and Faessinger. 3,417,037.

Fa. Fritz Kieper: *See*—
Putsch, Peter U., and Schorken. 3,416,826.

Fairbairn, Howard W., to The Mettoy Co. Ltd. Sounding toy vehicle with animated figure. 3,416,258, 12–17–68, Cl. 46—99.

Fairchild Camera and Instrument Corp.: *See*—
Wight, Ralph H. 3,416,423.

Fairchild Hiller Corp.: *See*—
Knoll, Frederick A., and Scandalis. 3,416,755.

Falk, Harold W.: *See*—
Russell, Fred J., Armstrong, and Falk. 3,416,828.
Russell, Fred J., Armstrong, and Falk. 3,416,829.

Fanning, Joseph S. Bait container. 3,416,688, 12–17–68, Cl. 215—41.

Fannon, John J., Jr., and M. Resek, to Fostoria-Fannon, Inc. Combustion type infrared generators. 3,416,511, 12–17–68, Cl. 126—92.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Corte, Herbert, and Netz. 3,417,066.
Pelster, Heinrich, Konig, and Putter. 3,417,090.
Rinkler, Heinrich, and Nischk. 3,417,134.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Beermann, Claus, Landauer, and Schmidt. 3,417,061.
Beermann, Claus, Schmidt, and Rupp. 3,417,163.
Kuch, Heinz, Seidl, and Hoffmann. 3,417,085.
Kuhne, Rudolf, Meininger, Noll, Rinno, and Schlessler. 3,417,074.
Meininger, Fritz, Hille, and Osterloh. 3,417,073.
Messwarb, Gunter, Luders, Erdmann, and Steppan. 3,417,051.
Messwarb, Gunter, Luders, Munder, and Steppan. 3,417,052.
Seidl, Gunther, and Nesemann. 3,417,093.
Sturm, Karl, Siedel, and Weyer. 3,417,080.

Faribo Mfg. Co., Inc.: *See*—
Freeborn, George E. 3,416,193.

Farmer, Bobby J., to Ling-Temco-Vought, Inc. Method and apparatus for regulating high voltage in electrostatic generators. 3,417,318, 12–17–68, Cl. 322—2.

Farquhar, Melville T., to Reynolds Metals Co. Container means and method of making same and blanks for making such container means. 3,416,653, 12–17–68, Cl. 206—65.

Farris, Richard J.: *See*—
Steele, Robert D., and Farris. 3,416,233.

Fasano, Thalia B.: *See*—
Adams, Arthur H., and Bozocos. 3,416,517.

Faustini, Albert J., to Warner-Lambert Pharmaceutical Co. Micrometer adjustment lock. 3,416,380, 12–17–68, Cl. 74—89.15.

Fay Dyn Products Ltd.: *See*—
Taylor, George F. 3,417,275.

Federal Bearing Co., Inc.: *See*—
Recknagel, Frederick W. 3,416,848.

Fekkes, Nanno: *See*—
Kohll, Charles F., and Fekkes. 3,417,124.

Feldman, Julian, and J. K. Seyler, to National Distillers and Chemical Corp., Process for separating monoamines from diamines by liquid-liquid extraction. 3,417,141, 12–17–68, Cl. 260—563.

Felson, Ronald, to Liquidonics Industries, Inc. Magnetic lock devices. 3,416,336, 12–17–68, Cl. 70—276.

Fenimore, Harry L. Stitching machines for binding booklets. 3,416,715, 12–17–68, Cl. 227—44.

Fenner, Gunther E., to General Electric Co. Simplified piezoresistive force sensing device. 3,417,322, 12–17–68, Cl. 323—75.

Fenton, Russell S. Interval control mechanism for light gun or the like. 3,417,237, 12–17–68, Cl. 240—10.62.

Fenwick, Richard C., to Collins Radio Co. Electrically small spiral antenna tunable over a wide band. 3,417,403, 12–17–68, Cl. 343—877.

Ferreira, Joseph J., to Frank Noone Shoe Co., Inc. Contoured insole. 3,416,245, 12–17–68, Cl. 36—44.

Ferri, Antonio: *See*—
Patron, Germano, Merluzzi, and Ferri. 3,417,152.

Ferro Mfg. Corp.: *See*—
Pickles, Joseph. 3,416,386.

Fertig, Raymond B.: *See*—
Nickell, Lawrence C., Fertig, and Perkins. 3,417,252.

Fesco, John J., to Studley Paper Co., Inc. Disposable vacuum cleaner bag. 3,416,721, 12–17–68, Cl. 229—62.5.

Feucht, Dennis D.: *See*—
Goloff, Alexander, and Feucht. 3,416,391.

Feuillebois, Louis, and G. Ormut, to Societe des Compresseurs a Membrane Corbin. Diaphragm-type compressors and pumps. 3,416,453, 12–17–68, Cl. 103—44.

French, Lawrence R., J. R. Strausser, and J. L. Thompson, to Gulf Oil Corp. Separation of hydrocarbons from plant process waste water. 3,417,159, 12–17–68, Cl. 260—677.

Fielding, Alfred W.: *See*—
Chavannes, Marc A., and Fielding. 3,416,984.

Figaro, Vincent S., to Bridgeport Fabrics, Inc. Method of covering an automobile door trim bead. 3,416,981, 12–17–68, Cl. 156—94.

Fink, Robert W., to Whirlpool Corp. Heat exchanger having twisted multiple passage tubes. 3,416,600, 12–17–68, Cl. 165—175.

Finkelstein, Manuel: *See*—
Ross, Sidney D., Petersen, and Finkelstein. 3,417,003.

Fiocco, Robert J.: *See*—
Canevari, Gerard P., and Fiocco. 3,417,015.

Firestone Tire & Rubber Co., The: *See*—
Cline, Delbert C., and Harr. 3,416,692.
Smith, George E. P., Jr., and Cook. 3,417,086.

Firgat S.n.c.: *See*—
Tondato, Carlo. 3,416,783.

Fischer & Porter Co.: *See*—
Kaucher, Erwin K., McLay, and Weingrad. 3,416,370.

Fischer, Raymond C., to International Harvester Co. Automatic return trip for moldboard plow. 3,416,611, 12–17–68, Cl. 172—261.

Fischer, Karl, G. Goessler, and H. Meissner, to Messrs. E. G. O. Elektro-Geraete Blanc u. Fischer. Device for securing a heating plate to the top plate of a range. 3,416,513, 12–17–68, Cl. 126—215.

Fisher, David C., and H. J. Czech, to General Electric Co. Conductive catheter. 3,416,533, 12–17–68, Cl. 128—404.

Fisher, Earl H. Hydraulic vibrating forging hammers and presses. 3,416,354, 12–17–68, Cl. 72—453.

Fishel, Norman A., to Universal Oil Products Co. Alkylation process. 3,417,148, 12–17–68, Cl. 260—671.

Fletcher, Calvert H., to Detrex Chemical Industries, Inc. Plural stage distillation process and system with foam control. 3,417,001, 12–17–68, Cl. 203—20.

Flexicore Co., Inc., The: *See*—
La Gue, David J. 3,416,272.

Flint, Hyland C. Backrest assembly. 3,416,839, 12–17–68, Cl. 297—396.

Flowers, Henry F. Spring supported gimbal supported mine cars. 3,416,463, 12–17–68, Cl. 105—179.

Fono, Andrew, and M. N. Siddiqui, to Otto B. May, Inc. Polyester dyeing with 1 - (2-methoxy-4-nitrobenzeneazo)-2-hydroxy-11H-benzo(a)carbazole-3-carbox-p-aniside. 3,416,873, 12–17–68, Cl. 8—21.

Fontaine, James L.: *See*—
Peterson, Warren J., Fontaine, and Wachtel. 3,416,468.

Forbro Design Corp.: *See*—
Kupferberg, Kenneth. 3,416,597.

Ford Motor Co.: *See*—
Liang, Po-Lung. 3,416,554.

Fork, Frank W., to H. H. Robertson Co. Dual function electrical outlet and electrical distribution system utilizing the same. 3,417,191, 12–17–68, Cl. 174—49.

Forry, Milton G., Jr., R. J. Agnew, and K. L. Dille, to Texaco Inc. Method of inhibiting autooxidizable aromatic compounds. 3,417,158, 12–17–68, Cl. 260—674.

Forwald, Haakon, W. Pucher, and K. G. Sindahl, to Allmanna Svenska Elektriska Aktiebolaget. Air blast circuit breaker. 3,417,217, 12–17–68, Cl. 200—148.

Foster, John C., Jr., to Motorola, Inc. Monolithic integrated diode-transistor logic circuit having improved switching characteristics. 3,417,260, 12–17–68, Cl. 307—213.

Foster, Thomas W. F., to Kaiser Aluminum & Chemical Corp. Melting furnace method. 3,417,166, 12–17–68, Cl. 263—52.

Fostoria-Fannon, Inc.: *See*—
Fannon, John J., Jr., and Resek. 3,416,511.

Foto-Cube, Inc.: *See*—
Ebner, Emanuel C. 3,416,765.

Fournier, Henri, to AREF Fribourg. Loom. 3,416,573, 12–17–68, Cl. 139—127.

Fowler, Walter E. Firearms locking system. 3,416,404, 12–17–68, Cl. 89—190.

Fox, George C. Diving board. 3,416,793, 12–17–68, Cl. 272—66.

Foxboro Co., The: *See*—
Kinner Hans-Dieter. 3,416,551.

Francis, Frank P. G., and G. V. Watts, to British Hovercraft Corp. Ltd. Flexible skirts for air cushion borne vehicles. 3,416,627, 12–17–68, Cl. 180—127.

Frank, Charles: *See*—
Burton, John C., Frank, and Walker. 3,416,996.

Frantz, Franklin D., Jr.: *See*—
Kalt, Charles G., and Frantz. 3,416,248.

Franz, Henry H. Valve for container filling apparatus. 3,416,577, 12–17–68, Cl. 141—117.

Frater, Allen H., to G. B. Lewis Co. Container. 3,416,704, 12–17–68, Cl. 220—97.

Frederick, Charles L., to United States of America, Atomic Energy Commission. Method of determining elastic properties of a metal sample. 3,416,365, 12–17–68, Cl. 73—67.8.

Frederick, Henry E.: *See*—
Zebarth, Ralph S., and Frederick. 3,416,186.

Freeborn, John C., to Honeywell Inc. Apparatus to produce push-pull electron beam deflection signals from a single input signal. 3,417,283, 12–17–68, Cl. 315—26.

Freeborn, George E., to Faribo Mfg. Co., Inc. Rotational molding apparatus and mold therefor. 3,416,193, 12–17–68, Cl. 18—26.

Freeman, Frank G., to Joseph Lucas (Industries) Ltd. Heart valve. 3,416,562, 12–17–68, Cl. 137—512.15.

Freese, Thomas E., to Allied Chemical Corp. Pelleted ruminant feedstuff. 3,416,928, 12–17–68, Cl. 99—2.

Freiberger, Ronald D., to General Motors Corp. Vacuum control system with regulating relay valve. 3,416,408, 12–17–68, Cl. 91—419.

Freyermuth, Harlan B.: *See*—
Randall, David I., and Freyermuth. 3,417,079.

Frick, John G., Jr.: *See*—
Kullman, Russell M. H., Frick, Reinhard, and Reid. 3,416,880.

Fritsch, Rudolf P., to Werner & Pfleiderer. Worm mixing devices. 3,416,774, 12–17–68, Cl. 259—109.

Fritz Sommer Nachf: *See*—
Langenohl, Hans-Joachim. 3,416,405.

Frohnauer, Franklin M., Jr., to The Dyna-Quip, Inc. Impacting machine. 3,416,418, 12–17–68, Cl. 94—49.

Fukuma, Norboru, K. Jono, T. Kihara, and Y. Midorikawa, to Asahi Kasei Kogyo Kabushiki Kaisha. Apparatus for heat-treating thermoplastic synthetic fibers. 3,416,188, 12–17–68, Cl. 18—1.

Fuller Co.: *See*—
Johnson, Bernard A., and Adamski. 3,416,376.

Fykes, Peter. Remotely adjustable rear view mirror with pneumatic operator. 3,416,854, 12–17–68, Cl. 350—289.

GAF Corp.: *See*—
Gantz, George M., Mautner, and Black. 3,416,877.
Graham, David E. 3,417,137.
Merijan, Ashot, Grosser, and Hort. 3,417,054.
Randall, David I., and Freyermuth. 3,417,079.
Strobel, Albert F., and Catino. 3,417,058.

G.K.N. Group Services Ltd.: *See*—
Wycherley, John R., and Wilkes. 3,416,364.

G-V Controls Inc.: *See*—
Pecota, Walter. 3,417,207.

Gaertner, Richard F., and F. F. Holub, to General Electric Co. Process for preparing a polyamide acid solution. 3,417,042, 12–17–68, Cl. 260—30.2.

Galli, Guido, F. L. Morritz, and C. A. Wiley, to North American Rockwell Corp. Composite heteroepitaxial structure. 3,417,301, 12–17–68, Cl. 317—237.

Gamer, Sven G. Y., to Stenberg-Flygt Aktiebolag. Device for aerating, preferably waste water. 3,416,776, 12–17–68, Cl. 261—122.

Ganiaris, Neophytos, to Struthers Scientific and International Corp. Method of centrifugally separating ice crystals from an aqueous solution. 3,416,661, 12–17–68, Cl. 210—78.

Ganiaris, Neophytos: *See*—
Muller, John G., and Ganiaris. 3,416,663.

Gantz, George M., H. R. Mautner, and E. J. Black, to GAF Corp. Basic dye dyeing of polyacrylonitrile assisted by tributylphosphate and a phosphate ester of an ethylene oxide condensate. 3,416,877, 12–17–68, Cl. 8—55.

Gardi, Rinaldo: *See*—
Ercoli, Alberto, and Gardi. 3,417,183.

Garver, William J.: *See*—
Kunkle, John P., Garver, and Dell. 3,417,364.

Gates, Duane C., and J. F. Detko, to Aerojet-General Corp. Apparatus for accelerating plasma by a static magnetic field and a traveling wave. 3,417,278, 12–17–68, Cl. 313—63.

Gauss, Louis H., Jr., to Corning Glass Works. Resistance measuring apparatus including voltage charging and discharging means in the indicator portion. 3,417,331, 12–17–68, Cl. 324—62.

Gaul, Daniel R.: *See*—
Harrison, James M., and Gaul. 3,417,169.

Gebr. Stork & Co's Apparatenfabriek N.V.: *See*—
Van der Winden, Johannes B. 3,416,432.

Gehrie, Charles S., to Presto Lock Co., Inc. Latching device and combination locking means. 3,416,338, 12–17–68, Cl. 70—312.

Geigy Chemical Corp.: *See*—
Dexter, Martin. 3,417,094.
Zweidler, Reinhard, and Keller. 3,416,945.

Geisinger, George H., to The Thomas & Betts Co., Inc. Retaining and locking device. 3,416,198, 12–17–68, Cl. 24—150.

Gembruch, Alfred, Jr., to A. Gembruch. Safety holder for heels in connection with ski bindings. 3,416,812, 12–17–68, Cl. 280—11.35.

Genarco Inc.: *See*—
Millie, Orrin. 3,416,249.

General Cigar Co. Inc.: *See*—
Townend, John. 3,416,537.

General Dynamics Corp.: *See*—
Christian, Earl L. 3,417,225.

General Electric Co.: *See*—
Bailey, Francis M. 3,417,219.
Banovic, Frank J. 3,417,334.
Boothe, Willis A. 3,416,310.
Cannon, Peter, Grams, and Mowrey. 3,417,222.
Chaik, Alan J. 3,417,053.
Christie, Cornelius W. 3,416,804.
Clark, Robert C., and Thompson. 3,417,235.
Contrucci, Raymond J., Kelm, and Schrier. 3,416,209.
Corey, Philip D. 3,417,315.
Cormia, Robert L. 3,416,959.
De Sorbo, Warren. 3,416,917.
Dounoucos, Angelo. 3,416,985.
Elias, William H. 3,417,341.
Fenner, Gunther E. 3,417,322.
Fisher, David C., and Czech. 3,416,533.
Gaertner, Richard F., and Holub. 3,417,042.
Hall, Robert N. 3,417,246.
Hall, Robert N., and Holonyak. 3,417,248.
Haselton, Thomas P., and Pustell. 3,416,972.
Joseph, Raymond S., and Ashley. 3,417,201.
Lampkin, John O., Jr. 3,417,373.
Millikan, Roger C. 3,417,230.
Mongesku, William O. 3,416,486.
Murphy, Cornelius B. 3,416,896.
Peaslee, Lawrence R., and Lafuze. 3,417,293.
Pinaire, Lonnie W., and Lingen. 3,416,754.
Plette, David L., and White. 3,417,254.
Quinn, Joseph G. 3,416,534.
Smith, Sidney R., Jr. 3,417,216.
Tiemann, Jerome J. 3,417,328.
White, Donald W. 3,416,967.

General Electronic Laboratories, Inc.: *See*—
Greenberg, Malvin, Alter, and Belanich. 3,416,243.
General Mills, Inc.: *See*—
Boushak, William M. 3,416,929.
General Motors Corp.: *See*—
Baig, Muhammad L. 3,417,005.
General Motors Corp.: *See*—
Freiberger, Ronald D. 3,416,408.
Grimm, Henry W. 3,416,333.
Livezey, William G. 3,416,308.
Mesbew, Robert E. 3,416,201.
Siems, David T. 3,416,363.
Wallis, Rolland B. 3,416,307.
General Precision System Inc.: *See*—
Evans, John L., Riordan, and Staut. 3,416,378.
Kenny, Charles R. 3,417,343.
Misulis, Edward V. 3,416,452.
General Signal Corp.: *See*—
Turtle, Quentin C. 3,417,390.
General Steel Industries, Inc.: *See*—
Sproul, James D., Jr. 3,416,936.
General Time Corp.: *See*—
Wallentowitz, Klaus. 3,417,296.
Wallentowitz, Klaus D. 3,417,297.
General Tire & Rubber Co., The: *See*—
Elmer, Otto C., Greene, and Schmucker. 3,417,035.
Maurer, Francis J. 3,416,948.
George, Roger: *See*—
Ridler, Desmond S., George, Butcher, and Kitajewski. 3,417,383.
Gerling, Ann M. Swimming aid. 3,416,172, 12–17–68, Cl. 9—337.
Gesellschaft fur Kernforschung m.b.H.: *See*—
Schmidt, Albrecht C. 3,417,245.
Giambra, Santo, and D. J. Waythomas, to Union Carbide Corp. Release of curing agents for vicinal epoxides from molecular sieves using a polyalkylene glycol as release agent. 3,417,046, 12–17–68, Cl. 260—37.
Gianantonio, Anacleto: *See*—
Fabrucci, Aldo, Gianantonio, and Sacerdoti. 3,417,095.
Giandomenico, Anthony: *See*—
Webb, James E. 3,417,399.
Gia-Quinto, Daniel. Page marker and holder. 3,416,817, 12–17–68, Cl. 281—42.
Giavini, Guido. Straight shuttlesless looms. 3,416,572, 12–17–68, Cl. 139—126.
Gibbings, Fredrick T., to North American Rockwell Corp. Cover assembly having cover with a retaining ring. 3,416,840, 12–17–68, Cl. 301—37.
Gibbons, John A. M.: *See*—
Rody, Richard S., Skipper, and Gibbons. 3,417,190.
Gibson, Harry T.: *See*—
Linderman, Garrett B., and Gibson. 3,416,659.
Gibson, Louis J. Door check. 3,416,182, 12–17–68, Cl. 16—52.
Gier, Delta W.: *See*—
Hensel, Jack, and Gier. 3,416,911.
Gifford, John H.: *See*—
Carter, Henry G., Jr., and Gifford. 3,416,348.
Gilbert, A. C., Co., The: *See*—
Goldbeck, Bernard H., and Effinger. 3,416,852.
Gillette Co.: *See*—
Hantman, Lionel L. 3,416,543.
Ginder, Raymond M. Bowling ball and adjustable diameter finger receiving attachment therefor. 3,416,796, 12–17–68, Cl. 273—63.
Glaser, Hellmut I., to Owens-Corning Fiberglas Corp. Method and apparatus for processing heat-softened mineral material. 3,416,906, 12–17–68, Cl. 65—1.
Glaser, Ronald A.: *See*—
Mihojevich, Steven, Zerfahs, Ostensen, Berggren, and Glaser. 3,416,860.
Glass Laboratories Co.: *See*—
Shanok, Victor, and J. P. 3,416,761.
Gleim, William K. T.: *See*—
O'Hara, Mark J., and Gleim. 3,417,030.
Glenn, Edwin E., Jr., V. R. Slover, Jr., and M. K. Strubhar, to Mobil Oil Corp. Separating flow control system and method. 3,416,547, 12–17–68, Cl. 137—12.
Globe-Union, Inc.: *See*—
Halsall, Vincent M. 3,416,969.
Sabatino, Anthony. 3,416,970.
Gobalet, Kenneth C.: *See*—
Hittenberger, William H., Gobalet, and Baker. 3,416,411.
Goessler, Gerhard: *See*—
Fischer, Karl, Goessler, and Meissner. 3,416,513.
Golbeck, Bernard J., and J. W. Hunter, to United States of America, Army. Mortar and ammunition. 3,416,401, 12–17–68, Cl. 89—1.
Goldschmidt, Th., A.-G.: *See*—
Koerner, Gotz. 3,417,121.
Goldbeck, Bernard H., and W. L. Effinger, Jr., to The A. C. Gilbert Co. Functionally combined microscope and carrying case. 3,416,852, 12–17–68, Cl. 350—82.
Goldstein, David, W. J. Buehler, and R. C. Wiley, to United States of America, Navy. Method for treating working and bonding refractory metals and alloys. 3,416,342, 12–17–68, Cl. 72—47.
Goldwasser, Seymore, to Lever Brothers Co. Treated phosphates. 3,417,024, 12–17–68, Cl. 252—135.
Goller, Walter, K. M. Harder, and W. Haechler. Process of automatically performing length measurments and self-calibrating measuring and sorting apparatus for carrying out the process. 3,416,658, 12–17–68, Cl. 209—73.
Goloff, Alexander, and D. D. Feucht, to Caterpillar Tractor Co. Misalignment compensating cam follower. 3,416,391, 12–17–68, Cl. 74—569.
Gonneville, Ovila: *See*—
Harrison, Frank H., and Gonneville. 3,416,743.
Good-Ko Industries, Inc.: *See*—
Kotila, Claudius F. 3,416,643.
Goodrich, B. F., Co., The: *See*—
Cardarelli, Nathan F. 3,417,181.
Goodrich, B. F., Co., The: *See*—
Eden, Jamal S. 3,417,125.
Eden, Jamal S. 3,417,128.
Goodwin-Coblentz Associates, Inc.: *See*—
Goodwin, George I., and Coblentz. 3,416,908.
Goodwin, George I., and R. C. Coblentz, to Goodwin-Coblentz Associates, Inc. Environmental control system for glass manufacturing. 3,416,908, 12–17–68, Cl. 65—162.
Goodwin, Robert J., E. A. Mori, J. L. Pekarek, P. W. Schaub, and R. E. Zinkham, to Gulf Research & Development Co. Hydraulic jet drilling method using ferrous abrasives. 3,416,614, 12–17–68, Cl. 175—67.
Gould, Floyd T., to Laboratory for Electronics, Inc. Process for preparing chemically pure ferrous carbonate. 3,416,883, 12–17–68, Cl. 23—61.
Grace, W. R., & Co.: *See*—
Cooper, Joseph, and Corbett. 3,417,025.
Legal, Casimer C., Jr., Richmond, and Bruno. 3,416,910.
Simons, Charles W., and Gribens. 3,417,177.
Snow, William T., Jr. 3,416,649.
Graham, David E., to GAF Corp. Process for the purification of crude 2,5-dichloro-3-nitrobenzoic acid (dinoben). 3,417,137, 12–17–68, Cl. 260—525.
Grams, William R.: *See*—
Cannon, Peter, Grams, and Mowrey. 3,417,222.
Granata, Raymond L.: *See*—
McCaul, Paul F., and Granata. 3,417,316.
Granberg, Mauritz L., and J. J. Stoffel, to Sperry Rand Corp. Electromagnetic gross beam positioning system. 3,417,284, 12–17–68, Cl. 315—27.
Grant Chemical Co., Inc.: *See*—
Morgana, Morley. 3,417,142.
Grant, Eric M., to Courtaulds Ltd. Stabilization of polyacrylonitrile. 3,417,049, 12–17–68, Cl. 260—45.85.
Grantham, Rodney E., to United States of America, Navy. Laser employing a liquid solution of chrome aluminum. 3,417,344, 12–17–68, Cl. 331—94.5.
Gray, Don N., J. J. Schmidt-Collerus, and C. D. Smith, to United States of America, Air Force. Polynitrobenzofluorides and the method of preparation thereof. 3,417,153, 12–17–68, Cl. 260—646.
Gray, Kenneth P. Fluid transmission. 3,416,313, 12–17–68, Cl. 60—53.
Green, Derek B., to Scovill Mfg. Co. Aerosol valve unit. 3,416,770, 12–17–68, Cl. 251—303.
Green Engineering Co.: *See*—
Greene, George B. 3,416,487.
Greenberg, Malvin, S. Alter, and J. M. Belanich, to General Electronics Laboratories, Inc. Responding apparatus. 3,416,243, 12–17–68, Cl. 35—48.
Greene, Charles E.: *See*—
Elmer, Otto C., Greene, and Schmucker. 3,417,035.
Greene, George B., to Green Engineering Co. Method and apparatus for generating and applying sonic energy. 3,416,487, 12–17–68, Cl. 116—137.
Greenfield, Ronald N. Container contents extractor. 3,416,689, 12–17–68, Cl. 215—100.
Greenleaf, Richard J., to International Fastener Corp. Coating apparatus for threaded fasteners. 3,416,492, 12–17–68, Cl. 118—620.
Greiner, James A.: *See*—
Wood, Howard J., and Greiner. 3,416,277.
Gresham, George S.: *See*—
Sweneck, George F., and Gresham. 3,416,278.
Gretz, Charles: *See*—
Kramer, Sol, and Gretz. 3,416,701.
Gribens, Joel A.: *See*—
Simons, Charles W., and Gribens. 3,417,177.
Griessen, Jean-Jacques, to Transurvey Holding Co. Inc., S.A. Engine launching device. 3,416,402, 12–17–68, Cl. 89—1.
Griffin, Benjamin F., Jr., to Sperry Rand Corp. Fluid logic circuits. 3,416,550, 12–17–68, Cl. 137—81.5.
Griffin, Henry W., to General Motors Corp. Windshield mounting. 3,416,833, 12–17–68, Cl. 296—93.
Grimmett, Frank A. Orthodontic appliance. 3,416,228, 12–17–68, Cl. 32—14.
Grinnell Corp.: *See*—
Thielsch, Helmut J. 3,416,343.
Thielsch, Helmut J. 3,416,344.
Thielsch, Helmut J. 3,416,351.
Grippo, George D.: *See*—
Marder, Herman L., Grippo, and Tundermann. 3,416,157.
Grospas, Pierre. Apparatus for boring by cable controlled percussion. 3,416,615, 12–17–68, Cl. 175—173.
Gross, Arthur R., to Gross-Given Manufacture Co. Can dispensing apparatus. 3,416,706, 12–17–68, Cl. 221—11.
Gross-Given Manufacture Co.: *See*—
Gross, Arthur R. 3,416,706.
Gross, Jerome A. Self-purging pressure dispenser valve. 3,416,711, 12–17–68, Cl. 222—402.18.
Grosser, Frederick: *See*—
Merijan, Ashot, Grosser, and Hort. 3,417,054.
Grossman, Alan R. Drainage tube with means for scraping away debris therewithin. 3,416,532, 12–17–68, Cl. 128—350.
Grover Machine Co.: *See*—
Sauder, Gerald D. 3,416,760.
Grubb, Hollis C.: *See*—
Weller, Peter A., and Grubb. 3,416,330.
Gruenzweig & Hartmann AG: *See*—
Eberle, Hans, and Wuttke. 3,417,171.

Gualandris, Emmanuel, and H. W. Hessling. Device for arranging and stacking objects on a charging floor. 3,416,674, 12–17–68, Cl. 214—6.
Guerrieri, Salvatore A., to The Lummus Co. Chloride process for producing iron from iron ore. 3,416,914, 12–17–68, Cl. 75—34.
Gulf Oil Corp.: *See*—
Cahoy, Roger P., and Coyne. 3,417,144.
French, Lawrence R., Strausser, and Thompson. 3,417,159.
Robicheaux, Warren J. 3,416,681.
Zeisig, Harry C., Jr., and Hoffmann. 3,416,913.
Gulf Research & Development Co.: *See*—
Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,416,614.
Gunderson, Ralph R. Extensible flagstaff for highway warning signal. 3,416,477, 12–17–68, Cl. 116—63.
Guthrie, David G., to Saunders Roe & Nuclear Enterprises Ltd. Coating of the surfaces of light transparent materials associated with light sources. 3,416,940, 12–17–68, Cl. 117—8.5.
Gutnikov, Eduard J., O. N. Melnikov, G. B. Matjunin, and I. I. Alterman. Hydraulic press plunger travel speed governing device. 3,416,433, 12–17–68, Cl. 100—48.
Gutridge, Jack E., to Pullman Inc. Mounting arrangement for demountable containers on railway cars. 3,416,464, 12–17–68, Cl. 105—366.
Gutzeit, Carlos L., and H. J. Brown, to Hitco. Refractory fibers and method of preparing same. 3,416,953, 12–17–68, Cl. 117—126.
Gyongyos, Ivan, to Swiss Aluminium Ltd. Rotary continuous casting machine having resiliently movable sidewalls. 3,416,594, 12–17–68, Cl. 164—278.
Haas, Laird K. S., to Bell Telephone Laboratories, Inc. Apparatus for outgassing electron tube elements. 3,417,278, 12–17–68, Cl. 315—3.5.
Haechler, Werner: *See*—
Goller, Walter, Harder, and Haechler. 3,416,658.
Hafler, David, to Dynaco, Inc. Two-channel stereo system with derived center channel. 3,417,203, 12–17–68, Cl. 179—1.
Hagan Industries, Inc.: *See*—
Dvirka, Miro, and Zanft. 3,416,469.
Hagelbarger, David W., to Bell Telephone Laboratories, Inc. Miniature dial. 3,417,208, 12–17–68, Cl. 179—90.
Haines, Paul G.: *See*—
Albert, Harry E., and Haines. 3,417,154.
Hall, C. P., Co., The: *See*—
Kuceski, Vincent P. 3,417,114.
Hall, Cyril J., to Radio Corp. of America. Means for stabilizing television deflection circuits. 3,417,282, 12–17–68, Cl. 315—24.
Hall, Earl C., to M. A. Bruder & Sons, Inc.: *See*—
Method of trowelling a coating material onto a building block. 3,416,947, 12–17–68, Cl. 117—64.
Hall, Robert N., to General Electric Co. Frequency modulated semiconductor junction laser. 3,417,246, 12–17–68, Cl. 250—199.
Hall, Robert N., and N. Holonyak, Jr., to General Electric Co. Tunneling semiconductor device exhibiting storage characteristics. 3,417,248, 12–17–68, Cl. 250—211.
Hall, Robert O.: *See*—
Hodgson, John, and Hall. 3,416,740.
Halliburton Co.: *See*—
Rensvold, Roger F. 3,416,604.
Young, Bill M., and Anderson. 3,416,601.
Halpaap, Herbert: *See*—
Heusser, Dietrich, and Halpaap. 3,416,993.
Halsall, Vincent M., to Globe-Union, Inc. Battery construction. 3,416,969, 12–17–68, Cl. 136—134.
Hamblen, Milton W., to Contamination Control Corp. Automatic flushing control mechanism. 3,416,162, 12–17–68, Cl. 4—100.
Hambling, James K., and J. R. Jones, to The British Petroleum Co. Ltd. Dimerisation process. 3,417,160, 12–17–68, Cl. 260—683.15.
Hamerla, Donald R., to United States of America, Air Force. Battery activator system. 3,416,451, 12–17–68, Cl. 102—70.2.
Hamilton Mfg. Co.: *See*—
Peterson, Warren J., Fontaine, and Wachtel. 3,416,468.
Hamilton-Skotch Corp., The: *See*—
Piker, Herbert M. 3,416,691.
Hamilton, William R., Jr., to Porter Inc. Insulated rail joints. 3,416,728, 12–17–68, Cl. 238—152.
Hamlin, Humphrey A. S., to Westland Aircraft Ltd. Breathing mask suspension. 3,416,521, 12–17–68, Cl. 128—146.7.
Hammon, Otto: *See*—
Kent, Francis J., and Hammon. 3,416,349.
Haninger, Horst, to Zinser-Textilmaschinen Gesellschaft Mit Beschraenkter, Haftung. Apparatus for transporting an elongated flexible element. 3,416,742, 12–17–68, Cl. 242—47.09.
Hanks, George F.: *See*—
Blumenfeld, John F., and Hanks. 3,417,187.
Hanna, Ralph T., to United States Steel Corp. Blast furnace stock line wall and method of constructing the same. 3,416,780, 12–17–68, Cl. 266—43.
Hansen, Julian E., Jr.: *See*—
Hansen, Julian E., Sr., and Jr. 3,417,392.
Hansen, Julian E., Sr., and Jr. Fire detector. 3,417,392, 12–17–68, Cl. 340—409.
Hansen, Richard C., and A. P. Yesnl, Jr., to Xerox Corp. Signal storage device. 3,416,861, 12–17–68, Cl. 355—13.
Hanson, Adelheid. Easy opening sliding door for bathtub. 3,416,166, 12–17–68, Cl. 4—173.
Hanson, Merlin T. Lug wrench with storage magazine and nut holding means. 3,416,395, 12–17–68, Cl. 81—125.
Hantman, Lionel L., to Gillette Co. Hair treating device. 3,416,543, 12–17–68, Cl. 132—125.
Harder, Karl M.: *See*—
Goller, Walter, Harder, and Haechler. 3,416,658.
Hare, Richard C., to Applied Power Industries, Inc. Vane type fluid converter. 3,416,457, 12–17–68, Cl. 103—123.
Harman, Randall W.: *See*—
Lamb, Irvin E., and Harman. 3,417,240.
Harr, George B.: *See*—
Cline, Delbert C., and Harr. 3,416,692.
Harris, Brian W., to The Distillers Co. Ltd. Oxidation of ethylene or propylene with a group VIII noble metal compound, oxygen and an amine carboxylate. 3,417,133, 12–17–68, Cl. 260—497.
Harris, John D., to J. I. Case Co. Test unit for checking electric circuitry of a pumping machine. 3,417,326, 12–17–68, Cl. 324—51.
Harrison, Frank H., and O. Gonneville, to The Smith-Gates Corp. Winding device for heat curing coiled cords. 3,416,743. 12–17–68, Cl. 242—50.
Harrison, James M., to Crown Machine & Tool Co. Method and apparatus for foam molding. 3,417,173, 12–17–68, Cl. 264—53.
Harrison, James M., and D. R. Gaul, to Crown Machine & Tool Co. Method and apparatus for automatically molding foam plastic articles. 3,417,169, 12–17–68, Cl. 264—51.
Hartman, Robert J.: *See*—
Patton, John T., Jr., and Hartman. 3,417,164.
Harvey Donald M., to Eastman Kodak Co. Apparatus for shutter energization and film advance in cameras. 3,416,424. 12–17–68, Cl. 95—31.
Hasbrouck, Leo J., E. J. Ossolinski, and G. L. Smith, to International Business Machines Corp. Instruction selection apparatus. 3,417,380, 12–17–68, Cl. 340—172.5.
Haselton, Thomas P., and R. A. Pustell, to General Electric Co. Insulated electrical conductor or thermocouple assembly with a membrane gas-tight seal. 3,416,972, 12–17–68, Cl. 136—230.
Hasson, Sol: *See*—
Holton, Morris J., and Hasson. 3,417,366.
Hathorn, Roy C. Core box assembly with heating means therefor. 3,416,593, 12–17–68, Cl. 164—234.
Hattori, Torao, to Kabushiki Kaisha Honda Gijutsu Kenkyusho. Automatic transmission which effects gear shifting in response to output torque of converter. 3,416,393, 12–17–68, Cl. 74—731.
Hauni-Werke Koerber & Co., K.G.: *See*—
Sebelin, Alfred. 3,416,289.
Hauser, Jon W., 6% to Charles H. Redman, and 4% to Richard D. Shearer. Side loading toaster. 3,416,430, 12–17–68, Cl. 99—332.
Haveg Industrird, Inc.: *See*—
Anderson, Robert W., and Perreault. 3,417,176.
Havens, Ralph J. Displacement detector. 3,416,373, 12–17–68, Cl. 73—339.
Hawkins, John L., and N. McIntyre, to McIntyre Packaging, Inc. Apparatus and method for winding and packaging web material. 3,416,287, 12–17–68, Cl. 53—3.
Hayes, Robert A.: *See*—
Peterson, Albert C., Hayes, and Lukins. 3,416,473.
Hayward, Brian P., to Joseph Lucas (Industries) Ltd. Displacement measuring apparatus. 3,417,221, 12–17–68, Cl. 219—109.
Hazelton, Harold J., to Carlson Tool & Machine Co. Abrasive device for finishing paint brushes. 3,416,262, 12–17–68, Cl. 51—86.
Headrick, Richard T. Restraining means for pillow tanks. 3,416,762, 12–17–68, Cl. 248—361.
Heald Machine Co., The: *See*—
Renner, Howard W., and Uhtenwoldt. 3,416,407.
Healy, Albert M.: *See*—
Armstrong, William J., Healy, and Duffy. 3,416,224.
Heard, Roderick S., and L. M. Hornung, to International Business Machines Corp. Clocking circuits for memory accessing and control of data processing apparatus. 3,417,379, 12–17–68, Cl. 340—172.5.
Hedrick, Robert H., to Struthers Scientific and International Corp. Centrifugal ice washing method. 3,416,662, 12–17–68, Cl. 210—78.
Heeney, Robert F. Metal window frame construction with liner board channel. 3,416,271, 12–17–68, Cl. 52—214.
Heinik, Peter, to Linde A.G. Low temperature production of highly compressed gaseous and/or liquid oxygen. 3,416 323, 12–17–68, Cl. 62—18.
Heinze, Johannes R. L., H. A. Ramm, and H. G. Richardt, to Veb Chemiefaserwerk Schwarza "Wilhelm Pieck." Rapid production of linear polyesters by transesterification. 3,417,057, 12–17–68, Cl. 260—75.
Heller, Henry B., and R. C. Abraham, to Conrac Corp. Semiconductive pressure transducer. 3,417,361. 12–17–68, Cl. 338—42.
Heller, Stanley, W. F. Anderson, and R. B. Berlin, to Itek Corp. Positioning system with gas bearing moving coil. 3,417,269, 12–17–68, Cl. 310—27.
Heller, Walter K. Defroster and windshield heater. 3,416,428. 12–17–68, Cl. 98—2.
Helm, Percy R., and C. O. Lewis. Method for stabilizing a crawler crane. 3,416,622. 12–17–68, Cl. 180—6.7.
Helmer, John C., to Varian Associates. High vacuum pump employing apertured penning cells driving ion beams into a target covered by a getter sublimator. 3 416,722, 12–17–68, Cl. 230—69.
Hembree, Clyde R., to Martin-Marietta Corp. Correlation guidance system having multiple switchable field of view. 3,416,752, 12–17–68, Cl. 244—317.

Henchert, John, to Continental Can Co., Inc. Method of preforming and attaching metal pull tab to metal can end rivet formation. 3,416,221, 12–17–68, Cl. 29—509.

Henderson, Homer I. Combined rotary and percussion drill utilizing liquid drilling fluid. 3,416,613, 12–17–68, Cl. 173—57.

Henkel, Charles E.: *See*—
Smith, Richard E., Holmes, and Henkel. 3,417,286.

Hennebutte, Georges B. L. Surf-boat with air-floats. 3,416,171, 12–17–68, Cl. 9—2.

Hensel, Jack, and D. W. Gier, to Chemagro Corp. Method of defoliating and desiccating plants with substituted triphenyl phosphates and phosphites. 3,416,911, 12–17–68, Cl. 71—71.

Henselman, Richard O., and N. Jacobson, to Esso Research and Engineering Co. Wax crystal modifier composition. 3,417,010, 12–17–68, Cl. 208—28.

Henson, Walter A., and R. L. Zimmerman, to The Dow Chemical Co. Polymer composition. 3,417,045, 12–17–68, Cl. 260—33.6.

Herchenroeder, Robert B., to Union Carbide Corp. Ductile cobalt-base alloy. 3,416,916, 12–17–68, Cl. 75—171.

Hercules Inc.: *See*—
Breslow, David S. 3,417,060.
Robinson, Anderson E., Jr. 3,416,990.
Vandenberg, Edwin J. 3,417,036.
Williams, Frederick E. 3,417,147.

Herderhorst, Wilfred W.: *See*—
Daley, Roger J., and Herderhorst. 3,416,847.

Herigstad, George W.: *See*—
Turnbull, Roger F., and Herigstad. 3,416,491.

Hermann, Friedl E.: *See*—
Hey, Ernst F., Kuipers, Schiel, Hermann, Von Hoffmann, and Hinte. 3,416,470.

Herr Mfg. Co., Inc.: *See*—
Atwood, Hyatt B., and McLean. 3,416,303.

Herres, Schuyler A.: *See*—
Snow, Karl S., and Herres. 3,416,919.

Herschler, Robert J., to Crown Zellerbach Corp. Synergistic biocidal compositions and methods. 3,417,185, 12–17–68, Cl. 424—287.

Hess, Howard V.: *See*—
Eckert, George W., and Hess. 3,416,901.

Hessling, Heinz W.: *See*—
Gualandris, Emmanuel, and Hessling. 3,416,674.

Heusser, Dietrich, and H. Halpaap, to E. Merck A.G. Use of cellulose ethers in preparative layer chromatography. 3,416,993, 12–17–68, Cl. 161—193.

Hexcel Corp.: *See*—
Steele, Roger C. 3,416,983.

Hey, Ernst F., H. Kuipers, V. Schiel, E. E. Hermann, G. Von Hoffmann, F. Hinte, and E. Braun, to Deutsche Babcock & Wilcox-Dampfkellel-Werke Aktiengesellschaft. Method of controlling and/or regulating induced draught fans for waste heat boilers. 3,416,470, 12–17–68, Cl. 110—162.

Hibner, John A.: *See*—
Simonsen, Richard C., Blessum, and Hibner. 3,417,378.

Hickson's Timber Impregnation Co. (G.B.) Ltd.: *See*—
Nicholson, James, and Poole. 3,416,933.

Higgins, Larry L., to TRW Inc. Fluid velocity measuring device. 3,416,369, 12–17–68, Cl. 73—194.

High, Carl F. Engine fume discharge reduction systems. 3,416,503, 12–17–68, Cl. 123—119.

Hildebrandt, William J., to Veeder Industries Inc. Blend control device. 3,416,552, 12–17–68, Cl. 137—98.

Hilfinger, George C., and X. D. Johnson, to Wesley Industries, Inc. Drawer construction. 3,416,850, 12–17–68, Cl. 312—330.

Hill, Howard M. Machine for making open-ended containers. 3,416,413, 12–17–68, Cl. 93—55.1.

Hill, Jacques A. F.: *See*—
Nicholson, James E., Hill, and Wilson. 3,416,758.

Hill, Oiva E., to Norton Co. Machine tool. 3,416,263, 12–17–68, Cl. 51—101.

Hill, Robert C., to Minnesota Mining and Mfg. Co. Method and apparatus for X-ray fluorescence gauging of a higher atomic number selected element in a coating on a base. 3,417,243, 12–17–68, Cl. 250—83.3.

Hill, William F., to Joseph Lucas (Industries) Ltd. Oscillator-controlled indicator for battery charger system. 3,417,310, 12–17–68, Cl. 320—48.

Hille, Ernst: *See*—
Meininger, Fritz, Hille, and Osterloh. 3,417,073.

Hills-McCanna Co.: *See*—
McFarland, Rolland. 3,416,461.

Hilyard, Harold W., to Marwood Enterprises Inc. Tire changing machine. 3,416,588, 12–17–68, Cl. 157—1.17.

Hinrichs, Helmut, and F. Thoma, to Osterreichische Stickstoffwerke Aktiengesellschaft. Process for the production of iron oxide catalysts. 3,417,031, 12–17–68, Cl. 252—472.

Hinte, Franz: *See*—
Hey, Ernst F., Kuipers, Schiel, Hermann, Von Hoffmann, and Hinte. 3,416,470.

Hinton, Robert A., to Phillips Petroleum Co. Polymerization process using a multi-feed catalyst in order to crente a more active catalytic species. 3,417,070, 12–17–68, Cl. 260—94.3.

Hirsch, Lothar: *See*—
Probst, Otto, Hörnig, and Hirsch. 3,417,129.

Hitachi, Ltd.: *See*—
Murayama, Seiichi. 3,417,287.

Hitco: *See*—
Gutzeit, Carlos L., and Brown. 3,416,953.

Hittenberger, William H., K. C. Gobalet, and T. R. Baker, to Klikiok Corp. Method of heat bonding panels of paperboard having a thermoplastic coating. 3,416,411, 12–17–68, Cl. 93—36.

Hitzemann, Gerhard, A. Kulling, and H. Steinbach, to Titangesellschaft m.b.H. Process and apparatus for the manufacture of fine particle size titanium dioxide by reacting titanium tetrachloride with oxygen. 3,416,892, 12–17–68, Cl. 23—202.

Hitzeroth, Franklin C. to McGraw-Edison Co. Negator spring toaster. 3,416,431, 12–17–68, Cl. 99—391.

Hochner, Walter L.: *See*—
Brown, George T., Hochner, and Marston. 3,417,175.

Hodgson John, and R. O. Hall, to British Titan Products Co. Ltd. Process and apparatus for milling. 3,416,740, 12–17–68, Cl. 241—21.

Hoef, William A., to Edward Weck & Co., Inc. Topical arch tray. 3,416,527. 12–17–68, Cl. 128—260.

Hoenig, James R., to Continental Can Co., Inc. Reinforced metallic container. 3,416,702, 12–17–68, Cl. 220—70.

Hoffman, Joseph A., to American Cyanamid Co. 1,3,5-tris-[(B-aziridinyl)acrylyl]-hexahydrotriazine and process for making: the cured carboxy-terminated polymer and process for making. 3,417,059, 12–17–68, Cl. 260—78.4.

Hoffmann, Gunter F. M. Oil spray lubricating device. 3,416,489, 12–17–68, Cl. 118—227.

Hoffmann, Irmgard: *See*—
Kuch, Heinz, Seidl, and Hoffmann. 3,417,085.

Hoffmann, Otto L.: *See*—
Zeisig, Harry C., Jr., and Hoffmann. 3,416,913.

Hohmann, Albert, to Taller & Cooper, Inc. Ticket dispenser with automatic feed and signal. 3,416,705, 12–17–68, Cl. 221—2.

Holden, Edwin C.: *See*—
Stixrood, Jarvis A., Bruce, and Holden. 3,416,773.

Holden, Robert B., to United Shoe Nuclear Corp. Electrochemical device for transferring hydrogen. 3,417,009, 12–17–68 Cl. 204—299.

Holk, Albert J.: *See*—
Jasper, John C., and Holk. 3,416,700.

Hollenton, Frank, to American Machine & Foundry Co. Multi duty rake type batch collator. 3,416,641, 12–17–68, Cl. 198—32.

Holliday Stanley R., to Rice Filter, Inc. Continuous self-evacuating air cleaner. 3,416,294, 12–17–68, Cl. 55—431.

Holmes, Conrad D.: *See*—
Smith, Richard E., Holmes, and Henkel. 3,417,280.

Holonyak, Nick, Jr.: *See*—
Hall, Robert N., and Holonyak. 3,417,248.

Holton, Morris J., and S. Hasson, to Advance Transformer Co. Electrical terminal device and method of forming the same. 3,417,366, 12–17–68, Cl. 339—96.

Holub, Fred F.: *See*—
Gaertner, Richard F., and Holub. 3,417,042.

Holzemer, Ferdinand, to Wilhelm Hegenscheidt Kommanditgesellschaft. Cleaning apparatus. 3,416,545, 12–17–68, Cl. 134—129.

Honchar, Andrew P., to National Lead Co. Process for producing a titanium sulfate solution and a TiO_2 concentrate from a titaniferous ore. 3,416,885, 12–17–68, Cl. 23—117.

Honeywell Inc.: *See*—
Davis, Wilbern F. 3,416,790.
Freeborn, John C. 3,417,283.
Jaeger, Robert B. 3,417,258.
Masterson, Earl E., and Schaller. 3,416,788.

Hoover, Andrew C., Jr. Cigarette filter. 3,416,541, 12–17–68, Cl. 131—266.

Hopkins, Richard S. Hood and deck tool to assist in the repair of automobile hoods and deck lids. 3,416,353, 12–17–68, Cl. 72—446.

Hornberger, Leon B.: *See*—
Kelly, William T., Hornberger, and Strief. 3,416,960.

Hörnig, Lothar: *See*—
Probst, Otto, Hörnig, and Hirsch. 3,417,129.

Hornung, Louis M.: *See*—
Heard, Roderick S., and Hornung. 3,417,379.

Hort, Eugene V.: *See*—
Merijan, Ashot, Grosser, and Hort. 3,417,054.

Hoste, Marcel B.: *See*—
Kadah, Hassan B., and Hoste. 3,417 253.

Hostettler, Fritz, and E. F. Cox, to Union Carbide Corp. Cyclic carbonates. 3,417,104, 12–17–68, Cl. 260—340.2.

Hondaille Industries, Inc.: *See*—
Rutz, Leon E. 3,416,392.

Hough. Ralph L., to United States of America, Air Force. Method for the pyrolytic deposition of silicon carbide. 3,416,951, 12–17–68, Cl. 117—106.

Houk, Richard D., to Morse Controls Inc. Control device for locking a shaft against axial translation. 3,416,390, 12–17–68, Cl. 74—531.

Houle, James F., and G. R. Van Norman, to Eastman Kodak Co. Process for preparation and separation of light sensitive stabilized diazo resins. 3,417,055, 12–17–68, Cl. 260—72.5.

Houtz, Charles C., and W. McMahon, to Bell Telephone Laboratories, Inc. Production of aluminum, magnesium, and nickel fluoride films by anodization. 3,417,004, 12–17–68, Cl. 204—14.

Hovden, Robert A., to Cargill, Inc. Aminocarboxylic acids and salts thereof. 3,417,136, 12–17–68, Cl. 260—534.

Hoy, Charles D., to Task Corp. Tensioned rotor construction for dynamoelectric machines. 3,417,272, 12–17–68, 310—261.

Hoy, Kenneth L., to Union Carbide Corp. Polymerization process for manufacturing polycyclic polyether polyols of controlled molecular weight. 3,417,034, 12–17–68, Cl. 260—2.

Hubbard, Peter J., to Dorr-Oliver Inc. Filter backwash means. 3,416,669, 12–17–68, Cl. 210—333.

Hudson, Frederick W., to Xerox Corp. Xerographic development electrode. 3,416,494. 12–17–68, Cl. 118—637.

Huebler, Jack, R. B. Rosenberg, and W. F. Rush, to Institute of Gas Technology. Self-cleaning gas oven. 3,416,509, 12–17–68, Cl. 126—21.

Hughes Aircraft Co.: *See*—
Cabezas, Amado Y., and De Shazer. 3,417,345.
Pariser, Jack J. 3,417,374.
Yatsiv, Shaul. 3,417,346.

Hughes, Gordon A., and H. Smith; said Hughes assor. to said Smith. Synthesis of gon-5(6) and 5(10)-enes. 3,417,081, 12–17–68, Cl. 260—239.55.

Hughes, Gordon A., and H. Smith; said Hughes assor. to said Smith. 9,10-secogonenes. 3,417,105, 12–17–68, Cl. 260—340.9.

Hughes, Roland L.: *See*—
Best, William V., and Hughes. 3,416,890.

Hugson, Geoffrey D., to International Paper Co. Process for drying web material. 3,416,236, 12–17–68, Cl. 34—23.

Huisman, Henderikus, J. G. Westra, W. N. Speckamp, and U. K. Pandit. 8,(9)-Dehydro-6-thiaestrone-3-methyl ether. 3,417,100, 12–17–68 Cl. 260—327.

Hulbert, John K., to Bell Aerospace Corp. Autopilot for jet belt. 3,416,753 12–17–68, Cl. 244—4.

Hull, R. Dell. Spinning reel brake. 3,416,746, 12–17–68, Cl. 242—84.5.

Humphriss, Deryck. Subjective sight-testing equipment. 3,416,856, 12–17–68, Cl. 351—17.

Hunger, Herbert F., N. J. Sanfilippo, and J. E. Wynn, to United States of America, Army. Electrochemical cell. 3,416,963, 12–17–68, Cl. 136—6.

Hunter, Joseph W.: *See*—
Golbeck, Bernard J., and Hunter. 3,416,401.

Huret, Jacques A.: *See*—
Huret, Roger H., and J. A. 3,416,387.

Huret, Roger H., and J. A. Translation movement control device. 3,416,387, 12–17–68, Cl. 74—473.

Husqvarna Vapenfabriks Aktiebolag: *See*—
Larsson, Sven G. O. 3,416,253.

Hutchins, Marlyn R., to Raven Industries, Inc. Locking cover for a coin box. 3,416,337, 12–17–68, Cl. 70—284.

Hutchinson, Benjamin M. Bridge assemblies. 3,416,175, 12–17–68, Cl. 14—1.

Hutchinson, Thomas K. Mold press and carriage. 3,416,592, 12–17–68, Cl. 164—210.

Hutkin, Irvin J., to Whittaker Corp. Filamentary thermal cell with ionically conductive glass coating. 3,416,971, 12–17–68, Cl. 136—205.

Hyde Park Electronics: *See*—
Breidenbach, Victor S. 3,417,327.

Hyltin, Tom M.: *See*—
Cooke, Harry F., Hyltin, and Vincent. 3,417,393.

Hyster Co.: *See*—
Kronholm, Donald D. 3,416,419.

IIT Research Institute: *See*—
Camras, Marvin. 3,416,949.

I-T-E Circuit Breaker Co.: *See*—
Di Marco, Bernard. 3,417,358.

Ideal Industries, Inc.: *See*—
McDonald, Harrison M. 3,416,227.

Imamura, Harry H., to Minigrip, Inc. Seal for bags. 3,416,199, 12–17–68, Cl. 24—201.

Imperial Chemical Industries Ltd.: *See*—
Cooper, Albert C., White, and Wilkinson. 3,417,048.
Keith, Donald G. 3,417,168.
McIntyre, James E., and Robertson. 3,416,952.

Industrie-Werke Karlsruhe Aktiengesellschaft: *See*—
Muller, Artur. 3,416,205.

Inoue, Kiyoshi. Method of and apparatus for electrical machining of metallic workpieces. 3,417,006, 12–17–68, Cl. 204—143.

Institut de Recherches de la Siderurgie Francaise: *See*—
Beaujard, Louis, and Mondot. 3,416,366.

Institute of Gas Technology: *See*—
Huebler, Jack, Rosenberg, and Rush. 3,416,509.
Khan, Amanullah R. 3,416,904.

Integrated Development and Mfg. Co.: *See*—
Davis, Noel, and Merchant. 3,416,328.

Intercon Research, Inc.: *See*—
Caputo. Arnold P., Schupack, and McDonald. 4,416,276.

International Business Machines Corp.: *See*—
Akmenkalns, Ivars G., Wilfinger, and Wilson. 3,417,249.
Armstrong, William J., Healy, and Duffy. 3,416,224.
Brown, Edgar A., and Chou. 3,416,442.
Hasbrouck, Leo J., Ossolinski, and Smith. 3,417,380.
Heard, Roderick S., and Hornung. 3,417,379.
Kalthoff, Clement H., and Rigbey. 3,416,535.
Kolpek, Robert A. 3,417,202.
Miller, Donald L., Spillman, Stokowski, and Wharmby. 3,416,440.
Sincerbox, Glenn T. 3,417,381.
Utley, Brian G. 3,417,236.
Walsh, James L. 3,417,261.

International Fastener Corp.: *See*—
Greenleaf, Richard J. 3,416,492.

International Harvester Co.: *See*—
Cobb, David A. 3,416,595.
Fischer, Raymond C. 3,416,611.
Kolthoff, C. Paul, Jr. 3,416,624.
Margolin. William. 3,416,312.
Simpson, Forrest L., and Robertson. 3,416,297.

International Lead Zinc Research Organization, Inc.: *See*—
Overmars, Henricus G. J. 3,417,113.

International Oil Burner Co.: *See*—
Barbier, Jean Y., and Papke. 3,417,227.

International Paper Co.: *See*—
Hughson, Geoffrey D. 3,416,236.

International Silver Co., The: *See*—
Landen, William J. 3,416,868.

International Standard Electric Corp.: *See*—
Kocher. Klaus. 3,417,342.
Ridler. Desmond S., George, Butcher, and Kitajewski. 3,417,383.
Ulrich, Friedrich. 3,417,376.

Irani, Riyad R., to Monsanto Co. Acid compositions. 3,416,930, 12–17–68, Cl. 99—28.

Irgens, Finn T., to Outboard Marine Corp. Chain saw bar. 3,416,578, 12–17–68, Cl. 143—32.

Inventa A.G. fur Forschung und Patentverwertung: *See*—
Capaul, Marcel, Matsuya, and Edinger. 3,416,886.

Itek Corp.: *See*—
Heller, Stanley, Anderson, and Berlin. 3,417,269.

Jackson, Harold E., ¼ to Petrol Injection Ltd. Fuel injection systems. 3,416,504, 12–17–68, Cl. 123—139.

Jackson, Harold E., ½ to Petrol Injection Ltd. Fuel injection nozzles. 3,416,738, 12–17–68, Cl. 239—588.

Jacobsen Mfg. Co.: *See*—
Kaufman Vernon R. 3,416,295.

Jacobson, Norman: *See*—
Henselman, Richard O., and Jacobson. 3,417,010.

Jaeger, Robert B., to Honeywell Inc. Magnetic core bipolar discriminator. 3,417,258, 12–17–68, Cl. 307—88.

James, Horace A. Foot washer and massager. 3,416,178, 12–17–68, Cl. 15—104.92.

Japan Gas-Chemical Co.: *See*—
Matsumoto, Tetsuro, and Tamano. 3,417,092.

Jhrund, Harry S. V. Multiple pack in band form for protective sheaths for thermometers. 3,416,651, 12–17–68, Cl. 206—56.

Jasper, John C., and A. J. Holk, to Continental Can Co., Inc. Safety device for easy opening container ends. 3,416,700, 12–17–68, Cl. 220—54.

Jenks, David M., to McDonnell Douglas Corp. Reduction driver. 3,416,582, 12–17–68, Cl. 145—50.

Jensen, Howard J., K. D. Richmond, A. W. Brooks, and D. L. Waugh, to Dayco Corp. Power transmission belts. 3,416,383, 12–17–68, Cl. 74—233.

Jensen, James N., to Ametek, Inc. Speed sensing switch for rotary drums and the like. 3,417,289, 12–17–68, Cl. 317—5.

Johansson, Arne, to Allmanna Svenska Elektriska Aktiebolaget. Relay protection means for HVDC transmission system, 3,417,291, 12–17–68, Cl. 317—31.

Johns-Manville Corp.: *See*—
Burns, Allan F. 3,417,018.
Stelchek, Charles G. 3,416,995.

Johns-Nigrelli-Johns, Inc.: *See*—
Standley, Wendell E., Wittmann, and Karlovitz. 3,416,285.

Johnson, Bernard A., and M. Adamski, Jr., to Fuller Co. Surface area measurement of variable length sample of finely divided solids. 3,416,376, 12–17–68, Cl. 73—432.

Johnson, John D., to Allsports & Marine of Michigan, Inc. Telescopic fishing pole. 3,416,255, 12–17–68, Cl. 43—18.

Johnson, Dawson A. Swimming pool backwall forming method and structure, 3,416,268, 12–17–68, Cl. 52—169.

Johnson, Ralph E., to The Singer Co. Construction of bobbin case rotation restraining means. 3,416,472, 12–17–68, Cl. 112—184.

Johnson, Waldo O., to Weather-Seal, Inc. Tilt-out magnetic slidable sash guide. 3,416,260, 12–17–68, Cl. 49—404.

Johnson, Xa D.: *See*—
Hilfinger, George C., and Johnson. 3,416,850.

Jones, Grady M. Lateral bend conveyor system. 3,416,645. 12–17–68, Cl. 198—181.

Jones, John R.: *See*—
Hambling, James K., and Jones. 3,417,160.

Jono, Kazuo: *See*—
Fukuma, Norboru, Jono, Kihara, and Midorikawa. 3,416,188.

Jordan, Walter F. Electrical musical high chair with potty. 3,416,163, 12–17–68, Cl. 4—134.

Joseph, Pierre, to Edouard Dubied & Cie. (Societe Anonyme). Patterning device for jacquard circular knitting machines. 3,416,332, 12–17–68, Cl. 66—50.

Joseph, Raymond S., and R. B. Ashley, to General Electric Co. Magnetic shield for cathode ray tube. 3,417,201. 12–17–68, Cl. 178—7.82.

Juby, Peter F., to Bristol-Myers Co. Certain 5-(1-benzoyl-3-indolylmethyl) tetrazoles. 3,417,096, 12–17–68, Cl. 260—308.

Judd, Claude I.: *See*—
Schnettler, Richard A., Suh, and Judd. 3,417,118.

Justus, Edgar J.: *See*—
Dahl, Carl B., and Justus. 3,416,435.

K.W. Battery Co.: *See*—
Boles, David B., and Dravnieks. 3,416,965.

Kabushi Kaiska Komatsu Seisakusho (Komatsu Mfg. Co. Ltd.): *See*—
Yoshizawa, Heiji. 3,416,311.

Kabushiki Kaisha Honda Gijutsu Kenkyusho: *See*—
Hattori, Torao. 3,416,393.

Kabushiki Kaisha Kobayashi Kose: *See*—
Nakayama, Michiko. 3,416,718.

Kabushiki Kaisha Obara Kogaku Carasu Seizosho: *See*—
Enomoto, Goro. 3,416,937.

Kadah, Hassan B., and M. B. Hoste, to Minnesota Mining and Mfg. Co. Compact pulse generating device utilizing a lucent epoxy resin encapsulated transistor. 3,417,253, 12–17–68, Cl. 250—233.

Kadivnik, Norman H., to Stewart-Warner Corp. Oil mist particle density detection method and apparatus utilizing a stable oil coating and a unijunction oscillator circuit. 3,417,250, 12–17–68, Cl. 250—218.

Kadri, Fred V., to Bell Telephone Laboratories, Inc. Regulated power supply comprising a plurality of isolated systems. 3,417,250, 12–17–68, Cl. 307—43.

Kahn, Paul, to Cutter Laboratories, Inc. Blood handling equipment. 3,416,528, 12–17–68, Cl. 128—214.2.

Kaiser Aluminum & Chemical Corp.: *See*—
Dey, Chester, and Smith, 3,417,166.
Foster, Thomas W. F. 3,417,166.

Kalenda, Norman W., to Eastman Kodak Co. Silver halide emulsions containing supersensitizing combinations of merocyanine dyes. 3,416,927, 12–17–68, Cl. 96—100.

Kalt, Charles G., and F. D. Frantz, Jr., to Sprague Electric Co. Electro-chemical optical display. 3,416,248, 12–17–68, Cl. 40—52.

Kalthoff, Clement H., and L. J. Rigbey, to International Business Machines Corp. Selection apparatus. 3,416,535, 12–17–68, Cl. 129—16.1.

Kane, John J.: *See*—
Conner, James P., and Kane. 3,416,745.

Kantorowicz, Gerard, to CSF-Compagnie Generale de Telegraphie Sans Fil. Traveling wave time delay device having a magnetic field in the drift region different from that in the delay line regions. 3,417,280, 12–17–68, Cl. 315—3.6.

Kaplan, Berta L.: *See*—
Balashkand, Mikhail I., Evdokimov, Kaplan, Loviya, Solodilov, and Chen. 3,416,621.

Karlovitz, John E.: *See*—
Standley, Wendell E., Wittmann, and Karlovitz. 3,416,285.

Karr, James F. Releasable hanger for hoisting equipment. 3,416,830, 12–17–68, Cl. 294—5.5.

Kasten, Walter, to The Bendix Corp. Shut-off valve for fuse filter. 3,416,665, 12–17–68, Cl. 210—90.

Kasten, Walter, to The Bendix Corp. Shut-off valve for fuse filter. 3,416,666, 12–17–68, Cl. 210—96.

Kaucher, Erwin K., J. F. McLay, and R. H. Weingrad, to Fischer & Porter Co. Tube type fluid meter and construction thereof. 3,416,370, 12–17–68, Cl. 73—209.

Kauffman, John E., to Texas Instruments Inc. Economy high power package. 3,417,300, 12–17–68, Cl. 317—234.

Kaufman, Boris: *See*—
Smeloff, Edward A., Davey, and Kaufman. 3,416,159.

Kaufman, Irving, to TRW Inc. Microwave harmonic generator and mixer with idling circuit. 3,417,317, 12–17–68, Cl. 321—69.

Kaufman, Vernon R., to Jacobsen Mfg. Co. Rotary lawn mower with gasoline engine. 3,416,295, 12–17–68, Cl. 56—25.4.

Kaumagraph Co.: *See*—
Brown, George T., Hochner, and Marston. 3,417,175.

Kawanee Oil Co.: *See*—
Keramidas, Basilio G., and Schaefer. 3,416,956.

Keahl, Gerald T., and N. J. Van Slooten, to Beckman Instruments, Inc. Circular variable interference filter monochromator. 3,416,864, 12–17–68, Cl. 356—100.

Keith, Donald G., to Imperial Chemical Industries Ltd. Production of laminates. 3,417,168, 12–17–68, Cl. 264—40.

Keller, Max: *See*—
Zweidler, Reinhard, and Keller. 3,416,945.

Kelly, William T., L. B. Hornberger, and M. J. Strief, to Beckman Instruments, Inc. Cermet resistors, their composition and method of manufacture. 3,416,960, 12–17–68, Cl. 117—224.

Kelm, Walter H.: *See*—
Contrucci, Raymond J., Kelm, and Schrier. 3,416,209.

Kelsey-Hayes Co.: *See*—
Swift, Harvey C. 3,416,634.

Kelsey, Martin C., E. R. Loyd, Jr., and J. F. Rollins, to Rayflex Exploration Co. Gas leak surveying. 3,416,357, 12–17–68, Cl. 73—23.

Kennedy, Michael E., III, to Peter Kennedy Inc. Composite metal and plastic ski and method of manufacture for said ski. 3,416,810, 12–17–68, Cl. 280—11.13.

Kennedy, Peter, Inc.: *See*—
Kennedy, Michael E., III. 3,416,810.

Kenny, Charles R., to General Precision Systems Inc. Magnetron pulse current regulator. 3,417,343, 12–17–68, Cl. 331—87.

Kent, Francis J., and O. Hammon, to Baldwin-Lima-Hamilton Corp. Extrusion apparatus and method. 3,416,349, 12–17–68, Cl. 72—270.

Kentucky Electronics, Inc.: *See*—
Merchant, Chester O. 3,417,220.

Keramas, James G. Apparatus for aligning and labeling limp packages. 3,416,987, 12–17–68, Cl. 156—363.

Keramidas, Basilio G., and J. C. Schaefer, to Kawanee Oil Co. Process for forming a barrier in a cadmium sulfide solar cell. 3,416,956, 12–17–68, Cl. 117—200.

Kervin, Willis D. Gas mixing valve. 3,416,570, 12–17–68, Cl. 137—625.17.

Kesling, David L. Orthodontic uprighting spring. 3,416,229, 12–17–68, Cl. 32—14.

Ketterl, Alfred: *See*—
Ballreich, Kurt, Ketterl, and Spranger. 3,416,450.

Keuffel & Esser, Co.: *See*—
Süs, Oskar, and Schäfer. 3,416,925.

Kewanee Oil Co.: *See*—
Towle, Jack L., and Meek. 3,417,139.

Khan, Amanullah R., to Institute of Gas Technology. Process for generation of hydrogen from liquid hydrocarbons. 3,416,904, 12–17–68, Cl. 48—214.

Kihara, Toshihiko: *See*—
Fukuma, Norboru, Jono, Kihara, and Midorikawa. 3,416,188.

Kilgore, Marion D.: *See*—
Crow, Morgan L., Kilgore, and Pumpelly. 3,416 608.

Kilgore, Marion D., to Dresser Industries, Inc. Well packer with by-pass valve. 3,416,609, 12–17–68, Cl. 166—131.

King, Phillip W.: *See*—
Long, Alfred, Roth, King, and Van Dyck. 3,416,897.

Kinner, Hans-Dieter, to The Foxboro Co. Fluid diffusion logic system. 3,416,551, 12–17–68, Cl. 137—81.5.

Kirk, Peter Geoffrey: *See*—
Bondy, Herbert F., Williams, and Kirk. 3,417,150.

Kirschner, Linda R.: *See*—
Torsiello, Joseph, Reiss, and Lawrence. 3,416,429.

Kirwan, Harry O.: *See*—
McWhorter, Wayne F., Kirwan, and Banfield. 3,417,140.

Klsa, Gabriel, and E. Peitry, to Sonotone Corp. Battery charging and discharging control system. 3,417,307, 12–17–68, Cl. 320—9.

Kitajewski, Ryszard: *See*—
Ridler, Desmond S., George, Butcher, and Kitajewski. 3,417,383.

Kizer, Donald E., and D. E. Lozier, to United States of America, Atomic Energy Commission. Method of preparing spherical uranium nitride particles having a porous interior. 3,417,167, 12–17–68, Cl. 264—.5.

Klancnik, Adolph V. Machine tools. 3,416,173, 12–17–68, Cl. 10—107.

Kleinhet, Samuel. Shopping bag or the like. 3,416,720, 12–17–68, Cl. 229—54.

Klemme, William R. Ventilated toilet. 3,416,167, 12–17–68, Cl. 4—217.

Klemme, William R. Fireplace ash remover. 3,416,514, 12–17–68, Cl. 126—242.

Kliklok Corp.: *See*—
Hittenberger, William H., Gobalet, and Baker. 3,416,411.

Kmiecik, James E., to Columbian Carbon Co. Method for producing 9,10-diazaphenanthrene. 3,417,088, 12–17–68, Cl. 260—250.

Knak, James L., to The Bendix Corp. Regulated voltage capacitor discharge circuit. 3,417,306, 12–17–68, Cl. 320—1.

Knapp, Eugene J., to Corning Glass Works. Reduction of cycle time by the use of heated expanded polystyrene beads. 3,417.170. 12–17–68, Cl. 264—51.

Knoll, Frederick A., and A. C. Scandalis, to Fairchild Hiller Corp. Aircraft ejection seat separation and retardation system. 3,416,755, 12–17–68, Cl. 244—122.

Knoll, Nicholas, to United States of America, Army. Method of curing a nitrose rubber containing carboxylic acid groups with chromium trifluoroacetate and chromic acetate. 3,417,068. 12–17–68, Cl. 260—92.1.

Knospe, Robert H., to E. I. du Pont de Nemours and Co. Differential shrinkage yarn. 3,416,302, 12–17–68, Cl. 57—140.

Knox, Anne A.: *See*—
Knox, Lawrence H. 3,417,111.

Knox, Lawrence H., deceased, by A. A. Knox, to Syntex Corp. 10-formyl fluoride and -acetyl steroids and processes for their preparation. 3,417,111, 12–17–68, Cl. 260—397.1.

Kobnick, Werner, to Berg Mfg. & Sales Co. Brake pressure regulator. 3,416,843, 12–17–68, Cl. 303—54.

Kocher, Klaus, to International Standard Electric Corp. Automatic frequency control system. 3,417,342, 12–17–68, Cl. 331—12.

Koegel, James H., to Robertshaw Controls Co. Stepping motor and control means. 3,417,270, 12–17–68, Cl. 310—49.

Koerner, Gotz, to Th. Goldschmidt A.G. Substituted 1,2-silthiacyclopentanes and process for producing the same. 3,417,121, 12–17–68, Cl. 260—448.2.

Kogan, Leo, to Monsanto Co. Weather-tight reverse locking device. 3,416,259, 12–17–68, Cl. 49—320.

Kohant, Betty. Arrangement for hanging curtains. 3,416,672, 12–17–68, Cl. 211—103.

Kohler, Alfred: *See*—
Deutscher, Hans-Christian, Bauer, and Kohler. 3,416,180.

Kohll, Charles F., and N. Fekkes, to Shell Oil Co. Preparation of aromatic nitriles by the liquid phase dehydration of amides. 3,417,124, 12–17–68, Cl. 260—465.

Kokaly, Joseph, to Caterpillar Tractor Co. Dual pressure relief valve with shock damping. 3,416,561, 12–17–68, Cl. 137—491.

Kolaian, Jack H., and J. H. Park, to Texaco Inc. Drilling fluid. 3,417,017, 12–17–68, Cl. 252—8.5.

Kolpek, Robert A., to International Business Machines Corp. System for recording, reproducing and communicating digital and audio signals with control adjuncts for operator use. 3,417,202, 12–17–68, Cl. 178—31.

Kolthoff, C., to International Harvester Co. Tractor drive and load arrangement. 3,416,624, 12–17–68, Cl. 180—14.

Koltuniak, Michael A., to The Udylite Corp. Switch for electrochemical processes. 3,417,008, 12–17–68, Cl. 204—225.

Kolyer, John M.: *See*—
Downing, Frank P., Kolyer, and Chen. 3,417 097.
Downing, Frank P., Kolyer, and Opalewski. 3,417,178.

Komplex Nagyberendezesek Export-Inport Vallalata: *See*—
Szucs, Laszlo, Tasnadi, and Linder. 3,416,775.

Konig, Claus: *See*—
Pelster, Heinrich, Konig, and Putter. 3,417,090.

Kopfil, Josef. Motor or pump operating machine. 3,416,458, 12–17–68, Cl. 103—125.

Kopp, Charles: *See*—
Pfeifer, Raymond B., and Kopp. 3,416,467.

Kopp, Philip E. Clay tile building block with passageways. 3,416,281, 12–17–68, Cl. 52—606.

Koreska, W.: *See*—
Schutzner, Walter, and Mock. 3,416,942.

Kosa, Gabriel: *See*—
Mandel, Lazaro, and Kosa. 3,417,308.

Kotila, Claudius F., to Good-Ko Industries, Inc. Automatic material release device. 3,416,643, 12–17–68, Cl. 198—34.

Kramer, Frank J., Jr., to D. H. Baldwin Co. Keying system for electronic musical percussion simulator. 3,417,189, 12–17–68, Cl. 84—1.19.

Kramer, Max J., to Aluminum Co. of America. X-ray thickness gauge with correction for specimen composition. 3,417,244, 12–17–68, Cl. 250—83.3.

Kramer, Sol, and C. Gretz, to Life-Like Products, Inc. Combined latch and handle. 3,416,701, 12–17–68, Cl. 220—55.

Kraus, Willibald, to L. & C. Steinmuller G.m.b.H. Branch current heat exchange with injection cooler. 3,416,599, 12–17–68, Cl. 165—145.

Krehbiel, John H. Switch connector. 3,417,214, 12–17–68, Cl. 200—51.

Krehbiel, John H., to Molex Products Co. Electrical connector. 3,417,365, 12–17–68, Cl. 339—91.

Kremer, Charles J., to Atlantic Richfield Co. Wax-polymer compositions and method of making same. 3,417,040, 12–17–68, Cl. 260—27.

Kretschmar, Herbert C., to The Procter & Gamble Co. Irradiation of β,γ-unsaturated bicyclic-cyclohexanones to form β,γ-unsaturated bicyclic-cyclobutanones. 3,417,143, 12–17–68, Cl. 260—586.

Kronholm, Donald D., to Hyster Co. Tandem roller. 3,416,419, 12–17–68, Cl. 94—50.

Krueger, Theodore H., Jr. Screen stencil with separate border strips. 3,416,445, 12–17–68, Cl. 101—128.1.

Kuceski, Vincent P., to The C. P. Hall Co. Method of making amides from moisture and acid-gas containing esters. 3,417,114, 12–17–68, Cl. 260—404.

Kuch, Heinz, G. Seidl, and I. Hoffmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 3,1-Benzothiazines and 3,1-benzoxazines. 3,417,085, 12–17–68, Cl. 260—243.

Kuecken, John A., to Avco Corp. Threshold servo control system. 3,417,253, 12–17–68, Cl. 307—39.

Kuhne, Rudolf, F. Meininger, W. Noll, H. Rinno, and S. Schiessler, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Metalliferous mono azo dyestuffs. 3,417,074, 12–17–68, Cl. 260—151.

Kuipers, Hans: *See*—
Hey, Ernst F., Kuipers, Schiel, Hermann, Von Hoffmann, Hinte, and Braun. 3,416,470.

Kulling, Achim: *See*—
Hitzemann, Gerhard, Kulling, and Steinbach. 3,416,892.

Kullman, Russell M. H., J. G. Frick, Jr., R. M. Reinhard, and J. D. Reid, to United States of America, Agriculture. Modification of cellulosic textiles with methylolated hydroxyalkyl carbamates. 3,416,880, 12–17–68, Cl. 8—116.3.

Kulman, Herman M. Protective glove. 3,416,158, 12–17–68, Cl. 2—161.

Kumme, Herman L., and J. F. Lontz. Artificial kidney. 3,416,664, 12–17–68, Cl. 210—87.

Kunkle, John P., W. J. Garver, and H. J. Dell, to AMP Inc. Fluorescent tube socket safety lock. 3,417,364, 12–17–68, Cl. 339—54.

Kunnemann, Elmer A., to Dresser Industries, Inc. Shrouded bit. 3,416,618, 12–17–68, Cl. 175—339.

Kupferberg, Kenneth, to Forbro Design Corp. Heat sink for forced air or convection cooling of semiconductors. 3,416,597, 12–17–68, Cl. 165—80.

Kurland, Jacob: *See*—
Lubman, Seymour A., and Kurland. 3,416,375.

L. & C. Steinmuller G.m.b.H.: *See*—
Kraus, Willibald. 3,416,599.

Labat, Pierre, to Societe Anonyme de Vehicules Industriels et d'Equipements Mecaniques Saviem. Pneumatic double-acting control devices. 3,416,409, 12–17–68, Cl. 92—8.

Laboratory for Electronics, Inc.: *See*—
Gould, Floyd T. 3,416,883.

Lace, Donald A. Moving coil electro-mechanical device. 3,417,268, 12–17–68, Cl. 310—27.

Lafuze, David L.: *See*—
Peaslee, Lawrence R., and Lafuze. 3,417,293.

La Grouw, Johannes: *See*—
Van Loghem, Johannes J., and La Gouw. 3,416,275.

La Gue, David J., to The Flexicore Co., Inc. Thin pre-stressed concrete slab. 3,416,272, 12–17–68, Cl. 52—223.

Lalmond, Harold W.: *See*—
Shomphe, George J., Tabor, and Lalmond. 3,417,229.

Lamb-Grays Harbor Co., Inc.: *See*—
Turnbull, Roger F., and Herigstad. 3,416,491.

Lamb, Irvin E., and R. W. Harman, to Aerojet-General Corp. Method of testing transparent materials. 3,417,240, 12–17–68, Cl. 250—71.

Lambein, Glen H., to T. Whiting Mfg., Inc. Cargo truck rear door. 3,416,589, 12–17–68, Cl. 160—201.

Lampkin, John O., Jr., to General Electric Co. Identification circuit. 3,417,373, 12–17–68, Cl. 340—172.5.

Land, Edwin H., to Polaroid Corp. Photographic apparatus with rangefinder-aperture control. 3,416,426, 12–17–68, Cl. 95—44.

Land, Edwin H., and W. H. Ryan, to Polaroid Corp. Comparison photometer using lenticular screen. 3,416,866, 12–17–68, Cl. 356—230.

Landauer, Franz: *See*—
Beermann, Claus, Landauer, and Schmidt. 3,417,061.

Landen, William J., to The International Silver Co. Lipstick or the like container. 3,416,868, 12–17–68, Cl. 401—61.

Landis, David M., and G. A. Rost, to Beckman Instruments, Inc. Toroidal conductivity measuring system. 3,417,329, 12–17–68, Cl. 324—62.

Lane, Arthur H.: *See*—
Elmes, Robert T., and Lane. 3,416,309.

Langenohl, Hans-Joachim, to Fritz Sommer Nachf. Cylinder for plastic injection molding machines. 3,416,405, 12–17–68, Cl. 91—25.

Larson, Melvin H., to Aerojet-General Corp. System for remote control of missiles. 3,416,751, 12–17–68, Cl. 244—3.13.

Larsson, John, to Aktiebolaget Karlstads Mekaniska Werkstad. Screens, particularly for wood chips. 3,416,660, 12–17–68, Cl. 209—254.

Larsson, Sven G. O., to Husqvarna Vapenfabriks Aktiebolag. Guide means for bolt-action firearms. 3,416,253, 12–17–68, Cl. 42—16.

Lautenschlaeger, Friedrich K., to The Dunlop Co. Ltd. Production of episulphides. 3,417,099, 12–17–68, Cl. 260—327.

Lawendel, Jean S.: *See*—
Ponzini, Sandro, Castelli, and Lawendel. 3,416,875.

Lawler, Daniel F., to The Wheel Rosary Co., Inc. Devotional article. 3,416,989, 12–17–68, Cl. 161—8.

Lawton, Ray A.: *See*—
Wittnebert, Frederick R., Lawton, and Dyson. 3,416,869.

Lear Siegler, Inc.: *See*—
Oxford, Keith E. 3,416,958.

Leary, Joseph A., L. J. Mullins, Jr., and J. F. Buchen, to United States of America, Atomic Energy Commission. Method and apparatus for improving recovery of plutonium-gallium alloys by electrorefining. 3,417,002, 12–17–68, Cl. 204—1.5.

Le Bouchage Mecanique: *See*—
Musy, Charles L. 3,416,474.

Ledig, Kurt W.: *See*—
Wendt, Gerhard R., and Ledig. 3,417,110.

Ledzion, Andrzej W., to Alupak A.G. Package and removable cover therefor. 3,416,697, 12–17–68, Cl. 220—54.

Lee, Denis E., to Joseph Lucas (Industries) Ltd. Heart valve. 3,416,563, 12–17–68, Cl. 137—519.

Lee, Edwin S., III, to Burroughs Corp. Memory system. 3,417,265, 12–17–68, Cl. 307—247.

Lee, Lieng-Huang: *See*—
Zimmerman, Robert L., and Lee. 3,417,162.

Lee Machinery Corp.: *See*—
Cahn, Leon J. 3,416,444.

Leesona Corp.: *See*—
Oswin, Harry G. 3,416,966.

Leffke, William O.: *See*—
Webb, James E. 3,416,274.

Lefort, Marcel J.: *See*—
Boissieraa, Jean, and Lefort. 3,417,120.

Legal, Casimer C., Jr., A. Richmond, and A. J. Bruno, Jr., to W. R. Grace & Co. Method of preventing reversion to citrate insoluble form. 3,416,910, 12–17–68, Cl. 71—39.

Leighton, Joseph T. Gas burner and fuel igniter for fireplaces. 3,416,733, 12–17–68, Cl. 239—407.

Leishman, Elmo G.: *See*—
Oleson, Raymond W., and Leishman. 3,416,230.

Leistner, Carl J., and A. W. Radtke, to Ultra Carbon Corp. Method of purifying graphite. 3,416,895, 12–17–68, Cl. 23—209.9.

Lenkei, Andrew, to Worthington Corp. Low resistance strip valve. 3,416,724, 12–17–68, Cl. 230—228.

Leonard, John M., and J. D. Bultman, to United States of America, Navy. Towed instrument for continuous measurement of ocean turbidity. 3,417,251, 12–17–68, Cl. 250—218.

Lepit S.p.A.: *See*—
Fabrucci, Aldo, Gianantonio, and Sacerdoti. 3,417,095.

Le Tourneau, Robert G. Control system for electrically powered vehicles. 3,417,304, 12–17–68, Cl. 318—149.

Lever Bros. Co.: *See*—
Goldwasser, Seymore. 3,417,024.
Nair, Govindan V., and Pandit. 3,417,109.

Levi, Hans L. Plastic foam housing with lock-on cover sleeve. 3,416,648, 12–17–68, Cl. 206—46.

Levin, Robert E., to Sylvania Electric Products Inc. Optical system for photocopying. 3,416,862, 12–17–68, Cl. 355—70.

Lewis, Bernard L., and L. Pietsch, to Radiation Inc. Modulated retrodirective corner reflector. 3,417,398, 12–17–68, Cl. 343—18.

Lewis, Carl O.: *See*—
Helm, Percy R., and Lewis. 3,416,622.

Lewis, G. B., Co.: *See*—
Frater, Allen H. 3,416,704.

Lewis, Hughie E., and W. Potter, Jr. Collapsible blocking dummy. 3,416,795, 12–17–68, Cl. 273—55.

Lewis, Richard L., to The Bendix Corp. Master cylinder. 3,416,316, 12–17–68, Cl. 60—54.6.

Lexington Laboratories, Inc.: *See*—
Waugh, Arthur. 3,416,905.

Liang, Po-Luag, to Ford Motor Co. Temperature sensitive control for a fluid pressure actuated valve. 3,416,554, 12–17–68, Cl. 137—116.3.

Liduma, Rudolf A. Electrostatic precipitator. 3,416,540, 12–17–68, Cl. 131—262.

Life-Like Products, Inc.: *See*—
Kramer, Sol, and Gretz. 3,416,701.

Lilly, Eli, and Co.: *See*—
Murphy, Hubert W., Stephens, and Conine. 3,417,077.

Lilly, William N., to Cone Mills Corp. Magnetic drafting system test apparatus. 3,416,368, 12–17–68, Cl. 73—141.

Limberger, Walter, and R. Wendt, to Lumoprint Zindler K.G. Photographic method of producing a copy from an endless silver surface. 3,416,920, 12–17–68, Cl. 96—27.

Linde A.G.: *See*—
Heinik, Peter. 3,416,323.

Linder, Istvan: *See*—
Szucs, Laszlo, Tasnadi, and Linder. 3,416,775.

Linderman, Garrett B., and H. T. Gibson. Can testing. 3,416,659, 12–17–68, Cl. 209—111.7.

Lindh, Thorsten L.: *See*—
Stark, Sven O. S., Melle, and Lindh. 3,416,716.

Line, L. C.: *See*—
Blocker, Andrew R. 3,416,256.

Linen Supply Association of America: *See*—
Rosenfeld, Howard. 3,416,238.

Ling, Edith M.: *See*—
Samuels, Bessie M., and Ling. 3,416,518.

Lingen, Alfred: *See*—
Pinaire, Lonnie W., and Lingen. 3,416,754.

Ling-Temco-Vought, Inc.: *See*—
Farmer, Bobby J. 3,417,318.
Linn, Carl B., and J. A. Vesely, to Universal Oil Products Co. Preparation of nitrated aromatic ethers. 3,417,146, 12–17–68, Cl. 260—609.
Liquidonics Industries, Inc.: *See*—
Felson, Ronald. 3,416,336.
List, Harold A., to Bethlehem Steel Corp. Automatic control system for rolling mills. 3,416,339, 12–17–68, Cl. 72—8.
List, William F., A. J. Demco, and J. D. Donaldson, to Westinghouse Electric Corp. Signal detection integration and level sensing system using thermal effect devices. 3,417,397, 12–17–68, Cl. 343—8.
Little, Arthur J., to Stewart-Warner Corp. Clock regulating apparatus. 3,416,304, 12–17–68, Cl. 58—85.5.
Little, Arthur J., to Stewart-Warner Corp. Ether injection assembly for internal combustion engine. 3,416,507, 12–17–68, Cl. 123—180.
Little, Lindsay S. Overload control for electric heater elements. 3,417,228, 12–17–68, Cl. 219—504.
Littwin, Arthur K., to A. K., R. L., and D. F. Littwin, and H. A. Young, as trustees under trust dated Jan. 2, 1951, known as Littwin Family Trust No. I. Apparatus for and method of magnetizing circumferential members. 3,417,295, 12–17–68, Cl. 317—123.
Littwin, Donald F.: *See*—
Littwin, Arthur K. 3,417,295.
Littwin, Robert L.: *See*—
Littwin, Arthur K. 3,417,295.
Livezey, William G., to General Motors Corp. Variable power and variable direction engine and compound planetary phase changing device. 3,416,308, 12–17–68, Cl. 60—24.
Lobley, Derek G., to D. & S. Engineering International Ltd. Table filter washer. 3,416,668, 12–17–68, Cl. 210—203.
Locke, John P., to F. W. Dwyer Mfg. Co. Flow meter with electrical read-out. 3,416,371, 12–17–68, Cl. 73—209.
Logan, Frank G., to United States of America, Navy. Static converter with load potential control. 3,417,311, 12–17–68, Cl. 321—2.
Lombardo, Pasquale: *See*—
Newallis, Peter E., and Lombardo. 3,417,165.
Long, Alfred, E. S. Roth, P. W. King, and K. A. Van Dyck, to Olin Mathieson Chemical Corp. Chemical dissolver for feeding a solution. 3,416,897, 12–17–68, Cl. 23—267.
Long, George E., and H. G. Anson. Control system for flexible and sectionalized screeds. 3,416,416, 12–17–68, Cl. 94—46.
Lontz, John F.: *See*—
Kumme, Herman L., and Lontz. 3,416,664.
Lookabaugh, Robert E. Method and apparatus for examining visual fields incorporating optical light target projection means and transparent overlay record chart. 3,416,857, 12–17–68, Cl. 351—31.
Lord Corp.: *See*—
Warnaka, Glenn E. 3,416,782.
Louks, Robert A. Apparatus for treating granular material. 3,416,239, 12–17–68, Cl. 34—211.
Love, Doris: *See*—
Eckert, George W., and Love. 3,416,903.
Lovlya, Sergei A.: *See*—
Balashkand, Mikhail I., Evdokimov, Kaplan, Lovlya, Solodilov, and Chen. 3,416,621.
Loyd, Edward R., Jr.: *See*—
Kelsey, Martin C., Loyd, and Rollins. 3,416,357.
Loyd, William E. Remote control weapon system. 3,417,198, 12–17–68, Cl. 178—6.8.
Lozier, Donald E.: *See*—
Klzer, Donald E., and Lozier. 3,417,167.
Lubman, Seymour A., and J. Kurland, to The Purdue Frederick Co. Adjustable measuring device. 3,416,375, 12–17–68, Cl. 73—429.
Lubrizol Corp., The: *See*—
Dorer, Casper J., Jr. 3,416,900.
Lucas, George B., to Rohm & Haas Co. Preparation of freely-soluble polymers of trinitratopentaerythrityl acrylate. 3,417,067, 12–17–68, Cl. 260—89.5.
Lucas, Joseph (Industries) Ltd.: *See*—
Freeman, Frank G. 3,416,562.
Hayward, Brian P. 3,417,221.
Hill, William F. 3,417,310.
Lee, Denis E. 3,416,563.
Luckins, John: *See*—
Sutherland, Charles A. O., and Luckins. 3,416,237.
Luders, Walter: *See*—
Messwarb, Gunter, Luders, Erdmann, and Steppan. 3,417,051.
Messwarb, Gunter, Luders, Munder, and Steppan. 3,417,052.
Lueder, Holger G. Apparatus for the production of unipolar ions in the air of a room. 3,417,302, 12–17–68, Cl. 317—262.
Lukins, Richard H.: *See*—
Peterson, Albert C., Hayes, and Lukins. 3,416,473.
Lukoff, Herman, and A. Schonfeld, to Sperry Rand Corp. Pneumatic card reader. 3,417,232, 12–17–68, Cl. 235—61.11.
Lummus Co., The: *See*—
Dorn, Rolf K. 3,416,598.
Guerrieri, Salvatore A. 3,416,914.
Lumoprint Zindler K.G.: *See*—
Limberger, Walter, and Wendt. 3,416,920.
Lumpkin, William B., to Phillips Petroleum Co. Method and apparatus for emulsion control. 3,417,014, 12–17–68, Cl. 208—187.
Lyons, Donald E. A., to Combustion Engineering, Inc. Method and system for detecting leaks in a forced through flow steam generator plant. 3,416,500, 12–17–68, Cl. 122—406.
M & T Chemicals, Inc.: *See*—
Considine, William J., and Reifenberg. 3,417,116.
Davies, Alwyn G. 3,417,117.
Maca, Paul D., to Sommer & Maca Glass Machinery Co. Belt machine. 3,416,384, 12–17–68, Cl. 74—242.16.
Machlett Laboratories, Inc., The: *See*—
Windebank, Robert W. 3,417,242.
Macovski, Albert, to Stanford Research Institute. Electrostatic drum printer. 3,417,404, 12–17–68, Cl. 346—74.
Magnesium Elektron Ltd.: *See*—
Emley, Edward F., and Meredith. 3,416,978.
Maichen, Karl. Infinitely variable friction gearing. 3,416,382, 12–17–68, Cl. 74—193.
Maida Development Co.: *See*—
Maida, Francis X. 3,416,207.
Maida, Francis X., to Maida Development Co. Method of manufacturing a capacitor. 3,416,207, 12–17–68, Cl. 29—25.42.
Makowski, Mieczyslaw P., to Clevite Corp. Electroless cobalt plating bath. 3,416,955, 12–17–68, Cl. 117—160.
Malinowski, Hans: *See*—
Boos, Hermann, Post, and Malinowski. 3,416,646.
Mallory, P. R., & Co. Inc.: *See*—
Allen, Edwin T. 3,416,215.
Wiser, Joseph E. 3,417,211.
Mandel, Lazaro J., and G. Kosa, to Sonotone Corp. Dual rate battery charging system. 3,417,308, 12–17–68, Cl. 320—23.
Maniu, Tiberiu D., to Ministerul Petrolului. Collapsible derrick for drilling. 3,416,267, 12–17–68, Cl. 52—121.
Maraghe, Alex, to The Boeing Co. Aircraft door actuator. 3,416,757, 12–17–68, Cl. 244—129.
Marconi, Walter, A. Mazzei, M. Araldi, and M. Bruzzone, to SNAM-S.p.A. Cis-1,4 copolymers of butadiene and 2-phenylbutadiene. 3,417,065, 12–17–68, Cl. 260—83.7.
Marder, Herman L., G. D. Grippo, and W. O. Tundermann, to Colgate-Palmolive Co. Disposable bib. 3,416,157, 12–17–68, Cl. 2—49.
Maremont Corp.: *See*—
Chilpan, Kurt C. 3,416,301.
Margolin, William, to International Harvester Co. Force compensating means for axial piston machines. 3,416,312, 12–17–68, Cl. 60—53.
Margarit, Traian: *See*—
Anastasin, Eugeniu, and Margarit. 3,416,607.
Marik, Henry J., to "Automatic" Sprinkler Corp. of America. Spray nozzle with flat fan pattern. 3,416,736, 12–17–68, Cl. 239—571.
Mark, Edward R. Loop-forming cable fitting. 3,416,197, 12–17–68, Cl. 24—123.
Marker, Hannes. Safety toe iron. 3,416,811, 12–17–68, Cl. 280—11.35.
Markham, Wesley K. Watercraft. 3,416,478, 12–17–68, Cl. 114—16.
Marks, Alvin M. Heat-electrical power interconversion devices. 3,417,267, 12–17–68, Cl. 310—6.
Marmac Co., The: *See*—
McCreery, Robert B. 3,416,406.
Marsh, Byron E., and R. J. Betty, Jr., to Armour Industrial Chemical Co. Paraffin deposition control. 3,416,605, 12–17–68, Cl. 166—38.
Marshall, John H.: *See*—
Warman, Bloomfield J., and Marshall. 3,417,205.
Marston, Frederick T.: *See*—
Brown, George T., Hochner, and Marston. 3,417,175.
Martin, Jerry L., to Truth Tool Co. Roller assembly for a sliding closure. 3,416,183, 12–17–68, Cl. 16—105.
Martin-Marietta Corp.: *See*—
Eagleson, Thomas N., and Windish. 3,416,350.
Hembree, Clyde R. 3,416,752.
Martin, Norman P., to J. I. Case Co. Front end weight. 3,416,814, 12–17–68, Cl. 280—150.
Marton, Miksa. Disc sanding apparatus. 3,416,265, 12–17–68, Cl. 51—381.
Marvid, Ethel M. Ankle and shin bone guard. 3,416,156, 12–17–68, Cl. 2—22.
Marwood Enterprises Inc.: *See*—
Hilyard, Harold W. 3,416,588.
Marx, Louis, & Co., Inc.: *See*—
Meri, Carl J. 3,416,488.
Maschinenfabrik Oerlikon: *See*—
Tschopp, Peter. 3,417,356.
Masterson, Earl E., and F. H. Schaller, to Honeywell Inc. Record input/output apparatus. 3,416,788, 12–17–68, Cl. 271—3.
Masuda, Noboru, to Denki-Onkyo Kabushiki-Kaisha. High speed recording apparatus for television images and the like. 3,417,197, 12–17–68, Cl. 178—6.6.
Mathias, Joseph S., and J. J. McGee, to Sperry Rand Corp. Magnetic alloys and method and compositions useful for preparing same. 3,416,932, 12–17–68, Cl. 106—1.
Mathieu, Walter: *See*—
Schmitz, Christian, and Mathieu. 3,416,723.
Mathison, Robert V. Buttons. 3,416,196, 12–17–68, Cl. 24—90.
Matjunin, German B.: *See*—
Gutnikov, Eduard J., Melnikov, Matjunin, and Alterman. 3,416,433.
Matray, Otto J., to E. I. du Pont de Nemours and Co. Process of preparing yarn and knitting hose. 3,417,174, 12–17–68, Cl. 264—78.
Matsubara, Asaichi, Y. Yasutake, K. Ueno, and S. Fujita, to Central Glass Co., Ltd. Method of manufacturing wet process phosphoric acid. 3,416,887, 12–17–68, Cl. 23—122.
Matsumoto, Tetsuro, and A. Tamano, to Japan Gas-Chemical Co. Method for producing pyridine. 3,417,092, 12–17–68, Cl. 260—290.
Matsushita Electric Industrial Co., Ltd.: *See*—
Onuma, Takeshi, and Terasaki. 3,416,979.
Someda, Sadamichi. 3,417,312.

Matsuya, Koichi: *See*—
Capaul, Marcel, Matsuya, and Edinger. 3,416,886.
Matzen, Walter T., to Texas Instruments Inc. Color display system. 3,416,731, 12–17–68, Cl. 315—13.
Maul, John A., R. B. Porter, and J. G. Nantz, to Addressograph-Multigraph Corp. Data recorder. 3,416,441, 12–17–68, Cl. 101—56.
Maurer, Francis J., to The General Tire & Rubber Co. Hair oil-resistant top coating for plasticized polyvinyl chloride sheeting. 3,416,948, 12–17–68, Cl. 117—76.
Maurice, Jean, to Societe Anonyme Francaise du Ferodo. Radially movable clutch bearing. 3,416,637, 12–17–68, Cl. 192—98.
Mautner, Henry R.: *See*—
Gantz, George M., Mautner, and Black. 3,416,877.
May, Otto B., Inc.: *See*—
Fono, Andrew, and Siddiqui. 3,416,873.
Mazzei, Alessandro: *See*—
Marconi, Walter, Mazzei, Araldi, and Bruzzone. 3,417,065.
McCaul, Paul F., and R. L. Granata, to United States of America, National Aeronautics and Space Administration. Sidereal frequency generator. 3,417,316, 12–17–68, Cl. 321—60.
McClelland, James F., Jr.: *See*—
Blake, Howard C., and McClelland. 3,416,644.
McClernon, Francis H. Device for measuring the cornea. 3,416,855, 12–17–68, Cl. 351—6.
McClusky, Stanley A. Means and method for rapidly filling receptacles. 3,416,619, 12–17–68, Cl. 177—53.
McClusky, Stanley A. Bag filling and weighing machine. 3,416,620, 12–17–68, Cl. 177—123.
McCreery, Robert B., 50% to The Marmac Co. Hydraulic ram with movement decelerating limit stop. 3,416,406, 12–17–68, Cl. 91—27.
McCreight, Donald O.: *See*—
Einstein, Edward, and McCreight. 3,416,935.
McCullough, Ira J., and S. G. Stroud. Inside pipe diameter caliper using coaxial excitation and pick up coils. 3,417,325, 12–17–68, Cl. 324—34.
McDonald, Alex D.: *See*—
Caputo, Arnold P., Schupack, and McDonald. 3,416,276.
McDonald, Harrison M., to Ideal Industries, Inc. Precision laminated stripper blade. 3,416,227, 12–17–68, Cl. 30—348.
McDonnell Douglas Corp.: *See*—
Jenks, David M. 3,416,582.
McFarland, Rolland, to Hills-McCanna Co. Diaphragm pump. 3,416,461, 12–17–68, Cl. 103—150.
McGee, Joseph J.: *See*—
Mathias, Joseph S., and McGee. 3,416,932.
McGahan, Leroy C., to United States of America, Navy. System for measuring moments of inertia. 3,416,362, 12–17–68, Cl. 73—65.
McGraw-Edison Co.: *See*—
Hitzeroth, Franklin C. 3,416,431.
Pfaffenbach, Arthur K. 3,416,226.
Uranl, Angelo. 3,417,359.
Withers, John S. 3,417,357.
McHatton, Austin D.: *See*—
Dryden, Hugh L. 3,416,988.
McHugh, James J., to McVee Industries, Inc. Portable structural support base. 3,416,270, 12–17–68, Cl. 52—36.
McIlrath, William P., and C. Stougaard, to Racine Hydraulics & Machinery Inc. Vibrator compactor. 3,416,417, 12–17–68 Cl. 94—48.
McIntyre, James E., and M. M. Robertson, to Imperial Chemical Industries Ltd. Surface modifying treatment of shaped articles made from polyesters. 3,416,952, 12–17–68, Cl. 117—118.
McIntyre, Newman: *See*—
Hawkins John L., and McIntyre. 3,416,287.
McKeown, John P. Rotating tube game with rolling member. 3,416,801, 12–17–68, Cl. 273—110.
McKinney, Helen: *See*—
Adams, Arthur H., and Bozocos. 3,416,517.
McLay, Joseph F.: *See*—
Kaucher, Erwin K., McLay, and Weingrad. 3,416,370.
McLean, James N.: *See*—
Atwood, Hyatt B., and McLean. 3,416,303.
McMahon, Joseph F., to Pullman, Inc. Catalyst composition. 3,417,029, 12–17–68, Cl. 252—455.
McMahon, William: *See*—
Houtz, Charles C., and McMahon. 3,417,004.
McManus, James M., to Chas. Pfizer & Co., Inc. Imidate esters and amidines and the salts thereof. 3,417,122, 12–17–68, Cl. 260—453.
McNair, James R. F., to Abrasive Developments Ltd. Treatment of mould surfaces. 3,416,934, 12–17–68, Cl. 106—38.24.
McNally, Robert N.: *See*—
Alper, Allen M., and McNally. 3,416,938.
McNish, Alvin G.: *See*—
Wenner, Frank, and McNish. 3,417,354.
McVee Industries, Inc.: *See*—
McHugh, James J. 3,416,270.
McWhorter, Wayne F., H. O. Kirwan, and C. E. Banfield, to Celanese Coating Co. Amido-amine compositions. 3,417,140. 12–17–68, Cl. 260—561.
Mead Corp., The: *See*—
Van Plateringen, Lambertus J. 3,416,654.
Meckenstock, John W.: *See*—
Ravitts, Richard B., and Meckenstock. 3,416,729.
Meek, William H., Jr.: *See*—
Towle, Jack L., and Meek. 3,417,139.
Megson, Frederic H., M. T. Beachem, and R. T. Stockel, to American Cyanamid Co. Enol betaines and process for preparing the same. 3,417,089, 12–17–68, Cl. 260—286.
Mehnert, Gottfried, Diehead. 3,416,190, 12–17–68, Cl. 18—14.
Meier, William G., to Parke, Davis and Co. Surgical dressing. 3,416,524, 12–17–68, Cl. 128—156.
Meininger, Fritz, E. Hille, and F. Osterloh, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Metal monoazo dyestuffs. 3,417,073, 12–17–68, Cl 260—145.
Meininger, Fritz: *See*—
Kunne, Rudolf, Meininger, Noll, Rinno, and Schiessler. 3,417,074.
Meissner, Horst: *See*—
Fischer, Karl, Goessler, and Meissner. 3,416,513.
Melle, Hans-Georg W.: See—
Stark, Sven O. S., Melle, and Lindh. 3,416,716.
Melnikov, Oleg N.: *See*—
Gutnikov, Eduard J., Melnikov, Matjunin, and Alterman. 3,416,433.
Menke, Franz, to Eltro G.m.b.H. & Co. Apparatus for generating high voltages. 3,417,314, 12–17–68, Cl. 321—44.
Mentzer, Leonard F.: *See*—
Bredemeyer, Gerry J. 3,417,324.
Merchant, Carl E.: *See*—
Davis, Noel, and Merchant. 3,416,328.
Merchant, Chester O., of Kentucky Electronics, Inc. Automatic welding machine. 3,417,220, 12–17–68, Cl. 219—80.
Merck E., A.G.: *See*—
Heusser, Dietrich, and Halpaap. 3,416,993.
Mercorelli, John N. Drawing device. 3,416,231, 12–17–68, Cl. 33—18
Meredith, Peter C.: *See*—
Emley, Edward F. and Meredith. 3,416,978.
Mergens, George W.: *See*—
Dreyfoos, Alex W., Jr., and Mergens. 3,417,196.
Merijan, Ashot, F. Grosser, and E. V. Hort, to GAF Corp. Alkylated polymers of heterocyclic N-vinyl monomers and process of preparing the same. 3,417,054, 12–17–68, Cl. 260—66.
Merl, Carl J., to Louis Marx & Co., Inc. Sound producing device. 3,416,488, 12–17–68, Cl. 116—139.
Merluzzi, Ottavio: *See*—
Patron, Germano, Merluzzi, and Ferri. 3,417,152.
Mertler, Charles S., to Essex Wire Corp. Door latching actuator assembly. 3,416,515, 12–17–68, Cl. 126—273.
Meshew, Robert E., to General Motors Corp. Seat belt buckle. 3,416,201, 12–17–68, Cl. 24—230.
Mesinger, Robert H. Cycle saddle construction. 3,416,838, 12–17–68, Cl. 297—214.
Messrs. E. G. O. Elktro-Geraete Blanc u. Fischer: *See*—
Fischer, Karl, Goessler, and Meissner. 3,416,513.
Messwarb, Gunter, W. Luders, F. Erdmann, and H. Steppan, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polyethers and process for their manufacture. 3,417,051, 12–17–68, Cl. 260—47.
Messwarb, Gunter, W. Luders, J. Munder and H. Steppan, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polyethers and process for their manufacture. 3,417,052, 12–17–68, Cl. 260—47.
Mettalia, Joseph B., Jr., and E. H. Specht, to Rohm & Haas Co. Method for the preparation of hydroxy esters. 3,417,131, 12–17–68, Cl. 260—484.
Mettoy Co. Ltd., The: *See*—
Fairbairn, Howard W. 3,416,273.
Meull, Rudolf: *See*—
Stucky, Fritz C., and Meull. 3,416,273.
Meyer, Edgar: *See*—
Steigerwald, Karl H., and Meyer. 3,417,224.
Meyer, Roy E., and Wahl, to Wahl Clipper Corp. Coupling T for vacuum cleaner hose associated with electric hair clippers. 3,417,194, 12–17–68, Cl. 174—71.
Michael, Joe W. Packing tray. 3,416,690, 12–17–68, Cl. 217—26.5.
Michaelis, Horst, to North American Philips Co., Inc. Voltage-controlled magnetic counting chains. 3,417,257, 12–17–68, Cl. 307—88.
Michalko, Ignatius, to Sonotone Corp. Fusion-sealed metal-enclosed rechargeable battery cells. 3,416,964, 12–17–68, Cl. 136—6.
Micro Vend, Inc.: *See*—
Torsiello, Joseph, and Reiss. 3,416,429.
Mihojevich, Steven, A. S. Zerfahs, R. G. Ostensen, A. F. Berggren, and R. A. Glaser, to SCM Corp. Electrostatic printer. 3,416,860, 12–17–68, Cl. 355—10.
Mikawa, Tsuneaki. Corrosion resistant copper alloys. 3,416,915, 12–17–68, Cl. 75—159.
Mikszan, David P.: *See*—
Webb, James E. 3,417,332.
Miles Laboratories, Inc.: *See*—
Barton, Richard R. 3,416,997.
Miller, Donald L., G. J. Spillman, E. J. Stokowski, and J. D. Wharmby, to International Business Machines Corp. Apparatus for screen printing. 3,416,440, 12–17–68, Cl. 101—35.
Miller, Frederick O., to Miller Mold Co. Mold clamping and sealing construction. 3,416,194, 12–17–68, Cl. 18—35.
Miller, Frederick O., to Miller Mold Co. Mold construction. 3,416,766, 12–17–68, Cl. 249—79.
Miller Mold Co.: *See*—
Miller, Frederick O. 3,416,766.
Miller, Frederick O. 3,416,194.
Millie, Orrin, to Genarco Inc. Reversible slide changer. 3,416,249, 12–17–68, Cl. 40—79.
Millikan, Roger C., to General Electric Co. Electric heat lamp and electric devices. 3,417,230, 12–17–68, Cl. 219—553.
Millmaster Onyx Corp.: *See*—
Wakeman, Reginald L., and Coates. 3,417,184.
Mingasson, Georges H. R., R. F. M. Sureau, and V. M. Dupre, to Etablissements Kuhlmann. Monoazo basic dyestuffs. 3,417,075, 12–17–68, Cl. 260—162.

Minigrip, Inc.: *See*—
Imamura, Harry H. 3,416,199.
Staller, Karel J. 3,416,585.

Ministerul Petrolului: *See*—
Manlu, Tiberiu D. 3,416,267.

Minnesota Mining and Mfg. Co.: *See*—
Coenen, Joseph H. 3,416,921.
Elm, Robert A. 3,417,192.
Hill, Robert C. 3,417,243.
Kadah, Hassan B., and Hoste. 3,417,253.

Mintz, Alvin, Infrared heating system. 3,416,512, 12–17–68, Cl. 126—94.

Misulis, Edward V., to General Signal Corp. Controls for variable displacement pumps. 3,416,452, 12–17–68, Cl. 103—10.

Miyaoka, Senri: *See*—
Yoshida, Susumu, Miyaoka, and Sahara. 3,417,199.

Mizuno, Koichi, ½ to Daikin Kogyo Co. Ltd. Process for the manufacture of a bearing surface on a steel article including a single sintered layer of bronze particles and a layer of polytetrafluoroethylene. 3,416,941, 12–17–68, Cl. 117—22.

Mobil Oil Corp.: *See*—
Glenn, Edwin E., Jr., Slover, and Strubhar. 3,416,547.
Offenhauer, Robert D. 3,417,123.

Moch, Pierre E.: *See*—
Dupont, Alain M., Normand, Moch, and Rousseau. 3,417,-292.

Mock, Franz: *See*—
Schutzner, Walter, and Mock. 3,416,942.

Moes, Ernest J.: *See*—
Cribbs, Robert D. Venzke, and Moes. 3,417,336.

Mogi, Tooru: *See*—
Ando, Fumio, Okada, and Mogi. 3,417,391.

Molex Products Co.: *See*—
Krehbiel, John H. 3,417,365.

Moller, G. T.: *See*—
Stone, Wayne B., Jr. 3,416,269.

Mondot, Jacques: *See*—
Beaujard, Louis, and Mondot. 3,416,366.

Mongesku, William O., to General Electric Co. Dial indicator apparatus for radio receiver. 3,416,486, 12–17–68, Cl. 116—124.1.

Monsanto Co.: *See*—
Irani, Riyad R. 3,416,930.
Kogan, Leo. 3,416,259.

Montecatini Edison S.p.A.: *See*—
Patron, Germano, and Merluzzi, and Ferri. 3,417,152.

Montes, Jose M. Simulated horse race board game apparatus. 3,416,802, 12–17–68, Cl. 273—134.

Montgomery, Douglas S., and B. I. Parsons. Process for the preparation of an inorganic gel having a predetermined pore structure. 3,417,028, 12–17–68, Cl. 252—317.

Moore, Edward T., to Wilmore Electronics Co., Inc. Frequency control for magnetically coupled oscillators. 3,417,348, 12–17–68, Cl. 331—113.

Morace, Mario. Method of regenerating used lubricating oil. 3,417,012, 12–17–68, Cl. 208—181.

Moreno, Albert M. Device for tensioning straps, wires, or like flexible elements. 3,416,763, 12–17–68, Cl. 248—361.

Morgan Construction Co.: *See*—
Alexander, Frank, Jr. 3,416,777.

Morgan, Johnson T. Garbage can cover. 3,416,671, 12–17–68, Cl. 211—83.

Morgan, Robert S., and J. T. Williams. Balancing exerciser platform with shock absorber means. 3,416,792, 12–17–68, Cl. 272—60.

Morgana, Morley, to Grant Chemical Co., Inc. Manufacture of acetone-diphenylamine condensation product. 3,417,142, 12–17–68, Cl. 260—576.

Mori, Ernest A.: *See*—
Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,416,614.

Moroni, Eneo C.: *See*—
Neuworth, Martin B., Moroni, and Del Bel. 3,417,149.

Morrison, James L. D. Record changer spindle. 3,416,805, 12–17–68, Cl. 274—10.

Morrison-Knudsen Co., Inc.: *See*—
Rice, Matt F. 3,416,832.

Morritz, Fred L.: *See*—
Galli, Guido, Morritz, and Wiley. 3,417,301.

Morse Controls Inc.: *See*—
Houk, Richard D. 3,416,390.

Morse, Frank E., Jr. Cover construction for open body trucks. 3,416,834, 12–17–68, Cl. 296—100.

Mortensen, Louis A. Holder for screw anchors. 3,416,650, 12–17–68, Cl. 206—47.

Moskovskoi, Oblasti: *See*—
Balashkand, Mikhail I., Evdokimov, Kaplan, Loviya, Solodilov, and Chen. 3,416,621.

Mott, Ralph B., Jr.: *See*—
Mott, Ralph B., Sr., and Ralph B. Mott, Jr. 3,416,744.

Mott, Ralph B., Sr., and Ralph B. Mott, Jr. Tissue roll dispenser. 3,416,744, 12–17–68, Cl. 242—55.3.

Motorola, Inc.: *See*—
Foster, John C., Jr. 3,417,260.
Palmer, Lawrence M. 3,417,313.

Mountfort, Cyril B., B. Cortis-Jones, and R. T. Wickham, to The Colonial Sugar Refining Co. Ltd. Process for the separation of fructose and glucose. 3,416,961, 12–17–68, Cl. 127—46.

Mowrey, William L.: *See*—
Cannon, Peter, Grams, and Mowrey. 3,417,222.

Moyroud, Louis M. Photographic composition apparatus. 3,416,420, 12–17–68, Cl. 95—4.5.

Muka, Richard S.: *See*—
Beckman, Maynard K., Jr., and Muka. 3,416,791.

Muller, Anton: *See*—
Schurle, Werner, and Muller. 3,416,587.

Muller, Artur, to Industrie-Werke Karlsruhe Aktiengesellschaft. Tersion adjustment arrangement for stretching and winding machines. 3,416,205, 12–17–68, Cl. 28—71.3.

Muller, Donald C., to C. F. Butz Engineering. Pressureless accumulation conveyor. 3,416,642, 12–17–68, Cl. 198—34.

Muller, John G., and N. Ganiaris, to Struthers Scientific and International Corp. Process for maintaining a perforated basket centrifuge free of basket plugging. 3,416,663, 12–17–68, Cl. 210—78.

Mullins, Lawrence J., Jr.: *See*—
Leary, Joseph A., Mullins, and Buchen. 3,417,002.

Munch, Walter, Jr., to D. H. Baldwin Co. Preference circuit for electronic musical instrument utilizing pulse amplitude discrimination and zero-crossing detector. 3,417,188, 12–17–68, Cl. 84—1.01.

Munder, Johannes: *See*—
Süs, Oskar, and Munder. 3,416,922.
Messwarb, Gunter, Luders, Munder, and Steppan. 3,417,-052.

Munson, Whitney K. Inking pad for stamp pads. 3,416,490, 12–17–68, Cl. 118—269.

Murayama, Seiichi, to Hitachi, Ltd. Low power high frequency discharge plasma generator. 3,417,287, 12–17–68, Cl. 315—111.

Murphy, Cornelius B., to General Electric Co. Analysis of gases containing low concentrations of phosgene. 3,416,896, 12–17–68, Cl. 23—232.

Murphy, Frank E., Jr., to Corning Glass Works. Electrical circuit for determining the resistance and temperature of a resistive element. 3,417,330, 12–17–68, Cl. 324—62.

Murphy, Hubert W., V. C. Stephens, and J. W. Conine, to Eli Lilly and Co. Erythromycin derivative and process for the preparation thereof. 3,417,077, 12–17–68, Cl. 260—210.

Murphy, John B., to Polaroid Corp. Photographic apparatus. 3,416,427, 12–17–68, Cl. 95—89.

Muskovac, Nicholas G., to Sprague Electric Co. Low noise control circuit. 3,417,320, 12–17–68, Cl. 323—22.

Musy, Charles L., to Le Bouchage Mecanique. Method and apparatus for forming a breakable C connection between two portions of a closure cap. 3,416,474, 12–17–68, Cl. 113—1.

Myers, F. E., & Bro. Co., The: *See*—
Steidley, Virgil K. 3,416,844.

Myers, William R.: *See*—
Pruett, Roy L., and Myers. 3,417,130.

N.V. Fabriek Van Electrische Apparaten Voorheen F. Hazemeijer & Co.: *See*—
Clason, Jan C. 3,417,355.

Nagamatsu, Brian H. Ground effect vehicle. 3,416,626, 12–17–68, Cl. 180—124.

Nair, Govindan V., and G. D. Pandit, to Lever Bros. Co. Preparation of mono-terpenoid products. 3,417,109, 12–17–68, Cl. 260—347.8.

Nakagawa, Shigesaburo. Encrusted jewelry chain. 3,416,306, 12–17–68, Cl. 59—80.

Nakayama, Michiko, to Kabushiki Kaisha Kobayashi Kose. Container with outer portion movable for opening and closing cover flaps. 3,416,718, 12–17–68, Cl. 229—16.

Nantz, Jack G.: *See*—
Maul, John A., Porter, and Nantz. 3,416,441.

Narutani, Shigeru. Bumper actuated safety means for electric motor driven car. 3,416,625, 12–17–68, Cl. 180—96.

Nasser, Roger M.: *See*—
Nozawa, Yasuto D., and Nasser. 3,417,259.

United States of America
National Aeronautics and Space Administration: *See*—
Black, Woodrow W. 3,417,400.
Black, Woodrow W. 3,417,400.

National Aeronautics and Space Administration: *See*—
Dryden, Hugh L. 3,416,988.
Dryden, Hugh L. 3,417,298.
Webb, James E. 3,416,274.
Webb, James E. 3,416,975.
Webb, James E. 3,417,247.
Webb, James E. 3,417,266.
Webb, James E. 3,417,332.
Webb, James E. 3,417,399.

National Distillers and Chemical Corp.: *See*—
Carley, Emile L. 3,416,986.
Feldman, Julian, and Seyler. 3,417,141.

National Engineering Science Co.: *See*—
Petroff, Michael D., and Swiadek. 3,416,219.

National Industries for the Blind: *See*—
Wiese, Albert H. 3,416,179.

National Lead Co.: *See*—
Honchar, Andrew P. 3,416,885.
Stynes, James A., and Clearfield. 3,416,884.

Neale, David W., to Raydyot Ltd. Motor vehicle accessory mounting. 3,416,820, 12–17–68, Cl. 285—399.

Neiss, Edward S.: *See*—
Campaigne, Ernest E., and Neiss. 3,417,087.

Nelson, Ardell H., to Pittsburgh-Des Moines Steel Co. Low temperature storage tank. 3,416,325, 12–17–68, Cl. 62—45.

Nelson, Axel B., to Sloan Valve Co. Combination sill-cock and vacuum breaker. 3,416,556, 12–17–68, Cl. 137—218.

Nelson, Merritt J. Shower head. 3,416,734, 12–17–68, Cl. 239—460.

Nemec, Joseph W., and F. W. Schlaefer, to Rohm & Haas Co. Method for the preparation of acrolein. 3,417,145, 12–17–68, Cl. 260—604.

Nesemann, Georg: *See*—
Seidl, Gunther, and Nesemann. 3,417,093.

Ness, Richard A. Eyeball medication dispensing tablet. 3,416,-530, 12–17–68, Cl. 128—260.

Netz, Otto: *See*—
Corte, Herbert, and Netz. 3,417,066.

Neumair, Josef F.: *See*—
Bschorr, Oskar, and Neumair. 3,416,628.

Neuworth, Martin B., E. C. Moroni, and E. Del Bel, to Consolidation Coal Co. Transmethylation of methyl-substituted phenols. 3,417,149, 12–17–68, Cl. 260—621.

Newallis, Peter E., and P. Lombardo, to Allied Chemical Corp. Fluoroketone hemiketal ester phosphates and phosphonates. 3,417,165, 12–17–68, Cl. 260—941.

Nicholson, James, and D. Poole, to Hickson's Timber Impregnation Co. (G.B.) Ltd. Stable wax emulsions containing hexavalent chromium. 3,416,933, 12–17–68, Cl. 106—15.

Nicholson, James E., J. A. F. Hill, and J. C. Wilson, Jr., to United States of America, Navy. Self-balancing spike control. 3,416,758, 12–17–68, Cl. 244—130.

Nickell, Lawrence C., R. B. Fertig, and C. L. Perkins, to Appalachian Electronic Instruments, Inc. Fabric flaw detecting apparatus using photoelectric sensing head traveling on a trolley with brushes engaging a conductive strip. 3,417,252, 12–17–68, Cl. 250—219.

Nickerson, James K.: *See*—
Amir, Emanuel M., and Nickerson. 3,417,138.

Nimblett, Albert H., Jr.: *See*—
Dayton, David R., and Nimblett. 3,417,367.

Nippon Electric Co. Ltd.: *See*—
Shiroki, Kenichi, and Saito. 3,416,898.

Nisbet, Thomas R., to Edex Corp. Teaching machine and control system. 3,416,242, 12–17–68, Cl. 35—48.

Nischk, Gunther: *See*—
Rinkler, Heinrich, and Nischk. 3,417,134.

Nissan Kagaku Kogyo Kabushiki Kaisha: *See*—
Taguchi, Michiichi, and Shoji. 3,417,126.

Nokes, Philip E., to United Shoe Machinery Corp. Dew point indicators. 3,416,355, 12–17–68, Cl. 73—17.

Nolin, Karl W., Jr. Hydraulic power means for conveyors and the like with automatic shutoff means. 3,416,676, 12–17–68, Cl. 214—17.

Noll, Walter: *See*—
Kühne, Rudolf, Meininger, Noll, Rinno, and Schiessler. 3,417,074.

Nolt, Edwin B., J. H. Eberly, and R. R. Eby, to Sperry Rand Corp. Guide for knotter needle of baler. 3,416,824, 12–17–68, Cl. 289—2.

Nolt, Edwin B., to Sperry Rand Corp. Twine finger and actuating means for baler. 3,416,825, 12–17–68, Cl. 289—18.

Non-Slip Temple Co., Inc.: *See*—
Bowes, Francis J. 3,416,858.

Noone, Frank Shoe Co., Inc.: *See*—
Ferreira, Joseph J. 3,416,245.

Norda Essential Oil and Chemical Co., Inc.: *See*—
Chodroff, Saul, and R. S. Vazirani. 3,417,107.

Nordeen, Erwin E., to Whirlpool Corp. Nozzle adjustment for vacuum cleaners. 3,416,181, 12–17–68, Cl. 15—359.

Norden, Alexander R. Wire terminals. 3,417,368, 12–17–68, Cl. 339—147.

Nordh, Ulf S. I., and J. B. Olsson, to Aktiebolaget Gotaverken. Hatch cover or similar closure member. 3,416,590, 12–17–68, Cl. 160—213.

Nordmann, Rene, to Ultrasona A.G. Process and apparatus for treating a continuous length of synthetic textile fabric for the purpose of making the material softer, less glossy and more volminous. 3,416,881, 12–17–68, Cl. 8—130.1.

Normand, Jacques L.: *See*—
Dupont, Alain M., Normand, Moch, and Rousseau. 3,417,-292.

North American Philips Co., Inc.: *See*—
Michaelis, Horst. 3,417,257.
Piotrowski, Tadeus. 3,416,388.
Reerink, Engbert H., Westerhof, and Scholer. 3,417,112.
Wanmaker Willem L., and Verlijsdonk. 3,417,027.

North American Rockwell Corp.: *See*—
Armenoff, Carl T., and Reed. 3,416,218.
Galli, Guido, Morritz, and Wiley. 3,417,301.
Gibbings, Fredrick T. 3,416,840.

North Atlantic Industries, Inc.: *See*—
Anderson, Norman J. 3,417,338.

Northern Electric Co., Ltd.: *See*—
Overtveld, Gilles. 3,417,340.

Northern Electric Co. Ltd.: *See*—
Waller, Milford J. 3,417,352.

Norton Co.: *See*—
Hill, Oiva E. 3,416,263.

Norwood, Glen A. Switch actuating apparatus utilizing a reciprocal rod with helical grooves to impart rotational movement to cams. 3,417,218, 12–17–68, Cl. 200—153.

Notari, Bruno, to SNAM S.p.A. Method for preparing spheroidal alumina. 3,416,888, 12–17–68, Cl. 23—143.

Novitake, Ralph J., to Ripon Knitting Works. Method of making footwear having an elastomeric dipped outsole. 3,416,174, 12–17–68, Cl. 12—142.

Nozawa, Yasuto D., and R. M. Nasser, to Conductron Corp. Control systems for sequentially actuating a plurality of loads. 3,417,259, 12–17–68, Cl. 307—108.

Nyrop, Per, to Dorr-Oliver Inc. Bearing mounted overflow impeller. 3,416,726, 12–17–68, Cl. 233—21.

Ochs, Charles S., to Anchor Hocking Glass Corp. Dud detector for small diameter caps. 3,416,360, 12–17–68, Cl. 73—52.

Offenhauer, Robert D., to Mobil Oil Corp. Heteroaromatic boron compounds and their preparation. 3,417,123, 12–17–68, Cl. 260—462.

O'Hara, Mark J., and W. K. T. Gleim, to Universal Oil Products Co. High surface area alumina and catalyst composite. 3,417,030, 12–17–68, Cl. 252—455.

Ohle, Harold F. Truck body converting apparatus. 3,416,-835, 12–17–68, Cl. 296—100.

Okada, Hidekazu: *See*—
Ando, Fumio, Okada, and Mogi. 3,417,391.

Oldehaver, Klaus, to Svenska Rotor Maskiner Aktiebolag. Packages of heat exchanging plates for rotary regenerative heat exchangers. 3,416,596, 12–17–68, Cl. 165—10.

Oleson, Raymond W., and E. G. Leishman. Means for measuring movement in masses of rock or the like. 3,416,230, 12–17–68, Cl. 33—1.

Olin Mathieson Chemical Corp.: *See*—
Long, Alfred, Roth, King, and Van Dyck. 3,416,897.

Olinkraft, Inc.: *See*—
Coons, Everett A. 3,416,288.

Olson, Robert L.: *See*—
Schoenecker, Thomas J., and Olson. 3,416,557.

Olsson, Johan B.: *See*—
Nordh, Ulf S. I., and Olsson. 3,416,590.

O'Neill, James P., to TRW Inc. Magnetic hysteresis apparatus. 3,416,749, 12–17–68, Cl. 244—1.

Onuma, Takeshi, and T. Terasaki, to Matsushita Electric Industrial Co., Ltd. Method of making a variable capacitance silicon diode with hyper abrupt junction. 3,416,979, 12–17–68, Cl. 148—178.

Opalewski, Vincent J.: *See*—
Downing, Frank P., Kolyer, and Opalewski. 3,417,178.

Original Equipment Manufacturers, Inc.: *See*—
Pfeifer, Raymond B., and Kopp. 3,416,467.

Ormut, Germain: *See*—
Feuillebois, Louis, and Ormut. 3,416,453.

Ossolinski, Edward J.: *See*—
Hasbrouck, Leo J., Ossolinski, and Smith. 3,417,380.

Ostensen, Ralph G.: *See*—
Mihojevich, Steven, Zerfahs, Ostensen, Berggren, and Glaser. 3,416,860.

Osterloh, Fritz: *See*—
Meininger, Fritz, Hille, and Osterloh. 3,417,073.

Osterreichische Stickstoffwerke Aktiengesellschaft: *See*—
Hinrichs, Helmut, and Thoma. 3,417,031.

Ostrowski, John: *See*—
Douds, Robert G., and Ostrowski. 3,417,161.

Oswin, Harry G., to Leesona Corp. Power system functioning alternately for producing or consuming electrical energy. 3,416,966, 12–17–68, Cl. 136—86.

Otenbaker, James T.: *See*—
Saad, Oscar C., and Otenbaker. 3,416,321.

Outboard Marine Corp.: *See*—
Irgens, Finn T. 3,416,578.

Overbay, Charles H. Chord determining tool. 3,416,232, 12–17–68, Cl. 33—75.

Overmars, Henricus G. J., to International Lead Zinc Research Organization, Inc. Certain monoaryllead trisocylates and a process for preparing them. 3,417,113, 12–17–68, Cl. 260—408.

Overtveld, Gilles, to Northern Electric Co., Ltd. Variable gain circuit. 3,417,340, 12–17–68, Cl. 330—24.

Owens-Corning Fiberglas Corp.: *See*—
Glaser, Heilmut I. 3,416,906.

Owens-Illinois, Inc.: *See*—
Best, William V., and Hughes. 3,416,890.

Oxford, Keith E., to Lear Siegler, Inc. Alloy coating for electrical conductors. 3,416,958, 12–17–68, Cl. 117—212.

Ozenne, Gilbert J., and F. M. Stephen, to American Standard Inc. Automatic apparatus with continuously moving conveyors for casting ceramic articles. 3,416,203, 12–17–68, Cl. 25—29.

PPG Industries, Inc.: *See*—
Douds, Robert G., and Ostrowski. 3,417,161.

Pabodie, Robert M.: *See*—
Stephens, Frederick N., Rowlett, and Pabodie. 3,416,787.

Pacific Car and Foundry Co.: *See*—
Stixrood, Jarvis A., Bruce, and Holden. 3,416,773.

Packaging Corp. of America: *See*—
Bessett, Clifford H., and Boyd. 3,416,695.

Packard, Roger E., to Burroughs Corp. Circuitry for rotating fields of data in a digital computer. 3,417,375, 12–17–68, Cl. 340—172.5.

Packard, Thomas D., to Bird Machine Co. Treating materials. 3,416,192, 12–17–68, Cl. 18—19.

Paillard S.A.: *See*—
Zimmer, Michel. 3,416,822.

Paiva, Joseph. Tool washing machine. 3,416,544, 12–17–68, Cl. 134—102.

Palermo, James J., R. P. Bonazoli, R. F. Scoledge, and E. G. Audesse, to Sylvania Electric Products Inc. Incandescent lamp. 3,416,851, 12–17–68, Cl. 316—19.

Palmer, Lawrence M., to Motorola, Inc. Two-core solid state voltage inverter systems. 3,417,313, 12–17–68, Cl. 321—18.

Pandit, Gopalkrishna D.: *See*—
Nair, Govindan V., and Pandit. 3,417,109.

Pandit, Upendra K.: *See*—
Huisman, Henderikus, Westra, Speckamp, and Pandit. 3,417,100.

Pandjiris Weldment Co., The: *See*—
Cooper, Cleveland N. 3,416,809.

Papke, Elizabeth J.: *See*—
Barbier, Jean Y., and Papke. 3,417,227.

Paris, Jacques M.: *See*—
Roubin, Marc P., and J. M. and R. A. Paris. 3,416,891.

Paris, Rene A.: *See*—
Roubin, Marc P., and J. M. and R. A. Paris. 3,416,891.

Pariser, Jack J., to Hughes Aircraft Co. Computer controlled data transferring buffer. 3,417,374, 12–17–68, Cl. 340—172.5.

Parish, Clyde E., and K. W. Urmy, to Signal Oil and Gas Co. Preparation of carbonyl sulfide. 3,416,893, 12–17–68, Cl. 23—203.

Park, Jack H.: *See*—
Kolaian, Jack H., and Park. 3,417,017.

Parke, Davis & Co.: *See*—
Creager, Paul, Jr. 3,416,520.
Meier, William G. 3,416,524.
Yeremian, George J. 3,416,522.
Yeremian, George J. 3,416,523.
Yeremian, George J. 3,416,525.
Yeremian, George J. 3,416,526.

Parker-Hannifin Corp.: *See*—
Reimer, Leonard H., and Prijatel. 3,416,459.
Stanley, John H. 3,416,345.

Parker Pen Co., The: *See*—
Wittnebert, Frederick R., Lawton, and Dyson. 3,416,869.

Parr, Albert W. Crossover faucet. 3,416,568, 12–17–68, Cl. 137—606.

Parrish, Arnold C.: *See*—
Parrish, Raymond L., A. C., and L. A. 3,416,581.

Parrish, Esther: *See*—
Parrish, Raymond L., A. C., and L. A. 3,416,581.

Parrish, Lloyd A.: *See*—
Parrish, Raymond L., A. C., and L. A. 3,416,581.

Parrish, Raymond L., A. C., and L. A., to L. A. and E. Parrish. Log debarking apparatus. 3,416,581, 12–17–68, Cl. 144—208.

Parsons, Basil I.: *See*—
Montgomery, Douglas S., and Parsons. 3,417,028.

Patel, Chim P., and R. E. Pyle, to Union Starch & Refining Co., Inc. Cationic starch. 3,417,078, 12–17–68, Cl. 260—233.3.

Patron, Germano, O. Merluzzi, and A. Ferri, to Montecatini Edison S.p.A. Method of stabilizing trichloroethylene. 3,417,152, 12–17–68, Cl. 260—652.5.

Patterson, John D., to Texas Instruments Inc. Digital remote firing system. 3,416,631, 12–17–68, Cl. 181—.5.

Patton, John T., Jr., and R. J. Hartman, to Wyandotte Chemicals Corp. Polymeric phosphorus-containing compounds. 3,417,164, 12–17–68, Cl. 260—926.

Paulson, Albert L. Camp stove toaster. 3,416,510, 12–17–68, Cl. 126—25.

Pautrat, Rene: *See*—
Pinazzi, Christian P., Pautrat, Cheritat, and Branlard. 3,417,056.

Pearson, John, to The British Iron and Steel Research Association. Manufacture of elongate articles. 3,416,222, 12–17–68, Cl. 29—528.

Peaslee, Lawrence R., and D. L. Lafuze, to General Electric Co. Reverse current indicating circuit. 3,417,293, 12–17–68, Cl. 317—43.

Pechini, Maggio P., to Sprague Electric Co. Resistance element utilizing group III or V B metal. 3,416,957, 12–17–68, Cl. 117—212.

Pecota, Walter, to G-V Controls Inc. Automatic dialing apparatus. 3,417,207, 12–17–68, Cl. 179—90.

Pelster, Heinrich, C. Konig, and R. Putter, to Farbenfabriken Bayer Aktiengesellschaft. Reduction of nitro compounds to amines. 3,417,090, 12–17–68, Cl. 260—288.

Peltry, Edward: *See*—
Kisa, Gabriel, and Peltry. 3,417,307.

Pekarek, Joseph L.: *See*—
Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,416,614.

Penneck, Richard J., to Bakelite Xylonite Ltd. Chlorine containing resins stabilized with mixtures comprising not more than two metal salts, a polyol and a sulfur containing compound. 3,417,039, 12–17–68, Cl. 260—23.

Pennington, William C. Golf club with two hitting faces. 3,416,798, 12–17–68, Cl. 273—80.

Pennsalt Chemicals Corp.: *See*—
Albert, Harry E., and Haines. 3,417,154.

Penrod, Lloyd. Haystacker. 3,416,686, 12–17–68, Cl. 214—778.

Pereira, John P., to Weatherking Products, Inc. Swimming pool construction. 3,416,165, 12–17–68, Cl. 4—172.

Perfater, Walter R. Toilet flushing mechanism. 3,416,161, 12–17–68, Cl. 4—67.

Perkins, Curtis L.: *See*—
Nickell, Lawrence C., Fertig, and Perkins. 3,417,252.

Perreault, Aime J.: *See*—
Anderson, Robert W., and Perreault. 3,417,176.

Perry, Charles C. Apparatus for providing multiple liquid jets. 3,416,730, 12–17–68, Cl. 239—61.

Persons-Majestic Mfg. Co.: *See*—
Saunders, Henry A. 3,416,837.

Persson, Rune, to Allmanna Svenska Elektriska Aktiebolaget. Procedure for welding metal pieces to porous material and device for carrying out this procedure. 3,417,200, 12–17–68, Cl. 219—113.

Peters, William H., to The Rooto Corp. Water distributing device for humidifiers. 3,416,564, 12–17–68, Cl. 137—525.

Petersen, Raymond C.: *See*—
Ross, Sidney D., Petersen, and Finkelstein. 3,417,003.

Peterson, Albert C., R. A. Hayes, and R. H. Lukins, to Union Special Machine Co. Combined feed mechanism with stepped feed-dogs for sewing machines. 3,416,473, 12–17–68, Cl. 112—209.

Peterson, Darwin L. Farrowing structure. 3,416,496, 12–17–68, Cl. 119—16.

Peterson, Raymond E. Casket hinge structure. 3,416,185, 12–17–68, Cl. 16—171.

Peterson, Warren J., J. L. Fontaine, and J. E. Wachtel, to Hamilton Mfg. Co. Table construction. 3,416,468, 12–17–68, Cl. 108—131.

Petroff, Michael D., and S. F. Swiadek, to National Engineering Science Co. Method for mounting very fine wires. 3,416,219, 12–17–68, Cl. 29—471.1.

Petrol Injection Ltd.: *See*—
Jackson, Harold E. 3,416,504.
Jackson, Harold E. 3,416,738.

Petzetakis, Aristovoulos G. Method of forming a reinforced seamless tubular element. 3,416,982, 12–17–68, Cl. 156—193.

Peytavin, Pierre: *See*—
Babel, Louis, and Peytavin. 3,416,591.

Pezzuti, Dominick L. Combination lift truck, hand truck and floor dolly. 3,416,682, 12–17–68, Cl. 214—370.

Pfaffenbach, Arthur K., to McGraw-Edison Co. Pruner. 3,416,226, 12–17–68, Cl. 30—261.

Pfau, Julius H. Golf club woods. 3,416,797, 12–17–68, Cl. 273—77.

Pfeifer, Raymond B., and C. Kopp, to Original Equipment Manufacturers, Inc. Device for forming a pie or tart shell. 3,416,467, 12–17–68, Cl. 107—15.

Pfizer, Chas., & Co., Inc.: *See*—
McManus, James M. 3,417,122.

Phillips, Chester W. Scoring aid. 3,416,485, 12–17–68, Cl. 116—120.

Phillips, Howard C.: *See*—
Busler, Willard L., and Phillips. 3,416,212.

Phillips Petroleum Co.: *See*—
Bottomley, Anthony. 3,416,299.
Cabbage, John T. 3,416,667.
Hinton, Robert A. 3,417,070.
Lumpkin, William B. 3,417,014.
Ross, Edward F., and Svetlik. 3,417,044.
Schiff, Sidney. 3,416,899.
Sheehan, William C. 3,416,772.
Skinner, Bradley. 3,416,714.
Sterry, Dan G. 3,417,371.
Warner, Paul F. 3,417,103.
Wilcox, Isaac L. 3,416,412.

Photo Electronics Corp.: *See*—
Dreyfoos, Alex W., Jr., and Mergens. 3,417,196.

Pick, George G.: *See*—
Snyder, Allan W., and Pick. 3,417,382.

Pickett, John E. P. Pneumatic apparatus for viewing film mounted specimens. 3,416,853, 12–17–68, Cl. 350—92.

Pickholz, Siegfried, and M. Shapero, to Bienkinsop, Ward & Co. Ltd. Nitron imidazyl ethyl pyridines and quinolines. 3,417,091, 12–17–68, Cl. 260—288.

Pickles, Joseph, to Ferro Mfg. Corp. Threaded drive gear with abutment for screw shaft. 3,416,386, 12–17–68, Cl. 74—424.8.

Pickles, Norman: *See*—
Ellison, Ronald, Pickles, Pritchard, and Taylor. 3,416,471.

Pien, Pao C., to United States of America, Navy. Ship's stern and propeller arrangement. 3,416,480, 12–17–68, Cl. 114—57.

Pietrucha, William J., to Worthington Corp. Hydraulically actuated sealing means for rotating equipment. 3,416,455, 12–17–68, Cl. 103—111.

Pietsch, Le Roy: *See*—
Lewis, Bernard L., and Pietsch. 3,417,398.

Piker, Herbert M., to The Hamilton-Skotch Corp. Thermally insulated container. 3,416,691, 12–17–68, Cl. 220—9.

Pilger, Nicholas J., to Reynolds Metals Co. Container means and blanks for making same. 3,416,719, 12–17–68, Cl. 229—20.

Pilkington Brothers Ltd.: *See*—
Wilcock, John E. 3,416,909.

Pinaire, Lonnie W., and A. Lingen, to General Electric Co. Vectorable exhaust nozzle. 3,416,754, 12–17–68, Cl. 244—55.

Pinazzi, Christian P., R. Pautrat, R. Cheritat, and P. Branlard, to Societe Nationale des Petroles d'Aquitaine Tour Aquitaine. Method of improving the properties of macromolecular polymers by reaction with polyfunctional aldehydes. 3,417,056, 12–17–68, Cl. 260—73.

Pioneer Electroform Mfg. Co.: *See*—
Dike, Melville A. 3,417,389.

Piotrowski, Tradeus, to North American Philips Co. Inc. Push button retention and release mechanism. 3,416,388, 12–17–68, Cl. 74—483.

Pirrung, Paul F., and D. L. Schmidt, to United States of America, Air Force. Ablative product and method for its manufacture. 3,416,944, 12–17–68, Cl. 117—46.

Pittsburgh-Des Moines Steel Co.: *See*—
Nelson, Ardell H. 3,416,325.

Pledger, Thomas R.: *See*—
Durbin, Hairrel A., and Pledger. 3,416,359.

Plette, David L., and R. R. White, to General Electric Co. Solid-state overvoltage protection circuit. 3,417,254, 12–17–68, Cl. 307—29.

Pohl, Ernst J., K. G. Schmitt-Thomas, and W. Burck, to Werkstoff-Untersuchung G.m.b.H. Method and arrangement for monitoring machines by means of their emitted sound waves. 3,416,630, 12–17–68, Cl. 181—.5.

Pokorny, John M.: *See*—
Pokorny, Louis, Jr. 3,416,168.

Pokorny, Louis, Jr., ⅓ each to L. and J. M. Pokorny. Sofa-bed assembly. 3,416,168, 12–17–68, Cl. 5—13.

Polaroid Corp.: *See*—
Biber, Conrad H. 3,416,867.
Land, Edwin H. 3,416,426.
Land, Edwin H., and Ryan. 3,416,866.
Murphy, John B. 3,416,427.
Taylor, Lloyd D. 3,417,082.

Polestak, Walter J., to Celanese Corp. Extrudable stabilized elastomeric polyester spinning solutions. 3,417,043, 12–17–68, Cl. 260—33.4.

Pollack, Isidore: *See*—
Webb, James E. 3,416,975.

Pollak, Henry M. and R. S. Centrifugal pump. 3,416,456, 12–17–68, Cl. 103—113.

Pollak, Robert S.: *See*—
Pollak, Henry M. and R. S. 3,416,456.

Pollard, Stephen L. Novel valve, aerosol polymer dispenser, and method. 3,416,707, 12–17–68, Cl. 222—1.

Pollitzer, Ernest L., to Universal Oil Products Co. Transalkylation of toluene and catalyst therefor. 3,417,157, 12–17–68, Cl. 260—672.

Polymark Ltd.: *See*—
Valentine, Norman S. 3,416,841.

Polysius G.m.b.H.: *See*—
Chabaglian, Henri F. 3,416,778.

Polyvinyl Chemicals, Inc.: *See*—
Brown, George L., and Silverstein. 3,417,041.

Pomagalski, Jean. Device for coupling loads suspended from a cable. 3,416,462, 12–17–68, Cl. 104—202.

Ponzini, Sandro, P. Castelli, and J. S. Lawendel, to Aziende Colori Nazionali Affini ACMA S.p.A. Process for dyeing cellulose textile materials with quaternized reactive dyestuffs. 3,416,875, 12–17–68, Cl. 8—54.2.

Poole, Donald: *See*—
Nicholson, James, and Poole. 3,416,933.

Portec Inc.: *See*—
Hamilton, William R., Jr. 3,416,728.

Porter, Ralph B.: *See*—
Maul, John A., Porter, and Nantz. 3,416,441.

Porter, Robert E.: *See*—
Sorensen, Cloyd J., Jr., and Porter. 3,416 657.

Posegate, Russell W., to Armour and Co. Preparing poultry loaf product. 3,416,931, 12–17–68, Cl. 99—107.

Post, Wolfgang: *See*—
Boos, Hermann, Post, and Malinowski. 3,416,646.

Potter, Worth, Jr.: *See*—
Lewis, Hughie E., and Potter. 3,416,795.

Pozniak, Norman J., to Brooks & Perkins, Inc. Saddle for use with flexible wrap-around printing plates. 3,416,447, 12–17–68. Cl. 101—415.1.

Prasil, Anthony J. G., to United States of America, Army. Homodyne reference generator having voltage controlled phase. 3,417,337, 12–17–68, Cl. 329—50.

Pratt & Whitney, Inc.: *See*—
Reuteler, Johann F. 3,417,303.

Prescott, Robert E., Jr. Load support for well casing. 3,416,610, 12–17–68. Cl. 166—216.

Presto Lock Co., Inc.: *See*—
Gebrie, Charles S. 3,416,338.

Preston, Richard A. Shearing apparatus for keys. 3,416,397, 12–17–68, Cl. 83—459.

Preuss, Albert F., and R. W. White, to Rohm and Haas Co. Carboxylated aliphatic polymers. 3,417,020, 12–17–68, Cl. 252—52.

Price, Herbert P., and D. A. Shimp, to Celanese Coatings Co. Epoxide resin process. 3,417,050, 12–17–68, Cl. 260—47.

Pritchett, William B., Jr.: *See*—
Davis, Carey L. 3,416,708.

Prijatel, Edward A.: *See*—
Reimer, Leonard H., and Prijatel. 3,416,459.

Pritchard, John: *See*—
Ellison, Ronald, Pickles, Pritchard, and Taylor. 3,416,471.

Probst, Otto, L. Hörnig, and L. Hirsch, to Farbwerke Hoechst Aktiengesellschaft, vormals. Process for the manufacture of acetoacetic acid methyl ester and acetoacetic acid ethyl ester. 3,417,129, 12–17–68, Cl. 260—483.

Procter & Gamble Co., The: *See*—
Kretschmar, Herbert C. 3,417,143.

Pruett, Roy L., and W. R. Myers, to Union Carbide Corp. Oligomerization. 3,417,130, 12–17–68, Cl. 260—485.

Pucher, Walter: *See*—
Forwald, Haakon, Pucher, and Sindahl. 3,417,217.

Pullman Inc.: *See*—
Gutridge, Jack E. 3,416,464.
McMahon, Joseph F. 3,417,029.

Pumpelly, Robert C.: *See*—
Crow, Morgan L., Kilgore, and Pumpelly. 3,416,608.

Purdue Frederick Co., The: *See*—
Lubman, Seymour A., and Kurland. 3,416,375.

Purex Corp. Ltd.: *See*—
Reiter, Benjamin C. 3,416,732.

Pustell, Robert A.: *See*—
Haselton, Thomas P., and Pustell. 3,416,972.

Pustsch, Peter U., and K. D. Schorken, to Fa. Fritz Kieper. Fastening means for a motor vehicle door. 3,416,826, 12–17–68, Cl. 292—198.

Putter, Rolf: *See*—
Pelster, Heinrich, Konig, and Putter. 3,417,090.

Pyle, Ronald E.: *See*—
Patel Chim P., and Pyle. 3,417,078.

Quinn, Joseph G., to General Electric Co. Body organ electrode. 3,416 534, 12–17–68. Cl. 128—418.

RIV-SKF Officine Di Villar Perosa S.p.A.: *See*—
Einaudi, Giacomo. 3,416,210.

Racine Hydraulics & Machinery Inc.: *See*—
McIlrath, William P., and Stougaard. 3,416,417.

Radcliffe, Milton R., and W. Tabroff, to United Shoe Machinery Corp. Shoe manufacture. 3,416,244, 12–17–68, Cl. 36—30.

Radiation Inc.: *See*—
Lewis, Bernard L., and Pietsch. 3,417,398.

Radio Corp. of America: *See*—
Atzenbeck, Charles R. 3,417,333.
Hall, Cyril J. 3,417,282.
Sondermeyer, Jack C. 3,417,339.
Yao, Ying-Luh. 3,417,262.

Radtke, Alton W.: *See*—
Leistner, Carl J., and Radtke. 3,416,895.

Ralston, Robert, to Addressograph-Multigraph Corp. Document and copy separating system. 3,416,863, 12–17–68, Cl. 355—110.

Ramm, Hellmut A.: *See*—
Heinze, Johannes R. L., Ramm, and Richardt. 3,417,057.

Randall, Brian P. Game projectiles. 3,416,800, 12–17–68, Cl. 273—106.

Randall, David J., and H. B. Freyermuth, to CAF Corp. 2-Alkylamino-4-halogeno-6-N-lactam-s-triazine derivatives. 3,417,079, 12–17–68, Cl. 260—239.3.

Raven Industries, Inc.: *See*—
Hutchins, Marylyn R. 3,416,337.

Ravitts, Richard B., to Richards of Rockford, Inc. Unit for removing solids from tanks, reservoirs and the like. 3,416,176, 12–17–68. Cl. 15—1.7

Ravitts, Richard B., and J. W. Meckenstock, to Richards of Rockford, Inc. Liquid aerator. 3,416,729, 12–17–68, Cl. 239—16.

Raydyot Ltd.: *See*—
Neale, David W. 3,416,820.

Rayfield, Harry F., to Burroughs Corp. Erasure prevention control for coaxially mounted tape supply and take-up reels. 3,417,387, 12–17–68. Cl. 340—174.1.

Rayflex Exploration Co.: *See*—
Kelsey, Martin C., Loyd, and Rollins. 3,416,357.

Raytheon Co.: *See*—
Dixon, Alan F., and Valdes. 3,417,299.
Stauffer, Franklin K. 3,417,281.
Stiftre, Francis J. and Shrader. 3,417,396.

Recknagel, Frederick W., to Federal Bearing Co., Inc. Combination ball and needle bearing with minimum rolling friction. 3,416,848, 12–17–68, Cl. 308—174.

Recognition Equipment, Inc.: *See*—
Bleser, Albert H. 3,417,372.

Redman, Charles H.: *See*—
Hauser, Jon W. 3,416,430.

Reed, Edward L.: *See*—
Armenoff, Carl T., and Reed. 3,416,218.

Reed, Jonathan, to Rye Ltd. Electromagnetic coupling devices. 3,417,271, 12–17–68, Cl. 310—103.

Reed, Robert D., to John Zink Co. Burner assembly producing radiant heat. 3,416,735 12–17–68, Cl. 239—567.

Reerink, Engbert H., P. Westerhof, and H. F. L. Scholer, to North American Philips Co., Inc. 15-Oxygenated derivatives of 9β, 10α-pregna-3,20-dione compounds. 3,417,112, 12–17–68 Cl. 260—397.4.

Regel, Erik K., and M. F. Botts, to Chemagro Corp. Process of killing plants. 3,416,912, 12–17–68, Cl. 71—87.

Regie Nationale des Usines Renault: *See*—
De Coye de Castelet, Gaetan. 3,416,501.

Regina Enterprises, Inc.: *See*—
Richter, Walter. 3,416,475.

Reid, John D.: *See*—
Kullman, Russell M. H., Frick, Reinhard, and Reid. 3,416 880.

Reifenberg, Gerald H.: *See*—
Considine, William J., and Reifenberg. 3,417,116.

Reimer, Leonard H., and E. A. Prijatel, to Parker-Hannifin Corp. Rotary pump or motor. 3,416,459, 12–17–68, Cl. 103—126.

Rein, Richard H., to Union Carbide Corp. Cryogenic cooling. 3,416,977, 12–17–68, Cl. 148—20.6.

Reinhard, Robert M.: *See*—
Kullman, Russell M. H., Frick, Reinhard, and Reid. 3,416,880.

Reise, John R. Foot valve. 3,416,565, 12–17–68, Cl. 137—549.

Reiss, Lawrence: *See*—
Torsiello, Joseph, and Reiss. 3,416,429.

Reiter, Benjamin C., to Purex Corp. Ltd. Washing apparatus for enclosed spaces. 3,416,732, 12–17–68, Cl. 239—227.

Renner, Howard W., and H. R. Ubtenwoldt, to The Heald Machine Co. Loading apparatus for reciprocating and rotating a shaft. 3,416 407, 12–17–68, Cl. 91—36.

Rensvold, Roger F., to Halliburton Co. Epoxy resin grouping fluid and method for stabilizing earth formations. 3,416,604, 12–17–68, Cl. 166—33.

Rescsanski, Joseph A.: *See*—
Springer, William E., and Rescsanski. 3,416,806.

Research Association for the Paper and Board Printing and Packaging Industries: *See*—
Sutherland, Charles A. O., and Luckins. 3,416,237.

Research Corp.: *See*—
Campaigne, Ernest E., and Neiss. 3,417,087.
Streitfeld, Murray M. 3,416,998.

Resek, Marc: *See*—
Fannon, John J., Jr., and Resek. 3,416,511.

Ressor, James W., to Voss Engineering Co. Automatic control and indicating systems for roller levelers. 3,416,340, 12–17–68, Cl. 72—12.

Reuteler, Johann F., to Pratt & Whitney, Inc. Numerical control system. 3,417,303, 12–17–68, Cl. 318—18.

Revere Copper and Brass Inc.: *See*—
Young, Charles W. 3,416,280.

Reynolds, Aaron G., to Reynolds Research & Mfg. Corp. Land leveling equipment. 3,416,612, 12–17–68, Cl. 172—784.

Reynolds, Charles E., to AMP Inc. Electrical connector and electrical terminals therefor. 3,417,362, 12–17–68, Cl. 339—17.

Reynolds, George A., and J. A. Van Allan, to Eastman Kodak Co. Polymethine pyrylium compounds and process for their preparation. 3,417,083, 12–17–68, Cl. 260—240.

Reynolds Metals Co.: *See*—
Arfert, Horst F. W. 3,416,698.
Farquhar, Melville T. 3,416,653.
Pilger, Nicholas J. 3,416,719.
Swenck, George F., and Gresham. 3,416,278.
Weber, Otto R. 3,416,292.
Whitaker, William C. 3,416,410.

Reynolds Research & Mfg. Corp.: *See*—
Reynolds, Aaron G. 3,416,612.

Rhone-Poulenc S.A.: *See*—
Boissieras, Jean, and Lefort. 3,417,120.

Ribback, Bernd. Press for deforming plastic stock. 3,416,352, 12–17–68, Cl. 72—402.

Rice Filter, Inc.: *See*—
Holliday, Stanley R. 3,416,294.

Rice, Matt F., to Morrison-Knudsen Co., Inc. Automatic coupling. 3,416,832, 12–17–68, Cl. 294—82.

Richard, Joseph D. Pulse echo recording. 3,417,369, 12–17–68, Cl. 340—3.

Richards, Philip C., to Bell Telephone Laboratories, Inc. Telephone trunk circuit. 3,417,204, 12–17–68, Cl. 179—18.

Richards of Rockford, Inc.: *See*—
Ravitts, Richard B. 3,416,176.
Ravitts, Richard B., and Meckenstock. 3,416,729.

Richardt, Hans G.: *See*—
Heinze, Johannes R. L., Ramm, and Richardt. 3,417,057.

Richmond, Alvin: *See*—
Legal, Casimer C., Jr., Richmond, and Bruno. 3,416,910.

Richmond, Kenneth D.: *See*—
Jensen, Howard J., Richmond, Brooks, and Waugh. 3,416,383.

Richmark Co., The: *See*—
Donner, Mark R. 3,416,396.

Richter, Henning, K. H. Büttner, and G. Bintzek, to Deutsche Edelstahlwerke Aktiengesellschaft. Apparatus for compacting permanent magnet powders into pressings. 3,416,191, 12–17–68, Cl. 18—16.5.

Richter, Walter, to Regina Enterprises, Inc. Curling die set. 3,416,475, 12–17–68, Cl. 113—1.

Ridler, Desmond S., R. George, J. A. W. Butcher, and R. Kitajewski, to International Standard Electric Corp. Transfluxor storage matrix. 3,417,383, 12–17–68, Cl. 340—174.

Riel, Dick. Timer-controlled feeder. 3,416,497, 12–17–68, Cl. 119—51.11.

Riener, Edward F., and T. J. Durkin, to Rohm & Haas Co. Process for reducing the 2,4-dialkylphenol content in the manufacture of monoalkylphenol. 3,417,151, 12–17–68, Cl. 260—624.

Rieth, Kurt A., to Textron Inc. Adjustable section for a watch bracelet. 3,416,305, 12–17–68, Cl. 59—79.

Rigbey, Leo J.: *See*—
Kalthoff, Clement H., and Rigbey. 3,416,535.

Rigolini, Venerio J., to Whitehouse Products Inc. Camera. 3,416,425, 12–17–68, Cl. 95—31.

Rinkler, Heinrich, and G. Nischk, to Farbenfabriken Bayer Aktiengesellschaft. Unsaturated sulfonic acids. 3,417,134, 12–17–68, Cl. 260—506.

Rinno, Helmut: *See*—
Kühne, Rudolf, Meininger, Noll, Rinno, and Schlessler. 3,417,074.

Riordan, Hugh E.: *See*—
Evans, John L., Riordan, and Straut. 3,416,378.

Ripley, William L., to United States of America, Navy. Controlled energy release system for use in signals, flares, and other high energy lighting devices. 3,416,872, 12–17–68, Cl. 431—344.

Ripon Knitting Works: *See*—
Novitske, Ralph J. 3,416,174.

Risdon Mfg. Co., The: *See*—
Venus, Frank, Jr. 3,416,737.

Ritsema, Irving R., to The Bendix Corp. Universal joint. 3,416,331, 12–17–68, Cl. 64—17.

Robbins, Jim, Seat Belt Co.: *See*—
Stoffel, Robert W. 3,416,747.

Robbins, Roland W. Statically sealed gyrating lever transmission. 3,416,379, 12–17–68, Cl. 74—18.1.

Roberts, David H., to St. Joseph Lead Co. Process of making dispersion strengthened lead. 3,416,918, 12–17–68, Cl. 75—206.

Roberts, John H. Water removal and device. 3,417,013, 12–17–68, Cl. 208—187.

Robertshaw Controls Co.: *See*—
Koegel, James H. 3,417,270.
Russell, William J. 3,417,305.

Robertson, Gerald L.: *See*—
Simpson, Forrest L., and Robertson. 3,416,297.

Robertson, H. H., Co.: *See*—
Fork, Frank W. 3,417,191.

Robertson, Michael M.: *See*—
McIntyre, James E., and Robertson. 3,416,952.

Robicheaux, Warren J., to Gulf Oil Corp. Can sorting apparatus. 3,416,681, 12–17–68, Cl. 214—308.

Robin, Jean B., to Crylor. Production of polyacrylonitrile-based articles. 3,416,874, 12–17–68, Cl. 8—52.

Robinette, James B., to Storm-Vulcan, Inc. Means for electroplating crankshafts. 3,417,007, 12–17–68, Cl. 204—212.

Robinson, Anderson E., Jr., to Hercules Inc. Glass fiber-reinforced polymers. 3,416,990, 12–17–68, Cl. 161—93.

Robinson, Gene H., and O. C. Rodenberg, to Eastman Kodak Co. Electrographic liquid developing apparatus. 3,416,493, 12–17–68, Cl. 118—637.

Rodenberg, Orville C.: *See*—
Robinson, Gene H., and Rodenberg. 3,416,493.

Rody, Richard S., D. J. Skipper, and J. A. M. Gibbons, to Associated Electrical Industrial Ltd. Electric cables. 3,417,190, 12–17–68, Cl. 174—36.

Roesner, Lawrence C., and L. E. Meon, 36¼% interest to Calavo Growers of California. Blank feeder for a bottom sealing machine. 3,416,789, 12–17–68, Cl. 271—44.

Rohm & Haas Co.: *See*—
Lucas, George B. 3,417,067.
Mettalia, Joseph B., Jr., and Specht. 3,417,131.
Nemec, Joseph W., and Schlaefer. 3,417,145.
Preuss, Albert F., and White. 3,417,020.
Riener, Edward F., and Durkin. 3,417,151.

Rolinx Ltd.: *See*—
Bebb, Richard H. 3,416,694.

Rollins, James F.: *See*—
Kelsey, Martin C., Loyd, and Rollins. 3,416,357.

Roneo-Neopost Ltd.: *See*—
Sherman, Herbert P. 3,416,785.

Rooto Corp., The: *See*—
Peters, William H. 3,416,564.

Rosenberg, Robert B.: *See*—
Huebler, Jack, Rosenberg, and Rush. 3,416,509.

Rosenfield, Howard, to Linen Supply Association of America. Self orientation of flatgoods. 3,416,238, 12–17–68, Cl. 34—23.

Ross, Edward F., and J. F. Svetlik, to Phillips Petroleum Co. Blend of butadiene-styrene block copolymer and polychloroprene. 3,417,044, 12–17–68, Cl. 260—33.6.

Ross, Sidney D., R. C. Petersen, and M. Finkelstein, to Sprague Electric Co. Polymer deposit electrochemically. 3,417,003, 12–17–68, Cl. 204—14.

Rost, Gerald A.: *See*—
Landis, David M., and Rost. 3,417,329.

Rostoker, David, to Corning Glass Works. Method of making synthetic marble. 3,417,172, 12–17–68, Cl. 264—77.

Roth, Edwin S.: *See*—
Long, Alfred, Roth, King, and Van Dyck. 3,416,897.

Roth, Lester H. Device for gingival retraction and hemostatic action. 3,417,179, 12–17–68, Cl. 424—28.

Roubal, Joseph J. Stop and feed apparatus. 3,416,710, 12–17–68, Cl. 222—230.

Roubin, Marc P., J. M. Paris, and R. A. Paris, to Centre Nationale de la Recherche Scientifique. Solid solutions of the transition metal nitrides and oxinitrides and methods of preparation thereof. 3,416,891, 12–17–68, Cl. 23—191.

Rousseau, Claude G.: *See*—
Dupont, Alain M., Normand, Moch, and Rousseau. 3,417,292.

Rowlett, Glenford: *See*—
Stephens, Frederick N., Rowlett, and Pabodie. 3,416,787.

Rowley, Charles A. Vegetable grater and slicer. 3,416,584, 12–17–68, Cl. 146—171.

Roy, Donald W.: *See*—
Carnall, Edward, Jr., and Roy. 3,416,907.

Rubenstein, Albert M. Propulsion system. 3,416,319, 12–17–68, Cl. 60—202.

Ruhle, Hans: *See*—
Dietrich, Rolf, Ruhle, and Ebertz. 3,416,422.

Rupp, Walter: *See*—
Beermann, Claus, Schmidt, and Rupp. 3,417,163.

Rush, William F.: *See*—
Huebler, Jack, Rosenberg, and Rush. 3,416,509.

Russell, Fred J., R. L. Armstrong, and H. W. Falk, said Armstrong and said Falk assors. to said Russell. Adjustable strike. 3,416,828, 12–17–68, Cl. 292—341.18.

Russell, Fred J., R. L. Armstrong, and H. W. Falk, said Armstrong and said Falk assors. to said Russell. Adjustable strike. 3,416,829, 12–17–68, Cl. 292—341.19.

Russell, William J., to Robertshaw Controls Co. Thermally responsive control circuit with manual reset. 3,417,305, 12–17–68, Cl. 318—473.

Rutz, Leon E., to Houdaille Industries, Inc. Punch press. 3,416,392, 12–17–68, Cl. 74—625.

Ryan, William H.: *See*—
Land, Edwin H., and Ryan. 3,416,866.

Rye Ltd.: *See*—
Reed, Jonathan. 3,417,271.

SCM Corp.: *See*—
Mihojevich, Steven, Zerfahs, Ostensen, Berggren, and Glaser. 3,416,860.

SNAM-S.p.A.: *See*—
Marconi, Walter, Mazzei, Araldi, and Bruzzone. 3,417,065.
Notari, Bruno. 3,416,888.

S.R.M. Hydromekanik AB: *See*—
Ahlen, Karl G. 3,416,636.

SWF-Spezialfabrik fur Autozubehor Gustav Rau G.m.b.H.: *See*—
Deutscher, Hans-Christian, Bauer, and Kohler. 3,416,180.

Saad, Oscar C., and J. T. Otenbaker. Drain tile structure. 3,416,321, 12–17–68, Cl. 61—13.

Sabatino, Anthony, to Globe-Union, Inc. Method of assembling battery casings. 3,416,970, 12–17–68, Cl. 136—176.

Sacerdoti, Sergio: *See*—
Fabrucci, Aldo, Gianantonio, and Sacerdoti. 3,417,095.

Sahara, Hiroshi: *See*—
Yoshida, Susumu, Miyaoka, and Sahara. 3,417,199.

St. Joseph Lead Co.: *See*—
Roberts, David H. 3,416,918.

Saito, Seiichi: *See*—
Shiroki, Kenichi, and Saito. 3,416,898.

Salonish, James C., to Atlas Chemical Industries, Inc. Attrition of granular carbon. 3,416,739, 12–17–68, Cl. 241—5.

Salton, Robert B., to Westinghouse Air Brake Co. Brake cylinder device. 3,416,635, 12–17–68, Cl. 188—196.

Samuels, Bessie M., and E. M. Ling. Cast cover. 3,416,518, 12–17–68, Cl. 128—82.

Sande Lopez, Cesar Numa. Basketball game wherein the arms of each player are rotatable independently and relative to each other. 3,416,799, 12–17–68, Cl. 273—85.

Sanders Associates, Inc.: *See*—
Shomphe, George J., Tabor, and Lalmond. 3,417,229.

Sanfilippo, Nunzio J.: *See*—
Hunger, Herbert F., Sanfilippo, and Wynn. 3,416,963.

Sanford, Arthur C. Combination wood and metal trusses. 3,416,283, 12–17–68, Cl. 52—693.

Sangamo Electric Co.: *See*—
Becker, Dale F. 3,417,277.

Sarandos, George A. Apparatus for automatically producing a deodorant block having a handle. 3,416,208, 12–17–68, Cl. 29—33.

Sartori, Mario F., to E. I. du Pont de Nemours and Co. Yellow and orange monoazo dyes. 3,417,070, 12–17–68, Cl. 260—205.

Sasaoka, Takenori. Resilient plate clip. 3,416,202, 12–17–68, Cl. 24—259.

Sauberuch, Gerhard P., to Elgeo Instruments of America, Inc. Geodetic instrument. 3,417,394, 12–17–68, Cl. 343—6.

Sauder, Gerald D., to Grover Machine Co. Gutter and bracket hanger. 3,416,760, 12–17–68, Cl. 248—48.2.

Saunders, Henry A., to Persons-Majestic Mfg. Co. Brace for cycle saddle seats. 3,416,837, 12–17–68, Cl. 297—195.

Saunders Roe & Nuclear Enterprises Ltd.: *See*—
Guthrie, David G. 3,416,940.

Scandalis, Angelo C.: *See*—
Knoll, Frederick A., and Scandalis. 3,416,755.

Scaniand, Joseph E., to American Machine & Foundry Co. Track belt for motor driven vehicle. 3,416,845, 12–17–68, Cl. 305—38.

Schaefer, James C.: *See*—
Keramidas, Basilio, and Schaefer. 3,416,956.

Schäfer, Heinz: *See*—
Süs, Oskar, and Schäfer. 3,416,925.

Schaller, Frank H.: *See*—
Masterson, Earl E., and Schaller. 3,416,788.

Schaub, Paul W.: *See*—
Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,416,614.

Schenk, Erwin L., to J. I. Case Co. Sprocket assembly. 3,416,385, 12–17–68, Cl. 74—243.

Schenkel, Erwin. Spinning and twisting apparatus. 3,416,300, 12–17–68, Cl. 57—77.

Schiel, Volker: *See*—
Hey, Ernst F., Kuipers, Schiel, Hermann, Von Hoffmann, and Hinte. 3,416,470.

Schiessler, Siegfried: *See*—
Kühne, Rudolf, Meininger, Noll, Rinno, and Schiessler. 3,417,074.

Schiff, Sidney, to Phillips Petroleum Co. Gel compositions and preparation. 3,416,899, 12–17–68, Cl. 44—7.

Schiller, Geraldine P., and L. S. Strutman. Ash disposal system for vehicles. 3,416,647, 12–17–68, Cl. 206—19.5.

Schladitz, Hermann J., to Schladitz-Whiskers A.G. Method and apparatus for coating the inner surface of a capillary system. 3,416,946, 12–17–68, Cl. 117—61.

Schladitz-Whiskers A.G.: *See*—
Schladitz, Hermann J. 3,416,946.

Schlaefer, Francis W.: *See*—
Nemec, Joseph W., and Schlaefer. 3,417,145.

Schlumberger Technology Corp.: *See*—
Blagg, Leon. 3,416,767.

Schmerling, Louis, and W. G. Toekelt, to Universal Oil Products Co. Conversion of pyridine to benzoic acid. 3,417,135, 12–17–68, Cl. 260—515.

Schmidt, Albrecht C., to Gesellschaft fur Kernforschung m.b.H. Neutron generating apparatus. 3,417,245, 12–17–68, Cl. 250—84.5.

Schmidt-Collerus, J. J.: *See*—
Gray, Don N., Schmidt-Collerus, and Smith. 3,417,153.

Schmidt, Donald L.: *See*—
Pirrung, Paul F., and Schmidt. 3,416,944.

Schmidt, Erwin: *See*—
Beermann, Claus, Landauer, and Schmidt. 3,417,061.

Schmidt, Erwin: *See*—
Beermann, Claus, Schmidt, and Rupp. 3,417,163.

Schmitt-Thomas, Karlheinz G.: *See*—
Pohl, Ernst J., Schmitt-Thomas, and Burck. 3,416,630.

Schmitz, Christian, and W. Mathieu, to Daimler-Benz Aktiengesellschaft. Gas turbine rotor. 3,416,723, 12–17–68, Cl. 230—116.

Schmucker, Arden E.: *See*—
Elmer, Otto C., Greene, and Schmucker. 3,417,035.

Schneider, Robert A., to Consolidated Electrodynamics Corp. High frequency magnetic head. 3,417,209, 12–17–68, Cl. 179—100.2.

Schneider, Robert A., to Consolidated Electrodynamics Corp. Magnetic head assembly. 3,417,386, 12–17–68, Cl. 340—174.1.

Schneider, Robert M., to American Bosch Arma Corp. Voltage-controlled wien bridge oscillator with servo-controlled strain-sensitive resistances. 3,417,349, 12–17–68, Cl. 331—141.

Schnettler, Richard A., J. T. Suh, and C. I. Judd, to Colgate-Palmolive Co. Bicyclic ferrocenes. 3,417,118, 12–17–68, Cl. 260—439.

Schoenecker, Thomas J., and R. L. Olson, to Union Tank Car Co. Check valve with wiping action. 3,416,557, 12–17–68, Cl. 137—242.

Scholer, Hendrik F. L.: *See*—
Reerink, Engbert H., Westerhof, and Scholer. 3,417,112.

Schonfeld, Arnold: *See*—
Lukoff, Herman, and Schonfeld. 3,417,232.

Schorken, Karl D.: *See*—
Putsch, Peter U., and Schorken. 3,416,826.

Schrader, Malcolm E., to United States of America, Navy. Method of improving the bonding characteristics of glass surfaces. 3,416,950, 12–17–68, Cl. 117—106.

Schrier, Henry M.: *See*—
Contrucci, Raymond J., Kelm, and Schrier. 3,416,209.

Schupack, Morris: *See*—
Caputo, Arnold P., Schupack, and McDonald. 3,416,276.

Schurle, Werner, and A. Muller, to Eisen- und Drahtwerk Erlau A.G. Chain link for anti-skid and tire-protective chains. 3,416,587, 12–17–68, Cl. 152—243.

Schutt, John B., and C. M. Shai, to United States of America, National Aeronautics and Space Administration. Alkali-metal silicate protective coating. 3,416,939, 12–17–68, Cl. 106—84.

Schutzner, Walter, and F. Mock, to W. Koreska. Direct-transfer copy sheet. 3,416,942, 12–17–68, Cl. 117—36.3.

Schuyler, Robert F. Battery charger circuit responsive to voltage and current of charging source. 3,417,309, 12–17–68, Cl. 320—32.

Schweers, Karl D., to Airequipt Inc. Metal slide magazine. 3,416,250, 12–17–68, Cl. 40—79.

Scoledge, Robert F.: *See*—
Palermo, James J., Bonazoli, Scoledge, and Audesse. 3,416,851.

Scott Paper Co.: *See*—
Eastes, John W., and Faessinger. 3,417,037.

Scott, Robert H., to Celanese Corp. Inhibition of corrosion. 3,416,974, 12–17–68, Cl. 148—6.15.

Scovill Mfg. Co.: *See*—
Daddona, Domenic J., Jr. 3,416,200.
Green, Derek B. 3,416,770.

Sealed Air Corp.: *See*—
Chavannes, Marc A., and Fielding. 3,416,984.

Sebelin, Alfred, to Hauni-Werke Koerber & Co., K.G. Apparatus for wrapping cigarette packs and the like. 3,416,289, 12–17–68, Cl. 53—55.

Seidl, Gunther: *See*—
Kuch, Heinz, Seidl, and Hoffmann. 3,417,085.

Seidl, Gunther, and G. Nesemann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. α-Phenyl-α(4-tertiary amino alkoxyimino-2,5-cyclohexadiene-1-ylidene) acetonitriles and process for preparing them. 3,417,093, 12–17–68, Cl. 260—294.7.

Sennik, John J., to Electrohome Ltd. Variable voltage networks. 3,417,285, 12–17–68, Cl. 315—31.

Seyler, Jay K.: *See*—
Feldman, Julian, and Seyler. 3,417,141.

Shai, Charles M.: *See*—
Schutt, John B., and Shai. 3,416,939.

Shakespeare Co.: *See*—
Wilson, Richard I. 3,416,220.

Shanok, Jesse P.: *See*—
Shanok, Victor and J. P. 3,416,761.

Shanok, Victor, and J. P., to Glass Laboratories Co. Magnetic mounting device. 3,416,761, 12–17–68, Cl. 248—115.

Shapero, Maurice: *See*—
Pickholz, Siegfried, and Shapero. 3,417,091.

Sharpe, Clarence L. Pipe cleaner. 3,416,539, 12–17–68, Cl. 131—245.

Shastal, Eugene D. Dispensing closures. 3,416,712, 12–17–68, Cl. 222—541.

Shaughnessy, William J., to American Standard Inc. Constant current apparatus. 3,417,319, 12–17–68, Cl. 323—4.

Shearer, Richard D.: *See*—
Hauser, Jon W. 3,416,430.

Sheehan, William C., to Phillips Petroleum Co. Method of fibrillation. 3,416,772, 12–17–68, Cl. 225—3.

Shell Oil Co.: *See*—
Kohll, Charles F., and Fekkes. 3,417,124.

Shepherd, Joseph L., and T. M. Cromwell, to Aerojet-General Corp. Distillation and fractionation of dichloroborane. 3,416,999, 12–17–68, Cl. 202—161.

Sherer, Abraham I., to Ball Brothers Co. Inc. Etching composition and method. 3,417,022, 12–17–68, Cl. 252—79.4.

Sherman, Floyd F., and R. E. Staples, to United States Plywood Corp. Sanding and polishing machine. 3,416,261, 12–17–68, Cl 51—60.

Sherman, Herbert P., to Roneo-Neopost Ltd. Paper nesting and enveloping apparatus. 3,416,785, 12–17–68, Cl. 270—45.

Shiffman, Jerome. Tray-enclosed jewelry box. 3,416,655, 12–17–68, Cl. 206—75.

Shimp, David A.: *See*—
Price, Herbert P., and Shimp. 3,417,050.

Shiroki, Kenichi, and S. Saito, to Nippon Electric Co. Ltd. Method for growing high melting point single crystals and an apparatus therefor. 3,416,898, 12–17–68, Cl. 23—301.

Shlesinger, Bernard E., Jr., to AMP, Inc. Strip and nonstrip electrical connection. 3,417,195, 12–17–68, Cl. 174—84.

Shoji, Susumu: *See*—
Taguchi, Michiichi, and Shoji. 3,417,126.

Sholl, Cecil R. Removable wheels for boats. 3,416,813, 12–17–68, Cl. 280—47.32.

Shomphe, George J., R. W. Tabor, and H. W. Lalmond, to Sanders Associates, Inc. Electrical resistance heating articles. 3,417,229, 12–17–68, Cl. 219—528.

Shook, Alvin L. Manicure aid. 3,416,542, 12–17–68, Cl. 132—73.

Shrader, William W.: *See*—
Stifter, Francis J., and Shrader. 3,417,396.

Shultz, James H., and C. G. Zike, to Spray-Tak Inc. Apparatus for applying a plurality of fluid materials. 3,416,709, 12–17–68, Cl. 222—94.

Shutt, Paul B., to The Bendix Corp. Master cylinder. 3,416,317, 12–17–68, Cl. 60—54.6.

Siddiqui, Mohammad N.: *See*—
Fono, Andrew, and Siddiqui. 3,416,873.

Siedel, Walter: *See*—
Sturm, Karl, Siedel, and Weyer. 3,417,080.

Siemens Aktiengesellschaft: *See*—
Walz, Heinz. 3,416,223.

Siems, David T., to General Motors Corp. Method and apparatus for determining the dynamic qualities of elastic materials. 3,416,363, 12–17–68, Cl. 73—67.1.

Sierra Electric, Inc.: *See*—
Bordner, Lee T. 3,416,251.

Signal Oil and Gas Co.: *See*—
Parish, Clyde E., and Urmy. 3,416,893.

Silsby, Stanley D., to United States of America, Army. Combination firing and ejecting mechanism for a grenade launcher. 3,416,252, 12–17–68, Cl. 42—1.

Silverstein, Harry: *See*—
Brown, George L., and Silverstein. 3,417,041.
Simons, Charles W., and J. A. Gribens, to W. R. Grace and Co. Method of making gasketed closures. 3,417,177, 12–17–68, Cl. 264—230.
Simonsen, Richard C., N. S. Blessum, and J. A. Hibner, to Burroughs Corp. Multiple frequency data handling system. 3,417,378, 12–17–68, Cl. 340—172.5.
Simpson, Forrest L., and G. L. Robertson, to International Harvester Co. Cotton harvester. 3,416,297, 12–17–68, Cl. 56—33.
Sincerbox, Glenn T., to International Business Machines Corp. Apparatus for writing information in memory by light. 3,417,381, 12–17–68, Cl. 340—173.
Sindahl, Karl G.: *See*—
Forwald, Haakon, Pucher, and Sindahl. 3,417,217.
Singer Co., The: *See*—
Johnson, Ralph E. 3,416,472.
Sivyer, Robert B. Heater fittings. 3,416,571, 12–17–68, Cl. 138—92.
Skinner, Bradley, to Phillips Petroleum Co. Method of fibrillation. 3,416,714, 12–17–68, Cl. 225—3.
Skipper, Donald J.: *See*—
Rody, Richard S., Skipper, and Gibbons. 3,417,190.
Slater, Richard J.: *See*—
Dryden, Hugh L. 3,416,988.
Sloan Valve Co.: *See*—
Nelson, Axel B. 3,416,556.
Slover, Vasel R., Jr.: *See*—
Glenn, Edwin E., Jr., Slover, and Strubhar. 3,416,547.
Smeloff, Edward A., T. B. Davey, and B. Kaufman, to Sutter Hospitals Medical Research Foundation. Double-cage heart valve with contoured oversize orifice. 3,416,159, 12–17–68, Cl. 3—1.
Smetana, Richard D., and H. Chafetz, to Texaco, Inc. Nitration of hydrocarbons with HNO—$(CF_3CO)_2O$ mixture. 3,417,127, 12–17–68, Cl. 260—466.
Smith, Albert C., to Eastman Kodak Co. Scribing film. 3,416,926, 12–17–68, Cl. 96—94.
Smith, Arthur D.: *See*—
Dey, Chester, and Smith. 3,416,341.
Smith, Charles R.: *See*—
Dorsett, James P., and Smith. 3,416,639.
Smith, Claiborne D.: *See*—
Gray, Don N., Schmidt-Collerus, and Smith. 3,417,153.
Smith, Colen S. Sampling device. 3,416,374, 12–17–68, Cl. 73—425.2.
Smith, Donald F., to United States of America, Navy. Antimine weapon. 3,416,403, 12–17–68, Cl. 89—1.
Smith-Gates Corp., The: *See*—
Harrison, Frank H., and Gonneville. 3,416,743.
Smith, George E. P., Jr., and W. S. Cook, to The Firestone Tire & Rubber Co. 2,6 dialkyl morpholinothio carbonyl-amino sulfides and amino thiocarbonyl-2,6 dialkylamino morpholino-sulfides. 3,417,086, 12–17–68, Cl. 260—247.1.
Smith, Gordon L.: *See*—
Hasbrouck, Leo J., Ossolinski, and Smith. 3,417,380.
Smith, Herchel: *See*—
Hughes, Gordon A., and Smith. 3,417,081.
Hughes, Gordon A., and Smith. 3,417,105.
Smith, Lawrence S.: *See*—
Dryden, Hugh L., and National Aeronautics and Space Administration. 3,417,298.
Smith, Richard E., C. D. Holmes, and C. E. Henkel, to Sylvania Electric Products Inc. Fused projector lamp. 3,417,286, 12–17–68, Cl. 315—74.
Smith, Sidney R., Jr., to General Electric Co. Arc controlling electrodes for switches and gaps. 3,417,216, 12–17–68, Cl. 200—144.
Smithe, Eliot S. Multipurpose suction roll for envelope making machines. 3,416,414, 12–17–68, Cl. 93—61.
Smithe, F. L., Machine Co., Inc.: *See*—
Ciccone, Jack M. 3,416,286.
Snow, Karl S., and S. A. Herres, to Titanium Metals Corp. of America. Method for forming electrodes. 3,416,919, 12–17–68, Cl. 75—208.
Snow, William T., Jr., to W. R. Grace & Co. Packages and packaging apparatus and methods. 3,416,649, 12–17–68, Cl. 206—46.
Snyder, Allan W., and G. G. Pick, to Sylvania Electric Products Inc. Ferrite core having different regions of varying permeability. 3,417,382, 12–17–68, Cl. 340—174.
Societe Anonyme de Vehicules Industriels et d'Equipements Mecaniques Saviem: *See*—
Labat, Pierre. 3,416,409.
Societe Anonyme Francaise du Ferodo: *See*—
Maurice, Jean. 3,416,637.
Societe Civile dite: Societe Civile d'Etudes de Centrifugation: *See*—
Babel, Louis, and Peytavin. 3,416,591.
Societe des Compresseurs a Membrane Corblin: *See*—
Feuillebois, Louis, and Ormut. 3,416 453.
Societe Mixte pour le Development de la Technique de la Commutation dans le Domaine des Telecommunications: *See*—
Dupont, Alain M., Normand, Moch, and Rousseau. 3,417,292.
Societe Nationale des Petroles d'Aquitaine Tour Aquitaine: *See*—
Pinazzi, Christian P., Pautrat, Cheritat, and Branlard. 3,417,056.
Solodilov, Leonid N.: *See*—
Balashkand, Mikhail I., Evokimov, Kaplan, Lovlya, Solodilov, and Chen. 3,416,621.
Soltys, Kenneth J., to Air Products and Chemicals, Inc. Plastic foam production. 3,417,038, 12–17–68, Cl. 260—2.5.
Someda, Sadamichi, to Matsushita Electric Industrial Co., Ltd. Constant output voltage rectifying systems. 3,417,312, 12–17–68, Cl. 321—18.
Sommer & Maca Glass Machinery Co.: *See*—
Maca, Paul D. 3,416,384.
Sondermeyer, Jack C., to Radio Corp. of America. Push-pull transistor amplifiers with transformer coupled driver. 3,417,339, 12–17–68, Cl. 330—15.
Sonotone Corp.: *See*—
Kisa, Gabriel, and Peitry. 3,417,307.
Mandel, Lazaro J., and Kosa. 3,417,308.
Michalko, Ignatius. 3,416,964.
Sony Corp.: *See*—
Yoshida, Susumu, Miyaoka, and Sahara. 3,417,199.
Sorensen, Cloyd J., Jr., and R. E. Porter. Syringe assembly unit. 3,416,657, 12–17–68, Cl. 206—47.
Southern Mills, Inc.: *See*—
Terry, Claude E. 3,416,246.
Specht, Edward H.: *See*—
Mettalia, Joseph B., Jr., and Specht. 3,417,131.
Speckamp, Willem N.: *See*—
Huisman, Henderikus, Westra, Speckamp, and Pandit. 3,417,100.
Speed-Park, Inc.: *See*—
Allmanestianu, Mihai. 3,416,685.
Spencer, Kenneth H., to Beckett Mfg. Co. Cargo securing means. 3,416,816, 12–17–68, Cl. 280—179.
Sperry Rand Corp.: *See*—
Granberg, Mauritz L., and Stoffel. 3,417,284.
Griffin, Benjamin F., Jr. 3,416,550.
Lukoff, Herman, and Schonfeld. 3,417,232.
Mathias, Joseph S., and McGee. 3,416,932.
Nolt, Edwin B. 3,416,825.
Nolt, Edwin B., Eberly, and Eby. 3,416,824.
Storck, Richard H., and Adomines. 3,416,962.
Spilker, Donald D. Guide strip for striping tools. 3,416,235, 12–17–68, Cl. 33—177.
Spillman, Gerard J.: *See*—
Miller, Donald L., Spillman, Stokowski, and Wharmby. 3,416,440.
Spiteri, Joseph. Relief valve. 3,416,553, 12–17–68, Cl. 137—115.
Sprague Electric Co.: *See*—
Kalt, Charles G., and Frantz. 3,416,248.
Muskovac, Nicholas G. 3,417,320.
Pechini, Maggio P. 3,416,957.
Ross, Sidney D., Petersen, and Finkelstein. 3,417,003.
Sprague, Lloyd G.: *See*—
Bennett, Robert W., and Sprague. 3,417,274.
Spranger, Wolfgang: *See*—
Ballreich, Kurt, Ketterl, and Spranger. 3,416,450.
Spray-Tak Inc.: *See*—
Shultz, James H., and Zike. 3,416,709.
Springer, William E., and J. A. Rescsanski, to Dictaphone Corp. Dictation apparatus. 3,416,806, 12–17–68, Cl. 274—17.
Sproul, James D., Jr., to General Steel Industries, Inc. Abrasion resistant glass bead with sharp softening range and process for making the same. 3,416,936, 12–17–68, Cl. 106—52.
Squibb, E. R., & Sons, Inc.: *See*—
Bodanszky, Miklos. 3,417,072.
Stahl, Chester B., Sr. Animal feeding device. 3,416,498, 12–17–68. Cl. 119—55.
Staller, Karel J., to Minigrip Inc. Flexible container having interlocking rib and groove closure elements. 3,416,585, 12–17–68, Cl. 150—3.
Stamm, Walter, to Stauffer Chemical Co. Process of preparing organometallic isocyanates. 3,417,115, 12–17–68, Cl. 260—429.7.
Standard Products Co., The: *See*—
Dallen, John A. 3,416,279.
Standley, Wendell E., R. B. Wittmann, and J. E. Karlovitz, to Johns-Nigrelli-Johns, Inc. Case flap folding mechanism and method. 3,416,285, 12–17–68, Cl. 53—3.
Stanford Research Institute: *See*—
Macovski, Albert. 3,417,404.
Stanley, John H., to Parker-Hannifin Corp. Hand-held tube bender and bend centering procedure. 3,416,345, 12–17–68, Cl. 72—159.
Staples, Robert R.: *See*—
Sherman, Floyd F., and Staples. 3,416,261.
Stark, Sven O. S., H.-G. W. Melle, and T. L. Lindh. Container opening device comprising a slot and a strip passing through it. 3,416,716, 12–17–68, Cl. 229—7.
Stauffer Chemical Co.: *See*—
Stamm, Walter. 3,417,115.
Stauffer, Franklin K., to Raytheon Co. Cursive character generator. 3,417,281, 12–17–68, Cl. 315—18.
Steele, Robert D., and R. J. Farris, to Aerojet General Corp. Extensometer and attachment. 3,416,233, 12–17–68, Cl. 33—147.
Steele, Roger C., to Hexcel Corp. Method and apparatus for making honeycomb. 3,416,983, 12–17–68, Cl. 156—197.
Stefaniak, Walter J., to Allied Chemical Corp. Production of dicarboxylic acid anhydrides by catalytic oxidation. 3,417,108, 12–17–68, Cl. 260—346.4.
Steidley, Virgil K., to The F. E. Myers & Bro. Co. Pickup probe. 3,416,844, 12–17–68, Cl. 302—58.
Steidlitz, Mark, to EMC Technology, Inc. Mounting circuit elements in printed circuit boards. 3,417,294, 12–17–68, Cl. 317—101.
Steiger, Anton, to Sulzer Bros. Ltd. Apparatus for injection of fuel into piston-type internal combustion engines. 3,416,506, 12–17–68, Cl. 123—139.
Steigerwald, K. H., G.m.b.H.: *See*—
Steigerwald, Karl H., and Meyer. 3,417,224.
Steigerwald, Karl H. Welding process using radiant energy. 3,417,223, 12–17–68, Cl. 219—121.

Steigerwald, Karl H., and E. Meyer, to K. H. Steigerwald G.m.b.H. Method and device for working material by means of a corpuscular beam. 3,417,224, 12–17–68, Cl. 219—121.
Steinbach, Hans: *See*—
Hitzemann, Gerhard, Kulling, and Steinbach. 3,416,892.
Stelchek, Charles G., to Johns-Manville Corp. Apparatus for loosening cementitious water-laid pipe from a mandrel. 3,416,995, 12–17–68, Cl. 162—284.
Stenberg-Flygt Aktiebolag: *See*—
Gamer, Sven G. Y. 3,416,776.
Stenlund, Sigvard: *See*—
Dryden, Hugh L. 3,416,988.
Stephen, Floyd M.: *See*—
Ozenne, Gilbert J., and Stephen. 3,416,203.
Stephens, Frederick N., G. Rowlett, and R. M. Pabodie, to Stephens Industries, Inc. Ticketmaking machine. 3,416,787, 12–17–68, Cl. 270—79.
Stephens Industries, Inc.: *See*—
Stephens, Frederick N., Rowlett, and Pabodie. 3,416,787.
Stephens, Joseph F. 3,416,713.
Stephens, Joseph F., to Stephens Industries, Inc. Filament inserting tool. 3,416,713, 12–17–68, Cl. 223—104.
Stephens, Verlin C.: *See*—
Murphy, Hubert W., Stephens, and Conine. 3,417,077.
Steppan, Hartmut: *See*—
Messwarb, Gunter, Luders, Erdmann, and Steppan. 3,417,051.
Messwarb, Gunter, Luders, Munder, and Steppan. 3,417,052.
Sternberg, Herbert B. Identification apparatus and improved seal element. 3,416,247, 12–17–68, Cl. 40—2.2.
Sterry, Dan G., to Phillips Petroleum Co. Acoustical logging apparatus. 3,417,971, 12–17–68, Cl. 340—18.
Stewart, Alfred W., to Datron Systems, Inc. Card reader. 3,417,233, 12–17–68, Cl. 235—61.11.
Stewart-Warner Corp.: *See*—
Deadrick, James R. 3,416,184.
Kadivnik, Norman H. 3,417,250.
Little, Arthur J. 3,416,804.
Little, Arthur J. 3,416,507.
Stier, Otto, and E Beck, to Vollmer Werke Maschinenfabrik G.m.b.H. Sawtooth treating apparatus. 3,416,394, 12–17–68, Cl. 76—49.
Stifter, Francis J., and W. W. Shrader, to Raytheon Co. Moving target indication system using a staggered repetition rate. 3,417,396, 12–17–68, Cl. 343—7.7.
Stites, Francis H., and B. J. Vachon, to Sylvania Electric Products, Inc. Mark sensing system. 3,417,231, 12–17–68, Cl. 235—61.11.
Stixrood, Jarvis A., J. R. Bruce, and E. C. Holden, to Pacific Car and Foundry Co. Skidder winch. 3,416,773, 12–17–68, Cl. 254—166.
Stobb, Anton R., to Stobb, Inc. Signature feeder. 3,416,679, 12–17–68, Cl. 214—8.5.
Stobb, Anton R. to Stobb, Inc. Book collating method and means. 3,416,786, 12–17–68, Cl. 270—54.
Stobb, Inc.: *See*—
Stobb, Anton R. 3,416,679.
Stobb, Anton R. 3,416,786.
Stockel, Richard F.: *See*—
Megson, Frederic H., Beachem, and Stockel. 3,417,089.
Stoffel, Jerome J.: *See*—
Granberg, Mauritz L., and Stoffel. 3,417,284.
Stoffel, Robert W., to Jim Robbins Seat Belt Co. Automatic locking rotary retracting device. 3,416,747, 12–17–68, Cl. 242—107.4.
Stokowski, Edward J., Jr.: *See*—
Miller, Donald L., Spillman, Stokowski, and Wharmby. 3,416,440.
Stone, Wayne B., Jr., 24½% each to G. T. Moller and E. L. Goldman. Automotive support structure for increasing the capacity of parking lots. 3,416,269, 12–17–68, Cl. 52—175.
Storck, Richard H., and A. A. Adomines, to Sperry Rand Corp. Preparing etched substrates for vacuum deposition of a metal thereon. 3,416,962, 12–17–68, Cl. 134—26.
Storm-Vulcan, Inc.: *See*—
Robinette, James B. 3,417,007.
Stougaard, Chris: *See*—
McIlrath, William P., and Stougaard. 3,416,417.
Strandrud, Halvor T.: *See*—
Chaney, Harold K., and Strandrud. 3,416,549.
Strausser, John R.: *See*—
French, Lawrence R., Strausser, and Thompson. 3,417,159.
Strant, Harold J.: *See*—
Evans, John L., Riordan, and Strant. 3,416,378.
Streitfeld, Murray M., to Research Corp. Method of detecting or classifying microorganisms using agar reagent sheets. 3,416,998, 12–17–68, Cl. 195—103.5.
Strief, Milton J.: *See*—
Kelly, William T., Hornberger, and Strief. 3,416,960.
Strobel, Albert F., and S. C. Catino, to GAF Corp. Brightened fine fabrics. 3,417,058, 12–17–68, Cl. 260—75.
Strohmeier, Daniel D., to Bethlehem Steel Corp. Floating dry dock. 3,416,479, 12–17–68, Cl. 114—45.
Strond, Stanley G.: *See*—
McCullough, Ira J., and Stroud. 3,417,325.
Strubhar, Malcolm K.: *See*—
Glenn, Edwin E., Jr., Slover, and Strubhar. 3,416,547.
Struthers Scientific and International Corp.: *See*—
Ganiaris, Neonhytos. 3,416,661.
Hedrick, Robert H. 3,416,662.
Muller, John G., and Ganiaris. 3,416,663.
Strutman, Lola S.: *See*—
Schiller, Geraldine P., and Strutman. 3,416,647.
Stucky, Fritz C., and R. Meuli, to Elcon A.G. Plural-storey prefabricated building. 3,416,273, 12–17–68, Cl. 52—236.
Studley Paper Co., Inc.: *See*—
Fesco, John J. 3,416,721.
Stuffer, Rowen. Efficient nitrogen trap. 3,416,326, 12–17–68, Cl. 62—55.5.
Sturm, Karl, W. Siedel, and R. Weyer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Sulfamylanthranilic acid amides and process for preparing them. 3,417,080, 12–17–68, Cl. 260—239.6.
Stynes, James A., and A. Clearfield, to National Lead Co. Crystalline zirconium phosphates. 3,416,884, 12–17–68, Cl. 23—105.
Suh, John T.: *See*—
Schnettler, Richard A., Suh, and Judd. 3,417,118.
Sulzer Bros. Ltd.: *See*—
Steiger, Anton. 3,416,506.
Sundblad, Gunnar E., to Svenska Dataregister AB. Record reading apparatus and method. 3,417,234, 12–17–68, Cl. 235—61.11.
Sureau, Robert F. M.: *See*—
Mingasson, Georges H. R., Sureau, and Dupre. 3,417,075.
Süs, Oskar, and J. Munder, to Azoplate Corp. Resinous printing plate compositions containing light-sensitive nitrones. 3,416,922, 12–17–68, Cl. 96—33.
Süs, Oskar, and H. Schäfer, to Keuffel & Esser Co. Diazotype reproduction material. 3,416,925, 12–17–68, Cl. 96—91.
Sutherland, Charles A. O., and J. Luckins, to Research Association for the Paper and Board Printing and Packaging Industries. Method and apparatus for drying flexible material such as paper and board formed from cellulosic fibrous material. 3,416,237, 12–17–68, Cl. 34—23.
Sutter Hospitals Medical Research Foundation: *See*—
Smeloff, Edward A., Davey, and Kaufman. 3,416,159.
Svenska Dataregister AB: *See*—
Sundblad, Gunnar E. 3,417,234.
Svenska Rotor Haskiner Aktiebolag: *See*—
Oldehaver, Klaus. 3,416,596.
Svetlik, Joseph F.: *See*—
Ross, Edward F., and Svetlik. 3,417,044.
Svobida, Loren. Automatic divider. 3,416,640, 12–17–68, Cl. 198—31.
Swan Hunter Group Ltd.: *See*—
Taylor, Frederick. 3,416,481.
Swanby, Victor S. Side-loading moving van. 3,416,836, 12–17–68, Cl. 296—148.
Swearingen, Judson S. Liquefaction of a gaseous mixture employing work expanded gaseous mixture as refrigerant. 3,416,324, 12–17–68, Cl. 62—23.
Swearingen, Judson S. Method of and apparatus for prewarming a lubricated shaft seal assembly. 3,416,633, 12–17–68, Cl. 184—1.
Swenck, George F., and G. S. Gresham, to Reynolds Metals Co. Nailable surface means and method for making same. 3,416,278, 12–17–68, Cl. 52—377.
Swiadek, Stanley F.: *See*—
Petroff, Michael D., and Swiadek. 3,416,219.
Swift, Harvey C., to Kelsey-Hayes Co. Caliper-type disk brake and support means therefor. 3,416,634, 12–17–68, Cl. 188—73.
Swiss Aluminium Ltd.: *See*—
Gyongyos, Ivan. 3,416,594.
Sylvania Electric Products, Inc.: *See*—
Dayton, David R., and Nimblett. 3,417,367.
Levin, Robert E. 3,416,862.
Palermo, James J., Bonazoli, Scoledge, and Audesse. 3,416,851.
Smith, Richard E., Holmes, and Henkel. 3,417,286.
Stites, Francis H., and Vachon. 3,417,231.
Snyder, Allan W., and Pick. 3,417,382.
Syntex Corp.: *See*—
Cross, Alexander D. 3,417,106.
Knox, Lawrence H. 3,417,111.
Szel, Frank: *See*—
Walsh, Joseph S., and Szel. 3,416,347.
Szilagyi, Istvan. Spark plugs. 3,417,276, 12–17–68, Cl. 313—143.
Szucs, Laszlo, C. Tasnadi, and I. Linder, to Komplex Nagyberendezesek Export-Inport Vallalata. Cooling tower packing means. 3,416,775, 12–17–68, Cl. 261—112.
TRW Inc.: *See*—
Higgins, Larry L. 3,416,369.
Kaufman, Irving. 3,417,317.
O'Neill, James P. 3,416,749.
Updike, Stanley H. 3,416,771.
Tabor, Robert W.: *See*—
Shomphe, George J., Tabor, and Lalmond. 3,417,229.
Tabroff, William: *See*—
Radcliffe, Milton R., and Tabroff. 3,416,244.
Taguchi, Michiichi, and S. Shoji, to Nissan Kagaku Kogyo Kabushiki Kaisha. Method of producing malononitrile. 3,417,126, 12–17–68, Cl. 260—465.8.
Taller & Cooper, Inc.: *See*—
Hohmann, Albert. 3,416,705.
Tamano, Akira: *See*—
Matsumoto, Tetsuro, and Tamano. 3,417,092.
Task Corp.: *See*—
Hoy, Charles D. 3,417,272.
Tasnadi, Csaba: *See*—
Szucs, Laszlo, Tasnadi, and Linder. 3,416,775.
Tate, Howell M., to Burlington Industries, Inc. Filling tail removal equipment. 3,416,574, 12–17–68, Cl. 139—256.
Tauberman, Olle: *See*—
Von Dardel, Georges O., Enstrom, and Tauberman. 3,416,567.
Taylor, Frederick, ½ to Swan Hunter Group Ltd. Construction of ships' hulls. 3,416,481, 12–17–68, Cl. 114—77.

Taylor, George F., to Foy Dyn Products Ltd. Spark plug having a sectional center electrode and a thin metallic sleeve surrounding the lower portion thereof. 3,417,275, 12–17–68, Cl. 313—136.

Taylor, Lawrence: *See*—
Ellison, Ronald, Pickles, Pritchard, and Taylor. 3,416,-471.

Taylor, Lloyd D., to Polaroid Corp. Novel chemical compounds and syntheses. 3,417,082, 12–17–68, Cl. 260—240.

Tech Aero, Inc.: *See*—
Conlin, William P. 3,416,818.

Teledex Inc.: *See*—
Conrad, Winthrop B., and Tschanz. 3,416,389.

Terasaki, Takeshi: *See*—
Onuma, Takeshi, and Terasaki. 3,416,979.

Terazaki, Okuzo. Rotary socket for photographic flash lamp. 3,417,363, 12–17–68, Cl. 339—45.

Terry, Claude E., to Southern Mills, Inc. Spring pad for pressing buck. 3,416,246, 12–17–68, Cl. 38—66.

Texaco Inc.: *See*—
Eckert, George W., and Hess. 3,416,901.
Eckert, George W., and Love. 3,416,903.
Forry, Milton G., Jr., Agnew, and Dille. 3,417,158.
Kolaian, Jack H., and Park. 3,417,017.
Smetana, Richard D., and Chafetz. 3,417,127.

Texas Instruments Inc.: *See*—
Brede, Erwin C. 3,416,629.
Brey, James R. 3,417,370.
Cooke, Harry F., Hyltin, and Vincent. 3,417,393.
Durbin, Hairrel A., and Pledger. 3,416,359.
Kauffman, John E. 3,417,300.
Matzen, Walter T. 3,416,731.
Patterson, John D. 3,416,631.

Textron Inc.: *See*—
Rieth, Kurt A. 3,416,305.

Tezuka, Kunitoshi, Scrap-metal compressor. 3,416,436, 12–17–68, Cl. 100—218.

Tezuka, Kunitoshi, Rotary scrap-metal compressor. 3,416,439, 12–17–68, Cl. 100—223.

Thielsed, Helmut J., to Grinnell Corp. Method and means for forming fittings. 3,416,343, 12–17–68, Cl. 72—58.

Thielsch, Helmut J., to Grinnell Corp. Method and means for forming fittings. 3,416,344, 12–17–68, Cl. 72—58.

Thielsch, Helmut J., to Grinnell Corp. Method and means for forming fittings. 3,416,351, 12–17–68, Cl. 72—398.

Thiokol Chemical Corp.: *See*—
Ehrlich, Robert. 3,417,119.

Thoma, Franz: *See*—
Hinrichs, Helmut, and Thoma. 3,417,031.

Thomas & Betts Co., Inc., The: *See*—
Geisinger, George H. 3,416,198.

Thomas, Edward W., to Ansitron, Inc. Logarithmic amplifier. 3,417,263, 12–17–68, Cl. 307—229.

Thomas, George M. Air conditioning unit. 3,416,329, 12–17–68, Cl. 62—262.

Thomiszer, Hubert J., to Eugene Dietzgen Co. Temperature responsive apparatus. 3,417,226, 12–17–68, Cl. 219—216.

Thompson, George D. Shock absorbing handle for an archer's bow. 3,416,508, 12–17–68, Cl. 124—24.

Thompson, John L.: *See*—
French, Lawrence R., Strausser, and Thompson. 3,417,-159.

Thompson, Kenneth R.: *See*—
Clark, Robert C., and Thompson. 3,417,235.

Tiemann, Jerome J., to General Electric Co. In-circuit inductance measuring circuit. 3,417,328, 12–17–68, Cl. 324—59.

Timm, Heinz, to Diehl. Binary magnetic reproducing circuitry. 3,417,388, 12–17–68, Cl. 340—174.1.

Titangesellschaft m.b.H.: *See*—
Hitzemann, Gerhard, Kulling, and Steinbach. 3,416,892.

Titanium Metals Corp. of America: *See*—
Snow, Karl S., and Herres. 3,416,919.

Toekelt, Walter G.: *See*—
Schmerling, Louis, and Toekelt. 3,417,135.

Tokheim Corp.: *See*—
Daley, Roger J., and Herderhorst. 3,416,847.

Tokyo Shibaurt Electric Co., Ltd.: *See*—
Ando, Fumio, Okada, and Mogi. 3,417,391.

Tomalia, Donald A., to Dow Chemical Co. 2-alkenyl-1,3-dioxolenium and 1,3-dioxenium salts and polymers thereof. 3,417,062, 12–17–68, Cl. 260—79.3.

Tomasovich, Martin. Bin turning attachment for fork lift vehicle. 3,416,680, 12–17–68, Cl. 214—307.

Tondato, Carlo, to Firgat S.n.c. Rubber-metal spring device. 3,416,783, 12–17–68, Cl. 267—33.

Torrington Co., The: *See*—
Ahlman, Sven R. 3,416,211.

Torsiello, Joseph, and L. Reisa, deceased (by R. L. Kirschner, executrix), to Micro Vend, Inc. Food dispensing machine. 3,416,429, 12–17–68, Cl. 99—327.

Totten, Gilbert P.: *See*—
Brooks, Robert B., and Totten. 3,416,894.

Towle, Jack L., and W. H. Meek, Jr., to Kewanee Oil Co. Coupling components for azo dyestuffs. 3,417,139, 12–17–68, Cl. 260—558.

Townend, John, to General Cigar Co. Inc. Tobacco sheet manufacture of high wet strength. 3,416,537, 12–17–68, Cl. 131—140.

Townsend, Stephen E., to Xerox Corp. Optical density measuring system. 3,416,865, 12–17–68, Cl. 356—206.

Toyobo Co., Ltd.: *See*—
Yoshimura, Shoehei. 3,416,991.

Tracey, Richard D. Detachable low bed trailer. 3,416,683, 12–17–68, Cl. 214—506.

Transurvey Holding Co. Inc., S.A.: *See*—
Griessen, Jean-Jacques. 3,416,402.

Truth Tool Co.: *See*—
Martin, Jerry L. 3,416,183.

Trylon Inc.: *See*—
Veldhuis, Albert C. 3,417,401.

Tschanz, August E.: *See*—
Conrad, Winthrop B., and Tschanz. 3,416,389.

Tschopp, Peter, to Maschinenfabrik Oerlikon. Device for the infinitely variable correction of the marginal field of a magnet. 3,417,356, 12–17–68, Cl. 335—298.

Tummers, Paul J. H., to Van der Grinten N.V. Heat-developable diazotype material. 3,416,924, 12–17–68, Cl. 96—75.

Tundermann, Werner O.: *See*—
Marder, Herman L., Grippo, and Tundermann. 3,416,157.

Turnbull, Roger F., and G. H. Herigstad, to Lamb-Grays Harbor Co., Inc. Leading edge gluer. 3,416,491, 12–17–68, Cl. 118—411.

Turner, Guy A. Small article holder. 3,416,670, 12–17–68, Cl. 211—60.

Turpen, Russell L., to Compass Container Co., Inc. Cargo container floor system. 3,416,465, 12–17–68, Cl. 105—422.

Turtle, Quentin C., to General Signal Corp. Telemetering. 3,417,390, 12–17–68, Cl. 340—207.

Uchida, Isamu. Coin counting and wrapping machine. 3,416,-290, 12–17–68, Cl. 53—78.

Uchida, Isamu. Coin counting and wrapping machine. 3,416,-291, 12–17–68, Cl. 53—78.

Udylite Corp., The: *See*—
Koltuniak, Michael A. 3,417,008.

Ueno, Kazunari: *See*—
Matsubara, Asaichi, Yasutake, Ueno, and Fujita. 3,416,887.

Uhtenwoldt, Herbert R.: *See*—
Renner, Howard W., and Uhtenwoldt. 3,416,407.

Ulrich, Friedrich, to International Standard Electric Corp. Scanning and selecting systems. 3,417,376, 12–17–68, Cl. 340—172.5.

Ultra Carbon Corp.: *See*—
Leistner, Carl J., and Radtke. 3,416,895.

Ultrasons A.G.: *See*—
Nordmann, Rene. 3,416,881.

Union Carbide Corp.: *See*—
Anderson, John R., and Cass. 3,416,902.
Bailey, Frederick E., Jr. 3,417,064.
Glambra, Santo, and Waythomas. 3,417,046.
Herchenroeder, Robert B. 3,416,916.
Hostettler, Fritz, and Cox. 3,417,104.
Hoy, Kenneth L. 3,417,034.
Pruett, Roy L., and Myers. 3,417,130.
Rein, Richard H. 3,416,977.

Union Oil Co. of California: *See*—
Bernard, George G. 3,416,603.
Watanabe, David J. 3,416,606.

Union Special Machine Co.: *See*—
Peterson, Albert C., Hayes, and Lukins. 3,416,473.

Union Starch & Refining Co., Inc.: *See*—
Patel, Chim P., and Pyle. 3,417,078.

Union Tank Car Co.: *See*—
Schoenecker, Thomas J., and Olson. 3,416,557.

United Shoe Machinery Corp.: *See*—
Nokes, Philip E. 3,416,355.
Radcliffe, Milton R., and Tabroff. 3,416,244.

United Shoe Nuclear Corp.: *See*—
Holden, Robert B. 3,417,009.

United States of America
Agriculture: *See*—
Kullman Russell M. H., Frick, Reinhard, and Reid. 3,416,880.
Air Force: *See*—
Chodorow, Marvin. 3,417,279.
Gray, Don N., Schmidt-Collerus, and Smith. 3,417,153.
Hamerla, Donald R. 3,416 451.
Hough, Ralph L. 3,416,951.
Pirrung, Paul F., and Schmidt. 3,416,944.
Army: *See*—
Brooks, Robert B., and Totten. 3,416 894.
Brothers, Jack. 3,416,448.
Brothers, Jack. 3,416,449.
Bullard, Richard W. 3,417,395.
Cason Charles M., III. 3,417,288.
Golbeck, Bernard J., and Hunter. 3,416,401.
Hunger, Herbert F., Sanfilippo, and Wynn. 3,416,963.
Knoll, Nicholas. 3,417,068.
Prasil, Anthony J. G. 3,417,337.
Silsby, Stanley D. 3,416,252.
Wenner, Frank, and McNnish. 3,417,354.
Wilcox, Roy O. 3,417 335.
Atomic Energy Commission: *See*—
Frederick, Charles L. 3,416,365.
Kizer, Donald E., and Lozier. 3,417,167.
Leary, Joseph A., Mullins, and Buchen. 3,417,002.
Welch, Kimo M. 3,416,768.
Commerce: *See*—
Cruz, Jose E. 3,417,350.
National Aeronautics and Space Administration: *See*—
Clapp, William M. 3,417,321.
McCaul Paul F., and Granata. 3,417,316.
Schutt, John B., and Shal. 3,416,939.
Navy: *See*—
Chen, Cheng-Lin. 3,416,372.
Crittenden, William B. 3,417,264.
Goldstein, David, Buehler and Wiley. 3,416,342.
Grantham, Rodney E. 3,417,344.
Leonard, John M., and Bultman. 3,417,251.
Logan, Frank C. 3,417,311.
McGahan, Leory C. 3,416,362.

United States of America
Navy: *See*—Continued
Nicholson, James E., Hill, and Wilson. 3,416,758.
Pien, Pao C. 3,416,480.
Ripley, William L. 3,416,872
Schrader, Malcolm E. 3,416,950.
Smith, Donald F. 3,416,403.

United States Plywood Corp.: *See*—
Sherman, Floyd F., and Staples. 3,416,261.

United States Steel Corp.: *See*—
Hanna, Ralph T. 3,416,780.

Universal Desalting Corp.: *See*—
Chocquet, Achille E. J. 3,416,318.

Universal Oil Products Co.: *See*—
Arrigo, Joseph T. 3,417,155.
Berger, Charles V. 3,417,156.
Carson, Don B. 3,417,011.
Dunkel, Morris. 3,417,063.
Dunkel, Morris. 3,417,132.
Fishel, Norman A. 3,417,148.
Linn, Carl B., and Vesely. 3,417,146.
O'Hara, Mark J., and Gleim. 3,417,030.
Pollitzer, Ernest L. 3,417,157.
Schmerling, Louis, and Toekelt. 3,417,135.

Updike, Stanley H., to TRW Inc. Unitized valve stem retainer lock. 3,416,771, 12–17–68, Cl. 251—337.

Upjohn Co., The: *See*—
Babcock, John C., and Campbell. 3,417,182.

Urani, Angelo, to McGraw-Edison Co. Protectors for electric circuits. 3,417,359, 12–17–68, Cl. 337—201.

Urmy, Kenneth W.: *See*—
Parish, Clyde E., and Urmy. 3,416,893.

Utley, Brian G., to International Business Machines Corp. Parallel binary adder utilizing cyclic control signals. 3,417,-236, 12–17–68, Cl. 235—175.

V-M Corp.: *See*—
Arent, John F. 3,416,807.

Vachon, Bradstreet J.: *See*—
Stites, Francis H., and Vachon. 3,417,231.

Valdes, Leopoldo B.: *See*—
Dixon, Alan F., and Valdes. 3,417,299.

Valentine, Norman S., to Polymark Ltd. Apparatus for conveying articles. 3,416,841, 12–17–68, Cl. 302—11.

Van Allan, James A.: *See*—
Reynolds, George A., and Van Allan. 3,417,083.

Van Campen, John H., and R. B. Clark, to Eastman Kodak Co. Amide dispersant for fluorescent agents in photographic elements. 3,416.923, 12–17–68, Cl. 96—74.

Vandenberg, Edwin J., to Hercules Inc. Polyethers containing polar groups obtained from polymers of epihalohydrins reacted with nucleophilic reagents. 3,417,036, 12–17–68, Cl. 260—2.

Van der Grinten N.V.: *See*—
Tummers, Paul J. H. 3,416,924.

Van der Winden, Johannes B., to Gebr. Stork & Co's Apparatenfabriek N.V. Installation for the pasteurization or sterilization of commodities packed in containers. 3,416,432, 12–17–68, Cl. 99—362.

Van Dyck, Kenneth A.: *See*—
Long, Alfred, Roth, King, and Van Dyck. 3,416,897.

Van Loghem, Johannes J., and J. La Grouw. Wall construction. 3,416,275, 12–17–68, Cl. 52—282.

Van Plateringen, Lambertus J., to The Mead Corp. Article carrier. 3,416,654, 12–17–68, Cl. 206—65.

Van Norman, Gilden R.: *See*—
Houle, James F., and Van Norman. 3,417,055.

Van Slooten, Nico J.: *See*—
Keahl, Gerald T., and Van Slooten. 3,416,864.

Van Tuyl Rusch, Willard: *See*—
Webb, James E. 3,417.399.

Van Uitert, Le Grand G.: *See*—
Bonner, William A., and Van Uitert. 3,417,032.

Vapor Corp.: *See*—
Bridgeman, Richard C. 3,416,356.

Varian Associates: *See*—
Helmer, John C. 3,416.722.

Vazirani, Ram S.: *See*—
Chodroff, Saul, and Vazirani. 3.417,107.

Veb Chemiefaserwerk Schwarza "Wilhelm Pieck": *See*—
Heinze, Johannes R. L., Ramm, and Richardt. 3,417,057.

Veeder Industries Inc.: *See*—
Hildebrandt, William J. 3,416 552.

Veldhuis, Albert C., to Trylon Inc. Low input impedance dipole antenna array. 3,417,401, 12–17–68, Cl. 343—792.5.

Vend-A-Matic, Inc.: *See*—
Dorsett, James P., and Smith. 3,416,639.

Venus, Frank, Jr., to The Risdon Mfg. Co Mechanical breakup spray button. 3,416,737, 12–17–68, Cl. 239—579.

Venzke, George E.: *See*—
Cribbs, Robert D., Venzke, and Moes. 3,417,336.

Verlijsdonk, Johannus G.: *See*—
Wanmaker, Willem L., and Verlijsdonk. 3,417,027.

Vermont American Corp.: *See*—
Cowley, William E. 3,416,579.

Verschure & Co's Scheepswerf EN Machinefabriek N.V.: *See*—
Donkers, Jacobus M. 3,416,842.

Vesely, Jerome A.: *See*—
Linn, Carl B., and Vesely. 3,417,146.

Victorius, Claus: *See*—
Chalmers, John R., and Victorius. 3,416,994.

Vietor, Charles A., and N. S. Blessum, to Burroughs Corp. Shift and buffer circuitry. 3,417,377, 12–17–68, Cl. 340—172.5.

Viggo Aktiebolag: *See*—
Von Dardel, Georges O., Enstrom, and Tauberman. 3,416,-567.

Vigren, Sten D., R. A. Zander, and P. H. E. Claesson, Selectors of the coordinate selector type. 3,417,353, 12–17–68, Cl. 335—112.

Vincent, Britton T., Jr.: *See*—
Cooke, Harry F., Hyltin, and Vincent. 3,417,393.

Vogt, Herwart C.: *See*—
Davis, Pauls, and Vogt. 3,417,069.

Voitik, Robert M., to Continental Illinois National Bank and Trust Co. of Chicago. Floating-antirotation device. 3,416,-808, 12–17–68, Cl. 277—40.

Vollmer Werke Maschinenfabrik G.m.b.H.: *See*—
Stier, Otto, and Beck. 3,416,394.

Von Albedyll, Joachim: *See*—
Biedermann, Friedrich, Von Wasielewski, and Von Albedyll. 3,416,421.

Von Dardel, Georges O., H. G. Enstrom, and O. Tauberman, to Viggo Aktiebolag. Syringe valve. 3,416,567, 12–17–68, Cl. 137—604.

Von Wasielewski, Erwin: *See*—
Biedermann, Friedrich, Von Wasielewski, and Von Albedyll. 3,416,421.

Voss Engineering Co.: *See*—
Ressor, James W. 3,416,340.

Voss, Walter C. Money carrier. 3,416,586, 12–17–68, Cl. 150—38.

Wachtel, Joseph E.: *See*—
Peterson, Warren J., Fontaine, and Wachtel. 3,416,468.

Waddington, Philip L., to Concrete Pipe Machinery Co. Self tracking concrete chute. 3,416,204, 12–17–68, Cl. 25—103.

Wagner, Heinz: *See*—
Wermuth, Charles, Wagner, and Arnold. 3,416,784.

Wahl Clipper Corp.: *See*—
Meyer, Roy E., and Wahl. 3,417,194.

Wahl, John F.: *See*—
Meyer, Roy E., and Wahl. 3,417,194.

Wakeman, Reginald L., and J. F. Coates, to Millmaster Onyx Corp. Biocidal compositions containing quaternary ammonium phenates and methods of use. 3,417,184, 12–17–68, Cl. 424—258.

Walker, Desmond J.: *See*—
Burton, John C., Frank, and Walker. 3,416,996.

Walker, Fred M. Method for making laminated sheet metal from reclaimed tinned metal waste pieces. 3,416,217, 12–17–68. Cl. 29—403.

Walker-Neer Mfg. Co., Inc.: *See*—
Elenburg, Wayland D. 3,416,617.

Wallentowitz, Klaus, to General Time Corp. Electronic timer circuit. 3,417,296, 12–17–68, Cl. 317—142.

Wallentowitz, Klaus D., to General Time Corp. Electronic timer circuits. 3,417,297, 12–17–68, Cl. 317—142.

Waller, Milford J., to Northern Electric Co. Ltd. Corona reduction on printed circuit tuning stubs. 3,417,352, 12–17–68, Cl. 333—84.

Wallis, Rolland B., to General Motors Corp. Variable power and variable direction engine and split torque phase changing device. 3,416,307, 12–17–68, Cl. 60—24.

Walsh, James L., to International Business Machines Corp. Logic circuit. 3,417,261, 12–17–68, Cl. 307—216.

Walsh, Joseph S., and F. Szel, to The Yoder Co. Slitting and edge conditioning means. 3,416,347, 12–17–68, Cl. 72—203.

Walter, Glen I. Doweling machine. 3,416,580, 12–17–68, Cl. 144—92.

Walz, Heinz, to Siemens Aktiengesellschaft. Method of producing thermobatteries. 3,416,223, 12–17–68, Cl. 29—573.

Wanmaker, Willem L., and J. G. Verlijsdonk, to North American Philips Co., Inc. Europium activated yttrium and gadolinium vanadate-phosphate and vanadate-arsenate phosphors. 3,417,027. 12–17–68, Cl. 252—301.4.

Warman, Bloomfield J., and J. H. Marshall, to Associated Electrical Industries Ltd. Linking circuits for switching equipment in automatic telephone systems. 3,417,205, 12–17–68, Cl. 179—22.

Warnaka, Glenn E., to Lord Corp. Mounting. 3,416,782, 12–17–68, Cl. 267—1.

Warner, Paul F., to Phillips Petroleum Co. Production of sulfolane. 3,417,103, 12–17–68, Cl. 260—332.1.

Warner-Lambert Pharmaceutical Co.: *See*—
Ercoli, Alberto, and Gardi. 3,417,183.
Faustini, Albert J. 3,416,380.

Warwick, O. H., Co.: *See*—
Bradley, Addison B. 3,416,781.

Watanabe, David J., to Union Oil Co. of California. Hydraulic fracturing of tilted subterranean formations. 3,416,-606, 12–17–68, Cl. 166—42.

Watts, Gordon V.: *See*—
Francis, Frank P. G., and Watts. 3,416,627.

Waugh, Arthur, to Lexington Laboratories, Inc. Process for manufacture of porous abrasive articles. 3,416,905, 12–17–68, Cl. 51—296.

Waugh, Dale L.: *See*—
Jensen, Howard J., Richmond, Brooks, and Waugh. 3,416,383.

Waythomas, Donald J.: *See*—
Glambra, Santo, and Waythomas. 3,417,046.

Weatherking Products, Inc.: *See*—
Pereira, John P. 3,416,165.

Weatherly, Earl E.: *See*—
Drace, Lawrence V., and Weatherly. 3,416,437.

Weatherly, Earl E., and L. V. Drace. Laundry loaders. 3,416,-438, 12–17–68, Cl. 100—218.

Weather-Seal, Inc.: *See*—
Johnson, Waldo O. 3,416,260.

Webb, James E., Administrator of The National Aeronautics and Space Administration, with respect to an invention of W. O. Leffke. Flexibly connected support and skin. 3,416,-274, 12–17–68, Cl. 52—272.

Webb, James E., Administrator of The National Aeronautics and Space Administration, with respect to an invention of I. Pollack, and W. D. Emde. Etching of aluminum for bonding. 3,416,975, 12–17–68, Cl. 148—6.20.

Webb, James E., Administrator of The National Aeronautics and Space Administration, with respect to an invention of E. S. David. Radiant energy intensity measurement system. 3,417,247, 12–17–68, Cl. 250—203.

Webb, James E., Administrator of The National Aeronautics and Space Administration, with respect to an invention of M. G. Woolfson. Pulse modulator providing fast rise and fall times. 3,417,266, 12–17–68, Cl. 307—263.

Webb, James E., Administrator of The National Aeronautics and Space Administration, with respect to an invention of D. P. Mikszan. Frequency shift keying apparatus. 3,417,332, 12–17–68, Cl. 325—163.

Webb, James E., Administrator of The National Aeronautics and Space Administration, with respect to an invention of A. Giandomenico, and R. Van Tuyl. Millimeter-wave radio-astronomy. 3,417,399, 12–17–68, Cl. 343—100.

Weber, Otto R., to Reynolds Metals Co. Apparatus for making covered receptacles or the like. 3,416,292, 12–17–68, Cl. 53—329.

Weck, Edward, & Co., Inc.: *See*—
Hoef, William A. 3,416,527.

Weidenmiller, Edward A. Rotary cookie die rolls. 3,416,466, 12–17–68, Cl. 107—8.

Weingart, Richard I. N. Travel lock. 3,416,333, 12–17–68, Cl. 70—14.

Weingrad, Richard H.: *See*—
Kaucher, Erwin K., McLay, and Weingrad. 3,416,370.

Weisman, William W. Therapeutic and service device. 3,416,529, 12–17–68, Cl. 128—232.

Weiss, Hans R., to The Dantamor Co. Seat belt massager. 3,416,815, 12–17–68, Cl. 280—150.

Weiss, Joseph. Internal combustion engines. 3,416,502, 12–17–68, Cl. 123—75.

Weitzner, Dorothea M. Electroacoustic language teaching device. 3,416,241, 12–17–68, Cl. 35—35.

Welch, Kimo M., to the United States of America, Atomic Energy Commission. Low leakage confined seal. 3,416,768, 12–17–68, Cl. 251—157.

Welch Relay Co., Inc.: *See*—
Welch, Thomas R. 3,416,225.

Welch, Thomas R., to Welch Relay Co., Inc. Method of assembling a relay. 3,416,225, 12–17–68, Cl. 29—593.

Weller, Peter A., and H. C. Grubb, to American Radiator & Standard Sanitary Corp. Apparatus for cooling dynamo-electric machines. 3,416,330, 12–17–68, Cl. 62—505.

Welt, Benjamin P. Shaft seal for extruders of heat-sensitive plastics and like materials. 3,416,189, 12–17–68, Cl. 18—12.

Wendt, Gerhard R., and K. W. Ledig, to American Home Products Corp. Process for the production of 3-(lower) alkoxy-estra-1,3,5(10)-trien-17β-yloxy-(lower)alkyl carboxylic acid. 3,417,110, 12–17–68, Cl. 260—397.1.

Wendt, Rudolf: *See*—
Limberger, Walter, and Wendt. 3,416,920.

Wenner, Frank, and A. G. McNish, to United States of America, Army. Magnetic circuit closer. 3,417,354, 12–17–68, Cl. 335—205.

Werkstoff-Untersuchung G.m.b.H.: *See*—
Pohl, Ernst J., Schmitt-Thomas, and Burck. 3,416,630.

Wermuth, Charles, H. Wagner, and F. Arnold. Clamping device. 3,416,784, 12–17–68, Cl. 269—136.

Werner & Pfleiderer: *See*—
Fritsch, Rudolf P. 3,416,774.

Wesley Industries, Inc.: *See*—
Hilfinger, George C., and Johnson. 3,416,850.

West Virginia Pulp and Paper Co.: *See*—
Blonsky, Joseph E. 3,416,678.

Westerhof, Pieter: *See*—
Reerink, Engbert H., Westerhof, and Scholer. 3,417,112.

Westinghouse Air Brake Co.: *See*—
Allen, Clifford W. 3,416,381.
Boone, William D. 3,416,623.
Salton, Robert B. 3,416,635.

Westinghouse Electric Corp.: *See*—
Carter, Henry G., Jr., and Gifford. 3,416,348.
List, William F., Demco, and Donaldeon. 3,417,397.

Westland Aircraft Ltd.: *See*—
Hamlin, Humphrey A. S. 3,416,521.

Westra, Johannes G.: *See*—
Huisman, Henderikus, Westra, Speckamp, and Pandit. 3,417,100.

Weyer, Rudi: *See*—
Sturm, Karl, Siedel, and Weyer. 3,417,080.

Wharmby, James D.: *See*—
Miller, Donald L., Spillman, Stokowski, and Wharmby. 3,416,440.

Wheel Rosary Co., Inc., The: *See*—
Lawler, Daniel F. 3,416,989.

Wheelus, Charles G., to Arizona Chemical Co. Bleaching and stabilizing rosin compounds with 1,3,4-thiadiazole polysulfides. 3,417,071, 12–17–68, Cl. 260—108.

Whigham, William. Production of vanadium values from crude oil. 3,416,882, 12–17–68, Cl. 23—15.

Whirlpool Corp.: *See*—
Candor, Robert R. and J. T. 3,416,334.
Fink, Robert W. 3,416,600.
Nordeen, Erwin E. 3,416,181.

Whitaker, William C., to Reynolds Metals Co. Apparatus for and method of making a cigarette package construction or the like. 3,416,410, 12–17–68, Cl. 93—12.

White, David F.: *See*—
Cooper, Albert C., White, and Wilkinson. 3,417,048.

White, Donald W., to General Electric Co. Electrical device comprising metal oxide containing solid electrolyte and electrode. 3,416,967, 12–17–68, Cl. 136—86.

White, Robert R.: *See*—
Plette, David L., and White. 3,417,254.

White, Robert W.: *See*—
Preuss, Albert F., and White. 3,417,020.

Whitehouse Products Inc.: *See*—
Rigolini, Venerio J. 3,416,425.

Whiting Corp.: *See*—
Caldwell, Harold B. 3,416,889.

Whiting, T., Mfg., Inc.: *See*—
Lambein, Glen H. 3,416,589.

Whittaker Corp.: *See*—
Hutkin, Irvin J. 3,416,971.

Wickham, Richard T.: *See*—
Mountfort, Cyril B., Cortis-Jones, and Wickham. 3,416,961.

Wiese, Albert H., to National Industries for the Blind. Broom construction. 3,416,179, 12–17–68, Cl. 15—171.

Wight, Ralph H., to Fairchild Camera and Instrument Corp. Optical system for panoramic cameras. 3,416,423, 12–17–68, Cl. 95—16.

Wilcock, John E., to Pilkington Brothers Ltd. Apparatus for moulding of glass articles. 3,416,909, 12–17–68, Cl. 65—309.

Wilcox, Isaac L., to Phillips Petroleum Co. Container forming machine. 3,416,412, 12–17–68, Cl. 93—39.1.

Wilcox, Roy C., to United States of America, Army. Method of radar return integration using a dual-gun, write-read, recording-storage tube. 3,417,335, 12–17–68, Cl. 328—124.

Wiley, Carl A.: *See*—
Galli, Guido, Morritz, and Wiley. 3,417,301.

Wiley, Raymond C.: *See*—
Goldstein, David, Buehler, and Wiley. 3,416,342.

Wilfinger, Raymond J.: *See*—
Akmenkalns, Ivars G., Wilfinger, and Wilson. 3,417,249.

Wilhelm Hegenscheidt Kommanditgesellschaft: *See*—
Holzemer, Ferdinand. 3,416,545.

Wilkes, William: *See*—
Wycherley, John R., and Wilkes. 3,416,864.

Wilkinson, Donald G.: *See*—
Cooper, Albert C., White, and Wilkinson. 3,417,048.

Williams, Frederick E., to Hercules, Inc. Manufacture of p-nitrosophenylmethyl and p-nitrosophenylethyl ethers. 3,417,147, 12–17–68, Cl. 260—612.

Williams, James E. F.: *See*—
Bondy, Herbert F., Williams, and Kirk. 3,417,160.

Williams, James T.: *See*—
Morgan, Robert S., and Williams. 3,416,792.

Williamson, John B. P., to Burndy Corp. Method and apparatus for determining constriction resistance of electrical contact interfaces. 3,417,323, 12–17–68, Cl. 324—28.

Wilmore Electronics Co., Inc.: *See*—
Moore, Edward T. 3,417,348.

Wilmot, Kenneth, to J. Blake, Ltd. Drinking valves for poultry. 3,416,499, 12–17–68, Cl. 119—72.5.

Wilson, Alan D.: *See*—
Akmenkalns, Ivars G., Wilfinger, and Wilson. 3,417,249.

Wilson, Henry A. Pet pan with disposable lining. 3,416,495, 12–17–68, Cl. 119—1.

Wilson, Joe C., Jr.: *See*—
Nicholson, James E., Hill, and Wilson. 3,416,758.

Wilson, Richard I., to Shakespeare Co. Method of bow stringing and bow stringer. 3,416,220, 12–17–68, Cl. 29—446.

Windebank, Robert W., to The Machlett Laboratories, Inc. Image intensification system comprising remote control means for varying the size of the output image. 3,417,242, 12–17–68, Cl. 250—83.3.

Windecker, Leo J., to The Dow Chemical Co. Airfoil structure. 3,416,756, 12–17–68, Cl. 244—123.

Windish, George A.: *See*—
Eagleson, Thomas N., and Windish. 3,416,350.

Windle, William: *See*—
Clark, Norman O., and Windle. 3,416,943.

Wiser, Joseph E., to P. R. Mallory & Co., Inc. Intermittent drive mechanism and a timer utilizing such. 3,417,211, 12–17–68, Cl. 200—38.

Withers, John S., to McGraw-Edison Co. Protectors for electric circuits. 3,417,357, 12–17–68, Cl. 337—295.

Wittmann, Richard B.: *See*—
Standley, Wendell E., Wittmann, and Karlovitz. 3,416,285.

Wittnebert, Frederick R., R. A. Lawton, and J. J. Dyson, to The Parker Pen Co. Ball point reservoir. 3,416,869, 12–17–68, Cl. 401—209.

Wolf, Irving W., to Ampex Corp. Thin film shift register. 3,417,385, 12–17–68, Cl. 340—174.

Wood, Howard J., and J. A. Greiner. Building components. 3,416,277, 12–17–68, Cl. 52—300.

Woolfson, Martin G.: *See*—
Webb, James E. 3,417,266.

Works, Madden T., to ACF Industries, Inc. Spherical plug valve having lubricated seats. 3,416,558, 12–17–68, Cl. 137—246.22.

Worson, Lee, to Edoco Technical Products, Inc. Method and apparatus for insertion of joint former material in uncured concrete. 3,416,415, 12–17–68, Cl. 94—22.

Worthington Corp.: *See*—
Lenkei, Andrew. 3,416,724.
Pietrucha, William J. 3,416,455.

Wortz, Harvey E., to The Bendix Corp. Brake system failure warning device. 3,416,315, 12–17–68, Cl. 60—54.6.

Woserau, Otto, and H. N. Anderson, to Bemis Co., Inc. Christmas tree loader apparatus. 3,416,434, 12–17–68, Cl. 100—144.

Wright, Franklin J., to Esso Research and Engineering Co. Apparatus for the application of an A.C. electrostatic field to combustion flames. 3,416,870, 12–17–68, Cl. 431—2.

Wuttke, Gerhard: *See*—
Eberle, Hans, and Wuttke. 3,417,171.

Wyandotte Chemical Corp.: *See*—
Davis, Pauls, and Vogt. 3,417,069.
Patton, John T., Jr., and Hartman. 3,417,164.

Wycherley, John R., and W. Wilkes, to G.K.N. Group Services Ltd. Apparatus for non-destructive testing of metal billets and other elongated bar-like workpieces. 3,416,364, 12–17–68, Cl. 73—67.8.

Wynn, James E.: *See*—
Hunger, Herbert F., Sanfilippo, and Wynn. 3,416,963.

Wyss, Hans, to Afico S.A. Container closure seaming method and apparatus. 3,416,476, 12–17–68, Cl. 113—30.

Xerox Corp.: *See*—
Beckman, Maynard K., Jr., and Muka. 3,416,791.
Hansen, Richard C., and Yesul. 3,416,861.
Hudson, Frederick W. 3,416 494.
Townsend, Stephen E. 3,416,865.

Yagishita, Aisaburo. Ion exchange process for treatment of industrial wastes. 3,417,016, 12–17–68, Cl. 210—34.

Yao, Ying-Luh, to Radio Corp. of America. Phantom or circuit for inverters having active load devices. 3,417,262, 12–17–68, Cl. 307—218.

Yasutake, Yoshito: *See*—
Matsubara, Asaichi, Yasutake, Ueno, and Fujita. 3,416,887.

Yatsiv, Shaul, to Hughes Aircraft Co. Laser utilizing a raman active material for double quantum absorption. 3,417,346, 12–17–68, Cl. 331—94.5.

Yeremian, George J., to Parke, Davis & Co. Stabilized non-adherent pad. 3,416,522, 12–17–68, Cl. 128—156.

Yeremian, George J., to Parke, Davis & Co. Non-adherent dressing. 3,416 523, 12–17–68, Cl. 128—156.

Yeremian, George J., to Parke, Davis & Co. Stabilized non-adherent dressing. 3,416,525, 12–17–68, Cl. 128—156.

Yeremian, George J., to Parke, Davis & Co. Non-adherent bandage pad. 3,416,526, 12–17–68, Cl. 128—156.

Yesul, Andrew P., Jr.: *See*—
Hansen, Richard C., and Yesul. 3,416,861.

Yoder Co., The: *See*—
Walsh, Joseph S., and Szel. 3,416,347.

Yoshida, Susumu, S. Miyaoka, and H. Sahara, to Sony Corp. Cathode ray device. 3,417,199, 12–17–68, Cl. 178—7.2.

Yoshimura, Shohei, to Toyobo Co., Ltd. Elongate plastic articles and method of making same. 3,416,991, 12–17–68, Cl. 161—101.

Yoshizawa, Heiji, to Kabushiki Kaiska Komatsu Seisakusho (Komatsu Mfg. Co. Ltd.). Power-distributing system. 3,416,311, 12–17–68, Cl. 60—53.

Young, Bill M., and B. W. Anderson, to Halliburton Co. Resin composition and method of use. 3,416,601, 12–17–68, Cl. 166—12.

Young, Charles W., to Revere Copper and Brass Inc. Contoured insert support for upstanding I-beam elements of a cargo-supporting floor. 3,416,280, 12–17–68, Cl. 52—588.

Young, Everett C. Apparatus with multiple purpose components for enabling the serviceability and maneuverability of a craft. 3,416,750, 12–17–68, Cl. 244—1.

Young, Horace A.: *See*—
Littwin, Arthur K. 3,417,295.

Young, Vera E., to C.T. & R.E., Inc. Floor cleaning machine. 3,416,177, 12–17–68, Cl. 15—98.

Zander, Rolf A.: *See*—
Vigren, Sten D., Zander, and Claesson. 3,417,353.

Zanft, Auram B.: *See*—
Dvirka, Miro, and Zanft. 3,416,469.

Zebarth, Ralph, Inc.: *See*—
Zebarth, Ralph S., and Frederick. 3,416,186.

Zebarth, Ralph S., and H. E. Frederick, to Ralph Zebarth, Inc. Poultry shackle unloading device. 3,416,186, 12–17–68, Cl. 17—11.

Zeisig, Harry C., Jr., and O. L. Hoffmann, to Gulf Oil Corp. Barban for wild oat control. 3,416,913, 12–17–68, Cl. 71—88.

Zeiss-Ikon Aktiengesellschaft: *See*—
Dietrich, Rolf, Ruhle, and Ebertz. 3,416,422.

Zerfahs, Arthur S.: *See*—
Mihojevich, Steven, Zerfahs, Ostensen, Berggren, and Glaser. 3,416,860.

Zike, Clarence G.: *See*—
Shultz, James H., and Zike. 3,416,709.

Zimmer, Michel, to Paillard S.A. System for coupling and mutually securing together two parts. 3,416,822, 12–17–68, Cl. 287—20.924.

Zimmerman, Robert L.: *See*—
Henson, Walter A., and Zimmerman. 3,417,045.

Zimmerman, Robert L., and L.-H. Lee, to The Dow Chemical Co. Epoxy modified vinyl copolymers of α,β-unsaturated dicarboxylic acid partial esters. 3,417,162, 12–17–68, Cl. 260—837.

Zink, John, Co.: *See*—
Reed, Robert D. 3,416,735.

Zinkham, Robert E.: *See*—
Goodwin, Robert J., Mori, Pekarek, Schaub, and Zinkham. 3,416,614.

Zinser-Textilmaschinen Gesellschaft mit beschrankter Haftung: *See*—
Haninger, Horst. 3,416,742.

Zweidler, Reinhard, and M. Keller, to Geigy Chemical Corp. Process for the optical brightening of fibers containing terephthalic acid polyesters. 3,416,945, 12–17–68, Cl. 117—33.5

CLASSIFICATION OF PATENTS

ISSUED DECEMBER 17, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2— 22 : 3,416,156
49 : 3,416,157
161 : 3,416,158
3— 1 : 3,416,159
36 : 3,416,160
4— 67 : 3,416,161
100 : 3,416,162
134 : 3,416,163
142 : 3,416,164
172 : 3,416,165
173 : 3,416,166
217 : 3,416,167
5— 13 : 3,416,168
337 : 3,416,169
8— 21 : 3,416,873
52 : 3,416,874
54.2 : 3,416,875
3,416,876
3,416,878
55 : 3,416,877
115.5 : 3,416,879
116.3 : 3,416,880
130.1 : 3,416,881
9— 2 : 3,416,170
3,416,171
337 : 3,416,172
10—107 : 3,416,173
12—142 : 3,416,174
13— 6 : 3,417,186
3,417,187
14— 1 : 3,416,175
15— 1.7 : 3,416,176
98 : 3,416,177
104.92: 3,416,178
171 : 3,416,179
250.32: 3,416,180
359 : 3,416,181
16— 52 : 3,416,182
105 : 3,416,183
112 : 3,416,184
171 : 3,416,185
17— 11 : 3,416,186
32 : 3,416,187
18— 1 : 3,416,188
12 : 3,416,189
14 : 3,416,190
16.5 : 3,416,191
19 : 3,416,192
26 : 3,416,193
35 : 3,416,194
23— 15 : 3,416,882
61 : 3,416,883
105 : 3,416,884
117 : 3,416,885
3,416,886
122 : 3,416,887
143 : 3,416,888
165 : 3,416,889
182 : 3,416,890
191 : 3,416,891
202 : 3,416,892
203 : 3,416,893
209.9 : 3,416,895
232 : 3,416,896
267 : 3,416,897
301 : 3,416,898
24— 5 : 3,416,195
90 : 3,416,196
123 : 3,416,197
150 : 3,416,198
201 : 3,416,199
208 : 3,416,200
230 : 3,416,201
259 : 3,416,202
25— 29 : 3,416,203
103 : 3,416,204
28— 71.3 : 3,416,205
3,416,206
29— 25.42: 3,416,207
33 : 3,416,208
96 : 3,416,209
148.4 : 3,416,210
3,416,211
203 : 3,416,212
3,416,213
3,416,214
204 : 3,416,215
261 : 3,416,216
403 : 3,416,217
446 : 3,416,220

29—470.9 : 3,416,218
471.1 : 3,416,219
509 : 3,416,221
528 : 3,416,222
573 : 3,416,223
580 : 3,416,224
593 : 3,416,225
30—261 : 3,416,226
348 : 3,416,227
32— 14 : 3,416,228
3,416,229
33— 1 : 3,416,230
18 : 3,416,231
75 : 3,416,232
147 : 3,416,233
174 : 3,416,234
177 : 3,416,235
34— 23 : 3,416,236
3,416,237
3,416,238
211 : 3,416,239
35— 19 : 3,416,240
35 : 3,416,241
48 : 3,416,242
3,416,243
36— 30 : 3,416,244
44 : 3,416,245
38— 66 : 3,416,246
40— 2.2 : 3,416,247
52 : 3,416,248
79 : 3,416,249
3,416,250
132 : 3,416,251
42— 1 : 3,416,252
16 : 3,416,253
43— 17.1 : 3,416,254
18 : 3,416,255
19 : 3,416,256
87 : 3,416,257
44— 7 : 3,416,899
63 : 3,416,900
69 : 3,416,901
72 : 3,416,902
73 : 3,416,903
46— 99 : 3,416,258
48—214 : 3,416,904
49—320 : 3,416,259
324 : Re.26,508
404 : 3,416,260
51— 60 : 3,416,261
80 : 3,416,262
101 : 3,416,263
216 : 3,416,264
296 : 3,416,905
381 : 3,416,265
52— 36 : 3,416,270
101 : 3,416,266
121 : 3,416,267
169 : 3,416,268
175 : 3,416,269
214 : 3,416,271
223 : 3,416,272
236 : 3,416,273
272 : 3,416,274
282 : 3,416,275
293 : 3,416,276
300 : 3,416,277
377 : 3,416,278
400 : 3,416,279
588 : 3,416,280
606 : 3,416,281
627 : 3,416,282
693 : 3,416,283
745 : 3,416,284
53— 3 : 3,416,285
3,416,286
3,416,287
27 : 3,416,288
55 : 3,416,289
78 : 3,416,290
3,416,291
329 : 3,416,292
55— 73 : 3,416,293
431 : 3,416,294
56— 25.4 : 3,416,295
28 : 3,416,296
33 : 3,416,297
327 : 3,416,298
57— 31 : 3,416,299
77 : 3,416,300

57—119 : 3,416,301
120 : 3,416,303
140 : 3,416,302
58— 85.5 : 3,416,304
59— 79 : 3,416,305
80 : 3,416,306
60— 24 : 3,416,307
3,416,308
39.15: 3,416,309
.28: 3,416,310
53 : 3,416,311
3,416,312
3,416,313
54.5 : 3,416,314
.6 : 3,416,315
3,416,316
3,416,317
67 : 3,416,318
202 : 3,416,319
208 : 3,416,320
61— 13 : 3,416,321
35 : 3,416,322
62— 18 : 3,416,323
23 : 3,416,324
45 : 3,416,325
55.5 : 3,416,326
115 : 3,416,327
118 : 3,416,328
262 : 3,416,329
505 : 3,416,330
64— 17 : 3,416,331
65— 1 : 3,416,906
32 : 3,416,907
162 : 3,416,908
309 : 3,416,909
66— 50 : 3,416,332
68— 20 : 3,416,334
70— 14 : 3,416,333
134 : 3,416,335
276 : 3,416,336
284 : 3,416,337
312 : 3,416,338
71— 3 : 3,416,910
71 : 3,416,911
87 : 3,416,912
88 : 3,416,913
72— 8 : 3,416,339
12 : 3,416,340
20 : 3,416,341
47 : 3,416,342
58 : 3,416,343
3,416,344
159 : 3,416,345
189 : 3,416,346
203 : 3,416,347
220 : 3,416,348
270 : 3,416,349
293 : 3,416,350
398 : 3,416,351
402 : 3,416,352
446 : 3,416,353
453 : 3,416,354
73— 17 : 3,416,355
3,416,356
23 : 3,416,357
37 : 3,416,358
40.7 : 3,416,359
52 : 3,416,360
61 : 3,416,361
65 : 3,416,362
67.1 : 3,416,363
.8 : 3,416,364
.9 : 3,416,365
71.5 : 3,416,366
83 : 3,416,367
141 : 3,416,368
194 : 3,416,369
209 : 3,416,370
3,416,371
304 : 3,416,372
339 : 3,416,373
425.2 : 3,416,374
429 : 3,416,375
432 : 3,416,376
74— 5 : 3,416,377
.6 : 3,416,378
18.1 : 3,416,379
89.15: 3,416,380
3,416,381
193 : 3,416,382

74—233 : 3,416,383
242.16: 3,416,384
243 : 3,416,385
424.8 : 3,416,386
473 : 3,416,387
483 : 3,416,388
502 : 3,416,389
531 : 3,416,390
569 : 3,416,391
625 : 3,416,392
731 : 3,416,393
752 : Re.26,507
75— 34 : 3,416,914
159 : 3,416,915
171 : 3,416,916
174 : 3,416,917
206 : 3,416,918
208 : 3,416,919
76— 49 : 3,416,394
81—125 : 3,416,395
83— 9 : 3,416,396
459 : 3,416,397
523 : 3,416,398
84— 1.01: 3,417,188
.19: 3,417,189
293 : 3,416,399
376 : 3,416,400
89— 1 : 3,416,401
3,416,402
3,416,403
190 : 3,416,404
91— 25 : 3,416,405
27 : 3,416,406
36 : 3,416,407
419 : 3,416,408
92— 8 : 3,416,409
93— 12 : 3,416,410
36 : 3,416,411
39.1 : 3,416,412
55.1 : 3,416,413
61 : 3,416,414
94— 22 : 3,416,415
46 : 3,416,416
48 : 3,416,417
49 : 3,416,418
50 : 3,416,419
95— 4.5 : 3,416,420
10 : 3,416,421
11 : 3,416,422
16 : 3,416,423
31 : 3,416,424
3,416,425
44 : 3,416,426
89 : 3,416,427
96— 27 : 3,416,920
29 : 3,416,921
33 : 3,416,922
74 : 3,416,923
75 : 3,416,924
91 : 3,416,925
94 : 3,416,926
100 : 3,416,927
98— 2 : 3,416,428
99— 2 : 3,416,928
17 : 3,416,929
28 : 3,416,930
107 : 3,416,931
327 : 3,416,429
332 : 3,416,430
362 : 3,416,432
391 : 3,416,431
100— 48 : 3,416,433
144 : 3,416,434
170 : 3,416,435
218 : 3,416,436
3,416,437
3,416,438
223 : 3,416,439
101— 35 : 3,416,440
56 : 3,416,441
93 : 3,416,442
3,416,443
128.1 : 3,416,445
181 : 3,416,444
287 : 3,416,446
415.1 : 3,416,447
102— 56 : 3,416,448
3,416,449
70 : 3,416,450
.2 : 3,416,451

102— 78 : 3,416,894
103— 10 : 3,416,452
44 : 3,416,453
103 : 3,416,454
111 : 3,416,455
113 : 3,416,456
123 : 3,416,457
125 : 3,416,458
126 : 3,416,459
3,416,460
148 : Re.26,509
150 : 3,416,461
104—202 : 3,416,462
105—179 : 3,416,463
366 : 3,416,464
422 : 3,416,465
106— 1 : 3,416,932
15 : 3,416,933
38.24: 3,416,934
41 : 3,416,935
52 : 3,416,936
54 : 3,416,937
57 : 3,416,938
84 : 3,416,939
107— 8 : 3,416,466
15 : 3,416,467
108—131 : 3,416,468
110— 7 : 3,416,469
162 : 3,416,470
112— 79 : 3,416,471
184 : 3,416,472
209 : 3,416,473
113— 1 : 3,416,474
3,416,475
30 : 3,416,476
114— 16 : 3,416,478
45 : 3,416,479
57 : 3,416,480
77 : 3,416,481
207 : 3,416,482
115— 41 : 3,416,483
116— 63 : 3,416,477
67 : 3,416,484
120 : 3,416,485
124.1 : 3,416,486
137 : 3,416,487
139 : 3,416,488
117— 8.5 : 3,416,940
22 : 3,416,941
33.5 : 3,416,945
36.3 : 3,416,942
44 : 3,416,943
46 : 3,416,944
61 : 3,416,946
64 : 3,416,947
76 : 3,416,948
93.2 : 3,416,949
106 : 3,416,950
3,416,951
118 : 3,416,952
126 : 3,416,953
141 : 3,416,954
160 : 3,416,955
200 : 3,416,956
212 : 3,416,957
3,416,958
213 : 3,416,959
224 : 3,416,960
118—227 : 3,416,489
269 : 3,416,490
411 : 3,416,491
620 : 3,416,492
637 : 3,416,493
3,416,494
119— 1 : 3,416,495
16 : 3,416,496
51.11: 3,416,497
55 : 3,416,498
72.5 : 3,416,499
122—406 : 3,416,500
123— 30 : 3,416,501
75 : 3,416,502
119 : 3,416,503
139 : 3,416,504
3,416,505
3,416,506
180 : 3,416,507
124— 24 : 3,416,508
126— 21 : 3,416,509
25 : 3,416,510

126— 92 : 3,416,511
94 : 3,416,512
215 : 3,416,513
242 : 3,416,514
273 : 3,416,515
127— 46 : 3,416,961
128— 2.05: 3,416,516
65 : 3,416,517
82 : 3,416,518
87 : 3,416,519
132 : 3,416,520
146.7 : 3,416,521
156 : 3,416,522
3,416,523
3,416,524
3,416,525
3,416,526
214.2 : 3,416,528
232 : 3,416,529
260 : 3,416,527
3,416,530
348 : 3,416,531
350 : 3,416,532
404 : 3,416,533
418 : 3,416,534
129— 16.1 : 3,416,535
130— 30 : 3,416,536
131—140 : 3,416,537
237 : 3,416,538
245 : 3,416,539
262 : 3,416,540
266 : 3,416,541
132— 73 : 3,416,542
125 : 3,416,543
134— 26 : 3,416,962
102 : 3,416,544
129 : 3,416,545
135— 49 : 3,416,546
136— 6 : 3,416,963
3,416,964
86 : 3,416,965
3,416,966
3,416,967
102 : 3,416,968
134 : 3,416,969
176 : 3,416,970
205 : 3,416,971
230 : 3,416,972
235 : 3,416,973
137— 12 : 3,416,547
68 : 3,416,548
81.5 : 3,416,549
3,416,550
3,416,551
98 : 3,416,552
115 : 3,416,553
116.3 : 3,416,554
119 : 3,416,555
218 : 3,416,556
242 : 3,416,557
246.22: 3,416,558
247.13: 3,416,559
456 : 3,416,560
491 : 3,416,561
512.15: 3,416,562
519 : 3,416,563
525 : 3,416,564
549 : 3,416,565
554 : 3,416,566
604 : 3,416,567
606 : 3,416,568
3,416,569
625.17: 3,416,570
138— 92 : 3,416,571
139—126 : 3,416,572
127 : 3,416,573
256 : 3,416,574
140— 92.1 : 3,416,575
93.2 : 3,416,576
141—117 : 3,416,577
143— 32 : 3,416,578
133 : 3,416,579
144— 92 : 3,416,580
208 : 3,416,581
145— 50 : 3,416,582
146—115 : 3,416,583
171 : 3,416,584
148— 6.15: 3,416,974
.20: 3,416,975
12.4 : 3,416,976

148— 20.6 : 3,416,977
32.5 : 3,416,978
178 : 3,416,979
150— 3 : 3,416,585
38 : 3,416,586
152—243 : 3,416,587
156— 89 : 3,416,980
94 : 3,416,981
193 : 3,416,982
197 : 3,416,983
209 : 3,416,984
244 : 3,416,986
289 : 3,416,985
363 : 3,416,987
545 : 3,416,988
157— 1.17: 3,416,588
160—201 : 3,416,589
213 : 3,416,590
161— 8 : 3,416,989
93 : 3,416,990
101 : 3,416,991
185 : 3,416,992
193 : 3,416,993
227 : 3,416,994
162—284 : 3,416,995
164— 85 : 3,416,591
210 : 3,416,592
234 : 3,416,593
278 : 3,416,594
165— 8 : 3,416,595
10 : 3,416,596
80 : 3,416,597
134 : 3,416,598
145 : 3,416,599
175 : 3,416,600
166— 12 : 3,416,601
29 : 3,416,602
33 : 3,416,603
3,416,604
38 : 3,416,605
42 : 3,416,606
57 : 3,416,607
129 : 3,416,608
131 : 3,416,609
216 : 3,416,610
172—261 : 3,416,611
784 : 3,416,612
173— 57 : 3,416,613
174— 36 : 3,417,190
49 : 3,417,191
59 : 3,417,192
68.5 : 3,417,193
71 : 3,417,194
84 : 3,417,195
175— 67 : 3,416,614
173 : 3,416,615
258 : 3,416,616
339 : 3,416,617
3,416,618
176— 30 : 3,416,996
177— 53 : 3,416,619
123 : 3,416,620
178— 5.2 : 3,417,196
6.6 : 3,417,197
.8 : 3,417,198
7.2 : 3,417,199
.82: 3,417,201
31 : 3,417,202
179— 1 : 3,417,203
18 : 3,417,204
22 : 3,417,205
3,417,206
90 : 3,417,207
3,417,208
100.2 : 3,417,209
175.3 : 3,417,210
180— 6.48: 3,416,623
.7 : 3,416,622
14 : 3,416,624
96 : 3,416,625
124 : 3,416,626
127 : 3,416,627
181— .5 : 3,416,621
3,416,628
3,416,629
3,416,630
3,416,631
3,416,632
184— 1 : 3,416,633
188— 73 : 3,416,634
196 : 3,416,635
192— 57 : 3,416,636
98 : 3,416,637
193— 37 : 3,416,638
194— 10 : 3,416,639
195— 66 : 3,416,997
103.5 : 3,416,998
198— 31 : 3,416,640
32 : 3,416,641
34 : 3,416,642
3,416,643
43 : 3,416,644
181 : 3,416,645
219 : 3,416,646
200— 38 : 3,417,211
42 : 3,417,212

200— 51 : 3,417,213
3,417,214
86 : 3,417,215
144 : 3,417,216
148 : 3,417,217
153 : 3,417,218
202—161 : 3,416,999
174 : 3,417,000
203— 20 : 3,417,001
204— 1.5 : 3,417,002
14 : 3,417,003
3,417,004
32 : 3,417,005
143 : 3,417,006
212 : 3,417,007
225 : 3,417,008
299 : 3,417,009
206— 19.5 : 3,416,647
46 : 3,416,648
3,416,649
47 : 3,416,650
3,416,657
56 : 3,416,651
60 : 3,416,652
65 : 3,416,653
3,416,654
75 : 3,416,655
78 : 3,416,656
208— 28 : 3,417,010
108 : 3,417,011
181 : 3,417,012
187 : 3,417,013
3,417,014
209— 73 : 3,416,658
111.7 : 3,416,659
254 : 3,416,660
210— 23 : 3,417,015
34 : 3,417,016
78 : 3,416,661
3,416,662
3,416,663
87 : 3,416,664
96 : 3,416,665
3,416,666
104 : 3,416,667
203 : 3,416,668
333 : 3,416,669
211— 60 : 3,416,670
83 : 3,416,671
103 : 3,416,672
115 : 3,416,673
214— 6 : 3,416,674
8.5 : 3,416,679
16.4 : 3,416,675
17 : 3,416,676
75 : 3,416,677
82 : 3,416,678
307 : 3,416,680
308 : 3,416,681
370 : 3,416,682
506 : 3,416,683
516 : 3,416,684
730 : 3,416,685
778 : 3,416,686
215— 39 : 3,416,687
41 : 3,416,688
100 : 3,416,689
217— 26.5 : 3,416,690
219— 10.61: 3,417,219
80 : 3,417,220
109 : 3,417,221
113 : 3,417,200
121 : 3,417,222
3,417,223
3,417,224
125 : 3,417,225
216 : 3,417,226
365 : 3,417,227
504 : 3,417,228
528 : 3,417,229
553 : 3,417,230
220— 9 : 3,416,691
3,416,692
3,416,693
3,416,694
21 : 3,416,695
23.8 : 3,416,696
44 : 3,416,697
54 : 3,416,698
3,416,699
3,416,700
55 : 3,416,701
70 : 3,416,702
73 : 3,416,703
97 : 3,416,704
221— 2 : 3,416,705
11 : 3,416,706
222— 1 : 3,416,707
55 : 3,416,708
94 : 3,416,709
230 : 3,416,710
402.18: 3,416,711
541 : 3,416,712
223—104 : 3,416,713
225— 3 : 3,416,714
3,416,772

227— 44 : 3,416,715
229— 7 : 3,416,716
14 : 3,416,717
16 : 3,416,718
20 : 3,416,719
54 : 3,416,720
62.5 : 3,416,721
230— 69 : 3,416,722
116 : 3,416,723
228 : 3,416,724
259 : 3,416,725
233— 21 : 3,416,726
235— 61.11: 3,417,231
3,417,232
3,417,233
3,417,234
151.11: 3,417,235
175 : 3,417,236
238— 84 : 3,416,727
152 : 3,416,728
239— 16 : 3,416,729
61 : 3,416,730
124 : 3,416,731
227 : 3,416,732
407 : 3,416,733
460 : 3,416,734
567 : 3,416,735
571 : 3,416,736
579 : 3,416,737
588 : 3,416,738
240— 10.62: 3,417,237
21 : 3,416,740
241— 5 : 3,416,739
18.1 : 3,416,741
47.09: 3,416,742
50 : 3,416,743
55.3 : 3,416,744
83 : 3,416,745
84.5 : 3,416,746
107.4 : 3,416,747
158 : 3,416,748
244— 1 : 3,416,749
3,416,750
3.13: 3,416,751
.17: 3,416,752
4 : 3,416,753
55 : 3,416,754
122 : 3,416,755
123 : 3,416,756
129 : 3,416,757
130 : 3,416,758
248— 4 : 3,416,759
48.2 : 3,416,760
115 : 3,416,761
361 : 3,416,762
3,416,763
452 : 3,416,764
467 : 3,416,765
249— 79 : 3,416,766
250— 44 : 3,417,238
52 : 3,417,239
71 : 3,417,240
3,417,241
83.3 : 3,417,242
3,417,243
3,417,244
84.5 : 3,417,245
199 : 3,417,246
203 : 3,417,247
211 : 3,417,248
217 : 3,417,249
218 : 3,417,250
3,417,251
219 : 3,417,252
233 : 3,417,253
251— 1 : 3,416,767
157 : 3,416,768
189 : 3,416,769
303 : 3,416,770
337 : 3,416,771
252— 8.5 : 3,417,017
13 : 3,417,018
52 : 3,417,020
56 : 3,417,021
62.1 : 3,417,019
79.4 : 3,417,022
118 : 3,417,023
135 : 3,417,024
152 : 3,417,025
301.4 : 3,417,027
.6 : 3,417,026
317 : 3,417,028
455 : 3,417,029
3,417,030
472 : 3,417,031
518 : 3,417,032
254—166 : 3,416,773
185 : RE.26,505
259—109 : 3,416,774
260— 2 : 3,417,033
3,417,034
3,417,035
3,417,036
.5 : 3,417,037
3,417,038
23 : 3,417,039

260— 27 : 3,417,040
28.5 : 3,417,041
30.2 : 3,417,042
33.4 : 3,417,043
.6 : 3,417,044
3,417,045
37 : 3,417,046
3,417,047
40 : 3,417,048
45.85: 3,417,049
47 : 3,417,050
3,417,051
3,417,052
3,417,053
66 : 3,417,054
7 .3 : 3,417,062
72.5 : 3,417,055
73 : 3,417,056
75 : 3,417,057
3,417,058
78.4 : 3,417,059
3,417,063
79 : 3,417,060
.3 : 3,417,061
.5 : 3,417,064
83.7 : 3,417,065
88.1 : 3,417,066
89.5 : 3,417,067
92.1 : 3,417,068
.3 : 3,417,069
94.3 : 3,417,070
108 : 3,417,071
112.5 : 3,417,072
145 : 3,417,073
151 : 3,417,074
162 : 3,417,075
205 : 3,417,076
210 : 3,417,077
233.3 : 3,417,078
239.3 : 3,417,079
.55: 3,417,081
.6 : 3,417,080
240 : 3,417,082
3,417,083
.2 : 3,417,084
243 : 3,417,085
247.1 : 3,417,086
3,417,087
250 : 3,417,088
286 : 3,417,089
288 : 3,417,090
3,417,091
290 : 3,417,092
294.7 : 3,417,093
3,417,094
296 : 3,417,095
308 : 3,417,096
309.7 : 3,417,098
327 : 3,417,099
3,417,100
328 : 3,417,101
332.1 : 3,417,103
333 : 3,417,102
340.2 : 3,417,104
.5 : 3,417,106
.9 : 3,417,105
346.1 : 3,417,107
.4 : 3,417,108
347.8 : 3,417,109
397.1 : 3,417,110
3,417,111
.4 : 3,417,112
404 : 3,417,114
408 : 3,417,113
429.7 : 3,417,115
3,417,116
3,417,117
439 : 3,417,118
448 : 3,417,119
.2 : 3,417,120
3,417,121
453 : 3,417,122
462 : 3,417,123
465 : 3,417,124
.3 : 3,417,125
3,417,128
.8 : 3,417,126
466 : 3,417,127
483 : 3,417,129
484 : 3,417,131
485 : 3,417,130
488 : 3,417,132
497 : 3,417,133
506 : 3,417,134
515 : 3,417,135
525 : 3,417,137
534 : 3,417,136
537 : 3,417,138
558 : 3,417,139
561 : 3,417,140
563 : 3,417,141
576 : 3,417,142
586 : 3,417,143
604 : 3,417,144
3,417,145
609 : 3,417,146

260—612 : 3,417,147
621 : 3,417,149
623 : 3,417,150
624 : 3,417,151
646 : 3,417,153
652.5 : 3,417,152
666 : 3,417,155
.5 : 3,417,154
669 : 3,417,156
671 : 3,417,148
672 : 3,417,157
674 : 3,417,158
677 : 3,417,159
683.15: 3,417,160
825 : 3,417,161
837 : 3,417,162
857 : 3,417,163
926 : 3,417,164
941 : 3,417,165
261—112 : 3,416,775
122 : 3,416,776
263— 6 : 3,416,777
32 : 3,416,778
52 : 3,417,166
264— .5 : 3,417,167
40 : 3,417,168
51 : 3,417,169
3,417,170
3,417,171
53 : 3,417,173
77 : 3,417,172
78 : 3,417,174
220 : 3,417,175
230 : 3,417,176
3,417,177
308 : 3,417,097
331 : 3,417,178
266— 36 : 3,416,779
39 : 3,416,781
43 : 3,416,780
267— 1 : 3,416,782
33 : 3,416,783
269—136 : 3,416,784
270— 45 : 3,416,785
54 : 3,416,786
79 : 3,416,787
271— 3 : 3,416,788
44 : 3,416,789
51 : 3,416,790
65 : 3,416,791
272— 60 : 3,416,792
66 : 3,416,793
273— 24 : 3,416,794
55 : 3,416,795
63 : 3,416,796
77 : 3,416,797
80 : 3,416,798
85 : 3,416,799
106 : 3,416,800
110 : 3,416,801
134 : 3,416,802
186 : 3,416,803
274— 2 : 3,416,804
10 : 3,416,805
11 : 3,416,806
23 : 3,416,807
277— 40 : 3,416,808
279—110 : 3,416,809
280— 11.13: 3,416,810
.35: 3,416,811
3,416,812
47.32: 3,416,813
150 : 3,416,814
3,416,815
179 : 3,416,816
281— 42 : 3,416,817
285— 39 : 3,416,818
302 : 3,416,819
399 : 3,416,820
287— 20.92: 3,416,821
.924 3,416,822
189.36: 3,416,823
289— 2 : 3,416,824
13 : 3,416,825
292—198 : 3,416,826
288 : 3,416,827
341.18: 3,416,828
.19: 3,416,829
294— 5.5 : 3,416,830
50.5 : 3,416,831
82 : 3,416,832
296— 93 : 3,416,833
100 : 3,416,834
3,416,835
148 : 3,416,836
297—195 : 3,416,837
214 : 3,416,838
396 : 3,416,839
301— 37 : 3,416,840
302— 11 : 3,416,841
34 : 3,416,842
58 : 3,416,844
303— 54 : 3,416,843
305— 38 : 3,416,845
54 : 3,416,846
307— 29 : 3,417,254

307— 39 : 3,417,255
43 : 3,417,256
88 : 3,417,257
3,417,258
108 : 3,417,259
213 : 3,417,260
216 : 3,417,261
218 : 3,417,262
229 : 3,417,263
232 : 3,417,264
247 : 3,417,265
263 : 3,417,266
308— 37 : 3,416,847
174 : 3,416,848
310— 6 : 3,417,267
27 : 3,417,268
3,417,269
49 : 3,417,270
103 : 3,417,271
261 : 3,417,272
312—312 : 3,416,849
330 : 3,416,850
313— 63 : 3,417,273
89 : 3,417,274
136 : 3,417,275
143 : 3,417,276
325 : 3,417,277
315— 3.5 : 3,417,278
.6 : 3,417,279
3,417,280
18 : 3,417,281
24 : 3,417,282
26 : 3,417,283
27 : 3,417,284
31 : 3,417,285
74 : 3,417,286
111 : 3,417,287
241 : 3,417,288
316— 19 : 3,416,851
317— 5 : 3,417,289
13 : 3,417,290
31 : 3,417,292
33 : 3,417,291
43 : 3,417,293
101 : 3,417,294
123 : 3,417,295
142 : 3,417,296
3,417,297
148.5 : 3,417,298
234 : 3,417,299
3,417,300
237 : 3,417,301
262 : 3,417,302
318— 18 : 3,417,303
149 : 3,417,304
473 : 3,417,305
320— 1 : 3,417,306
9 : 3,417,307
23 : 3,417,308
32 : 3,417,309
48 : 3,417,310
321— 2 : 3,417,311
18 : 3,417,312
3,417,313
44 : 3,417,314
45 : 3,417,315
60 : 3,417,316
69 : 3,417,317
322— 2 : 3,417,318
323— 4 : 3,417,319
22 : 3,417,320
3,417,321
75 : 3,417,322
324— 28 : 3,417,323
3,417,324
34 : 3,417,325
51 : 3,417,326
54 : 3,417,327
59 : 3,417,328
62 : 3,417,329
3,417,330
3,417,331
325—163 : 3,417,332
320 : 3,417,333
492 : 3,417,334
328—124 : 3,417,335
140 : 3,417,336
329— 50 : 3,417,337
132 : 3,417,338
330— 15 : 3,417,339
24 : 3,417,340
28 : 3,417,341
331— 12 : 3,417,342
87 : 3,417,343
94.5 : 3,417,344
3,417,345
3,417,346
112 : 3,417,347
113 : 3,417,348
141 : 3,417,349
333— 35 : 3,417,350
73 : 3,417,351
84 : 3,417,352
335—112 : 3,417,353
205 : 3,417,354
296 : 3,417,355

335—298 : 3,417,356
337— 99 : 3,417,358
201 : 3,417,359
295 : 3,417,357
339 : 3,417,360
338— 42 : 3,417,361
339— 17 : 3,417,362
45 : 3,417,363
54 : 3,417,364
91 : 3,417,365
96 : 3,417,366
145 : 3,417,367
147 : 3,417,368
340— 3 : 3,417,369

340— 15.5 : 3,417,370
18 : 3,417,371
146.3 : 3,417,372
172.5 : 3,417,373
3,417,374
3,417,375
3,417,376
3,417,377
3,417,378
3,417,379
3,417,380
173 : 3,417,381
174 : 3,417,382

340—174 : 3,417,383
3,417,384
3,417,385
.1 : 3,417,386
3,417,387
3,417,388
3,417,389
207 : 3,417,390
376 : 3,417,391
409 : 3,417,392
343— 5 : 3,417,393
6 : 3,417,394
7.7 : 3,417,396

343— 7.9 : 3,417,395
8 : 3,417,397
18 : 3,417,398
100 : 3,417,399
771 : 3,417,400
792.5 : 3,417,401
852 : 3,417,402
877 : 3,417,403
346— 74 : 3,417,404
145 : 3,417,405
350— 82 : 3,416,852
92 : 3,416,853
157 : RE.26,506

350—289 : 3,416,854
351— 6 : 3,416,855
17 : 3,416,856
31 : 3,416,857
118 : 3,416,858
353— 69 : 3,416,859
355— 10 : 3,416,860
13 : 3,416,861
70 : 3,416,862
110 : 3,416,863
356—100 : 3,416,864
206 : 3,416,865
230 : 3,416,866

356—230 : 3,416,867
401— 61 : 3,416,868
209 : 3,416,869
424— 28 : 3,417,179
47 : 3,417,180
229 : 3,417,181
243 : 3,417,182
3,417,183
258 : 3,417,184
287 : 3,417,185
431— 2 : 3,416,870
125 : 3,416,871
344 : 3,416,872

CLASSIFICATION OF DESIGNS

D 9— 39 : 212,932
185 : 212,933
289 : 212,934
D10— 6 : 212,935
D13— 1 : 212,936
212,937
D14— 6 : 212,938
212,939
24 : 212,940
30 : 212,941
D15— 1 : 212,942
212,943

D18— 2 : 212,944
D22— 25 : 212,945
D23— 49 : 212,946
97 : 212,947
212,948
D24— 1 : 212,949
D26— 5 : 212,950
212,951
14 : 212,952
212,953
D29— 23 : 212,954
D34— 14 : 212,955

D34— 15 : 212,956
212,957
D35— 2 : 212,958
3 : 212,959
D40— 1 : 212,960
D42— 7 : 212,961
212,962
D44— 10 : 212,963
212,964
212,965
D45— 10 : 212,966
D48— 2 : 212,967

D48— 20 : 212,968
212,969
32 : 212,970
D49— 6 : 212,971
14.1 : 212,972
D52— 7 : 212,973
D56— 2 : 212,974
D61— 1 : 212,975
212,976
212,977
D64— 11 : 212,978

D64— 11 : 212,979
D74— 1 : 212,980
12 : 212,991
17 : 212,981
212,992
D80— 9 : 212,982
D81— 4 : 212,983
10 : 212,984
212,985
D83— 1 : 212,986
212,987
212,988
212,989

D83— 1 : 212,990
12 : 212,991
212,992
D86— 10 : 212,993
13 : 212,994
D87— 1 : 212,995
3 : 212,996
5 : 212,997
D89— 1 : 212,998
212,999
D95— 3 : 213,000

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,416,593
3,416,671
3,417,288
2 : 3,416,813
4 : 3,417,260
3,417,313
3,417,317
6 : 3,416,156
3,416,159
3,416,167
3,416,203
3,416,216
3,416,218
3,416,219
3,416,225
3,416,230
3,416,233
3,416,242
3,416,251
3,416,259
3,416,322
3,416,324
3,416,335
3,416,341
3,416,362
3,416,369
3,416,373
3,416,380
3,416,397
3,416,398
3,416,411
3,416,415
3,416,423
3,416,438
3,416,442
3,416,465
3,416,487
3,416,514
3,416,516
3,416,517
3,416,528
3,416,531
3,416,532
3,416,536
3,416,544
3,416,582
3,416,584
3,416,603
3,416,606
3,416,619

6 : 3,416,620
3,416,632
3,416,633
3,416,642
3,416,657
3,416,670
3,416,677
3,416,680
3,416,692
3,416,707
3,416,719
3,416,722
3,416,733
3,416,749
3,416,751
3,416,762
3,416,768
3,416,789
3,416,805
3,416,806
3,416,816
3,416,818
3,416,828
9 : 3,416,829
3,416,835
3,416,864
3,416,953
3,416,958
3,416,960
3,416,968
3,416,971
3,416,983
3,416,999
3,417,026
3,417,166
3,417,198
3,417,209
3,417,212
3,417,225
3,417,236
3,417,238
3,417,240
3,417,265
3,417,268
3,417,270
3,417,272
3,417,273
3,417,279
3,417,283
3,417,299

6 : 3,417,301
3,417,325
3,417,329
3,417,345
3,417,346
3,417,361
3,417,374
3,417,375
3,417,377
3,417,378
3,417,380
3,417,385
3,417,386
3,417,387
3,417,389
3,417,392
3,417,400
3,417,402
3,417,404
8 : 3,416,535
3,416,693
3,417,067
3,417,350
9 : 3,416,200
3,416,211
3,416,276
3,416,445
3,416,500
3,416,552
3,416,669
3,416,726
3,416,727
3,416,728
3,416,737
3,416,743
3,416,838
3,416,852
3,416,868
3,416,871
3,416,897
3,416,914
3,416,986
3,416,989
3,417,009
3,417,122
3,417,186
3,417,187
3,417,242
3,417,263
3,417,296

9 : 3,417,297
3,417,303
3,417,323
10 : 3,416,302
3,416,664
3,416,975
3,416,990
3,417,036
3,417,060
3,417,076
3,417,102
3,417,147
3,417,175
11 : 3,416,274
3,416,659
3,416,988
3,417,247
3,417,266
3,417,298
3,417,332
3,417,354
3,417,399
12 : 3,416,163
3,416,166
3,416,187
3,416,266
3,416,268
3,416,277
3,416,283
3,416,478
3,416,495
3,416,529
3,416,690
3,416,752
3,416,763
3,416,803
3,416,889
3,416,998
3,417,071
3,417,258
3,417,360
3,417,369
3,417,398
13 : 3,416,158
3,416,172
3,416,246
3,416,261
3,416,329
3,416,688
3,416,708

15 : 3,416,484
16 : 3,416,832
17 : RE.26,509
3,416,173
3,416,176
3,416,185
3,416,221
3,416,227
3,416,254
3,416,262
3,416,270
3,416,285
3,416,304
3,416,307
3,416,312
3,416,356
3,416,376
3,416,384
3,416,385
3,416,391
3,416,401
3,416,428
3,416,430
3,416,435
3,416,461
3,416,466
3,416,467
3,416,473
3,416,507
3,416,509
3,416,540
3,416,542
3,416,543
3,416,556
3,416,561
3,416,592
3,416,595
3,416,605
3,416,611
3,416,623
3,416,624
3,416,638
3,416,640
3,416,695
3,416,699
3,416,700
3,416,702
3,416,703
3,416,710
3,416,712

17 : 3,416,717
3,416,729
3,416,785
3,416,808
3,416,815
3,416,819
3,416,821
3,416,859
3,416,860
3,416,904
3,416,931
3,416,949
3,416,965
3,417,011
3,417,030
3,417,078
3,417,114
3,417,135
3,417,155
3,417,156
3,417,157
3,417,194
3,417,214
3,417,226
3,417,237
3,417,250
3,417,277
3,417,295
3,417,341
3,417,365
3,417,366
18 : 3,416,229
3,416,308
3,416,315
3,416,331
3,416,371
3,416,408
3,416,464
3,416,518
3,416,548
3,416,709
3,416,798
3,416,847
3,416,872
3,416,916
3,416,928
3,416,997
3,417,077
3,417,087
3,417,211

18 : 3,417,324
19 : 3,416,239
3,416,431
3,416,496
3,416,676
3,416,845
3,417,289
3,417,336
20 : 3,416,759
3,416,787
3,416,796
3,416,911
3,416,912
3,416,913
3,417,144
3,417,146
21 : 3,416,282
3,416,293
3,416,381
3,416,498
3,416,579
3,417,001
3,417,050
3,417,140
3,417,188
3,417,202
3,417,220
3,417,286
3,417,379
22 : 3,416,288
3,416,575
3,416,629
3,416,880
3,417,088
3,417,142
24 : 3,416,269
3,416,280
3,416,319
3,416,342
3,416,348
3,416,350
3,416,379
3,416,480
3,416,485
3,416,577
3,416,701
3,416,910
3,416,939
3,416,973
3,417,000
3,417,251
3,417,264
3,417,311
3,417,316
3,417,344
3,417,397
25 : RE.26,506
3,416,192
3,416,234
3,416,244
3,416,245
3,416,248
3,416,252
3,416,263
3,416,264
3,416,355
3,416,407
3,416,420
3,416,426
3,416,427
3,416,492
3,416,551
3,416,683
3,416,758
3,416,765
3,416,777
3,416,788
3,416,790
3,416,834
3,416,837
3,416,858
3,416,862
3,416,866
3,416,867
3,416,883
3,416,905
3,416,957
3,416,972
3,416,987
3,417,003
3,417,041
3,417,082
3,417,177
3,417,231
3,417,281
3,417,320
3,417,367
3,417,382
3,417,396
3,417,405
26 : 3,416,194
3,416,201
3,416,209
3,416,217
3,416,220
3,416,255

26 : 3,416,316
3,416,317
3,416,321
3,416,330
3,416,346
3,416,363
3,416,386
3,416,389
3,416,443
3,416,447
3,416,503
3,416,511
3,416,524
3,416,527
3,416,554
3,416,581
3,416,634
3,416,644
3,416,665
3,416,666
3,416,684
3,416,730
3,416,734
3,416,747
3,416,766
3,416,807
3,416,833
3,416,839
3,416,840
3,416,846
3,416,849
3,416,895
3,416,908
3,416,992
3,417,005
3,417,008
3,417,045
3,417,062
3,417,069
3,417,148
3,417,162
3,417,164
3,417,182
3,417,358
27 : RE.26,508
3,416,164
3,416,181
3,416,183
3,416,193
3,416,257
3,416,337
3,416,392
3,416,434
3,416,510
3,416,530
3,416,557
3,416,706
3,416,894
3,416,929
3,417,068
3,417,136
3,417,192
3,417,243
3,417,284
28 : 3,416,519
29 : 3,416,179
3,416,186
3,416,296
3,416,383
3,416,538
3,416,647
3,416,711
3,416,713
3,416,760
3,416,809
3,416,855
3,416,890
3,416,930
3,416,936
3,417,227
3,417,259
3,417,357
3,417,359
3,417,394
31 : 3,416,580
3,416,857
32 : 3,416,437
3,416,919
33 : 3,416,610
3,416,741
3,416,770
3,416,851
3,417,229
3,417,321
34 : 3,416,157
3,416,169
3,416,189
3,416,198
3,416,231
3,416,299
3,416,320
3,416,326
3,416,338
3,416,353
3,416,375
3,416,378

34 : 3,416,429
3,416,448
3,416,449
3,416,455
3,416,472
3,416,490
3,416,560
3,416,585
3,416,598
3,416,641
3,416,679
3,416,786
3,416,870
3,416,873
3,416,885
3,416,932
3,416,963
3,417,004
3,417,010
3,417,015
3,417,018
3,417,021
3,417,022
3,417,023
3,417,024
3,417,029
3,417,032
3,417,043
3,417,054
3,417,059
3,417,063
3,417,072
3,417,089
3,417,097
3,417,116
3,417,119
3,417,123
3,417,132
3,417,137
3,417,151
3,417,165
3,417,178
3,417,180
3,417,204
3,417,207
3,417,208
3,417,210
3,417,215
3,417,256
3,417,262
3,417,294
3,417,319
3,417,333
3,417,338
3,417,339
3,417,351
3,417,384
35 : 3,417,002
3,417,395
36 : 3,416,168
3,416,236
3,416,238
3,416,240
3,416,241
3,416,243
3,416,247
3,416,249
3,416,250
3,416,286
3,416,303
3,416,310
3,416,313
3,416,327
3,416,336
3,416,361
3,416,412
3,416,414
3,416,424
3,416,425
3,416,440
3,416,444
3,416,452
3,416,469
3,416,475
3,416,479
3,416,482
3,416,486
3,416,493
3,416,494
3,416,502
3,416,576
3,416,586
3,416,589
3,416,597
3,416,626
3,416,648
3,416,655
3,416,656
3,416,661
3,416,663
3,416,682
3,416,685
3,416,705
3,416,720
3,416,721
3,416,724

36 : 3,416,753
3,416,755
3,416,761
3,416,764
3,416,769
3,416,791
3,416,792
3,416,794
3,416,817
3,416,827
3,416,848
3,416,861
3,416,865
3,416,884
3,416,896
3,416,901
3,416,902
3,416,903
3,416,907
3,416,917
3,416,921
3,416,923
3,416,926
3,416,927
3,416,938
3,416,950
3,416,959
3,416,964
3,416,966
3,416,967
3,416,977
3,416,984
3,416,985
3,417,019
3,417,042
3,417,046
3,417,053
3,417,055
3,417,058
3,417,083
3,417,094
3,417,096
3,417,107
3,417,108
3,417,115
3,417,127
3,417,158
3,417,170
3,417,196
3,417,201
3,417,222
3,417,230
3,417,233
3,417,246
3,417,248
3,417,249
3,417,253
3,417,255
3,417,261
3,417,267
3,417,274
3,417,306
3,417,307
3,417,308
3,417,309
3,417,322
3,417,328
3,417,330
3,417,334
3,417,337
3,417,343
3,417,349
3,417,368
3,417,381
37 : 3,416,184
3,416,195
3,416,196
3,416,215
3,416,287
3,416,368
3,416,639
3,416,795
3,416,800
3,416,853
3,416,981
3,417,037
3,417,348
39 : 3,416,228
3,416,235
3,416,260
3,416,272
3,416,279
3,416,281
3,416,328
3,416,334
3,416,345
3,416,347
3,416,360
3,416,390
3,416,400
3,416,406
3,416,418
3,416,441
3,416,459
3,416,508
3,416,512

39 : 3,416,515
3,416,520
3,416,539
3,416,564
3,416,583
3,416,588
3,416,643
3,416,652
3,416,673
3,416,691
3,416,736
3,416,750
3,416,754
3,416,771
3,416,844
3,416,850
3,416,863
3,416,900
3,416,944
3,416,948
3,416,951
3,416,955
3,416,956
3,417,025
3,417,035
3,417,044
3,417,086
3,417,125
3,417,128
3,417,139
3,417,141
3,417,143
3,417,167
3,417,181
3,417,189
3,417,244
3,417,327
40 : 3,416,454
3,416,601
3,416,602
3,416,604
3,416,667
3,416,714
3,416,715
3,416,725
3,416,735
3,416,746
3,416,772
3,416,854
3,416,899
3,417,070
41 : 3,416,197
3,416,419
3,416,568
42 : 3,416,178
3,416,182
3,416,212
3,416,213
3,416,325
3,416,339
3,416,340
3,416,349
3,416,370
3,416,372
3,416,403
3,416,451
3,416,456
3,416,488
3,416,537
3,416,553
3,416,574
3,416,614
3,416,635
3,416,662
3,416,696
3,416,732
3,416,745
3,416,779
3,416,780
3,416,782
3,416,793
3,416,797
3,416,801
3,416,804
3,416,824
3,416,825
3,416,877
3,416,935
3,416,947
3,416,962
3,416,994
3,417,020
3,417,038
3,417,040
3,417,079
3,417,081
3,417,101
3,417,105
3,417,110
3,417,131
3,417,145
3,417,149
3,417,154
3,417,161
3,417,172
3,417,179

42 : 3,417,184
3,417,191
3,417,203
3,417,232
3,417,269
3,417,278
3,417,305
3,417,331
3,417,362
3,417,364
3,417,401
44 : 3,416,165
3,416,305
3,416,343
3,416,344
3,416,351
3,417,390
45 : 3,416,301
3,416,522
3,416,523
3,416,525
3,416,526
3,416,649
3,416,678
3,416,906
3,417,007
3,417,013
3,417,216
46 : 3,416,395
47 : 3,416,297
3,416,570
3,416,600
3,416,689
48 : 3,416,208
3,416,214
3,416,256
3,416,357
3,416,359
3,416,463
3,416,546
3,416,547
3,416,558
3,416,566
3,416,571
3,416,608
3,416,609
3,416,612
3,416,613
3,416,617
3,416,618
3,416,631
3,416,645
3,416,681
3,416,739
3,416,744
3,416,756
3,416,767
3,416,830
3,416,893
3,416,974
3,416,995
3,417,017
3,417,103
3,417,138
3,417,159
3,417,169
3,417,173
3,417,290
3,417,300
3,417,304
3,417,318
3,417,370
3,417,371
3,417,372
3,417,393
3,417,403
49 : 3,416,686
50 : 3,416,224
3,417,176
51 : 3,416,170
3,416,207
3,416,278
3,416,292
3,416,404
3,416,410
3,416,413
3,416,550
3,416,653
3,416,698
3,416,731
3,417,174
3,417,195
3,417,219
3,417,235
3,417,254
3,417,293
3,417,315
3,417,373
53 : RE.26,505
3,416,162
3,416,199
3,416,232
3,416,271
3,416,365
3,416,374
3,416,396

53 : 3,416,416	53 : 3,416,831	54 : 3,417,034	55 : 3,416,294	55 : 3,416,477	55 : 3,416,781
3,416,491	3,416,836	3,417,064	3,416,295	3,416,497	3,416,814
3,416,541	3,417,185	3,417,104	3,416,298	3,416,533	3,416,869
3,416,549	3,417,218	3,417,130	3,416,399	3,416,534	3,416,969
3,416,748	3,417,241	3,417,252	3,416,417	3,416,578	3,416,970
3,416,757	3,417,335	55 : 3,416,174	3,416,457	3,416,622	3,417,118
3,416,773	54 : 3,416,161	3,416,226	3,416,468	3,416,704	3,417,326
3,416,810					

Design Patents

6 : 212,944	6 : 212,990	18 : 212,936	36 : 212,933	39 : 212,959	42 : 212,965
212,950	212,992	20 : 212,960	212,949	212,971	212,980
212,952	9 : 212,934	26 : 212,935	212,968	212,972	212,983
212,955	212,947	212,937	212,975	212,973	212,996
212,957	212,948	212,940	212,976	212,984	51 : 212,942
212,958	212,978	212,945	212,977	212,993	212,943
212,967	212,979	212,982	212,985	212,994	212,974
212,969	12 : 212,938	27 : 212,989	212,988	212,995	53 : 212,966
212,981	17 : 212,953	212,998	212,997	40 : 212,939	55 : 212,951
212,986	212,962	29 : 212,963	39 : 212,946	42 : 212,956	212,961
212,987	212,964	34 : 212,932	212,954		

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 17, 1968 Volume 857 Number 3

TRADEMARKS

NOTICES

Supplemental Notice Regarding Study of Need for Revision of Trademark Act of 1946, as amended

Request for Comments

The time for the submission of comments regarding the Patent Office study of the need for a revision of the Trademark Act of 1946, as amended, is extended from January 3, 1969, as announced by notice in the OFFICIAL GAZETTE, volume 857, No. 1, December 3, 1968, to February 14, 1969.

In addition, comments and suggestions are invited regarding the need for changes in the Code of Federal Regulations, Title 37, Chapter 1, Part 2—Rules of Practice in Trademark Cases and Part 4—Forms for Trademark Cases by February 14, 1969.

EDWARD J. BRENNER,
Commissioner of Patents.

Nov. 25, 1968.

Approved:

JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 33 F.R. 18108, Dec. 5, 1968

Service by Publication

A petition to cancel the registration identified below having been filed and this Office being unable to effect service of notice of this proceeding on the domestic representative for registrant since he is deceased, notice is hereby given that unless the registrant listed herein, its assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Societe Anonyme Ed. Laurens "Le Khedive" Extension Belge, Manufacture de Cigarettes, Molenbeek-Saint-Jean, Belgium, Reg. No. 747,484, Canc. No. 9224.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 195,360 (CHANEL), Chanel Industries, Inc., Face powder, perfume, eau de cologne, toilet water, lipstick and rouge; **Reg. No. 510,992**, same, Chanel, Inc., Perfume, toilet water, eau de cologne, face powder, bath powder, talcum powder, lipsticks, and lip oil, **filed** Aug. 20, 1968, D.C., Puerto Rico (San Juan), Doc. 537–68, *Chanel, Inc., and Chanel Industries, Inc.* v. *Zepol Manufacturing Products, Inc.*

Reg. No. 510,992. (See Reg. No. 195,360.)

Reg. No. 517,753 (ALUMISEAL), C. T. Hogan & Company, Inc., Fabricated insulating barriers and materials for such barriers including sheet aluminum insulation and vapor barriers, comprising self-sustaining, non-porous, heat-reflective sheets of aluminum used for insulating barriers for re-

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	16,348
Date of oldest new application	September 11, 1967
Date of oldest amended application (filing date)	January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	3-12-68	10- 6-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	2- 1-68	7-26-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	2-28-68	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-11-67	1-5 -65
Renewals (All Classes)	9-23-68	.....
Sec. 12(c) Publications (All Classes)	10- 4-68	.....

Applications filed during the month of October 1968—2,732

Registrations Issued ..... 357—No. 861,839 to No. 862,195
Renewals Issued 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

frigerated structures, insulating barriers for structures exposed to high temperatures, and insulating barriers for equipment and pipes operated at refrigerating or high temperatures, **filed** June 3, 1968, D.C.N.J. (Newark), Doc. C–547–68, *Alumiseal Corporation* v. *Mayflower Vapor Seal Corp.* Notice of dismissal, Sept. 13, 1968.

Reg. No. 524,126 (PARANITE), Essex Wire Corporation, Insulated electric wires, and insulated electric cables, **filed** Apr. 19, 1968, D.C., E.D. Pa. (Philadelphia), Doc. 68–844, *Essex Wire Corporation* v. *Eastern Electric Sales Co., Inc. et al.*

Reg. No. 530,116 (TORGOMETER), Snap-On Tools Corporation, Hand wrenches and hand tools for tightening machine parts fasteners, such as nuts, screws and the like, **filed** Sept. 27, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1791, *Snap-On Tools Corporation* v. *Edward V. Sundt and Power Instruments, Inc.*

Reg. No. 597,721 (ROTO-ROOTER), Roto-Rooter Corporation, Municipal, industrial and domestic sewer, drain, and pipe cleaning service; **Reg. No. 745,984** (ROTO-ROOTER AND DESIGN), same, Cleaning sewer, oil and water pipes, field and drain tile conduits for electric cable, **filed** Sept. 18, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–788, *Roto-Rooter Corp.* v. *Pat Bauer, Inc.*

Reg. No. 602,054 (PERMA-WALL), The Logan Long Company, Insulated siding, for the outer weather-proof surfacing of sidewalls of buildings and the like, **filed** June 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1161, *The Logan-Long Company* v. *Perma Wall Inc., David H. Kaplan and Victor Marsden.* Default judgment against Permal Wall, Inc. and Victor Marsden allowed, plaintiff declared owner, permanent injunction, cause dismissed as to David H. Kaplan defendant, Sept. 20, 1968.

Reg. No. 602,346. (See Reg. No. 643,563.)

Reg. No. 603,047 (LONDON FOG), The Londontown Manufacturing Company, Raincoats for men, women, and children, **filed** Sept. 16, 1968, D.C., S.D.N.Y., Doc. 68–C–3700, *The Londontown Manufacturing Company* v. *S. Scheinfeld & Sons Inc.*

Reg. No. 605,246 (TV TRI-VALLEY AND DESIGN), Tri-Valley Packing Association, Canned fruit, **filed** Aug. 22, 1967, D.C., E.D. Mich. (Detroit), Doc. 30273, *Tri-Valley Growers* v. *King Frost Foods, Inc.* Consent judgment for perpetual injunction, Sept. 10, 1968.

Reg. No. 630,412 (TRADITION), General Time Corporation, Clocks, **filed** Aug. 20, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1548, *General Time Corporation* v. *Seeco, Inc., Haddon Products, Inc. and Allen E. Weinstein.* Dismissal pursuant to Rule 41(a)(I)(1) as to defendant Haddon Products, Inc., Sept. 13, 1968.

Reg. No. 643,536 (BOGEN AND DESIGN), David Bogen Co., Inc. Sound equipment—namely, amplifiers, intercommunication systems, radio tuners and receivers, television preamplifiers, and record players; **Reg. No. 602,346,** (F AND GEORGE E. FAILING COMPANY WITHIN MONOGRAM DESIGN), George E. Failing Company, Portable earth drilling machines—namely, slim hole drills, exploration drills, core drills, seismograph shot hole drills, water well drills, slush pumps, water swivels, traveling blocks, kelly rods, drive bushings, drill pipe slips, core drill and exploration drill pipe, drill pipe substitutes, core barrels and bits, drilling bits, fishing tools, rotary tables, power take-offs, drill pipe elevators and spiders, pull-down chucks, hoisting plugs, safety clevices, drill heads, drawworks, drill pipe and tool joints, **filed** Aug. 5, 1968, D.C., W.D. Okla. (Oklahoma City), Doc. 68–310–C, *Westinghouse Air Brake Company* v. *George E. Failing et al.*

Reg. No. 727,697 (VENDO), The Vendo Company, Vending machines and apparatus, dispensing machines and apparatus, parts of such machines, attachments and accessories for such machines, and installations of groups of such machines, **filed** Aug. 9, 1968, D.C., S.D. Fla. (Miami), Doc. C–68–949, *The Vendo Company* v. *Vendo International Limited and John Robert Rhodes, Sr.* Consent judgment, defendants permanently enjoined, Sept. 30, 1968.

Reg. No. 739,773 (STANLEY BLACKER), Stanley Blacker, Inc., Men's sportcoats, **filed** Jan. 26, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–124–CC, *Stanley Blacker, Inc.* v. *Blacker of California and Mel Blacker.* Consent judgment, defendants enjoined, May 27, 1968.

Reg. No. 745,984. (See Reg. No. 597,721.)

Reg. No. 757,835 (REPRESENTATION OF A MALE CHEF WITH HAT AND CANE), Kentucky Fried Chicken, Inc., Freshly prepared chicken and gravy, packaged and sold in retail trade; **Reg. No. 805,773** (COLONEL SANDERS' RECIPE), Kentucky Fried Chicken Corporation, Restaurant services; **Reg. No. 806,104** (HUMAN HEAD DESIGN), same; **Reg. No. 807,000** (KENTUCKY PLANTATION), same, Barbecue sauce; **Reg. No. 807,043** (HUMAN FIGURE WITH CHEF'S HAT AND CANE), same, Restaurant services; **Reg. No. 810,835** (HUMAN HEAD DESIGN), same, Fried chicken, cooked and frozen; cooking sauce, gravy, gravy base mix, and an herb and spice mix; chicken parts (gizzards and livers); fish and shrimp; biscuits, baked beans; Bar-B-Q (Chicken and pork); prepared potatoes; salads; maple syrup; and candy; **Reg. No. 813,559** (COL. SANDERS' RECIPE KENTUCKY FRIED CHICKEN), same, Frozen and fresh prepared chicken and gravy, packaged and sold in retail trade, prepared potatoes, chicken parts (gizzards and livers), fish and shrimp, biscuits, baked beans, barbecue (chicken and pork) and salads; **Reg. No. 814,610** (COL. SANDERS' RECIPE), same, Fried chicken, cooked and frozen; cooking sauce, gravy, gravy base mix, and an herb and spice mix; prepared potatoes; chicken parts (gizzards and livers); fish and shrimp; biscuits; baked beans; Bar-B-Q (chicken and pork) salads; maple syrup; and candy; **Reg. No. 815,167** (KENTUCKY FRIED CHICKEN), same, Restaurant services; **Reg. No. 838,062** (COLONEL SANDERS' RECIPE KENTUCKY FRIED CHICKEN), same; **Reg. No. 838,895** (KENTUCKY FRIED CHICKEN), same, Freshly prepared chicken and chicken with gravy, chicken parts (gizzards and livers), fish and shrimp, biscuits, potatoes, salads of a vegetable and poultry nature, baked beans, and Bar-B-Q (chicken and pork); **Reg. No. 839,658** (KENTUCKY PLANTATION AND DESIGN), same, Table syrup; **Reg. No. 846,026** (MAN DRESSED IN WHITE SUIT), Restaurant services, **filed** July 24, 1968, D.C. E.D. Mich. (Detroit), Doc. 31525, *Kentucky Fried Chicken Corp.* v. *Kentucky Colonel, Inc. et al.*

Reg. No. 759,940 (PAVABID), Marion Laboratories, Inc., Vascular relaxant and antispasmodic, **filed** Sept. 26, 1968, D.C., E.D. Mich. (Detroit), Doc. 31764, *Marion Laboratories, Inc.* v. *Dunchock's Pharmacy, Inc.* **Same, filed** Sept. 26, 1968, D.C., E.D. Mich. (Detroit), Doc. 31765, *Marion Laboratories, Inc.* v. *Lakeshore Drugs.* **Same, filed** Sept. 26, 1968, D.C., E.D. Mich. (Detroit), Doc. 31766, *Marion Laboratories, Inc.* v. *Bob Hush Drug Store.* **Same, filed** Sept. 26, 1968, D.C., E.D. Mich. (Detroit), Doc. 31767, *Marion Laboratories, Inc.* v. *Merrill Pharmacy, Inc.* **Same, filed** Sept. 26, 1968, D.C., E.D. Mich. (Detroit), Doc. 31768, *Marion Laboratories, Inc.* v. *Heyden Drugs, Inc.* **Same, filed** Sept. 26, 1968, D.C., E.D. Mich. (Detroit), Doc. 31769, *Marion Laboratories, Inc.* v. *Jerome Soble, doing business as Checker Drugs #2.*

Reg. No. 760,166 (SENIOR POLICY), National Union Agency, Insurance agency services—namely, planning and selling life insurance policies and placing same with insurers, **filed** Sept. 17, 1968, D.C., N.D. Okla. (Tulsa), Doc. 68–C–223, *National Union Agency et al.* v. *Community National Life Inc.*

Reg. No. 805,775. (See Reg. No. 757,835.)
Reg. No. 806,104. (See Reg. No. 757,835.)
Reg. No. 807,000. (See Reg. No. 757,835.)
Reg. No. 807,043. (See Reg. No. 757,835.)
Reg. No. 810,835. (See Reg. No. 757,835.)
Reg. No. 813,559. (See Reg. No. 757,835.)
Reg. No. 814,610. (See Reg. No. 757,835.)
Reg. No. 815,167. (See Reg. No. 757,835.)
Reg. No. 838,062. (See Reg. No. 757,835.)
Reg. No. 838,895. (See Reg. No. 757,835.)
Reg. No. 839,658. (See Reg. No. 757,835.)
Reg. No. 846,026. (See Reg. No. 757,835.)

MARKS PUBLISHED FOR OPPOSITION

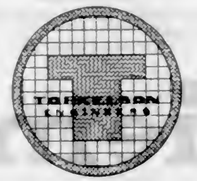
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 252,368. F. C. Torkelson Co., Salt Lake City, Utah. Filed Aug. 15, 1966.



The drawing is lined for orange, but no claim is made to color.

Class 100—Miscellaneous

For Engineering Consultation Services (Int. Cl. 42).

Class 103—Construction and Repair

For Construction Engineering (Int. Cl. 37).

First use May 30, 1957.

SN 257,434. Lafayette Radio Electronics Corporation, Syosset, N.Y. Filed Oct. 28, 1966.



Owner of Reg. Nos. 187,851, 813,011, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Amplifiers, Communications Equipment (Walkie-Talkies, Transceivers), Speakers, Power Control Switch Boxes, Volume Control Adapters, Switches, and Antenna Boosters (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Voltmeters, Amp. Meters and Volt-Ohm-Milliameters (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders, Tape Decks, and Tape Splicers (Int. Cl. 9).

First use on or about Nov. 17, 1965.

SN 262,737. The Coleman Company, Inc., Wichita, Kans. Filed Jan. 18, 1967.



Owner of Reg. Nos. 516,713, 726,393, and others.

Class 2—Receptacles

For Jugs and Coolers for Picnic and Camping Use, and for Camping Water Bags (Int. Cl. 21).

First use at least as early as December 1960.

Class 6—Chemicals and Chemical Compositions

For Packaged Liquefied Hydrocarbon Gas Fuels for Lanterns and Outdoor Cookers (Int. Cl. 4).

First use at least as early as 1962.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Camp Stove Cooking Utensils (Int. Cl. 21).

First use at least as early as 1961.

Class 15—Oils and Greases

For Packaged Hydrocarbon Liquid Fuels for Lanterns, Portable Radiant Heaters, and Outdoor Cookers (Int. Cl. 4).

First use at least as early as 1962.

Class 22—Games, Toys, and Sporting Goods

For Camping Sleeping Bags and Tents (Int. Cls. 20 and 22).

First use on or before Sept. 15, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Liquid and Gas Fuel Burning Lanterns and Lamps, Replacement Parts Therefor, Accessories, and Supplies—Namely, Generators, Globes, Filter Funnels, and Mantles; Liquid and Gas Fuel Burning Cooking Stoves for Picnic and Camping Use, Replacement Parts Therefor, Accessories and Supplies for Use Therewith—Namely, Camp Stove Ovens, Camp Stove Stands, Camp Stove Griddles, and Camp Stove Heat Drums, Portable Radiant Heaters Using Catalytic Combustion for Outdoor or Camping Use, Gas, Oil, and Electric Furnaces and Wall Heaters, Air Conditioners, Heat Pumps, Coil Blower Units, and Electric Duct Heaters (Int. Cl. 11).

First use at least as early as October 1945.

SN 267,480. Gibson, Inc., Kalamazoo, Mich. Filed Mar. 27, 1967.



Owner of Reg. No. 510,594.

Class 4—Abrasives and Polishing Materials

For Polish for Finishes of Both Musical Instruments and Furniture (Int. Cl. 3).

First use at least as early as July 1, 1942.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electronic Amplifiers, and Accessories and Replacement Parts Therefor—Namely, Speakers, Transformers, Tubes, Reverberation Units, Foot Switch Assemblies, Controls, Capacitors, Diodes, Transistors, Resistors, Cords, Amplifier Cases and Their Components, Fuses, and Fuse Holders (Int. Cl. 9).

First use at least as early as Dec. 31, 1940.

Class 36—Musical Instruments and Supplies

For Musical Instruments of the Fretted Type—Namely, Guitars, Electric Guitars, Mandolins, Banjos, Ukeleles, and Electric Basses; and Accessories and Replacement Parts Therefor—Namely, Amplifiers, Speakers, Bridges, Fingerboards, Fingerrests, Machine-Type Tuning Heads, Tailpieces, Vibrato Tailpieces, Truss Rod Covers, Electric Pickups and Controls, Neck Straps, String Mutes, String Dampers, Binding, Hawaiian Steels, Guitar Stands, Picks, Cases, and Case Covers; and Other Accessories and Replacement Parts for Banjos, Namely, Armrests, Pickguards, Tuners, Co-ordinator Rods, Tension Hooks and Nuts, Heads, Tension Rings, and Resonator Bands; Pitchpipes; Strings for Fretted Musical Instruments and for Violins, and Musical Instrument Strings and Accessories Therefor (Int. Cls. 9 and 15).

First use on or about Jan. 1, 1890.

Class 38—Prints and Publications

For Musical Magazines, Columns for Musical Periodicals Published Both by Applicant and by Others, and Printed Guitar Teaching Materials (Int. Cl. 16).

First use at least as early as November 1948.

SN 269,591. Zenith Radio Corporation, Chicago, Ill. Filed Apr. 19, 1967.

ZENITH

Owner of Reg. Nos. 164,341, 828,809, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Screws, Rivets, Eyelets, Support Blocks, Rings, Studs, Grommets, Thumbtacks, Cotter Pins, Screening, Springs, Latches, Brackets, Glides, Bumpers and Spacers; Ferrules, Plates, Sleeves, Couplings, Links and Link Chains, Plungers, Knobs and Buttons, Clips, Clamps, Washers, Hinges, Hinge Pins, and Metal Straps (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Bearings, Discs, Gears, Shafts and Rods, Levers, Pawls, Cams, Bushings, and Pulley Wheels (Int. Cl. 7).

First use at least as early as 1942.

SN 271,700. Foster Wheeler Corporation, Livingston, N.J. Filed May 17, 1967.



The mark comprises a fanciful representation of the letters "F" and "W."

Class 100—Miscellaneous

For Design of Industrial Facilities Including Processing Plants and Equipment for the Production and Treatment of Chemicals, Metals, Petrochemicals, and Natural Gas (Int. Cl. 42).

Class 103—Construction and Repair

For Construction of Industrial Facilities Including Processing Plants and Equipment for the Production and Treatment of Chemicals, Metals, Petrochemicals, and Natural Gas (Int. Cl. 37).

First use as early as January 1930.

SN 274,641. Litton Business Systems, Inc., Orange, N.J., by change of name from Monroe International, Inc., Orange, N.J. Filed June 23, 1967.

ROYPAK

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fasteners—Namely, Staples (Int. Cl. 16).

Class 37—Paper and Stationery

For Stationery Supplies—Namely, Folders, Elastic Bands, Notebooks, Stencils, and Pens (Int. Cl. 16).

First use on or about Mar. 31, 1967.

SN 276,451. International Electro-Magnetics, Inc., Palatine, Ill. Filed July 20, 1967.

iem

Owner of Reg. No. 853,119.

Class 100—Miscellaneous

For Research, Development and Special Design of Magnetic Transducers or Heads, and Magnetic Recording Components (Int. Cl. 42).

Class 103—Construction and Repair

For Refurbishing of Magnetic Transducers or Heads (Int. Cl. 37).

First use on or about Apr. 7, 1961.

SN 281,047. District Photo, Inc., Beltsville, Md. Filed Sept. 25, 1967.

SNAP SHOPS

Class 101—Advertising and Business

For Retail Camera Store Services (Int. Cl. 35).

Class 106—Material Treatment

For Photo Film Processing Services (Int. Cl. 40).

First use Aug. 15, 1967.

SN 284,129. Slifer Manufacturing Co., Inc., Humboldt, Iowa. Filed Nov. 6, 1967.

MODERN

Owner of Reg. No. 790,294.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For High Pressure Spray-Type Cleaning Machines Incorporating Power Operated Pumps Adapted for Handling Cleaning Fluids and the Like (Int. Cl. 7).

Class 52—Detergents and Soaps

For Chemical Cleaning Compounds for Use in Steam Cleaning Machines (Int. Cl. 1).

First use Sept. 19, 1960.

SN 286,590. Comite Organizador de los Juegos de la XIX Olimpiada, Mexico City, Mexico. Filed Dec. 11, 1967.

MEXICO 68

Class 38—Prints and Publications

For Placards, Decals, News Bulletins, and Travel Guides (Int. Cl. 16).

Class 105—Transportation and Storage

For Organizational Services—Namely, Arranging for Travel and Accommodations (Int. Cl. 39).

Class 107—Education and Entertainment

For Promotion, Scheduling and Conduct of Athletic Events, Official Receptions, Ceremonial Activities, Cultural Expositions, and Festivals Relating Thereto (Int. Cl. 41).

First use on or about Jan. 1, 1967; in commerce at least as early as Sept. 1, 1967.

SN 287,891. Burleigh-Smith Brothers (Vigorn) Limited, Hartlebury, near Kidderminster, England. Filed Jan. 2, 1968.

VIGORN

Owner of British Reg. Nos. 681,656, dated Aug. 12, 1949, and 747,566 and 747,567, dated Nov. 2, 1955.

Class 39—Clothing

For Coats, Suits, Trousers, Shirts, and Neckwear (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Hand Woven Piece Goods Made Wholly of Wool and Textile Piece Goods for Making Into Coats, Suits, Trousers, Shirts and Neckwear, and Blankets (Int. Cl. 24).

SN 291,660. Penguin Associates, Inc., Parkesburg, Pa. Filed Feb. 23, 1968.



PENGUIN

Owner of Reg. Nos. 789,176 and 818,974.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Cylinders and Dispensers Containing Pressurized Tear Gas and Carrying Cases Therefor; Filled Dispensers Which Emit Under Pressure an Irritating Liquid Stream; Tear Gas Grenades, Projectors, Cartridges and Spray Dispensers Containing Tear Gas and Carrying Cases Therefor; Smoke Projectors, Cartridges, Grenades, and Pyrotechnic Candles; Signalling Flare Cartridges, Smoke Cartridges, Projectors and Carrying Cases Therefor, and Kits Containing Such Cartridges and Projectors; Bird Dispersing Cartridges; Shotgun, Rifle, Handgun and Combination Shotgun or Rifle Cases (Int. Cl. 13).

Class 22—Games, Toys, and Sporting Goods

For Billiard and Pool Cue, Tennis Racquet, and Archery Cases (Int. Cl. 28).

Class 26—Measuring and Scientific Appliances

For Telescope, Camera, and Photographic Equipment Cases (Int. Cl. 9).

Class 44—Dental, Medical, and Surgical Appliances

For Gas Mask Carrying Cases and Canisters (Int. Cl. 9).

First use at least as early as June 22, 1967.

SN 293,770. Amerock Corporation, Rockford, Ill. Filed Mar. 21, 1968.



Owner of Reg. Nos. 381,468, 524,364, and others.

Class 12—Construction Materials

For Corner Molding, Plastic Molding Strips, and Rotating Shelves (Int. Cl. 19).

Class 13—Hardware and Plumbing and Steam-Fitting Thereof

For Cabinet Door and Drawer Pulls and Knobs; Door Hinges; Drawer Slides; Desk and Chair Hardware; Shelf Hardware; Coat Hooks; Door Stops; Handrail Brackets; Pulls and Hinges for Vending Machines, Dishwashers, Washers, Ovens and Refrigerators; Rollers, and Pulls for Sliding Patio Doors; Finger Lifts, Operators, and Counter-Balancing Devices for Windows (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Installation Tools for Pulls, Knobs, Hinges, Catches, Moldings and Drawer Slides; Adjusting Tools for Hinges; and Cutting Tools for Moldings (Int. Cl. 8).

Class 25—Locks and Safes

For Cabinet Door and Drawer Catches; Patio Door and Window Locks; Latches for Vending Machines, Dishwashers, and Ovens (Int. Cl. 6).

First use September 1939.

SN 294,429. Allied Supermarkets, Inc., Detroit, Mich. Filed Mar. 29, 1968.

SQUIRE

Class 1—Raw or Partly Prepared Materials

For Charcoal Briquettes (Int. Cl. 4).

Class 6—Chemicals and Chemical Compositions

For Liquid Starch, Spray Starch, Liquid Bleach, and Household Spray-Deodorant (Int. Cls. 3 and 5).

Class 14—Metals and Metal Castings and Forgings

For Aluminum Wrapping Foil (Int. Cl. 6).

Class 37—Paper and Stationery

For Facial Tissues and Paper Napkins (Int. Cl. 16).

Class 52—Detergents and Soaps

For Liquid Dish Detergent and Powdered Laundry Detergent (Int. Cl. 3).

First use Nov. 29, 1967.

SN 297,913. California Wine Association, San Francisco, Calif. Filed May 13, 1968.

WAHTOKE

Class 47—Wines

For Wine (Int. Cl. 33).

Class 49—Distilled Alcoholic Liquors

For Brandy (Int. Cl. 33).

First use Mar. 27, 1968.

SN 298,493. Chance Brothers Limited, Birmingham, England. Filed May 20, 1968.

CHANCE

Owner of British Reg. Nos. 885,876 and 885,878, dated Oct. 21, 1965.

Class 26—Measuring and Scientific Appliances

For Glasses for the Protection of Workmen Against Injury; Optical Cover Glasses; Glass Slides for Microscopes; and Glass Tubing for Scientific Use (Int. Cl. 9).

Class 33—Glassware

For Glass Table Ware for Domestic Purposes and Glass in the Form of Tubes for Use in Manufactures (Int. Cl. 21).

SN 306,985. Iroquois Popcorn Co., Inc., Chicago, Ill. Filed Sept. 10, 1968.



Class 2—Receptacles

For Boxes, Bags, and Cups for Popcorn and Hot Dog Trays (Int. Cls. 16 and 20).

Class 46—Foods and Ingredients of Foods

For Popcorn, Caramel Flavoring for Popcorn, Popcorn Cooking Oils, Popcorn Seasoning, and Cotton Candy Cones (Int. Cls. 29 and 30).

First use in or about August 1948.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 289,204. National Wax Company, Skokie, Ill. Filed Jan. 19, 1968.

BLAZER

Owner of Reg. No. 725,185.
For Artificial Fireplace Logs (Int. Cl. 4).
First use on or about Nov. 1, 1966.

SN 291,070. House of Ceramics, Inc., Memphis, Tenn. Filed Feb. 14, 1968.

EX-CEL

For Slip Consisting of a Liquid Clay Compound To Be Used in the Making of Various Ceramic Products (Int. Cl. 1).
First use May 1960.

SN 291,104. Shell Oil Company, New York, N.Y. Filed Feb. 14, 1968.

CARIFLEX

For Synthetic Rubber (Int. Cl. 17).
First use at least as early as Aug. 2, 1967.

SN 291,110. Uniroyal, Inc., New York, N.Y. Filed Feb. 14, 1968.



For Coated Fabrics of the So-Called Artificial Leather Type (Int. Cl. 18).
First use at least as early as November 1967.

SN 291,404. Filmcraft-Chicago, Chicago, Ill. Filed Feb. 19, 1968.

FILMCRAFT

For Polyethylene Film in Sheet and Roll Form (Int. Cl. 17).
First use Jan. 25, 1968.

SN 300,866. Francis N. Bard, Barrington, Ill. Filed June 20, 1968.

BARZONA

For Desert and Mountain Type Cattle (Int. Cl. 31).
First use September 1952.

SN 301,012. Lake Superior Pulp & Paper Inc., Chicago, Ill. Filed June 21, 1968.

LS
ERIE KRAFT

For the purposes of registration no claim is made to the exclusive right to use "Kraft" but the applicant waives none of its common-law rights therein.
For Wood Pulp (Int. Cl. 1).
First use on or about June 1, 1966.

SN 301,013. Lake Superior Pulp & Paper Inc., Chicago, Ill. Filed June 21, 1968.

LS
SUPERIOR
KRAFT

For the purposes of registration no claim is made to the exclusive right to use "Superior Kraft" but the applicant waives none of its common-law rights therein.
For Wood Pulp (Int. Cl. 1).
First use on or about June 14, 1966.

SN 301,014. Lake Superior Pulp & Paper Inc., Chicago, Ill. Filed June 21, 1968.

LS

For Wood Pulp (Int. Cl. 1).
First use on or about May 4, 1966.

Class 2—Receptacles

SN 270,177. Wolff Products Co., New York, N.Y. Filed Apr. 27, 1967.

BATHIQUE

Owner of Reg. No. 740,782.
For Waste Baskets, Tissue Boxes, Hampers, Plastic Tumblers and Tumbler Holders, Soap Dishes, Tumbler and Toothbrush Holders (Int. Cls. 20 and 21).
First use July 1, 1966.

SN 270,703. Union Camp Corporation, New York, N.Y., assignee of Pak-All Products, Inc., Providence, R.I. Filed May 4, 1967.

PAK
ALL

Applicant disclaims the word "Pak" apart from the mark as shown. Owner of Reg. Nos. 742,164 and 768,555.
For Flexible Packaging Bags (Int. Cl. 22).
First use Apr. 10, 1967.

SN 275,085. Harry K. Tharpe, d.b.a. Ruth-Anne Woodcrafts, Apex, N.C. Filed June 29, 1967.

RUTH-ANNE

For Wood Products and More Particularly Salt Boxes, Telephone and Note Pad Holders, Receipt Holders, Napkin Holders of Varying Sizes, Letter Holders, Key Holders, Compotes of Various Sizes and Shapes, Towel Holders and Tubs (Int. Cl. 21).
First use May 15, 1967.

SN 282,136. Rexall Drug and Chemical Company, d.b.a. Syroco, Los Angeles, Calif. Filed Oct. 9, 1967.

FASHION ROSE

For Bath and Boudoir Accessories—Namely, Tissue Boxes, Waste Baskets, Towel Rings, Soap Dishes, and Tootbrush Holders (Int. Cl. 21).
First use Sept. 27, 1967.

SN 305,046. John A. Hendershot, Jr., d.b.a. Unit Liner Company, Wewoka, Okla. Filed Aug. 13, 1968.

UNIT LINER COMPANY

For Synthetic Rubber and Thermoplastic Liners for Tanks and Earthen Pits (Int. Cl. 17).
First use Feb. 28, 1968.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 283,635. Coniker Enterprises, Inc., Chicago, Ill. Filed Oct. 30, 1967.

CONTROLMASTER

For Portfolios, Pocket Folios, Pocketbooks, Looseleaf and Add-On Folios, Holders for Positioning Cards or Papers or Memorandum Files in Selected Arrangement and Business Organizer for the Same Purpose as the Foregoing (Int. Cl. 18).
First use on or about Oct. 12, 1966.

SN 291,008. PepsiCo, Inc., New York, N.Y. Filed Feb. 14, 1968.

ROMP

For Luggage (Int. Cl. 18).
First use Dec. 5, 1967.

SN 299,080. Jack C. Abert, d.b.a. Mechanical Products Company, Phoenix, Ariz. Filed May 27, 1968.

TRACKER

For Pack Frames (Int. Cl. 18).
First use June 27, 1965.

SN 300,704. Hartz Mountain Products Corp., New York, N.Y. Filed June 18, 1968.

SUPER STICK

For Rawhide Teeth and Gum Exerciser for Dogs (Int. Cl. 18).
First use Feb. 19, 1968.

Class 4—Abrasives and Polishing Materials

SN 273,593. The Betco Corporation, Toledo, Ohio. Filed June 12, 1967.

Fancy
FINISH

The word "Finish" is disclaimed apart from the mark.
For Floor Waxes and Polishes (Int. Cl. 3).
First use Apr. 5, 1966.

SN 304,874. Sterling Drug Inc., New York, N.Y. Filed Aug. 12, 1968.

SHYNEBRITE

Owner of Reg. No. 502,632.
For Floor Polish (Int. Cl. 3).
First use at least as early as May 1967.

Class 5 — Adhesives

SN 277,549. Excel Corporation, Elkhart, Ind. Filed Aug. 4, 1967.

XL8

For Resinous Adhesive for Joining Components Together, in Particular Metal and Glass Parts (Int. Cl. 1).
First use July 20, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 277,547. Elgin Softener, Inc., Elgin, Ill. Filed Aug. 4, 1967.

FILTERITE

For Preneutralized Coagulant and Flocculating Agents for Use in Liquid Clarification (Int. Cl. 1).
First use Oct. 26, 1945.

SN 277,731. G. H. Tennant Company, Minneapolis, Minn. Filed Aug. 7, 1967.

TENNANT

Owner of Reg. Nos. 507,709, 850,765, and others.
For Concrete Curing Compounds and Hydraulic Fluids (Int. Cl. 1).
First use July 1959; July 1, 1870, in a different form.

SN 282,835. Spring Crest Company, La Habra, Calif. Filed Oct. 18, 1967.

SPRING MIST

For Drapery Dressing Consisting of a Chemical Compound for Making Fabrics Manageable and for Improving Drapeability (Int. Cl. 1).
First use June 5, 1967.

SN 283,780. Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. Filed Oct. 31, 1967.

CUTINA

Owner of German Reg. No. 641,828, dated Oct. 16, 1950.
For Organic Chemical Compositions for Use in the Manufacture of Cosmetic Creams and Ointments (Int. Cl. 1).

SN 286,886. Aktiebolaget Kabi, Stockholm, Sweden. Filed Dec. 14, 1967.

GALAX

Owner of Swedish Reg. No. 111,378, dated Nov. 13, 1964.
For Galactose Oxidase-Containing Reagent for Use in Laboratory Determination of Galactose as in Blood (Int. Cl. 1).

SN 288,063. Manlius W. Noble, d.b.a. Noble Oil Products Company, Jacksonville, Fla. Filed Jan. 4, 1968.

TYPO
RADIATOR AND BLOCK
SURE SEAL

For the Purposes of Registration, no claim is made to the exclusive right to use the words "Radiator and Block" apart from the mark as shown. Owner of Reg. Nos. 747,142, 792,432, and others.
For Preparation for Sealing Leaks in Automotive Radiators and Blocks (Int. Cl. 17).
First use Oct. 4, 1967.

SN 288,419. Anti-Hydro Waterproofing Co., Newark, N.J. Filed Jan. 9, 1968.

ACURICON

For Chemical Preparation for Curing, Hardening and Dustproofing Concrete Surfaces (Int. Cl. 1).
First use on or about July 10, 1967.

SN 290,484. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Feb. 7, 1968.

ANSCOGRAPH

Owner of Reg. No. 210,571.
For Photographic Processing Chemicals—Namely, Photographic Developers (Int. Cl. 1).
First use Dec. 13, 1967.

Class 7 — Cordage

SN 287,890. Broderick & Bascom Rope Company, St. Louis, Mo. Filed Jan. 2, 1968.

YELLOWBRAID

Owner of Reg. Nos. 551,915, 801,158, and others.
For Wire Rope (Int. Cl. 6).
First use Dec. 6, 1967.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 265,064. Healthways, Los Angeles, Calif. Filed Feb. 20, 1967.

healthways CO_2 pow-r-jets

"CO_2" apart from the mark as shown is disclaimed. Owner of Reg. No. 716,418.
For CO_2 Cartridges for Use With Gas-Powered Pistols and Rifles (Int. Cl. 13).
First use at least as early as Oct. 1, 1966.

SN 276,129. Gulf Oil Corporation, Pittsburgh, Pa. Filed July 17, 1967.

SPENITE

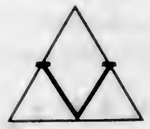
Owner of Reg. No. 718,801.
For Explosive Boosters and Blasting Agents (Int. Cl. 13).
First use Oct. 26, 1960.

SN 278,105. Imperial Metal Industries (Kynoch) Limited, Witton, Birmingham, England. Filed Aug. 11, 1967.

TENEX

For Rimfire Cartridges (Int. Cl. 13).
First use during 1951; in commerce June 1965.

SN 281,271. Delta-Visier G.m.b.H., Ottobrunn, near Munich, Germany. Filed Sept. 27, 1967.



Owner of German Reg. No. 771,815, dated Sept. 28, 1962.
For Sights for Firearms, Firearm Firing Controls and Parts of Such Sights and Controls (Int. Cl. 13).

Class 10 — Fertilizers

SN 262,536. Jegco Inc., Oakland, Calif. Filed Jan. 16, 1967.

agro-culture

For Seed-Growing Kit Including a Container, Planting Medium, Plant Nutrient, and Incidental Items To Assist the Grower in the Cultivation of the Seed (Int. Cl. 1).
First use Jan. 6, 1967.

SN 284,718. Occidental Petroleum Corporation, Los Angeles, Calif. Filed Nov. 13, 1967.

Bumper Crop

For Chemical Fertilizers (Int. Cl. 1).
First use no later than about Feb. 8, 1954.

SN 284,719. Occidental Petroleum Corporation, Los Angeles, Calif. Filed Nov. 13, 1967.

Bumper Crop

For Chemical Fertilizers (Int. Cl. 1).
First use no later than about Feb. 8, 1954.

SN 284,720. Occidental Petroleum Corporation, Los Angeles, Calif. Filed Nov. 13, 1967.

GOLDEN SUPREME

For Chemical Fertilizers (Int. Cl. 1).
First use no later than about Mar. 3, 1961.

SN 295,911. Capitol Insulation Company, Inc., Denver, Colo. Filed Apr. 18, 1968.

RICH-N-GREEN

For Fertilizer—Namely, Synthetic Chemical Lawn Fertilizers (Int. Cl. 1).
First use on or about Feb. 15, 1968.

SN 295,912. Capitol Insulation Company, Inc., Denver, Colo. Filed Apr. 18, 1968.

GREEN-ER-AMA

For Fertilizer—Namely, Synthetic Chemical Lawn Fertilizers (Int. Cl. 1).
First use on or about Feb. 5, 1968.

Class 11 — Inks and Inking Materials

SN 288,674. Burroughs Corporation, Detroit, Mich. Filed Jan. 12, 1968.

Burroughs

Owner of Reg. No. 506,433.
For Inking Ribbons Used With Business Machines—Namely, Adding Machines, Accounting Machines, Calculating Machines, Cash Registers, Printers, Typewriters, Check Writers and Signers and the Like; Carbon Paper; and Reproductive Transfer or Copy Paper Containing an Inking Material (Int. Cl. 16).
First use March 1910.

SN 289,811. Lawter Chemicals, Inc., Chicago, Ill. Filed Jan. 29, 1968.

OPTICHROME

Owner of Reg. No. 839,822.
For Ink Bases and Printing Inks (Int. Cl. 2).
First use July 15, 1966.

Class 12 — Construction Materials

SN 254,637. Tyson & Van, Inc., Myrtle Beach, S.C. Filed Sept. 16, 1966.

THERMA VISTA POOL PODS

The wording "Pool Pods" is disclaimed apart from the mark as shown.
For Fabricated Plastic Dome Pool Shelters (Int. Cl. 19).
First use Jan. 2, 1965.

SN 262,279. Package Builders, Inc., Shrewsbury, Mass. Filed Jan. 10, 1967.



The drawing is lined for the colors red and yellow.
For Prefabricated Steel Building (Int. Cl. 6).
First use on or about Feb. 1, 1966.

SN 262,984. The Verticel Company, Englewood, Colo. Filed Jan. 20, 1967.



The mark consists of a honeycomb design with randomly spaced wavy lines. The drawing is lined for the color gold. Owner of Reg. No. 617,339.
For Honeycomb Core Material of Paper and Resin Impregnated Paper (Int. Cl. 16).
First use Oct. 1, 1963.

SN 274,966. The Garrett Corporation, Los Angeles, Calif. Filed June 28, 1967.

GARRETT

For Prefabricated Buildings for Use in Setting Up Field Hospitals (Int. Cl. 19).
First use July 8, 1966.

SN 275,366. Ralph Delgado, Long Island City, N.Y. Filed July 5, 1967.

VOLKSHAUS

For Portable Prefabricated Structure for Use as a Ski Lodge (Int. Cl. 19).
First use Oct. 27, 1966.

SN 294,426. Witra KG, Klaus Gobel, Trier, Biewer, Germany. Filed Mar. 28, 1968.

ALWITRA

Owner of German Reg. No. 825,427, dated May 3, 1966.
For Components and Assemblies for Securing and Protecting the Edges of Sheet Roofing (Int. Cl. 6).

SN 295,328. The General Tire & Rubber Company, Akron, Ohio. Filed Apr. 10, 1968.

SKY SPAN

For Bridge Bearings (Int. Cl. 19).
First use Mar. 24, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 236,619. Missimers, Incorporated, Glendale, Calif. Filed Jan. 17, 1966.

SPIN-SPRAY

For Wind Driven Rotary Spray Nozzles for Use in Aerial Agricultural Spraying (Int. Cl. 7).
First use July 15, 1965.

SN 258,893. Brand Hydraulics Co., Omaha, Nebr. Filed Nov. 17, 1966.

BRAND HYDRAULICS

Applicant disclaims the word "Hydraulics" apart from the mark as shown.
For Hydraulic Valves (Int. Cl. 6).
First use on or about Apr. 12, 1957.

SN 274,978. Mid America Distributors, Inc., Springfield, Mo. Filed June 28, 1967.

SVENSK DESIGN

Applicant does issue a disclaimer to exclusive use of the word "Svensk," meaning "Swedish."
For Stainless Steel Kitchen Utensils (Int. Cl. 21).
First use June 6, 1967.

SN 276,259. Standard Screw Company, Bellwood, Ill. Filed July 18, 1967.

Fountainflo

For Drinking Fountain Attachment for Faucets (Int. Cl. 11).
First use May 1, 1967.

SN 289,430. Steel Drum Packaging & Accessories, Inc., Independence, Ohio. Filed Jan. 23, 1968.

REEL-EZY

For Devices in the Nature of Reels Revolving on Upright Spindles for Guiding Garden Hose To Prevent the Hose From Damaging Flower Beds, Gardens, Shrubbery and the Like (Int. Cl. 6).
First use in or about May 1961.

SN 290,795. Yoshida Kogyo K.K., Chiyoda-ku, Tokyo, Japan. Filed Feb. 9, 1968.

YKK

Owner of U.S. Reg. No. 836,567.
For Zippers (Int. Cl. 26).
First use January 1946; in commerce March 1949.

SN 295,840. N.K.R. Precision Manufacturing Corp., Harriman, N.Y. Filed Apr. 17, 1968.

ROCK-A-CRIB

For Supports in the Nature of Springs Used on the Bottom of the Legs of Cribs and Play-Pens To Produce a Rocking Motion (Int. Cl. 6).
First use Dec. 1, 1967.

SN 298,497. "Automatic" Sprinkler Corporation of America, Cleveland, Ohio. Filed May 20, 1968.

CORO-COATED

For Coated Sprinklers for Fire Protection Systems (Int. Cl. 11).
First use at least as early as October 1964.

SN 306,991. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 10, 1968.

SCOTCH-GRIP

Owner of Reg. Nos. 515,733, 816,809, and others.
For Fasteners (Such as Bolts and Screws) Coated With Adhesive Material To Provide for More Secure Affixation of Such Fasteners Into Various Objects (Int. Cl. 6).
First use July 11, 1968.

Class 14 — Metals and Metal Castings and Forgings

SN 286,157. Langley Alloys Limited, Langley, Slough, England. Filed Dec. 4, 1967.

LANGALLOY

Owner of British Reg. No. 671,359, dated July 22, 1948.
For Alloys of Metals Other Than Precious Metals Including Copper Alloys, Copper Nickel Alloys and Alloy Steels and Castings and Wrought or Partly Wrought Products of Such Alloys (Int. Cl. 6).

SN 306,321. Aluminum Company of America, Pittsburgh, Pa. Filed Aug. 30, 1968.

BAR LOK

For Ingots of Aluminum or Aluminum Alloy (Int. Cl. 6).
First use Aug. 12, 1968.

Class 15 — Oils and Greases

SN 258,903. Famariss Oil and Refining Company, Hobbs, N. Mex. Filed Nov. 17, 1966.

ECON

Owner of Reg. Nos. 705,145 and 740,489.
For Motor Oil (Int. Cl. 4).
First use January 1963.

SN 302,557. Fiske Brothers Refining Company, Newark, N.J. Filed July 12, 1968.

MARINE GUARD

For Penetrating Oil With Moisture Displacement Agent. (Int. Cl. 4).
First use July 3, 1968.

SN 302,558. Fiske Brothers Refining Company, Newark, N.J. Filed July 12, 1968.

AUTO GUARD

For Penetrating Oil With Moisture Displacement Agent (Int. Cl. 4).
First use July 3, 1968.

Class 16 — Protective and Decorative Coatings

SN 270,599. Napko Corporation, Houston, Tex. Filed May 3, 1967.

NAP-GARD

For Protective Coating for Application to Metal Surfaces Such as That of Pipe, etc. (Int. Cl. 2).
First use approximately October 1965.

SN 273,852. Cal Corporation, Ferndale, Mich. Filed June 14, 1967.

TEX-TOP

For Kit Consisting Principally of a Spray-On Texture Coat, a Spray-On Vinyl Overlay Coat, and Including Tape, Sandpaper and Instructions for applying a Spray-On Vinyl for Automobile Tops (Int. Cl. 2).
First use on or about May 25, 1967.

SN 280,343. Steelcote Manufacturing Co., St. Louis, Mo. Filed Sept. 14, 1967.

HALTS-RUST

For Paint-Like Protective Coating Applied to Metal Surfaces in Order To Prevent Rust (Int. Cl. 2).
First use July 22, 1948.

SN 282,489. Tracor, Inc., Austin, Tex. Filed Oct. 13, 1967.

TraChem

For Protective Corrosion Inhibiting Coating (Int. Cl. 2).
First use at least as early as Sept. 11, 1967.

SN 282,490. Tracor, Inc., Austin, Tex. Filed Oct. 13, 1967.

TRACHEM DRYCOAT

For Protective Corrosion Inhibiting Coating (Int. Cl. 2).
First use at least as early as Sept. 11, 1967.

SN 282,491. Tracor, Inc., Austin, Tex. Filed Oct. 13, 1967.

TRACHEM LUBECOAT

For Protective Corrosion Inhibiting Coating (Int. Cl. 2).
First use at least as early as Sept. 11, 1967.

SN 287,945. Polyastics Corporation, Croydon, Pa. Filed Jan. 2, 1968.

Polyastics

POLY-U № 16

For Modified, Urethane, Weather Resistant Coating in the Nature of Paint (Int. Cl. 2).
First use Aug. 1, 1966.

SN 290,804. PPG Industries, Inc., Pittsburgh, Pa., by change of name from Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Feb. 12, 1968.

DURANAR

For Resin-Based Coatings (Int. Cl. 2).
First use at least as early as Jan. 11, 1968.

Class 17—Tobacco Products

SN 264,664. Glaser Bros., San Francisco, Calif. Filed Feb. 14, 1967.



"Pancho Arango" is a fictitious name. Owner of Reg. Nos. 420,668 and 509,440.
For Cigars (Int. Cl. 34).
First use June 20, 1966.

SN 270,918. House of Windsor, Inc., Windsor, Pa. Filed May 8, 1967.

SOUTH WINDSOR

Owner of Reg. No. 430,695.
For Cigars (Int. Cl. 34).
First use Apr. 1, 1946.

SN 276,037. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Filed July 14, 1967.



Paul Revere was a celebrated American patriot of the Eighteenth Century.
For Cigarettes (Int. Cl. 34).
First use Aug. 4, 1966.

SN 277,071. Rembrandt Tobacco Corporation (Overseas) Limited, Zurich, Switzerland. Filed July 28, 1967.



Applicant makes no claim to the numeral "20" nor to the words "Full Flavor—True Taste" apart from the trademark as shown. Paul Revere is the name of a famous Eighteenth Century American patriot.
For Cigarettes (Int. Cl. 34).
First use July 9, 1966.

SN 284,043. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed Nov. 2, 1967.



Applicant makes no claim to the words "King Size Cigarettes" or to the phrase "The Extra Length for Greater Smoothness," apart from the mark as shown. Owner of Swiss Reg. No. 166,570, dated July 19, 1957.
For Cigarettes (Int. Cl. 34).

SN 286,716. Philip Morris Incorporated, New York, N.Y. Filed Dec. 11, 1967.



The drawing is lined for the colors gold and blue. Applicant disclaims the numeral "100's." Owner of Reg. Nos. 378,340, 662,465, and others.
For Cigarettes (Int. Cl. 34).
First use Oct. 20, 1967; Mar. 15, 1931, in another form.

SN 287,919. Cuesta Cigars, Inc., Miami, Fla., by change of name from Don Joaquin Cigars Inc., Miami, Fla. Filed Jan. 2, 1968.



Applicant disclaims "Fabrica de Tabacos."
For Cigars (Int. Cl. 34).
First use Nov. 20, 1967.

Class 18—Medicines and Pharmaceutical Preparations

SN 271,915. Biozymes International Limited, Montreal, Quebec, Canada. Filed May 19, 1967.

ORATRILE

Owner of Canadian Reg. No. 147,202, dated Sept. 16, 1966.
For Pharmaceutical Preparations To Be Taken Orally for the Treatment of Cancer (Int. Cl. 5).

SN 287,367. Knoll Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Dec. 21, 1967.

KNOLLIDE

Owner of U.S. Reg. No. 761,567.
For Pharmaceutical Preparation Indicated for Treatment of Respiratory Disorders (Int. Cl. 5).
First use Sept. 8, 1967.

Class 19—Vehicles

SN 265,789. Burkhart Trailer Manufacturing Company, Fort Worth, Tex. Filed Mar. 2, 1967.



The drawing is lined for the color red.
For Mobile Metal Pickup Campers and Vacation Travel Trailers (Int. Cl. 12).
First use Dec. 1, 1961.

SN 267,388. Arctic Enterprises, Inc., Thief River Falls, Minn. Filed Mar. 23, 1967.

ARCTIC CAT

For Snowmobiles, Parts Thereof, and Sleds for Use Therewith (Int. Cl. 12).
First use Apr. 19, 1962.

SN 268,218. Paceco Inc., Alameda, Calif., by change of name from Pacific Coast Engineering Company, Alameda, Calif. Filed Apr. 3, 1967.

PACECO

Owner of Reg. No. 560,765.
For Marine Equipment—Namely, Barges, and Tug Boats, and Fittings Therefor (Int. Cl. 12).
First use Dec. 19, 1949.

SN 268,483. Fawn Corporation, Howe, Ind. Filed Apr. 6, 1967.

FAWN

For Vehicles—Namely, Travel Trailers, Camping Trailers, Camper Bodies for Pick Up Trucks, Mobile Homes and Truck Tractors (Int. Cl. 12).
First use May 1966.

SN 277,976. Bangor Punta Operations, Inc., New York, N.Y. Filed June 13, 1968.

ALURA

For Boats and Yachts (Int. Cl. 12).
First use at least as early as Mar. 31, 1965.

SN 277,979. Bangor Punta Operations, Inc., New York, N.Y. Filed June 13, 1968.

BANGOR PUNTA'S WIDE WORLD OF BOATING

For Boats and Yachts (Int. Cl. 12).
First use at least as early as Mar. 9, 1967.

SN 279,496. R-W Industries, Inc., Barberton, Ohio. Filed Aug. 31, 1967.

INSTANT

For Removable Van Body (Int. Cl. 12).
First use July 27, 1967.

SN 280,122. Western Progress, Inc., Mountain View, Calif. Filed Sept. 11, 1967.

BUMPERSCOPE

Owner of Reg. No. 626,369.
For High Level Warning Devices for Attachment to Moving Vehicles (Int. Cl. 12).
First use on or about Jan. 1, 1956.

SN 289,918. Richard E. Brown, d.b.a. Rebcats, Washington, D.C. Filed Jan. 30, 1968.

COUGAR

For Sailboats, in Particular, of the Catamaran Type, and Parts Thereof (Int. Cl. 12).
First use Apr. 4, 1959.

SN 291,856. Florig Equipment Co., Inc., Consbohocken, Pa. Filed Feb. 26, 1968.

SANI-BULK

For Highway Truck Trailer for Dry Bulk and General Cargo (Int. Cl. 12).
First use Nov. 15, 1967.

SN 292,566. Fenton Manufacturing Corp., Gardena, Calif. Filed Mar. 6, 1968.

RAMROD

For Automobile Wheels (Int. Cl. 12).
First use on or about Mar. 1, 1966.

SN 293,045. John E. Nast, Fort Lauderdale, Fla. Filed Mar. 12, 1968.

FISH-N-SKI

For Fiberglass Boats (Int. Cl. 12).
First use Sept. 15, 1966.

SN 293,864. Stolper Industries, Inc., Menomonee Falls, Wis. Filed Mar. 21, 1968.

CONSOL-AIR

For Vehicle Cab Air Conditioners (Int. Cl. 11).
First use on or about Feb. 1, 1968.

SN 294,593. Guido Carnielli, Milan, Italy. Filed Apr. 1, 1968.

AMICA

The word "Amica" has the meaning of "friend." Owner of Italian Reg. No. 201,342, dated Mar. 15, 1967.
For Bicycles, Motorcycles, and Motorscooters (Int. Cl. 12).

SN 295,524. Fuji Jyukogyo Kabushiki Kaisha, Shinjuku-ku, Tokyo-to, Japan. Filed Apr. 12, 1968.

SAMBAR

Owner of Japanese Reg. No. 602,491, dated Dec. 12, 1962.
For Automobiles, Motor Buses, Motor Trucks, Delivery Trucks, and Parts for These Goods (Int. Cl. 12).
First use Oct. 15, 1960; in commerce Dec. 31, 1964.

SN 296,000. Alexander-Reynolds Corp., Dumont, N.J. Filed Apr. 19, 1968.



The drawing is lined for the color blue, but no claim is made to such color.
For Motor Scooters (Int. Cl. 12).
First use Mar. 27, 1968.

SN 304,071. Fairchild Hiller Corporation, Germantown, Md. Filed Aug. 1, 1968.

FAIRCHILD HILLER

Owner of Reg. Nos. 559,860, 761,868, and others.
For Aircraft and Parts Therefor (Int. Cl. 12).
First use in or about November 1964.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 248,496. Luminator, Inc., Chicago, Ill., by change of name from Luminator-Harrison, Inc., Chicago, Ill. Filed June 20, 1966.

LUMINATOR

For Electric Light Fixtures and Switches, Including Heat Lamp Units (Int. Cls. 9 and 11).
First use Apr. 15, 1928.

SN 258,356. The Carbone Corporation, Boonton, N.J. Filed Nov. 10, 1966.

CORTITE

For Carbon Brush Assemblies—Namely, Carbon Brushes and Springs for Said Brushes for Use in Electric Motors (Int. Cl. 7).
First use Oct. 19, 1966.

SN 274,541. Amédée Pons and Reno-France (joint owners), Paris, France. Filed June 22, 1967.

VIBRASONIC

Priority claimed under Sec. 44(d) on French Reg. No. 718,244, dated Dec. 23, 1966.
For Processing Equipment Employing Compressional Waves of Sonic or Ultrasonic Frequencies in Liquids for Washing and Cleaning Horological Parts and Jewelry and Component Parts Thereof (Int. Cl. 9).

SN 279,191. Herter's, Inc., Waseca, Minn. Filed Aug. 28, 1967.

FISH FINDER

For Electronic Sonar Type Device (Int. Cl. 9).
First use July 15, 1960.

SN 279,943. Graphic Electronics, Inc., La Salle, Ill. Filed Sept. 8, 1967.

CITATION

For Electronic Metal Decorating Machines for Producing Plaques and the Like by Engraving an Image on a Metal Plate (Int. Cl. 7).
First use July 31, 1967.

SN 280,863. Electromite Corporation, Santa Ana, Calif. Filed Sept. 21, 1967.



For Batteries (Int. Cl. 9).
First use June 21, 1967.

SN 281,437. Blass Antenna Electronics Corporation, Leonia, N.J. Filed Sept. 29, 1967.

BLASS ISOPHASE

For Electronic Equipment for Use in Conjunction With Antenna Systems—Namely, a Beam Pointing Error Reduction System (Int. Cl. 9).
First use June 1967.

SN 282,094. Jefferson Electric Company, Bellwood, Ill. Filed Oct. 9, 1967.



Owner of Reg. No. 501,770.
For Ballasts for Fluorescent Lamps (Int. Cl. 11).
First use July 27, 1967.

SN 289,061. Philco-Ford Corporation, Philadelphia, Pa. Filed Jan. 18, 1968.

VIDICODER

For Visual Communication System—Namely, a Video Processor for Transmitting Television Signals Over Voice Circuits by Digital Means (Int. Cl. 9).
First use Oct. 16, 1967.

SN 291,084. Micro Communications, Inc., Manchester, N.H. Filed Feb. 14, 1968.



For Microwave Transmission Line Components, e.g., Elbows, Straight Transmission Lines, Filters, Diplexes, Color-Notch Filters and Sideband Filters (Int. Cl. 9).
First use February 1967.

SN 291,415. Molex Products Company, Downers Grove, Ill. Filed Feb. 19, 1968.

INCONECT

For Electrical Connectors (Int. Cl. 9).
First use Feb. 1, 1968.

SN 292,102. Ishimoto Trading Company, Los Angeles, Calif. Filed Feb. 28, 1968.

ITRON

For Electronic Tubes (Int. Cl. 9).
First use Feb. 15, 1968.

SN 292,949. National Semiconductor Corporation, Santa Clara, Calif. Filed Mar. 11, 1968.



For Integrated Circuits and Discrete Semiconductor Devices (Int. Cl. 9).
First use not later than January 1968.

SN 293,544. Microphase Corporation, Cos Cob, Conn. Filed Mar. 18, 1968.

MICROPHASE

Owner of Reg. No. 819,436.
For Electronic and Microwave Components and Solid State Devices—Namely, Electrical Filters of Low Pass, High Pass, Band Pass, and Band Elimination Types in the High Frequency, Very High Frequency, Ultra High Frequency and Microwave Ranges, Including Waveguide and Coaxial Types; Channel Filters; Multiplexers; Preselectors; Equalizers; Mixers; Hybrids; Power Dividers; Frequency Modulators; Harmonic Generators; Converters; Frequency Multipliers; Detectors; Detector Mounts; Amplifiers; Pre-Amplifiers; Antenna Feeders and Couplers; Diode Switches; Stable Transistor Power Supplies; Phase Shifters; Variable Attenuators; Telemetry Converters; and Microwave Receivers (Int. Cl. 9).
First use on or about Nov. 23, 1954.

SN 293,935. Leslie Manufacturing Company, San Marcos, Calif. Filed Mar. 22, 1968.

MERCOTAC

For Rotary Electrical Connectors Whose Principal Use Is With Rotating Electronic Organ Speakers (Int. Cl. 9).
First use June 14, 1967.

SN 295,125. Dial-A-Lite Company, Bartlesville, Okla. Filed Apr. 8, 1968.

VARI-WATT

For Light Sockets (Int. Cl. 11).
First use June 23, 1966.

SN 296,594. Tandy Corporation, d.b.a. Radio Shack, Boston, Mass. Filed Apr. 25, 1968.

OPTIMUS

For Speakers (Int. Cl. 9).
First use at least as early as June 30, 1967.

SN 296,596. Tandy Corporation, d.b.a. Radio Shack, Boston, Mass. Filed Apr. 25, 1968.

MINIMUS

For Speakers (Int. Cl. 9).
First use at least as early as June 30, 1966.

SN 300,882. The Valtronic Corporation, Bronx, N.Y. Filed June 20, 1968.

VALCOM

For Audio and Visual Intercommunication (Int. Cl. 9).
First use Mar. 1, 1968.

SN 302,677. ESB Incorporated, Philadelphia, Pa. Filed July 15, 1968.



For Marine Batteries (Int. Cl. 9).
First use Nov. 8, 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 262,446. Ski-Bob, Inc., Bridgeport, Conn. Filed Jan. 12, 1967.



For Gravity Sled-Type Snow Sporting Vehicle (Int. Cl. 28).
First use Dec. 5, 1955.

SN 268,068. Pflueger Corporation, Akron, Ohio. Filed Mar. 31, 1967.

HANDE PAK

The word "Pak" is disclaimed apart from the mark as shown. Owner of Reg. No. 299,920.
For Fishing Sinkers (Int. Cl. 28).
First use on or about Jan. 20, 1967.

SN 268,148. Brunswick Corporation, Chicago, Ill. Filed Apr. 3, 1967.

VIP

For Golf Clubs and Bags (Int. Cl. 28).
First use Nov. 10, 1966.

SN 272,311. Scott, Foresman and Company, Glenview, Ill. Filed May 24, 1967.

TALKSTARTERS

For Equipment for Playing an Educational Game for the Development of Linguistic Ability (Int. Cl. 28).
First use Mar. 22, 1967.

SN 280,125. Earl A. Wisemiller, d.b.a. Earl Ad Company, Chicago, Ill. Filed Sept. 11, 1967.

FAMILY GOLF

No claim of exclusive right is made to the word "Golf" apart from the mark shown, or to the representation of the golf balls and golf tees, for the goods recited.
For Equipment Including a Game Playing Board Sold as a Unit for Playing a Parlor Type Golf Game and Used in Recording Scores in Playing a Game of Golf (Int. Cl. 28).
First use June 3, 1967.

SN 280,199. Atlantic Lures, Inc., Providence, R.I. Filed Sept. 13, 1967.

SAFE-T-GARD

For Protective Covers for Fish Hooks (Int. Cl. 28).
First use July 27, 1967.

SN 283,875. Consolidated Freightways Corporation of Delaware, Menlo Park, Calif. Filed Nov. 1, 1967.

CF

For Toy Trucks (Int. Cl. 28).
First use on or about December 1959.

SN 286,923. Fyanes Corporation, Chicago, Ill. Filed Dec. 14, 1967.

AVANTE

For Equipment Comprising a Board, Playing Pieces and Ancillary Pieces for Playing a Parlor Game (Int. Cl. 28).
First use Nov. 8, 1967.

SN 287,494. Princess Grace Doll, Inc., New York, N.Y. Filed Dec. 26, 1967.

MADDIE MOD

The word "Mod" is disclaimed apart from the mark as shown.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use May 10, 1967.

SN 291,586. The Coleman Company, Inc., Wichita, Kans. Filed Feb. 21, 1968.

DRI-TEX

For Tent Fabric Sold in the Form of Outdoor Camping Tents (Int. Cl. 22).
First use during or before November 1966.

SN 295,812. Dri Mark Products, Inc., Mount Vernon, N.Y. Filed Apr. 17, 1968.

dm

Owner of Reg. Nos. 729,143, 770,823, and others.
For Playing Cards (Int. Cl. 16).
First use December 1965.

SN 297,184. Gamemasters, Inc., Port Chester, N.Y. Filed May 2, 1968.

STUDENT SURVIVAL

For Equipment for Playing a Parlor Type Game (Int. Cl. 28).
First use Apr. 19, 1968.

SN 297,749. Atlantic Lures, Inc., Providence, R.I. Filed May 9, 1968.

MASTER SPOON

The word "Spoon" is disclaimed apart from the mark as shown.
For Fishing Lures (Int. Cl. 28).
First use July 28, 1961.

SN 298,228. Kohner Bros., Inc., East Paterson, N.J. Filed May 15, 1968.

JUMPKINS

For String Actuated Toy Figurines (Int. Cl. 28).
First use April 1968.

SN 300,776. Eldon Industries, Inc., Hawthorne, Calif. Filed June 19, 1968.

TOUCH COMMAND

For Remote Control Toy Vehicles (Int. Cl. 28).
First use May 15, 1968.

SN 302,205. Wham-O Mfg. Co., San Gabriel, Calif. Filed July 8, 1968.

MORE FUN FROM WHAM-O

Owner of Reg. No. 730,346.
For Slingshots, Flying Saucers, Golf Practice Balls, Paddle Game Equipment, Boomerangs, Hoops, Rubber Balls, Bubble Making Toys and Toy Material Comprising Powdered Polymeric Preparations Primarily Sold in Kit Form for Making Toys (Int. Cl. 28).
First use at least as early as June 25, 1968.

SN 302,206. Wham-O Mfg. Co., San Gabriel, Calif. Filed July 8, 1968.

MORE COOL FUN FROM WHAM-O

Owner of Reg. No. 730,346.
For Plastic Boats, Head Shaped Devices for Attachment to Water Hoses for Play Purposes, and Other Toys Used in Aquatic and Water Sports (Int. Cl. 28).
First use at least as early as June 25, 1968.

SN 303,965. Mattel, Inc., Hawthorne, Calif. Filed July 31, 1968.

KIDDLES

Owner of Reg. Nos. 838,306, 842,798, and others.
For Dolls, Doll Clothing and Doll Accessories, Including Dolls in Miniature Automobiles (Int. Cl. 28).
First use June 27, 1968.

SN 305,899. Rainbow Crafts, Inc., Cincinnati, Ohio. Filed Aug. 26, 1968.

FUN SCULPTOR

For Children's Toys—Namely, Modeling Compound and Molds (Int. Cl. 28).
First use on or prior to Nov. 15, 1967.

SN 306,851. Mattel, Inc., Hawthorne, Calif. Filed Sept. 9, 1968.

EAGLE

For Toy Automobile (Int. Cl. 28).
First use Aug. 30, 1968.

SN 306,853. Mattel, Inc., Hawthorne, Calif. Filed Sept. 9, 1968.

LOLA

For Toy Automobile (Int. Cl. 28).
First use Aug. 30, 1968.

SN 306,855. Mattel, Inc., Hawthorne, Calif. Filed Sept. 9, 1968.

BRABHAM REPCO

For Toy Automobile (Int. Cl. 28).
First use Aug. 30, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 259,544. Rudolph F. Gerisch, d.b.a. R. F. Gerisch Company, Lyons, Ill. Filed Nov. 28, 1966.

SPACERAIL

For Machines for the Storage, Selection, and Retrieval of Articles, Particularly Articles Suspended From Hooks or Hangers (Int. Cl. 7).
First use Aug. 12, 1966.

SN 260,483. Wickman Wimet Limited, Coventry, England. Filed Dec. 9, 1966.

WIMET

Owner of British Reg. Nos. 814,444, 814,445, and 814,449, dated Dec. 8, 1960, respectively.
For Cutting Machines—Namely, Lathes, Milling Machines, Boring Machines, Single and Multi-Spindle Automatics, Planing Machines, Presses, Mining Machines, Metal Working Machines and Tools for Use With Any of the Foregoing—Namely, Turning Tools, Cutters, Reamers, Drills, Mining Picks and Cutters, Press Tool Punches and Dies; Hand Tools—Namely, Drills, Reamers, Counter Bores, Taps, Thread Dies, Chisels, and Metal Hand Tools; Scribers and Glass Cutters; Cutters, Blades, Knives and Edge Tools Used in Agricultural and Horticultural Machines; and Bearings (Int. Cls. 7 and 8).

SN 262,051. Murray Company of Texas, Inc., Dallas, Tex. Filed Jan. 6, 1967.

TIE-O-MATIC

For Automatic Bale Banding Apparatus for Fiber Presses (Int. Cl. 7).
First use Feb. 15, 1965.

SN 268,217. Paceco Inc., Alameda, Calif., by change of name from Pacific Coast Engineering Company, Alameda, Calif. Filed Apr. 3, 1967.

PACECO PORTAINER

For Materials Handling Equipment—Namely, Mobile Gantry Cranes, and Attachments and Parts Therefor (Int. Cl. 7).
First use Nov. 19, 1965.

SN 268,219. Paceco Inc., Alameda, Calif., by change of name from Pacific Coast Engineering Company, Alameda, Calif. Filed Apr. 3, 1967.

PACECO

Owner of Reg. No. 560,765.
For Materials Handling Equipment—Namely, Shoreside Cranes, Shipboard Cranes, Mobile Cranes, Bridge Cranes, Yard Cranes, Bulk Loader and Unloader Cranes; and Accessories and Parts Therefor, Namely, Articulating Booms, Lifting Spreaders, List Compensating Devices, Bulk Throwers, Trolleys, Hoists and Antisway Devices; and Hydro Control Equipment for Dams, Power Houses and Irrigation and Flood Control Apparatus—Namely, Gates, Gate Hoists, Trash Rakes, and Cranes (Int. Cl. 7).
First use Mar. 20, 1947.

SN 268,936. Applied Power Industries, Inc., Milwaukee, Wis. Filed Apr. 12, 1967.

AMERICAN

For Vehicle, General Purpose, and Transmission Jacks, Adjustable Automotive Safety Stands, and Collision Damage Repair Tools (Int. Cls. 7 and 8).
First use 1938 on jacks and repair equipment.

SN 272,261. Electro-Craft Corporation, Hopkins, Minn. Filed May 24, 1967.

MOTOFEED

For Variable Feed Attachments for Milling Machines (Int. Cl. 7).
First use Feb. 20, 1967.

SN 275,028. Atomic Transmissions Service, Inc., Beverly Hills, Calif. Filed June 29, 1967.



Applicant disclaims the exclusive right to the word "Transmissions" and to the atom symbol apart from the mark as shown.
For Transmissions for Automobiles and the Like (Int. Cl. 12).
First use Aug. 27, 1966; February 1961 as to "Atomic."

SN 275,090. Victory Diamond Tool Company, Hanover, N.J. Filed June 29, 1967.

DIREX

For Diamond Dressing and Truing Tools (Int. Cl. 7).
First use Oct. 13, 1965.

SN 275,152. Listo Products Ltd., Vancouver, British Columbia, Canada. Filed June 30, 1967.

ELPROCAN

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 20, 1967; Reg. No. 155,705, dated Feb. 23, 1968.
For Disposable Plastic Cutlery and Stir Sticks (Int. Cls. 8 and 21).

SN 276,459. American Hospital Supply Corporation, Evanston, Ill., assignee of V. Mueller & Company, Chicago, Ill. Filed July 20, 1967.

ETCH-MASTER

For Electrochemical Apparatus for Etching Identification Marks on Metal Surfaces (Int. Cl. 7).
First use on or before Feb. 20, 1967.

SN 281,330. UMC Industries, Inc., St. Louis, Mo. Filed Sept. 27, 1967.



The mark consists of the letters "UMC."
For Vending Machines, Installations of Groups of Such Machines, and Parts, Attachments and Accessories for Such Machines (Int. Cl. 9).
First use Sept. 7, 1967.

SN 281,474. The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio. Filed Sept. 29, 1967.



Owner of Reg. Nos. 436,790, 438,462, and 503,868.
For Metal Working Lathes and Parts Therefor (Int. Cl. 7).
First use September 1965; approximately 1887 as to "Le Blond."

SN 284,573. Automation Devices, Inc., Fairview, Pa. Filed Nov. 13, 1967.

PEECO

For Vibratory Feeding Equipment—Namely, Vibrators, Tooled Bowls, Tracks, Escapements, and Parts Thereof (Int. Cl. 7).
First use Apr. 1, 1956.

SN 286,211. The Union Fork and Hoe Company, Columbus, Ohio. Filed Dec. 4, 1967.



For Hand-Operated Snow Removal Tools—Namely, Shovels, Plows, Scoops, and Scrapers (Int. Cl. 8).
First use July 25, 1967.

SN 288,386. Textube Corporation, Stamford, Conn. Filed Jan. 8, 1968.

PLASTUBE

Owner of Reg. No. 622,638.
For Yarn Carriers for Textile Machines (Int. Cl. 7).
First use October 1967.

SN 290,613. International Speedi-Sleeve Ltd., d.b.a. Speedi-Sleeve International, Burnaby, British Columbia, Canada. Filed Feb. 8, 1968.

SPEEDI-SLEEVE

For Sleeves for Application to Oil Sealed Surfaces on Rotating Shafts (Int. Cl. 7).
First use July 15, 1967; in commerce Oct. 1, 1967.

SN 302,002. Auto Laundry Equipment Sales Company Northbrook, Ill. Filed July 5, 1968.



Applicant disclaims all rights in the words "The Perfect Car Washing Equipment" apart from the mark as shown.
For Mechanical Car Washing Equipment—Namely, Drying Systems, Rinse Units, Rinse and Brush Units, Brush Units, Wheel Washers, Roller Conveyors and Oscillators (Int. Cl. 7).
First use August 1962.

Class 24 — Laundry Appliances and Machines

SN 294,714. American Associated Companies, Inc., Atlanta, Ga. Filed Apr. 2, 1968.

TARZAN

For Stainless Steel Flatwork Ironer Pads (Int. Cl. 21).
First use June 30, 1967.

Class 26 — Measuring and Scientific Appliances

SN 254,152. Herbst Shoe Manufacturing Company, Milwaukee, Wis. Filed Sept. 9, 1966.

THERA-PEDIC

For Foot Measuring Scale (Int. Cl. 9).
First use on or about Nov. 15, 1965.

SN 263,886. Ball Brothers Company Incorporated, Muncie, Ind. Filed Feb. 3, 1967.

BALL

For Inspection and Measuring Equipment—Namely, Glassware Fault Inspection Devices, and Oil Well Condition Sensing Equipment for Measuring Conditions Such as Temperature and Pressure and Indicating the Measured Condition at a Remote Location (Int. Cl. 9).
First use on or about Nov. 10, 1961.

SN 264,225. Nuclide Corporation, State College, Pa. Filed Feb. 8, 1967.

LUMINOSCOPE

For Microscope Attachment in the Nature of a Cold-Cathode for Creating Cathode Luminescence, Used in the Study of Mineral or Other Specimens (Int. Cl. 9).
First use Mar. 31, 1966.

SN 269,340. OMSI/KIT, Inc., Portland, Oreg., assignee of Oregon Museum of Science & Industry, Portland, Oreg. Filed Apr. 17, 1967.

DISCOVERY LAB

Applicant disclaims the term "Lab" apart from the mark as a whole.
For Scientific Educational Laboratory Kit for Study of Animal, Vegetable, and Mineral Matter, Comprising Materials Such as Microscope Slides, Filter Sheets, Tweezers, and Related Paraphernalia (Int. Cl. 9).
First use January 1966.

SN 269,342. OMSI/KIT, Inc., Portland, Oreg., assignee of Oregon Museum of Science & Industry, Portland, Oreg. Filed Apr. 17, 1967.

For Scientific Educational Laboratory Kit for Study of Animal, Vegetable, and Mineral Matter, Comprising Materials Such as Microscope Slides, Filter Sheets, Tweezers, and Related Paraphernalia (Int. Cl. 9).
First use January 1966.

SN 277,230. Tomsett Corporation, Rochester, N.Y. Filed July 31, 1967.

TOMSETT

For Combination Fire and Smoke Detectors (Int. Cl. 9).
First use June 1, 1967.

SN 280,627. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Sept. 18, 1967.

MERRILL

For Tablet Counting Machines and Parts Thereof (Int. Cl. 9).
First use April 1949.

SN 281,567. Farrand Optical Co., Inc., New York, N.Y. Filed Oct. 2, 1967.

FOCI

For Scientific and Optical Instruments—Namely, Microammeters, Spectrofluorometers, Collimators, Comparators, Filters, Lenses, Microscopes, Monochromators, Photographic Lenses, Prisms, Projection Screens, Projectors, Spectrometers, Telescopes, Television Lenses and Toolmakers' Microscopes; Optical Simulators and Simulation Equipment, Namely, Visual Training Aids Comprised of Simulated Cockpits, Drivers' Seats and Locomotive Cab Seats or Stools, and Scene Generating Attachments Therefor (Int. Cl. 9).
First use on or about Jan. 10, 1944, on optical instruments

SN 281,605. Micro-Tol Engineering Corporation, Dale Summit, Pa. Filed Oct. 2, 1967.

MICRO-TOL

For Electron Optics Kits for Electron Physics Laboratory Experiments Involving Electron Beams and Ion Beams, the Kits Containing Diodes, Triodes, Cathode Ray Oscilloscopes, Ion Detectors, Electron Multipliers and Time-of-Flight Mass Spectrometers, and Parts Thereof (Int. Cl. 9).
First use June 25, 1967.

SN 285,148. Presearch Incorporated, Silver Spring, Md. Filed Nov. 17, 1967.

SONAFIX

For Acoustic Ranging Indicator (Int. Cl. 9).
First use Nov. 7, 1967.

SN 285,536. Fabri-Tek Incorporated, Minneapolis, Minn. Filed Nov. 24, 1967.

FAST LINE

For Magnetic Systems for Use in Digital Computers and Elsewhere as Data Storage Equipment, and Magnetic Memory Components Such as Memory Stacks for Use in Magnetic Memory Systems (Int. Cl. 9).
First use Feb. 3, 1967.

SN 286,293. Tesa S.A., Renens, Vaud, Switzerland. Filed Dec. 5, 1967.

TESADIGIT

Owner of Swiss Reg. No. 222,697, dated Jan. 27, 1967.
For Micrometers Having Direct Reading Features (Int. Cl. 9).

SN 288,030. Pyro-Serv Instruments, Inc., North Arlington, N.J. Filed Jan. 3, 1968.



Owner of Reg. No. 558,795.
For Pyrometers (Int. Cl. 9).
First use October 1967.

SN 289,972. Compute-A-Trot & Associates Inc., West Pittston, Pa. Filed Jan. 31, 1968.

COMPUTE-A-TROT



For Manually Operated Computer for Handicapping Harness Races (Int. Cl. 9).
First use Aug. 23, 1967.

SN 290,023. Royal Zenith Corporation, New York, N.Y. Filed Jan. 31, 1968.

MISOMATIC

For Photographic Copier (Int. Cl. 9).
First use Dec. 20, 1966.

SN 290,155. Charles Beseler Company, East Orange, N.J. Filed Feb. 2, 1968.

TRAINING MATE

Applicant disclaims the right to the exclusive use of "Training" apart from the mark as shown.
For Combination Sound and Film Projector (Int. Cl. 9).
First use Dec. 6, 1966.

SN 291,428. Raypak Company, Inc., South El Monte, Calif. Filed Feb. 19, 1968.

UNATHERM GOVERNOR

The word "Governor" is disclaimed apart from the mark as a whole.
For Flow Governors—Namely, Thermostatic Three-Way Valves (Int. Cl. 9).
First use 1957.

SN 294,088. Spiratone, Inc., Flushing, N.Y. Filed Mar. 25, 1968.

MINITEL

For Photographic Lenses (Int. Cl. 9).
First use Nov. 13, 1967.

SN 296,004. American Cyanamid Company, Wayne, N.J. Filed Apr. 19, 1968.

LASER-GARD

For Windows or Lens for Use in Helmets, Goggles, Shields, etc. (Int. Cl. 9).
First use Mar. 20, 1968.

Class 27 — Horological Instruments

SN 279,332. Mido G. Schaeren & Co. S.A., Bienne, Switzerland. Filed Aug. 29, 1967.

MULTIFIT

For Watches, Watch Casings, and Parts of Watches (Int. Cl. 14).
First use March 1942; in commerce March 1942.

SN 288,962. Manufacture d'Horlogerie Rayville S.A. Montres Blancpain (Rayville Watch Manufacturing Co. Limited, Blancpain Watches), Villeret, Switzerland. Filed Jan. 16, 1968.

PERMALUB

Owner of Swiss Reg. No. 205,859, dated Sept. 10, 1964.
For Horological Products—Namely, Watches, Watch Movements, Watch Casings, Watch Dials, and Parts of Watches (Int. Cl. 14).

Class 28 — Jewelry and Precious-Metal Ware

SN 273,111. Morris Reibman & Sons, Inc., Seattle, Wash. Filed June 5, 1967.



Applicant disclaims the representation of a gem stone apart from the mark as shown.
For Jewelry (Int. Cl. 14).
First use about May 6, 1957.

SN 292,537. Albithel Jewelry Mfg., Inc., New York, N.Y. Filed Mar. 6, 1968.

ALB

For Rings, Bracelets, Earrings, Pins, and Necklaces (Int. Cl. 14).
First use Feb. 2, 1968.

SN 294,803. Bates Creations, Inc., New York, N.Y. Filed Apr. 3, 1968.



The mark consists of a fanciful representation of the letters "BC."
For Ladies' Jewelry Consisting of Charms, Earrings, Bracelets, Pendants, Necklaces, Rings, Pins, and Anklets; and Men's Jewelry Consisting of Tie Tacks, Tie Bars, Cuff Links, and Money Clips (Int. Cl. 14).
First use March 1962.

Class 29 — Brooms, Brushes, and Dusters

SN 288,288. The Drackett Company, Cincinnati, Ohio. Filed Jan. 8, 1968.

PATIO-TIP

For Floor Broom (Int. Cl. 21).
First use Dec. 18, 1967.

Class 31 — Filters and Refrigerators

SN 269,840. Aqua-Guard, Incorporated, Birmingham, Ala. Filed Apr. 24, 1967.



For Water Treating Equipment—Namely, Water Softeners, and Water Filters of the Backwash Bed Type (Int. Cl. 11).
First use August 1963.

SN 271,495. Millersville Manufacturing Company, Goodlettsville, Tenn. Filed May 15, 1967.

SNO FLAKER

For Commercial, Auger-Type Ice Making Machines (Int. Cl. 11).
First use Jan. 31, 1967.

SN 286,358. Multiplex Company, St. Louis, Mo. Filed Dec. 6, 1967.

PUFF-FROST

For Refrigerated Beverage Dispensers for Dispensing Slush-Like Frozen Carbonated Beverages (Int. Cl. 11).
First use about August 1967.

SN 290,514. Nor-Lake, Incorporated, Hudson, Wis. Filed Feb. 7, 1968.



Applicant disclaims the words "Products" and "Hudson, Wis. U.S.A." apart from the mark as shown. The drawing is lined for the color green. Owner of Reg. No. 741,973.
For Commercial Refrigeration Equipment — Namely, Freezers, Refrigerators, Refrigerated Machines for Making Ice Cubes, Walk-In Coolers, and Refrigerator Back Bars (Int. Cl. 11).
First use Nov. 10, 1967.

SN 291,007. Ozarka Water Company, Los Angeles, Calif. Filed Feb. 14, 1968.



The drawing is lined for the color red, but no particular color is claimed. Owner of Reg. Nos. 836,026 and 849,654.
For Refrigerated and Evaporative Coolers for Drinking Water (Int. Cl. 11).
First use May 24, 1967.

Class 32 — Furniture and Upholstery

SN 289,411. Mattress Warehouse, Inc., Bronx, N.Y. Filed Jan. 23, 1968.

COTTON-KOOL

For Mattresses Made in Substantial Part of Cotton (Int. Cl. 20).
First use Nov. 5, 1966.

SN 290,419. Tura, Inc., Great Neck, N.Y. Filed Feb. 6, 1968.

EYEWEAR GALERIE

Applicant disclaims the word "Eyewear" apart from the mark shown.
For Cabinet for Displaying Eyeglass Frames (Int. Cl. 20).
First use Oct. 10, 1967.

Class 33 — Glassware

SN 269,592. Zenith Radio Corporation, Chicago, Ill. Filed Apr. 19, 1967.

ZENITH

Owner of Reg. Nos. 164,341, 828,809, and others.
For Protective Safety Glass Plates for Television Sets (Int. Cl. 21).
First use at least as early as 1948.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 284,673. Krueger Manufacturing Company, Inc., Tucson, Ariz. Filed Nov. 13, 1967.



The words "Manufacturing Co., Inc." are disclaimed apart from the mark as shown.
For Air Conditioning and Heating Registers, Diffusers, Dampers; and Air Conditioning System Primary and Return Air Mixing Apparatus Including Mixing Boxes and Baffling (Int. Cl. 11).
First use Dec. 1, 1965.

SN 287,589. A. O. Smith Corporation, Milwaukee, Wis. Filed Dec. 26, 1967.



"A. O. Smith" is the name of the founder of A. O. Smith Corporation, who is now deceased. Owner of Reg. Nos. 394,190, 506,436, and 613,916.
For Gas Water Heaters and Electric Water Heaters (Int. Cl. 11).
First use Dec. 13, 1962; Jan. 6, 1941, in a different form.

SN 289,724. Space Conditioning, Inc., Harrisonburg, Va. Filed Jan. 26, 1968.

MOISTAIRE

For Humidifiers for Commercial and Domestic Use (Int. Cl. 11).
First use Jan. 16, 1965.

SN 294,834. Glenwood Range Company, d.b.a. Sunray Stove Company, Delaware, Ohio. Filed Apr. 3, 1968.

DATA MATIC

For Heating Apparatus, Specifically Gas Heated Cooking Ranges (Int. Cl. 11).
First use on or about Oct. 15, 1966.

SN 295,305. Carrier Corporation, Syracuse, N.Y. Filed Apr. 10, 1968.

Carrier

Owner of Reg. Nos. 267,368, 553,098, and others.
For Self-Contained Air Conditioning Units and Window Mounted Coolers for Cooling and Ventilating; Air Conditioning Systems for Drying, Ventilating, Heating, Cooling, Humidifying and/or Dehumidifying; Air Washers; Fans; Cold Diffusers—Namely, a Refrigerating Coil and a Fan; Heat Diffusers—Namely, a Heating Coil and a Fan; Boilers; Indirect Heating Units; Unit Heaters; Duct Furnaces; Warm Air Furnaces; Residential Air Conditioning Units; Add-On Cooling Units for Residential Air Conditioning Units; Humidifiers and Dehumidifiers (Int. Cl. 11).
First use April 1961.

SN 295,475. The Tappan Company, Mansfield, Ohio. Filed Apr. 11, 1968.

HIDE'N SEE

For Windowed Oven Doors (Int. Cl. 11).
First use on or about June 1, 1964.

SN 296,878. Società Metallurgica Italiana S.p.A., Florence, Italy. Filed Apr. 29, 1968.

SMITERM

Priority claimed under Sec. 44(d) on Italian application filed Dec. 4, 1967; Reg. No. 220,381, dated Feb. 5, 1968.
For Finned Tubes for Heat Exchangers, Made of Steel, Copper and Copper Alloys, and Nickel and Nickel Alloys (Int. Cl. 11).

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 294,181. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Mar. 26, 1968.

INSTAFIND

For Belts and Belting (Int. Cl. 7).
First use Dec. 12, 1967.

SN 299,668. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed June 4, 1968.

REMNAC RACER

For Belts and Belting (Int. Cl. 7).
First use Mar. 18, 1968.

SN 299,980. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed June 7, 1968.

STACKER

For Belts and Belting for Machines (Int. Cl. 7).
First use October 1922.

SN 300,174. Dana Corporation, Toledo, Ohio. Filed June 11, 1968.

STAR

For Oil Seals (Int. Cl. 17).
First use Apr. 30, 1968.

SN 300,478. Penetred Corporation, Marshfield, Wis. Filed June 14, 1968.

PENETRATOR

For New and Retreaded Tires (Int. Cl. 12).
First use May 21, 1968.

SN 300,479. Penetred Corporation, Marshfield, Wis. Filed June 14, 1968.

LAND JET

For New and Retreaded Tires (Int. Cl. 12).
First use May 21, 1968.

SN 301,218. Louis Fishman & Co., Inc., Chicago, Ill. Filed June 24, 1968.

ARMOR-GARD

For Vehicle Tires (Int. Cl. 12).
First use May 6, 1963.

SN 302,006. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

SOFT AIR SKYWAY

Owner of U.S. Reg. No. 792,234.
For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Sept. 15, 1967; in commerce Sept. 15, 1967.

SN 302,009. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

L-MILER

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Jan. 1, 1958; in commerce Jan. 1, 1958.

SN 302,010. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

MIGHTY RIB

Applicant makes no claim of exclusive right to use of the word "Rib," separate and apart from the mark as shown.
For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use May 1, 1966; in commerce May 1, 1966.

SN 302,012. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

SKYWAY DE LUXE

Applicant makes no claim of exclusive right to the use of the word "De Luxe," separate and apart from the mark as shown. Owner of U.S. Reg. No. 792,234.
For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Dec. 15, 1967; in commerce Dec. 15, 1967.

SN 302,013. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

U-LUG PREMIUM

Applicant makes no claim of exclusive right to the use of the word "Premium," separate and apart from the mark as shown.
For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Apr. 10, 1958; in commerce Apr. 10, 1958.

SN 302,014. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

U-LUG

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Mar. 10, 1958; in commerce Mar. 10, 1958.

SN 302,015. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

R-LUG

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Mar. 10, 1961; in commerce Mar. 10, 1961.

SN 302,016. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Filed July 5, 1968.

SUPER L-MILER

For All Kinds of Rubber Tires and Tubes for Automobiles, Autobicycles, or Any Other Vehicles (Int. Cl. 12).
First use Nov. 1, 1967; in commerce Nov. 1, 1967.

Class 36 — Musical Instruments and Supplies

SN 307,266. Capitol Records, Inc., Los Angeles, Calif. Filed Sept. 13, 1968.

PROBE
sound where there has been silence

No claim is made to the word "Sound" apart from the other features of the mark.
For Phonograph Records (Int. Cl. 9).
First use July 25, 1966.

SN 307,269. The Fred Gretsch Company, Inc., Brooklyn, N.Y. Filed Sept. 13, 1968.

GEORGE VAN EPS

"George Van Eps" is the name of a living individual, whose consent is of record.
For Guitars (Int. Cl. 15).
First use Oct. 4, 1967.

Class 37 — Paper and Stationery

SN 260,263. Master-Craft Corporation, Kalamazoo, Mich. Filed Dec. 7, 1966.

THE Person-all by Master-Craft

The words "The Per-son-all by" and "Kalamazoo, Michigan" are disclaimed apart from the mark as shown.
For Blank Checks, Bookkeeping Record Forms, and Binders Therefor (Int. Cl. 16).
First use Feb. 24, 1965.

SN 263,120. Simpson Lee Paper Company, Vicksburg, Mich. Filed Jan. 23, 1967.

SL

Owner of Reg. Nos. 677,731 and 711,251.
For Paper of the Text, Cover, Bristol, Textured, and Reversible Types, Suitable for Use as (a) Stationery Consisting of Envelopes, Announcements, Blank Inserts, Invitations, Checks, Invoices, Blank Menus; (b) Pads; and (c) Book Paper, Art Reproductions, Post Cards, Brochures, Catalogs, Price Books, Booklets, Calendars, Specification Sheets, House Organs, Book Jackets, and Manuals (Int. Cl. 16).
First use May 18, 1966.

SN 270,392. Wilson Jones Company, Niles, Ill. Filed May 1, 1967.

TUFFLEX

For Covers for Burst Marginal-Punched Sheets (Int. Cl. 16).
First use Mar. 15, 1967.

SN 279,082. Lindy Pen Company, Incorporated, North Hollywood, Calif. Filed Aug. 25, 1967.

MOD-CAP

For Ball Point Pens (Int. Cl. 16).
First use July 17, 1967.

SN 279,083. Lindy Pen Company, Incorporated, North Hollywood, Calif. Filed Aug. 25, 1967.

MOD-CAP

For Ball Point Pens (Int. Cl. 16).
First use July 17, 1967.

SN 279,089. Nekoosa-Edwards Paper Company, Port Edwards, Wis. Filed Aug. 25, 1967.

LAUREATE

For Paper of All Types and Categories—Namely, Bond, Duplicator, Ledger, Offset, Manifold, Copying, Mimeograph, Printing, Index, Opague, Converting, Specialty, Wrapping, Writing, Book, and Publishing (Int. Cl. 16).
First use May 5, 1967.

SN 279,549. W. R. Grace & Co., New York, N.Y. Filed Sept. 1, 1967.

Stay-Dri

For Plastic Coated Paper Towels, Sold Exclusively to Physicians and Dentists for Professional Use (Int. Cl. 16).
First use Aug. 17, 1967.

SN 288,944. Durable International, Inc., Long Island City, N.Y. Filed Jan. 16, 1968.

QUIKLIPS

For Plastic Clips or Holders To Be Attached to Folded Garments, Such as Shirts, etc., To Keep the Garments in Their Folded Position (Int. Cl. 16).
First use Oct. 1, 1967.

SN 290,250. Burroughs Corporation, Detroit, Mich. Filed Feb. 5, 1968.



Owner of Reg. Nos. 528,946 and 528,947.
For Stationery and Supplies—Namely, Roll and Flat Sheet Paper, Partially Printed and Processed Forms, Safety Paper Checks, Accounting Boards and Binders (Int. Cl. 16).
First use Apr. 16, 1947.

SN 290,251. Burroughs Corporation, Detroit, Mich. Filed Feb. 5, 1968.

Burroughs

Owner of Reg. Nos. 508,710 and 528,946.
For Stationery and Supplies—Namely, Roll and Flat Sheet Paper, Partially Printed and Processed Forms, Safety Paper Checks, Accounting Boards and Binders (Int. Cl. 16).
First use 1905.

SN 292,312. Wilson Jones Company, Niles, Ill. Filed Mar. 1, 1968.

POCKET-REF

Owner of Reg. No. 579,122.
For Binders, Record Forms, and Record Indexes (Int. Cl. 16).
First use Nov. 25, 1932.

SN 295,036. Knapp Printing Company, Salem, Oreg. Filed Apr. 5, 1968.

Speedrite

For Business Forms (Int. Cl. 16).
First use March 1959.

Class 38 — Prints and Publications

SN 218,705. Stenographic Machines, Inc., Skokie, Ill. Filed May 12, 1965.

STENOGRAPH

Owner of Reg. Nos. 514,021, 696,431, and others.
For Printed Instruction Materials for Machine Shorthand (Int. Cl. 16).
First use in or about December 1939.

SN 255,429. Flambeaux Publishing Company, Inc., New Orleans, La. Filed Sept. 29, 1966.

NEW ORLEANS

For Magazine (Int. Cl. 16).
First use Sept. 15, 1966.

SN 255,611. Flambeaux Publishing Company, Inc., New Orleans, La. Filed Oct. 3, 1966.

NEW ORLEANS GUIDE

For Magazine Supplement (Int. Cl. 16).
First use Sept. 15, 1966.

SN 257,460. Congregation of Sons of the Immaculate Heart of Mary, Eastern Province, d.b.a. Claretian Fathers, Chicago, Ill. Filed Oct. 28, 1966.

U.S. CATHOLIC

For Magazine Published Periodically (Int. Cl. 16).
First use in or about September 1963.

SN 275,097. Whitman Publishing Company, Racine, Wis. Filed June 29, 1967.



Owner of Reg. Nos. 721,356, 721,341, and others.
For Books, Prints, and Publications, Pertaining to Coins and Stamps; Philatelic and Non-Philatelic Stamps, Albums, Album Filler Sheets, Packets, and Folders; and Coin Record Books, Albums, and Folders (Int. Cl. 16).
First use Feb. 17, 1967.

SN 280,828. Visual Graphics Corporation, New York, N.Y. Filed Sept. 20, 1967.

Pistilli Roman

The term "Roman" is disclaimed apart from the mark.
For Sheets of Letters and Other Characters for Use in Photoprinting and Photographic Reproduction (Int. Cl. 16).
First use Jan. 13, 1965.

SN 281,150. Wisconsin State Barber and Beauty Culture Association, Stevens Point, Wis. Filed Sept. 25, 1967.



Applicant specifically disclaims the exclusive right to the use of the union shop label.
For Newsletter Addressed to Applicant's Members and Other Persons Having an Interest in Activities of Wisconsin Barbers (Int. Cl. 16).
First use Apr. 8, 1967.

SN 283,120. Food Fair Properties, Inc., Philadelphia, Pa. Filed Oct. 23, 1967.

CenterTrend Index

For Periodical Guide to Comparative Gross Sales of Shopping Center Tenants (Int. Cl. 16).
First use Mar. 13, 1967.

SN 283,946. Visual Graphics Corporation, New York, N.Y. Filed Nov. 1, 1967.

TROOPER ROMAN

The term "Roman" is disclaimed apart from the mark.
For Sheets of Letters and Other Characters for Use in Photoprinting and Photographic Reproduction (Int. Cl. 16).
First use May 18, 1967.

SN 286,021. Metropolitan Greetings, Inc., Everett, Mass. Filed Dec. 1, 1967.

TIME FOR CHRISTMAS

For Christmas Cards and Albums Within Which Christmas Cards Are Mounted for Display (Int. Cl. 16).
First use on or about Apr. 1, 1967.

SN 288,329. Kennedy Sinclaire, Inc., Montclair, N.J. Filed Jan. 8, 1968.

SPEAKING OF MONEY

For Booklets Prepared Periodically for Distribution by Others (Int. Cl. 16).
First use August 1961.

SN 289,107. 16 Magazine, Inc., New York, N.Y. Filed Jan. 18, 1968.

16

For Magazine Published Monthly (Int. Cl. 16).
First use Feb. 8, 1957.

SN 290,396. Umberto Marone, Naples, Italy. Filed Feb. 6, 1968.



The words "Studio d'Arte" and "Italia" are disclaimed apart from the mark as shown. "A. Devity" is a fictitious name.
For Oil Paintings, Water Color Paintings, and Art Prints (Int. Cl. 16).
First use Mar. 1, 1967; in commerce Mar. 1, 1967.

SN 291,607. The Hearst Corporation, New York, N.Y. Filed Feb. 21, 1968.

MEN'S BAZAAR

For Magazine Published Semi-Annually and/or at Other Intervals (Int. Cl. 16).
First use Mar. 30, 1967.

SN 295,037. Letraset U.S.A., Inc., Mountain View, Calif. Filed Apr. 5, 1968.

SPACEMATIC

For Sheets of Transfer Letters and Symbols (Int. Cl. 16).
First use Jan. 8, 1968.

SN 302,476. United States Steel Corporation, Pittsburgh, Pa. Filed July 11, 1968.

PICSIE

For Educational Booklets Used in Programmed Instruction (Int. Cl. 16).
First use June 4, 1968.

SN 302,818. United States Steel Corporation, Pittsburgh, Pa. Filed July 16, 1968.



For Educational Booklets Used in Programmed Instruction (Int. Cl. 16).
First use June 4, 1968.

SN 303,604. Fabri-Tek Incorporated, Minneapolis, Minn. Filed July 25, 1968.

COMPUTER BITS

For Trade Newsletters (Int. Cl. 16).
First use June 20, 1966.

SN 306,611. Chicago Athletic Association, Chicago, Ill. Filed Sept. 5, 1968.

CHERRY CIRCLE

For Monthly Publication (Int. Cl. 16).
First use June 1894.

Class 39 — Clothing

SN 276,099. C.L.M. Imports, Ltd., New York, N.Y. Filed July 17, 1967.

LAMICA

For Ladies' Shoes (Int. Cl. 25).
First use May 24, 1967.

SN 276,100. C.L.M. Imports, Ltd., New York, N.Y. Filed July 17, 1967.

SCANDICE

For Ladies' Shoes (Int. Cl. 25).
First use May 24, 1967.

SN 282,196. Latest Trends, Inc., Rutherford, N.J. Filed Oct. 10, 1967.

TRISSI

For Ladies' Sportswear—Namely, Slacks, Blouses, and Sweaters (Int. Cl. 25).
First use June 10, 1963.

SN 282,207. Polly Preston Shoes, Inc., New York, N.Y. Filed Oct. 10, 1967.

TERRI TONES

Owner of Reg. Nos. 558,806, 723,128, and others.
For Ladies' Leather, Rubber, and Synthetic Shoes (Int. Cl. 25).
First use Jan. 2, 1965.

SN 285,413. Genesco Inc., Nashville, Tenn. Filed Nov. 22, 1967.

EAGLE OAK

Applicant disclaims the word "Oak" apart from the mark as shown.
For Shoe Leather Heels and Soles (Int. Cl. 25).
First use Aug. 25, 1967.

SN 285,781. Wembley, Inc., New Orleans, La. Filed Nov. 28, 1967.

Sophisticate Collection

For Neckwear (Int. Cl. 25).
First use Nov. 2, 1967.

SN 286,190. Jack Steinberg, Hollywood, Fla. Filed Dec. 4, 1967.

COUNTESS MITZI

The name "Countess Mitzi" is fanciful.
For Neckties (Int. Cl. 25).
First use Sept. 1, 1967.

SN 288,236. Sears, Roebuck and Co., Chicago, Ill. Filed Jan. 5, 1968.

SMOOTHLINE

For Brassieres (Int. Cl. 25).
First use on or about June 20, 1966.

SN 290,020. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Jan. 31, 1968.

SALVATORE

The mark "Salvatore" identifies Joseph Salvatore, whose consent is of record.
For Men's Suits and Sport Coats (Int. Cl. 25).
First use on or about Oct. 11, 1967.

SN 290,160. Colonial Frocks, Inc., Aurora, Ill. Filed Feb. 2, 1968.

Jan Arcy

"Jan Arcy" is not the name of any particular living individual, but is a fanciful name.
For Dresses (Int. Cl. 25).
First use May 8, 1967.

SN 292,732. B. B. Walker Shoe Company, Asheboro, N.C. Filed Mar. 7, 1968.



The drawing is lined for the color orange, but no claim is made for the color orange as part of the mark.
For Men's and Children's Leather Shoes (Int. Cl. 25).
First use on or about Feb. 15, 1956.

SN 292,772. The Euro Shirt Company, Inc., Louisville, Ky. Filed Mar. 8, 1968.



The pictorial representation shown on the drawing is not that of any particular individual known to applicant.
For Shirts, Pajamas, and Sport Shirts (Int. Cl. 25).
First use Aug. 2, 1967.

SN 293,966. B. B. Walker Shoe Company, Asheboro, N.C. Filed Mar. 22, 1968.

LORRAINE WALKER

"Lorraine Walker" is the name of the daughter of B. B. Walker, president of applicant corporation, whose consent is of record.
For Women's Leather Shoes (Int. Cl. 25).
First use on or about Jan. 15, 1955.

SN 294,250. Avant Garde Sportswear, Inc., New York, N.Y. Filed Mar. 27, 1968.

JILETOS

For Children's, Girls' and Ladies' Shirts, Skirts, Jackets, Dresses, Blouses, Slacks, Pants, and Sweaters (Int. Cl. 25).
First use Mar. 15, 1968.

SN 298,335. Mabel Julianelli, d.b.a. Julianelli, New York, N.Y. Filed May 16, 1968.

JULIANELLI

For Boots, Shoes, and Slippers (Int. Cl. 25).
First use on or about Dec. 1, 1940.

SN 298,874. John B. Stetson Company, Philadelphia, Pa. Filed May 22, 1968.

STETSON

Owner of Reg. Nos. 51,990, 638,080, and 816,647.
For Headwear, Including Hats and Caps; Footwear, Including Boots, Shoes and Slippers; Suits; Vests; Coats of All Types; Sweaters; Robes; Capes; Rainwear; Trousers; Shorts; Shirts; Underwear; Hosiery; Sleepwear Swimwear; Neckwear; Belts; Gloves; and Handkerchiefs (Int. Cl. 25).
First use Jan. 1, 1866, on hats and caps.

SN 300,408. Pappagallo, Inc., New York, N.Y. Filed June 14, 1968.

Pappagallo

Owner of Reg. No. 678,919.
For Ladies' Read-To-Wear—Namely, Belts, Blouses, Fur Coats, Panty Hose, Scarfs, Smocks, and Shoes (Int. Cl. 25).
First use at least as early as July 3, 1952.

SN 300,788. Mister Trio Uniforms Inc., New York, N.Y. Filed June 19, 1968.

Mister UNIFORM

The word "Uniform" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 816,664, 852,813, and others.
For Men's and Women's Launderable Uniforms—Namely, Jackets, Coats, Blouses, Skirts, and Dresses, Such as Are Used by Doctors, Nurses, Dentists, Barbers, Beauticians, etc. (Int. Cl. 25).
First use Feb. 1, 1968.

SN 300,789. Mister Trio Uniforms Inc., New York, N.Y. Filed June 19, 1968.

Fashion

The word "Fashion" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 816,664 and 831,118.
For Men's and Women's Launderable Uniforms—Namely, Jackets, Coats, Blouses, Skirts, and Dresses, Such as Are Used by Doctors, Nurses, Dentists, Barbers, Beauticians, etc. (Int. Cl. 25).
First use Dec. 3, 1967.

SN 305,887. Hickey-Freeman Co., Inc., Rochester, N.Y. Filed Aug. 26, 1968.

ROLLPROOF

For Men's Trousers (Int. Cl. 25).
First use July 19, 1961.

SN 306,100. Cleve Shirtmakers, Inc., New York, N.Y. Filed Aug. 28, 1968.

CLEVE

For Men's Shirts (Int. Cl. 25).
First use June 10, 1968.

SN 306,108. Proudfoot Hosiery Corp., New York, N.Y. Filed Aug. 28, 1968.

311

For Hosiery for Women, Men, Boys, and Girls; and Shirts and Sweaters for Men and Boys (Int. Cl. 25).
First use on or about Sept. 13, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 272,601. Diantha Fielding, Santa Monica, Calif. Filed May 29, 1967.



For Stitching and Applique Kits Consisting of Stamped Material and Thread for Working Tapestries, Stitchery Paintings, and Embroidery (Int. Cl. 26).
First use Feb. 28, 1964.

SN 279,490. Modish Imports, Inc., Brooklyn, N.Y. Filed Aug. 31, 1967.

NAIL DO

The word "Nail" is disclaimed apart from the mark as shown.
For Artificial Finger Nails (Int. Cl. 26).
First use July 28, 1966.

SN 292,617. Save Way Barber & Beauty Supplies, Inc., North Miami Beach, Fla. Filed Mar. 6, 1968.

VIKING

For Men's Toupees (Int. Cl. 26).
First use on or about Oct. 1, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 279,340. Vlisco Textieldrukkerijen N.V., Helmond, Netherlands. Filed Aug. 29, 1967.

BOUBOUDIMA

Priority claimed under Sec. 44(d) on Dutch application filed Apr. 24, 1967; Reg. No. 163,423, dated June 1, 1967.
For Textile Fabrics for Making Into Men's and Women's Clothing and for Making Into Draperies, Tablecloths, Bedcovers, and the Like (Int. Cl. 24).

SN 279,751. Roller Process Corp., New York, N.Y. Filed Sept. 6, 1967.

SATURN MOSAIC

For Piece Goods Made of Cotton, Silk, Wool, Man-Made Fibers, or Blends Thereof, and Glitter Fabrics (Int. Cl. 24).
First use Apr. 5, 1967.

SN 290,580. Chemcell Limited-Chemcell Limitee, Montreal, Quebec, Canada. Filed Feb. 8, 1968.

CANASIL

For Fabrics for Use in Making Rainwear, Parka Jackets, and Snowsuits (Int. Cl. 24).
First use November 1963; in commerce February 1966.

SN 295,171. Premium Corporation of America, Inc., Minneapolis, Minn. Filed Apr. 8, 1968.

LADY MARIAN

For Child's Layette Consisting of a Receiving Blanket, Wash Cloths, Towels, Diapers, Bib, Diaper Pins, Sleeping Bag, Lap Pad, Slip-On Shirt, and Toy (Int. Cl. 24).
First use Oct. 9, 1967.

SN 299,448. Fieldcrest Mills, Inc., Eden, N.C. Filed May 31, 1968.

FONDEAU

For Textile Rugs and Carpeting (Int. Cl. 27).
First use Feb. 19, 1968.

SN 299,544. Burlington Industries, Inc., New York, N.Y. Filed June 3, 1968.

PRIMALENE

For Polypropylene Backing for Rugs and Carpets (Int. Cl. 27).
First use May 24, 1968.

Class 43 — Thread and Yarn

SN 298,522. American Enka Corporation, Enka, N.C. Filed May 20, 1968.

MUSCLEFLEX

For Synthetic Thread and Yarn (Int. Cl. 23).
First use Mar. 25, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

SN 284,316. Precious Metals Research Works, Inc., Brooklyn, N.Y. Filed Nov. 7, 1967.

AUROLAIN

For Dental Porcelain and Cast Gold for Making Dental Appliances (Int. Cl. 5).
First use on or about Nov. 1, 1967.

SN 289,669. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 26, 1968.

BREATHMAKER

For Metered Aerosol Inhalant Dispensers (Int. Cl. 10).
First use Jan. 17, 1968.

SN 289,906. M.I.T. Industries, Inc., Northvale, N.J. Filed Jan. 30, 1968.

M.I.T.

For Medical Equipment—Namely, Footstools, Adjustable Stools, Examination and Treatment Tables, Fleetwood Couches, Fleetwood Lounges, Pediatric Tables, Professional Treatment Tables, Mats and Mat Tables (Int. Cl. 10).
First use January 1946.

SN 292,621. Sierra Engineering Company, Sierra Madre, Calif. Filed Mar. 6, 1968.

707

For Gaseous Analgesia Apparatus Comprising Tanks, Valves, Pressure Indicators, Tubing, and Masks (Int. Cl. 10).
First use Nov. 24, 1967.

SN 296,930. Roycemore, Inc., Brooklyn, N.Y. Filed Apr. 30, 1968.

DEMURE

Owner of Reg. No. 570,368.
For Feminine Syringes (Int. Cl. 10).
First use Apr. 1, 1968.

Class 45 — Soft Drinks and Carbonated Waters

SN 263,415. Tingsryds Bryggeri Aktiebolag, Tingsryd, Sweden. Filed Jan. 26, 1967.



Applicant disclaims the words "Frisk Citrusdryck" and "Bottled by Tingsryds Bryggeri AB Sweden" apart from the mark as shown. The English translation of the Swedish words "Frisk Citrusdryck" is "fresh citrus drink." Owner of Swedish Reg. No. 117,042, dated July 22, 1966.
For Citrus Fruit Flavored Soft Drinks (Int. Cl. 32).

SN 283,860. Bromo Cedin International Ltd., Nassau, Bahamas. Filed Nov. 1, 1967.

BARMAN'S BEST

The word "Best" is disclaimed apart from the mark as shown.
For Non-Alcoholic Carbonated Beverages, Used as Soft Drinks and Mixers (Int. Cl. 32).
First use Aug. 20, 1967; in commerce Oct. 21, 1967.

SN 284,360. General Foods Corporation, White Plains, N.Y. Filed Nov. 8, 1967.

KOOL SHAKES

Owner of Reg. Nos. 677,038 and 711,308.
For Concentrate for Use in Making a Soft Drink (Int. Cl. 32).
First use Aug. 3, 1967.

SN 284,361. General Foods Corporation, White Plains, N.Y. Filed Nov. 8, 1967.

KOOL SHOT

Owner of Reg. Nos. 677,038 and 711,308.
For Concentrate for Use in Making a Soft Drink (Int. Cl. 32).
First use Aug. 3, 1967.

SN 284,363. General Foods Corporation, White Plains, N.Y. Filed Nov. 8, 1967.

SOUR SHAKES

The word "Sour" is disclaimed apart from the mark as a whole.
For Non-Alcoholic Cocktail Mix (Int. Cl. 32).
First use Aug. 3, 1967.

Class 46 — Foods and Ingredients of Foods

SN 260,072. Products Engineering Corp., Los Angeles, Calif. Filed Dec. 5, 1966.

BARBECUE CHEF

The word "Barbecue" is disclaimed apart from the mark as shown.
For Liquid and Dehydrated Barbecue Sauces and Vegetable Seasoning for Meat, Fish and Poultry; and Fruit Flavorings—Namely, Lemon and Banana (Int. Cl. 30).
First use during 1951.

SN 263,093. Lindsay Groves, Inc., Lindsay, Calif. Filed Jan. 23, 1967.



The drawing is lined for orange, but color is not claimed as a feature of the mark.
For Fresh Citrus Fruit (Int. Cl. 31).
First use on or about Sept. 10, 1966.

SN 264,541. Harrisons (London) Limited, London, England. Filed Feb. 13, 1967.

SCARLET BEAUTY

Owner of British Reg. No. 798,604, dated Dec. 1, 1959.
For Canned and Frozen Salmon (Int. Cl. 29).

SN 265,280. Cresca Company, Inc., New York, N.Y. Filed Feb. 23, 1967.

FLOWERPOPS

For Hard Candy on a Stick (Int. Cl. 30).
First use 1955.

SN 269,667. Kelco Company, San Diego, Calif. Filed Apr. 20, 1967.

KELCO

Owner of Reg. Nos. 277,972, 407,888, and others.
For Carbohydrate Gums for Use in Food and Ingredients of Foods (Int. Cl. 30).
First use Feb. 1, 1930.

SN 270,203. Rose Brand Corporation, Brooklyn, N.Y. Filed Apr. 28, 1967.

CHOCORICH

Owner of Reg. No. 692,172.
For Chocolate Ice Cream Flavoring, Chocolate Flavored Drink Base and Bittersweet Syrup for Use in Making Sundaes and Ice Cream Sodas (Int. Cls. 30 and 32).
First use Apr. 15, 1954.

SN 272,257. Chicken Delight, Inc., Rock Island, Ill. Filed May 24, 1967.

CHICKEN ROYALE

The word "Chicken" is disclaimed apart from the mark. Owner of Reg. Nos. 672,989 and 847,697.
For Packaged Cooked Meal Consisting of Fried Chicken, Potatoes, Sauce, and a Muffin or Roll (Int. Cl. 29).
First use June 9, 1956.

SN 273,250. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed June 7, 1967.

FUDGECO

For Cocolate Flavored Coatings and Chocolate Flavored Powdered Base for Making Icings To Be Used on Bakery Products, Sold to Commercial Bakeries (Int. Cl. 30).
First use Dec. 31, 1946.

SN 274,204. Gray's Groves, Inc., d.b.a. Gray's Orange Barn, Lady Lake, Fla. Filed June 19, 1967.

ORANGE BARN

No claim is made to the term "Orange" apart from the mark in its entirety.
For Fresh Oranges (Int. Cl. 31).
First use June 1, 1967.

SN 274,256. Super Valu Stores, Inc., Hopkins, Minn. Filed June 19, 1967.

HARRISON HOUSE

Owner of Reg. No. 722,904.
For Frozen Vegetables, Potatoes, Fruits, Sea Food, Meats, Fowl, and Pastries; Condiments—Namely, Catsup, Chili Sauce, Maraschino Cherries, Salad Dressing, Mayonnaise, Tartar Sauce, Thousand Island Dressing, French Dressing, Fruit Flavored Preserves, Fruit Jelly, Apple Base Jelly, Mustard, Green and Ripe Olives, Corn Relish, and White Distilled Vinegar; Canned Vegetable and Fruit Juices; Canned Diet Fruits and Vegetables; Canned Fruits; Canned and Dried Vegetables; Canned Potatoes; Canned Fish; Canned Meats; Canned Specialties—Namely, Pizza Sauce, Ravioli, Stuffed Cabbage, Stuffed Peppers, Spaghetti Sauce, Tomato Puree, Tomato Sauce, Sour Cream Dressing, Cheese Sauce, Boned Chicken, Concentrated Chicken Broth, Bean Sprouts, Chow Mein, Chicken Chow Mein, Chop Suey Vegetables, Chow Mein Noodles, and Soy Sauce; Soup Bases; Flour; Pie Fillings; Vegetable Oil; Shortening and Cooking Oils; Spices and Imitation Vanilla Flavoring; Tea; and Syrups and Toppings—Namely, Waffle Syrup, Imitation Pineapple Syrup, Hawaiian Pineapple Topping, Vanilla Syrup, Imitation Strawberry Syrup, Imitation Cherry Syrup, Blueberry Fruited Pancake Syrup, Lemon-Lime Flavored Syrup, Root Beer Syrup, Strawberry Topping, Butterscotch Fudge Topping, and Wild Cherry Topping (Int. Cls. 29, 30, and 32).
First use January 1966 on canned fruits, vegetables, and juices.

SN 274,257. Super Valu Stores, Inc., Hopkins, Minn. Filed June 19, 1967.



Owner of Reg. No. 722,904.
For Frozen Vegetables, Potatoes, Fruits, Sea Food, Meats, Fowl, and Pastries; Condiments—Namely, Catsup, Chili Sauce, Maraschino Cherries, Salad Dressing, Mayonnaise, Tartar Sauce, Thousand Island Dressing, French Dressing, Fruit Flavored Preserves, Fruit Jelly, Apple Base Jelly, Mustard, Green and Ripe Olives, Corn Relish, and White Distilled Vinegar; Canned Vegetable and Fruit Juices; Canned Diet Fruits and Vegetables; Canned Fruits; Canned and Dried Vegetables; Canned Potatoes; Canned Fish; Canned Meats; Canned Specialties—Namely, Pizza Sauce, Ravioli, Stuffed Cabbage, Stuffed Peppers, Spaghetti Sauce, Tomato Puree, Tomato Sauce, Sour Cream Dressing, Cheese Sauce, Boned Chicken, Concentrated Chicken Broth, Bean Sprouts, Chow Mein, Chicken Chow Mein, Chop Suey Vegetables, Chow Mein Noodles, and Soy Sauce; Soup Bases; Flour; Pie Fillings; Vegetable Oil Shortening and Cooking Oils; Spices and Imitation Vanilla Flavoring; Tea; and Syrups and Toppings—Namely, Waffle Syrup, Imitation Pineapple Syrup, Hawaiian Pineapple Topping, Vanilla Syrup, Imitation Strawberry Syrup, Imitation Cherry Syrup, Blueberry Fruited Pancake Syrup, Lemon-Lime Flavored Syrup, Root Beer Syrup, Strawberry Topping, Butterscotch Fudge Topping, and Wild Cherry Topping (Int. Cls. 29, 30, and 32).
First use January 1966 on canned fruits, vegetables, and juices.

SN 274,259. Super Valu Stores, Inc., Hopkins, Minn. Filed June 19, 1967.



For Frozen Vegetables, Potatoes, Fruits, Sea Food, Meats, Fowl, and Pastries; Condiments—Namely, Catsup, Chili Sauce, Maraschino Cherries, Salad Dressing, Mayonnaise, Tartar Sauce, Thousand Island Dressing, French Dressing, Fruit Flavored Preserves, Fruit Jelly, Apple Base Jelly, Mustard, Green and Ripe Olives, Corn Relish, and White Distilled Vinegar; Canned Vegetable and Fruit Juices; Canned Diet Fruits and Vegetables; Canned Fruits; Canned and Dried Vegetables; Canned Potatoes; Canned Fish; Canned Meats; Canned Specialties—Namely, Pizza Sauce, Ravioli, Stuffed Cabbage, Stuffed Peppers, Spaghetti Sauce, Tomato Puree, Tomato Sauce, Sour Cream Dressing, Cheese Sauce, Boned Chicken, Concentrated Chicken Broth, Bean Sprouts, Chow Mein, Chicken Chow Mein, Chop Suey Vegetables, Chow Mein Noodles, and Soy Sauce; Soup Bases; Flour; Pie Fillings; Vegetable Oil Shortening and Cooking Oils; Spices and Imitation Vanilla Flavoring; Tea; and Syrups and Toppings—Namely, Waffle Syrup, Imitation Pineapple Syrup, Hawaiian Pineapple Topping, Vanilla Syrup, Imitation Strawberry Syrup, Imitation Cherry Syrup, Blueberry Fruited Pancake Syrup, Lemon-Lime Flavored Syrup, Root Beer Syrup, Strawberry Topping, Butterscotch Fudge Topping, and Wild Cherry Topping (Int. Cls. 29, 30, and 32).
First use January 1966 on canned fruits, vegetables, and juices; Dec. 1, 1957, on related goods.

SN 275,273. Otto A. Kohl, d.b.a. Cedar Rapids Molasses Processing Co., Cedar Rapids, Iowa. Filed July 3, 1967.

URE-O-LASS

For Livestock Feed (Int. Cl. 31).
First use May 20, 1967.

SN 275,274. Otto A. Kohl, d.b.a. Cedar Rapids Molasses Processing Co., Cedar Rapids, Iowa. Filed July 3, 1967.

FLAVO-LASS

For Livestock Feed (Int. Cl. 31).
First use May 20, 1967.

SN 275,524. Hunt Oil Company, Dallas, Tex. Filed July 7, 1967.

RANCH COOK



For Barbecue Sauce for Use With Beef, Pork, and Poultry (Int. Cl. 30).
First use May 24, 1967.

SN 277,014. J. Bôngrain & Cie (Societe Anonyme), Illoud, Haute-Marne, France. Filed July 28, 1967.



The drawing is lined for blue and yellow but no claim is made for color. The French words "Caprice des Dieux" mean "God's caprice." Owner of French Reg. No. 1,577, dated July 2, 1957 (Chaumont); Natl. Inst. No. 92,981.
For Cheese (Int. Cl. 29).

SN 277,639. Doskocil Sausage, Inc., Hutchinson, Kans. Filed Aug. 7, 1967.



For Pork Sausage (Int. Cl. 29).
First use Mar. 3, 1967.

SN 278,879. Crown Candy Corporation, Atlanta, Ga. Filed Aug. 23, 1967.



The word "Recipe" is disclaimed apart from the mark as shown.
For Candy (Int. Cl. 30).
First use on or about Oct. 12, 1966.

SN 279,237. Wallace & Tiernan Inc., East Orange, N.J. Filed Aug. 28, 1967.

ADAPT

For Oxidizing Agent for Improving Flour (Int. Cl. 1).
First use Aug. 21, 1967.

SN 281,486. Peavey Company, Minneapolis, Minn. Filed Sept. 29, 1967.

SOLAR

For Prepared Cake and Doughnut Mix (Int. Cl. 30).
First use June 23, 1967.

SN 281,487. Peavey Company, Minneapolis, Minn. Filed Sept. 29, 1967.

SUNDO

Owner of Reg. No. 826,178.
For Sweet Dough Mix for Use in Baking Coffee Cake and Sweet Rolls (Int. Cl. 30).
First use July 7, 1967.

SN 281,488. Peavey Company, Minneapolis, Minn. Filed Sept. 29, 1967.

NORTH COUNTRY

For Buttermilk Pancake and Waffle Mix (Int. Cl. 30).
First use Oct. 20, 1966.

SN 285,727. Dumont Packing Company, Victor, Calif. Filed Nov. 28, 1967.

VALLEY BOY

For Fresh Grapes, Cherries, and Apricots (Int. Cl. 31).
First use about Feb. 9, 1946.

SN 285,728. Dumont Packing Company, Victor, Calif. Filed Nov. 28, 1967.

FAMIGLIA

The word "Famiglia" is the Italian equivalent of the word "family" in the feminine form.
For Fresh Grapes, Cherries, and Apricots (Int. Cl. 31).
First use about Feb. 9, 1946.

SN 286,269. Kelly, Douglas & Company, Limited, Burnaby, British Columbia, Canada. Filed Dec. 5, 1967.

KADANA

For Tea, Tea Bags, Coffee, and Cocoa (Int. Cl. 30).
First use 1954; in commerce 1954.

SN 286,883. Kellogg Company, Battle Creek, Mich. Filed Dec. 14, 1967.

KELLOGG'S 1001

Owner of Reg. Nos. 415,047 and 756,725.
For Feed for Fur-Bearing Animals, Particularly Mink (Int. Cl. 31).
First use Nov. 16, 1967.

SN 287,330. Whiting Milk Company Inc., Charlestown, Mass. Filed Dec. 20, 1967.



For Fresh Fruit Juice Sold in Cartons—Namely, Orange Juice; and Dairy Products—Namely, Fresh Milk and Cream (Int. Cls. 29 and 32).
First use Nov. 13, 1967.

SN 288,044. Plantation Fried Chicken Corporation, New Orleans, La. Filed Nov. 24, 1967.



The words "Fried Chicken" are disclaimed apart from the mark as shown.
For Fried Chicken (Int. Cl. 29).
First use Feb. 15, 1967.

SN 288,144. Wajay Bakery, Inc., Miami, Fla. Filed Jan. 4, 1968.

WATEKE

For Crackers, Biscuits, and Breads (Int. Cl. 30).
First use Nov. 1, 1967.

SN 288,357. Ben Silverstein, d.b.a. Silver Foods Company, Wilkes-Barre, Pa. Filed Jan. 8, 1968.

WHITE LILAC

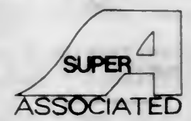
For Peppers and Cauliflower in Pickled Form and Pickles and Olives (Int. Cl. 29).
First use June 1, 1940.

SN 291,735. W. R. Grace & Co., New York, N.Y. Filed Feb. 23, 1968.

GRACE

For Animal Feeds for Beef and Dairy Cattle, Poultry, Sheep, Swine, and Horses (Int. Cl. 31).
First use Nov. 11, 1964.

SN 293,104. Associated Food Stores, Inc., Jamaica, N.Y. Filed Mar. 13, 1968.



The word "Super" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 594,322, 699,936, and 796,920.
For Canned Food Beverages—Namely, Pineapple Juice, Orange Juice, Grape Juice, Apple Juice, Prune Juice, Lemon Juice, Apricot Nectar, Pear Nectar; Canned Fruits—Namely, Fruit Cocktail, Apple Sauce, Pear Halves, Peach Halves, Purple Plums, Cranberry Sauce, Fancy Grapefruit Sections; Canned Vegetables—Namely, Whole White Potatoes, Sweet Peas, Asparagus, Sliced Carrots, Peas and Carrots, Diced Carrots, Sauerkraut, Mushrooms, Green Beans, Spinach, Beets, Sweet Potatoes, Peeled Tomatoes, Sliced White Potatoes, Wax Beans, Whole Kernel Corn; and Peanut Butter, Dry Roasted Peanuts, Maraschino Cherries, Mayonnaise, Grape Jelly, Beans With Pork, Cake Mix, Honey, and Canned Tuna Fish (Int. Cls. 29, 30, and 32).
First use Sept. 7, 1966.

SN 293,687. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed Mar. 20, 1968.

S.D.S.

For Sweet Dough Stabilizer for Use in Bakery Products (Int. Cl. 30).
First use May 18, 1956.

SN 294,373. Chr. Hansen's Laboratory, Inc., Milwaukee, Wis. Filed Mar. 28, 1968.

HANSENS

50-50

Owner of Reg. Nos. 353,567 and 630,139.
For Packaged Products Consisting of Enzymes for Cheese Making (Int. Cl. 1).
First use Jan. 7, 1966.

SN 294,635. Mal-Len Corp., Long Beach, N.Y. Filed Apr. 1, 1968.

Lenny's.

For Salad Dressings (Int. Cl. 29).
First use Apr. 24, 1958.

SN 295,841. National Licorice Company, Brooklyn, N.Y. Filed Apr. 17, 1968.

Q&S

Owner of Reg. Nos. 88,935, 665,163, and others.
For Licorice Candy (Int. Cl. 30).
First use Mar. 29, 1968.

SN 295,866. Western Alfalfa Corporation, Kansas City, Mo. Filed Apr. 17, 1968.



For Animal and Poultry Feeds (Int. Cl. 31).
First use Mar. 26, 1968.

SN 296,068. Fairmont Foods Company, Omaha, Nebr. Filed Apr. 22, 1968.

Sierra Grand'e

For Meat Products—Namely, Beef Jerky and Beef Sausages (Int. Cl. 29).
First use July 24, 1967.

SN 296,069. Fairmont Foods Company, Omaha, Nebr. Filed Apr. 22, 1968.

Western Siesta

For Meat Products—Namely, Beef Jerky and Beef Sausages (Int. Cl. 29).
First use July 24, 1967.

SN 299,221. Delicious Foods Co., Grand Island, Nebr. Filed May 28, 1968.



Applicant disclaims the word "Brand" and also the pictorial representation of an onion per se, apart from the mark as shown. The drawing is lined for the colors red and yellow.
For Breaded Ready-For-Frying Frozen Onion Rings (Int. Cl. 29).
First use at least as early as Oct. 1, 1962.

SN 300,112. Reese Finer Foods, Inc., Chicago, Ill. Filed June 10, 1968.

ATHENA

Owner of Reg. No. 527,556.
For Olives of Various Types, Vine Leaves, Stuffed Eggplants, Salonika Peppers, and Greek Salad (Int. Cls. 29 and 31).
First use Aug. 16, 1966.

SN 300,235. The Quaker Oats Company, Chicago, Ill. Filed June 12, 1968.

Burry's Lickity Splits

Owner of Reg. Nos. 764,031, 845,572, and others.
For Cookies (Int. Cl. 30).
First use Oct. 1, 1967; Dec. 14, 1934, as to "Burry's."

SN 300,271. The Donruss Company, Memphis, Tenn. Filed June 12, 1968.

MOUTH FULL

For Bubble Gum, Chewing Gum, and Candy (Int. Cl. 30).
First use Apr. 26, 1968.

SN 300,555. Central Alberta Dairy Pool, d.b.a. Alpha Milk Co. and Alpha Milk Company, Red Deer, Alberta, Canada. Filed June 17, 1968.

ALPHA

For Honey (Int. Cl. 30).
First use in 1953; in commerce May 15, 1968.

SN 305,269. Desert Produce, Inc., Holtville, Calif. Filed Aug. 16, 1968.

XXXX Plus

For Fresh Vegetables (Int. Cl. 31).
First use May 25, 1968.

SN 305,270. Desert Produce, Inc., Holtville, Calif. Filed Aug. 16, 1968.

Ricardo

For Fresh Vegetables (Int. Cl. 31).
First use May 27, 1968.

Class 47 — Wines

SN 294,859. Schenley Industries, Inc., New York, N.Y. Filed Apr. 3, 1968.

ROMA ROCKET

Owner of Reg. Nos. 318,900, 680,895, and others.
For Wines (Int. Cl. 33).
First use Nov. 13, 1957.

SN 295,303. Brown & Pank Limited, London, England. Filed Apr. 10, 1968.

JUSTINA

Owner of British Reg. No. 783,661, dated Nov. 6, 1958.
For Wines (Int. Cl. 33).

SN 297,574. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. Filed May 7, 1968.

GLADIATOR

For Wines (Int. Cl. 33).
First use Apr. 24, 1968.

Class 48 — Malt Beverages and Liquors

SN 293,710. Foreign Vintages, Inc., New York, N.Y. Filed Mar. 20, 1968.

LOTUS FLOWER

For Sake (Int. Cl. 32).
First use Oct. 31, 1958.

SN 294,495. Haffenreffer & Co., Inc., Boston, Mass. Filed Mar. 29, 1968.



For Malt Liquor, Beer, and Ale (Int. Cl. 32).
First use August 1955.

Class 49 — Distilled Alcoholic Liquors

SN 287,292. Hepburn & Ross Limited, Kelvinbridge, Glasgow, Scotland. Filed S.R. Dec. 20, 1967; Am. P.R. Aug. 27, 1968.



The letters "RH" appear as part of the design feature shown. Owner of U.S. Reg. No. 589,414; and British Reg. No. 846,795, dated Mar. 22, 1963.
For Scotch Whisky (Int. Cl. 33).

SN 289,312. Licoreria Trigo, Inc., San Juan, Puerto Rico. Filed Jan. 22, 1968.

TRIGO

The word "Trigo" is Spanish for "wheat."
For Rum (Int. Cl. 33).
First use June 9, 1966.

SN 292,719. Schenley Industries, Inc., New York, N.Y. Filed Mar. 7, 1968.

SCHENLY SUPERB

Applicant disclaims the word "Superb" except as shown in the mark and retains all common law right to the use of said word. Owner of Reg. Nos. 544,397, 845,996, and others.
For Whisky (Int. Cl. 33).
First use Nov. 29, 1967; Jan. 30, 1967, as to "Schenly."

SN 295,429. Glenmore Distilleries Company, Louisville, Ky. Filed Apr. 11, 1968.

CANVASBACK

For Straight Bourbon Whiskey (Int. Cl. 33).
First use Mar. 26, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 280,988. Touch Incorporated, Albany, N.Y. Filed Sept. 22, 1967.



For Educational Aids for Teaching Children—Namely, Alphabet Cards, Dominoes, Wall Cards, and Number Cards, All Having Thereon Letters or Other Indicia With a Raised Surface (Int. Cl. 16).
First use June 21, 1967.

SN 282,473. New Products Corporation, Clearfield, Utah. Filed Oct. 13, 1967.

TRESS-TREE

For Wig Stand (Int. Cl. 20).
First use July 25, 1967.

SN 296,485. Anodyne, Inc., North Miami Beach, Fla. Filed Apr. 25, 1968.

PIP

For Flexible Aluminum Nameplates (Int. Cl. 6).
First use February 1968.

SN 300,351. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. Filed June 13, 1968.

FLEX-O-LITE

For Reflective Glass Beads of the Character Adapted To Be Caused To Adhere to Surfaces To Render the Surfaces Diffusively Light Reflective (Int. Cl. 21).
First use Jan. 24, 1947.

SN 300,604. Mawa Metallwarenfabrik Wagner G.m.b.H. & Co. KG., Pfaffenhofen, Ilm, Germany. Filed June 17, 1968.

MAWA

For Clothes Hangers (Int. Cl. 26).
First use in 1952; in commerce on or about May 20, 1959.

Class 51 — Cosmetics and Toilet Preparations

SN 275,148. Ellen Kaye Laboratories, Inc., St. Paul, Minn. Filed June 30, 1967.

FINAL NET

For Hair Spray (Int. Cl. 3).
First use Apr. 28, 1967.

SN 280,359. E. R. Holloway Limited, Lavenham, Suffolk, England. Filed Aug. 28, 1967.



For Cosmetics and Toiletries—Namely, Eye, Lip, Face, and Nail Makeup; Powder Compacts Sold Filled and Refills Therefor; and Hair Spray (Int. Cl. 3).
First use on or about Apr. 15, 1967; in commerce on or about May 15, 1967.

SN 282,369. Houbigant, Inc., New York, N.Y. Filed Oct. 12, 1967.

CHANTILLY

Owner of Reg. Nos. 394,399, 503,194, and 506,919.
For Perfumes, Cosmetics, Toilet Preparations and Men's Toiletries—Namely, Perfume, Cologne, Toilet Water, Perfumed Moisture Balm, Bath Oil, Dry Skin Bath Oil, Talcum Powder, Dusting Powder, Bubble Bath, Powder Sachet, Liquid Skin Sachet, Foam Milk Bath Powder, Skin Lotions, Lipstick, Rouge, Face Powder, Skin Cream, Brilliantine, Hair Spray, and Deodorant (Int. Cls. 3 and 5).
First use Feb. 10, 1941.

SN 285,541. Guerlain, Inc., New York, N.Y. Filed Nov. 24, 1967.

AMBRULSION

For Cosmetic Skin Creams (Int. Cl. 3).
First use Nov. 1, 1967.

SN 285,557. Koscot Interplanetary, Inc., Orlando, Fla. Filed Nov. 24, 1967.

KOSCOT

For Face Powder, Rouge, Eye Liner, Eye Make-Up Pencil, Mascara, Eye Shadow, Bath Powder, Eye Liner With Automatic Applicator, Personal Deodorant, Hair Spray, Hair Conditioning Oil, Eye and Throat Conditioning Oil, Liquid Facial Make-Up, Shaving Cream, After-Shave, Suntan Oil, Lipstick, Nail Enamel, Cuticle Softener and Remover, Nail Polish Remover, Cleansing Cream, Moisturizer, Night Cream, Liquid and Cream Facial Mask, and Bath Oil (Int. Cl. 3).
First use Aug. 22, 1967.

SN 288,781. Clairol Incorporated, New York, N.Y. Filed Jan. 15, 1968.

FORMULOTION

For Hair Conditioner (Int. Cl. 3).
First use Nov. 6, 1967.

SN 290,128. Yardley of London, Inc., Totowa, N.J. Filed Feb. 1, 1968.

LONDONDERRY

For Hair Brightener, Setting Foam, Hair Conditioner, and Creme Rinse (Int. Cl. 3).
First use June 16, 1967.

SN 307,063. Gem, Incorporated, Byhalia, Miss. Filed Sept. 11, 1968.

FASHION NET

For Aerosol Hair Spray (Int. Cl. 3).
First use July 11, 1968.

Class 52 — Detergents and Soaps

SN 282,691. Duo Chem Corporation, Westfield, Mass. Filed Oct. 17, 1967.

WORKS LIKE 50 MEN

For All-Purpose Cleaner (Int. Cl. 3).
First use March 1967.

SN 283,819. Richardson Chemical Products Company, Milwaukee, Wis. Filed Oct. 31, 1967.

RICHCO

For Concentrated Glass Cleaning Preparations, and Cleaning Compositions for Stainless Steel Equipment (Int. Cl. 3).
First use Oct. 2, 1937.

SN 283,976. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 2, 1967.

BULOVA

Owner of Reg. Nos. 184,904, 718,925, and others.
For Jewelry Cleaner (Int. Cl. 3).
First use Sept. 8, 1967.

SN 289,275. Chemical Associates, Inc., Houston, Tex. Filed Jan. 22, 1968.

HLD

For Powdered Laundry Detergent (Int. Cl. 3).
First use Sept. 21, 1967.

SN 291,246. Burroughs Corporation, Detroit, Mich. Filed Feb. 16, 1968.



For Hand Cleaner, Type Cleaner, and Platen Cleaner and Restorer (Int. Cl. 3).
First use Apr. 16, 1947.

SN 291,247. Burroughs Corporation, Detroit, Mich. Filed Feb. 16, 1968.

Burroughs

For Hand Cleaner, Type Cleaner, and Platen Cleaner and Restorer (Int. Cl. 3).
First use at least as early as Dec. 16, 1946.

SN 301,141. Simoniz Company, Chicago, Ill. Filed June 24, 1968.

DOUBLE FEATURE

For Disinfectant Household Cleaner (Int. Cl. 3).
First use May 10, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 266,518. Essen Enterprises, Ltd., Clear Lake, Iowa. Filed Mar. 13, 1967.



"Eat" is a literal translation of the German word "Essen." No claim is made to the words "Smorgasbord" and "Essen House" apart from the mark as shown, without waiving any common law rights therein.
For Restaurant Services (Int. Cl. 42).
First use on or about Dec. 1, 1965.

SN 269,754. Environmental Planning Associates, Inc., Salina, Kans. Filed Apr. 21, 1967.

EPA

For Consultation Services and Preparation of Drawings and Specifications for Furniture, Furnishings and Equipment for Household, Office, School, and Educational Use (Int. Cl. 42).
First use Feb. 9, 1967.

SN 271,472. The Hungry Dutchman Restaurants, Inc., Denver, Colo. Filed May 15, 1967.

THE HUNGRY DUTCHMAN

For Restaurant and Liquor Bar Services (Int. Cl. 42).
First use Oct. 4, 1966.

SN 274,875. International Food Plaza Inc., Phoenix, Ariz. Filed June 27, 1967.



For Carry-Out, Dining and Restaurant Services (Int. Cl. 42).
First use Apr. 15, 1966.

SN 285,655. Electronic Calculating Service, Inc., Los Angeles, Calif. Filed Nov. 27, 1967.

PHOCAL

For Solving of Engineering Problems of Others by Electronic Computer (Int. Cl. 42).
First use Nov. 1, 1963.

SN 286,178. Rerebaz, Inc., McKee City, N.J. Filed Dec. 4, 1967.

POLAR BEAR

For Private Restaurant Services Featuring Food and Drink (Int. Cl. 42).
First use June 12, 1960.

SN 296,232. Commonwealth Edison Company, Chicago, Ill. Filed Apr. 23, 1968.

THE BRIGHT NEW IDEAS ARE ELECTRIC

For Public Utility Services Relating to Electric Power (Int. Cl. 42).
First use Sept. 7, 1966.

SN 298,080. Across the Street Restaurants of America, Incorporated, Oklahoma City, Okla. Filed May 14, 1968.



For Restaurant Services (Int. Cl. 42).
First use April 1964.

SN 304,278. Alaska Business Council, Anchorage, Alaska. Filed Aug. 5, 1968.



For Association Services—Namely, Promoting the Economic Development of the State of Alaska (Int. Cl. 42).
First use Feb. 15, 1968.

Class 101 — Advertising and Business

SN 252,921. The Wurlitzer Company, Chicago, Ill. Filed Aug. 22, 1966.

WURLITZER MEANS MUSIC TO MILLIONS

Owner of Reg. Nos. 77,761, 214,557, and others.
For Musical Instrument and Sound Reproducing Equipment Retail Store Services (Int. Cl. 35).
First use in or about April 1966; Aug. 1, 1941, in a different form.

SN 260,878. The Olsten Corporation, New York, N.Y., assignee of William Olsten, New York, N.Y. Filed Dec. 15, 1966.

olsten

Owner of Reg. No. 697,224 and 718,709.
For Temporary Personnel Services, Such as White Collar, Blue Collar, Hostesses, Demonstrators, Technicians and Professionals; and Permanent Placements as Well as Executive Search (Int. Cl. 35).
First use about 1950.

SN 261,610. Mario Buccellati Inc., New York, N.Y. Filed Dec. 29, 1966.

BUCCELLATI

For Retail Jewelry Store Services (Int. Cl. 35).
First use during 1952.

SN 272,146. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed May 23, 1967.

R+R

For Retail Used Construction Machinery and Farm Equipment Outlet Services (Int. Cl. 35).
First use May 12, 1966.

SN 273,610. Custom Mailers & Consultants, Inc., Richmond, Va. Filed June 12, 1967.

THE Custom MAILER

The words "The Custom Mailer" are disclaimed apart from the mark as shown.
For Printing and Mailing of Direct Mail Programs (Int. Cl. 35).
First use Sept. 1, 1965.

SN 273,785. Llewellyn Brothers, Incorporated, d.b.a. Llewellyn Bros., Inc., Wilkes-Barre, Pa. Filed June 13, 1967.

LBI

For Wholesale and Retail Printing Services (Int. Cl. 35).
First use on or about Feb. 10, 1960.

SN 278,658. Rome Arnold & Company, Chicago, Ill. Filed Aug. 21, 1967.

CENTELIBUS

For Conducting National Telephone Surveys for Others (Int. Cl. 35).
First use on or before July 1, 1965.

SN 282,926. John F. Robinson, d.b.a. Robinson Executive Search and Consulting Associates, Cleveland, Ohio. Filed Oct. 19, 1967.

"THE UNCOMMON EXECUTIVE"

For Management Consulting Services—Namely, Assessment and Evaluation of Executive Staffs and Conducting Searches for Executive Personnel; and Executive Consulting Services—Namely, Conducting Searches for Executive Career Opportunities (Int. Cl. 35).
First use on or about July 5, 1967.

SN 284,879. Spencer Gifts Retail Stores, Inc., Atlantic City, N.J. Filed Nov. 15, 1967.

THE "LIVING CATALOG" STORE

The word "Store" is disclaimed apart from the mark as shown.
For Retail Gift Store Services (Int. Cl. 35).
First use Jan. 21, 1965.

SN 286,514. The Reuben H. Donnelley Corporation, New York, N.Y. Filed Dec. 8, 1967.

DONNELLY MARKET INFORMATION SERVICE

Applicant disclaims the words "Market Information Service" apart from the mark as shown. Owner of Reg. No. 570,822.
For Consumer Goods Marketing Reporting Services (Int. Cl. 35).
First use on or before Sept. 1, 1967.

SN 289,855. Ticket Reservation Systems, Inc., New York, N.Y. Filed Jan. 22, 1968.



For Rendering a High Speed, Computerized Ticket Sales Service for Others, and Rendering Accounting Services in Connection With Such Sales (Int. Cl. 35).
First use August 1966.

SN 295,452. National Alliance of Businessmen, Washington, D.C. Filed Apr. 11, 1968.

JOBS
National Alliance of Businessmen

For Finding Jobs for the Urban Hard-Core Unemployed and Filling Them (Int. Cl. 35).
First use Mar. 16, 1968.

SN 300,883. Xerocenter, Inc., Philadelphia, Pa. Filed June 20, 1968.

XEROCENTER

For Electro-Offset Reproduction, Photo-Offset Reproduction, and Photocopying Printed and Handwritten Material for Others (Int. Cl. 35).
First use May 23, 1968.

Class 102 — Insurance and Financial

SN 257,790. The Millers Casualty Insurance Company of Texas, The Millers Mutual Fire Insurance Company of Texas, The Millers Life Insurance Company of Texas, (joint owners), d.b.a. Millers Group, Fort Worth, Tex. Filed Nov. 2, 1966.

MILLERS GROUP

For Underwriting Property, Liability, Life, and Health Insurance (Int. Cl. 36).
First use Oct. 6, 1966.

SN 274,425. Girard Trust Bank, Philadelphia, Pa. Filed June 21, 1967.

LOANEASE

For Personal Loan Services (Int. Cl. 36).
First use Apr. 21, 1967.

SN 283,707. The Protective Group, Minneapolis, Minn. Filed Oct. 30, 1967. COLLECTIVE MARK.

THE PROTECTIVE GROUP

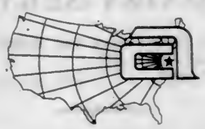
For Underwriting of Insurance (Int. Cl. 36).
First use Aug. 1, 1967.

SN 283,817. The Protective Group, Minneapolis, Minn. Filed Oct. 13, 1967. COLLECTIVE MARK.



For Underwriting of Insurance (Int. Cl. 36).
First use Aug. 1, 1967.

SN 287,725. Continental American Life Insurance Company, Wilmington, Del. Filed Dec. 28, 1967.



The representation of the map of the United States is disclaimed apart from the mark as shown.
For Underwriting and Issuing Life Insurance Policies and Health Insurance Policies (Int. Cl. 36).
First use Dec. 4, 1967.

SN 302,666. Beverley Bank, Chicago, Ill. Filed July 15, 1968.

BONUS SAVINGS

No claim of exclusive right is made to the word "Savings" for the services recited.
For Banking Services—Namely, Savings Account Services (Int. Cl. 36).
First use November 1967.

Class 103 — Construction and Repair

SN 262,336. Hughes Tool Company, Houston, Tex. Filed Jan. 11, 1967.

HUGHES Numerics

Owner of Reg. Nos. 126,549, 761,826, and others.
For Fitting Machine Tools for Automatic Control by Numerical Control Equipment Which Is Furnished as a Part of the Service (Int. Cl. 37).
First use May 6, 1965.

SN 266,110. T-Vion, Inc., Oklahoma City, Okla. Filed Mar. 6, 1967.

T-VION

For Construction, Maintenance, and Repair of Radio, Television, and Portable Stereophonic Sound Systems Equipment, and the Repair, Rebuilding, and Servicing of Mobile Radio Equipment (Int. Cl. 37).
First use Apr. 24, 1964.

SN 275,441. Graflex, Inc., Rochester, N.Y. Filed July 6, 1967.



Owner of Reg. No. 801,296.
For Servicing of Photographic and Audiovisual Equipment (Int. Cl. 37).
First use May 1965.

SN 276,940. Midland-Ross Corporation, Cleveland, Ohio. Filed July 27, 1967.

DAIRY-SERV

For Performing Maintenance and Repair Services on Extruding Equipment (Int. Cl. 37).
First use July 7, 1967.

SN 298,753. Orkin Exterminating Company, Inc., Atlanta, Ga. Filed May 21, 1968.

ORKIN 12

Owner of Reg. No. 568,404.
For Pest Control Services (Int. Cl. 37).
First use on or about Mar. 12, 1968.

Class 105 — Transportation and Storage

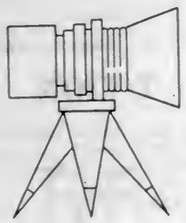
SN 290,295. HUB Airlines, Inc., Fort Wayne, Ind. Filed Feb. 5, 1968.



For Airline Services (Int. Cl. 39).
First use Dec. 22, 1966.

Class 106 — Material Treatment

SN 272,868. Supra Color Inc., Minneapolis, Minn. Filed June 1, 1967.



For Processing Exposed Color Film and Color Photographs for Others (Int. Cl. 40).
First use Feb. 1, 1967.

SN 288,122. Skyland Studios, Inc., d.b.a. Sky Land Photo Service, Asheville, N.C. Filed Jan. 4, 1968.

TODAY'S PHOTOGRAPHIC PLEASURES ARE TOMORROW'S VALUED TREASURES

For Photograph Developing and Printing (Int. Cl. 40).
First use Jan. 31, 1939.

SN 291,002. Cooper Industries, Inc., Canfield, Ohio. Filed Feb. 14, 1968.

COLORESIN

For Applying a Finish to the Metal Parts of Others (Int. Cl. 40).
First use Jan. 10, 1967.

Class 107 — Education and Entertainment

SN 272,461. American Self-Protection Association, Inc., Brookfield, Ill. Filed May 26, 1967.



For Classroom and Correspondence Courses in Self-Protection (Int. Cl. 41).
First use July 12, 1965.

SN 281,788. Jackie Gleason, d.b.a. Jaglea Music Company, New York, N.Y. Filed Oct. 4, 1967.

AWAY WE GO

For Entertainment Services in the Form of a Television Variety Program (Int. Cl. 41).
First use June 3, 1967.

SN 290,597. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Feb. 8, 1968.

GAF

Owner of Reg. Nos. 509,124, 837,005, and others.
For Preparation of Visual Programs for Projection, With or Without Accompanying Text, To Illustrate Techniques, Educational Subject Matter and Other Information, According to Order and/or Specifications of Others (Int. Cl. 41).
First use Feb. 24, 1965.

SN 290,598. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Feb. 8, 1968.



Owner of Reg. Nos. 509,124, 837,005, and others.
For Preparation of Visual Programs for Projection, With or Without Accompanying Text, To Illustrate Techniques, Educational Subject Matter and Other Information, According to Order and/or Specifications of Others (Int. Cl. 41).
First use Feb. 24, 1965.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 279,775. Automotive Parts Rebuilders Association, Los Angeles, Calif. Filed Sept. 7, 1967.



For Indicating Membership in Applicant.
First use Sept. 14, 1957.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

861,839. MANOR NORTH RESEARCH AND DESIGN. Ralston Purina Company. SN 276,865. Pub. 10–1–68. Filed 7–26–67.

861,840. ADRUB RTV. Adhesive Products Corporation. SN 277,968. Pub. 10–1–68. Filed S.R. 8–10–67; Am. P.R. 7–18–68.

861,841. HOU. Domestic Marble & Stone Corporation. SN 290,263. Pub. 10–1–68. Filed 2–5–68.

861,842. NELCO. New England Laminates Company, Inc. SN 296,860. Pub. 10–1–68. Filed 4–29–68.

Class 2 — Receptacles

861,843. MISCELLANEOUS DESIGN. Lit-Ning Products Company. MULTIPLE CLASS (Classes 2, 25, and 32). SN 256,569. Pub. 10–1–68. Filed 10–17–66.

861,844. VISU-MATIC. The Powell Pressed Steel Company. SN 274,136. Pub. 5–7–68. Filed 6–19–67.

861,845. CTP AND DESIGN. CTP Industries Inc. SN 276,532. Pub. 10–1–68. Filed 7–21–67.

861,846. WHITE-PLATE. Curtice-Burns, Inc. SN 277,257. Pub. 7–9–68. Filed 8–1–67.

861,847. FILTER POWER AND DESIGN. Modern Dust Bag Co., Inc. SN 285,893. Pub. 10–1–68. Filed 11–30–67.

861,848. PARKER. Parker Hardcastle Limited. SN 289,643. Pub. 10–1–68. Filed 1–26–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

861,849. BRAND X. Chadbourn Gotham, Inc. MULTIPLE CLASS (Classes 3 and 26). SN 286,053. Pub. 10–1–68. Filed 12–4–67.

861,850. JEEN KEENE. Keene Corporation. SN 289,307. Pub. 10–1–68. Filed 1–22–68.

Class 4 — Abrasives and Polishing Materials

861,851. WOOLESS WONDER. Mirror Bright Polish Co. SN 274,818. Pub. 10–1–68. Filed 6–26–67.

861,852. XPAL. W. R. Grace & Co. SN 281,074. Pub. 10–1–68. Filed 9–25–67.

Class 5 — Adhesives

861,853. ZIPAK. Imperial Adhesives and Chemicals, Inc., by change of name from Imperial Adhesives, Inc. SN 297,260. Pub. 8–6–68. Filed 5–3–68.

Class 6 — Chemicals and Chemical Compositions

861,854. MISCELLANEOUS DESIGN. Sunnyside Products, Inc. MULTIPLE CLASS (Classes 6, 15, 16, and 52). SN 267,878. Pub. 10–1–68. Filed 3–30–67.

861,855. FOGGER FUEL. Judd Ringer Corporation. SN 277,181. Pub. 10–1–68. Filed 7–31–67.

861,856. MINI-STAT. American Photocopy Equipment Company. MULTIPLE CLASS (Classes 6 and 26). SN 287,779. Pub. 10–1–68. Filed 12–29–67.

861,857. SSK AND DESIGN. S. S. Kresge Company. SN 289,100. Pub. 10–1–68. Filed 1–18–68.

861,858. CHERRY BOMB. Puritan Chemical Company. SN 290,530. Pub. 10–1–68. Filed 2–7–68.

861,859. GAYPET. American Home Products Corporation. SN 300,416. Pub. 10–1–68. Filed 6–14–68.

Class 8 — Smokers' Artides, Not Including Tobacco Products

861,860. RABBIT HEAD (DESIGN). HMH Publishing Co. Inc. SN 301,422. Pub. 10–1–68. Filed 6–26–68.

861,861. PLAYBOY. HMH Publishing Co. Inc. SN 301,423. Pub. 10–1–68. Filed 6–26–68.

Class 10 — Fertilizers

861,862. GARDENURE AND DESIGN. Organic Compost Corporation. SN 272,394. Pub. 10–1–68. Filed 5–25–67.

Class 12 — Construction Materials

861,863. SEAL-O-MATIC. Robert Haws Company. SN 202,688. Pub. 12–14–65. Filed 9–25–64.

861,864. VISION STRIP. The Tremco Manufacturing Co. SN 282,492. Pub. 10–1–68. Filed 10–13–67.

861,865. VEE-DRANE. Cyclops Corporation. SN 285,914. Pub. 10–1–68. Filed 11–30–67.

861,866. ELTROVIT. Eltreva A.G. SN 295,021. Pub. 10–1–68. Filed 4–5–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

861,867. GADCO. ISP, Inc. SN 280,951. Pub. 10–1–68. Filed 9–22–67.

861,868. CONTROMATICS. Contromatics Corporation. SN 289,879. Pub. 10–1–68. Filed 1–30–68.

861,869. VIEW-PACK. Beneke Corporation. SN 289,963. Pub. 10–1–68. Filed 1–31–68.

861,870. TWIN-SLIDE. Waldes Kohinoor, Inc. SN 290,118. Pub. 10–1–68. Filed 2–1–68.

861,871. TRI-PACT. Rain Bird Sprinkler Mfg. Corp. SN 290,325. Pub. 10–1–68. Filed 2–5–68.

861,872. DECO ROOM AND DESIGN. American Tack & Hardware Co., Inc. MULTIPLE CLASS (Classes 13 and 21). SN 293,073. Pub. 10–1–68. Filed 3–13–68.

861,873. NORSE. Norse, Inc. SN 294,781. Pub. 9–3–68. Filed 4–3–68.

861,874. UNIT-TANDEM. Yarway Corporation. SN 301,392. Pub. 10–1–68. Filed 6–26–68.

Class 14 — Metals and Metal Castings and Forgings

861,875. MC CANNALLOY. Hills-McCanna Company (Delaware corporation), assignee of Hills-McCanna Company (Illinois corporation). SN 269,187. Pub. 10–1–68. Filed 4–14–67.

861,876. AMERICANA. American Type Founders Co., Inc. SN 274,927. Pub. 10–1–68. Filed 6–28–67.

Class 15 — Oils and Greases

861,854. (See Class 6 for this trademark.)

Class 16 — Protective and Decorative Coatings

861,854. (See Class 6 for this trademark.)

861,877. WEAR WELL. Servicemaster Industries Inc., by change of name from Wade, Wenger Servicemaster Co. SN 269,365. Pub. 10–1–68. Filed 4–17–67.

861,878. GOLDEN T. T.G. & Y. Stores Co. MULTIPLE CLASS (Classes 16, 22, and 39). SN 271,304. Pub. 10–1–68. Filed 5–12–67.

861,879. BAG-WAX. Howard E. Weiler. SN 275,002. Pub. 10–1–68. Filed 6–28–67.

861,880. DEOX. Standard T Chemical Company, Inc. SN 285,948. Pub. 10–1–68. Filed 11–30–67.

861,881. MASTER BLEND. Badger Paint and Hardware Stores, Inc. SN 286,626. Pub. 10–1–68. Filed 12–11–67.

861,882. EASTMAN. Eastman Kodak Company. SN 286,652. Pub. 10–1–68. Filed 12–11–67.

Class 17 — Tobacco Products

861,883. GALLANTES. Bayuk Cigars Incorporated. SN 270,750. Pub. 10–1–68. Filed 5–5–67.

861,884. ACAPULCO. Geryl Company, Ltd. SN 279,731. Pub. 10–1–68. Filed 9–6–67.

861,885. WATTSONS. Skandinavisk Tobakskompagni A/S. SN 294,534. Pub. 10–1–68. Filed 3–29–68.

861,886. BROOKS GRANDE PRIMA. T. E. Brooks & Co. SN 296,939. Pub. 10–1–68. Filed 4–30–68.

Class 18 — Medicines and Pharmaceutical Preparations

861,887. TOXTABS. Richard T. Rappolt, Sr. SN 253,556. Pub. 10–1–68. Filed 8–31–66.

861,888. VERSAKAN. Bristol-Myers Company. SN 278,278. Pub. 10–1–68. Filed 8–15–67.

861,889. CYSTOSOL. Baxter Laboratories, Inc. SN 280,385. Pub. 10–1–68. Filed 9–15–67.

861,890. PANABARB. Pan American Laboratories, Inc. SN 285,754. Pub. 10–1–68. Filed 11–28–67.

861,891. ILOSETIC. USV Pharmaceutical Corporation. SN 285,773. Pub. 10–1–68. Filed 11–28–67.

861,892. UNICAP F. The Upjohn Company. SN 287,053. Pub. 10–1–68. Filed 12–15–67.

861,893. MILLICIN. The Upjohn Company. SN 287,241. Pub. 10–1–68. Filed 12–19–67.

861,894. ECONOSULFA. Bristol-Myers Company. SN 287,885. Pub. 10–1–68. Filed 1–2–68.

861,895. MASTIVET. Ciba Corporation. SN 288,088. Pub. 10–1–68. Filed 1–4–68.

861,896. METREVET. Schering Corporation. SN 288,121. Pub. 10–1–68. Filed 1–4–68.

861,897. OMNI-SEPTIC. Delta Drug Corporation. SN 288,193. Pub. 10–1–68. Filed 1–5–68.

861,898. INSTA CAINE AND DESIGN. Fred H. Lowe, Sr., d.b.a. Dental Preference Items. SN 288,220. Pub. 10–1–68. Filed 1–5–68.

861,899. LITHONATE. Rowell Laboratories Inc. SN 288,863. Pub. 10–1–68. Filed 1–15–68.

861,900. EQUESTRIN. Mead Johnson & Company. SN 299,534. Pub. 10–1–68. Filed 6–3–68.

Class 19 — Vehides

861,901. SAFETY FIRST AND DESIGN. McCord Corporation. SN 262,184. Pub. 10–1–68. Filed 1–9–67.

861,902. EVERLOCK AND DESIGN. John G. Fontaine. SN 268,951. Pub. 10–1–68. Filed 4–12–67.

861,903. III. American Hospital Supply Corporation, assignee of Institutional Industries, Inc. SN 269,317. Pub. 10–1–68. Filed 4–17–67.

861,904. COOT. Coot Inc. SN 282,418. Pub. 9–3–68. Filed 10–13–67.

861,905. PIT VIPER. Carmelo La China. SN 284,482. Pub. 10–1–68. Filed 11–9–67.

861,906. DM DAYNA MOTIV AND DESIGN. Overseas Development Corp. MULTIPLE CLASS (Classes 19, 21, 23, and 31). SN 286,611. Pub. 10–1–68. Filed 12–11–67.

Class 20 — Linoleum and Oiled Cloth

861,907. MODERN MANOR. The General Tire & Rubber Company. SN 288,809. Pub. 10–1–68. Filed 1–15–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

861,872. (See Class 13 for this trademark.)

861,906. (See Class 19 for this trademark.)

861,908. THE ELECTRONIC JUNGLE. Dressler Electronics, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 259,093. Pub. 10–1–68. Filed 11–21–66.

861,909. AUDIOTEX AND DESIGN. Hydrometals, Inc., d.b.a. G.C. Electronics Company. MULTIPLE CLASS (Classes 21 and 36). SN 264,320. Pub. 10–1–68. Filed 2–9–67.

861,910. BLISS EAGLE SIGNAL AND DESIGN. E. W. Bliss Company. MULTIPLE CLASS (Classes 21 and 26). SN 272,882. Pub. 10–1–68. Filed 6–2–67.

861,911. ELRAD. Westinghouse Air Brake Company. SN 277,745. Pub. 10–1–68. Filed 8–7–67.

861,912. ENVIRONEL. Superior Continental Corporation, by change of name from Superior Cable Corporation. SN 279,583. Pub. 10–1–68. Filed 9–1–67.

861,913. MISCELLANEOUS DESIGN. American Cyanamid Company. SN 285,899. Pub. 10–1–68. Filed 11–30–67.

861,914. ANES. ANES Automotive Electronics, Inc. SN 285,901. Pub. 10–1–68. Filed 11–30–67.

861,915. TELESIS. Telesis Corporation. SN 286,045. Pub. 10–1–68. Filed 12–1–67.

861,916. DIP-BIT. Cambridge Thermionic Corporation. SN 287,719. Pub. 10–1–68. Filed 12–28–67.

861,917. RAPID FIRE. Fedtro, Inc. SN 300,779. Pub. 10–1–68. Filed 6–19–68.

Class 22 — Games, Toys, and Sporting Goods

861,878. (See Class 16 for this trademark.)

861,918. 007 AND DESIGN. Glidrose Productions Limited and Eon Productions Limited (joint venture). SN 251,353. Pub. 10–1–68. Filed 8–1–66.

861,919. JAMES BOND 007. Glidrose Productions Limited and Eon Productions Limited (joint venture). SN 251,355. Pub. 10–1–68. Filed 8–1–66.

861,920. 007. Glidrose Productions Limited and Eon Productions Limited (joint venture). SN 251,356. Pub. 10–1–68. Filed 8–1–66.

861,921. JAMES BOND. Glidrose Productions Limited and Eon Productions Limited (joint venture). SN 251,357. Pub. 10–1–68. Filed 8–1–66.

861,922. ROLLS RIGHT. William Hoffman, d.b.a. Rolls-Right Co. SN 265,190. Pub. 10–1–68. Filed 2–21–67.

861,923. MISCELLANEOUS DESIGN. Aspen Ski Boot Internationale, Inc. SN 268,281. Pub. 10–1–68. Filed 4–4–67.

861,924. AZTEC. Blazon, Inc. SN 274,303. Pub. 10–1–68. Filed 6–20–67.

861,925. LIGHTNING. Rempel Mfg. Co., Inc. SN 274,345. Pub. 10–1–68. Filed 6–20–67.

861,926. BAT-Y-BALL. Jack Russell Company, Inc. SN 280,886. Pub. 10–1–68. Filed 9–21–67.

861,927. FIRST TEE. Pete Uram Sales, Inc. SN 292,983. Pub. 10–1–68. Filed 3–11–68.

861,928. KO-KO. Romolo P. Bianco, d.b.a. Ascot Tackle Co. SN 294,574. Pub. 10–1–68. Filed 4–1–68.

861,929. ELASTI-MOTOR. Mattel, Inc. SN 301,311. Pub. 10–1–68. Filed 6–25–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

861,906. (See Class 19 for this trademark.)

861,930. WYCO AND DESIGN. The Wyco Tool Co. SN 251,031. Pub. 1–16–68. Filed 7–25–66.

861,931. CHIEF. C. M. McClung & Co., Inc. MULTIPLE CLASS (Classes 23, 26, 35, and 50). SN 255,850. Pub. 10–1–68. Filed 10–6–66.

861,932. HYDRO-METHOD AND DESIGN. H. K. Porter, Inc. SN 261,840. Pub. 10–1–68. Filed 1–3–67.

861,933. SCORE KING. Brunswick Corporation. SN 269,167. Pub. 10–1–68. Filed 4–14–67.

861,934. APACHE. New Jersey Machine Corporation. SN 269,681. Pub. 10–1–68. Filed 4–20–67.

861,935. KAI. Sanwa Cutlery Co., Ltd. SN 269,794. Pub. 10–1–68. Filed 4–21–67.

861,936. H AND DESIGN. Clark Equipment Company (Delaware corporation), by merger and change of name from Clark Equipment Company (Michigan corporation). SN 269,975. Pub. 10–1–68. Filed 4–25–67.

861,937. MISCELLANEOUS DESIGN. Vichek Tool Company. SN 271,665. Pub. 10–1–68. Filed 5–16–67.

861,938. GRAEBER. Powers & Eaton Industries, Inc. SN 274,652. Pub. 10–1–68. Filed 6–23–67.

861,939. SUPER TRONIC. Omark Industries, Inc. SN 275,073. Pub. 10–1–68. Filed 6–29–67.

861,940. S FLEX AND DESIGN. Ackermann und Schmitt K.G. SN 275,734. Pub. 10–1–68. Filed 7–11–67.

861,941. PECO. Performance Equipment Co., Ltd. SN 276,949. Pub. 10–1–68. Filed 7–27–67.

861,942. ULTRAMATIC. Ultramatic Equipment Co. SN 277,484. Pub. 10–1–68. Filed 8–3–67.

861,943. TIRLIFT. Verlinde S.A. SN 278,049. Pub. 10–1–68. Filed 8–10–67.

861,944. ALCO AND DESIGN. Al Nyman & Son, Inc. SN 278,408. Pub. 10–1–68. Filed 8–16–67.

861,945. POLAR-VEND AND DESIGN. Lanex Importing Company. SN 280,601. Pub. 10–1–68. Filed 9–18–67.

861,946. EE (DESIGN). Electro Engineering Products Co., Inc. SN 280,775. Pub. 10–1–68. Filed 9–20–67.

861,947. BUSH-WHACKER. Jonas Harry Steinert, d.b.a. G. L. Turner Company. SN 280,821. Pub. 10–1–68. Filed 9–20–67.

861,948. CARPENTER. Carpenter Manufacturing Co. Inc. SN 281,549. Pub. 10–1–68. Filed 10–2–67.

861,949. HYDRASLIP. Hydraslip, Inc. SN 283,895. Pub. 10–1–68. Filed 11–1–67.

861,950. MISCELLANEOUS DESIGN. Dana Corporation. SN 284,171. Pub. 10–1–68. Filed 11–6–67.

861,951. SAMCO. United Shoe Machinery Corporation. SN 286,455. Pub. 10–1–68. Filed 12–7–67.

Class 24 — Laundry Appliances and Machines

861,952. THERMOGRADUAL. Industrie A. Zanussi. SN 271,562. Pub. 10–1–68. Filed 3–14–67.

Class 25 — Locks and Safes

861,843. (See Class 2 for this trademark.)

861,953. INTEGRALOCK. Sargent & Company. SN 290,194. Pub. 10–1–68. Filed 2–2–68.

Class 26 — Measuring and Scientific Appliances

861,849. (See Class 3 for this trademark.)

861,856. (See Class 6 for this trademark.)

861,910. (See Class 21 for this trademark.)

861,931. (See Class 23 for this trademark.)

861,954. VIVOSTAR. Williams Gold Refining Co. Inc. SN 246,119. Pub. 10–1–68. Filed 5–19–66.

861,955. IFD. In-Flight Devices Corp. SN 270,252. Pub. 10–1–68. Filed 4–28–67.

861,956. BEEDE. Beede Electrical Instrument Co., Inc. SN 274,937. Pub. 10–1–68. Filed 6–28–67.

861,957. AUTO-GEL. Grafar Corporation. SN 281,699. Pub. 10–1–68. Filed 10–3–67.

861,958. STEELE'S. The Columbus Dental Manufacturing Company. SN 299,325. Pub. 10–1–68. Filed 5–29–68.

Class 27 — Horological Instruments

861,959. J AND DESIGN. Firma Gebruder Jungbans Aktiengesellschaft. SN 240,286. Pub. 10–1–68. Filed 3–7–66.

861,960. ULTRAMAR. Jesus Chagoyen, d.b.a. Chagoyen Jewelry. SN 292,888. Pub. 10–1–68. Filed 3–11–68.

861,961. SPEIDEL. Textron Inc. MULTIPLE CLASS (Classes 27 and 28). SN 293,772. Pub. 10–1–68. Filed 3–21–68.

Class 28 — Jewelry and Precious-Metal Ware

861,961. (See Class 27 for this trademark.)

861,962. PIERCE ME NOT. Romega, Incorporated. SN 278,245. Pub. 10–1–68. Filed 8–14–67.

861,963. PRE-POSAL. Plainville Stock Company. SN 292,956. Pub. 10–1–68. Filed 3–11–68.

861,964. KID STUFF. Raleigh Mfg. Co. SN 293,577. Pub. 10–1–68. Filed 3–18–68.

Class 29 — Brooms, Brushes, and Dusters

861,965. FLOOR MASTER. The Drackett Company. SN 289,790. Pub. 10–1–68. Filed 1–29–68.

861,966. SONA STREAM. Bennett Industries, Inc. SN 293,775. Pub. 10–1–68. Filed 3–21–68.

Class 30 — Crockery, Earthenware, and Porcelain

861,967. AMERICAN MANOR CHINA. Shenango Ceramics, Inc. SN 276,767. Pub. 10–1–68. Filed 7–25–67.

861,968. ROYAL KENDALL. Toscany Imports Ltd. MULTIPLE CLASS (Classes 30, 33, and 50). SN 292,046. Pub. 10–1–68. Filed 2–28–68.

861,969. CROWN WREATH. Castleton China, Inc. SN 293,694. Pub. 10–1–68. Filed 3–20–68.

Class 31 — Filters and Refrigerators

861,906. (See Class 19 for this trademark.)

Class 32 — Furniture and Upholstery

861,843. (See Class 2 for this trademark.)

861,970. SHAFTI-DOME. American Hospital Supply Corporation. SN 263,733. Pub. 10–1–68. Filed 2–1–67.

861,971. KMC AND DESIGN. Kinder Manufacturing Company, Inc. SN 275,946. Pub. 10–1–68. Filed 7–13–67.

861,972. BOUNCINETTE. B. J. Ball Limited. SN 282,877. Pub. 10–1–68. Filed 10–19–67.

861,973. REPRODUX AND DESIGN. Bevan Funnell Limited. SN 288,770. Pub. 10–1–68. Filed 1–15–68.

861,974. LADY MARIAN. Premium Corporation of America, Inc. SN 295,843. Pub. 10–1–68. Filed 4–17–68.

861,975. ETCETERAS. Mattel, Inc. SN 300,785. Pub. 10–1–68. Filed 6–19–68.

Class 33 — Glassware

861,968. (See Class 30 for this trademark.)

861,976. MISCELLANEOUS DESIGN. Continental Can Company, Inc. SN 290,826. Pub. 10–1–68. Filed 2–12–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

861,977. NORGE. Borg-Warner Corporation. SN 273,472. Pub. 4–23–68. Filed 6–9–67.

861,978. GRAHAMITE. Graham Manufacturing Co., Inc. SN 282,574. Pub. 10–1–68. Filed 10–16–67.

861,979. ENVIRATECH. Becton, Dickinson and Company. SN 299,620. Pub. 10–1–68. Filed 6–4–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

861,931. (See Class 23 for this trademark.)

Class 36 — Musical Instruments and Supplies

861,908. (See Class 21 for this trademark.)

861,909. (See Class 21 for this trademark.)

Class 37 — Paper and Stationery

861,980. SUN AND RAIN (DESIGN). The Brown-Bridge Mills, Inc. SN 284,987. Pub. 10–1–68. Filed 11–16–67.

Class 38 — Prints and Publications

861,981. GOURMANIA GUIDE. Gourmania Incorporated. SN 267,942. Pub. 10–1–68. Filed 3–30–67.

861,982. SCOTFORD UNCIAL. Visual Graphics Corporation. SN 268,814. Pub. 10–1–68. Filed 4–10–67.

861,983. DEUTSCH BLACK. Visual Graphics Corporation. SN 268,820. Pub. 10–1–68. Filed 4–10–67.

861,984. DAILY BLESSING. Oral Roberts Evangelistic Association, Inc. SN 283,712. Pub. 10–1–68. Filed 10–30–67.

861,985. BLUE BOOK. Implement & Tractor Publications, Inc. SN 284,665. Pub. 10–1–68. Filed 11–13–67.

861,986. MISCELLANEOUS DESIGN. McGraw-Hill, Inc. SN 285,747. Pub. 10–1–68. Filed 11–28–67.

861,987. GOLDEN THOUGHTS. Hallmark Cards, Incorporated, d.b.a. Ambassador Cards. SN 286,523. Pub. 10–1–68. Filed 12–8–67.

861,988. SEA & SKI SUN. Sea & Ski Corporation. SN 292,618. Pub. 10–1–68. Filed 3–6–68.

861,989. RCA. Radio Corporation of America. SN 296,926. Pub. 10–1–68. Filed 4–30–68.

861,990. ENEMIES OF SMOKING, INC., ETC. AND DESIGN. Enemies of Smoking, Inc. SN 299,275. Pub. 10–1–68. Filed 5–29–68.

861,991. JOBBER & WAREHOUSE EXECUTIVE. Hunter Publishing Company. SN 301,885. Pub. 10–1–68. Filed 7–3–68.

861,992. L AND DESIGN. Thomas J. Lipton, Inc. SN 302,193. Pub. 10–1–68. Filed 7–8–68.

861,993. LIPTON AND DESIGN. Thomas J. Lipton, Inc. SN 302,194. Pub. 10–1–68. Filed 7–8–68.

Class 39 — Clothing

861,878. (See Class 16 for this trademark.)

861,994. POLY PLAY. Surf Mfg., Inc. SN 271,855. Pub. 10–1–68. Filed 5–18–67.

861,995. GRANDE DECORATION. Damon Creations, Inc. SN 272,173. Pub. 10–1–68. Filed 5–23–67.

861,996. BUGGIES AND DESIGN. Foster Industries, Inc. SN 272,637. Pub. 10–1–68. Filed 5–29–67.

861,997. FLING-THINGS. Fling-Things, Inc. SN 272,718. Pub. 10–1–68. Filed 5–31–67.

861,998. DALTON AND DESIGN. Dalton of America, Inc. SN 274,861. Pub. 10–1–68. Filed 7–23–68.

861,999. ANASTASIAS. Anastasia's. SN 275,606. Pub. 10–1–68. Filed 7–10–67.

862,000. BRITISH SQUIRES. Intercontinent Shoe Corporation. SN 275,759. Pub. 10–1–68. Filed 7–11–67.

862,001. ELLE. France Editions & Publications, assignee of S.A.R.L. Editions Mal. SN 276,692. Pub. 10–1–68. Filed 7–24–67.

862,002. SIGNOR GIOVELLI. Toby Lane, Inc. SN 277,942. Pub. 10–1–68. Filed 8–9–67.

862,003. DRYLON. Farah Manufacturing Company, Inc. SN 278,381. Pub. 10–1–68. Filed 8–16–67.

862,004. STYLED BY AMERICAN. American Uniform Company, Inc. SN 288,414. Pub. 10–1–68. Filed 10–26–67.

862,005. TRAVELER SHIFT BY LAURA MAE LIFE PRESS AND DESIGN. M. Serman & Co., Inc. SN 283,580. Pub. 10–1–68. Filed 10–27–67.

862,006. THE XTROVERT. Donnkenny, Inc. SN 283,781. Pub. 10–1–68. Filed 10–31–67.

862,007. BRUCK'S AND DESIGN. Bruck's, Inc. SN 283,861. Pub. 10–1–68. Filed 11–1–67.

862,008. COUNTRY SOPHISTICATES. Pendleton Woolen Mills. SN 285,672. Pub. 10–1–68. Filed 11–27–67.

862,009. DON ROBERTS. Freeman Enterprises, Inc. SN 285,829. Pub. 10–1–68. Filed 11–29–67.

862,010. STEGARI. Liebman-Weiss, Inc. SN 287,024. Pub. 10–1–68. Filed 12–15–67.

862,011. WOOLYNE. Stratford Neckwear Co., Inc. SN 287,045. Pub. 10–1–68. Filed 12–15–67.

862,012. BORN FREE BY POIRETTE. Poirette Corsets, Inc. SN 287,759. Pub. 10–1–68. Filed 12–28–67.

862,013. BRIDES SHOWCASE. Brides Showcase International, Inc. SN 287,795. Pub. 10–1–68. Filed 12–29–67.

862,014. S SIGALLO AND DESIGN. L & M Knitting Mills, Inc. SN 288,020. Pub. 10–1–68. Filed 1–3–68.

862,015. PILLOW PACERS. Gilbert Shoe Stores, Inc. SN 289,187. Pub. 10–1–68. Filed 1–19–68.

862,016. G.A.P.P. Arnold J. Weber, SN 289,362. Pub. 10–1–68. Filed 1–22–68.

862,017. LUSTER-LITE. Curlee Clothing Company. SN 289,575. Pub. 10–1–68. Filed 1–25–68.

862,018. HILTON HEAD. Barrow Manufacturing Company. SN 290,461. Pub. 10–1–68. Filed 2–7–68.

862,019. A ACME AND DESIGN. Acme Boot Company, Inc. SN 293,006. Pub. 10–1–68. Filed 3–12–68.

862,020. DINGO. Acme Boot Company, Inc. SN 293,008. Pub. 10–1–68. Filed 3–12–68.

862,021. HAWK EYE AND DESIGN. Acme Boot Company, Inc. SN 293,009. Pub. 10–1–68. Filed 3–12–68.

862,022. TEMPO INTERNATIONALE. The Joseph & Feiss Company. SN 294,198. Pub. 10–1–68. Filed 3–26–68.

862,023. WAISTAMERS. Apparel Industries of California, Inc. SN 294,716. Pub. 10–1–68. Filed 4–2–68.

862,024. GORDON OF PHILADELPHIA AND DESIGN. Gordon-Ford Inc. SN 296,319. Pub. 10–1–68. Filed 4–23–68.

862,025. D'ANGELLO DELLO. President Shops, Inc. SN 297,802. Pub. 10–1–68. Filed 5–9–68.

862,026. TOSSUMS. Butterworth Industries, Inc. SN 298,086. Pub. 10–1–68. Filed 5–14–68.

862,027. THIN ICE. C. K. Slaughter Inc. SN 298,631. Pub. 10–1–68. Filed 5–20–68.

862,028. HER-EM. Tip Top Hosiery Mills, Inc. SN 298,881. Pub. 10–1–68. Filed 5–22–68.

862,029. PLAZA SQUARE. New England Robe Corp. SN 299,153. Pub. 10–1–68. Filed 5–27–68.

862,030. UNDERCURRENT. Maidenform, Inc. SN 301,017. Pub. 10–1–68. Filed 6–21–68.

862,031. TAME-ME-TIGHTS. Maidenform, Inc. SN 301,018. Pub. 10–1–68. Filed 6–21–68.

Class 40 — Fancy Goods, Furnishings, and Notions

862,032. STYLIST. La Maur, Inc., assignee of Amerace Corporation. SN 225,251. Pub. 5–31–66. Filed 8–9–65.

862,033. ROFFLER. Roffler Sculptur-Kut National Franchised System, Inc. MULTIPLE CLASS (Classes 40 and 51). SN 268,119. Pub. 10–1–68. Filed 4–3–67.

862,034. OSTER. John Oster Manufacturing Co. SN 292,953. Pub. 10–1–68. Filed 3–11–68.

862,035. LEONKA. Lillian Ruth Dowell, d.b.a. Leonka Boxer. SN 293,486. Pub. 10–1–68. Filed 3–18–68.

862,036. DON JUAN. Import-Export Corporation. SN 293,523. Pub. 10–1–68. Filed 3–18–68.

Class 41 — Canes, Parasols, and Umbrellas

862,037. DESIGN OF FOX UNDER UMBRELLA. Samuel Fox & Company Limited. SN 283,651. Pub. 10–1–68. Filed 10–30–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

862,038. KNIT-ONE. Polikoff Textiles, Inc. SN 278,305. Pub. 10–1–68. Filed 6–7–67.

862,039. Jomour. Donald E. Magee, d.b.a. Don Magee Studios. SN 283,805. Pub. 10–1–68. Filed 10–31–67.

862,040. SEAGUARD. J. P. Stevens & Co., Inc. SN 285,472. Pub. 10–1–68. Filed 11–22–67.

862,041. DECATHLON. Wellco Carpet Corp. SN 292,523. Pub. 10–1–68. Filed 3–5–68.

862,042. HAROLON. The Harodite Finishing Company, Inc. SN 292,577. Pub. 10–1–68. Filed 3–6–68.

862,043. TRAVLRIB. J. P. Stevens & Co., Inc. SN 292,626. Pub. 10–1–68. Filed 3–6–68.

862,044. TRAVLTUCK. J. P. Stevens & Co., Inc. SN 292,627. Pub. 10–1–68. Filed 3–6–68.

862,045. STEVTUCK. J. P. Stevens & Co., Inc. SN 292,628. Pub. 10–1–68. Filed 3–6–68.

862,046. ROBERTSON AND DESIGN. Robertson Carpet Corp. SN 292,716. Pub. 10–1–68. Filed 3–7–68.

862,047. CERTIFAB. Collins & Aikman Corporation. SN 293,021. Pub. 10–1–68. Filed 3–12–68.

862,048. DURADUCK. Collins & Aikman Corporation. SN 293,112. Pub. 10–1–68. Filed 3–13–68.

862,049. HYCONE. Cone Mills Incorporated. SN 301,009. Pub. 10–1–68. Filed 6–21–68.

862,050. HYFAB. Cone Mills Incorporated. SN 301,010. Pub. 10–1–68. Filed 6–21–68.

Class 44 — Dental, Medical, and Surgical Appliances

862,051. HALL CRANIOTOME. Air Instruments, Inc. SN 257,142. Pub. 10–1–68. Filed 10–25–66.

862,052. ROFFLER SCULPTUR KUT ETC. AND DESIGN. Roffler Sculptor-Kut National Franchised System, Inc. MULTIPLE CLASS (Classes 44 and 51). SN 268,118. Pub. 10–1–68. Filed 4–3–67.

862,053. JK AND DESIGN. Jay-Kay Distributors, Inc. SN 271,712. Pub. 10–1–68. Filed 5–17–67.

862,054. SPLINTER. Splinter Company. SN 272,422. Pub. 10–1–68. Filed 5–25–67.

862,055. SCOTT. Scott Paper Company. SN 272,860. Pub. 10–1–68. Filed 6–1–67.

862,056. Q-RET. Helen E. Chatfield. SN 275,226. Pub. 10–1–68. Filed 7–3–67.

862,057. MELOLIN. T. J. Smith & Nephew, Limited. SN 275,962. Pub. 10–1–68. Filed 7–13–67.

862,058. KLINI-KITS. Acme Cotton Products Co., Inc. SN 287,126. Pub. 10–1–68. Filed 12–18–67.

862,059. VOCALIZER. Zenith Radio Corporation. SN 287,985. Pub. 10–1–68. Filed 1–2–68.

862,060. CRAMEROL. The Cramer Chemical Company. SN 291,359. Pub. 10–1–68. Filed 2–19–68.

862,061. NOTRAUMA. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 291,527. Pub. 10–1–68. Filed 2–20–68.

862,062. CONTOUR. Dynamic Classics, Ltd. SN 294,882. Pub. 10–1–68. Filed 4–4–68.

862,063. EISELE AND DESIGN. Eisele & Company, Inc. SN 295,284. Pub. 10–1–68. Filed 4–10–68.

862,064. CERAMCO. Ceramco, Inc. SN 298,382. Pub. 10–1–68. Filed 5–17–68.

862,065. ALEAVE. Chesebrough-Pond's Inc. SN 298,701. Pub. 10–1–68. Filed 5–21–68.

862,066. PHOENIX SWAB. Phoenix Products Company, Inc. SN 298,905. Pub. 10–1–68. Filed 5–23–68.

862,067. ASR AND DESIGN. Philip Morris Incorporated, d.b.a. ASR Industries. SN 298,994. Pub. 10–1–68. Filed 5–24–68.

862,068. VAGGIES. Marvin B. Rodney, d.b.a. DSA Medical Group Laboratories. SN 299,736. Pub. 10–1–68. Filed 6–5–68.

862,069. JOBST-JET. Jobst Institute Inc. SN 300,655. Pub. 10–1–68. Filed 6–18–68.

Class 45 — Soft Drinks and Carbonated Waters

862,070. WINCHELL'S AND DESIGN. Winchell Donut House, Inc. SN 272,974. Pub. 10–1–68. Filed 6–5–67.

Class 46 — Foods and Ingredients of Foods

862,071. JUICES WILD. Duffy-Mott Company, Inc. SN 256,340. Pub. 10–1–68. Filed 10–13–66.

862,072. NOPCO CTC AND DESIGN. Diamond Shamrock Corporation, by merger and change of name from Nopco Chemical Company. SN 257,722. Pub. 10–24–67. Filed 11–1–66.

862,073. BANQUET. Beatrice Foods Co. SN 262,118. Pub. 4–9–68. Filed 1–9–67.

862,074. DUCAL. Tropicana Preserve Co., Inc. SN 265,751. Pub. 10–1–68. Filed 3–1–67.

862,075. TULIP (DESIGN). SCM Corporation, assignee of The Glidden Company. SN 266,418. Pub. 10–1–68. Filed 3–10–67.

862,076. WASA PARTY SQUARES. Wasabrod Aktiebolag, d.b.a. Wasa. SN 266,472. Pub. 10–1–68. Filed 3–10–67.

862,077. WASA PARTY SQUARES AND DESIGN. Wasabrod Aktiebolag, d.b.a. Wasa. SN 267,374. Pub. 10–1–68. Filed 3–10–67.

862,078. CHESTER THE CHICK AND DESIGN. W. O. Giles, d.b.a. Giles Enterprises. SN 268,306. Pub. 10–1–68. Filed 4–4–67.

862,079. B. LLOYD'S PECAN PRODUCTS AND DESIGN. B. Lloyd Woodall, d.b.a. Lloyd's Pecan Products. SN 271,559. Pub. 10–1–68. Filed 5–15–67.

862,080. SEELOCK. Bush Boake Allen Inc. SN 272,577. Pub. 10–1–68. Filed 5–29–67.

862,081. WINCHELL'S AND DESIGN. Winchell Donut House, Inc. SN 272,973. Pub. 10–1–68. Filed 6–5–67.

862,082. GALACTINA. Galactina & Biomalz AG. SN 273,057. Pub. 10–1–68. Filed 6–5–67.

862,083. CAP'N QUADE'S IMPERIAL AND DESIGN. Quade's Seafood Products, Inc. SN 273,307. Pub. 10–1–68. Filed 6–7–67.

862,084. TEM-COLE AND DESIGN. Tem-Cole, Inc., assignee of The Geo. Weasel, Jr. Pre-Pack Corporation. SN 274,010. Pub. 10–1–68. Filed 6–15–67.

862,085. WAIST-AWAY. Cumberland Packing Corp., assignee of Cumberland Packing Company. SN 274,957. Pub. 10–1–68. Filed 6–28–67.

862,086. WANETA. Atlantic Tuna Corporation (Proprietary) Limited. SN 277,610. Pub. 10–1–68. Filed 8–7–67.

862,087. DENNY'S. Denny's Restaurants, Inc. SN 281,045. Pub. 10–1–68. Filed 9–25–67.

862,088. ETC. Sidney's Food Products, Inc. SN 286,186. Pub. 10–1–68. Filed 12–4–67.

862,089. HAWAIIAN GIRL (DESIGN). Shak-Ur-Corn, Inc. SN 286,557. Pub. 10–1–68. Filed 12–8–67.

862,090. HEAVENLY LOAF. C. J. Patterson Company. SN 287,574. Pub. 10–1–68. Filed 12–26–67.

862,091. SCOTTY AND DESIGN. Ayrshire Breeders' Association. SN 288,669. Pub. 10–1–68. Filed 1–12–68.

862,092. PRO-RICH. Beverly E. Williams. SN 289,052. Pub. 10–1–68. Filed 1–17–68.

862,093. HOLIDAY. Robert L. Berner Company. SN 290,997. Pub. 10–1–68. Filed 2–14–68.

862,094. CUMBIA. Lucta, S.A. SN 291,272. Pub. 10–1–68. Filed 2–16–68.

862,095. THE GIRDLE BUSTER. Gourmet Foods, Incorporated. SN 291,467. Pub. 10–1–68. Filed 2–20–68.

862,096. MC. McCormick & Company, Incorporated. SN 292,218. Pub. 10–1–68. Filed 2–29–68.

862,097. MAGGIO STRICTLY BIG LEAGUE CALIFORNIA HONEY SWEET AND DESIGN. Joe Maggio. SN 295,598. Pub. 10–1–68. Filed 4–15–68.

862,098. THE SPREADABLES. Carnation Company. SN 296,107. Pub. 10–1–68. Filed 4–22–68.

862,099. MOTHER'S AND DESIGN. Mother's Cake & Cookie Co. SN 300,879. Pub. 10–1–68. Filed 6–20–68.

862,100. MOTHER'S AND DESIGN. Mother's Cake & Cookie Co. SN 300,880. Pub. 10–1–68. Filed 6–20–68.

862,101. FAIR SEAS. Ocean Garden Products, Inc. SN 302,198. Pub. 10–1–68. Filed 7–8–68.

862,102. SEA GARDEN. Ocean Garden Products, Inc. SN 302,199. Pub. 10–1–68. Filed 7–8–68.

Class 47 — Wines

862,103. FLORENS-LOUIS AND DESIGN. Kunkelmann et Cie. SN 279,077. Pub. 10–1–68. Filed 8–25–67.

Class 48 — Malt Beverages and Liquors

862,104. HANDY KEG. Lone Star Brewing Co. SN 275,766. Pub. 10–1–68. Filed 7–11–67.

Class 49 — Distilled Alcoholic Liquors

862,105. HOUSE OF SCOTS. Schenley Distillers, Inc. SN 291,778. Pub. 10–1–68. Filed 2–23–68.

Class 50 — Merchandise Not Otherwise Classified

861,931. (See Class 23 for this trademark.)

861,968. (See Class 30 for this trademark.)

862,106. PRIDECOTE. Hawkeye Steel Products, Incorporated. SN 264,055. Pub. 10–1–68. Filed 2–6–67.

862,107. WINDECOR. Windecor, Inc. SN 280,662. Pub. 10–1–68. Filed 9–18–67.

862,108. BAKER SCAFFOLD. Baker-Roos, Inc. SN 283,421. Pub. 10–1–68. Filed 10–26–67.

862,109. CADET HEAD (DESIGN). Afco Rubber Corporation. SN 288,417. Pub. 10–1–68. Filed 1–9–68.

862,110. LITTLE JEWELS. Slip-Pruf Service Corporation. SN 291,530. Pub. 10–1–68. Filed 2–20–68.

862,111. MASTER PAINTER. John Berg Manufacturing Co. SN 291,746. Pub. 10–1–68. Filed 2–23–68.

862,112. STERLING. John Berg Manufacturing Co. SN 291,747. Pub. 10–1–68. Filed 2–23–68.

862,113. MEYER-MOUNT. N. S. Meyer, Inc. SN 295,154. Pub. 10–1–68. Filed 4–8–68.

862,114. SGB SUREFRAME. Scaffolding (Great Britain) Limited. SN 295,677. Pub. 10–1–68. Filed 4–15–68.

Class 51 — Cosmetics and Toilet Preparations

862,033. (See Class 40 for this trademark.)

862,052. (See Class 44 for this trademark.)

862,115. ORCHIDEE EN FLEUR. Jean Eymond, Inc. SN 241,043. Pub. 1–31–67. Filed 3–15–66.

862,116. AVOCADO VELVET. Hain Pure Food Company, Inc., d.b.a. House of Hain. SN 267,421. Pub. 10–1–68. Filed 3–23–67.

862,117. ROYAL JAMAICAN. Port Royal Fragrance Ltd. SN 269,685. Pub. 10–1–68. Filed 4–20–67.

862,118. NO 1 CHANEL. Chanel Industries, Inc. SN 273,034. Pub. 10–1–68. Filed 6–5–67.

862,119. MAQUIMAT DE LANCOME. Lancome S.A. SN 275,535. Pub. 10–1–68. Filed 7–7–67.

862,120. NAIL SATIN. Max Factor & Co., d.b.a. Max Factor. SN 284,696. Pub. 10–1–68. Filed 11–13–67.

Class 52 — Detergents and Soaps

861,854. (See Class 6 for this trademark.)

862,121. SINGULIER. Pierre Cardin. SN 275,411. Pub. 10–1–68. Filed 4–28–67.

862,122. HYPERPHASE. Colgate-Palmolive Company. SN 281,683. Pub. 10–1–68. Filed 10–3–67.

862,123. LADY ASHLEY. Product Distributors Unlimited, Inc. SN 291,425. Pub. 10–1–68. Filed 2–19–68.

862,124. NU-WASH. Roberts and Porter, Inc. SN 292,296. Pub. 10–1–68. Filed 3–1–68.

862,125. SIMONIZ. Simoniz Company. SN 301,684. Pub. 10–1–68. Filed 7–1–68.

Service Marks

Class 100 — Miscellaneous

862,126. SABRE & SADDLE AND DESIGN. Pick Hotels Corporation. SN 242,046. Pub. 10–1–68. Filed 3–28–66.

862,127. THE WONDERFUL WORLD OF MAKE BELIEVE FLOWERS. John R. Tramposch, d.b.a. The Wonderful World of Make Believe Flowers. SN 256,778. Pub. 10–1–68. Filed 10–19–66.

862,128. TI. Transolve Systems, Inc., assignee of Transolve International, Inc. SN 257,424. Pub. 10–1–68. Filed S.R. 10–27–68; Am. P.R. 5–24–68.

862,129. MISCELLANEOUS DESIGN. American Investment Counseling Company. SN 268,372. Pub. 10–1–68. Filed 4–5–67.

862,130. INTERNATIONAL MINERAL ENGINEERS. International Mineral Engineers, Inc. SN 275,574. Pub. 10–1–68. Filed 7–10–67.

862,131. INTERNATIONAL MINERAL ENGINEERS IME AND DESIGN. International Mineral Engineers, Inc. SN 275,575. Pub. 10–1–68. Filed 7–10–67.

862,132. MISCELLANEOUS DESIGN. Ocean Technology, Inc. SN 287,456. Pub. 10–1–68. Filed 12–22–67.

Class 101 — Advertising and Business

862,133. TEMPOWER. Tempower, Inc. SN 252,909. Pub. 10–1–68. Filed 8–22–66.

862,134. BLUE G. Blue G Stamp Co. SN 258,777. Pub. 10–1–68. Filed 11–16–66.

862,135. VIP SYSTEMS. Van Horn Information Processing Systems Corporation. SN 263,418. Pub. 10–1–68. Filed 1–26–67.

862,136. MEETING DYNAMICS AND DESIGN. Diners/Fugazy Travel, Inc., assignee of Fugazy Travel Bureau, Inc. SN 263,556. Pub. 9–3–68. Filed 1–30–67.

862,137. AUTOHAUS INTERNATIONAL INCORPORATED. Autohaus International, Inc. MULTIPLE CLASS (Classes 101 and 103). SN 265,968. Pub. 10–1–68. Filed 3–6–67.

862,138. MISCELLANEOUS DESIGN. Data Processing Financial & General Corporation, assignee of Lear Siegler, Inc. SN 271,311. Pub. 10–1–68. Filed 5–12–67.

862,139. MISCELLANEOUS DESIGN. Compar Corporation. SN 274,955. Pub. 10–1–68. Filed 6–28–67.

862,140. WHITE COLLAR (DESIGN). White Collar Girls of America, Incorporated. SN 275,336. Pub. 10–1–68. Filed 7–3–67.

862,141. TREAT-O-RAMA. Dairy Queen, Inc. SN 278,472. Pub. 10–1–68. Filed 8–17–67.

862,142. DCA AND DESIGN. Data Corporation of America. SN 278,473. Pub. 10–1–68. Filed 8–17–67.

862,143. LANCOR. Acme Visible Records, Inc. SN 279,035. Pub. 10–1–68. Filed 8–25–67.

862,144. THE IMPERIAL SHOP. Rich's, Inc. SN 284,239. Pub. 10–1–68. Filed 11–6–67.

862,145. CS AND DESIGN. Color Systems, Inc. SN 284,966. Pub. 10–1–68. Filed 11–16–67.

862,146. MISCELLANEOUS DESIGN. Coronet Marketing, Inc. SN 286,416. Pub. 10–1–68. Filed 12–7–67.

862,147. RECORDACCOUNT. The First National Bank of Denver. SN 290,688. Pub. 10–1–68. Filed 2–9–68.

862,148. GIVEN. Given Machinery. SN 296,149. Pub. 10–1–68. Filed 4–22–68.

Class 102 — Insurance and Financial

862,149. THE PREMIUM FINANCE COMPANY PREFCO AND DESIGN. Prefco Corporation. SN 261,876. Pub. 10–1–68. Filed 1–3–67.

862,150. INTERBANK CARD. Interbank Card Association, by change of name from Interbank Card, Inc. SN 267,756. Pub. 10–1–68. Filed 3–28–67.

862,151. BRI AND DESIGN. Babson's Reports, Incorporated. SN 282,169. Pub. 10–1–68. Filed 10–10–67.

862,152. PEOPLES STATE BANK AND DESIGN. Peoples State Bank of Tulsa, Oklahoma. SN 287,490. Pub. 10–1–68. Filed 12–26–67.

Class 103 — Construction and Repair

862,137. (See Class 101 for this trademark.)

862,153. MISCELLANEOUS DESIGN. Delta Piping Company. SN 269,643. Pub. 10–1–68. Filed 4–20–67.

862,154. MR. POWER CLEAN AND DESIGN. Power Clean Industries, Inc. SN 273,972. Pub. 10–1–68. Filed 6–15–67.

862,155. STRATABLAST. The Dow Chemical Company. SN 282,785. Pub. 10–1–68. Filed 10–18–67.

Class 105 — Transportation and Storage

862,156. THE MOST TRUSTED NAME IN TRAVEL. The American Automobile Association (Incorporated). SN 261,963. Pub. 10–1–68. Filed 1–5–67.

862,157. THE MOUNTAIN MEN AND DESIGN. Burt Green, d.b.a. The Mountain Men. SN 282,913. Pub. 10–1–68. Filed 10–19–67.

862,158. VIAJES MELIA. Viajes Melia, S.A. SN 283,945. Pub. 10–1–68. Filed 11–1–67.

862,159. HEP AND DESIGN. Ambassador Travel Service of Michigan, Inc. SN 286,986. Pub. 10–1–68. Filed 12–15–67.

862,160. MITCO AND DESIGN. Modern Intermodal Traffic Corp. SN 288,844. Pub. 10–1–68. Filed 1–15–68.

862,161. DELIVERY MAN (DESIGN). Mail Delivery Service Co., Inc. SN 298,775. Pub. 10–1–68. Filed 5–22–68.

Class 107 — Education and Entertainment

862,162. UNI-SKI. Sherburne Corporation. SN 271,649. Pub. 10–1–68. Filed 5–16–67.

862,163. CARETEX. Caretex. SN 273,599. Pub. 10–1–68. Filed 6–12–67.

862,164. GORDON. Gordon Research Conferences. SN 273,634. Pub. 10–1–68. Filed 6–12–67.

Collective Membership Mark

Class 200

862,165. NAMTA AND DESIGN. National Art Materials Trade Association. SN 298,844. Pub. 10–1–68. Filed 5–22–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

862,192. Chas. T. Main, Inc., Boston, Mass. SN 285,881. Filed 11–30–67.

MAIN

Class 100—Miscellaneous

For Complete, Integrated Engineering Services for Industrial Plants, Thermal and Hydroelectric Power Plants, Power Transmission Systems, Textile Mills, Pulp and Paper Mills, Publishing Plants, Nuclear Facilities, Process Facilities, Water Resource Developments, Parks and Recreation Facilities, and Public Works, Including Studies, Reports, Planning, Drawings, and Specifications (Int. Cl. 42).

Class 103—Construction and Repair

For Construction Management of Industrial Plants, Thermal and Hydroelectric Power Plants, Power Transmission Systems, Textile Mills, Pulp and Paper Mills, Publishing Plants, Nuclear Facilities, Process Facilities, Water Resource Developments, Parks and Recreation Facilities, and Public Works (Int. Cl. 37).

First use Jan. 3, 1965.

SECTION 2

Class 4 — Abrasives and Polishing Materials

862,166. W. J. Hagerty & Sons, Ltd., Inc., South Bend, Ind. SN 286,138. Filed P.R. 12–4–67; Am. S.R. 10–7–68.

SILVERSMITHS'

For Silver Polish and Tarnish Preventative and Chemically Impregnated Polishing Gloves (Int. Cls. 4 and 21).
First use Feb. 1, 1967.

Class 6 — Chemicals and Chemical Compositions

862,167. Anderson Chemical Company, Litchfield, Minn. SN 276,627. Filed P.R. 7–24–67; Am. S.R. 9–18–68.

LETHAL 13

For Insecticide in Liquid Form To Be Sprayed (Int. Cl. 5).
First use Apr. 30, 1962.

862,168. Spray Products Corporation, Oaks, Pa. SN 294,239. Filed P.R. 3–27–68; Am. S.R. 9–11–68.

SURFACE SHIELD

For Chemical Preparation Which Displaces Water and Moisture, Prevents Rust, Forms a Protective Film, Seals Surfaces, Penetrates, Loosens, Lubricates and Resists Salt Water Damage on Metal Surfaces (Int. Cl. 1).
First use July 1963.

Class 22 — Games, Toys, and Sporting Goods

862,169. Jack Russell Company, Inc., Key Biscayne, Fla. SN 280,885. Filed P.R. 9–21–67; Am. S.R. 8–12–68.

BAT-A-BALL

For Toy Consisting of a Plastic or Wooden Paddle and a Rubber Ball Connected by an Elastic Cord (Int. Cl. 28).
First use Mar. 6, 1967.

Class 32 — Furniture and Upholstery

862,170. National Furniture Manufacturing Co., Inc., Evansville, Ind. SN 263,936. Filed P.R. 2–3–67; Am. S.R. 10–9–68.

THE ROCKER-RECLINER THAT DOES EVERYTHING!

For Rocker-Recliner Chair (Int. Cl. 20).
First use during July 1966.

Class 36 — Musical Instruments and Supplies

862,171. Ervin A. Steiner, Jr., d.b.a. The Detroit Sound Recording Company, Detroit, Mich. SN 267,859. Filed P.R. 3-29-67; Am. S.R. 9-11-68.



The drawing is lined for the colors blue and orange.
For Phonograph Records (Int. Cl. 9).
First use Mar. 1, 1966.

Class 38 — Prints and Publications

862,172. Petersen Publishing Company, Los Angeles, Calif. SN 256,131. Filed P.R. 10-10-66; Am. S.R. 9-30-68.

HOD ROD INDUSTRY NEWS

For Magazine (Int. Cl. 16).
First use August 1966.

862,173. Rand Securities Research Corporation, Beverly Hills, Calif., assignee of Richard L. Ulmer, d.b.a. The Rand Stock Market Calendar, Van Nuys, Calif. SN 288,264. Filed P.R. 1-8-68; Am. S.R. 9-12-68.

RAND

For Calendar Booklet Containing Stock Market Data (Int. Cl. 16).
First use Aug. 23, 1966

Class 39 — Clothing

862,174. Bama-Werke Curt Baumann, Mosbach, Baden, Germany. SN 246,149. Filed P.R. 5-20-66; Am. S.R. 8-26-68.

SOKKETS

Owner of German Reg. No. 804,944, dated July 21, 1964.
For Boot Liners (Int. Cl. 25).
First use May 21, 1962; in commerce Oct. 9, 1962.

Class 44 — Dental, Medical, and Surgical Appliances

862,175. The Kendall Company, Walpole, Mass. SN 291,078. Filed P.R. 2-14-68; Am. S.R. 8-13-68.

COMIC STRIPS

For Adhesive Bandages (Int. Cl. 5).
First use Apr. 3, 1967.

Class 46 — Foods and Ingredients of Foods

862,176. The Nestle Company, Inc., White Plains, N.Y. SN 265,205. Filed P.R. 2-21-67; Am. S.R. 10-7-68.

ALL WEATHER

For Milk Chocolate (Int. Cl. 30).
First use Oct. 14, 1943.

862,177. Costa Ice Cream Company, Woodbridge, N.J. SN 265,806. Filed 7-30-68.



For Ice Cream (Int. Cl. 30).
First use Jan. 10, 1967

862,178. Abilene Candy Company, Inc., Abilene, Tex. SN 270,334. Filed P.R. 5-1-67; Am. S.R. 9-19-68.

PIK-L-POP

For Candy Suckers (Int. Cl. 30).
First use January 1955.

862,179. Tasty Baking Company, Philadelphia, Pa. SN 271,894. Filed P.R. 5-19-67; Am. S.R. 9-27-68.

tasty-twist

For Pretzels (Int. Cl. 30).
First use May 9, 1967

862,180. Stefano Pernigotti & Figlio S.p.A., Novi Ligure, Italy. SN 272,958. Filed 6-2-67.

PERNIGOTTI

Priority claimed under Sec. 44(d) on Italian application filed Dec. 16, 1966; Reg. No. 217,151, dated Nov. 22, 1967.
Owner of U.S. Reg. No. 827,405.
For Ingredients for the Manufacture of Ice-Cream—Namely, Almond Paste, Honey, Sugar, Unshelled Hazel Nuts, Unshelled Pistachio, Cocoa; and Fluid Mixture Ice-Cream Coatings Consisting of Cocoa, Sugar, and Refined Coconut Oil; and Pudding Powders (Int. Cls. 29, 30, and 31).

862,181. Bridgford Foods Corporation, Anaheim, Calif. SN 281,958. Filed P.R. 10-6-67; Am. S.R. 10-8-68.

PANNED "READY-ROLLS"

For Bakery Goods—Namely, Frozen Dough Portions To Be Baked Into Rolls (Int. Cl. 30).
First use July 3, 1967.

862,182. Robert Morton Cullison, Jr., d.b.a. Cully's, Havre de Grace, Md. SN 282,687. Filed P.R. 10-17-67; Am. S.R. 9-27-67.

CULLY'S

For Refrigerated Cole Slaw (Int. Cl. 29).
First use Sept. 18, 1967.

862,183. Sunny Farms, Inc., Edison, Calif. SN 303,239. Filed P.R. 7-22-68; Am. S.R. 9-30-68.

SOMETHING SPECIAL

For Fresh Vegetables (Int. Cl. 31).
First use on or about May 1, 1967.

Class 49 — Distilled Alcoholic Liquors

862,184. James Buchanan & Company Limited, Piccadilly, London, England. SN 290,577. Filed 2-8-68.

"BLACK & WHITE"
BUCHANAN'S
BLENDED SCOTCH WHISKY
BLENDED & BOTTLED IN SCOTLAND BY
James Buchanan & Co.
DISTILLERS
GLASGOW & LONDON.
PRODUCT OF SCOTLAND
4/5 QUART 100% SCOTCH WHISKIES 86.8 PROOF

Owner of Reg. Nos. 38,774, 845,577, and others.
For Scotch Whisky (Int. Cl. 33).
First use July 1, 1966; in commerce Aug. 1, 1966.

Class 50 — Merchandise Not Otherwise Classified

862,185. The Fiberite Corporation, Winona, Minn. SN 262,034. Filed P.R. 1-6-67; Am. S.R. 9-24-68.

Fibertape

For Resin Impregnated Tape Wrapping Fabric for Use in Progressive Cure Tape Wrapping Techniques for Fabricating Products Such as Rocket and Missile Exit Cones, Liquid Chambers, Liners, Insulators, and the Like (Int. Cl. 17).
First use June 24, 1966.

Class 51 — Cosmetics and Toilet Preparations

862,186. Helene Curtis Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. SN 265,524. Filed P.R. 2-27-67; Am. S.R. 9-12-68.

WHITE FROSTING

For Hair Lightener Preparation for Use With Hydrogen Peroxide (Int. Cl. 3).
First use on or about Jan. 25, 1967.

862,187. Clairol Incorporated, New York, N.Y. SN 275,633. Filed P.R. 7-10-67; Am. S.R. 9-30-68.

HEADY WINE

For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use June 7, 1967.

862,188. Chadbourn Gotham, Inc., Charlotte, N.C. SN 288,000. Filed P.R. 1-3-68; Am. S.R. 9-27-68.

SMOOTH-ONS-BEFORE-NYLONS

For Skin Softener Lotion (Int. Cl. 3).
First use Sept. 22, 1967.

Class 52 — Detergents and Soaps

862,189. J. C. Whitlam Manufacturing Co., Inc., Wadsworth, Ohio. SN 272,232. Filed P.R. 5-23-67; Am. S.R. 9-23-68.

hands-o-klean

The drawing is lined for the color red.
For Waterless Hand Cleaner (Int. Cl. 3).
First use on or about Apr. 26, 1967.

Class 100 — Miscellaneous

862,192. See Section 1 (Combined Certificate).

862,190. National Association of Catholic Alumni Clubs, Inc., Boston, Mass. SN 247,389. Filed P.R. 6-6-66; Am. S.R. 9-11-68.

CATHOLIC ALUMNI CLUB

For Promoting the Interests of Unmarried College or University Graduates of the Catholic Faith in Religious, Community Service, Social, Recreational and Cultural Activities (Int. Cl. 42).
First use March 1940.

862,191. Donald C. Linn, Mt. Prospect, Ill. SN 268,745. Filed 4-10-67.

LE PETIT SIDEWALK CAFE

For Restaurant Services (Int. Cl. 42).
First use during or about January 1964.

Class 101 — Advertising and Business

862,193. Brockton Public Market, Inc., Brockton, Mass. SN 281,959. Filed P.R. 10–6–67; Am. S.R. 9–17–68.

PENNY POWER PRICES

For Grocery Store Services (Int. Cl. 35).
First use on or about Mar. 31, 1967.

Class 102 — Insurance and Financial

862,194. The Independent Life and Accident Insurance Company, Jacksonville, Fla. SN 306,844. Filed 9–9–68.

THERE IS NO SUBSTITUTE FOR LIFE INSURANCE

For Underwriting Life, Health and Accident Insurance (Int. Cl. 36).
First use in or about and not later than 1944.

Class 103 — Construction and Repair

862,192. See Section 1 (Combined Certificate).

Class 107 — Education and Entertainment

862,195. California International Sea Festival at Long Beach, Inc., Long Beach Calif. SN 263,892. Filed P.R. 2–3–67; Am. S.R. 9–17–68.

SEA FESTIVAL

For Arranging and Staging Annual Fishing, Water Ski, Boat, Swimming, Diving, and Related Aquatic Competitions, Costume Ball, Art Exhibit, Music Concert, and Parade (Int. Cl. 35).
First use on or about March 1966.

TRADEMARK REGISTRATIONS RENEWED

69,269. "VENUS" ETC. AND DESIGN. Cl. 51 (Int. Cl. 3). 6–2–08.
69,497. "CEROTTO BERTELLI" ETC. AND DESIGN. Cl. 18 (Int. Cl. 5). 6–16–08.
70,808. ALVA. Cl. 14 (Int. Cl. 6). 10–6–08.
70,961. MAXIM. Cl. 46 (Int. Cl. 29). 10–20–08.
71,265. HARRIET HUBBARD AYER. Cl. 51 (Int. Cl. 3). 11–10–08.
71,412. R & R AND DESIGN. Cl. 46 (Int. Cl. 29). 11–24–08.
73,059. AC BARRY. Cl. 18 (Int. Cl. 5). 3–16–09.
207,098. THOMPSON'S DOUBLE MALTED. Cl. 46 (Int. Cl. 30). 12–15–25.
245,454. SAMSON. Cl. 1 (Int. Cl. 17). 8–14–28.
246,009. YODORA. Cl. 51 (Int. Cl. 5). 8–28–28.
246,734. "PENN-OLA" AND DESIGN. Cl. 6 (Int. Cl. 5). 9–11–28.
247,413. ROSE-DALE. Cl. 46 (Int. Cls. 29, 30, and 31). 9–25–28.
247,844. STAR (DESIGN). Cl. 22 (Int. Cl. 28). 10–9–28.
248,118. "K-N" AND OVAL BACKGROUND. Cl. 1 (Int. Cl. 6). 10–16–28.
248,315. CREO-TERPIN. Cl. 18 (Int. Cl. 5). 10–16–28.
251,334. WEST PEAK. Cl. 46 (Int. Cl. 29). 1–1–29.
251,840. FURLANA. Cl. 42 (Int. Cl. 24). 1–15–29.
251,858. KARRATEEN. Cl. 42 (Int. Cl. 24). 1–15–29.
252,456. CELANTHRENE. Cl. 6 (Int. Cl. 2). 2–5–29.
252,886. TELGA. Cl. 42 (Int. Cl. 24). 2–19–29.
253,027. LORDA. Cl. 42 (Int. Cl. 24). 2–19–29.
253,074. CARMA. Cl. 42 (Int. Cl. 24). 2–19–29.
253,076. ELDA. Cl. 42 (Int. Cl. 24). 2–19–29.
253,471. FORSTA. Cl. 42 (Int. Cl. 24). 2–26–29.
254,269. SANI-CLOR. Cl. 52 (Int. Cl. 3). 3–19–29.
254,440. BLUE RIBBON. Cl. 39 (Int. Cl. 25). 3–26–29.
254,532. MAMMOL. Cl. 18 (Int. Cl. 5). 3–26–29.
254,893. NOREEDA. Cl. 42 (Int. Cl. 24). 3–26–29.
254,969. GADABOUT. Cl. 39 (Int. Cl. 25). 4–2–29.
437,697. M-LAB. Cl. 51 (Int. Cl. 3). 3–30–48.
439,537. LUCOZATE. Cl. 46 (Int. Cl. 5). 7–6–48.
439,583. BALANCED BEAUTY. Cl. 51 (Int. Cl. 3). 7–6–48.
439,993. SANA-LASTIC. Cl. 5 (Int. Cl. 19). 8–3–48.
440,402. PHILLSOLV. Cl. 52 (Int. Cl. 1). 8–31–48.
440,620. LAPIDAR. Cl. 18 (Int. Cl. 5). 9–14–48.
440,846. LUCOZATE. Cl. 18 (Int. Cl. 5). 10–5–48.
441,033. SAL ENO. Cl. 18 (Int. Cl. 5). 10–19–48.
441,137. JIFFY. Cl. 6 (Int. Cl. 3). 10–26–48.
441,257. SUNOCO WAY. Cl. 15 (Int. Cl. 4). 11–9–48.
441,479. ARMVAC. Cl. 15 (Int. Cl. 4). 11–30–48.
441,485. SUN OCCIDENT. Cl. 15 (Int. Cl. 4). 11–30–48.
441,562. WYNOLA. Cl. 45 (Int. Cl. 32). 12–7–48.
441,715. FURACIN. Cl. 18 (Int. Cl. 5). 12–28–48.
441,734. FLYING HORSE (DESIGN). Cl. 6 (Int. Cl. 1). 12–28–48.
442,127. ESKA. Cl. 51 (Int. Cl. 3). 3–1–49.
442,189. P.D.Q. Cl. 11 (Int. Cl. 2). 3–8–49.
442,206. LIFETIME. Cl. 32 (Int. Cl. 20). 3–15–49.
500,850. EVANS. Cl. 3 (Int. Cl. 18). 7–6–48.
500,980. YUKON CLUB. Cl. 46 (Int. Cl. 29). 7–13–48.
501,206. YANKEE. Cl. 46 (Int. Cl. 29). 7–27–48.
501,323. A & P. Cl. 45 (Int. Cl. 32). 8–3–48.
501,575. GDC AND DESIGN. Cl. 6 (Int. Cl. 2). 8–17–48.
502,288. VISTEX. Cl. 50 (Int. Cl. 24). 9–21–48.
502,299. SUNNYFIELD. Cl. 46 (Int. Cls. 29 and 30). 9–21–48.
502,333. WILLARD. Cl. 21 (Int. Cl. 9). 9–21–48.
502,337. DESIGN OF TUG-O-WAR. Cl. 39 (Int. Cl. 25). 9–21–48.
502,597. LIX-PAIN. Cl. 18 (Int. Cl. 5). 9–28–48.
502,701. MB. Cl. 19 (Int. Cl. 12). 10–5–48.
502,816. YUKON CLUB. Cl. 45 (Int. Cl. 32). 10–12–48.
502,818. SUNNY BROOK AND DESIGN. Cl. 46 (Int. Cl. 29). 10–12–48.
502,821. SUNNYBROOK. Cl. 46 (Int. Cl. 29). 10–12–48.
502,946. MC AND DESIGN. Cl. 55 (Int. Cl. 42). 10–12–48.
502,947. MAGNA-TECTOR. Cl. 100 (Int. Cl. 42). 10–12–48.
502,998. POCKETTE. Cl. 37 (Int. Cl. 16). 10–19–48.
503,022. CONDOR AND DESIGN. Cl. 46 (Int. Cl. 30). 10–19–48.
503,035. NELA AND DESIGN. Cl. 21 (Int. Cl. 11). 10–19–48.
503,148. BLUE MOON. Cl. 46 (Int. Cl. 29). 10–19–48.
503,198. BSA AND DESIGN. Cl. 6 (Int. Cl. 1). 10–19–48.
503,252. KREML. Cl. 51 (Int. Cl. 3). 10–19–48.
503,529. INKETINE. Cl. 11 (Int. Cl. 2). 10–26–48.
503,774. BRAGG. Cl. 18 (Int. Cl. 5). 11–9–48.
503,799. BATHASWEET. Cl. 51 (Int. Cl. 3). 11–9–48.
504,564. EMERALD CORD. Cl. 35 (Int. Cl. 17). 12–7–48.
504,654. DAVIS CUP AND DESIGN. Cl. 22 (Int. Cl. 28). 12–7–48.
504,683. "98." Cl. 18 (Int. Cl. 5). 12–7–48.
504,703. MARKEM. Cl. 52 (Int. Cl. 3). 12–7–48.
504,912. PERIKROM. Cl. 12 (Int. Cl. 19). 12–21–48.
504,981. KLEEN-STIK. Cl. 5 (Int. Cl. 16). 12–21–48.
505,144. DILAC. Cl. 52 (Int. Cl. 3). 12–28–48.
505,196. RIEDELL. Cl. 39 (Int. Cl. 25). 12–28–48.
505,252. AEROSPORIN. Cl. 18 (Int. Cl. 5). 12–28–48.
505,381. LOXPRING. Cl. 3 (Int. Cl. 18). 1–4–49.
505,394. GOODYEAR. Cl. 19 (Int. Cl. 12). 1–4–49.
505,465. ALLAN. Cl. 34 (Int. Cl. 11). 1–4–49.
505,466. ARDMORE. Cl. 34 (Int. Cl. 11). 1–4–49.
505,757. CRUISER. Cl. 15 (Int. Cl. 4). 1–18–49.
505,802. DACRO. Cl. 33 (Int. Cl. 21). 1–18–49.

505,900. PAYETTE VALLEY. Cl. 46 (Int. Cl. 29). 1–18–49.
505,945. SCIENTIFIC AMERICAN. Cl. 38 (Int. Cl. 16). 1–25–49.
506,206. WEST HAVEN. Cl. 46 (Int. Cl. 29). 2–1–49.
506,510. LIBERTY AND DESIGN. Cl. 1 (Int. Cl. 31). 2–8–49.
506,548. ELVANOL. Cl. 1 (Int. Cl. 1). 2–8–49.
506,775. CHROMACYL. Cl. 6 (Int. Cl. 2). 2–15–49.
506,822. ROCHELTEX. Cl. 6 (Int. Cl. 1). 2–22–49.
506,951. ELECTRICAL DEALER. Cl. 38 (Int. Cl. 16). 2–22–49.
507,021. ELVACET. Cl. 1 (Int. Cl. 1). 2–22–49.
507,136. STADUIM BOOT. Cl. 39 (Int. Cl. 25). 3–1–49.
507,404. HY-LO. Cl. 6 (Int. Cl. 5). 3–8–49.
507,457. SYMBOL (LITTLE MAN). Cl. 102 (Int. Cl. 36). 3–8–49.
507,556. THE TETRAD AND DESIGN. Cl. 36 (Int. Cl. 9). 3–15–49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 30, 1962

739,854. PER-CAST. Cl. 1.
739,856. CUSH-N-TAN. Cl. 1.
739,860. INSULITE. Cl. 2.
739,870. FLORSAVER. Cl. 2.
739,873. SOPHISTIGIFT. Cl. 3.
739,874. PUP-P-PAPER. Cl. 3.
739,878. FS–11. Cl. 6.
739,884. BELAIRE. Cl. 8.
739,885. STECK. Cl. 8.
739,887. ROOT-O-POTS AND DEVICE. Cl. 10.
739,888. DORCO AND DESIGN. Cl. 10.
739,891. BAYVIEW. Cl. 12.
739,892. VAN-SEAL. Cl. 12.
739,893. VCC AND DESIGN. Cl. 12.
739,895. TRUS-CO-POST. Cl. 12.
739,896. TRUS-T-POST. Cl. 12.
739,901. GUARD-N-RAIL. Cl. 13.
739,905. READI-PAKT. Cl. 13.
739,922. UML–491. Cl. 18.
739,925. ASP–250. Cl. 18.
739,926. SCRIPTAB. Cl. 18.
739,935. DACTAFEM. Cl. 18.
739,950. ROBERTS HI-LIFT BARBELLS H AND DESIGN. Cl. 22.
739,954. MISS SWEETEEN. Cl. 22.
739,955. "BOOBIE." Cl. 22.
739,956. "LAMBKIN." Cl. 22.
739,957. SWAN-BUOY. Cl. 22.
739,958. DIPRO. Cl. 23.
739,965. CENTRIPULSE. Cl. 23.
739,967. GOLDEN ARROW GA AND DESIGN. Cl. 23.
739,982. DECO. Cl. 23.
739,991. Q-TROL. Cl. 26.
739,994. 600. Cl. 26.
739,995. DESIGN OF THREE ARROWHEADS IN A CIRCLE ADJACENT TO A PAIR OF PARALLEL ARCS. Cl. 26.
739,996. PAUL MONET. Cl. 27.
739,997. PIONEER FROM VERSAILLES COLLECTION AND DESIGN. Cl. 28.
739,998. FIXOLUX. Cl. 28.
739,999. SUPERFLEX. Cl. 28.
740,004. THERM-OVEN CHINA ETC. AND DESIGN. Cl. 30.
740,006. MARTIN AND DESIGN. Cl. 31.
740,011. SANFRE. Cl. 31.
740,015. WINGED ACORN SYMBOL SUPERIMPOSED ON LETTERS ADL. Cl. 31.
740,016. REXOR. Cl. 31.
740,018. MASTERBILT KITCHENS QUALITY PLANNED. Cl. 32.
740,019. THERAMAT AND DESIGN. Cl. 32.
740,020. DOLPHIN. Cl. 32.
740,028. SHELTERSCOPE. Cl. 34.
740,029. LITTLE DAISY. Cl. 34.
740,037. WINCREST. Cl. 37.
740,043. SERMO-MAGIC. Cl. 38.
740,045. DIESEL EQUIPMENT SUPERINTENDENT. Cl. 38.
740,047. DEL RIO. Cl. 39.
740,048. CHARLESTONIAN. Cl. 39.
740,052. ALIX INTERNATIONAL. Cl. 39.
740,054. MR. FOAMY. Cl. 39.
740,057. STRIDE STEPS. Cl. 39.
740,062. AMERICAN BAZAAR AND DESIGN. Cl. 39.
740,063. DASH-ABOUT. Cl. 39.
740,067. JACQUELINE ARPEL. Cl. 39.
740,072. BOW. Cl. 39.
740,073. ROSECREST. Cl. 39.
740,077. PAR-T-PAK. Cl. 40.
740,081. DOWNY-TUFT. Cl. 42.
740,088. WEATHER KNIT MILLS. Cl. 42.
740,098. LORTWEED. Cl. 43.
740,106. AQUA-LAXER. Cl. 44.
740,110. CEROLIFE. Cl. 46.
740,113. GLENWOOD. Cl. 46.
740,115. KALOAS. Cl. 46.
740,116. ROYAL OAK RO AND DESIGN. Cl. 46.
740,120. TRIPLE F BRAND ETC. AND DESIGN. Cl. 46.
740,128. WHITE WAVES AND DESIGN. Cl. 46.
740,142. WS WATER-SPORTSMEN AND DESIGN. Cl. 100.
740,145. NSCS AND DESIGN. Cl. 102.
740,147. LEVERAGED FUNDING ETC. AND DESIGN. Cl. 102.

INDEX OF REGISTRANTS

DECEMBER 17, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ASR Industries : *See*—
Morris, Philip, Inc.
Abbott Laboratories : *See*—
Swan-Myers Co.
Abilene Candy Co., Inc., Abilene, Tex. 862,178. Cl. 46.
Ackermann und Schmitt K.G., Stuttgart, Germany. 861,940, pub. 10–1–68. Cl. 23.
Acme Boot Co., Inc., Clarksville, Tenn. 862,019–21, pub. 10–1–68. Cl. 39.
Acme Cotton Products Co., Inc., Valley Stream, N.Y. 862,058, pub. 10–1–68. Cl. 44.
Acme Visible Records, Inc., Crozet, Va. 862,143, pub. 10–1–68. Cl. 101.
Adhesive Products Corp., Bronx, N.Y. 861,840, pub. 10–1–68. Cl. 1.
Afco Rubber Corp., North Canton, Ohio. 862,109, pub. 10–1–68. Cl. 50.
Air Instruments, Inc., Pittsburgh, Pa. 862,051, pub. 10–1–68. Cl. 44.
Alexander Doll Co., Inc., d.b.a. Madame Alexander, New York, N.Y. 739,955–6, canc. Cl. 22.
Alix of Miami, Inc., Miami, Fla. 740,052, canc. Cl. 39.
Allied Chemical Corp. : *See*—
General Chemical Co.
Allied Chemical & Dye Corp. : *See*—
General Chemical Co.
Aluminum Detail Products : *See*—
Spring Hill Fuel Co.
Ambassador Cards : *See*—
Hallmark Cards, Inc.
Ambassador Travel Service of Michigan, Inc., Kalamazoo, Mich. 862,159, pub. 10–1–68. Cl. 105.
Amerace Corp. : *See*—
La Maur, Inc.
American Automobile Association, (Inc.), The, Washington, D.C. 862,156, pub. 10–1–68. Cl. 105.
American Cyanamid Co., New York, N.Y. 739,925, canc. Cl. 18.
American Cyanamid Co., Wayne, N.J. 861,913, pub. 10–1–68. Cl. 21.
American Felt Co., Glenville, Conn., to GAF Corp., New York, N.Y. 502 288, ren. 12–17–68. Cl. 50.
American Home Products Corp., New York, N.Y. 861,859, pub. 10–1–68. Cl. 6.
American Hospital Supply Corp., Evanston, Ill., from Institutional Industries, Inc., Cincinnati, Ohio. 861,903, pub. 10–1–68. Cl. 19.
American Hospital Supply Corp., Evanston, Ill. 861,970, pub. 10–1–68. Cl. 32.
American Investment Counseling Co., Los Angeles, Calif. 862,129, pub. 10–1–68. Cl. 100.
American Photocopy Equipment Co., Evanston, Ill. 861,856, pub. 10–1–68. Multiple Class (Classes 6 and 26).
American Products Co., The, d.b.a. Zanol Products Co., assor. to The R. L. Flett Co., to Heekin Inc., Cincinnati, Ohio. 441,137, ren. 12–17–68. Cl. 6.
American Tack & Hardware Co., Inc., New York, N.Y. 861,872, pub. 10–1–68. Multiple Class (Classes 12 and 21).
American Type Founders Co., Inc., Elizabeth, N.J. 861,876, pub. 10–1–68. Cl. 14.
American Uniform Co., Inc., Cleveland, Tenn. 862,004, pub. 10–1–68. Cl. 39.
Anastasia's, Sausalito, Calif. 861,999, pub. 10–1–68. Cl. 39.
Anderson Chemical Co., Litchfield, Minn. 862,167. Cl. 6.
Anes Automotive Electronics, Inc., Los Angeles, Calif. 861,914, pub. 10–1–68. Cl. 21.
Apparel Industries of California, Inc., Los Angeles, Calif. 862,023, pub. 10–1–68. Cl. 39.
Ascot Tackle Co. : *See*—
Bianco, Romolo P.
Aspen Ski Boot Internationale, Inc., Denver, Colo. 861,923, pub. 10–1–68. Cl. 22.
Atlantic Tuna Corp. (Proprietary) Ltd., Capetown, Republic of South Africa. 862,086, pub. 10–1–68. Cl. 46.
Audlain of Hyattsville, Inc., Hyattsville, Md. 740,057, canc. Cl. 39.
Autohaus International, Inc., Clearwater, Fla. 862,137, pub. 10–1–68. Multiple Class (Classes 101 and 103).
Ayer, Harriet Hubbard, Inc. : *See*—
Thomas, Vincent B.
Ayrshire Breeders' Association, Brandon, Vt. 862,091, pub. 10–1–68. Cl. 46.
Babson's Reports, Inc., Wellesley Hills, Mass. 862,151, pub. 10–1–68. Cl. 102.
Badger Paint & Hardware Stores, Inc., Milwaukee, Wis. 861,881, pub. 10–1–68. Cl. 16.
Baker-Roos, Inc., Indianapolis, Ind. 862,108, pub. 10–1–68. Cl. 50.
Ball, B. J., Ltd., Sydney, New South Wales, Australia. 861,972, pub. 10–1–68. Cl. 32.
Bama-Werke Curt Baumann, Mosbach (Baden), Germany. 862,174. Cl. 39.
Barclay & Barclay, New York, N.Y., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 73,059, ren. 12–17–68. Cl. 18.
Barrow Mfg. Co., Winder, Ga. 862,018, pub. 10–1–68. Cl. 39.
Bathasweet Corp., Morris Plains, N.J. 503,799, ren. 12–17–68. Cl. 51.
Baxter Laboratories, Inc., Morton Grove, Ill. 739,878, canc. Cl. 6.
Baxter Laboratories, Inc., Morton Grove, Ill. 861,889, pub. 10–1–68. Cl. 18.
Bayuk Cigars Inc., Philadelphia, Pa. 861,883, pub. 10–1–68. Cl. 17.
Beatrice Foods Co., Chicago, Ill. 862,073, pub. 4–9–68. Cl. 46.
Becton, Dickinson & Co., East Rutherford, N.J. 861,979, pub. 10–1–68. Cl. 34.
Beecham Inc. : *See*—
Eno, J. C., Inc.
Macleans Laboratories, Inc.
Beede Electrical Instrument Co., Inc., Penacook, N.H. 861,956, pub. 10–1–68. Cl. 26.
Beneke Corp., Columbus, Miss. 861,869, pub. 10–1–68. Cl. 13.
Bennett Industries, Inc., Peotone, Ill. 861,966, pub. 10–1–68. Cl. 29.
Berg, John, Mfg. Co., Chicago, Ill. 862,111–12, pub. 10–1–68. Cl. 50.
Berner, Robert L., Co., Chicago, Ill. 862,093, pub. 10–1–68. Cl. 46.
Bertelli, A., S.p.A. : *See*—
Socta, Prodti, Chimco, Farmacci, A. Bertelli & C.
Bevan Funnell Ltd., Newhaven, Sussex, England. 861,973, pub. 10–1–68. Cl. 32.
Bianco, Romolo P., d.b.a. Ascot Tackle Co., Allen Park, Mich. 861,928, pub. 10–1–68. Cl. 22.
Big 3 Textile Corp., New York, N.Y. 740,088, canc. Cl. 42.
Blazon, Inc., Akron, Ohio. 861,924, pub. 10–1–68. Cl. 22.
Bliss, E. W., Co., Davenport, Iowa. 861,910, pub. 10–1–68. Multiple Class (Classes 21 and 26).
Blue G Stamp Co., Detroit, Mich. 862,134, pub. 10–1–68. Cl. 101.
Blue Moon Foods, Inc., Thorp, Wis., to Foremost-McKesson, Inc., San Francisco, Calif. 503,148, ren. 12–17–68. Cl. 46.
Bo-Mer Mfg. Co., Inc., Auburn, N.Y. 739,870, canc. Cl. 2.
Borden Co., The : *See*—
Thompson's Malted Food Co.
Borg-Warner Corp., Chicago, Ill. 861,977, pub. 4–23–68. Cl. 34.
Bow Shirts, Inc., Cleveland, Ohio. 740,072, canc. Cl. 39.
Bowling, Ernest H., d.b.a. Bowling Sales Co., Charleston, W. Va. 740,048, canc. Cl. 39.
Bowling Sales Co. : *See*—
Bowling, Ernest H.
Brsgg, Paul C., d.b.a. Live Food Products Co., to Live Food Products Co., Burbank, Calif. 503,774, ren. 12–17–68. Cl. 18.
Brides Showcase International, Inc., New York, N.Y. 862,013, pub. 10–1–68. Cl. 39.
Bridgeford Foods Corp., Anaheim, Calif. 862,181. Cl. 46.
Bristol-Myers Co., New York, N.Y. 861,888, pub. 10–1–68. Cl. 18.
Bristol-Myers Co., New York, N.Y. 861,894, pub. 10–1–68. Cl. 18.
Brockton Public Market, Inc., Brockton, Mass. 862,193. Cl. 101.
Brooks, T. E., & Co., Red Lion, Pa. 861,886, pub. 10–1–68. Cl. 17.
Brown Shoe Co., Inc., St. Louis, Mo. 254,440, ren. 12–17–68. Cl. 39.
Brown-Bridge Mills, Inc., The, Troy, Ohio. 861,980, pub. 10–1–68. Cl. 37.
Brown & Williamson Tobacco Corp., Louisville, Ky., from L. F. Phillips, d.b.a. C.P. Plastic Engineering Co., Chicago, Ill. 739,884, canc. Cl. 8.
Brucks, Inc., Bronx, N.Y. 862.007, pub. 10–1–68. Cl. 39.
Brunswick Corp., Chicago, Ill. 861,933, pub. 10–1–68. Cl. 23.
Buchanan, James, & Co. Ltd., London, England. 862,184. Cl. 49.
Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. 505 252. ren. 12–17–68. Cl. 18.
Bush Boake Allen Inc., Emerson, N.J. 862,080, pub. 10–1–68. Cl. 46.
Buttenheim Publishing Corp. : *See*—
Electrical Publications, Inc.
Butterworth Industries, Inc., Marion, Ind. 862,026, pub. 10–1–68. Cl. 39.
C.P. Plastic Engineering Co. : *See*—
Brown & Williamson Tobacco Corp.
CTP Industries Inc., Brooklyn, N.Y. 861,845, pub. 10–1–68. Cl. 2.
California Bleaching Water Co., Inc., San Francisco, to L.C.F., Inc., Los Angeles, Calif. 254,269, ren. 12–17–68. Cl. 52.
California International Sea Festival at Long Beach, Inc., Long Beach, Calif. 862,195. Cl. 107.
Cambridge Rubber Co. : *See*—
Consolidated Footwear Corp.
Cambridge Thermionic Corp., Cambridge, Mass. 861,916, pub. 10–1–68. Cl. 21.
Cardin, Pierre, Paris, France. 862,121, pub. 10–1–68. Cl. 52.
Caretex, Chicago, Ill. 862,163, pub. 10–1–68. Cl. 107.

Carmelo La China, College Park, Md. 861,905, pub. 10–1–68. Cl. 19.
Carnation Co., Los Angeles, Calif. 862,098, pub. 10–1–68. Cl. 46.
Carpenter Mfg. Co. Inc., Manlius, N.Y. 861,948, pub. 10–1–68. Cl. 23.
Castleton China, Inc., New Castle, Pa. 861,909, pub. 10–1–68. Cl. 30.
Celanese Corp.: *See*—
Celluloid Corp.
Celluloid Corp., Newark, N.J., to Celanese Corp., New York, N.Y. 245,454, ren. 12–17–68. Cl. 1.
Ceramco, Inc., Long Island City, N.Y. 862,064, pub. 10–1–68. Cl. 44.
Chadbourn Gotham, Inc., Charlotte, N.C. 861,849, pub. 10–1–68. Multiple Class (Classes 3 and 26).
Chadbourn Gotham, Inc., Charlotte, N.C. 862,188. Cl. 51.
Chagoyen, Jesus, d.b.a. Chagoyen Jewelry, New York, N.Y. 861,960, pub. 10–1–68. Cl. 27.
Chagoyen Jewelry: *See*—
Chagoyen, Jesus.
Chanel Industries, Inc., New York, N.Y. 862,118, pub. 10–1–68. Cl. 51.
Chatfield, Helen E., Phoenix, Ariz. 862,056, pub. 10–1–68. Cl. 44.
Chesebrough-Pond's Inc., New York, N.Y. 862,065, pub. 10–1–68. Cl. 44.
Ciba Corp., Summit, N.J. 861,895, pub. 10–1–68. Cl. 18.
Clairol Inc., New York, N.Y. 862,187. Cl. 51.
Clark Equipment Co., from Clark Equipment Co., Buchanan, Mich. 861,936, pub. 10–1–68. Cl. 23.
Colgate-Palmolive Co., New York, N.Y. 862,122, pub. 10–1–68. Cl. 52.
Collins & Aikman Corp., New York, N.Y. 862,047–8, pub. 10–1–68. Cl. 42.
Color Systems, Inc., Atlanta, Ga. 862,145, pub. 10–1–68. Cl. 101.
Columbus Dental Mfg. Co., The, Columbus, Ohio. 861,958, pub. 10–1–68. Cl. 26.
Compac Corp.: *See*—
Kleen-Stik Products, Inc.
Compar Corp., Burlingame, Calif. 862,139, pub. 10–1–68. Cl. 101.
Cone Mills Inc., New York, N.Y. 862,049–50, pub. 10–1–68. Cl. 42.
Consolidated Footwear Corp., New York, N.Y., to Cambridge Rubber Co., Cambridge, Mass. 507,136, ren. 12–17–68. Cl. 39.
Contas, J. S., Bros. Inc., Boston, Mass. 740,116, canc. Cl. 46.
Continental Can Co., Inc., New York, N.Y. 861,976, pub. 10–1–68. Cl. 33.
Contromatics Corp., Rockville, Conn. 861,868, pub. 10–1–68. Cl. 13.
Coot Inc., San Francisco, Calif. 861,904, pub. 9–3–68. Cl. 19.
Coronet Marketing, Inc., New York, N.Y. 862,146, pub. 10–1–68. Cl. 101.
Cosgrove, John E., d.b.a. Foam Products Co., Union, N.J. 740,054, canc. Cl. 39.
Costa Ice Cream Co., Woodbridge, N.J. 862,177. Cl. 46.
Cramer Chemical Co., The, Gardner, Kans. 862,060, pub. 10–1–68. Cl. 44.
Crown Cork & Seal Co., Inc., Philadelphia, Pa. 505,802, ren. 12–17–68. Cl. 33.
Crucible Steel Co. of America, to Crucible Steel Corp., Pittsburgh, Pa. 70,808, ren. 12–17–68. Cl. 14.
Crucible Steel Corp.: *See*—
Crucible Steel Co. of America.
Cullison, Robert M., Jr., d.b.a. Cully's, Havre de Grace, Md. 862,182. Cl. 46.
Cully's: *See*—
Cullison, Robert M., Jr.
Cumberland Packing Co.: *See*—
Cumberland Packing Corp.
Cumberland Packing Corp., from Cumberland Packing Co., Brooklyn, N.Y. 862,085, pub. 10–1–68. Cl. 46.
Curlee Clothing Co., St. Louis, Mo. 862,017, pub. 10–1–68. Cl. 39.
Curtice-Burns, Inc., Rochester, N.Y. 861,846, pub. 7–9–68. Cl. 2.
Curtis, Helene: *See*—
Curtis Helene Industries, Inc.
Curtis, Helene, Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. 862,186. Cl. 51.
Cyclops Corp., Pittsburgh, Pa. 861,865, pub. 10–1–68. Cl. 12.
DSA Medical Group Laboratories: *See*—
Rodney, Marvin B.
Daggett & Ramsdell International Corp.: *See*—
Quinlan, Kathleen Mary, Inc.
Dairy Queen, Inc., Salina, Kans. 862,141, pub. 10–1–68. Cl. 101.
Dalton of America, Inc., Willoughby, Ohio. 861,998, pub. 10–1–68. Cl. 39.
Damon Creations, Inc., New York, N.Y. 861,995, pub. 10–1–68. Cl. 39.
Dana Corp., Toledo, Ohio. 861,950, pub. 10–1–68. Cl. 23.
Data Corp. of America, New York, N.Y. 862,142, pub. 10–1–68. Cl. 101.
Data Processing Financial & General Corp., New York, N.Y., from Lear Siegler, Inc., Santa Monica, Calif. 862,138, pub. 10–1–68. Cl. 101.
Decker Corp., The, Bala-Cynwyd, Pa. 739,994, canc. Cl. 26.
Delano Engineering Co., Inc., Delano, Calif. 739,982, canc. Cl. 23.
Delta Drug Corp., Jacksonville, Fla. 861,897, pub. 10–1–68. Cl. 18.
Delta Piping Co., Chicago, Ill. 862,153, pub. 10–1–68. Cl. 103.
Denny's Restaurants, Inc., La Mirada, Calif. 862,087, pub. 10–1–68. Cl. 46.
Dental Preference Items: *See*—
Lowe, Fred H., Sr.
Denver Chemical Mfg. Co.: *See*—
Wampole, Henry K., & Co., Inc.
Detroit Sound Recording Co., The: *See*—
Steiner, Ervin A., Jr.
Diamantprodukter Aktiebolag, Hagersten, Sweden. 739,958, canc. Cl. 23.
Diamond Shamrock Corp., Cleveland, Ohio, from Nopco Chemical Co., Newark, N.J. 862,072, pub. 10–24–67. Cl. 46.
Diesel Publications, Inc., Stamford, Conn. 740,045, canc. Cl. 38.
Diners/Fugazy Travel, Inc., from Fugazy Travel Bureau, Inc., New York, N.Y. 862,136, pub. 9–3–68. Cl. 101.
Diversa Electronics, Inc.: *See*—
Texas Electronic Products Corp.
Diversey Corp., The, Chicago, Ill. 505,144, ren. 12–17–68. Cl. 52.
Dodge Chemical Co., The: *See*—
Redonnett, Renee, Inc.
Domestic Marble & Stone Corp., New York, N.Y. 861,841, pub. 10–1–68. Cl. 1.
Donnkenny, Inc., New York, N.Y. 862,006, pub. 10–1–68. Cl. 39.
Dorchester Fertilizer Co., Cambridge, Md. 739,888, canc. Cl. 10.
Dow Chemical Co., The, Midland, Mich. 862,155, pub. 10–1–68. Cl. 103.
Dowell, Lillian R., d.b.a. Leonka Boxer, San Franscisco, Calif. 862,035, pub. 10–1–68. Cl. 40.
Drackett Co., The, Cincinnati, Ohio. 861,965, pub. 10–1–68. Cl. 29.
Dressler Electronics, Inc., East Hartford, Conn. 861,908, pub. 10–1–68. Multiple Class (Classes 21 and 36).
Duffy-Mott Co., Inc., New York, N.Y. 862,071, pub. 10–1–68. Cl. 46.
Du Pont de Nemours, E. I., & Co.: *See*—
Newport Co., The.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 506,548, ren. 12–17–68. Cl. 1.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 506,775, ren. 12–17–68, Cl. 6.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 507,021, ren. 12–17–68, Cl. 1.
Dynamic Classics, Ltd., New York, N.Y. 862,062, pub. 10–1–68. Cl. 44.
ESB Inc.: *See*—
Willard Storage Battery Co.
Eastman Kodak Co., Rochester, N.Y. 861,882, pub. 10–1–68. Cl. 16.
Eaton Laboratories, Inc., to The Norwich Pharmacal Co., Norwich, N.Y. 441,715, ren. 12–17–68. Cl. 18.
Eisele & Co., Inc., Clifton, N.J. 862,063, pub. 10–1–68. Cl. 44.
Electrical Publications, Inc., Chicago, Ill., to Buttenheim Publishing Corp., New York, N.Y. 506,951, ren. 12–17–68. Cl. 38.
Electro Engineering Products Co., Inc., Chicago, Ill. 861,946, pub. 10–1–68. Cl. 23.
Eltreva A.G., Aesch, Switzerland. 861,866, pub. 10–1–68. Cl. 12.
Ender, Louis, Inc.: *See*—
Neuman & Schwiers Co., The.
Endicott Johnson Corp., Endicott, N.Y. 740,047, canc. Cl. 39.
Enemies of Smoking, Inc., Washington, D.C. 861,990, pub. 10–1–68. Cl. 38.
Eno, J. C., Inc., Bloomfield, to Beecham Inc., Clifton, N.J. 441,033. ren. 12–17–68. Cl. 18.
Evans Case Co., North Attleboro, to The Hilsinger Corp., Plainville, Mass. 500,850, ren. 12–17–68. Cl. 3.
Evans, Robert B.: *See*—
Meili-Blumberg Corp.
Eymond, Jean, Inc., Miami, Fla. 862,115, pub. 1–31–67. Cl. 51.
Factor, Max: *See*—
Factor, Max, & Co.
Factor, Max, & Co., d.b.a. Max Factor, Hollywood, Calif. 862,120, pub. 10–1–68. Cl. 51.
Farah Mfg. Co., Inc., El Paso, Tex. 862,003, pub. 10–1–68. Cl. 39.
Fedtro, Inc., Rockville Centre, N.Y. 861,917, pub. 10–1–68. Cl. 21.
Fiberite Corp., The, Winona, Minn. 862,185. Cl. 50.
Firma Gebruder Junghans Aktiengesellschaft, Schramberg, Wurttemberg, Germany. 861,959, pub. 10–1–68. Cl. 27.
First National Bank of Denver, The, Denver, Colo. 862,147, pub. 10–1–68. Cl. 101.
Fling-Things, Inc., Lester, Pa. 861,997, pub. 10–1–68. Cl. 39.
Foam Products Co.: *See*—
Cosgrove, John E.
Fontaine, John G., Fort Lauderdale, Fla. 861,902, pub. 10–1–68. Cl. 19.
Foremost-McKesson, Inc.: *See*—
Blue Moon Foods, Inc.
McKesson & Robbins, Inc.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 251,840, ren. 12–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 251,858 ren. 12–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 252,886, ren. 12–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,027, ren. 12–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,074, ren. 12–17–68. Cl. 42.

Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co. Inc., New York, N.Y. 253,076, ren. 12–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 253,471, ren. 12–17–68. Cl. 42.
Forstmann & Huffmann Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 254,693, ren. 12–17–68. Cl. 42.
Foster Industries, Inc., New York, N.Y. 861,996, pub. 10–1–68. Cl. 39.
Fox, Samuel, & Co. Ltd., Sheffield, England. 862,037, pub. 10–1–68. Cl. 41.
France Editions & Publications, from S.A.R.L. Editions Mai, Paris, France. 862,001, pub. 10–1–68. Cl. 39.
Freeman Enterprises, Inc., New York, N.Y. 862,009, pub. 10–1–68. Cl. 39.
Fruitland Canning Association, Inc., Fruitland, Idaho. 505,900, ren. 12–17–68. Cl. 46.
Fugazy Travel Bureau, Inc.: *See*—
Diners/Fugazy Travel, Inc.
GAF Corp.: *See*—
American Felt Co.
General Dyestuff Corp.
Paulsboro Mfg. Co.
G.C. Electronics Co.: *See*—
Hydrometals, Inc.
Galactina & Biomalz AG, Belp, Berne, Switzerland. 862,082, pub. 10–1–68. Cl. 46.
General Chemical Co., now by merger Allied Chemical & Dye Corp., to Allied Chemical Corp., New York, N.Y. 503,198, ren. 12–17–68. Cl. 6.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 501,575, ren. 12–17–68. Cl. 6.
General Electric Co., Schenectady, N.Y. 503,035, ren. 12–17–68. Cl. 21.
General Tire & Rubber Co., The, Akron, Ohio. 861,907, pub. 10–1–68. Cl. 20.
Geryl Co., Ltd., New York, N.Y. 861,884, pub. 10–1–68. Cl. 17.
Gilbert Shoe Stores, Inc., Columbus, Ohio. 862,015, pub. 10–1–68. Cl. 39.
Giles Enterprises: *See*—
Giles, W. O.
Giles, W. O., d.b.a. Giles Enterprises, Montgomery, Ala. 862,078, pub. 10–1–68. Cl. 46.
Given Machinery, Los Angeles, Calif. 862,148, pub. 10–1–68. Cl. 101.
Glenwood Products, Ltd., Toronto, Ontario, Canada. 740,113, canc. Cl. 46.
Glidden Co., The: *See*—
SCM Corp.
Glidrose Productions Ltd. & Eon Productions Ltd., London, England. 861,918–21, pub. 10–1–68. Cl. 22.
Golden Arrow Sprayers Ltd., Calgary, Alberta, Canada. 739,967, canc. Cl. 23.
Goldmar Sales Corp., Baltimore, Md. 739,901, canc. Cl. 13.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 504,564, ren. 12–17–68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 505,394, ren. 12–17–68. Cl. 19.
Gordon Research Conferences, Kingston, R.I. 862,164, pub. 10–1–68. Cl. 107.
Gordon-Ford Inc., Conshohocken, Pa. 862,024, pub. 10–1–68. Cl. 39.
Gourmania Inc., Warwick, Pa. 861,981, pub. 10–1–68. Cl. 38.
Gourmet Foods, Inc., Altamonte Springs, Fla. 862,095, pub. 10–1–68. Cl. 46.
Grace, W. R., & Co., New York, N.Y. 861,852, pub. 10–1–68. Cl. 4.
Grafar Corp., Detroit, Mich. 861,957, pub. 10–1–68. Cl. 26.
Graham Mfg. Co., Inc., Batavia, N.Y. 861,978, pub. 10–1–68. Cl. 34.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 500,980, ren. 12–17–68. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,206, ren. 12–17–68. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,323, ren. 12–17–68. Cl. 45.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 502,299, ren. 12–17–68. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 502,816, ren. 12–17–68. Cl. 45.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 502,818, ren. 12–17–68. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 502,821, ren. 12–17–68. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 503,022, ren. 12–17–68. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The: *See*—
Great Atlantic & Pacific Tea Co., The.
Green, Burt, d.b.a. The Mountain Men, Littleton, Colo. 862,157, pub. 10–1–68. Cl. 105.
Greenleaf Producers, Kansas City, Mo. 740,110, canc. Cl. 46.
HMH Publishing Co. Inc., Chicago, Ill. 861,860–1, pub. 10–1–68. Cl. 8.
Hagerty, W. J., & Sons, Ltd., Inc., South Bend, Ind. 862,166. Cl. 4.
Hain Pure Food Co., Inc., d.b.a. House of Hain, Los Angeles, Calif. 862,116, pub. 10–1–68. Cl. 51.
Hallmark Cards, Inc., d.b.a. Ambassador Cards, Kansas City, Mo. 861,987, pub. 10–1–68. Cl. 38.
Harodite Finishing Co., Inc., The, North Dighton, Mass. 862,042, pub. 10–1–68. Cl. 42.
Harry and David, Medford, Oreg. 739,873, canc. Cl. 3.
Harzfeld's, Inc., Kansas City, Mo. 254,969, ren. 12–17–68. Cl. 39.
Hawkeye Steel Products, Inc., Waterloo, Iowa. 862,106, pub. 10–1–68. Cl. 50.
Haws, Robert, Co., Melvindale, Mich. 861,863, pub. 12–14–65. Cl. 12.
Heekin Inc.: *See*—
American Products Co., The.
Hickok Mfg. Co., Inc., Rochester, N.Y., from Pioneer Industries, Inc., Dr Darby, Pa. 739,997, canc. Cl. 28.
Hills-McCanna Co., from Hills-McCanna Co., Carpentersville, Ill. 861,875, pub. 10–1–68. Cl. 14.
Hilsinger Corp., The: *See*—
Evans Case Co.
Hoffman, William, d.b.a. Rolls-Right Co., Park Ridge, Ill. 861,922, pub. 10–1–68. Cl. 22.
Holt, Harvey R., Gruver, Tex. 740,011, canc. Cl. 31.
House of Hain: *See*—
Hain Pure Food Co., Inc.
Hunter Publishing Co., Chicago, Ill. 861,991, pub. 10–1–68. Cl. 38.
Hydraslip, Inc., Okanogan, Wash. 861,949, pub. 10–1–68. Cl. 23.
Hydrometals, Inc., d.b.a. G.C. Electronics Co., Rockford, Ill. 861,909, pub. 10–1–68. Multiple Class (Classes 21 and 36).
ISP, Inc., Long Beach, Calif. 861,867, pub. 10–1–68. Cl. 13.
Imperial Adhesives & Chemicals, Inc., from Imperial Adhesives, Inc., Cincinnati, Ohio. 861,853, pub. 8–6–68. Cl. 5.
Imperial Adhesives, Inc.: *See*—
Imperial Adhesives & Chemicals, Inc.
Implement & Tractor Publications, Inc., Kansas City, Mo. 861,985, pub. 10–1–68. Cl. 38.
Import-Export Corp., Houston, Tex. 862,036, pub. 10–1–68. Cl. 40.
Independent Life & Accident Insurance Co., The, Jacksonville, Fla. 862,194. Cl. 102.
Industrie A. Zanussi, Pordenone, Italy. 861,952, pub. 10–1–68. Cl. 24.
In-Flight Devices, Corp., Columbus, Ohio. 861,955, pub. 10–1–68. Cl. 26.
Institutional Industries, Inc.: *See*—
American Hospital Supply Corp.
Interbank Card Association, from Interbank Card, Inc., Buffalo, N.Y. 862,150, pub. 10–1–68. Cl. 102.
Interbank Card, Inc.: *See*—
Interbank Card Association.
Intercontinent Shoe Corp., New York, N.Y. 862,000, pub 10–1–68. Cl. 39.
International Mineral Engineers, Inc., Golden, Colo. 862 130–1 pub. 10–1–68. Cl. 100.
International Minerals & Chemical Corp.: *See*—
Lavino, E. J., & Co.
International Shoe Co., St. Louis, Mo. 739,856, canc. Cl. 1.
Interstate Transactions, Inc., Seattle, Wash. 740,106, canc. Cl. 44.
Jabsco Pump Co., Costa Mesa, Calif. 739 965, canc. Cl. 23.
Jay-Kay Distributors, Inc., State College, Pa. 862,053, pub. 10–1–68. Cl. 44.
Jobst Institute Inc., Toledo, Ohio. 862,069, pub. 10–1–68. Cl. 44.
Joseph & Feiss Co., The, Cleveland, Ohio. 862,022, pub. 10–1–68. Cl. 39.
Kashino, Dolores E., d.b.a. S & D Kashino, Pomona, Calif. 740,115, canc. Cl. 46.
Kashino S & D: *See*—
Kashino, Dolores E.
Keene Corp., New York, N.Y. 861,850, pub. 10–1–68. Cl. 3.
Kendall Co., The, Walpole, Mass. 862,175. Cl. 44.
Kimberly Corp., Los Angeles, Calif., to The Parker Pen Co., Janesville, Wis. 502,998. ren. 12–17–68. Cl. 37.
Kinder Mfg. Co., Inc., Elkhart, Ind. 861,971, pub. 10–1–68. Cl. 32.
Kleen-Stik Products, Inc., Chicago, Ill., to Compac Corp., New York, N.Y. 504,981, ren. 12–17–68. Cl. 5.
Krauterpfarrer Johann Kunzle Zizers A.G., Zizers, to Krauterpfarrer Kunzle AG, Minusio, Switzerland. 440,620, ren. 12–17–68. Cl. 18.
Krauterpfarrer Kunzle AG: *See*—
Krauterpfarrer Johann Kunzle Zizers A.G.
Kresge, S. S., Co., Detroit, Mich. 861,857, pub. 10–1–68. Cl. 6.
Kunkelmann Et Cie, Reims (Marne), France. 862,103, pub. 10–1–68. Cl. 47.
L.C.F. Inc.: *See*—
California Bleaching Water Co., Inc.
L & M Knitting Mills, Inc., Philadelphia, Pa. 862,014, pub. 10–1–68. Cl. 39.
La France Dry Cleaners, Inc., Youngstown, Ohio. 740,018, canc. Cl. 32.
Lakeside Laboratories, Inc., Milwaukee, Wis. 739,935, canc. Cl. 18.
La Maur, Inc., Minneapolis, Minn., from Amerace Corp., New York, N.Y. 862,032, pub. 5–31–66. Cl. 40.
Lancome S.A., Paris, France. 862,119, pub. 10–1–68. Cl. 51.
Lane Foods, Inc., Denver, Colo. 740,120, canc. Cl. 46.
Lane Toby, Inc., St. Louis, Mo. 862,002, pub. 10–1–68. Cl. 39.
Lanex Importing Co., Lodi, N.J. 861,945, pub. 10–1–68. Cl. 23.
Lanman & Kemp-Barclay & Co. Inc.: *See*—
Barclay & Barclay.
Lavino, E. J., & Co., Philadelphia, Pa., to International Minerals & Chemical Corp., Skokie, Ill. 248,118, ren. 12–17–68. Cl. 1.

Lavino E. J., & Co., Philadelphia, Pa., to International Minerals & Chemical Corp., Skokie, Ill. 504,912, ren. 12–17–68. Cl. 12.
Leader Cards, Inc., Milwaukee, Wis. 740,037, canc. Cl. 37.
Leading Jewelers Association, Inc., Los Angeles, Calif. 739,996, canc. Cl. 27.
Lear Siegler, Inc.: *See*—
Data Processing Financial & General Corp.
Leonka Boxer: *See*—
Dowell, Lillian R.
Libby, McNeill & Libby, Chicago, Ill. 247,413, ren. 12–17–68. Cl. 46.
Liebman-Weiss, Inc., New York, N.Y. 862,010, pub. 10–1–68. Cl. 39.
Linn, Donald C., Mount Prospect, Ill. 862,191. Cl. 100.
Lipton, Thomas J., Inc., Englewood Cliffs, N.J. 861,992–3, pub. 10–1–68. Cl. 38.
Lit-Ning Products Co., Beverly Hills, Calif. 861,843, pub. 10–1–68. Multiple Class (Classes 2, 25, and 32).
Little, Arthur D., Inc., Cambridge, Mass. 740,015, canc. Cl. 31.
Live Food Products Co.: *See*—
Bragg, Paul C.
Lloyd's, B., Pecan Products: *See*—
Woodall, B. Lloyd.
Lohrke Textiles, Inc., Philadelphia, Pa. 740,098, canc. Cl. 43.
Lone Star Brewing Co., San Antonio, Tex. 862,104, pub. 10–1–68, Cl. 48.
Lowe, Fred H., Sr., d.b.a. Dental Preference Items, Dallas, Tex. 861,898, pub. 10–1–68. Cl. 18.
Lucta, S.A., Barcelona, Spain. 862,094, pub. 10–1–68. Cl. 46.
M-B Co.: *See*—
Meill-Blumberg Corp.
Macdermid Inc., Waterbury, Conn. 506,822, ren. 12–17–68. Cl. 6.
Macleans Laboratories, Inc., Bloomfield, to Beecham Inc., Clifton, N.J. 439,537, ren. 12–17–68. Cl. 46.
Macleans Laboratories, Inc., Bloomfield, to Beecham Inc., Clifton, N.J. 440,846, ren. 12–17–68. Cl. 18.
Macy, R. H., & Co., Inc., New York, N.Y. 247,844 ren. 12–17–68. Cl. 22.
Madame Alexander: *See*—
Alexander Doll Co., Inc.
Magee, Don, Studios: *See*—
Magee, Donald E.
Magee, Donald E., d.b.a. Don Magee Studios, Venice, Calif. 862,039, pub. 10–1–68. Cl. 42.
Maggio, Joe, Holtville, Calif. 862,097, pub. 10–1–68. Cl. 46.
Maidenform, Inc., New York, N.Y. 862,030–1 pub. 10–1–68. Cl. 39.
Mail Delivery Service Co., Inc., San Francisco, Calif. 862,161, pub. 10–1–68. Cl. 105.
Main, Chas. T., Inc., Boston, Mass. 862,192. Multiple Class (Classes 100 and 103).
Majestic Seat Co., Inc., Newnan, Ga. 740,020, canc. Cl. 32.
Marblehead Lime Co., Chicago, Ill. 504,683, ren. 12–17–68. Cl. 18.
Marine Trading Inc., Long Beach, Calif. 740,128, canc. Cl. 46.
Markem Corp.: *See*—
Markem Machine Co.
Markem Machine Co., to Markem Corp., Keene, N.H. 504,703, ren. 12–17–68. Cl. 52.
Martin Filter Corp., Edison, N.J. 740,006, canc. Cl. 31.
Marx & Cie, Basel, Switzerland. 740,016, canc. Cl. 31.
Marx, Louis, & Co. Inc., New York, N.Y. 739,954, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 861,929, pub. 10–1–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 861,975, pub. 10–1–68. Cl. 32.
McClung, C. M., & Co., Inc., Knoxville, Tenn. 861,931, pub. 10–1–68. Multiple Class (Classes 23, 26, 35, and 50).
McCord Corp., Detroit, Mich. 861,901, pub. 10–1–68. Cl. 19.
McCormick & Co., Inc., Baltimore, Md. 862,096, pub. 10–1–68. Cl. 46.
McCullough Tool Co., Los Angeles, Calif. 502,946–7, ren. 12–17–68. Cl. 55.
McGraw-Hill, Inc., New York, N.Y. 861,986, pub. 10–1–68. Cl. 38.
McKesson & Robbins, Inc., Bridgeport, Conn., to Foremost-McKesson, Inc., New York, N.Y. 246,009, ren. 12–17–68. Cl. 51.
McNicol China Co., Clarksburg, W. Va. 740,004, canc. Cl. 30.
Mead Johnson & Co., Evansville, Ind. 861,900, pub. 10–1–68. Cl. 18.
Meill-Blumberg Corp., to Robert B. Evans, d.b.a. M-B Co., New Holstein, Wis. 502,701, ren. 12–17–68. Cl. 19.
Meyer, N. S., Inc., New York, N.Y. 862,113, pub. 10–1–68. Cl. 50.
Mirror Bright Polish Co., Pasadena, Calif. 861,851, pub. 10–1–68. Cl. 4.
Mobil Oil Corp.: *See*—
Socony-Vacuum Co., Inc.
Modern Dust Bag Co., Inc., West Haverstraw, N.Y. 861,847, pub. 10–1–68. Cl. 2.
Modern Intermodal Traffic Corp., Oakland, Calif. 862,160, pub. 10–1–68. Cl. 105.
Morris, Philip, Inc., d.b.a. ASR Industries, New York, N.Y. 862,067, pub. 10–1–68. Cl. 44.
Mother's Cake & Cookie Co., Oakland, Calif. 862,099–100, pub. 10–1–68. Cl. 46.
Mountain Men, The: *See*—
Green, Burt.
Munn & Co. Inc., now by change of name Scientific American, Inc., to Scientific American, Inc., New York, N.Y. 505,945, ren. 12–17–68. Cl. 38.
National Art Materials Trade Association, Hasbrouck Heights, N.J. 862,165, pub. 10–1–68. Cl. 200.
National Association of Catholic Alumni Clubs, Inc., Boston, Mass. 862,190. Cl. 100.
National Association of Schools & Publishers, Inc., Wilmington, Del. 740,145, canc. Cl. 102.
National Furniture Mfg. Co., Inc., Evansville, Ind. 862,170. Cl. 32.
National Mattress Co., Huntington, W. Va. 442,206, ren. 12–17–68. Cl. 32.
National NuGrape Co., to National NuGrape Co., Atlanta, Ga. 441,562, ren. 12–17–68. Cl. 45.
Nestle Co., Inc., The, White Plains, N.Y. 862,176. Cl. 46.
Neuman & Schwiers Co., The, New York, to Louis Ender, Inc., Brooklyn, N.Y. 70,961, ren. 12–17–68. Cl. 46.
New England Laminates Co., Inc., Stamford, Conn. 861,842, pub. 10–1–68. Cl. 1.
New England Robe Corp., Natick, Mass. 862,029, pub. 10–1–68. Cl. 39.
New Jersey Machine Corp., Hoboken, N.J. 861,934, pub. 10–1–68. Cl. 23.
Newport Co., The, Carrollville, Wis., to E. I. du Pont de Nemours and Co., Wilmington, Del. 252,456, ren. 12–17–68. Cl. 6.
Nootbaar, H. V., & Co.: *See*—
Nootbaar, Herbert V.
Nootbaar, Herbert V., d.b.a. H. V. Nootbaar & Co., to H. V. Nootbaar & Co., Pasadena, Calif. 507,457, ren. 12–17–68. Cl. 102.
Nopco Chemical Co.: *See*—
Diamond Shamrock Corp.
Norse, Inc., Brookfield, Conn. 861,873, pub. 9–3–68. Cl. 13.
North & Judd Mfg. Co., to North & Judd Mfg. Co., New Britain, Conn. 505,381, ren. 12–17–68. Cl. 3.
Norwich Pharmacal Co., The: *See*—
Eaton Laboratories, Inc.
Nyman, Al. & Son, Inc., New York, N.Y. 861,944, pub. 10–1–68. Cl. 23.
Ocean Garden Products, Inc., San Diego, Calif. 862,101–2, pub. 10–1–68. Cl. 46.
Ocean Technology, Inc., Burbank, Calif. 862,132, pub. 10–1–68. Cl. 100.
Oglesby Chemical Co.: *See*—
Oglesby, David E.
Oglesby, David E., d.b.a. Oglesby Wholesale Co., to Dezzie Oglesby, d.b.a. Oglesby Chemical Co., Kinston, N.C. 502,597, ren. 12–17–68. Cl. 18.
Oglesby, Dezzie: *See*—
Oglesby, David E.
Oglesby Wholesale Co.: *See*—
Oglesby, David E.
Omark Industries, Inc., Portland, Oreg. 861,939, pub. 10–1–68. Cl. 23.
Opper, William J., New York, N.Y. 739,874, canc. Cl. 3.
Organic Compost Corp., Germantown, Wis. 861,862, pub. 10–1–68. Cl. 10.
Oster, John, Mfg. Co., Milwaukee, Wis. 862,034, pub. 10–1–68. Cl. 40.
Overseas Development Corp., New York, N.Y. 861,906, pub. 10–1–68. Multiple Class (Classes 19, 21, 23, and 31).
Pan American Laboratories, Inc., New Orleans, La. 861,890, pub. 10–1–68. Cl. 18.
Park Fashions, Inc., New Britain, Conn. 740,062, canc. Cl. 39.
Parker Hardcastle Ltd., London, England. 861,848, pub. 10–1–68. Cl. 2.
Parker Pen Co., The: *See*—
Kimberly Corp.
Patterson, C. J., Co., Kansas City, Mo. 862,090, pub. 10–1–68. Cl. 46.
Paulsboro Mfg. Co., Paulsboro, N.J., to GAF Corp., New York, N.Y. 439,993, ren. 12–17–68. Cl. 5.
Pendleton Woolen Mills, Portland, Oreg. 862,008, pub. 10–1–68. Cl. 39.
Pennsylvania Refining Co., Butler, Pa. 505,757, ren. 12–17–68. Cl. 15.
Peoples State Bank of Tulsa, Okla., Tulsa, Okla. 862,152, pub. 10–1–68. Cl. 102.
Performance Equipment Co., Ltd., Birkenhead, England. 861,941, pub. 10–1–68. Cl. 23.
Perrone, J., Associates, Inc., Wooster, Ohio. 739,854, canc. Cl. 1.
Petersen Publishing Co., Los Angeles, Calif. 862,172. Cl. 38.
Phillips, Lewis F.: *See*—
Brown & Williamson Tobacco Corp.
Phillips Mfg. Co., Chicago, Ill. 440,402, ren. 12–17–68. Cl. 52.
Phoenix Products Co., Inc., Milwaukee, Wis. 862,066, pub. 10–1–68. Cl. 44.
Pick Hotels Corp., Chicago, Ill. 862,126, pub. 10–1–68. Cl. 100.
Pioneer Industries, Inc.: *See*—
Hickok Mfg. Co., Inc.
Plainville Stock Co., Plainville, Mass. 861,963, pub. 10–1–68. Cl. 28.
Poirette Corsets, Inc., New York, N.Y. 862,012, pub. 10–1–68. Cl. 39.
Polikoff Textiles, Inc., New York, N.Y. 862,038, pub. 10–1–68. Cl. 42.
Port Royal Fragrance Ltd., Carthage, Mo. 862,117, pub. 10–1–68. Cl. 51.
Porter, H. K., Inc., Somerville, Mass. 861,932, pub. 10–1–68. Cl. 23.
Powell Pressed Steel Co., The, Hubbard, Ohio. 861,844, pub. 5–7–68. Cl. 2.
Power Clean Industries, Inc., Rockford, Ill. 862,154, pub. 10–1–68. Cl. 103.
Powers & Eaton Industries, Inc., Hawthorne, N.J. 861,938, pub. 10–1–68. Cl. 23.

Prefco Corp., New York, N.Y. 862,149, pub. 10–1–68. Cl. 102.
Premium Corp. of America, Inc., Minneapolis, Minn. 861,974, pub. 10–1–68. Cl. 32.
President Shops, Inc., Kansas City, Mo. 862,025, pub. 10–1–68. Cl. 39.
Product Distributors Unlimited, Inc., North Miami, Fla. 862,123, pub. 10–1–68. Cl. 52.
Progress Mfg. Co., Inc., Philadelphia, Pa. 739,905, canc. Cl. 13.
Puritan Chemical Co., Atlanta, Ga. 861,858, pub. 10–1–68. Cl. 6.
Quade's Seafood Products, Inc., Arlington, Va. 862,083, pub. 10–1–68. Cl. 46.
Quinlan, Kathleen Mary, Inc., to Daggett & Ramsdell International Corp., New York, N.Y. 439,583, ren. 12–17–68. Cl. 51.
Radio Corp. of America, New York, N.Y. 861,989, pub. 10–1–68. Cl. 38.
Rain Bird Sprinkler Mfg. Corp., Glendora, Calif. 861,871, pub. 10–1–68. Cl. 13.
Raleigh Mfg. Co., Providence, R.I. 861,964, pub. 10–1–68. Cl. 28.
Ralston Purina Co., St. Louis, Mo. 861,839, pub. 10–1–68. Cl. 1.
Rand Securities Research Corp., Beverly Hills, from R. L. Ulmer, d.b.a. The Rand Stock Market Calendar, Van Nuys, Calif. 862,173. Cl. 38.
Rand Stock Market Calendar, The: *See*—
Rand Securities Research Corp.
Rappolt, Richard T., Sr., Berkeley, Calif. 861,887, pub. 10–1–68. Cl. 18.
Redonnett, Renee, Inc., to The Dodge Chemical Co., Boston, Mass. 437,697, ren. 12–17–68. Cl. 51.
Regal Rugs, Inc., North Vernon, Ind. 740,081, canc. Cl. 42.
Regaw Corp., South Orange, N.J. 740,028, canc. Cl. 34.
Rempel Mfg. Co., Inc., West Point, Miss. 861,025, pub. 10–1–68. Cl. 22.
Republic Steel Corp., Cleveland, Ohio. 739,895–6, canc. Cl. 12.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 862,061, pub. 10–1–68. Cl. 44.
Richardson and Robbins Co., Dover, Del., to William Underwood Co., Watertown, Mass. 71,412, ren. 12–17–68. Cl. 46.
Rich's, Inc., Atlanta, Ga. 862,144, pub. 10–1–68. Cl. 101.
Riedell Shoes, Inc., Red Wing, Minn. 505,196, ren. 12–17–68. Cl. 39.
Ringer, Judd, Corp., Eden Prairie, Minn. 861,855, pub. 10–1–68. Cl. 6.
Roberts, J., Mfg. Co., The, Kingston, Pa. 739,950, canc. Cl. 22.
Roberts, Oral, Evangelistic Association, Inc., Tulsa, Okla. 861,984, pub. 10–1–68. Cl. 38.
Roberts and Porter, Inc., Chicago, Ill. 862,124, pub. 10–1–68. Cl. 52.
Robertson Carpet Corp., New York, N.Y. 862,046, pub. 10–1–68. Cl. 42.
Robertson, P. L., Mfg. Co. Ltd., Milton, Ontario, Canada. 740,077, canc. Cl. 40.
Rockland Chemical Co., Newark, to Rockland Chemical Co., Inc., West Caldwell, N.J. 246,734, ren. 12–17–68. Cl. 6.
Rockland Chemical Co., Inc.: *See*—
Rockland Chemical Co.
Rodi & Wienenberger Aktiengesellschaft, Pforzheim, Germany. 739,998–9, canc. Cl. 28.
Rodney, Marvin B., d.b.a. DSA Medical Group Laboratories, Hollywood, Calif. 862,068, pub. 10–1–68. Cl. 44.
Roffler Sculptur-Kut National Franchised System, Inc., Ambridge, Pa. 862,033, pub. 10–1–68. Multiple Class (Classes 40 and 51).
Roffler Sculptur-Kut National Franchised System, Inc., Ambridge, Pa. 862,052, pub. 10–1–68. Multiple Class (Classes 44 and 51).
Rolls-Right Co.: *See*—
Hoffman, William.
Romega, Inc., Rome, Ga. 861,962, pub. 10–1–68. Cl. 28.
Rosecrest Inc., Boston, Mass. 740,073, canc. Cl. 39.
Rowell Laboratories Inc., Baudette, Minn. 861,899, pub. 10–1–68. Cl. 18.
Russell, Jack, Co., Inc., Key Biscayne, Fla. 861,926, pub. 10–1–68. Cl. 22.
Russell, Jack, Co., Inc., Key Biscayne, Fla. 862,169. Cl. 22.
S.A.R.L. Editions Mai: *See*—
France Editions & Publications.
SCM Corp., New York, N.Y., from The Glidden Co., Cleveland, Ohio. 862,075, pub. 10–1–68. Cl. 46.
Sachs, Paul, Originals Co., St. Louis, Mo. 740,067, canc. Cl. 39.
Sandoz, Inc., Hanover, N.J. 739,922, canc. Cl. 18.
Sani-Gard Plastics Co., Santa Clara, Calif. 739,860, canc. Cl. 2.
Sanwa Cutlery Co., Ltd., Chiyoda-ku, Tokyo, Japan. 861,935, pub. 10–1–68. Cl. 23.
Sargent & Co., New Haven, Conn. 861,953, pub. 10–1–68. Cl. 25.
Scaffolding (Great Britain) Ltd., Mitcham, Surrey, England. 862,114, pub. 10–1–68. Cl. 50.
Schenley Distillers, Inc., New York, N.Y. 862,105, pub. 10–1–68. Cl. 49.
Schering Corp., Bloomfield, N.J. 861,896, pub. 10–1–68. Cl. 18.
Schonfeld, Alfred L., d.b.a. Alfred Lincoln Schonfeld C.L.U. & Associates, Great Neck, N.Y. 740,147, canc. Cl. 102.
Schonfeld, Alfred Lincoln, C.L.U. & Associates: *See*—
Schonfeld, Alfred L.
Scientific American, Inc.: *See*—
Munn & Co. Inc.
Scott Paper Co., Delaware County, Pa. 862,055, pub. 10–1–68. Cl. 44.
Sea & Ski Corp., San Francisco, Calif. 861,988, pub. 10–1–68. Cl. 38.
Seamless Rubber Co., The: *See*—
Rexall Drug & Chemical Co.
Semler, R. B., Inc., New Canaan, Conn., to The J. B. Williams Co., Inc., New York, N.Y. 503,252, ren. 12–17–68. Cl. 51.
Serman, M., & Co., Inc., New York, N.Y. 862,005, pub. 10–1–68. Cl. 39.
Servicemaster Industries Inc., from Wade, Wenger Servicemaster Co., Downers Grove, Ill. 861,877, pub. 10–1–68. Cl. 16.
Shak-Ur-Corn, Inc., Chicago, Ill. 862,089, pub. 10–1–68. Cl. 46.
Sharp, Donald H., Sturgis, Ky. 740,043, canc. Cl. 38.
Shenango Ceramics, Inc., New Castle, Pa. 861,967, pub. 10–1–68. Cl. 30.
Sherburne Corp., Killington, Vt. 862,162, pub. 10–1–68. Cl. 107.
Sidney's Food Products, Inc., Kansas City, Mo. 862,088, pub. 10–1–68. Cl. 46.
Simoniz Co., Chicago, Ill. 862,125, pub. 10–1–68. Cl. 52.
Skandinavisk Tobakskompagni A/S, Rodovre, Denmark. 861,885, pub. 10–1–68. Cl. 17.
Slaughter, C. K., Inc., Daytona Beach, Fla. 862,027, pub. 10–1–68. Cl. 39.
Slip-Pruf Service Corp., Baton Rouge, La. 862,110, pub. 10–1–68. Cl. 50.
Smith, T. J., & Nephew, Ltd., Hull, England. 862,057, pub. 10–1–68. Cl. 44.
Socony-Vacuum Co., Inc., to Mobil Oil Corp., New York, N.Y. 441,479, ren. 12–17–68. Cl. 15.
Socony-Vacuum Oil Co., Inc., to Mobil Oil Corp., New York, N.Y. 441,734, ren. 12–17–68. Cl. 6.
Socta. Prodti. Chimco. Farmacci. A. Bertelli & C., to A. Bertelli S.p.A., Milan, Italy. 69,269, ren. 12–17–68. Cl. 51.
Socta. Prodti. Chimco. Farmacci. A. Bertelli & C., to A. Bertelli S.p.A., Milan, Italy. 69,497, ren. 12–17–68. Cl. 18.
Space-General Corp., The, Glendale, Calif. 739,995, canc. Cl. 26.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 504,654, ren. 12–17–68. Cl. 22.
Splinter Co., St. Charles, Ill. 862,054, pub. 10–1–68. Cl. 44.
Spray Products Corp. Oaks, Pa. 862,168. Cl. 6.
Spring Hill Fuel Co., d.b.a. Aluminum Detail Products, Seattle, Wash. 739,891, canc. Cl. 12.
Standard T Chemical Co., Inc., Chicago, Ill. 861,880, pub. 10–1–68. Cl. 16.
Stanford Seed Co., Inc., The, Buffalo, N.Y. 506,510, ren. 12–17–68. Cl. 1.
Steck, William, & Co., Inc., New York, N.Y. 739,885, canc. Cl. 8.
Stefano Pernigotti & Figlio S.p.A., Novi Ligure, Italy. 862,180. Cl. 46.
Steiner, Ervin A., Jr., d.b.a. The Detroit Sound Recording Co., Detroit, Mich. 862,171. Cl. 36.
Steinert, Jonas H., d.b.a. G. L. Turner Co., North Little Rock, Ark. 861,947, pub. 10–1–68. Cl. 23.
Stern, Russell, Associates, Inc., Buffalo, N.Y. 740,063, canc. Cl. 39.
Stevens, J. P., & Co., Inc.: *See*—
Forstmann & Huffmann Co.
Stevens, J. P., & Co., Inc., New York, N.Y. 862,040, pub. 10–1–68. Cl. 42.
Stevens, J. P. & Co., Inc., New York, N.Y. 862,043–5, pub. 10–1–68. Cl. 42.
Stratford Neckwear Co., Inc., New York, N.Y. 862,011, pub. 10–1–68. Cl. 39.
Sun Chemical Corp., New York, N.Y. 442,189, ren. 12–17–68. Cl. 11.
Sun Chemical Corp., New York, N.Y. 503,529, ren. 12–17–68. Cl. 11.
Sun Oil Co., Philadelphia, Pa. 441,257, ren. 12–17–68. Cl. 15.
Sun Oil Co., Philadelphia, Pa. 441,485, ren. 12–17–68. Cl. 15.
Sunny Farms, Inc., Edison, Calif. 862,183. Cl. 46.
Sunnyside Products, Inc., Chicago, Ill. 861,854, pub. 10–1–68. Multiple Class (Classes 6, 15, 16, and 52).
Superior Cable Corp.: *See*—
Superior Continental Corp.
Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 861,912, pub. 10–1–68. Cl. 21.
Surf Mfg., Inc., St. Petersburg, Fla. 861,994, pub. 10–1–68. Cl. 39.
Swan-Myers Co., Indianapolis, Ind., to Abbott Laboratories, North Chicago, Ill. 254,532, ren. 12–17–68. Cl. 18.
Sweeney, W. R., Mfgr., to W. R. Sweeney Mfr., Inc., Salisbury, Mo. 507,404, ren. 12–17–68. Cl. 6.
Sweeney, W. R., Mfr., Inc.: *See*—
Sweeney, W. R., Mfgr.
Sweet-Orr & Co., Inc., New York, N.Y. 502,337, ren. 12–17–68. Cl. 39.
Swim-Aid Corp., West Hartford, Conn. 739,957, canc. Cl. 22.
T.G. & Y. Stores Co., Oklahoma City, Okla. 861,878, pub. 10–1–68. Multiple Class (Classes 16, 22, and 39).
Tasty Baking Co., Philadelphia, Pa. 862,179. Cl. 46.
Telesis Corp., Chicago, Ill. 861,915, pub. 10–1–68. Cl. 21.
Tem-Cole, Inc., from The Geo. Weasel, Jr., Pre-Pack Corp., McClure, Ohio. 862,084, pub. 10–1–68. Cl. 46.
Tempower, Inc., King of Prussia, Pa. 862,133, pub. 10–1–68. Cl. 101.
Tetrad Co., Inc., The: *See*—
Tetrad Corp., The.
Tetrad Corp., The, Yonkers, to The Tetrad Co., Inc., Nyack, N.Y. 507,556, ren. 12–17–68. Cl. 36.
Texas Electronic Products Corp., from Diversa Electronics, Inc., Dallas, Tex. 739,991, canc. Cl. 26.

Textron Inc., Providence, R.I. 861,961, pub. 10–1–68. Multiple Class (Classes 27 and 28).
Theratron Corp., St. Paul, Minn. 740,019, canc. Cl. 32.
Thomas, Vincent B., to Harriet Hubbard Ayer, Inc., New York, N.Y. 71,265, ren. 12–17–68. Cl. 51.
Thompson's Malted Food Co., Waukesha, Wis., to The Borden Co., New York, N.Y. 207,098, ren. 12–17–68. Cl. 46.
Tip Top Hosiery Mills, Inc., Asheboro, N.C. 862,028, pub. 10–1–68. Cl. 39.
Toscany Imports Ltd., New York, N.Y. 861,968, pub. 10–1–68. Multiple Class (Classes 30, 33, and 50).
Tramposch, John R., d.b.a. The Wonderful World of Make Believe Flowers, Fairfield, Conn. 862,127, pub. 10–1–68. Cl. 100.
Transolve International, Inc.: *See*— Transolve Systems, Inc.
Transolve Systems, Inc., Cambridge, from Transolve International, Inc., Boston, Mass. 862,128, pub. 10–1–68. Cl. 100.
Tremco Mfg. Co., The, Cleveland, Ohio. 861,864, pub. 10–1–68. Cl. 12.
Tropicana Preserve Co., Inc., Miami, Fla. 862,074, pub. 10–1–68. Cl. 46.
Turner Hall Corp., New York, N.Y. 442,127, ren. 12–17–68. Cl. 51.
Turner, G. L., Co.: *See*— Steinert, Jonas H.
USV Pharmaceutical Corp., New York, N.Y. 861,891, pub. 10–1–68. Cl. 18.
Ulmer, Richard L.: *See*— Rand Securities Research Corp.
Ultramatic Equipment Co., Addison, Ill. 861,942, pub. 10–1–68. Cl. 23.
Underwood, William, Co.: *See*— Richardson and Robbins Co.
United Shoe Machinery Corp., Boston, Mass. 861,951, pub. 10–1–68. Cl. 23.
Universal Pulp Containers Ltd., Glasgow, Scotland. 739,887, canc. Cl. 10.
Upjohn Co., The, Kalamazoo, Mich. 739,926, canc. Cl. 18.
Upjohn Co., The, Kalamazoo, Mich. 861,892–3, pub. 10–1–68. Cl. 18.
Uram, Pete, Sales, Inc., Wyandotte, Mich. 861,927, pub. 10–1–68. Cl. 22.
Van Horn Information Processing Systems Corp., Washington, D.C. 862,135, pub. 10–1–68. Cl. 101.
Vance Chemical Co., Inc., Weehawken, N.J. 739,892–3, canc. Cl. 12.
Verlinde S.A., Loos-Lez-Lille (Nord), France. 861,943, pub. 10–1–68. Cl. 23.
Viajes Melia, S.A., Madrid, Spain. 862,158, pub. 10–1–68. Cl. 105.
Visual Graphics Corp., New York, N.Y. 861,982–3, pub. 10–1–68. Cl. 38.
Vlchek Tool Co., Cleveland, Ohio. 861,937, pub. 10–1–68. Cl. 23.
Wade, Wenger Servicemaster Co.: *See*— Servicemaster Industries Inc.
Waldes Kohinoor, Inc., Long Island City, N.Y. 861,870, pub. 10–1–68. Cl. 13.
Wampole, Henry K., & Co., Inc., Philadelphia, Pa., to Denver Chemical Mfg. Co., Stamford, Conn. 248,315, ren. 12–17–68. Cl. 18.
Wasa: *See*— Wasabrod Aktiebolag.
Wasabrod Aktiebolag, d.b.a. Wasa, Filipstad, Sweden. 862,076–7, pub. 10–1–68. Cl. 46.
Washington Canners Cooperative, Vancouver, Wash. 251,334, ren. 12–17–68. Cl. 46.
Washington Canners Cooperative, Vancouver, Wash. 506,206, ren. 12–17–68. Cl. 46.
Water-Sportsmen International, Inc., Fort Lauderdale, Fla. 740,142, canc. Cl. 100.
Weasel, Geo., Jr., Pre-Pack Corp., The: *See*— Tem-Cole, Inc.
Weber, Arnold J., New York, N.Y. 862,016, pub. 10–1–68. Cl. 39.
Weller, Howard E., Miami, Fla. 861,879, pub. 10–1–68. Cl. 16.
Wellco Carpet Corp., Calhoun, Ga. 862,041, pub. 10–1–68. Cl. 42.
Westinghouse Air Brake Co., Chicago, Ill. 861,911, pub. 10–1–68. Cl. 21.
White Collar Girls of America, Inc., Chicago, Ill. 862,140, pub. 10–1–68. Cl. 101.
White, L. B., Co., Inc., La Crosse, Wis. 740,029, canc. Cl. 34.
Whitlam, J. C., Mfg. Co., Inc., Wadsworth, Ohio. 862,189. Cl. 52.
Willard Storage Battery Co., Cleveland, Ohio, to ESB Inc., Philadelphia, Pa. 502,333, ren. 12–17–68. Cl. 21.
Williams, Beverly E., La Grange Park, Ill. 862,092, pub. 10–1–68. Cl. 46.
Williams Gold Refining Co. Inc., Buffalo, N.Y. 861,954, pub. 10–1–68. Cl. 26.
Williams, J. B., Co., Inc., The: *See*— Semler, R. B., Inc.
Winchell Donut House, Inc., South El Monte, Calif. 862,070, pub. 10–1–68. Cl. 45.
Winchell Donut House, Inc., South El Monte, Calif. 862,081, pub. 10–1–68. Cl. 46.
Windecor, Inc., Santa Barbara, Calif. 862,107, pub. 10–1–68. Cl. 50.
Wonderful World of Make Believe Flowers: *See*— Tramposch, John R.
Wood, John, Co.: *See*— Wood, John, Mfg. Co., Inc.
Wood, John, Mfg. Co., Inc., Chicago, Ill., and Philadelphia, Pa., to John Wood Co., Conshohocken, Pa. 505,465–6, ren. 12–17–68. Cl. 34.
Woodall, B. Lloyd, d.b.a. B. Lloyd's Pecan Products, Barnesville, Ga. 862,079, pub. 10–1–68. Cl. 46.
Wyco Tool Co., The, Chicago, Ill. 861,930, pub. 1–16–68. Cl. 23.
Yarway Corp., Blue Bell, Pa. 861,874, pub. 10–1–68. Cl. 13.
Zanol Products Co.: *See*— American Products Co., The.
Zenith Radio Corp., Chicago, Ill. 862,059, pub. 10–1–68. Cl. 44.

U.S. GOVERNMENT PRINTING OFFICE: O——1968

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 24, 1968 Volume 857 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1968

Examiner affirmed	142
Examiner affirmed in part	18
Examiner reversed	50
Total	210

Adjudicated Patents

(D.C.M.D.) Reifers Patent No. 2,990,094 (229—2.5), for MOLDED PULP EGG CARTON, *Held* valid and infringed. *Diamond International Corporation* v. *Harry C. Walterhoefer, Jr.*, 289 F. Supp. 550; — USPQ —.

(D.C.D.C.) Laguerre Patent No. 3,140,038 (229—54), for HANDLE AND CLOSURE DEVICE FOR THERMAL PLASTIC BAGS, *Held* invalid. *Windmöller* v. *Laguerre*, 289 F. Supp. 178; 159 USPQ 24.

(D.C.D.C.) Laguerre Patent No. 3,227,358 (229—54), for HANDLE AND CLOSURE DEVICE FOR THERMAL PLASTIC BAGS, *Held* invalid. *Id.*

Erratum

Substitute for 843 O.G. 1566 notice re Patent No. 2,802,448 the following:

(D.C. Del.) Young Patent No. 2,802,448 (120—45.40), for FOUNTAIN. CONSTRUCTION AND INK CARTRIDGE THEREFOR. Claim 1 *held* valid and infringed; claim 2 *held* valid but not infringed. *Waterman-Bic Pen Corp.* v. *W. A. Sheafer Pen Co., Division of Textron Inc.*, 267 F. Supp. 849; 153 USPQ 499.

Dedication

2,721,148.—*Ralph R. Reading*, Hawthorne, Calif. SPRAY DEVICE FOR RETREADING TIRES AND THE LIKE USES. Patent dated Oct. 18, 1955. Dedication filed July 10, 1968, by the assignee, *John M. Lee.*

Hereby dedicates to the people of the United States the entire term of said patent.

Disclaimers

2,959,347.—*Robert W. Kearns*, Detroit, Mich. MEANS FOR EXTENDING THE USEFUL FREQUENCY RESPONSE OF MEASURING INSTRUMENTS. Patent dated Nov. 8, 1960. Disclaimer filed July 9, 1968, by the inventor.

Hereby enters this disclaimer to claim 1 of said patent.

3,185,573.—*Max J. Harvey*, Trenton, N.J. ANIMAL FEED COMPOSITION AND METHOD OF USING SAME. Patent dated May 25, 1965. Disclaimer filed July 10, 1968, by the assignee, *American Cyanamid Company.*

Hereby enters this disclaimer to claims 11, 12, 13 and 14 of said patent.

3,289,606.—*Paul Bosch*, Ludwigsburg, Germany. AXIAL PISTON PUMP OR MOTOR ARRANGEMENT. Patent dated Dec. 6, 1966. Disclaimer filed July 12, 1968, by the assignee, *Robert Bosch G.m.b.H.*

Hereby enters this disclaimer to claims 7 and 8 of said patent.

3,340,929.—*Knox A. Slagle*, Duncan, Okla. METHOD FOR CEMENTING WELLS. Patent dated Sept. 12, 1967. Disclaimer filed Nov. 20, 1968, by the assignee, *Halliburton Company.*

Hereby enters this disclaimer to claim 13 of said patent

3,404,249.—*Karl E. Dorschu*, Basking Ridge, N.J. WELDING OF HIGH YIELD STRENGTH STEEL. Patent dated Oct. 1, 1968. Disclaimer filed June 24, 1968, by the assignee, *Air Reduction Company, Incorporated.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Nov. 2, 1982.

3,406,514.—*George Andrew Hanlon*, Branford, and *Albert James Garde*, Milford, Conn. COMMUNICATION CABLE QUAD AND METHOD OF MAKING SAME. Patent dated Oct. 22, 1968. Disclaimer filed Nov. 20, 1968, by the assignee, *The Whitney Blake Company.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Jan. 16, 1985.

Certificates of Correction Listing

Certificates of Correction are issued every Tuesday. Beginning January 7, 1969, each issue of the OFFICIAL GAZETTE will numerically list all U.S. Patents having Certificates of Correction issuing that Tuesday. The list will appear under the heading "Certificates of Correction Issued (date)."

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 22, 1968.

Abandonment of Applications Before Board of Appeals

There have been recent instances of the Board of Appeals rendering a decision in an application which had already been refiled as a streamlined continuation.

New Applications Received During September 1968

Patents	7274
Designs	443
Plant Patents	11
Reissues	23
Total	7751

Issue—December 24, 1968

Patents	1251	No. 3,417,406	to No.	3,418,656, incl.
Designs	33	No. 213,001	to No.	213,033, incl.
Plant Patents	3	No. 2,850	to No.	2,852, incl.
Total	1287			

To avoid recurrence of this situation, applicants should promptly inform the Clerk of the Board in writing as soon as they have positively decided to refile or to abandon an application containing an appeal awaiting a decision. Failure to exercise appropriate diligence in this matter may result in the Board's refusing an otherwise proper request to vacate their decision.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 2, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-08-66	1-30-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-17-66	7-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-02-66	2-24-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*3-30-66	*7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-22-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-19-66	4-06-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-13-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-03-66	*11-01-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-07-66	10-16-63
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-27-66	4-28-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	2-15-68	6-14-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-07-67	10-08-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*1-03-67	2-18-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1-05-67	11-23-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-01-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	7-19-67	5-19-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	4-07-67	*7-10-63

Total number of pending applications (excluding Designs)	186,420
Total number of Design applications pending	2,677

Expiration of patents: The patents within the range of numbers indicated below expire during December 1968, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents	Numbers 2,576,909 to 2,580,378, inclusive
Plant Patents	Numbers 1,049 to 1,058, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE NORMAN A. MEINHARDT

No. 7922. Decided April 11, 1968

[55 CCPA —; 392 F.2d 273; 157 USPQ 270]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CLAIMS CONSIDERED TOGETHER.

"Appellant raises no issue here as to the specific differences of the remaining claims, from which we conclude that the claims stand or fall together."

2. PATENTABILITY—REFERENCE—"NON-PREFERRED" REFERENCE DISCLOSURE CONSIDERED.

"All of the disclosure of the Goldsmith reference must be considered for what it fairly teaches one of ordinary skill in the art. *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507, 510 (1966). Indeed, that disclosure is pertinent to a determination of the scope and content of the prior art, *Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). We thus conclude that the pertinence of 'non-preferred' disclosure must likewise be reviewed in the light of what it teaches to one of ordinary skill in the art."

3. SAME—COMPOSITION—PROPERTIES CONSIDERED—SYNERGISM—*In re Huellmantel* CONSTRUED.

"In *In re Huellmantel* * * * this court pointed out that properties of compositions involving the admixture of two or more compounds must be considered in determining obviousness under 35 U.S.C. 103. There, as here, the Examiner apparently conceded that appellant's composition showed 'improved results.' There, the reference gave at least a hint of synergism, whereas here the suggestion of synergism is much stronger. We viewed the matter of synergism as a property to be considered * * *."

4. SAME—SAME—OBVIOUSNESS.

" * * * the question of non-obviousness must turn on whether the prima facie case of obviousness of the claimed composition is rebutted by a showing of unexpected results."

5. SAME—SAME—EVIDENCE.

"If he is to prevail, he must show that whatever improvement he made over the prior art was unobvious, as well as novel and useful. If he merely followed the teachings of the prior art or obvious variants thereof, he, of course, would not be entitled to a patent under the statutes. If, however, he discovered a composition which, in contemplation of law, would have been unobvious when tested against the standard of one of ordinary skill in the art, he should prevail. In this case, to achieve that latter position, he must produce evidence that his results were 'unexpected' when compared to the results achieved by the prior art."

6. APPEAL TO THE BOARD OF APPEALS—MATTER BEFORE BOARD—RELIANCE ON PORTION OF REFERENCE IGNORED BY EXAMINER—*In re Azorlosa* CONSTRUED.

"* * * the Board relied on the same references as the Examiner to sustain the rejection. Assuming arguendo that the Board relied upon a portion of the Goldsmith disclosure ignored by the Examiner, this could not constitute a new ground of rejection in view of *In re Azorlosa*, 44 CCPA 826, 241 F.2d 939, 113 USPQ 156 (1957), which holds, in pertinent part, that it is proper for the court and, necessarily, the Board, to consider everything that a reference discloses."

7. PATENTABILITY — PARTICULAR SUBJECT MATTER — ZINC PHOSPHORODITHIOATE COMPOSITIONS.

The refusal of certain claims to zinc phosphorodithioate compositions, as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 252,307.

AFFIRMED.

Roger Y. K. Hsu, Almon S. Nelson, Joseph F. Shekleton, William H. Pittman, Oberlin, Maky, Donnelly and Renner (*Donald D. Jeffrey*, of counsel) for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH and ALMOND, *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals,[1] adhered to on reconsideration, affirming the Examiner's rejection of the remaining claims of appellant's application[2] as obvious over certain prior art within the meaning of 35 U.S.C. 103.

Two issues are presented in this appeal: (1) whether the Board erred in considering the rejected claims to be obvious and therefore unpatentable in view of the prior art under 35 U.S.C. 103, and (2) whether the Board erred in refusing to regard its decision as involving a new ground of rejection, thus denying appellant an opportunity to respond fully to that rejection under Rule 196(b).

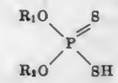
The disposition of the issue of "obviousness" ultimately turns, as will be seen, on the question of whether appellant's proofs relating to a zinc phosphorodithioate composition useful as an additive in lubricants shows that the composition exhibits an unexpected synergism and hence is nonobvious. We conclude, however, that appellant's evidence is insufficient to overcome the evidence of obviousness upon which the Patent Office position is based. *In re Diamond*, 53 CCPA 1172, 360 F.2d 214, 149 USPQ 562 (1966); *In re Luvisi*, 52 CCPA 1063, 342 F.2d 102, 144 USPQ 646 (1965); *In re Huellmantel*, 51 CCPA 845, 324 F.2d 998, 139 USPQ 496 (1963).

The invention relates to an admittedly novel zinc phosphorodithioate composition which is useful as a corrosion-inhibiting additive to lubricants. The composition of the invention is a mixture of two separately prepared, individual zinc salts of phosphorodithioic acids. The two salts are referred to as (A) and (B) in the specification, the claims and in this opinion. The language of the claims is sufficient to identify the chemical nature of the zinc salts. The separately prepared, individual zinc salts are mixed in a specified range of mole ratios.

Claim 14 is the broadest of the rejected claims and reads:

14. A zinc phosphorodithioate composition useful as an improving agent in lubricants which composition is obtained by separately preparing and then mixing:

(A) the zinc salts of a mixture of phosphorodithioic acids having the structure

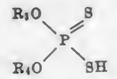


in which R_1 and R_2 are selected from the group consisting of lower molecular weight primary aliphatic hydrocarbon radicals having less than 5 carbon atoms and higher molecular weight primary aliphatic hydrocarbon radicals having from 5 to about 18 carbon atoms, the molar ratio of lower molecular weight radicals to higher molecular weight radicals in the zinc salt mixture being within the range of 1:1 to 6:1; and

[1] The board consisted of Messrs. Behrens, Examiner-in-Chief, and Stone and Campbell, Acting Examiners-in-Chief. For the various views of this court on the legality of boards so constituted, see *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967). Mr. Campbell wrote the opinion of the board.

[2] Claims 2 through 14 are here in issue and are all of the remaining claims, of appellant's application Serial No. 252,307, filed January 18, 1963, entitled "Composition."

(B) the zinc salt of at least 1 phosphorodithioic acid having the structure



in which R_3 and R_4 are selected from the group consisting of primary aliphatic hydrocarbon radicals having from about 6 to about 40 carbon atoms and alkyl-substituted aromatic radicals having from about 9 to about 96 carbon atoms;

the mole ratio of A:B in said zinc phosphorodithioate composition being within the range from about 1:5 to about 5:1.

[1] Appellant raises no issue here as to the specific differences of the remaining claims, from which we conclude that the claims stand or fall together.

The references relied upon are:

Mikeska, 2,506,310, May 2, 1950.
Goldsmith, 2,838,555, June 10, 1958.
Higgins et al., 3,000,822, Sept. 19, 1961.

The claims were rejected "as being obvious over Mikeska and Higgins et al. in view of Goldsmith." It may be noted that both Higgins and Goldsmith are also assigned to appellant's assignee, The Lubrizol Corporation.

Appellant does not contest that components (A) and (B), taken individually, are each known to the art. In his brief he states:

For the present purpose, it may be admitted that *Higgins et al.* show subject matter within component (A) of appellant's mixture and *Mikeska* shows subject matter within component (B) of appellant's mixture. Neither *Higgins et al.* nor *Mikeska* shows appellant's mixture.

* * * * * * *

Inasmuch as appellant concedes that components (A) and (B) are each individually known in the art, it is unnecessary to consider *Higgins et al.* and *Mikeska* in any detail. Suffice it to say that *Higgins et al.* is illustrative of component (A) and *Mikeska* is illustrative of component (B).

In his statement of the final rejection, the position of the Examiner as to the efficacy of the teachings of Goldsmith was:

* * * The Goldsmith reference teaches that it is quite old in the art to use mixtures of metal salts of dialkyl dithiophosphoric acids as antioxidants and corrosion inhibitors for lubricating oil compositions. Thus this reference teaches that such mixtures can be prepared by (*a*) reacting P_2S_5 with a mixture of alcohols with subsequent reaction with ZnO, (*b*) by individually preparing the dithiophosphoric acid esters by reaction of P_2S_5 with individual alcohols with the subsequent reaction of a mixture of such acid esters with ZnO or (*c*) by preparing the individual metal salts with subsequent mixing.

Applicant has merely followed this last teaching of Goldsmith and combined two known corrosion inhibiting additives as shown by the primary references. It is the position of the Examiner that no patentable invention is involved in following prior art teachings *even if results are better than expected.* * * * [Emphasis added and citations omitted.]

In response to argument filed by the appellant after the final rejection, the Examiner elaborated somewhat:

* * * Goldsmith teaches that mixtures of metal salts of dithiophosphates are more effective as corrosion inhibitors than prior art material * * * and that zinc salts give superior results * * *. It appears that applicant has merely experimented within the bounds defined by Goldsmith to determine optimum results. Applicant has merely extended the teachings of the prior art in an obvious manner and *nothing of patentable merit can be seen in determining that in a narrow field of corrosion inhibitors which are known to be superior, one is more superior.* [Reference to particular portions of Goldsmith omitted and emphasis added.]

The Board affirmed, stating:

* * * The method claimed herein appears to generally follow method (5) of the [Goldsmith] patent, wherein appellant mixes a simple salt such as could be obtained by method (3), corresponding to appellant's B, with a mixed salt prepared by method (1) of the patent (appellant's A). * * *

The language of the Board may be better understood from the following specific disclosure from the Goldsmith patent:

The preparation of the dithiophosphate salt-ester material is accomplished by at least one of the following methods:

(1) The reaction of P_2S_5 with a mixture of alcohols, and subsequently reacting the resultant mixture with the desired basic reagent;

(2) First preparing simple acids by the separate reaction of P_2S_5 with each of the desired alcohols; mixing two or more of such simple acids together and then reacting the mixture with the desired basic reagent;

(3) First preparing simple acids by the separate reaction of P_2S_5 with each of the desired alcohols; then reacting separately each of the simple acids with the desired basic reagent, followed by mixing the desired salts together;

(4) The mixed acids of method (1) above are mixed with the simple acids of method (2) above, and then the resultant mixture is reacted with the desired reagent; and

(5) The simple salts of method (3) above are mixed with the mixed salts of method (1) above.

Thus, Goldsmith does not disclose the particular zinc phosphorodithioate composition of appellant's invention, although methods (3) and (5) above teach generally the mixing of metal phosphorodithioates. Appellant here asserts that zinc phosphorodithioates are most commonly prepared from alcohols, phosphorus pentasulfide, and zinc oxide by certain reactions. He argues that a zinc phosphorodithioate composition can be prepared by techniques involving the use of a mixture of alcohols, a mixture of phosphorodithioic acids, or a mixture of zinc phosphorodithioates and that variations and combinations of such techniques give rise to many methods, including the five methods disclosed in Goldsmith.

Appellant thus concludes that a metal phosphorodithioate product prepared by one method may be identical in empirical and overall chemical composition with another product prepared by a different method. Appellant states that the two products will not be identical in respect to their precise composition, i.e., they will differ in the arrangement of the organic groups, the presence or absence of some individual components, and the specific distribution of the individual components. Thus, appellant asserts that their difference cannot be characterized except in terms of the particular methods by which the products are prepared.

It can be seen that appellant's claims specify that the components (A) and (B) must be separately prepared and then mixed. Since Goldsmith *prefers* methods (1) and (2) above, which involve the use of a mixture of alcohols and a mixture of phosphorodithioate acids, respectively, appellant argues that Goldsmith thus regards methods (3) and (5) as not being preferred. As noted above, those methods generally relate to separately preparing metal phosphorodithioates and then mixing them.

We do not perceive the significance of this argument. **[2]** All of the disclosure of the Goldsmith reference must be considered for what it fairly teaches one of ordinary skill in the art. *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507, 510 (1966). Indeed, that disclosure is pertinent to a determination of the scope and content of the prior art. *Graham* v. *John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467

(1966). We thus conclude that the pertinence of "non-preferred" disclosure must likewise be reviewed in the light of what it teaches to one of ordinary skill in the art.

We turn now to the differences between appellant's claims and the prior art. Initially, it may be observed that appellant raised no issue here, or below, with respect to the mole ratio of the components specified in the claims.

The Goldsmith reference does not specifically disclose the particular zinc phosphorodithioate composition of the rejected claims, nor does it mention any phosphorodithioates in which the organic radicals are alkyl-substituted aromatic radicals. While that reference illustrates mixtures of metal phosphorodithioates by specific examples in Table II, only one example is a mixture of two *zinc* phosphorodithioates. That example is a mixture of "zinc di-(hexylcyclohexyl) dithiophosphate" and "zinc (ethyl) (propyl) dithiophosphate"; and that mixture is different from the mixture of appellant's invention.

However, we agree with the Solicitor that the teachings of the Goldsmith reference render appellant's claims at least prima facie obvious. By way of illustration, Example 8 of Table II of Goldsmith also points toward the obviousness of the composition of claim 14. That example relates to a mixture of cadmium di-lauryl dithiophosphate and strontium (ethyl) (amyl) dithiophosphate. Accordingly, in view of the prominence accorded to zinc by Goldsmith, as well as by Higgins, which is concerned solely with zinc salts of phosphorodithioates, these two patents would suggest the mixture of zinc salts corresponding to the mixed salts of Example 8. Goldsmith specifically mentions that:

> For certain uses, and particularly as lubricant additives, superior results have usually been obtained when the salt-forming radical employed in the preparation of dithiophosphate salt-ester materials of the present invention is selected from the metals in Group II of the periodic table of elements, and especially where the salt-forming radical is zinc. Further, it has been found that dithiophosphate materials which have an average of from 8 to 9.6 carbon atoms per atom of phosphorus will be found to be preferable for many uses.

Thus, in the light of that teaching, the ethyl and amyl radicals in the examples of Goldsmith would correspond to R_1 and R_2 of component A of the claim, having 2 (less than 5) and 5 (from 5 to about 18) carbon atoms, respectively, and "di-lauryl" of Example 8 corresponds to R_3 and R_4 of component B of the claim, where R_3 and R_4 are the same, and each is a primary aliphatic hydrocarbon radical having 12 carbon atoms.

Thus, the substance of our position at this juncture is that we agree with the Patent Office that the prior art establishes a prima facie case of obviousness under 35 U.S.C. 103. Our inquiry now is directed to the ultimate issue of whether appellant's evidence overcomes the position of the Patent Office. The appellant's position is that the factual showing in the record clearly demonstrates that the claimed composition has unexpected properties. We turn now to a discussion of that evidence.

The factual showing consists of two sets of performance data, each comparing the claimed zinc phosphorodithioate composition with products of the prior art. The data are said to demonstrate synergism in the claimed composition. They show that the claimed composition which is obtained by separately preparing and then mixing component (A) and component (B) (zinc di-(oxo-octyl) phosphorodithioate), is more than twice as effective to impart corrosion inhibiting properties to lubricants as each of components (A) and (B) alone.

Similarly, the data are also said to demonstrate the properties of another claimed composition in which component (B) is a zinc salt of an "alkyl-substituted aromatic" phosphorodithioic acid. Thus, the data show that the claimed composition, which is obtained by separately preparing and then mixing component (A) and component (B) (zinc di-(heptylphenyl) phosphorodithioate), is more effective than each of components (A) and (B) alone.

The Examiner seemed to recognize that the results were "better than expected," as exemplified by the underscored portion of his final rejection above, and seems further to have maintained that position in his letter after the final rejection.

In his answer, the Examiner stated that he did not dispute the data shown either in the specification, which we previously discussed, or in the affidavit filed under Rule 132, which we will discuss later. As heretofore indicated, Goldsmith contemplates the use of mixtures of metal salts, as evidenced by method (5), and Table II therein. The reference further teaches that such mixtures give superior results. In this respect, the specification of Goldsmith states:

> • • • After having unexpectedly found that stable, oil-soluble salt-esters could be economically produced in this novel way, another program was conducted to determine the effectiveness of the new salt-ester materials as corrosion inhibitors. The result of this undertaking quite unexpectedly showed that in order to obtain the same corrosion-inhibiting effect of a high molecular weight hydrocarbon-substituted salt-ester, it actually took a smaller amount on a weight basis of the novel salt-esters of this invention. This discovery is extremely important, because salt-esters are sold on a weight basis for use in lubricants.
>
> Therefore, it is now possible, by means of the present invention, to provide novel salt-ester materials which are economical to produce and are also more effective than the heretofore known oil-soluble salt-esters as corrosion inhibitors in lubricants, on a given weight basis.

From these and other portions of the Goldsmith reference, the Examiner in his answer concluded:

> Goldsmith does suggest that mixtures of metal salts of dithiophosphates would be synergistic. He teaches that smaller amounts of such mixtures give equivalent or better results than a large amount of prior art metal salts • • •.

We agree with the position of the Solicitor, as set forth in his brief:

> • • • Appellant has not challenged these findings by the Examiner, in his brief. These findings, read in the light of the Examiner's entire answer, suggest that the Examiner was of the opinion that the combined prior art teachings made the claimed invention so obvious that only a much stronger showing of unexpectedly improved results than that presented, would have sufficed to render unobvious the subject as a whole of claim 14. • • • *In re Umbricht*, 52 CCPA 1586, 1592 [347 F.2d 882, 886], 146 USPQ 214, 218 [1965], demonstrates the legal soundness of the Examiner's position.

[3] In *In re Huellmantel*, supra, this court pointed out that properties of compositions involving the admixture of two or more compounds must be considered in determining obviousness under 35 U.S.C. 103. There, as here, the Examiner apparently conceded that appellant's composition showed "improved results." There, the reference gave at least a hint of synergism, whereas here the suggestion of synergism is much stronger. We viewed the matter of synergism as a property to be considered as follows, 51 CCPA at 850, 324 F.2d at 1003, 139 USPQ at 500:

> As to properties, appellant argues that his composition exhibits unexpected synergism. Synergism is one factor to be considered in the ultimate determination of obviousness of the composition. However, we attribute no magic status to

synergism per se since it may be expected or unexpected. On the record before us, we see nothing "unexpected" in appellant's synergism. * * * However, nothing in the record shows that similar synergism is not attained by Holt et al. or by using "Salcort."

There we also noted that no tests comparing the composition of the prior art with the appellant's composition were of record.

In *In reLuvisi*, supra, we applied the "dictate" of *Huellmantel* and inquired as to what properties of the claimed invention had been shown. There, as here, appellant contended that synergism was clearly demonstrated while the Solicitor contended that such a finding was within the teaching of the prior art reference. There, we stated, 52 CCPA at 1072, 342 F.2d at 109, 144 USPQ at 652:

We do not accept the notion that every suggestion of synergism in the art coupled with a finding of synergism in the practice of the invention *automatically* compels a conclusion of obviousness. * * * [A] synergistic composition could well be *un*obvious even though "synergism" is suggested in the prior art. For example, the claimed compositions may be *many times more synergistic* than any of the prior art compositions. Again, some prior art compositions may show little synergism and others show considerable synergistic effects, with the net result that predictability is impossible save the fact that a synergistic result *of some kind* will probably be found. The situation before us is a blend of these two examples, i.e., the prior art compositions display less synergism than the claimed invention and, more importantly, they display such a variation in degree of synergistic effects that predictability is impossible.

[4] Thus, as in *In re Diamond*, supra, the question of nonobviousness must turn on whether the prima facie case of obviousness of the claimed composition is rebutted by a showing of unexpected results.

In an attempt to achieve this showing, appellant filed an affidavit under Rule 132. The data demonstrate that appellant's zinc phosphorodithioate composition (Test Sample III) is about twice as effective as analogous compositions prepared in accordance with Goldsmith's "method (1)" (Test Sample I) and "method (2)" (Test Sample II). These data, according to appellant, brought into sharp focus the critical significance in the particular method by which appellant's zinc phosphorodithioate composition is prepared. The products in the three test samples are identical except for the methods of their preparation; that is, they have analogous empirical compositions and they are derived from the same reactants employed in the same relative proportions.

The Examiner considered that affidavit as not persuasive in view of the teaching of Goldsmith. The Board likewise took a dim view of appellant's showing, stating:

* * * Absent unexpected results for mixing the specific mixed salts of Higgins et al. with the specific simple salts of Goldsmith or Mikeska, using a method taught by Goldsmith, [it] appears to us to be obvious to do so. While appellant points to Table III on page 22 as evidence of an unexpected result, we do not find that it is sufficient to show any different results for the specific compositions of claims 9 and 10 than might be obtained for many other mixtures produced by method (5) of Goldsmith. *A fortiori*, it does not establish unexpected results for appellant's broader claims over other mixed products which the art suggests.

At oral argument, appellant's counsel asserted that the claimed invention was better than products having the same empirical composition and made by other methods. The data presented by appellant were directed to methods (1) and (2) of Goldsmith. At oral argument, appellant thus admitted that the product of appellant's invention was achieved by following method (5) of Goldsmith.

This, in our view, is the fatal deficiency of appellant's evidence before the Office. **[5]** If he is to prevail, he must show that whatever improvement he made over the prior art was unobvious, as well as novel and useful. If he merely followed the teachings of the prior art or obvious variants thereof, he, of course, would not be entitled to a patent under the statutes. If, however, he discovered a composition which, in contemplation of law, would have been unobvious when tested against the standard of one of ordinary skill in the art, he should prevail. In this case, to achieve that latter position, he must produce evidence that his results were "unexpected" when compared to the results achieved by the prior art.

Thus, while we do not agree with the broad sweeping statements of the Examiner with respect to results, we conclude that the position of the Patent Office was basically sound. Had appellant provided a broader base of probative evidence before the Office, he would, in the words of the Solicitor, have been in a "better" position. On this record, we are thus disposed to affirm the decision of the Board.

Appellant contends that the Board's holding that his evidence, or showing of facts, was insufficient to overcome the prior art rejection was a new ground of rejection, contrary to the position taken by the Examiner, and that "a full opportunity to answer it should be afforded appellant." It is pertinent to note here that in its supplementary decision, the Board asserted that the rejection as expressed by it in its principal decision "remains the same rejection on the same references under 35 U.S.C. 103, and this is not a new ground of rejection." [3]

[6] Considering the merits, the Board relied on the same references as the Examiner to sustain the rejection. Assuming arguendo that the Board relied upon a portion of the Goldsmith disclosure ignored by the Examiner, this could not constitute a new ground of rejection in view of *In re Azorlosa*, 44 CCPA 826, 241 F.2d 939, 113 USPQ 156 (1957), which holds, in pertinent part, that it is proper for the court and necessarily, the Board, to consider everything that a reference discloses.

[7] Thus, the decision of the Board is affirmed.

AFFIRMED.

[3] In response to the Board's supplementary decision, appellant petitioned the Commissioner to reopen prosecution of the application to permit him to present the data the Board thought necessary to support his position. On referral to the Acting Director of the Chemical Examining Operation, the latter denied the petition holding that:

A mere statement that the evidence presented is insufficient to support arguments is not a new ground of rejection nor does it clearly invite the presentation of additional data.

See *In re Maloy*, 51 CCPA 1081, 328 F.2d 933, 140 USPQ 599 (1964).

U.S. Court of Customs and Patent Appeals

IN RE JOHN COVELL COLLIER

No. 7973. Decided June 27, 1968

[55 CCPA —; 397 F.2d 1003; 158 USPQ 266]

1. CLAIM — INDEFINITENESS — COMBINATION — STRUCTURAL RELATIONSHIPS BETWEEN ELEMENTS NOT POSITIVELY RECITED—35 U.S.C. 112, SECOND PARAGRAPH.

"Appellant appears to argue that we should regard the statements in the claim * * * about intended uses, capabilities, and structure which will result upon the performance of future acts, as positive structural limitations; he seems to believe that his invention (on which a claim in proper structural form has been allowed) is particularly pointed out and distinctly claimed within the meaning of section 112 because of the presence of these statements. He is apparently aware of the necessity for limiting his claim as he thinks he has done. We agree with the Board, however, that the claim does not positively recite structural relationships of the two elements, identified as [1] and [2],

in its recitation of what may or may not occur. In this sense it fails to comply with section 112, second paragraph, in failing distinctly to claim what appellant in his brief insists is his actual invention."

2. SAME—SAME.

"The main fault we observe in claim 17 is indefiniteness in the sense that things which may be done are not required to be done. For example, the ferrule or connector member is crimpable but not required, structurally, to be crimped; the ground wire 'means,' which we take to be a piece of wire, is for disposition under the ferrule but is not required to be disposed anywhere; it becomes displaced when the ferrule is crimped but that may never be, so far as the language of claim 17 is concerned. These cannot be regarded as structural limitations and therefore not as positive limitations in a claim directed to structure. They cannot therefore be relied on to distinguish from the prior art."

3. SAME—PARTICULAR SUBJECT MATTER—"ELECTRICAL CONNECTIONS."

The refusal of a certain claim in an application entitled "Electrical Connections," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 242,973.

AFFIRMED.

William Hintze (*Truman S. Safford*, *Roger L. Hansel*, of counsel), *Adrian J. LaRue* for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK *

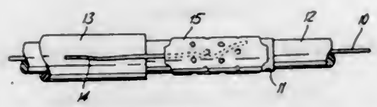
RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claim 17 of application Serial No. 242,973, filed December 7, 1962, entitled "Electrical Connections."

The rejection of claim 17 is based on two grounds: (1) that it does not comply with 35 U.S.C. 112 because incomplete and indefinite; (2) that the subject matter defined by the claim is obvious under 35 U.S.C. 103 in view of a patent to Dumire et al., No. 3,109,052, Oct. 29, 1963. Other references were cited and relied on by the Examiner but the Board held them merely cumulative.

The invention relates to making a ground wire connection with the shield conductor of a coaxial cable and is illustrated by FIG. 4 of the application drawings:

FIG. 4.



The coaxial cable has an axial conductor 10 covered by insulation 12 over which is the usual coaxial wire braid or second conductor 11 over which is the external insulating sheath 13. It is desired to make a ground connection with the braid 11, through applied wire 14, without damaging the insulation 12. To this end, insulation 13 is stripped back and a perforated metal ferrule 15 is crimped around the braid into generally cylindrical form, the ferrule being rolled up from flat stock. The perforations in the ferrule are struck inwardly so as to produce sharp projections which extend toward the axis and dig into the wire braid but not so far as to damage insulation 12. The perforations are preferably in staggered rows so that when the ferrule is crimped over the ground wire they will distort it into the sinuous path shown in dotted lines, locking it more securely against withdrawal.

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

The single claim on appeal, which we have broken up into its elements for clarity and to which we have added some emphasis, reads:

17. *For use* in a ground connection,
[1] a connector member *for* engaging shield means of a coaxial cable means, said connector member comprising a substantially rectangular piece of metal formed into trough form to define a ferrule-forming member, said ferrule-forming member having
a series of perforations disposed therein toward the axis of the ferrule-forming member and defining inwardly directed frusto-conical projections having jagged edges defining lances converging toward their tips,
said ferrule-forming member being *crimpable* onto said shield means with said lances keying into said shield means without penetrating insulation means disposed thereunder,
[2] and ground wire means *for* disposition between said ferrule-forming member and said shield means *upon* the ferrule-forming member being crimped onto the shield means,
said ground wire means *being displaced* in a series of bights around respective perforations to effect serpentine form *when* said ferrule-forming member is crimped onto said shield means.

We consider first the rejection based on section 112. The Examiner's rejection on this score, which the Board appropriately declined to follow, was on the ground that claim 17 was merely a "catalogue of elements." The Examiner's view was that it recites "a connector member, a shield means and a ground wire." We do not regard that as a proper reading of the claim. There is no positive inclusion of "shield means" in what is apparently intended to be a claim to structure consisting of a combination of elements. As we read it, the claim includes only two elements and appellant admitted as much at oral argument. They are [1] the connector member, also redundantly recited as a ferrule-forming member, and [2] the ground wire.

The Board, referring to the Examiner's "catalogue" rejection, said:

Since in connection therewith the Examiner states that "There is no positive recitation of any structural cooperation among the elements listed," we construe this rejection as in fact based on the ground that the claim is incomplete, and therefore indefinite and in this way does not conform to the requirements of 35 U.S.C. 112.

[1] Appellant appears to argue that we should regard the statements in the claim, indicated by the initial italicized words, about intended uses, capabilities, and structure which will result upon the performance of future acts, as positive structural limitations; he seems to believe that his invention (on which a claim in proper structural form has been allowed) is particularly pointed out and distinctly claimed within the meaning of section 112 because of the presence of these statements. He is apparently aware of the necessity for limiting his claim as he thinks he has done. We agree with the Board, however, that the claim does not positively recite structural relationships of the two elements, identified as [1] and [2] above, in its recitation of what may or may not occur. In this sense it fails to comply with section 112, second paragraph, in failing distinctly to claim what appellant in his brief insists is his actual invention.

Of course, if appellant regards his invention as nothing more than the bare combination of a crimpable perforated ferrule and a ground wire, regardless of particular relationships, it cannot be gainsaid

that the claim defines such a combination. But since appellant does not so contend, it must be held that what he says is his invention is not pointed out as the statute requires. This leads us to the second rejection based on obviousness in view of the prior art which cannot be separated from the question of what limitations are and are not included in the claim.

The Dumire et al. patent on which the Board rested its holding of obviousness under section 103 discloses a crimpable, perforated, split, metallic sleeve which engages the wire braid conductor of a coaxial cable without penetrating or damaging the underlying insulation. It is used as part of a screwed-together end fitting and is brought into clamping relationship with the wire braid through the action of tapered fitting parts, the braid being grounded through the fitting. Hence no ground *wire* is shown. The Board said:

> We take judicial notice of the existence of electrical conductors, and of their conventional connection for grounding purposes. Moreover, not only is shielded coaxial cable likewise conventional, but such a cable is disclosed in Dumire et al. at 10, the shield being denoted at 11. Claim 17, as noted above, does not require the elements included therein to be structurally connected or related; it would be satisfied merely by the presence or existence of such elements, and this not even necessarily in proximity. Thus, we consider the claim to present nothing patentable over the connector member 15 of Dumire et al. plus the other apparatus mentioned above [the ground wire] as conventional.

We agree with that reading of claim 17 and consequently with the holding that its subject matter is obvious in view of prior art.

Appellant argues for patentability on the basis of our decision in *In re Gustafson*, 51 CCPA 1358, 331 F.2d 905, 141 USPQ 585 (1964), wherein we held that a rejection for "aggregation" is non-statutory. We see no applicability of the case here. Appellant's argument is predicated on the assumption that the Examiner's rejection of the claim as a mere catalogue of elements was an aggregation rejection. Whatever it was, it no longer existed after the Board opinion interpreting it, as explained above, and basing the rejection squarely on section 112. Quite clearly, and perhaps because of *Gustafson*, the Board disagreed with the Examiner's statement of the rejection.

We have also considered *In re Attwood*, 53 CCPA 784, 354 F.2d 365, 148 USPQ 203 (1966), cited by appellant for the proposition that we should regard the intended use statements in the claim as positive limitations. While there is some logic to the position, *Attwood* did not involve limitations such as some of the more crucial ones here involved, with respect to the ground wire [1], for example, which state what will happen to it *when* the ferrule is crimped, if it is ever crimped. The claim language in the claims on appeal in *Attwood* placed the invention in an entirely different category from that of the reference relied on whereas here both the appealed claim and the reference relate specifically to the making of electrical contact with the very same braid element of coaxial cable. We see no need to apply *Attwood* here nor to modify what we said in *Attwood* under the circumstances of that case.

[2] The main fault we observe in claim 17 is indefiniteness in the sense that things which may be done are not required to be done. For example, the ferrule or connector member is crimpable but not required, structurally, to be crimped; the ground wire "means," which we take to be a piece of wire, is *for* disposition under the ferrule but is not required to be disposed anywhere; it becomes displaced *when* the ferrule is crimped but that may never be, so far as the language

of claim 17 is concerned. These cannot be regarded as structural limitations and therefore not as positive limitations in a claim directed to structure. They cannot therefore be relied on to distinguish from the prior art.

[3] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE ARTHUR B. WINTER *v.* MAURICE P. LEBOURG AND HARRY S. ARENDT (No. 7919)

IN RE MAURICE P. LEBOURG *v.* ARTHUR B. WINTER AND HARRY S. ARENDT (No. 7930)

Nos. 7919 and 7930. Decided May 16, 1968

[55 CCPA; 394 F.2d 575; 157 USPQ 574]

1. INTERFERENCE—PRELIMINARY STATEMENT—AMENDMENT OF STATEMENT.
   "The question of the right to amend a preliminary statement is a matter within the discretion of the Patent Office, and this court will not disturb a decision of the Board of Interferences unless there is a clear abuse of discretion. *Holslag* v. *Steinert*, 31 CCPA 1116, 143 F.2d 661, 62 USPQ 77."
2. SAME—REDUCTION TO PRACTICE—TEST CONSIDERED FAILURE BY ALL WITNESSES.
   "In view of this testimony, corroborated by the other witnesses present, the Board of Interferences correctly concluded: It [the invention] was quite obviously not reduced to practice in the test of December 15, 1958, for that test was considered a failure by all witnesses. Since Lebourg has not proven a reduction to practice prior to or even on the same date as Arendt's filing date, he is not entitled to an award of priority over Arendt. This holding makes it unnecessary for us to consider the issue of whether the device tested by Lebourg was within the count of the interference."
3. SAME—SAME—TESTS.
   "The adequacy of an actual reduction to practice is to be tested by what one of ordinary skill in the art would conclude from the results of the tests. *In re Hartop*, 50 CCPA 780, 311 F.2d 249, 135 USPQ 419."
4. SAME—SAME—SAME.
   "It is apparent to us that the tests were not * * * adequate [to show an actual reduction to practice.] While Winter clearly proved his ability to locate another pipe, he did not demonstrate his ability on that date to carry out the complete method of perforating. His own testimony showed that more work needed to be done before he had an operable well-perforating system * * *."
5. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—RECORD—ASSESSMENT OF COSTS.
   "Appellant Lebourg has asked this court to charge appellee Arendt for the cost of printing certain additions to the record added by motion of Arendt. The assessing of costs in such circumstances is discretionary as provided by Rule 13 of the court. The bulk of the material added to the record by Arendt seems to be reasonably necessary to the full and complete presentation of his case, and the request of Lebourg is accordingly denied.

APPEAL from the Patent Office. Interference No. 93,013.

AFFIRMED.

Russell E. Schlorff for appellant in PA 7919.

Francis J. Hone (*Brumbaugh, Free, Graves & Donohue*, of counsel) for appellant in PA 7930.

John S. Schneider for appellee in PA 7919 and PA 7930.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK *

ALMOND, *J.*, delivered the opinion of the court.

---

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

These are appeals by the two losing parties of a three-party interference. The Board of Patent Interferences awarded priority to Arendt, senior party in the interference, on the ground that neither junior party could overcome Arendt's filing date.

The invention is a method of perforating a pipe string in a well bore without perforating other strings in the same bore. It involves lowering into the string a perforating gun combined with a device capable of sensing the radial position of other tubing strings, such as a directional gamma-ray well logging tool. The device is rotated in the string until the gun is pointing away from the other tubing strings, and the gun is then fired. The single count reads:

1. A method of perforating in a well bore having a plurality of pipe strings arranged therein in side-by-side relationship comprising the steps of: arranging in one of said pipe strings a rotatable tool provided with a perforator having a selected radial direction of perforation and with pipe locator means having a selected radial direction of pipe detection fixed relative to said direction of perforation and capable of locating the radial position of at least one other of said pipe strings relative to a selected angular position of said tool; orienting said tool to a desired radial direction of perforation as determined by said locator means; and actuating said perforator.

The Arendt application is assigned to Arendt's employer, Humble Oil & Refining Co., the Winter one to Dresser Industries, whose subsidiary Lane-Wells Co. was his employer, and the Lebourg one to his employer, Schlumberger Well Surveying Corporation. In 1958 the parties and witnesses were familiar, through the activities of Humble, Lane-Wells and Schlumberger, with methods of completing oil wells by a then conventional method involving setting a string of tubular production casing in the well borehole, filling the annular space between the outside of the casing and the borehole with cement, and firing perforating guns through the casing and cement at spaced locations to establish the flow of petroleum.

In 1958, Humble pioneered a completion technique in which two or more parallel strings of tubing were lowered into a single borehole and cemented in position, these strings being thereafter perforated at different levels to establish flow from one level into one string and from other levels into others. This procedure was called the "multiple tubingless completion" technique, and care was required in its practice to avoid simultaneous perforation of more than one string at a given level. In the early stages of the development, such undesired simultaneous perforation was avoided by rigid securement of the casing strings during insertion and mechanical orientation of the gun within the string to be perforated, so that the perforation direction was away from the other string or strings.

As early as April 1958, Arendt became dissatisfied with this method of controlling the orientation of the gun and proposed in a patent disclosure substitution of a method in which the necessary information to enable the operator to fire the gun away from the other tubing strings would be obtained electronically. Humble was a customer of Schlumberger in this line of activity, and Schlumberger had designed for Humble's use the mechanically oriented devices used in the early stages of the development. In a letter dated August 8, 1958, Lebourg explained to his official superior in the Schlumberger organization, Mr. Andre Blanchard, that he had conferred with Humble engineers, at their request, to discuss a desire on the part of Humble that Schlumberger develop such an electronic tool. It is clear from Lebourg's record that his subsequent conceptions and developments stem from this initial suggestion. It is also clear that the conception and development of Winter stem from a related suggestion made by a Humble representative, James Rike, to a Lane-Wells representative, Floyd O. Bohn, in August 1958. Almost immediately after receiving these suggestions, Lebourg and Winter conceived and documented the methods on which they rely for priority in this interference.

The following dates were alleged in the preliminary statements:

	Lebourg	Winter	Arendt
First drawing	Aug. 1, 1958	Aug. 7, 1958	Apr. 22, 1958
First written description	Aug. 1, 1958	Aug. 7, 1958	Apr. 30, 1958
Disclosure to others	Aug. 1, 1958	Aug. 8, 1958	Apr. 1, 1958
Reduction to practice	Dec. 15, 1958	Sept. 12, 1958	None prior to application
Diligence from	Aug. 1, 1958	Aug. 14, 1958	Apr. 1, 1958
Application filed	Sept. 4, 1959	Mar. 24, 1959	Dec. 15, 1958
Prior application claimed	Feb. 24, 1959 S.N. 795,099	----------	

LEBOURG *v.* ARENDT

We will first consider whether Lebourg, as the last of the three to file his application, is entitled to priority over Arendt, the first to file. It will be noted that Lebourg alleged an actual reduction to practice on December 15, 1958, the exact day on which the Arendt application was filed.

Prior to opening of the preliminary statements, but after being advised of Arendt's filing date, Lebourg moved to amend his statement in order to rely upon an alleged reduction to practice on November 14, 1958. The motion stated that:

• • • the date for the reduction to practice as set forth in the original preliminary statement was, through inadvertence and mistake and without negligence, based upon a mistake of fact and incomplete evidence which erroneously indicated that the first reduction to practice occurred on or about December 15, 1958 and that prompt action has been taken following the discovery of the error.

The Board of Interferences, noting that the same issue had been presented in an earlier interference between Lebourg and one Brumble, another Humble assignor, stated:

We next consider two issues which are also closely related to those of Interference 92,664. In that interference, after asserting in his original preliminary statement a date of reduction to practice of Dec. 15, 1958, i.e. the very date of filing of Brumble's patent application, Lebourg moved to amend that statement to assert a date of Nov. 14, 1958. In this interference, which involves an application of Arendt also filed on Lebourg's originally asserted reduction to practice date of Dec. 15, 1958, Lebourg has similarly moved to amend his preliminary statement to assert a date of Nov. 14, 1958. This motion to amend was made (Paper 32) after Lebourg had been advised (Paper 9) of Arendt's filing date, and was based upon discovery in the notebook of the attorney who prepared the preliminary statement of information leading him to conclude that a test he attended on Nov. 14, 1958 involved the presence of a perforating gun and was hence, in his judgment, a reduction to practice. We held in Interference 92,664 • • • that the evidence did not prove that Lebourg had reduced the invention to practice on Nov. 14, 1958, as averred in the amended statement, and that the support for the motion to amend was inadequate in that it was apparent that the original statement was prepared without careful investigation. These same two factors are applicable in the present interference and the motion to amend is accordingly denied. The language of Commissioner Allen is applicable to this situation, viz. (*Friestedt* v. *Harold*, 1905 C.D. 161, 116 O.G. 594): "If amendment were permitted under circumstances like those here presented, the rule requiring that preliminary statements be made in ignorance of the dates of the opposing party would be virtually abrogated." (See also

McCullough v. *Watkins*, 1875 C.D. 129, and *Ducas* v. *Seymour*, 1927 C.D. 78, 364 O.G. 3.)

Lebourg argues that the Board erred in denying his motion to amend. He claims that omission of the allegation of reduction to practice on November 14, 1958 arose through inadvertence, even though the preparation of the preliminary statement involved a careful and thorough search of records and interview of the parties involved, and that amendment should be permitted under such circumstances.

The record shows that the patent lawyer who prepared the preliminary statement was himself a witness to the alleged reduction to practice on November 14, 1958, and made an entry in his diary to that effect. However, in preparing the preliminary statement he did not consult his diary. His search of other company records and interviews with other witnesses led him to believe that December 15, not November 14, was the date of the reduction to practice.

The problem of amendment of preliminary statements is discussed in Rivise and Caesar, "Interference Law and Practice" (1940) § 99:

> Generally speaking, if an amended statement is presented before the original statements are approved, the amended statement will be accepted without question. For until the statements are approved, *the parties are in ignorance of each other's filing dates*, unless of course one of the parties is a patentee. • • • [Emphasis added.]

As noted above, however, Lebourg was notified of Arendt's filing date, and therefore at the time Lebourg filed his amended preliminary statement, he was aware that Arendt's filing date was December 15, 1958.

The burden placed upon a person who wishes to amend his preliminary statement after learning of his opponent's filing date is discussed in Rivise and Caesar, supra, § 100:

> A party, who wishes to amend his preliminary statement after the statements have been approved, must present a motion to the Examiner of Interferences requesting permission to file an amended statement. The motion papers must be served upon the other parties to the interference, and must be accompanied by the proposed amended statement together with a satisfactory showing that the party was not negligent in preparing the original statement and that the error could not have been avoided by the exercise of due care. If the amendment is based upon newly discovered evidence, the motion should clearly set out the specific nature of the new evidence as well as all the circumstances resulting in its discovery, so that the Examiner of Interferences can judge for himself whether the evidence could have been discovered earlier by the exercise of reasonable care. The motion should also satisfactorily explain any delay that may have occurred after the need for the amendment became evident. All statements as to fact in the motion should be verified by the affidavits of persons having personal knowledge thereof.
>
> As was stated in *Borg* v. *Strauss*, 1907 C.D. 320; 130 O.G. 2719: "• • • Amendments to preliminary statements are to be permitted after a party has had an opportunity to inspect his opponent's case only in cases where *bona fide* mistakes of fact have been made and a full and clear showing is made that there was no negligence in discovering the true facts."

Several cases are summarized by Rivise and Caesar in § 101 as illustrations of unsatisfactory showings. Two are of particular interest in this case:

Ducas v. *Seymour*, 1927 C.D. 78; 364 O.G. 3.

> Ducas, after he learned Seymour's filing date and found that it was several months prior to the dates alleged in his own preliminary statement, presented a motion to amend his statement. In support of his motion, he averred that he had failed to remember a certain conversation with one of his witnesses, and as a result he became confused in his mind as to two sets of devices which bore some suggestion to the device of the invention. In denying the motion, the Commissioner stated:
>
> " • • • There is no showing that if the same degree of effort and care exercised after Ducas learned of Seymour's date of filing had been exercised when Ducas first prepared his preliminary statement he would not have been able to have obtained the information regarding the earlier date of conception which he now seeks to set up in the amended preliminary statement.
>
> " • • • The party Ducas, according to the statements of his counsel, was fully informed and cautioned as to the necessity for care and diligence in the preparation of the original preliminary statement. It must be held, therefore, that the mere later recollection of matters which should have been recalled at an earlier date can not be deemed to furnish a sufficient basis for the granting of the motion to amend the preliminary statement at this time.

Maple v. *Cook*, 1929 C.D. 12; 380 O.G. 3.

> A motion by Maple for permission to amend his preliminary statement after he had learned Cook's dates were [sic] denied, because Maple admittedly did not make as diligent a search of his records as he should have made while preparing the original statement. In his decision, the Commission stated:
>
> " • • • Applicants should exercise the same care in preparing their preliminary statements that they exercise in discovering evidence after they learn the dates alleged by their opponents. *Fowler* v. *Boyce* v. *Temple et al.*, 108 O.G. 561. Had such a degree of care been exercised by Maple in the present case, he probably would have found the alleged newly-discovered evidence and had it available for preparing the original preliminary statement."

The facts present in this case led the Board of Interferences to conclude "that the original statement was prepared without careful investigation," and it therefore denied the motion to amend.

[1] The question of the right to amend a preliminary statement is a matter within the discretion of the Patent Office, and this court will not disturb a decision of the Board of Interferences unless there is a clear abuse of discretion. *Holslag* v. *Steinert* 31 CCPA 1116, 143 F.2d 661, 62 USPQ 77. On the facts presented in this record, we cannot say that there was any abuse of discretion in denying the motion.

Lebourg must therefore rely upon the date alleged in his preliminary statement as his earliest reduction to practice and cannot be given the benefit of an earlier date, even if proved. *Biel* v. *Chessin*, 52 CCPA 1607, 347 F.2d 898, 146 USPQ 293.

The alleged reduction to practice on December 15, 1958 was an attempted test of a pipe locator device in a 1,000-foot well. However, equipment malfunction was encountered, as described in the testimony of a radioactivity laboratory technician who was to have operated the detector equipment:

> XQ5. Do you recall a test that occurred on December 15th, 1958? A. Yes, sir.
>
> XQ6. Will you give us the result of that test? A. Well, there weren't any results except that the equipment that didn't work. And it was my equipment that didn't work in the test; and, therefore, we didn't get any usable results. The radioactive panel on the uphole equipment was not working on that date.
>
> XQ7. On the December 16th test, was that carried out the same way, with the same procedure that the December 15th test was carried out? A. Well, the December 15th test we did not get any information, and didn't carry out my procedure because my equipment didn't work.
>
> And on the 16th we did what we were going to do on the 15th. And with equipment that worked.

[2] In view of this testimony, corroborated by the other witnesses present, the Board of Interferences correctly concluded:

> It [the invention] was quite obviously not reduced to practice in the test of Dec. 15, 1958, for that test was considered a failure by all witnesses.

Since Lebourg has not proven a reduction to practice prior to or

even on the same date as Arendt's filing date, he is not entitled to an award of priority over Arendt. This holding makes it unnecessary for us to consider the issue of whether the device tested by Lebourg was within the count of the interference.

WINTER *v.* ARENDT

Winter alleges conception August 7, 1958 and an actual reduction to practice on September 12, 1958. The Board of Interferences held that he had proved that he was in possession of the conception of the invention before the end of August 1958, but provided no proof of continuing activity in reducing the invention to practice from a date prior to Arendt's filing date. His claim to priority therefore rests solely upon his contention that he made an actual reduction to practice on September 12, 1958.

The alleged reduction to practice was in the nature of a laboratory bench test utilizing two pipe lengths immersed in a 55-gallon drum of wet sand. Since the tubing used was of the same size as that used in wells, and was spaced at the same spacing normally encountered in a well bore, and since the density of the sand was close to that of the cement used in wells, Winter's witnesses felt that they had duplicated the actual operating conditions in a well bore.

Having thus prepared a simulated well bore, Winter's associates modified a gamma-ray well logging tool to provide a collimated source and aligned collimated detector. This modified tool was the device with which the alleged reduction to practice was accomplished. There was no perforator associated with the tool, nor was there any means provided for rotation of the tool.

Winter's bench test consisted of manually rotating the tool in one pipe and determining the amount of radiation sensed by the detector. By correlating visual observations of the position of the tool with detector readings, the witnesses concluded that they could locate a tubing by the magnitude of the detector reading.

The Board felt that this bench test was inadequate, stating:

> The tests proved that the proper position of rotation of the tool carrying the gamma ray log could be determined in this way; however no perforation was accomplished and no tool for accomplishing such perforation was present; in fact the whole purpose of the experiment was to determine whether the proper relative positions could be established by manual rotation of the gamma log in this environment. The adaptation of a gun for this purpose and the development of electronic portions of the tool were the subjects of subsequent projects * * *, and it was not until a year later that a tool was available for field test of the entire process * * *.
>
> This interference is directed to a process of perforating a pipe, and we do not consider that it was successfully reduced to practice by a test establishing merely that one pipe could be located by means of a tool within another; if that was Winter's interpretation he should have moved to amend the interference by substituting a count defining only this step (Rule 233). Clearly he has not provided a demonstration of the combination of steps required by the interference count.

Winter has appealed this holding of the Board, arguing that since the perforator and its actuation were old and commonplace in the art, the one and only problem to be solved was that of locating the other pipe string. Having successfully done that, and having presented evidence that persons skilled in the art considered the test to prove the operability of the method, Winter maintains that he made an adequate reduction to practice of the invention defined in the count.

[3] The adequacy of an actual reduction to practice is to be tested by what one of ordinary skill in the art would conclude from the results of the tests. *In re Hartop*, 50 CCPA 780, 311 F.2d 249, 135 USPQ 419. The question facing us, therefore, is whether the tests conducted by Winter would persuade one skilled in the art that the method defined by the count of the interference is operable as alleged, not whether merely part of the method is operable.

[4] It is apparent to us that the tests were not so adequate. While Winter clearly proved his ability to locate another pipe, he did not demonstrate his ability on that date to carry out the complete method of perforating. His own testimony showed that more work needed to be done before he had an operable well-perforating sytem:

> **Q73. Were any other steps taken after this, then? A. Yes. We obtained approval to spend some money to build an actual tool for the field, and the project was set up to *develop the electronic portions* of this tool. Another project was set up to *adapt a gun* for this use, and those programs went right ahead immediately after this test. [Emphasis added.]**
>
> * * * * * * *
>
> **XQ29. You testified that you obtained approval to build an actual tool, is that correct? A. Yes, that is correct. I obtained the permission to spend the money to build a tool.**
>
> **XQ30. Was a tool ever built? A. Yes, a tool was built.**

Even more work was shown to be necessary by Mr. Bohn, a mechanical engineer for Lane-Wells:

> **RDQ5.As a result of the tests, which were performed by Mr. Wilson and Mr. Farnsworth for Mr. Winter, which are shown on Exhibit 2, you went ahead with a project to develop a commercial perforator? A. Yes, I went ahead, wrote specifications for the device, put it into the engineering section with the approval of the management, and *proceeded to develop, build and acquire a rotator* for this assembly.**
>
> **RDQ6. However, before you had seen the results of the tests, you did not go ahead with any of this project? A. No. [Emphasis added.]**

From this testimony it can only be concluded that Winter could not have actually perforated a well on September 12, 1958 because he lacked means to rotate the device in the well bore; he lacked the electronic portions of the tool; and he lacked a gun adapted to be used in conjunction with the locating device. Even though development of these elements may have represented no more than routine engineering tasks, the fact nonetheless remains that Winter was incapable of perforating a well bore on September 12, 1958, and in fact did not even have so much as a small scale working model of a device which would perforate.

We, therefore, hold that Winter failed to demonstrate an actual reduction to practice prior to Arendt's filing date and is not entitled to an award of priority.

In view of our holding that neither junior party can overcome Arendt's filing date, we find it unnecessary to consider the attacks made by the junior parties on Arendt's conception date.

[5] Appellant Lebourg has asked this court to charged appellee Arendt for the cost of printing certain additions to the record added by motion of Arendt. The assessing of costs in such circumstances is discretionary as provided by Rule 13 of the court. The bulk of the material added to the record by Arendt seems to be reasonably necessary to the full and complete presentation of his case, and the request of Lebourg is accordingly denied.

The decision of the Board of Interferences is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the results.

U.S. Court of Customs and Patent Appeals

IN RE JOSEPH D. HOWARD AND WILLIAM M. BROBECK

No. 7953. Decided May 16, 1968

[55 CCPA —; 394 F.2d 869; 157 USPQ 615]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JUDICIAL NOTICE.
"It is a matter of common practice of wide notoriety, well within the ambit of judicial cognizance, for retail outlets to list by code or otherwise various items stocked for sale, together with the price assigned to each item, so as to enable the clerk or sales person to ascertain the charge to the customer * * *. Selecting one instance from many, equally relevant, the Solicitor referred to radio tubes, it being well known that these items are disseminated to users through a code listing designating type and applicable retail price assigned to various types. Prominent in many drug and hardware stores today are tube testing machines having a cabinet full of tubes marked only by a code designation and an associated retail price list correlating the retail price to the code designation. These common merchandising practices, as to which we cannot escape judicial notice, would in practice and effect constitute a memory system in that they clearly reflect and suggest a coded indicia and corresponding prices."

2. PATENTABILITY—PROCESS.
"* * * the appealed claims relate to a method and do not embrace apparatus. We, therefore, agree with the Board that to electrically compare the code markings is without patentable significance in this method claim. We think it pertinent, however, to point out that appellants concede in their brief that 'The claimed comparison may be done electrically or in any other way.' We do not therefore feel patentability may be predicated on the recitation of an electrical comparison."

3. SAME—PARTICULAR SUBJECT MATTER—"METHOD AND APPARATUS FOR HANDLING MATERIALS."
The decision of the Board of Appeals, refusing certain claims in an application entitled "Method and Apparatus for Handling Materials" on the ground that they "do not define a novel process," is affirmed.

APPEAL from the Patent Office. Serial No. 820,670.

AFFIRMED.

Samuel B. Smith, Kane, Dalsimer, Kane, Sullivan and Smith (*J. Harold Kilcoyne, Alvin E. Hendricson*, of counsel) for appellants.

Joseph Schimmel (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals, adhered to on reconsideration, affirming the action of the Examiner in rejecting claims 2 and 3 of an application [2] for a method for handling materials. The grounds upon which the rejections were predicated are that the claims fail to define patentable subject matter under 35 U.S.C. 100 and 101 since they are drawn to a method of doing business, and that the method defined in the claims is old, being the same as that commonly used in connection with catalog sales. Apparatus claims 7 and 11 to 19 were allowed. There are no other claims in the application.

The application discloses a method of pricing merchandise which reduces the amount of manual handling of each of the various individual items which are shelf-stocked and displayed in retail grocery stores. The method comprises the use of a separate code marking on

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 820,670, filed June 16, 1959, entitled "Method and Apparatus for Handling Materials."

the label of each different kind or type of item, in conjunction with apparatus for assimilating and utilizing the code markings to supply applicable retail prices at the check-out counters in the store. The code may be in alphabetic or numeric form and is preferably printed as a part of the label affixed to each individual item by the manufacturer or processor of the item. The code marking and the retail price associated therewith applicable to each kind and type of article is recorded by the retailer in a memory device of a centralized "converter." The latter is linked to and synchronized with a register at the check-out counter. A code keyboard in the register is utilized so that the code markings on the items brought to the counter by the purchaser are manually registered by the checker to feed code input signals into the converter. It is the function of the converter to compare each code input signal with the code and price data stored in the memory device and feed back to the register an output signal which comprises the code input and the price associated therewith. By means of an output unit at the register, the output signal of the converter is utilized to print the code marking and corresponding price of each item on a sales slip.

Claim 2 is reproduced as illustrative:

2. A method of handling a large plurality of materials of varying identities comprising the steps of printing labels having visible coded indicia thereon, applying said labels to separate items at points of origin thereof with the same indicia upon each of the identical items only, applying said coded indicia to a memory system at a collection and distribution point of coded items, also applying local price information on said items to said memory system in correspondence with said coded indicia thereon, registering the coded indicia of each item distributed and comparing same with the indicia on said memory system to obtain the corresponding prices thereof, and printing the coded indicia and corresponding price of each item distributed at the point of distribution as a sales slip for items distributed.

The Examiner rejected claims 2 and 3 for "failing to define patentable subject matter" under 35 U.S.C. 100 and 101. The Examiner observed that the steps defined in the claims "do not relate to any art but are merely directed to business techniques * * *."

The Board of Appeals affirmed the rejection on the ground that the claimed method is old and well known, and also "since the claims are drawn to a method of doing business."

We will first consider the issue of whether the claims define a new process, or one which is in fact old and well known.

An analysis of claim 2 discloses, with reference to the first two steps therein (1) "printing labels having visible coded indicia thereon" and (2) applying the labels to separate items at points of origin with the same indicia on identical items. As to these two steps the Board observed that appellants had admitted that they were disclosed in the prior art. We find nothing of record or in appellants' brief to controvert this observation.

Steps 3 and 4 of claim 2 call for applying the "coded indicia to a memory system at a collection and distribution point of coded items" and also applying the corresponding retail prices to the memory system.

[1] It is a matter of common practice of wide notoriety, well within the ambit of judicial cognizance, for retail outlets to list by code or otherwise various items stocked for sale, together with the price assigned to each item, so as to enable the clerk or sales person to ascertain the charge to the customer. This practice relates back to the

proverbial country merchant who has all but passed from the scene, but has his present-day counterpart in this context in the supermarket cashier who has a price list of advertised "specials" taped to his register. Furthermore, common observation cannot escape the deluge of second class matter in the form of mail order catalogs which embody lists of merchandise designated by code or otherwise together with the purchase price assigned to individual items. Selecting one instance from many, equally relevant, the Solicitor referred to radio tubes, it being well known that these items are disseminated to users through a code listing designating type and applicable retail price assigned to various types. Prominent in many drug and hardware stores today are tube testing machines have a cabinet full of tubes marked only by a code designation and an associated retail price list correlating the retail price to the code designation. These common merchandising practices, as to which we cannot escape judicial notice, would in practice and effect constitute a memory system in that they clearly reflect and suggest a coded indicia and corresponding prices.

Claim 2 concludes:

> • • • registering the coded indicia of each item distributed and comparing same with the indicia on said memory system to obtain the corresponding prices thereof, and printing the coded indicia and corresponding price of each item distributed at the point of distribution as a sales slip for items distributed.

The Board disposed of this recitation as follows:

> We take judicial notice of the fact that when a sale is made of an item, as for instance, an appliance part, it is common practice to record the manufacturer's code number for the particular part on the sales slip; to compare the code number with code number in the parts catalog (memory) in order to obtain the corresponding prices of the items; and to print or write the corresponding price of each item sold as a sales slip for the items sold. It is our opinion that appellants' method is old and well known in the prior art [of] which we have taken judicial notice.

We are not persuaded of error in the Board's disposition of this limitation in claim 2. The reasoning which we have applied to the steps of claim 2 previously discussed is substantially applicable here.

We agree with the Board that claim 3 is similar to claim 2, adding however:

> • • • electrically comparing each registered code marking • • • and • • • a totalization of such prices • • •.

[2] As we have noted, the appealed claims relate to a method and do not embrace apparatus. We, therefore, agree with the Board that to electrically compare the code markings is without patentable significance in this method claim. We think it pertinent, however, to point out that appellants concede in their brief that "The claimed comparison may be done electrically or in any other way." We do not therefore feel patentability may be predicated on the recitation of an electrical comparison.

Appellants assert reversible error predicated on the argument that the Board gave no thoughtful consideration to the Ray affidavit filed to counter certain assertions in the Board's decision. This affidavit deals exclusively with the method employed in the sale of *automotive* parts, and was filed with appellants' request for reconsideration. It is apparent that in its decision on reconsideration the Board took cognizance of the affidavit. The Board stated:

> While the method [claimed] may be different from that employed in the sale of *automotive parts*, however, it is our opinion that the method defined • • • is the same as that commonly used in connection with *catalog sales*. [Emphasis supplied.]

[3] We find no basis here upon which to predicate a finding of reversible error, and we therefore affirm the decision of the Board of Appeals on the ground that the claims do not define a novel process.

Our affirmance of this ground of rejection makes it unnecessary to consider the issue of whether a method of doing business is inherently unpatentable.

AFFIRMED.

WORLEY, *Chief Judge*, and SMITH, *J.*, concur in the result.

KIRKPATRICK, *J.*, concurring.

I am in agreement with the result. I am, however, unable to agree that the claims can properly be held unpatentable for the reason that the process they define is an old one, which was the only ground upon which the majority has affirmed the decision of the Board. The Board had affirmed the Examiner's rejection upon this ground and also on the ground that the invention is unpatentable because for a method of doing business. This latter reason as given by the Board is amply supported by authority and I think that the court should place its conclusion upon that ground and not upon the other.

The majority opinion reaches its conclusion solely upon judicial notice of a "common practice of wide notoriety * * * for retail outlets to list by code or otherwise various items stocked for sale, together with the price assigned to each item, so as to enable the clerk or sales person to ascertain the charge to the customer." I am aware of the fact that the limits of judicial notice, particularly in patent cases, are expanding and the field of notice is now pretty broad. However, I think that the majority goes beyond today's limits in placing its decision solely upon judicial notice of the above quoted practice. Of course, everyone knows that large department stores and supermarkets must have some system of recording prices of the various articles which they have for sale and keeping their sales people informed of such prices and of changes in them made from time to time. There may be any number of different ways of doing this, and any number of different systems and I do not see how, without any evidence, we can use the doctrine of judicial notice to find that a system exists which anticipates that of the application or is so nearly like it as to make the application an obvious variation. That, it seems to me, is what we would have to do in order to sustain the conclusion reached by the majority. Without some concrete evidence of the prior art (of which there is none) I do not think that it is possible to find that the system of this application is old or that it is obvious under section 103.[3]

For my part, I do not see how I could join in an opinion in which I would be taking judicial notice of business practices of which I have not the slightest knowledge or experience. For example, the fact stated by the majority that "in many drug and hardware stores today are tube testing machines having a cabinet full of tubes marked only by a code designation and an associated retail price list correlating the retail price to the code designation." I would want some evidence of this practice before I would base rejection of an application for a patent upon it.

---

[3] There was one reference cited before the Examiner (Rogal et al., U.S. Patent No. 1,801,981). The Board held that that reference would not sustain the Examiner's rejection of the claims as obvious and it did not enter into the Board's decision.

I would place the affirmance of the Board's decision upon the ground that the application discloses merely a method of doing business and is therefore for an unpatentable invention.

U.S. Court of Customs and Patent Appeals

IN RE BERTRAND V. GIEGERICH AND EUGENE K. STEELE

No. 7988. Decided June 13, 1968

[55 CCPA —; — F.2d —; 158 USPQ 43]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"ENCAPSULATED COILS FOR ELECTROMAGNETIC INDUCTION DEVICES AND METHOD OF MAKING SUCH COILS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Encapsulated Coils for Electromagnetic Induction Devices and Method of Making Such Coils" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 114,747.

AFFIRMED.

Melvin M. Goldenberg, Francis X. Doyle for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

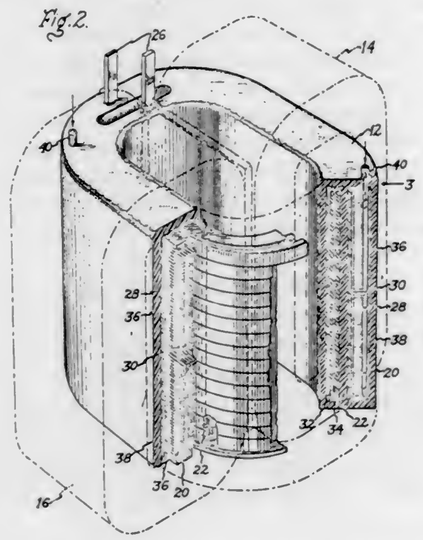
Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection on prior art of claims 1–5 and 10 in appellants' application entitled "Encapsulated Coils for Electromagnetic Induction Devices and Method of Making Such Coils." [2] No claims have been allowed.

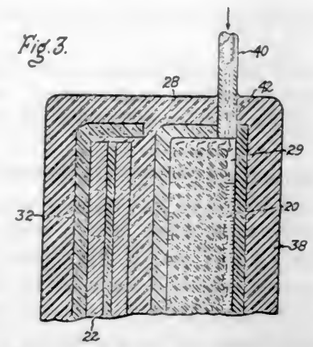
The claimed invention is asserted to be an improvement in an electromagnetic induction apparatus such as a transformer. Application drawings FIGS. 2 and 3 are reproduced below:

Fig. 2.



[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 114,747, filed June 5, 1961.

Fig. 3.



Claim 10, with reference numerals inserted, is illustrative:

10. A core and coil unit for an electromagnetic induction device comprising: a high voltage winding [20], said high voltage winding wound on a winding form [28] having a window opening, a low voltage winding [22], said low voltage winding wound on a winding form [32] having a window opening, sealing means [36] about said high voltage winding form sealing a cavity within said high voltage winding form which contains said high voltage winding, a liquid dielectric completely filling said cavity and impregnating said high voltage winding, said low voltage winding and said low voltage winding form mounted in said window opening of said high voltage winding form, said windings and said winding forms encapsulated in a synthetic resinous material [38] which is in contact with said sealing means said winding forms and said low voltage winding and a wound core [14], said wound core electromagnetically connected to said windings through said window opening in said low voltage winding form.

The other claims are broader than claim 10, being drawn essentially to the combination of high and low voltage windings encapsulated in a synthetic resinous material and having at least one of the windings impregnated with a dielectric liquid.

The references are:

Camilli, 2,300,910, Nov. 3, 1942.
Wigert et al., 2,930,011, Nov. 22, 1960.

Camilli relates to transformers. The high voltage winding is surrounded with a fluid-impervious covering of material, such as cellulose acetate, forming a container for liquid dielectric. The said winding and the porous insulation surrounding same are impregnated with the aid of vacuum with liquid dielectric introduced through a tube. It is further disclosed that the low voltage winding is mounted within a window opening in the high voltage winding.

Wigert discloses a transformer in which the high voltage winding and the low voltage winding are surrounded by resin-impregnated inert material. The low voltage winding and a core are mounted in a window opening in the high voltage winding.

The Examiner rejected all of the claims under 35 U.S.C. 103, as unpatentable over Camilli taken with Wigert.

Treating claim 10 as the most detailed of the claims, the Examiner analyzed the individual structural recitations therein in the light of the cited references, as follows:

A core and coil unit for an electromagnetic induction device comprising: a high voltage winding, said high voltage winding wound on a winding form having a window opening, a low voltage winding, said low voltage winding wound on a winding form having a window opening * * *.

The Examiner found the above structure to be old and fundamental in the art as clearly shown in Wigert, wherein a low voltage winding and a high voltage winding are each wound on a winding form hav-

ing a window therein, with a portion of the core located in the window of each coil form.

• • • sealing means about said high voltage winding form sealing a cavity within said high voltage winding form which contains said high voltage winding, a liquid dielectric completely filling said cavity and impregnating said high voltage winding • • •.

The Examiner pointed to the disclosure in Camilli of the introduction of a dielectric fluid, by means of a tube, into a space surrounding a high voltage winding. He noted that a solid porous insulation encloses the high voltage winding and that a fluid impervious covering encloses both the porous insulation and the winding. Spacers between the porous insulation and the fluid impervious covering form cavities, and the dielectric fluid fills these cavities and impregnates the porous insulation and high voltage winding.

• • • said low voltage winding and said low voltage winding form mounted in said window opening of said high voltage winding form • • •.

The Examiner observed that not only does Wigert show the same structure but Camilli shows the low voltage winding mounted through the window of the high voltage winding.

• • • said windings and said winding forms encapsulated in a synthetic resinous material which is in contact with said sealing means, said winding forms and said low voltage winding and a wound core • • •.

The Examiner noted that Wigert clearly shows the same structure.

• • • said wound core electromagnetically connected to said windings through said window opening in said low voltage winding form.

The Examiner observed that this structure is shown in Wigert; however, to provide Camilli with a magnetic core would be an obvious expedient even without relying on the teaching of Wigert.

The Board agreed with the Examiner, and so do we, that the claimed invention is obvious in the light of the prior art under section 103.

Appellants have argued that their invention is unobvious because no one had previously recognized the problem of corona breakdown of encapsulating resins in contact with high voltage windings, and thus had no motivation to immerse the windings in a dielectric liquid. However, it is a well-known fact that corona is a problem in connection with transformer coils which is admitted in appellants' specification as well as in their brief. The specification states that: "As is well known, corona is the ionization of insulation or other material surrounding a conductor." We are in agreement with the observations of the Board made in this connection. The Board stated:

It seems to us that if failure occurred in the Wigert et al. device because of corona, which is a well known cause of breakdown in high voltage devices, it would be obvious to encase the windings in oil impervious containers and to impregnate the windings with oil as taught by Camilli.

Appellants point out that Camilli does not disclose a device in which the windings of a transformer are encased in an oil impervious container "unless it is the porcelain shell." We think, however, from the teachings of Wigert that the porcelain shell of the Camilli transformer could be formed of synthetic resin and that such would be an obvious construction to one of ordinary skill in the subject art.

[1] Upon consideration of the arguments advanced by the appellants, we are not persuaded of reversible error in the decision of the Board, and we therefore affirm.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,378,328, Robinson and Evans, MEANS AND METHODS OF IDENTIFYING MANUFACTURED PRODUCTS, **filed** July 1, 1968, D.C., E.D. Mo. (St. Louis), Doc. 66C404(2), *Robley D. Evans and Elmer Robinson* v. *McDonnell Aircraft Corp.* Judgment of dismissal remanded to District Court for further proceedings, July 1, 1968.

2,513,094, G. O. Hall, CURING OF MEAT TO INHIBIT UNDESIRABLE COLOR CHANGE, **filed** June 22, 1967, D.C. Md. (Baltimore), Doc. 18489–C, *Calgon Corporation* v. *Dukeland Packing Company, Inc.* Dismissal by plaintiff, July 22, 1968.

2,542,399, Curtis and Schoepe, MACHINE TOOL; **2,579,368**, same; **2,616,159**, M. S. Curtis, same; **2,644,222**, Curtis and Schoepe, same; **2,706,415**, M. S. Curtis, CROSS SLIDE DRIVE AND CONTROL THEREFOR, **filed** Feb. 29, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–202, *The Warner & Swasey Co.* v. *Sinon Srybnik et ano, doing business as S & S Machinery Corp.* Consent judgment for injunction filed, July 26, 1968.

2,563,794, Rickes and Wood, VITAMIN B_{12}; **2,703,302**, same, VITAMIN B_{12}-ACTIVE COMPOSITION AND PROCESS OF PREPARING SAME, **filed** Apr. 16, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63–C–417, *Merck & Co.* v. *Gotham Pharmaceutical Co.* Consent judgment for injunction filed, June 19, 1968.

2,564,811. (See 3,010,245.)

2,579,368. (See 2,542,399.)

2,616,159. (See 2,542,399.)

2,644,222. (See 2,542,399.)

2,670,293, F. H. Stark, FOOD PRODUCT FLAVORING COMPOSITION AND METHOD OF PREPARATION THEREOF; **Reg. No. 643,366** (CHEESWEET), S. M. Stebbings, Candy containing cheese, **filed** July 18, 1968, D.C., W.D. Wis. (Madison), Doc. 68–C–122, *Stuart M. Stebbings* v. *Bob White Candy Company and Samuel A. Loniello.*

2,703,302. (See 2,563,794.)

2,706,415. (See 2,542,399.)

2,720,461, A. Voet, PRINTING INK AND VARNISH THEREFOR, **filed** Aug. 5, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1442, *J. M. Huber Corporation* v. *Lawter Chemicals, Inc.*

2,723,785, E. M. Moore, MACHINE FOR TOPPING TROUSERS, **filed** June 28, 1968, D.C., N.D. Okla. (Tulsa), Doc. 68–C–153, *Elton M. Moore* v. *Industrial Uniform & Towel Supply, Inc.*

2,724,270, H. E. Trekell, FLOWMETER, **filed** July 17, 1968, D.C.N.J. (Newark), Doc. 728–68, *Carter-Wallace, Inc.* v. *Zenith Laboratories, Inc. and Benjamin Wiener.*

2,729,146, K. Wandel, IMPELLERS FOR PULP DISINTEGRATING MACHINES; **3,319,897**, Craig, Combs, Hilbert, Kemper and Tahar, WASTE DISPOSAL UNIT, **filed** June 21, 1968, D.C. Md. (Baltimore), Doc. 19618–C, *Somat Corporation* v. *The University of Maryland and Wascom Systems, Inc.*

2,850,023, G. H. Taylor, TOUPEE, **filed** July 30, 1968, D.C., E.D. Mich. (Detroit), Doc. 31552, *Taylor Topper Incorporated* v. *Donald Ostrom, Taylor Topper Company, Ideal Hairpieces, Inc.*

2,879,439, C. H. Townes, PRODUCTION OF ELECTROMAGNETIC ENERGY, **filed** Mar. 20, 1968, D.C., N.D. Calif. (San Francisco), Doc. 48923, *Research Corporation* v. *Spectra-Physics, Inc.*

2,975,495, Wolf and Kaplan, COVERED BACKWASHERS, **filed** July 29, 1968, D.C., S.D.N.Y., Doc. 68–C–3077, *Peter S. Wolf, doing business as Pivot Metal Works et ano.* v. *Mershon Metal Specialties, Inc.*

3,010,245, F. R. Conibear, TRAPS; **2,564,811**, C. C. Mau, ANIMAL TRAP, **filed** June 30, 1966, D.C.N.J. (Camden), Doc. C–655–66, *Woodstream Corporation* v. *John E. Frost, doing business as Jack Frost Traps.* Consent judgment, Patent No. 3,010,245 owned by Woodstream Corporation and valid, said patent has been infringed by defendant. Defendant's counterclaim for declaratory judgment and infringement dismissed with prejudice, Aug. 23, 1968.

3,046,110, M. P. Schidt, PROCESS OF MAKING PRINTING PLATES AND LIGHT SENSITIVE MATERIAL SUITABLE FOR USE THEREIN, **filed** Aug. 6, 1968, D.C. Md. (Baltimore), Doc. 19764–C, *Azoplate Corporation* v. *James E. Harper.*

3,108,882, Nash and Freudenstein, METHOD OF PREPARING AN EDIBLE FISH PRODUCT, **filed** July 12, 1967, D.C.N.J. (Newark), Doc. C–739–67, *The B. Manischewitz Co.* v. *I. Rokeach & Sons and Monroe Nash.* Notice of dismissal of action, July 30, 1968.

3,118,465, D. Scaramucci, DISC VALVE, **filed** Apr. 20, 1966, D.C., S.D. Tex. (Houston), Doc. 66–H–622, *Domer Scaramucci and Demco, Inc.* v. *FMC Corporation.* Complaint dismissed and all claims which plaintiffs may have had against defendant or defendant's customers are waived. Defendant's counterclaim is dismissed, July 26, 1968.

3,146,598, M. F. Smith, APPARATUS FOR CONFINING FLOATING MATERIAL, **filed** Apr. 16, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–341, *Millard F. Smith* v. *Blue Water Marine Supply, Inc.* Final judgment, patent valid and infringed; injunction issued, May 23, 1968.

3,174,436, W. F. Wanner, RADIAL PUMP, **filed** July 12, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–532, *Seeger-Wanner Corporation* v. *Hypro, Inc. and Edwin E. Allen, doing business as Allen Pump Company.*

3,191,412, C. E. Duvall, PRESS BRAKE CONTROL, **filed** June 24, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1175, *Clarence E. Duvall* v. *Engel Equipment, Inc.*

3,206,229, J. M. Kramer, FLEXIBLE SEALED CONNECTOR, **filed** July 19, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1187–JWC, *General Connectors Corp.* v. *Paul A. Sheets, etc.*

3,231,503, E. Laue (deceased), by the Colonial Bank and Trust Company, executor, AMMONIACAL AQUEOUS SOLUTION CONTAINING SODIUM CHLORITE AND USED FOR DISSOLVING METALS, **filed** June 15, 1966, D.C. Conn. (New Haven), Doc. 11481, *Philip A. Hunt Chemical Corporation* v. *MacDermid Incorporated.* By stipulation patent owned by the defendant is valid; and complaint and counterclaim dismissed, May 21, 1968.

3,253,741, Russell and Anderson, CAR WASH DEVICE; **3,389,860**, H. L. Null, AUTOMOTIVE VEHICLE WASH SYSTEMS, **filed** Aug. 28, 1968, D.C.N.J. (Newark), Doc. 879–68, *Bernardi Bros., Inc.* v. *Pride Manufacturing, Inc. et al.*

3,262,116, Hutchinson and Arendt, SATELLITE AND SPACE COMMUNICATIONS SYSTEMS, **filed** Aug. 30, 1968, D.C. Dist. of Col. (Washington), Doc. C.A. 2194–68, *Satellite and Space Communications Systems Co.* v. *Communications Satellite Corporation.*

3,319,897. (See 2,729,146.)

3,341,955, Pyke and Pyke, PRODUCING WRINKLE-FREE, PERMANENTLY CREASED GARMENTS, **filed** Apr. 10, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–57–CC, *Everpress, Inc.* v. *L & L Manufacturing Co. et al.*

3,349,798, J. O. Allen, VARIABLE VALVES, **filed** July 23, 1968, D.C.S.C. (Columbia), Doc. C/A–68–667, *J. O. Allen III and James B. Allen, as administrators CTA of the estate of J. O. Allen, deceased* v. *Applied Engineering Company.*

3,351,073, R. G. Gregg, COIFFURE PROTECTORS, **filed** July 29, 1968, D.C. Ala. (Birmingham), Doc. 68–422–NE, *Richard Gregg Manufacturing Co., Inc.* v. *Ruth S. Rigney, doing business as Miracle City Beauty Salon and Wig Bar.*

3,366,911, Wilson, Budd and Van Benthuysen, ELECTRICAL CONTROL WITH PANEL MOUNTING MEANS; **3,370,261**, J. D. Van Benthuysen, ELECTRICAL SWITCH AND COMBINATION ELECTRICAL RESISTOR AND SWITCH, **filed** July 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1362, *CTS Corporation* v. *P. R. Mallory & Co., Inc.*

3,370,261. (See 3,366,911.)

3,375,381, J. H. Tavel, CORDLESS ELECTRIC VIBRATOR FOR USE ON THE HUMAN BODY, **filed** Apr. 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–584–JWC, *Stimulant Products, Inc.* v. *Vibrex Corp. et al.*

3,381,302, Reimus and Saporito, FREEZE CONCENTRATION OF COFFEE EXTRACT, **filed** Apr. 30, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–374, *Struthers Scientific & International Corp.* v. *General Foods Corp.* **Same, filed** June 18, 1968, D.C. Del. (Wilmington), Doc. 3566, *General Foods Corporation* v. *Struthers Scientific and International Corporation.* **Same, filed** May 1, 1968, D.C.N.J. (Newark), Doc. 417–68, *Struthers Scientific and International Corporation* v. *General Foods Corporation (Delaware) and General Foods Corporation (New Jersey).* Notice of dismissal entered, June 17, 1968.

3,382,280, C. W. Huffman, 3',4'-DICHLOROPROPIONANILIDE, **filed** May 7, 1968, D.C., S.D. Tex. (Houston), Doc. CA68–H–400, *Monsanto Co.* v. *Dawson Chemical Co. and Crystal Chemical Co.* **Same, filed** May 7, 1968, D.C.N.J. (Newark), Doc. C–447–68, *Monsanto Company* v. *Chemical Insecticide Corp.* **Same, filed** May 7, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–741–HP, *Monsanto Company* v. *Rohm & Haas Company.* **Same, filed** May 7, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–742–HP, *Monsanto Company* v. *Occidental Petroleum Corporation.* **Same, filed** May 14, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–815–WPG, *Baldwin-Montrose Chemical Company* v. *Monsanto Company.* **Same, filed** May 7, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–399, *Monsanto Company* v. *Red Barn Chemicals, Inc.* Consent judgment, patent valid and infringed; injunction issued, June 3, 1968. **Same, filed** May 8, 1968, D.C.N.J. (Newark), Doc. C–448–68, *Monsanto Company* v. *Baldwin-Montrose Chemical Co., Inc.* Notice of dismissal, June 18, 1968.

3,389,860. (See 3,253,741.)

Re. 25,634, Pringle, Roulston and Brownell, NUCLEAR BOREHOLE LOGGING UTILIZING A SCINTILLATION DETECTOR, **filed** May 19, 1967, D.C., S.D. Tex. (Houston), Doc. 67–H–408, *McCullough Tool Co.* v. *Pan Geo Atlas Corp. and PGAC Development Co.*

D. 211,018, D. D. Granger, CHAIR OR SIMILAR ARTICLE; **D. 211,633**, same, SIDE PANELED CHAIR OR SIMILAR ARTICLE; **D. 211,785**, same, WINGED ARMCHAIR OR SIMILAR ARTICLE; **D. 211,786**, same, CHAIR OR SIMILAR ARTICLE, **filed** Sept. 6, 1968, D.C.N.C. (Charlotte), Doc. 2391, *Maxwell Royal Chair Company* v. *Clayton Marcus Company, Inc.*

D. 211,633. (See D. 211,018.)

D. 211,785. (See D. 211,018.)

D. 211,786. (See D. 211,018.)

Reg. No. 643,366. (See 2,670,293.)

DEFENSIVE PUBLICATIONS

PUBLISHED DECEMBER 24, 1968

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

535,843

BOOK BACK RIBS

Ben T. Pardue and Edwin K. McClellan, both of P.O. Box 431, Kingsport, Tenn. 37662

Filed Mar. 21, 1966. Published Dec. 24, 1968

Class 161—123

1 Sheet Drawing. 13 Pages Specification

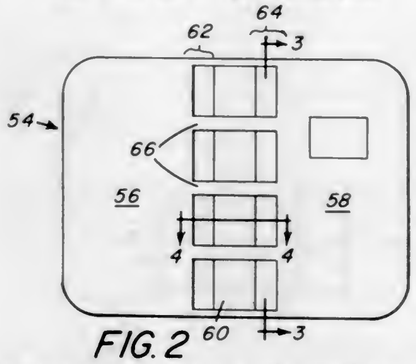


FIG. 2

A plastic article such as a book back having a thinned portion acting as an elongated hinge which is caused to be tear resistant by ribs extending thereacross. The ribs are thicker than the thinned hinge portion and the molecular orientation of the material of the ribs is across the hinge line. Thus, the ribs provide an area in the hinge which is resistant to tearing along the line thereof and which confines any tearing which does occur to only a small portion of the hinge.

544,271

APERTURED NON-WOVEN STRUCTURE FROM A FILM-FIBRIL SHEET AND METHOD OF MAKING THE SAME

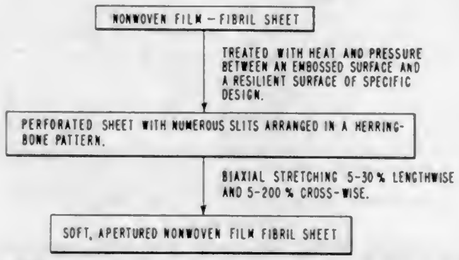
Millard David Zeisberg, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 21, 1966. Published Dec. 24, 1968

Class 161—109

1 Sheet Drawing. 14 Pages Specification

FIG. 1



This invention relates to a process for making a soft, apertured, fibrous, nonwoven structure having a high strength per unit weight from a film-fibril sheet. The basic film-fibril sheet is prepared from flash-spun continuous fibrillated strands, preferably of linear high density polyethylene, according to the method of Steuber U.S. Patent 3,169,899. The process of the present invention comprises hot-slit perforating the nonwoven film-fibril sheet by pressing between a supported hot wire screen and a resilient surface. Sufficient heat is supplied and sufficient pressure is exerted between the two surfaces to provide an embossed sheet having numerous perforations in the form of slits. The slits are arranged in two series as in a herringbone pattern with at least one slit per square centimeter in the useable area of the sheet, the slits being at least 0.2 cm. long. The sheet is fused around the edges of the slits, but is unfused elsewhere. The slit sheet is then stretched 5–30% in a direction which is within 5–45° of the orientation of one of the two series of slits, this direction being usually along the longitudinal axis of the sheet. Optionally, the product is then stretched 5–200% in a second direction at about 90° to the first stretch direction.

555,993

HIGH DENSITY NON-WOVEN FIBROUS BATT

Joseph Mark Perri, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 8, 1966. Published Dec. 24, 1968

Class 161—170

No Drawing. 11 Pages Specification

High-density non-woven structures, which are easily converted to low-density structures on mechanical working, comprising acrylic bicomponent fibers with a recoil-index of about 60 to about 90 and in which the more hydrophobic component comprises about 60 to about 75% of the fiber. Discrete areas of inter-filament entanglement and bonding amount to 10% or less of the total volume. An original density of 29 to 36 lbs./ft.^{3} is reduced to 3 to 10 lbs./ft.^{3} by gentle mechanical working. Preferably, the staple fibers are side-by-side bicomponent fibers in which one component is polyacrylonitrile and the other component is a copolymer of acrylonitrile and sodium styrene sulfonate, e.g. 96% acrylonitrile and 4% sodium styrene sulfonate.

$$\text{Recoil index} = \frac{(L_a - L_b)}{L_a} 100,$$

where L_a is the extended length of the fiber and L_b is the largest dimension of the fiber after retraction.

622,866

METHOD FOR APPLYING PLASTIC DUST COVERS TO CONTAINERS

Rex Eells and David E. Stooksbury, both of P.O. Box 511, Kingsport, Tenn. 37662

Filed Mar. 10, 1967. Published Dec. 24, 1968

Class 53—14

1 Sheet Drawing. 13 Pages Specification

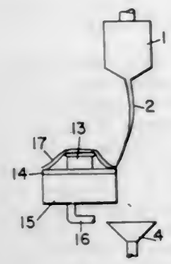


FIG. 2

A method for applying plastic dust covers to containers, which comprises (1) placing an air-impermeable skirt around the middle portion of a container positioned with its end which is to be protected by a dust cover projecting upwardly through an opening in said skirt, (2) said skirt being spaced away from said container so as to form an annular opening having a radial dimension of 1/16" to 1/4", (3) passing the combination of said skirt and said container through a falling curtain of molten thermoplastic material so as to apply a continuous coating of said thermoplastic material over the surfaces of said container projecting above said skirt, (4) applying an atmospheric pressure drop across said annular opening to force said molten thermoplastic material downwardly through said opening, and (5) recovering said container coated with a solidified, continuous film of said thermoplastic material extending over all of the surfaces of said container above said skirt.

675,413

METHOD FOR APPLYING PLASTIC COVERS TO CONTAINERS

Rex Eells and David E. Stooksbury, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation-in-part of application Ser. No. 622,866, Mar. 10, 1967. This application Oct. 16, 1967. Published Dec. 24, 1968

Class 117—105.3

3 Sheets Drawings. 23 Pages Specification

A method of applying a coating to the upward and outward facing portions of a container which comprises (1) supporting a container so that the portions to be coated are freely accessible to a falling curtain of coating material and that a reduced air pressure can be applied to the lower portion of the container; (2) passing the supported container through a falling curtain of viscous, molten, thermoplastic material to apply thereto a continuous coating of said thermoplastic material; and (3) reducing the air pressure around the container to pull the molten thermoplastic material down over the upward and outward portion of the container. The method can be utilized to line containers having internal compartments. The method can also be utilized to provide a cover for a carton open at the top and containing articles inside the carton.

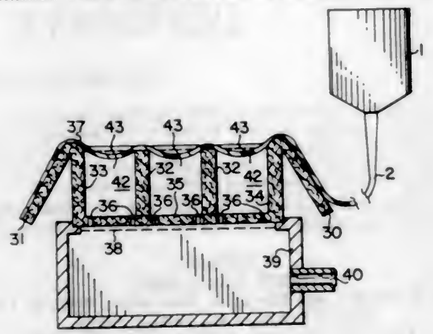


FIG. 9

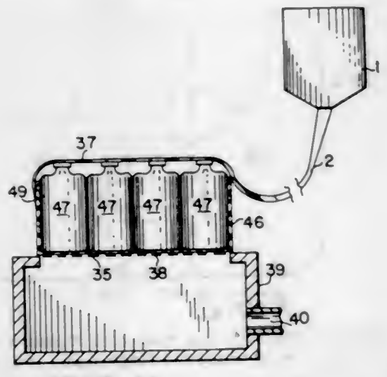


FIG. 11

628,881

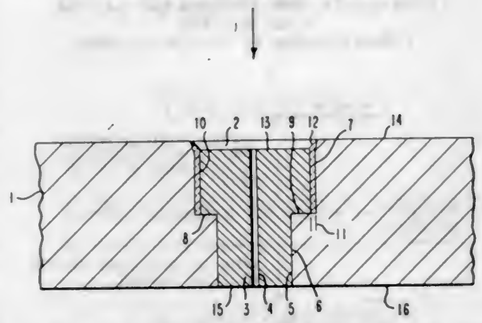
SPINNERET

Eldon Lawrence Fletcher, Kingston, Ontario, Canada, and Michael John Wolstencroft, Collins Bay, Ontario, Canada, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 6, 1967. Published Dec. 24, 1968

Class 18—8

1 Sheet Drawing. 2 Pages Specification



A spinneret for the production of melt spun filaments having an insert removably sealed in a through passage connecting the top and bottom surfaces of the spinneret plate.

651,659

BLENDS OF ETHYLENE PROPYLENE TERPOLYMERS WITH POLYURETHANE

Joseph Edward Merkel, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 7, 1967. Published Dec. 24, 1968

Class 260—859

No Drawing. 8 Pages Specification

Elastomer compositions suitable for use as component parts, e.g., seals, cups, etc., in hydraulic brake systems, are made by curing an EPDM elastomer compound that includes a minor proportion, such as 3 to 6 phr. (parts per hundred parts of the EPDM polymer) of a curable polymeric polyurethane. The EPDM elastomer may be an ethylene/propylene/1,4-hexadiene terpolymer. The polyurethane may be an isocyanato-terminated aromatic diisocyanate/polytetramethyleneether glycol polyurethane. The curing agent is preferably an organic peroxide such as dicumyl peroxide. The polyurethane component causes the vulcanized composition to have a slight swelling action in the presence of conventional ester-type brake fluids, thus giving a desirable sealing action. The composition can include up to 20 phr. of ester-type brake fluid as plasticizer.

657,493

TERNARY RUBBER BLEND COMPRISING E.P.D. HALOBUTYL, AND HIGHLY UNSATURATED RUBBERS

Lewis T. Ladocsi, 437 Hobart Ave., Short Hills, N.J. 07078, and Donald G. Young, 254 Midway Ave., Fanwood, N.J. 07023

Filed Aug. 1, 1967. Published Dec. 24, 1968

Class 260—5

No Drawing. 3 Pages Specification

A three-part blend of ethylene-propylene terpolymer, halobutyl rubber, and a high unsaturation rubber, has surprisingly improved physical properties after vulcanization. More specifically, the blend is composed of 15–30 wt. percent of a terpolymer of ethylene, and a higher alpha olefin such as propylene, along with a small amount of a nonconjugated diolefin, such as 5-methylene-2-norbornene; with 25–30 wt. percent of a halobutyl rubber, such as chlorobutyl; and 40–70 wt. percent of a high unsaturation rubber, such as polybutadiene or natural rubber. The amount of high unsaturation rubber used will depend upon how much of the other two components are put into the blend, the amount of high unsaturation rubber being, in essence, that amount which is necessary to complete a 100% mixture of total rubber.

These blends, after vulcanization, have surprisingly improved static ozone and heat-flex resistance, particularly when compared with terpolymer/high unsaturation rubber blends. In addition, these blends retain the high static ozone resistance and good physical property characteristics of binary blends of terpolymer and high unsaturation rubber. Conventional fillers, such as carbon blacks, oils, etc. can be used in the blends, and they are vulcanizable with curing agents which are conventional for high unsaturation or chlorobutyl rubbers. These include sulfur, alkylphenol disulfide, zinc oxide and guanidines.

663,321

BOX FLAP PRESSER FOOT FOR BALING FIBERS

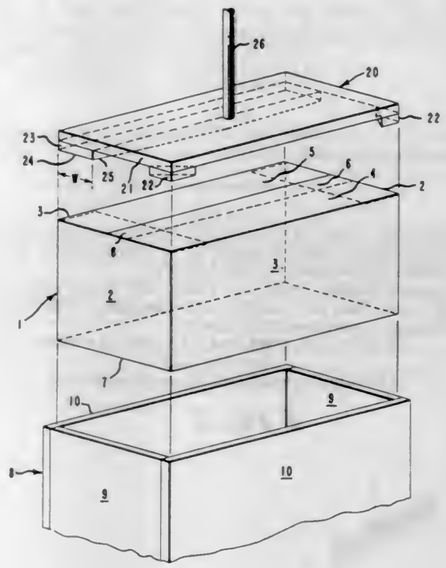
Richard Owen White, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 25, 1967. Published Dec. 24, 1968

Class 53—124

1 Sheet Drawing. 2 Pages Specification

An improvement in apparatus for baling staple fibers comprising a bale chamber (8) into which a box bottom is placed, means for compressing the fibers into the box bottom in the bale chamber, means for inserting a box cover having a top with separable upper and lower flaps into the bale chamber with a box pusher foot (20) and means for closing the box cover and box together to package the bale of staple fiber is provided. The improvement comprises means, such as abutments (22, 23) on the pressure face of said pusher foot, for depressing the lower flap (5) of the box cover with respect to the upper flap (4) thereof while the box cover is being inserted in the bale chamber. The improved means permits air within the box cover and bale chamber to flow out through the top of the box cover thereby reducing wastage of fiber due to violent gusts of air which otherwise would blow through the cracks in the baler doors. Incidence of damage to the box cover is also reduced. While being inserted in the bale chamber by the pusher foot, the box cover is aligned by spring-loaded protruding plates which permit sliding downward passage.



692,145

VARIABLE FLOW RESTRICTING APPARATUS

James Stanley Cobb, Jr., Martinsville, and Stephen Charles Stutler, Collinsville, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

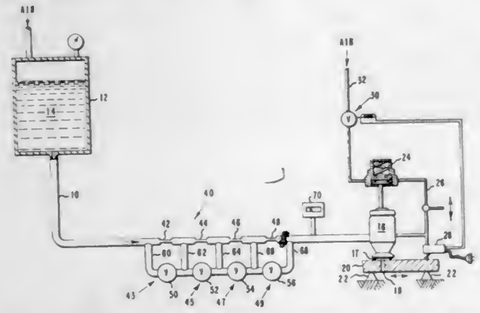
Filed Dec. 20, 1967. Published Dec. 24, 1968

Class 73—3

1 Sheet Drawing. 8 Pages Specification

A variable flow restricting apparatus for use with a gauging device in a pressurized fluid flow system that extends the operating range and improves the efficiency of operation of the gauging device. The apparatus includes a plurality of serially connected flow restricting orifices positioned in a passage between a source of fluid and an outlet. The orifices are arranged so that their resistances are in a binary progression and each orifice is provided

with a valved bypass loop, such that any integer value of flow resistance within the range extending to the sum of



the orifice resistances can be obtained by proper selection of bypass valve positions.

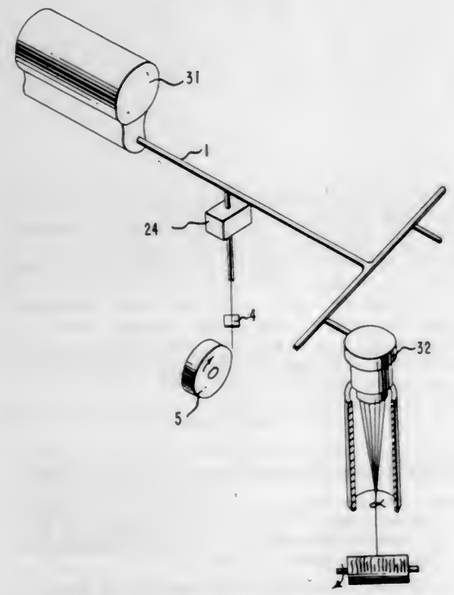
698,961

PROCESS AND APPARATUS FOR MONITORING POLYMER RHEOLOGICAL PROPERTIES IN A MELT-SPINNING OPERATION

Thurman Ralston Jones, Jr., Greenville, N.C., asignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 18, 1968. Published Dec. 24, 1968
Class 264—40
4 Sheets Drawings. 12 Pages Specification

FIG. 7



In the process of melt spinning synthetic polymer to filaments, the improvement in monitoring polymer rheological properties comprising conveying a sample portion of the polymer from a transfer line transporting molten polymer from a reactor to a spinning machine, extruding the sample portion of polymer at substantially a constant flow rate through a viscometer having a filter and a measuring capillary and pressure sensing means between filter and capillary while maintaining the molten polymer at the desired temperature with heat control means; quenching the extruded polymer to form a filament; and then, marking said filament when said pressure is outside of preset limits to indicate the portion of said filament formed of off-specification polymer. The marked portion may subsequently be subjected to analysis to determine reasons for variation from specification. Separate sample streams may be simultaneously withdrawn from axial and wall areas of the transfer line, if desired. Parallel measuring capillaries of different diameters, each with a separate pressure sensing means, may be used to indicate the effect of shear stress on polymer viscosity. Also disclosed is an apparatus for carrying out the process.

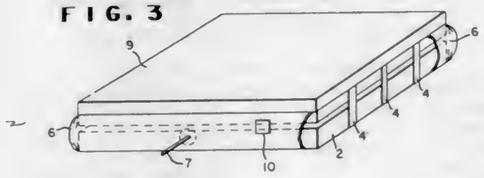
707,522

COMPRESSED GAS STANDOFF FOR CLADDING

William F. Sharp, Jr., Bellmawr Manor, Apt. 39, Bellmawr, N.J. 08030

Filed Feb. 23, 1968. Published Dec. 24, 1968
Class 29—497.5
1 Sheet Drawing. 8 Pages Specification

FIG. 3



Standoff required between metal layers to be explosion-bonded, e.g., as in U.S. Patent 3,137,937, is provided by introducing pressurized gas between the layers. To illustrate, the backer is supported in horizontal position, and several spacers whose thickness is equal to the desired standoff are placed on the backer around its edges. The cladder is lowered onto these spacers. Spaced standoff strips of strong adhesive tape are stretched taut across the standoff gap and adhered to the edges and outside surface of each layer. A thin spacer is rested on the backer at one edge, and the other spacers are removed, slackening the standoff strips and allowing the cladder to rest on the backer and thin spacer (permits gas to enter between the layers). The standoff gap is completely enclosed, e.g., with wide strips of vinyl tape which extend outside the standoff strips and adhere to each layer's outside surface. Explosive is placed on the cladder, and pressurized gas, e.g., air or nitrogen, is introduced through a tube inserted through the tape seal, forcing the layers apart until the standoff strips become taut. The layers are now at the desired standoff, and the explosive is initiated.

PLANT PATENTS

GRANTED DECEMBER 24, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,850
ROSE PLANT

Niels Dines Poulsen, Kelleriis, Kvistgaard, Denmark, assignor to Amling-De Vor Nurseries, Inc., Livermore, Calif., a corporation of California

Filed July 14, 1967, Ser. No. 653,580
1 Claim. (Cl. Plt.—28)

A new variety of floribunda rose plant bearing deep red flowers of medium size borne in clusters and having long persistence as cut flowers; the new plant being particularly characterized by its high production by forcing, its more even growth than other red floribundas, and capacity of being forced without going blind.

2,851
ROSE PLANT

Eugene S. Boerner, deceased, late of Benton, N.Y., by Lincoln Rochester Trust Co., Rochester, N.Y., and Roger L. Boerner, Milwaukee, Wis., executors, assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Mar. 16, 1967, Ser. No. 624,967
1 Claim. (Cl. Plt.—26)

1. A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous habit of growth, strong flower stems suitable for cut flowers, a large flower size, a distinctive and attractive general color tonality of the flowers corresponding to La France Pink, lightly overcast with Eosine Pink, which is an improvement over the flower color of the rose "Summertime," and long keeping cut flower qualities.

2,852
DIANTHUS PLANT

William Zombory and Sophia B. Zombory, Detroit, Mich., assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed June 5, 1967, Ser. No. 643,740
1 Claim. (Cl. Plt.—70)

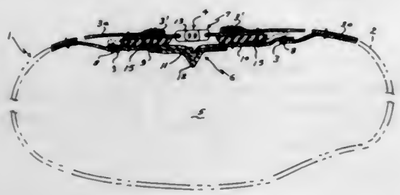
1. A new and distinct variety of Dianthus plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a compact habit of plant growth, an attractive Yew Green foliage color, pronounced fimbriated flower petals, a distinctive and attractive general color tonality of the flowers corresponding to Pomegranate Purple, with the outer edges of the petals circled with Rosolane Pink, and a spicy carnation flower fragrance.

PATENTS

GRANTED DECEMBER 24, 1968

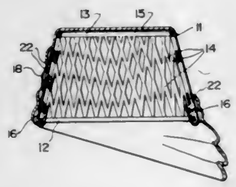
GENERAL AND MECHANICAL

3,417,406
PRESSURE SEALING CLOSURE
Donald A. Rosenbaum, 71 N. Smithville Road, Dayton, Ohio 45403
Filed Aug. 16, 1966, Ser. No. 572,867
7 Claims. (Cl. 2—2.1)



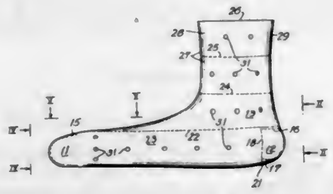
An elongated separable mechanical closure is secured on the outside of the marginal edges of an elongated access opening in a pressure tight enclosure and progressively operated from end to end of the access opening to positively connect the edges of the access opening to each other in parallel relation. A separable elongated magnetic closure is connected to the inside of the marginal edges of the access opening from end to end in closely spaced relation behind the mechanical closure comprising, a pair of flat thin flexible resilient magnetic strips movable progressively into overlapping contacting relation by the closing of the mechanical closure. Closing of the outer mechanical closure brings the oppositely magnetized surfaces into overlapping sealing relation and the outer mechanical closure "backs up" the inner magnetic strips and prevents slippage between the smooth contacting overlapping surfaces of the strips.

3,417,407
CAP CONSTRUCTION
Rena L. Divine, 1310 3rd Ave., Albany, Ga. 31705
Filed Feb. 23, 1966, Ser. No. 529,591
4 Claims. (Cl. 2—180)



A cap construction comprising a polyethylene mesh-like crown base having a fabric covering with an annular fabric band secured about the fabric covering. Opposite upper edge portions of the annular fabric band are secured to the fabric covering such that the lower edge of the annular fabric band is disposed an increasing distance below the lower edge of the crown base. The cap crown base material has flexibility, resiliency, and toughness to permit bending and crushing without permanent deformation.

3,417,408
DISPOSABLE FOOTWEAR OF READILY ALTERABLE FORM
John J. Caggiano, 830 E. 227th St., Bronx, N.Y. 10466
Filed Mar. 27, 1967, Ser. No. 626,034
10 Claims. (Cl. 2—239)



Disposable footwear comprises a foot cover of disposable material having a toe portion, a heel portion, an ankle portion and a lower leg portion. Each of the portions have perforations therein in a predetermined pattern to facilitate an alteration of the form of the footwear. The toe portion is adapted to cover the five toes of a foot of a wearer and has perforations therein extending between and separating the large toe and the remaining toes of the wearer to facilitate separating the toe portion between the large toe and the remaining toes. The heel portion is adapted to cover the heel of the foot of the wearer and has perforations therein extending substantially around the heel of the wearer to facilitate removal of substantially the heel portion. The ankle portion is adapted to cover the ankle of a foot of the wearer and has perforations therein extending around the under part of the ankle of the wearer to facilitate removal of the ankle portion and the lower leg portion from the remainder of the footwear. Perforations extend substantially linearly along the back of the foot of the wearer from the heel portion to the top of the lower leg portion to facilitate separating the heel, ankle and lower leg portions along the back of the footwear. The lower leg portion is adapted to cover the lower leg of the wearer and has perforations therein extending around the lower leg of the wearer in spaced rings to facilitate removal of substantially cylindrical parts of the lower leg portion of the footwear.

3,417,409
CAM OPERATED HYDRAULIC KNEE JOINT FOR AN ARTIFICIAL LEG
Jan Prahl, Weiler zum Stein, Gollenhof, Germany, assignor to Wilhelm J. Teufel, Stuttgart, Germany, a limited liability company of Germany
Filed Sept. 27, 1966, Ser. No. 582,304
Claims priority, application Germany, Sept. 29, 1965, T 29,482
8 Claims. (Cl. 3—1.2)

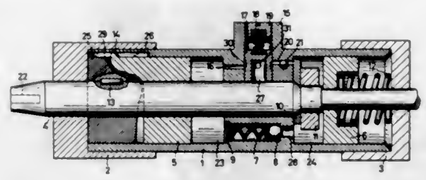
1. A knee joint for an artificial leg, having an elongated lower portion comprising, in combination:

(a) a cylinder member defining a cavity and an expansion chamber therein, and being formed with conduit means;

(b) a shaft member rotatable in said cylinder member about an axis;

(c) fastening means for securing said members respectively to the thigh portion and the lower portion of an artificial leg in a position in which said axis is transverse of the direction of elongation of said lower portion;

(d) a piston axially movable in said cavity in sealing engagement with said cylinder member, said piston member dividing the cavity into a pressure chamber and a compartment, said pressure chamber being connected to said expansion chamber by said conduit means;

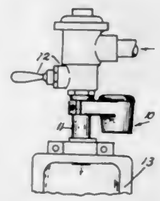


(e) engaging means on said piston and on one of said members for securing the piston against rotation relative to said one member;

(f) cam means secured against rotation on the other member and engaging said piston for axially moving the piston when said members move angularly relative to each other; and

(g) pressure means for maintaining a liquid in said expansion chamber under a pressure higher than atmospheric pressure.

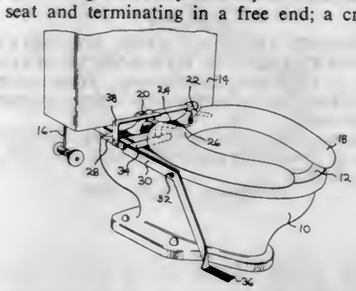
3,417,410
CHEMICAL DISPENSER
Casper J. Tietema, Chicago, and Donald M. Rodak, Hanover Park, Ill., assignors to Lien Chemical Company, Franklin Park, Ill., a corporation of Illinois
Filed Aug. 31, 1967, Ser. No. 664,845
2 Claims. (Cl. 4—225)



A dispenser of a chemical into a flush valve operated water pipe leading to a urinal or toilet, in which an adjustable water inlet tube leads from the water pipe to a container containing the chemical, and a separate outlet tube carries the water mixed with the chemical in the container to the water pipe, to exit to the urinal or toilet, substantially simultaneously, and with the outlet tube so constructed that after-flow and streaking are eliminated.

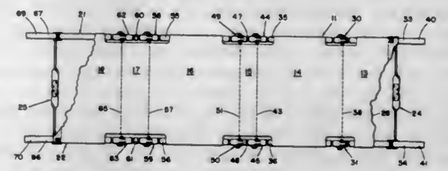
3,417,411
TOILET SEAT LIFTING MECHANISM
Philip R. Greenwood, 1404 Pere St., Toledo, Ohio 43609
Filed Dec. 5, 1966, Ser. No. 599,226
5 Claims. (Cl. 4—251)

1. In combination with the toilet assembly including the bowl, a seat, and hinged means for hingedly connecting the seat to the bowl at the rear of the top of the bowl to permit pivotal movement between the top of the bowl and a position thereabove, a seat raising attachment comprising a base frame member including a first and a second leg disposed at substantially right angles to one another, the first leg being slotted and adapted to be positioned in secured relation with the hinged means, the second leg extending forwardly and adjacent the outer edge of the seat and terminating in a free end; a crank arm



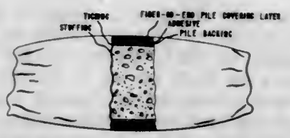
means for pivotally affixing said crank arm to the free end of the second leg of said base frame member; roller means affixed to one of the arms of said crank arm and extending in contact beneath the bottom surface of the seat and arranged to extend parallel to the pivotal axis of the hinge means; and stop means attached to said base frame for limiting the upward pivotal movement of the seat.

3,417,412
FOLDING STRETCHER
Robert J. Andrews, Hubert, N.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 11, 1967, Ser. No. 630,484
10 Claims. (Cl. 5—82)



A stretcher or litter is provided having segmented carrying poles and hinges which permit 180° folds in one direction and have a reinforced stop in the opposite direction to form straight poles in the carrying attitude. Spreader bars serve to space the opened litter off the ground and remain attached through all stages of operation of the litter. The spreader bars and hinges permit the litter to be folded to a compact, minimum volume for packing through rough terrain.

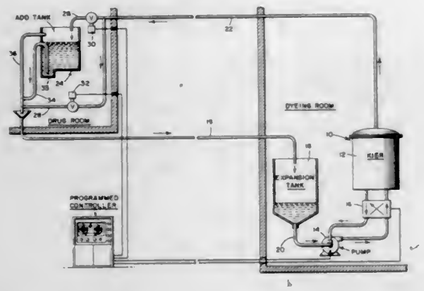
3,417,413
PILLOW WITH FIBER-ON-END PILE COVERING AIDING PREVENTION OF FACIAL ACNE AGGRAVATION
Thomas Barton Gage, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 22, 1965, Ser. No. 515,669
3 Claims. (Cl. 5—338)



A pillow having a covering of porous fiber-on-end pile. In the pile, parallel, crimped fibers are poined at a plu-

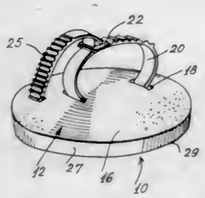
rality of contact points, and the faces of the pile layer are composed essentially of fiber ends. The covering helps prevent aggravation of acne while the user's face is in contact therewith.

3,417,414
METHOD AND APPARATUS FOR ADDING CHEMICAL AND DYESTUFFS TO A DYEING MACHINE
Jefferson L. Claiborne, Chattanooga, Tenn., assignor to Dixie Yarns, Inc., Chattanooga, Tenn., a corporation of Tennessee
Continuation-in-part of application Ser. No. 600,258, Dec. 8, 1966. This application Mar. 30, 1967, Ser. No. 627,178
27 Claims. (Cl. 8—158)



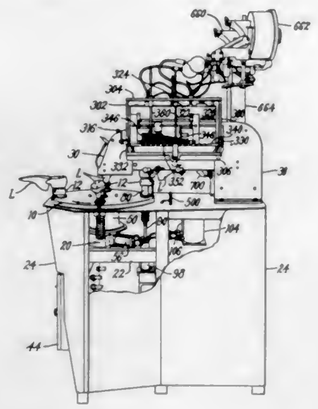
A package yarn dyeing system particularly adapted for on-off program control including dye chemical add tank receiving a predetermined amount of diluting bath liquid before it is syphoned into an expansion tank and fed from there to the pump inlet feeding a kier. Further dilution and line washing are achieved by an add tank bypass line through which bath liquid is circulated. In one embodiment, the add tank fill line emanates from the pump outlet and the kier dome is tapped by an additional expansion tank feed line to enhance and speed up dilution uniformity.

3,417,415
BEACH SHOE AND HAND PADDLE
John Kozak, 137 14th St., Brooklyn, N.Y. 11215
Filed Sept. 26, 1967, Ser. No. 670,746
6 Claims. (Cl. 9—309)



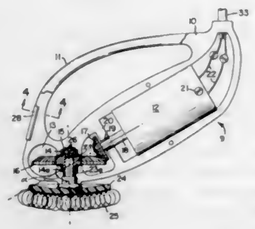
The disclosure describes a device of general utility which can be used as a beach shoe for walking on sand, a hand paddle for use in swimming, a seat for use on a beach, and a sun shade for use on the head. The device has as disk-like body in the form of a segment of a sphere. It is provided with a flexible strap. It is very light in weight and strong enough to support a person's weight. It is preferably made of closed cell polystyrene.

3,417,416
APPARATUS FOR ASSEMBLING INSOLES ON LASTS
Calvin Isaacson, Beverly, Mass., and Norman A. Ouellette, Palm Beach Gardens, Fla., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed May 5, 1966, Ser. No. 547,911
15 Claims. (Cl. 12—1)



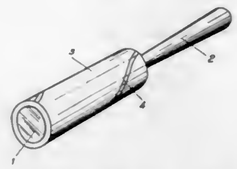
1. A machine for assembling insoles on the bottoms of lasts comprising an assembling station, means for presenting a series of lasts, one by one, successively, to said assembling station, said presenting means having means for supporting a plurality of lasts, and means at said station for assembling an insole on the bottom of each last as it arrives at said station.

3,417,417
SCRUBBING IMPLEMENT
Louise K. Rhodes, 6835 E. Prairie Road, Lincolnwood, Ill. 60645
Filed Apr. 18, 1966, Ser. No. 543,413
4 Claims. (Cl. 15—93)



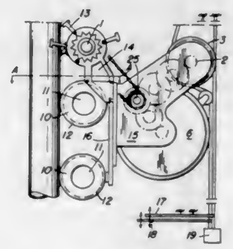
A line-powered scrubbing implement having a waterproof elongated body with a raised handle extending between its ends and an angularly disposed rotating scrubbing element mounted at one of its ends is employed in combination with a housing for stowage of the implement which includes a proximity operated switching means controlling line voltage to a transformer therein which turns "on" or "off" the line voltage to the transformer automatically when the scrubber is removed from or returned to the housing. This arrangement completely and automatically isolates the line voltage, making the scrubber safe for employment in kitchen sinks and the like.

3,417,418
ADHESIVE-COATED CLEANING ROLLER
Pierre-Jean Riboud, Levallois-Perret, France, assignor to Societe Anonyme dite: Lincrusta, Paris, France, a corporation of France
Filed July 5, 1967, Ser. No. 651,199
Claims priority, application France, July 6, 1966, 3,295
3 Claims. (Cl. 15—104)



A tool for collecting dirt and dust has a cylinder rotatably mounted on a handle and carrying a plurality of layers of outwardly adhesive spirally-wound sheets. The edges of the outermost sheet can be located when dirty by making a subjacent layer of a different colour and leaving a gap between turns of the spiral of each layer or by colouring one edge of each layer differently from the remainder thereof.

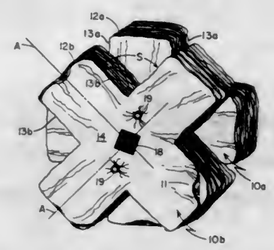
3,417,419
DEVICE FOR REMOVING SLAG FROM HEATING SURFACES OF WATERWALL TUBES IN THE BOILER
Zygmunt Ziebinski, Sosnowiec, Poland, assignor to Zaklady Energetyczne Okregu Poludniowego Zaklad Remontowy Energetyki, Katowice, Poland
Filed Oct. 3, 1966, Ser. No. 583,695
Claims priority, application Poland, Oct. 8, 1965, P 111,152
4 Claims. (Cl. 15—104.04)



Apparatus for cleaning the heating surfaces of radiant tubes in boilers, including a rotatable drum rotatably mounted on a vehicle frame and carrying a plurality of articulated hammers. Means are provided to guide the vehicle frame along the tubes along with means to vary the speed of the vehicle.

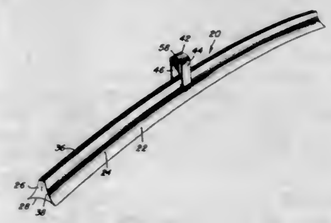
3,417,420
BUFF OF FABRIC MATERIAL
Albin Stanley Rock, 69 Fullerton Ave., Whitman, Mass. 02382
Filed Feb. 23, 1967, Ser. No. 617,930
5 Claims. (Cl. 15—230.16)

A buff comprising a plurality of stacked, flat, edge-aligned fabric elements. Each element has projections of substantial width extending outwardly from an integral portion. The axes and edges of adjacent projections are perpendicular and the edges form substantial angles with the threads of the fabric forming the element. In preferred embodiments, each element includes an arbor hole oriented at an angle of 22½° to an axis of the projections, the lengths and widths of the projections are substantially the same, and a plurality of buffs are secured



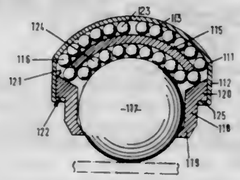
together in successively reversed relationship with their arbor holes aligned so that the projections of adjacent buffs overlap and form 45° angles with each other.

3,417,421
WINDSHIELD WIPER ATTACHMENT
Dale O. Retke, P.O. Box 306, Kimball, Nebr. 69145
Filed Mar. 20, 1967, Ser. No. 624,263
5 Claims. (Cl. 15—250.41)



An elongated scraping blade assembly including oppositely laterally outwardly directed scraping edge portions and adapted to be supported from a conventional windshield wiper blade and to be utilized primarily on a vehicle driving through a snowstorm for the purpose of preventing freezing snow from icing on the windshield of the vehicle in the area of the windshield normally swept by the associated windshield wiper assembly.

3,417,422
BALL CASTORS
Samuel B. Dale, Sheldon, Birmingham, England, assignor to Autoset (Production) Limited, Birmingham, England, a British company
Filed Aug. 16, 1966, Ser. No. 572,820
Claims priority, application Great Britain, Mar. 5, 1966, 9,761/66
4 Claims. (Cl. 16—26)



A ball castor having a main ball retained in a cup-shaped housing, a multiplicity of bearing balls of a diameter smaller than that of the main ball, the bearing balls being disposed in a circulating chamber between the main

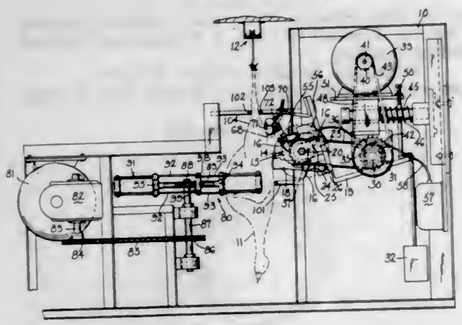
ball and the base of the housing, and a freely floating table in the circulating chamber dividing the bearing balls into two layers, the table being of smaller area than the interior of the housing and circumferentially spaced therefrom a distance at least equal to the diameter of the bearing balls to permit free circulation thereof from one to the other layer.

3,417,423
MEANS FOR PROCESSING SCALLOPS FOR THE MARKET
Lorenz Meyer, 212 E. Main St., East Islip, N.Y. 11730
Filed Apr. 13, 1966, Ser. No. 542,252
4 Claims. (Cl. 17—2)



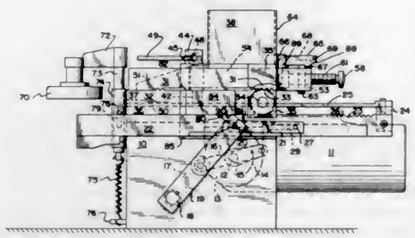
Means for both shucking and eviscerating scallops in a continuous automatic process, consisting of a machine for shucking and delivering shucked scallops at a relatively low level on to the lower end of an upwardly sloping conveyor belt which discharges the scallops into an elevated hopper forming part of a viscerating machine. The hopper deposits the scallops into a downwardly sloping space or line of contact between a similarly downwardly sloped rotary brush and a similarly sloped baffle, said line being spaced horizontally from the brush axis a distance approximately equal to the radius of the brush. Along the substantially diametrically opposite edge of the brush, a similarly sloping comb has its teeth substantially in contact with the brush, and one or more streams of water are sprayed at the line of contact between the brush and the comb. The eviscerated scallops are discharged at the lower end of said first-named downwardly sloping line, or path.

3,417,424
POULTRY PROCESSING APPARATUS
Harold F. Chamberlain, New Haven, Conn., assignor to Jarvis Corporation, Hartford, Conn., a corporation of Conneticut
Filed Nov. 14, 1966, Ser. No. 593,773
11 Claims. (Cl. 17—11)



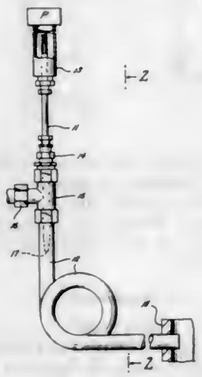
1. A device for removing oil glands from poultry carcasses or the like, comprising in combination first cutter means for cutting the oil gland from the carcass and second cutter means for slicing into a portion of the carcass in proximity to the location of the oil gland to facilitate the removal of the oil gland.

3,417,425
MOLDING APPARATUS FOR PLASTIC MATERIAL
James A. Holly, Olympia Fields, Ill., assignor to Hollymatic Corporation, a corporation of Illinois
Filed Sept. 9, 1966, Ser. No. 578,234
6 Claims. (Cl. 17—32)



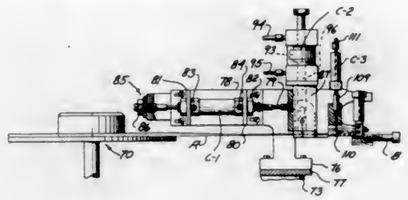
Molding apparatus for molding or shaping portions of a moldable material and particularly patties of a food material in which a movable feeder in a hopper is used for periodically forcing material from the hopper into an opening in the mold and particularly including means for retaining the feeder in fixed position until the mold opening has been moved out of material receiving position.

3,417,426
APPARATUS FOR SEPARATING A POLYMER FROM A SOLVENT
Billy D. Rice, Pasadena, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 487,985
14 Claims. (Cl. 18—1)



An apparatus for separating a polymer from a solvent wherein nozzle means are connected to an elongate housing, which is in turn connected to a surface in such a manner that a polymer solution which has been forced through the nozzle is partially volatilized and then impinges against the surface to achieve particulation.

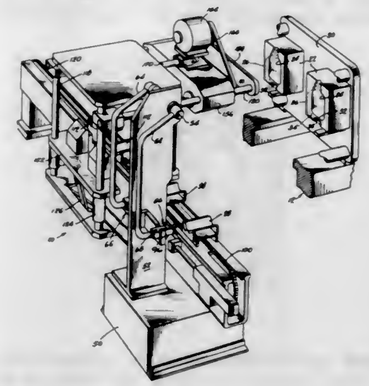
3,417,427
INDEXING AND DISPENSING MECHANISM
Francis R. Kull, Warminster, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1966, Ser. No. 602,387
7 Claims. (Cl. 18—1)



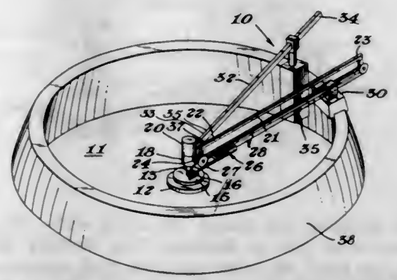
1. In apparatus for indexing a ribbon of material and for subdividing said ribbon into discrete lengths, a ribbon transfer block movable in a reciprocatory path for advancing said ribbon during the forward portion of said movement, a ribbon guide secured to said block, said guide defining a channel through which said ribbon is adapted to extend, said channel extending in the direction of movement of said block, a bore in said block intersecting said channel, a pin mounted in said bore for movement axially thereof, pin drive means for moving said pin between a retracted position and a position within said channel whereby the ribbon within the channel is pierced, transfer block drive means operable subsequent to movement of said piercing pin for thereafter advancing said transfer block, a second ribbon guide fixedly mounted relative to said first guide, a channel in said second guide in axial alignment with said first channel, a bore in said second guide intersecting said second channel, a clamping member mounted for axial movement within said bore, clamping member drive means operable upon advance of said transfer block to drive said clamping member into said channel to thereafter hold said ribbon in advanced position, a tool at the exit end of said channel, said tool being mounted for relative movement with respect to said guide transversely of the channel, and cooperating shearing surfaces on said tool and on the second ribbon guide, said surfaces being positioned to shear a discrete length of ribbon upon movement of said tool transversely of said second channel.

3,417,428
APPARATUS FOR TRIM FINISHING BLOW MOLDED CONTAINERS
Samuel J. Rupert, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Dec. 9, 1964, Ser. No. 416,991
9 Claims. (Cl. 18—5)

Apparatus for use in conjunction with an organic plastic blow molding machine wherein sectional molds are provided for defining a cavity in which an article is to be blow molded. A pivotally supported arm is located adjacent to the sectional molds and has gripping means for gripping the tail of the molded article while the mold sections are still closed. The arm is mounted for reciprocable movement between the position for gripping the tail and another position or loading station wherein the gripping means releases the tail with the article being loaded in a prescribed position on a holder carried by the conveyor. The conveyor has two sets of such holders one of which is movable between the loading station and an article trimming station and the second of which is movable between the trimming station and an unloading station. The trimming station provides a mechanism for elevating articles delivered there for trimming purposes and such mechanism maintains these articles in the elevated trim position at the time the conveyor is returned to the initial position wherein the one set of holders can receive additional articles from the blow molding machine. The trimmed articles at the trim station will then be deposited in the second set of holders for movement to an unloading station when the conveyor repeats its cycle of operation.



3,417,429
APPARATUS FOR THE PREPARATION OF WALLED STRUCTURES
Donald R. Wright, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,927
6 Claims. (Cl. 18—5)

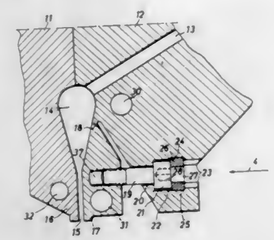


An apparatus is described for the preparation of structures by spiral generation wherein the shape of the structure is controlled by a cam or pattern which controls the position of the material depositing head along a boom or arm. Such cams or patterns may be of the two or three dimensional type.

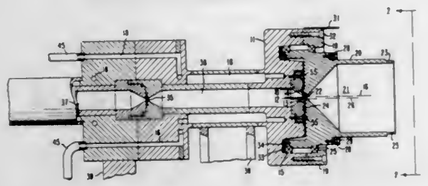
3,417,430
SCREW ADJUSTMENT MECHANISM
Felix Frederik De Smedt and Victor Alois Marinus, Wilrijk-Antwerp, Belgium, assignors to Gevaert-Agfa, N.V., Mortsel, Belgium, a Belgian company
Filed Aug. 10, 1966, Ser. No. 571,567
Claims priority, application Great Britain, Aug. 10, 1965, 34,209/65
2 Claims. (Cl. 18—12)

A slit type extrusion head in which a longitudinal section of the head defining one wall of the slit is connected to the remainder of the head through a thin neck and is

subdivided longitudinally by weakened regions so that the section can be adjusted bodily relative to the remainder of the head, and the independent longitudinal subdivisions adjust with respect to each other, the head being equipped with an adjusting mechanism comprised of a plurality of screws seated in the head portion and in threadwise engagement with the longitudinal section, substantially every subdivision of the section having one of said screws engaged therewith, the heads of the screws being received in recesses provided therefor and restrained against displacement relative to such recesses by a retaining bar common to all of the screws, the bar having openings aligned with the screw heads to permit access to such heads for adjustment of the screws.



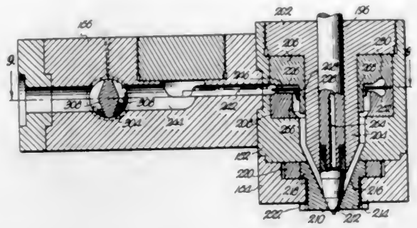
3,417,431
ADJUSTABLE EXTRUSION DIE
Ludvik Majoch, Windy Hills, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,551
2 Claims. (Cl. 18—12)



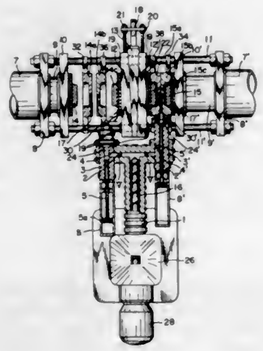
An extrusion die having an orifice with adjustable cross-sectional area is disclosed. Two abutting die-portions, one fixed, the other rotatable, each contain cylindrical orifice-portions of equal diameters. The axis of rotation of the rotatable die-portion is eccentric to the axis of the orifice-portion in the fixed die-portion, and is equidistant from the axes of both orifice-portions. Rotation of the rotatable die-portion to the position where the axes of the two orifice portions coincide provides maximum opening; rotation to a position where there is no overlapping area between the two orifice-portions closes the orifice.

3,417,432
APPARATUS FOR EXTRUDING COMPOSITE BLOW MOLDING PARISONS
John R. Albert, Leawood, and Michael J. Grebowiec, Shawnee Mission, Kans., assignors to Brockway Glass Company, Inc., Brockway, Pa.
Filed Aug. 27, 1965, Ser. No. 483,204
4 Claims. (Cl. 18—14)

A plastic blow molding apparatus wherein plastic from an extruder passes through a homogenizer and thence through radiating conduits, each conduit terminating at a molding station. A rotatable valve in each branch conduit with the several valves synchronized to permit substantially continuous movement of plastic from the extruder. Each molding station has a pair of concentric annular extrusion orifices for producing telescoping tubular plastic extrusions which are then passed through a single extrusion orifice to produce a single homogeneous tubular extrusion, the two component tubular extrusions having offset joint lines therealong.

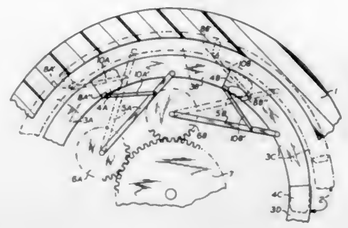


3,417,433
PLURAL NOZZLES, PLURAL MOLDS, INJECTION MOLDING MACHINE
Shoichi Teraoka, Hiroshima-ken, Japan, assignor of fifty percent to Shin-Etsu Chemical Industry Co. Ltd., Chiyoda-ku, Tokyo, Japan
Filed Nov. 17, 1965, Ser. No. 508,264
Claims priority, application Japan, Nov. 20, 1964, 39/65,546
5 Claims. (Cl. 18—30)



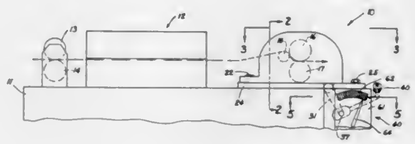
An injection molding machine comprises a plurality of platens which may be slid along guide bars arranged on each side of a closing wedge member and which may be moved together by a ram to define a molding cavity on each side of the wedging member which may be selectively aligned in a closed position with an infeed gate of a respective one of two injection nozzles for the material to be molded. Each mold may be opened to a position in which the gate is no longer aligned with its associated nozzle. The construction further includes a rotating feed screw for conveying material in a plasticized form selectively to one of the two laterally extending side head portions serving the two nozzles. Each head member carries an injection piston which is reciprocable under the control of fluid pressure to force material to be molded into the mold cavity through the gate thereof.

3,417,434
GROOVE FORMING TOOL FOR PIPES
Theodore Hafner, 1501 Broadway, New York, N.Y. 10036
Filed Sept. 14, 1966, Ser. No. 579,320
4 Claims. (Cl. 18—45)



The invention consists of a forming tool comprising a number of ring-shaped sections adjoining each other and forming a substantially continuous circular configuration of predetermined diameter, and means for telescoping at least part of the ends of the sections, one end moving parallel to an adjacent end, so as to produce a configuration of another predetermined diameter substantially without changing the continuous circular shape of configuration while moving from one diameter to the other.

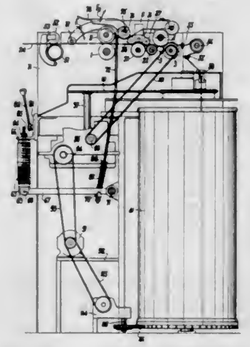
3,417,435
GILL BOX WITH ADJUSTABLE DELIVERY ROLLS
John V. Curran, Bedford, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed May 25, 1966, Ser. No. 552,893
7 Claims. (Cl. 19—129)



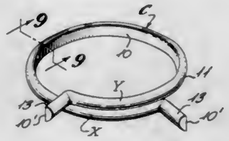
The present invention relates to textile apparatus, and particularly relates to textile apparatus which includes a gill box having sliver advancing rolls located at the input and output ends thereof. The sliver advancing rolls at the output end of the apparatus are adjustable toward and away from the gill box. An indicator mechanism is provided for indicating the position of the rolls relative to the gill box.

3,417,436
DISPENSING DEVICE FOR TEXTILE FIBRES
Michel Masurel, Wasquehal, France, assignor to Brevets et Applications Textiles Brevatex, Wailly, Tourcoing, Nord, France, a French company
Filed Jan. 10, 1966, Ser. No. 519,784
Claims priority, application France, Jan. 12, 1965, 1,556
4 Claims. (Cl. 19—258)

A dispensing device for textile fibres comprising a first cooperating roll means for introducing textile fibres, a second cooperating roll means spaced from said first cooperating roll means and a fibre engaging means disposed between said first and second cooperating roll means and wherein said fibre engaging means includes a pair of feeding and controlling rollers provided with needle-like projections that contact the surface of the textile fibres; positive means are provided to actuate the cooperating roll means, the feeding roller means and the controlling roller means at peripheral speeds such that the peripheral speed of the feeding roller is less than that of the cooperating roll means and the peripheral speed of the controlling roller is less than that of the the feeding roller.



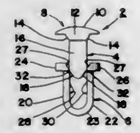
3,417,437
SPRING WIRE HOSE CLAMP AND FORM POST FOR MAKING SAID CLAMP
Thomas Joseph Binnall, Cromwell, and Walter E. Surko, Jr., Kensington, Conn., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed June 24, 1966, Ser. No. 560,228
10 Claims. (Cl. 24—27)



A self-tightening, spirally wound, spring wire hose clamp having a substantially flat internal clamping surface and a novel and simplified geometry which is a definite improvement over round wire hose clamps of the prior art. The improvement, in its broadest aspects, lies in the concept of providing a substantially flat internal surface on a spirally wound, self-contracting, spring wire hose clamp, by means of which an unexpectedly improved performance has been obtained. Within this broad concept it has been determined that the best performance is obtained from a wire having a generally D-shaped or generally half-round cross-section and a thickness to width ratio in the range of from 1:1 to 1:7. This improved clamp, therefore, because of its carefully designed cross-section and geometry, shows a substantial increase in holding power under high pressure, resulting in less leakage; less tendency to clamp breakage; reduced permanent damage to the hose being clamped; and a greater reserve spring force when the clamp is in use. The invention further involves an improved form post, or core,

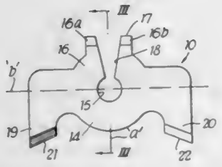
for use in bending and forming the clamp to the required carefully developed configuration.

3,417,438
DEFORMABLE POLYMERIC FASTENING DEVICE
Jerome T. Schuplin, Parma Heights, Ohio, assignor to Tinnerman Products, Inc., a corporation of Ohio
Filed May 14, 1965, Ser. No. 455,786
18 Claims. (Cl. 24—73)



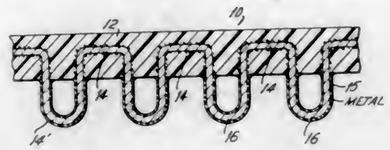
A fastening device made from polymeric material comprising a loop-like generally vertically oriented body, a drive pin initially made integral with the body along a limited area adapted to be sheared therefrom and moved downwardly into the body upon application of pressure thereto, and a pair of spaced, oppositely disposed cam elements projecting inwardly from the body adapted for camming engagement by the drive pin to cause spreading deformation of the body upon the application of said pressure to the drive pin.

3,417,439
FASTENER FOR SECURING MOULDING TO A STUD ON A SUPPORT
Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Jan. 19, 1968, Ser. No. 699,151
Claims priority, application Great Britain, Jan. 31, 1967, 4,709/67
4 Claims. (Cl. 24—73)



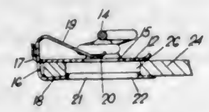
The present invention relates to a fastener for attaching a moulding having inturned flanges on a support provided with a projecting stud formed with a shank and a head. The fastener comprises a body portion, a lug on one side of the body portion which holds one flange of the moulding against the support, a slot which divides the lug into two jaw portions and a pair of arms projecting from opposite ends of the body portion and outwardly in the opposite sense to the lug to hold the other flange of the moulding against the support. The fastener is engaged on the support by sliding the fastener laterally on to the stud so that the shank extends through the slot and the head overlies the body portion and the moulding is then snap-engaged over the body portion of the fastener. The arms of the fastener are laterally deflectable and when compressed by the moulding cause the jaw portions to close up around the shank of the stud ensuring a secure connection between the fastener and the stud.

3,417,440
HOOK AND LOOP FASTENER
Jean Billarant, Nogent-sur-Marne, Val-de-Marne, France, assignor to Velcro S.A., Lenzerheide, Grisons, Switzerland
Continuation-in-part of application Ser. No. 245,247, Dec. 17, 1962. This application July 21, 1966, Ser. No. 567,012
5 Claims. (Cl. 24—204)



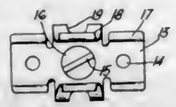
A flexible band having hooked and/or looped shaped elements for engagement with a similar flexible band to provide a fastener, in which the engageable elements are formed of a metal wire having elastic properties. The elements may be coated with a thermoplastic material thermally related to the melting point of the base sheet to which the metal wires are anchored.

3,417,441
QUICK RELEASE FASTENERS
Howard John Leonard Smith, Farnham, Surrey, England, assignor to Dzus Fastener Co., Inc., West Islip, N.Y., a corporation of New York
Filed Sept. 29, 1966, Ser. No. 583,053
3 Claims. (Cl. 24—221)



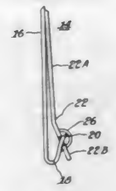
A mounting for one unit of a fastener assembly, such that it may be quickly and accurately associated with a panel or sheet of material. Such mounting will not require precision drilling of the panel to position the ends of a spring rod in exact relationship with respect to stem-accommodating aperture; the stem forming a part of a second unit of the assembly and cooperating with that rod.

3,417,442
QUICK RELEASE FASTENERS
Howard John Leonard Smith, Farnham, Surrey, England, assignor to Dzus Fastener Co. Inc., West Islip, N.Y., a corporation of New York
Filed Feb. 24, 1967, Ser. No. 618,465
3 Claims. (Cl. 24—221)



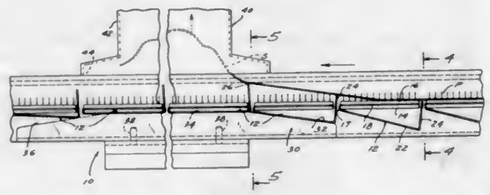
The invention concerns a quick release fastener of the Dzus type for holding two panels together. The fastener has a retaining member, such as a spring wire or cup, mounted on a base plate having bent edge portions which form both spacers and resilient legs, the legs being arranged to fit into a rectangular aperture in a panel to hold the retaining member assembly in position. A stud can then pass through the aperture, through a hole in the base plate and into engagement with the retaining member.

3,417,443
CURTAIN TRAINING CLIP
Nancy Gentilucci, 6 Gonzalez Drive, San Francisco, Calif. 94132
Filed Aug. 7, 1967, Ser. No. 658,963
4 Claims. (Cl. 24—252)



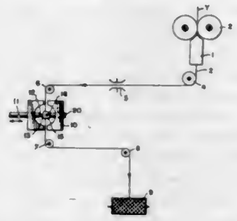
A clip adapted to be detachably secured to curtains to "train" same to drape and fold gracefully.

3,417,444
SELVAGE REMOVING ASSEMBLY FOR HIGH SPEED TENTER MACHINES
John McCreary, 9 Apple Tree Lane, Newtonville, N.Y. 12128
Filed Dec. 20, 1967, Ser. No. 692,154
11 Claims. (Cl. 26—57)



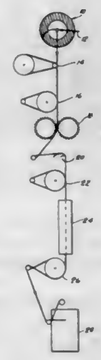
An assembly for mounting on a high speed, pin-type tenter machine for continuously removing selvage therefrom, the assembly comprising lifting means for continuously and positively disengaging the selvage from the pins of a high speed tenter chain so that the selvage may be removed to a point remote from the tenter machine.

3,417,445
METHOD AND APPARATUS FOR PRODUCING A VOLUMINOUS YARN WITH UNIFORMLY SPACED BINDINGS
Hermann Gemeinhardt and Günther Schatz, Elsenfeld, and Hans Brücher, Klingenberg, Germany, assignors to Vereinigte Glanztoff-Fabriken A.G., Wuppertal-Elberfeld, Germany
Filed June 20, 1966, Ser. No. 558,825
Claims priority, application Germany, June 23, 1965, V 28,723
10 Claims. (Cl. 28—1)



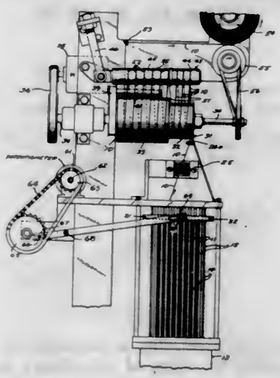
Method and apparatus for uniformly oscillating a yarn conducted between two fixed points in a secondary resonance chamber under the influence of a jet of gas impinging perpendicularly on the normal straight line path of the thread between the fixed points and entering into a primary resonance chamber arranged behind and in fluid communication with the secondary resonance chamber, thereby producing uniformly spaced bindings along the length of the yarn.

3,417,446
METHOD AND APPARATUS OF GEAR CRIMP
Rodney James Fairclough and Peter Bernard Checkland, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Nov. 16, 1966, Ser. No. 594,918
Claims priority, application Great Britain, Nov. 16, 1965, 48,629/65
9 Claims. (Cl. 28—1)



Polyester yarn is produced by melt spinning and drawing between feed and draw rolls, the yarn being passed between rotating intermeshing gears and across a narrow heated surface before reaching the draw roll. The yarn is subsequently bulked by relaxing and scouring.

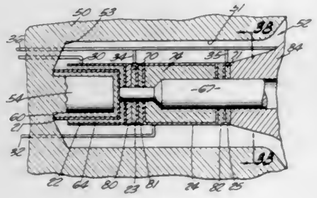
3,417,447
METHOD AND APPARATUS FOR TREATING CRIMPED YARN
Alexander L. Trifunovic and Steve E. Zeis, Wilmington, Del., assignors to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,662
3 Claims. (Cl. 28—71.3)



Apparatus for treating crimped yarn derived from a core of a stuffer crimper including a heated stepped roll and a parallel guide roll around which the yarn is looped for heating and stretching and a winder receiving the

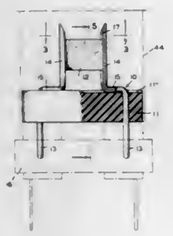
yarn from said rolls. A motor for driving the rolls is controlled by a potentiometer actuated by a sensing element responsive to the level of the core of yarn and connected to maintain the level substantially constant. The crimped yarn is stretched at a temperature below the original setting temperature and is rebulked by relaxation at a temperature higher than the stretching temperature.

3,417,448
METHOD OF MOULDING ELECTRON TUBES AROUND REMOVABLE MANDRELS CARRYING THE TUBE ELECTRODES
Ray H. Kelley, Los Angeles, Calif., assignor to Ray H. Kelley & Associates, Santa Monica, Calif., a partnership
Filed May 24, 1966, Ser. No. 552,492
14 Claims. (Cl. 29—25.13)



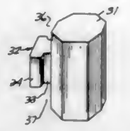
1. A method of forming an electron tube comprising the steps of
plating a plurality of metallic electrodes on respective mandrels,
positioning the plated electrodes and mandrels within a mold,
applying liquid envelope material into said mold and allowing said material to contact said electrodes and harden thereby securing said electrodes and forming a tube structure,
removing the tube structure from said mold, and
removing said mandrels from said electrodes.

3,417,449
METHOD OF MANUFACTURING PIEZOELECTRIC CRYSTAL ASSEMBLIES
William W. Sanford, 714 E. Harwood St., Orlando, Fla. 32803
Continuation-in-part of application Ser. No. 387,714, Aug. 5, 1964. This application Dec. 16, 1966, Ser. No. 602,371
8 Claims. (Cl. 29—25.35)



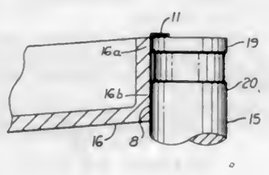
1. A method of producing a piezoelectric crystal assembly comprising the steps of providing a pair of electrodes each having a crystal receiving groove, mounting said electrodes in fixed position on a base with said grooves facing each other and said electrodes extending from opposite sides thereof, providing a crystal of a size to extend from one electrode to the other, mounting said crystal within said grooves, altering said crystal to a desired thickness, and applying a conductive film to opposed surfaces of said crystal in a manner to provide an electrical connection between each electrode and one surface of said crystal.

3,417,450
METHOD FOR MAKING A PLUMBING VALVE BODY
Robert M. Zell, Huntington Woods, Mich., assignor to Brass Craft Manufacturing Co., Detroit, Mich.
Filed Nov. 25, 1966, Ser. No. 597,054
1 Claim. (Cl. 29—157.1)



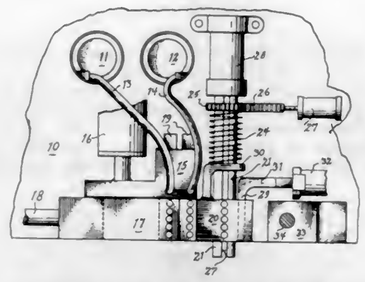
The method disclosed herein relates to forming the valve body or barrel of an under-fixture type of plumbing valve, having an outwardly extending spout or fitting formed integral with the body, by means of extruding a brass rod which is polygonal, and preferably hexagonal in cross-section with an integral T joined therewith, and thereafter cutting away the material forming the T, above and below the spout and then cutting the T into the shape of the threaded spout and cutting into the polygonal portion the conventional end connectors, and threaded openings and valve sheet. The method results in a completely integral or one-piece construction.

3,417,451
PROCESS AND APPARATUS FOR PRODUCING FINNED TUBING
Addison Y. Gunter and Thomas E. Owen, Houston, Tex., assignors to Hudson Engineering Corporation, Houston, Tex., a corporation of Texas
Continuation of abandoned application Ser. No. 346,833, Feb. 24, 1964. This application July 6, 1966, Ser. No. 565,044
12 Claims. (Cl. 29—157.3)



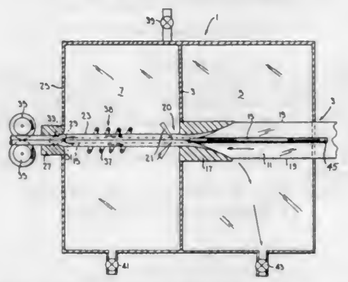
8. A process for applying a helical fin to the exterior of a tube, which comprises the steps of applying rolling stress to the opposite sides of longitudinally extending areas of a thin strip of metal so as to advance the strip therebetween and differentially thin the strip along such longitudinally extending areas in a direction from its inner to its outer edge and thereby form it into a helical fin as it is so advanced, providing no more than relatively small support for an intermediate area of the strip between said longitudinally extending areas so that it is relatively unthinned and caused to part at a series of locations along its length as said longitudinally extending areas are thinned, and rotating the tube and simultaneously moving the tube and strip relative to one another along the axis of the tube so that the helical strip may be guided about the tube.

3,417,452
TUMBLER LOCK BLIND HOLE PIN ASSEMBLY APPARATUS
Max G. Roland, San Carlos, Calif., assignor to Maromatic Company, Inc., Burlingame, Calif., a corporation of California
Filed Mar. 29, 1966, Ser. No. 538,327
3 Claims. (Cl. 29—208)



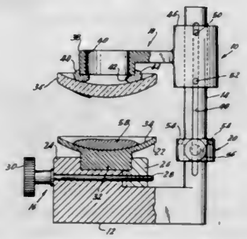
This invention provides apparatus by which driving pins and springs are assembled in a tumbler lock cylinder of the type having blind driving pin and spring accommodating holes by which the springs and driving pins are inserted in the lock cylinder through the key plug accommodating opening therein. The arrangement consists of means for positioning the driving pins and springs in a slotted mandrel having dimensions corresponding to the key accommodating plug of the lock and subsequently maneuvering the lock cylinder about the mandrel in such manner that a key plug with preselected key bit engaging tumbler pins may be assembled to complete the lock.

3,417,453
COATING OF TUBING
John F. Clarke, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,502
4 Claims. (Cl. 29—460)



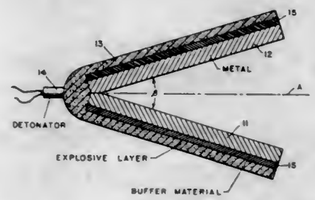
A metal strip is drawn through a curling die to form a tube, the adjacent edges of which are welded beyond the die. The tube then moves through heating means in a heating chamber and finally through a finishing die. A hollow mandrel extends through the curling die into the welded tube beyond the heating zone where the mandrel has outlets and a tube plug therebeyond. A gas or vapor which is decomposable by heating is introduced into the moving tube through the mandrel and its outlets. Because of the plug the gas or vapor back-flushes through the advancing tube within its heated zone and out through its open portion at the curling die. It escapes through a chamber having a valve-controlled vapor outlet to control the rate of flow. The outside of the tube in the heating chamber may also be subjected to a neutral, deoxidizing, or a decomposable gas or vapor, the flow of which through the heating chamber is controlled by a valve-controlled chamber outlet. The temperature established in the heating zone is sufficient to decompose the back-flushing vapor or gas, which condenses on the inside of the tube as it cools in its movement away from the heating zone. If a decomposable vapor or gas is used in the heating chamber, there will be formed an outside deposit on the tube.

3,417,454
METHOD OF BLOCKING LENSES
George A. Beasley, Fort Lauderdale, Fla., assignor to Univis, Inc., Fort Lauderdale, Fla., a corporation of Ohio
Filed May 16, 1966, Ser. No. 550,519
18 Claims. (Cl. 29—468)



1. A method of blocking a lens blank whereby a lens blank holding and aligning block unit and a lens blank unit are secured and aligned one with respect to the other, said method comprising:
positioning one of the units on a support;
positioning and aligning the other of the units relative to the one unit;
temporarily fixing the aligned relationship of the units by applying a bonding wax to a surface of one of the units and this unit is removed from the other, while preserving the fixed aligned relationship by gripping the wax, by a structure shiftable along a predetermined path such that the units are adapted to be returned to the aligned relationship following the interposition of the bonding agent by simply shifting the structure and consequently the removed unit adhered thereto by the bonding wax;
removing one unit from the other while preserving the fixed aligned relationship;
interposing a bonding agent on one of the units;
returning the units to the aligned relationship;
and securing the units to one another in the aligned relationship by the interposed bonding agent.

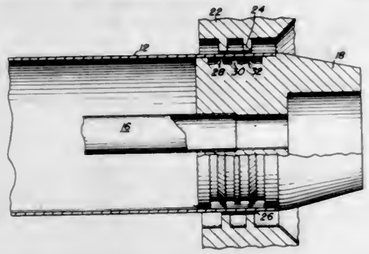
3,417,455
EXPLOSIVE WELDING
John Pearson, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 18, 1961, Ser. No. 83,597
2 Claims. (Cl. 29—470.1)



The improvement in the process of explosive welding wherein the parts positioned with an angular gap in the

area of the intended joint are coated with a buffer material prior to positioning of the explosive layer is disclosed.

3,417,456
METHOD FOR PULSE FORMING
Melvin J. Carlson, Havre De Grace, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 30, 1966, Ser. No. 584,064
6 Claims. (Cl. 29—470.1)

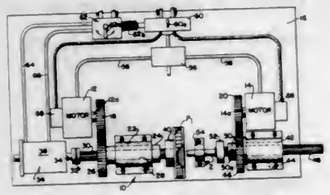


1. A method of joining a tubular workpiece selected from metal and plastic material to a cylindrical workpiece selected from metal and plastic material comprising the steps of:

(a) fabricating said tubular workpiece so as to provide three integral rings spaced a predetermined distance apart, with a center ring of a rectangular cross section having a top and a pair of rings of a right trianguler cross section each having a peak spaced on either side of said center ring in a manner such that the hypotenuse of each of said triangular cross sections slopes towards said center ring, the distance from each said peak of the triangular rings and said top of the rectangular ring being approximately one-half the thickness of the cylindrical workpiece,

(b) inserting said tubular workpiece into said cylindrical workpiece, assembling the workpieces in a high energy rate forming machine, said machine having a pair of rings located above each said peak of said triangular rings and joining said tubular workpiece to said cylindrical workpiece by means of a high energy, high speed impulse.

3,417,457
WELDING METHOD AND APPARATUS
Clarence J. Burke, Palos Verdes Estates, and Kenneth J. Miller, Fullerton, Calif., assignors, by mesne assignments, to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 30, 1962, Ser. No. 220,417
14 Claims. (Cl. 29—470.3)



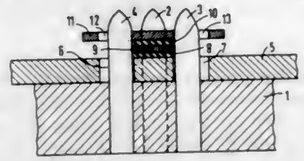
1. The method of welding parts together which comprises the steps of:

producing relative rotation of said parts by driving at least one part in rotation;

effecting relative axial movement of said parts into forging impact during relative rotation thereof to heat the abutting interfaces of the parts to welding temperature by dissipation of the forging impact and frictional energies at said interfaces, and creating forced contact of said interfaces while at said temperature to cause welding diffusion to occur at said interfaces; and

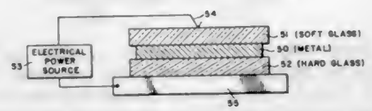
terminating relative rotation of said parts after heating of said interfaces to said temperature.

3,417,458
PRODUCTION OF ELECTRICAL SEMICONDUCTOR DEVICE
Udo Lob and Heinz Martin, Munich, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Continuation of application Ser. No. 397,561, Sept. 18, 1964. This application May 17, 1966, Ser. No. 550,870
1 Claim. (Cl. 29—471.9)



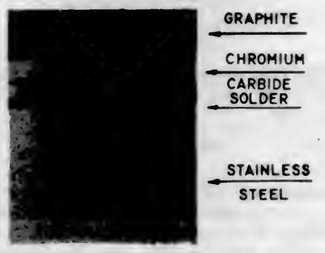
1. The method of producing electrical semiconductor devices having at least one semiconductor member with contact faces at its axially opposite sides and having two conductor plates soldered to said respective faces and provided with holes uniformly distributed about said faces, which comprises placing one of said plates upon a base having at least three upwardly protruding guide pins with said holes of said plate passing over said respective pins, stacking a solder layer and thereupon said member on top of said one plate between said pins so as to be held laterally in position by said pins, placing another layer of solder and ultimately the other plate on top so as to have the pins pass through the holes in said other plate, heating the assembly to soldering temperature so as to join said plates to said contact faces, and removing the resulting semiconductor device from the pins.

3,417,459
BONDING ELECTRICALLY CONDUCTIVE METALS TO INSULATORS
Daniel I. Pomerantz and George Wallis, Lexington, and John J. Dorsey, Waltham, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,794
21 Claims. (Cl. 29—472.9)



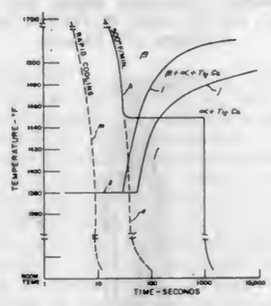
An electrically conductive element is bonded to an insulator element by placing the elements in close surface contact, heating the insulator element thus rendering it electrically conductive and applying a voltage across and passing a low electric current through the composite for a short time. The potential distribution characteristic of the insulator is predetermined from known data or testing operations, and the polarity of the insulator with respect to the conductive element, and thereby the direction of the current, are selected in accordance therewith and the arrangement of the elements in order to obtain optium bonding and adherence. In the production of laminates of alternate layers of inorganic insulator material and metal where there are at least two layers of one of these materials, where it is desired to accomplish simultaneous bonding, the insulator material is to be selected from those which possess suitable potential distribution characteristics.

3,417,460
METHODS OF BRAZING
Philippe Galmiche, Paris, France, assignor to Office National d'Etudes et de Recherches Aerospatiales (par abreviation: O.N.E.R.A.), Chatillon-sous-Bagneux, France, a body corporate of France
Continuation-in-part of application Ser. No. 828,604, July 21, 1959. This application Feb. 23, 1966, Ser. No. 529,465
3 Claims. (Cl. 29—473.1)



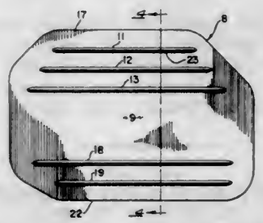
This invention is directed to improvements in methods of brazing in which a carbide layer is formed on a piece of carbon and in which the carbide coated piece is then joined in situ to a second piece through the use of a hard solder having a melting temperature higher than that required to form the carbide layer on the carbon piece. The carbiding and joining operations are carried out in an atmosphere of hydrogen, a hydrohalogenic acid and a corresponding halide of a selected metal.

3,417,461
THIN-FILM DIFFUSION BRAZING OF TITANIUM MEMBERS UTILIZING COPPER INTERMEDIATES
Robert R. Wells, La Mirada, and Ernie B. Mikus, Los Alamitos, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Dec. 15, 1965, Ser. No. 513,936
14 Claims. (Cl. 29—487)



A method of bonding titanium or titanium alloys to each other comprising placing a thin layer of copper at the bond joint, heating the bond joint to a temperature sufficiently high to form a eutectic liquid of copper and titanium, and maintaining the bond joint at that temperature for a sufficient period of time to allow solid state diffusion of the copper and titanium atoms at the interface, and finally lowering the temperature of the bond joint to an intermediate temperature and holding it at that temperature for a period of time to effect a transformation of the joint material from a beta-titanium phase to an alpha-titanium phase plus Ti_2Cu.

3,417,462
METHOD OF CASTING
Howard U. McClelland, Vassar, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed May 5, 1964, Ser. No. 365,069
9 Claims. (Cl. 29—526.2)



1. In a method of casting in a permanent mold, relatively smooth, uniform surfaced ferrous metal objects having a pair of substantially parallel surfaces, wherein gas forming pockets cause defects, the improvement which substantially eliminates said defects comprising:

(a) providing indented serrations in each face of the mold in which said objects are cast,

(b) pouring the metal into said mold causing corresponding ridges wherein said defects are concentrated, to be formed on each of said surfaces, and

(c) removing said ridges containing said defects from surfaces of said object.

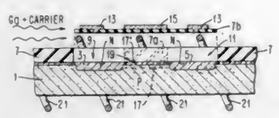
3,417,463
METHOD OF PRODUCING STEEL FOR SHEETS TO BE ENAMELLED BY THE SINGLE-COAT METHOD
Helmut Knüppel, Sulzbach-Rosenberg Hutte, and Karl Brotzmann, Amberg, Germany, assignors to Eisenwerke-Gesellschaft Maximilianshutte m.b.H., Sulzbach-Rosenberg Hutte, Germany, a corporation of Germany
No Drawing. Filed July 5, 1966, Ser. No. 562,506
Claims priority, application Germany, July 9, 1965, E 29,679
9 Claims. (Cl. 29—528)

1. A method of producing steel for sheets to be enamelled by the single-coat method, which comprises the steps of (a) producing by a refining process a steel having a composition which has a relatively high oxygen content of about 0.10 to 1.12% with a carbon content of 0.03 to 0.06% thereafter (b) treating the steel melt to reduce its carbon content to below about 0.01%, (c) subjecting the steel to a deoxidation treatment in vacuo to reduce the oxygen content to a predetermined level, (d) vigorously mixing the steel in vacuo, (e) pouring the steel to produce slabs, and (f) rolling the slabs into sheets.

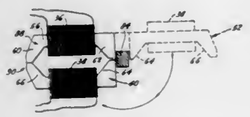
3,417,464
METHOD FOR FABRICATING INSULATED-GATE FIELD-EFFECT TRANSISTORS
Frank F. Fang, Yorktown Heights, Edward J. Walker, Ossining, and Hwa N. Yu, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 21, 1965, Ser. No. 457,571
20 Claims. (Cl. 29—571)

The threshold voltage or operational mode, as desired, of an insulated-gate field effect transistor is tailored by

doping the surface of the conduction channel prior to the gate electrode metallization with a particular acceptor-type impurity, e.g., gallium, to control the density of donor states at the semiconductor-insulating layer, e.g., silicon-silicon dioxide, interface. The acceptor-type impurity is diffused through the insulating layer and subsequent to all high temperature processes to achieve positive control of the operational characteristics. A sufficient doping level of the acceptor-type impurity can change irreversibly the operational mode of the field effect transistor.



3,417,465
METHOD OF MAKING LAMINATED MAGNETIC HEAD
Robert Glass, Woodland Hills, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,718
18 Claims. (Cl. 29—603)



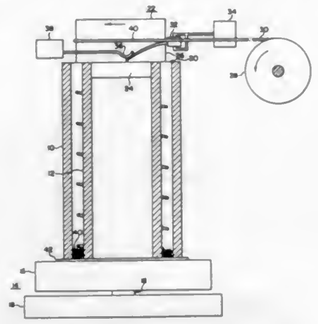
This invention relates to a method of forming a magnetic circuit to enhance the operating characteristics of the magnetic circuit. When the magnetic circuit is formed from a plurality of magnetic laminations, each lamination is initially provided with a pair of sections joined by an integrating portion. The laminations are stacked and are then divided at the opposite ends of the integrating portions to form the two sections. To facilitate this operation, the integrating portions may be provided with reference surfaces so that the aligning operations may be optimized. After the sections have been formed, they are joined to produce the magnetic circuit. Before joining the sections, pole faces may be formed on the ends of the sections adjacent the ends of the integrating portions and the sections may be joined to form an air gap between the pole faces.

The invention also relates to a magnetic head produced by the method described above.

3,417,466
METHOD OF MAKING A WINDING FOR AN ELECTRICAL INDUCTIVE APPARATUS
Martin P. Seidel and Fred L. W. Norton, Sharon and Edward C. Wentz, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application May 17, 1965, Ser. No. 456,229, now Patent No. 3,327,267, dated June 20, 1967. Divided and this application Aug. 26, 1966, Ser. No. 575,381
10 Claims. (Cl. 29—605)

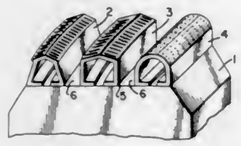
1. The method of constructing a winding for electrical inductive apparatus, comprising the steps of:

forming an electrical conductor into a plurality of conductor turns each having a predetermined diameter; dropping the conductor turns into a space defined by holding means until a predetermined height has been attained;



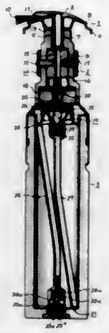
pouring bonding means into the holding means; and curing the bonding means to form a cast solid winding assembly.

3,417,467
SHEARHEAD ASSEMBLIES ON ELECTRICAL AND MECHANICAL SHAVERS
Paul Kobler, 81 Fenimore St., Lynbrook, N.Y. 11563
Filed Apr. 26, 1967, Ser. No. 633,990
1 Claim. (Cl. 30—34.2)



A dry shaver having a plurality of shearheads of different configuration, one with a straight cutting surface, the middle head having a curved cutting surface and the third shearhead also with a curved cutting surface and a more acute curvature than the middle head.

3,417,468
RAZOR
Hideo Miyauchi, 9491 Shimosuwa-machi, Suwa-gun, Nagano-ken, Japan
Filed Dec. 21, 1965, Ser. No. 515,379
Claims priority, application Japan, July 27, 1965, 40/61,245; Dec. 27, 1964, 39/100,884, 39/100,885
3 Claims. (Cl. 30—41)



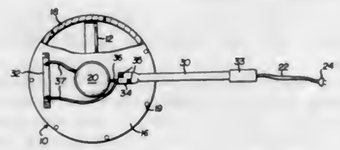
A shaver, including a handle which defines a refillable chamber. A shaving head includes a razor blade and is formed with an elongated passage extending along a cutting edge portion of the razor blade so as to discharge shaving fluid thereunto. Control means is detachably secured to the shaving head and to the handle and is operative for selectively connecting the passage with the chamber.

3,417,469
ELECTRIC KNIFE
Otto J. Cousins, Frederick J. Ritter, and Ignacy Supel, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,261
16 Claims. (Cl. 30—272)



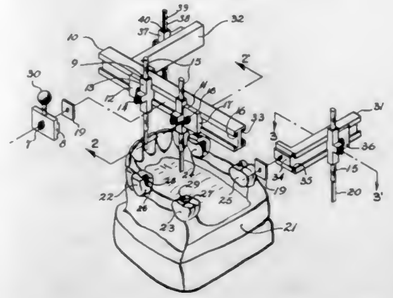
Electrically operated slicing knife with a hollow handle housing an electric motor and means to convert rotary motion of the motor to counterreciprocating motion of a pair of identical blade holders molded from suitable plastic. A pair of knife blades are each adapted to be releasably secured to an associated one of the blade holders. A pair of resilient members, one secured to each of said blade holders are each provided with latching means to releasably latch each blade to its associated holder. An intermediate portion of each resilient member serves as a fulcrum when a releasing force is applied to the resilient member. A trigger for energizing the motor is provided together with latch means to prevent actuation of the trigger.

3,417,470
HEDGE TRIMMER
Leon B. Damon, 3405 SW. 44th St., Fort Lauderdale, Fla. 33312
Filed Sept. 26, 1967, Ser. No. 670,660
1 Claim. (Cl. 30—276)



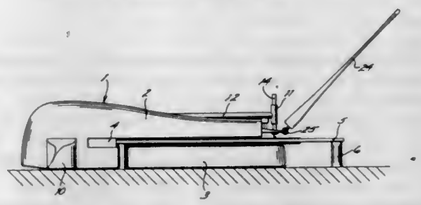
The invention is a cutting apparatus such as a hedge trimmer having two handles enabling the apparatus to be manipulated manually and which is stopped automatically if either of the handles is released. The apparatus includes a frame on which an electric motor is mounted, a blade driven by the motor, and means connected to the motor for supplying energizing power thereto. A pair of handles is affixed to the frame, and one electrical switch is mounted on each of the handles and is electrically connected to the motor so that both switches must be operated in order to operate the motor. Each switch has an actuator adapted to be operated by the operator when he grasps the associated handle. Thus, when the operator grasps both handles, he can depress both actuators to start the motor. If either handle is released, such as by dropping one handle, the associated switch is de-activated and the motor stops, thus stopping the blade. The motor has brakes for immediately stopping the blade as soon as the motor stops.

3,417,471
DENTAL PARALLELOMETER AND METHOD OF USING SAME
James Luther Mitchell, 6400 Stanton, Buena Park, Calif. 90620
Filed Oct. 22, 1965, Ser. No. 501,441
10 Claims. (Cl. 32—67)



A dental parallelometer is provided for the precise and parallel alignment of abutment connectors for precision fitting dental attachments. The parallelometer has mandrels that support the connectors during the positioning of these connectors in the dental work. The mandrels are maintained in precise parallel relationships by their mounting on the parallelometer which permits only the sliding, rectilinear movement of the mandrels along the lateral, longitudinal and vertical axis. The parallelometer comprises a first rail and at least one auxiliary rail that is slidably mounted onto the first rail with at least one mandrel support slidably mounted on each of the main or first rail and on the auxiliary rail.

3,417,472
ETCHING METHOD
Robert F. Nelson, Hawthorne, Calif. (10955 Huston St., North Hollywood, Calif. 91601)
Filed Oct. 18, 1967, Ser. No. 679,590
8 Claims. (Cl. 33—24)

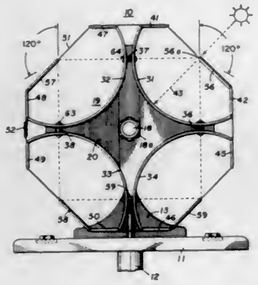


A lithographic or intaglio plate is prepared by hand and the surface of the plate is scribed by an instrument, including a pen which follows the master plate and an etching pin which bears against the coated plate, thus duplicating on the coated plate the outlines of the design on the master plate.

3,417,473
UNIVERSAL SUNDIAL
Ralph Troseth, 3402 Banbury Place, Houston, Tex. 77027
Filed Nov. 15, 1965, Ser. No. 507,870
10 Claims. (Cl. 33—62)

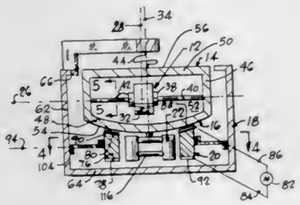
Four outwardly concave cylindrically curved sundials are mounted back to back about a time zone adjustment axis settable into parallelism with the earth's axis. One pair is turned upwardly during the half year of lengthening daylight and the other during the other half year. Each pair comprises a morning and an afternoon dial

scaled in hours of the day and months, forming a coordinate grid with its lines curved for the equation of



time. The gnomons are short tubes strung on a cord stretched around the dial assemblage so as to lie along a middle diameter of each cylindrical dial surface.

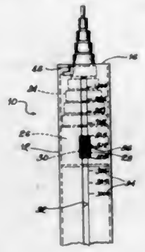
3,417,474
GYROCOMPASS
John L. Evans, Oakland, and Hugh E. Riordan, Wyckoff, N.J., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 498,005
7 Claims. (Cl. 33—72)



The inner gimbal or rotor case of a gyrocompass is supported by a squeeze-film universal air bearing formed between its spherically curved under surface and a piezoelectrically vibrated spherically curved annulus. The rotor case carries a liquid ballistic type mechanical damper which it supports below its spherical under surface and in the space surrounded by the bearing annulus, in an effective compact position to increase the pendulosity of the inner gimbal about the center of curvature of the spherical bearing.

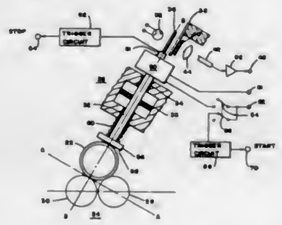
3,417,475
DEVICE FOR CHECKING INSTRUMENT ACCURACY AND WEAR
Frank J. Vlasaty, Chicago, Ill., assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 511,064, Dec. 2, 1965. This application Aug. 30, 1967, Ser. No. 666,545
5 Claims. (Cl. 33—168)

A measuring device for checking instrument accuracy and wear comprising a plurality of measuring members fixed in relation to each other. Each measuring member is of different diameter so that a variety of test measurements can be taken. The device is particularly useful for checking spindle and anvil accuracy of micrometers, and the diameters of the measuring members are related so as to insure a proper test. Specifically, the diameters vary to the extent that rotation of a micrometer spindle for an



amount other than a whole number of turns is required between measurements.

3,417,476
DIGITAL MEASURING APPARATUS
Alexander E. Martens, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 546,739
16 Claims. (Cl. 33—174)

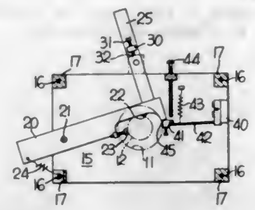


1. Apparatus adapted to receive a device having a desired dimension with variations thereabout, and measuring said dimension to establish whether said dimension falls within preset limits comprisng:
means adapted to receive and maintain said device in a predetermined position;
means providing a reference position located at a predetermined distance from said means receiving said device;
measuring means movable from said reference position to engage said device, said measuring means generating plurality electrical signal pulses, the number of which corresponds to the distance moved from said reference position to a point wherein said measuring means engages said device, and
circuit means coupled to said measuring means receiving said electrical signal pulses and comparing the number of pulses generated to a range of pulses corresponding to a movement of said measuring means engaging a device having a dimension within said preset limits, to determine whether said measured dimension falls within said preset limits.

3,417,477
TEMPLATE FOR THE GAS CUTTING OF HOLES
Lloyd A. Nowotny, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 22, 1967, Ser. No. 692,756
11 Claims. (Cl. 33—174)

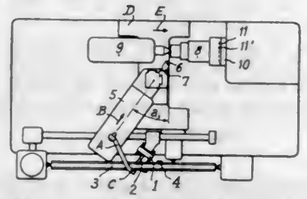
A hole cutting template for use in combination with a template tracing gas cutting machine having a faceplate with an aperture, the configuration of which is that of the intended hole. A movable cam is secured behind said faceplate which may be locked in a position whereby one

edge thereof is exposed through said aperture. To cut a hole, the template tracing means first follows the edge of the cam thus starting the cut at a point inward from the



intended hole edges. After the template tracer moves onto the aperture walls, the cam is moved out of the way so that the aperture can be completely traced.

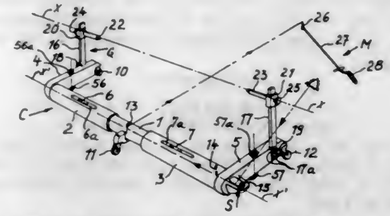
3,417,478
METHOD OF AND APPARATUS FOR SIMULTANEOUSLY ADJUSTING THE DEPTH AND LENGTH OF CUT IN A WORKPIECE ON A LATHE
Jules Louis Jeanneret, 13–21 Rue Henri Gelin, Niort, Deux-Sevres, France
Filed July 27, 1966, Ser. No. 568,230
Claims priority, application France, Aug. 25, 1965, 29,442
7 Claims. (Cl. 33—185)



Method and apparatus for simultaneously adjusting removable turrets which determine the depth and length of cut in a workpiece mounted on a lathe having a tool slide. The turrets are provided with adjustable stops. Two calibrated measuring rods are provided which are movable perpendicularly to each other and which are arranged parallel to the turrets. One of the rods is secured to the other rod in such a manner that any movement of one automatically causes movement of the other proportionally to the movement of the first rod and to the angle formed by the axis of the tool slide and the transverse axis of the workpiece.

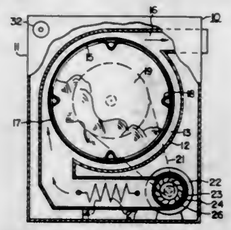
3,417,479
APPARATUS FOR CONTROLLING THE GEOMETRY OF THE CHASSIS OF MOTOR VEHICLES
Georg Hirmann, Zurich, Switzerland, assignor, by mesne assignments, to Polyprodukte AG., Zurich, Switzerland, a corporation of Switzerland
Filed May 10, 1965, Ser. No. 454,485
Claims priority, application Switzerland, May 13, 1964, 6,221/64; Jan. 5, 1965, 194/65
15 Claims. (Cl. 33—203.17)

An apparatus and method for checking the geometry of the chassis of a motor vehicle wherein a central longitudinal axis of symmetry of the chassis is determined and each further measurement of the geometric condition of the chassis such as the geometric axis position at the geometric forward and rear wheel axis and the two-dimensional inclination of the geometric wheel planes are based



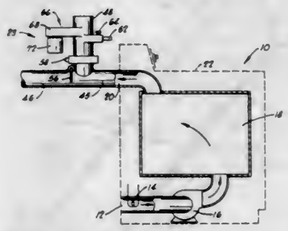
upon and relative to said determined central axis of chassis symmetry.

3,417,480
DOMESTIC APPLIANCE WITH CONTROL MEANS
Hans T. Thunander, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 14, 1965, Ser. No. 496,047
15 Claims. (Cl. 34—45)



Clothes drying apparatus having a control including electrodes disposed in the rotating basket, which electrodes, together with the clothes, constitute a varying resistance which is measurable as a function of moisture content in the clothes. The control is more specifically characterized by the incorporation of means capable of producing various signals representative of moisture content which serve to either extend operation of the dryer or to terminate operation thereof, the extended operation including both a drying portion with heat and a cool-down portion without heat.

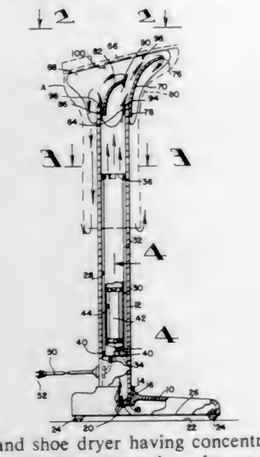
3,417,481
ATTACHMENT FOR DRYERS OR THE LIKE
Joseph F. Rumsey, Jr., 1608 Elmhurst, Oklahoma City, Okla. 73120
Filed June 16, 1966, Ser. No. 557,961
11 Claims. (Cl. 34—72)



An attachment for clothes dryers for introducing treated air to a treating chamber located exteriorly of the dryer. The attachment includes a bifurcated conduit which can be connected to the hot air exhaust from the dryer, with one of the outlets from this bifurcated conduit connected through a suitable valve means to the means forming

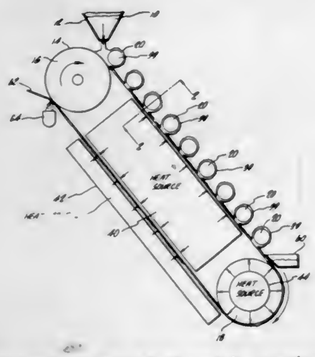
the treating chamber. A treating material container is mounted on the outlet of the bifurcated conduit which is connected to the treating chamber, and includes, in association therewith, means for introducing a volatile treating material into a stream of hot air discharged through the outlet from the bifurcated conduit connected to the treating chamber.

3,417,482
BOOT AND SHOE DRYER
Gene W. Peet, 521 Main, St. Maries, Idaho 83861
Continuation-in-part of application Ser. No. 271,090, Apr. 8, 1963. This application Aug. 22, 1966, Ser. No. 574,186
5 Claims. (Cl. 34—104)



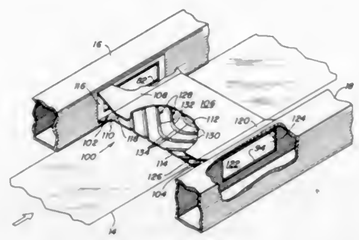
A boot and shoe dryer having concentric tubular thermal convection tubes, wherein a low wattage electrical heater is disposed concentrically of the inner tube, and means on the upper ends of the tubes for supporting a shoe, whereby convection currents induced by the heater flow upwardly through the tubes and into the shoe and downwardly around the outside of the shoe dryer, all in accordance with the thermal input of the heater internally of the concentric tubes.

3,417,483
FOOD DEHYDRATION APPARATUS
Miles J. Willard, 3067 Gustafson Circle, Idaho Falls, Idaho 83401
Filed Sept. 28, 1965, Ser. No. 490,940
5 Claims. (Cl. 34—117)



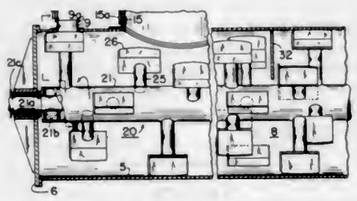
Mashed potatoes are dehydrated by passing them between an endless belt and a plurality of spreader rolls disposed along the belt.

3,417,484
WEB DRYING APPARATUS
Joseph V. McCarthy, Needham, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 619,976
13 Claims. (Cl. 34—156)



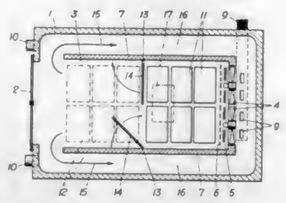
Web drying apparatus including a plurality of drying compartments, aligned in the direction of web travel, for receiving the web, an input duct having an input port communicating with each of the compartments for discharging a differentially heated fluid medium to its associated compartment and the web segment therein, and means for substantially preventing transfer of the medium and of moisture between the compartments and for facilitating advance of the web between the compartments. Each compartment may include an input nozzle and a web cell, the nozzle having its larger orifice communicating with the input port and its smaller orifice communicating with the cell, for increasing the heat exchange between the fluid medium and the web. The web may be supported by a plurality of raised, spaced elements disposed at an oblique angle to the direction of travel of the web in a plane approximately parallel to the plane of the web, and by an air bearing produced in the cell.

3,417,485
DESOLVENTIZER INCLUDING A STATIONARY VESSEL AND ROTATING AGITATOR-CONVEYOR
Arthur F. Saxon, Pittsburgh, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,042
5 Claims. (Cl. 34—182)



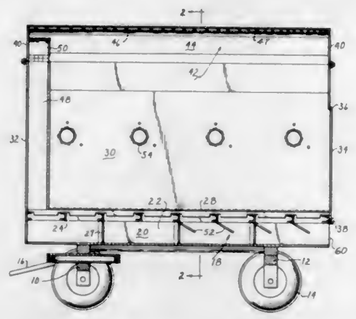
My invention comprises a desolventizing or deodorizing vessel in the form of a horizontally elongated cylindrical casing having therein a special agitator conveyor device for lifting and showering and moving the material in a generally lateral direction while at the same time progressing the material longitudinally through a vaporous atmosphere within the vessel. Unique means of controlling the flow level of the vaporous atmosphere within the vessel is provided in the form of a plurality of vertical baffle curtains which extend downwardly from the roof or upper side wall of the vessel. A special material outlet assembly is provided to operate in functional cooperation with the agitator conveyor device making possible a better reaction efficiency. This material outlet assembly comprises a side position dam construction located a substantial distance from the end of the vessel.

3,417,486
DRYING KILN
Victor T. Vanicek, 7 Hamerlingplatz, 1080 Vienna 8, Austria
Filed Feb. 13, 1967, Ser. No. 615,833
Claims priority, application Austria, Mar. 11, 1966, A 2,308/66
15 Claims. (Cl. 34—218)



This invention relates to a drying kiln having a drying chamber for drying goods and more specifically is concerned with the arrangement of the heat input means. At least one part of the heat input means is removably placed in the drying chamber between areas which receive the drying goods. The part is removable for loading and unloading operations and is adapted to reheat the gaseous drying medium circulating through the drying chamber.

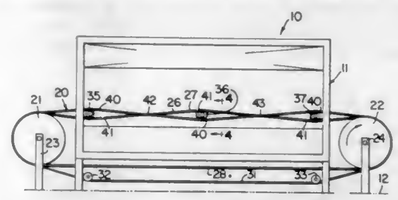
3,417,487
DRIER
Harold D. Harris, Lubbock, Tex., assignor to Harris and Thrush Manufacturing Company, Lubbock, Tex., a corporation of Texas
Filed June 12, 1967, Ser. No. 645,251
1 Claim. (Cl. 34—233)



Hot drying air is forced into a mass of agricultural produce to be dried from the top and bottom. The humid air from the produce is removed by tubes extending through the central part of the mass at right angles to the direction of the flow of the air above and below the mass. Air is directed to the different parts of the mass by dampers on the outlet of the tubes.

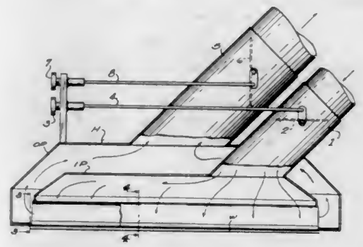
3,417,488
CONVEYOR FOR GAS CONTACT APPARATUS
Lyle E. McCoy, 1754 Sterigere St., Norristown, Pa. 19401
Filed July 10, 1967, Ser. No. 652,302
7 Claims. (Cl. 34—236)

This invention is essentially concerned with a conveyor including loops of flexible strands extending about spaced rotatable rolls defining upper and lower runs movable between the rolls, and support means for elevating certain of the strands at one location, and elevating other of the



strands at another location, so that material on the certain elevated strands is transferred to the other elevated strands during conveyance.

3,417,489
WEB DRYER OF THE HIGH VELOCITY MULTIPLE NOZZLE, SLOTTED ORIFICE TYPE
David R. Hardt, Wauwatosa, Wis., assignor to Zerand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin
Filed Oct. 19, 1966, Ser. No. 587,750
1 Claim. (Cl. 34—160)

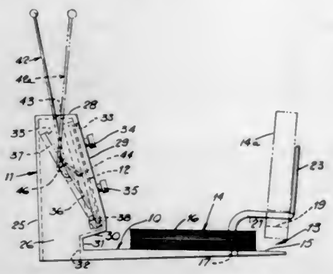


1. In a web dryer of the type in which the work to be dried is advanced along a predetermined path and exposed to jets of drying gas issuing from a plurality of nozzles extending toward the work, said nozzles extending substantially the full width of the work and transversely of such path and from ⅜ to ⅝ of an inch from said path, said nozzle having an open upper end and straight opposed sides arranged in parallelism and normal to said path, said nozzles also have a lower air discharge end adjacent the work and defined by generally flat, opposed obstructing surfaces which terminate adjacent one another in rounded corners to form a single, elongated and narrow air supply orifice; a supply plenum in direct air delivering communication with said open ends of said nozzles; an air exhaust suction passage between adjacent nozzles for withdrawal of gases from the surface of the work against which drying gas is directed through said nozzles, said passage being of a width of about ⅜ of an inch and formed as a restricted slot extending substantially the full width of the work whereby the withdrawal suction pressure along the work and between nozzles is minimized to promote turbulence of said gas, said nozzles being spaced slightly over two inches apart, and the width of the nozzle orifice is from .04 to .05 inch.

3,417,490
FLASH CARD APPARATUS
Ruth G. Chuy and Daniel T. Chuy, both of 15447 Sorrento, Detroit, Mich. 48227
Filed Mar. 30, 1967, Ser. No. 627,267
15 Claims. (Cl. 35—9)

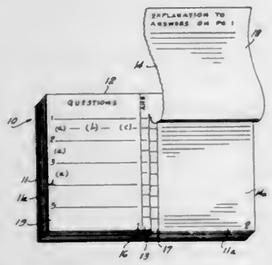
A flash card device having a set of flash cards pivotally mounted on a platform. The flash cards have problems,

questions, words, and the like on the front faces thereof, and solutions, answers, and pictures corresponding to said words on the rear faces thereof. The flash cards are mounted at one end of a platform in a position spaced apart from an inclined mirror. The mirror may be fixed or pivotally mounted. The flash cards are movable from an



inoperative position on the platform, or from a position at the side of the platform, to an inclined position on the platform in front of the inclined mirror so that when the flash cards are in an operative position the flash cards and mirror are disposed at diverging angles relative to each other.

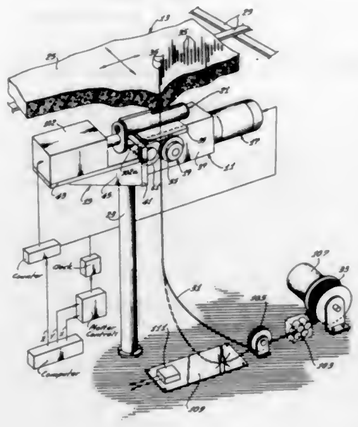
3,417,491
EDUCATIONAL WORKBOOK
Joseph Marks, 117—16 Park Lane S., Kew Gardens, N.Y. 11418
Filed Apr. 29, 1966, Ser. No. 546,223
6 Claims. (Cl. 35—9)



Book contains upper page having reading material on one side and questions on the other, a severable line between the sides, and a response area on the question side directly adjacent to the severable line. Lower page contains correct answers to questions in answer area located directly adjacent to severable line but on side of line opposite to response area. By tearing upper page and lifting reading material side, response area and answer area may be viewed in side-by-side relation.

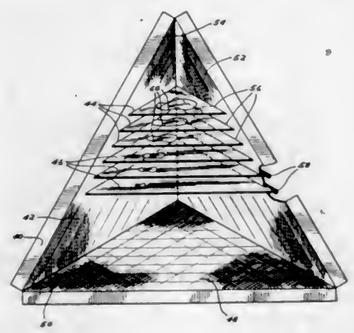
3,417,492
THREE-DIMENSIONAL WIRE PLOTTER
David F. Rutland, Santa Barbara, and Miles S. Schlosser and Roger E. Lagerquist, Goleta, Calif., assignors to Spatial Data Systems, Inc., Goleta, Calif., a corporation of California
Filed May 26, 1966, Ser. No. 553,145
9 Claims. (Cl. 35—24)

This disclosure describes a three-dimensional plotting device which includes wire feeding means for inserting wire from an elongated continuous supply of wire into a plotting board and means responsive to a first input from a data source for relatively positioning the plotting board and the wire feeding means so that the wire feeding means can insert wire into the plotting board at a determined location thereon. The wire feeding means includes means responsive to a second input from the data source for inserting wire into the plotting board at the predeter-



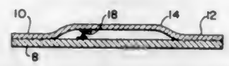
mined location. Cutting means are provided for severing the wire from the supply of wire leaving a predetermined length of wire protruding from one face of the plotting board with such predetermined length of wire graphically corresponding to the second input.

3,417,493
DEVICE FOR REPRESENTING MATHEMATICAL FUNCTIONS IN THREE DIMENSIONS
Bruce A. Drew, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Nov. 8, 1966, Ser. No. 592,772
3 Claims. (Cl. 35—30)



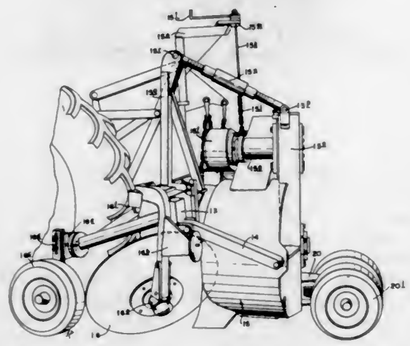
A device consisting of paper, paperboard or plastic sheet material for representing mathematical functions in three dimension. The unit consists of a base formed from sheet material to which a plurality of parallel marking surfaces are connected by means of a hinged joint. The marking surfaces are formed from transparent plastic sheets. An additional sheet is provided for holding the free ends of the marking surfaces at the proper spacing. Grids are printed upon the marking surfaces to facilitate the entry of data.

3,417,494
INSOLE
Clarence Lloyd Claff, 5 Van Beal Road, Randolph, Mass. 02368
Filed Aug. 1, 1967, Ser. No. 657,566
11 Claims. (Cl. 36—44)



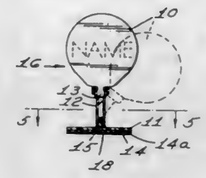
This invention is an insole for boots or shoes comprising a two-layered article, the bottom layer being made of flexible material impervious to moisture and the top layer being made of a flexible, moisture-absorbing material, with a plurality of capsules of a volatile liquid such as isopropyl alcohol. The capsules themselves are made so that when the insole is placed in a shoe and the wearer steps on it, the capsules will rupture thus releasing the liquid which then contacts the wearer's feet. Each of the insoles has marked on it, extending inwardly from the edge thereof, a series of lines which act as indicia for cutting the insole to fit a shoe of a given size.

3,417,495
TERRACING, GRADING AND LEVELING DEVICE
Herbert Barras, P.O. Box 327, Baldwin, La. 70514
Filed Dec. 6, 1965, Ser. No. 511,826
3 Claims. (Cl. 37—93)



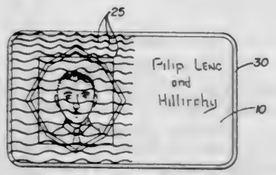
The present invention is directed to a terracing and grading device for use with a tractor having a power take-off at the rear thereof adapted to be coupled to drive the terracing and grading device. This device is provided with a primary and secondary earth cutter of the rotary type which is adapted to be drawn at the rear of the tractor with the axis of the rotary cutter lying substantially along the axis of the left rear wheel of the tractor. A two frame unit is pivoted to the rear of the tractor, that is one frame pivoted to the other and the main frame pivoted to the tractor. Supported by one frame is a support for a plow disc which disc is arranged at an angle to overlap the left rear wheel of the tractor and the intake of the rotary earth cutter so that the tractor and terracing device may be used to work close to a ditch without tipping the tractor into the ditch. A winged plow cooperates with the rotary cutter and disc to form an earth path of smooth flow from the disc in advance of the winged plow into the rotating earth cutter and thence out of the discharge spout which directs the earth transversely over a very substantial distance at a uniform depth over the terrain.

3,417,496
LUGGAGE SPOTTER
Walter G. Von Meyer, 1504 Port Jefferson Road, Sidney, Ohio 45365
Filed June 23, 1967, Ser. No. 648,404
6 Claims. (Cl. 40—2)



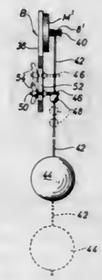
The spotter unit shown herein comprises a combination advertising and luggage spotting unit. The spotter unit preferably comprises an indicator portion, a base attaching portion and an intermediate easily bendable portion. The intermediate easily bendable portion may be formed of either rubber or plastic so that the indicator portion may be easily bent over against the surface of the luggage and when free, easily snappable into upright or flat position. The device is extremely simple, inexpensive and easy to apply and is in the nature of what is called a "premium" article.

3,417,497
IDENTIFICATION CARD
Donald F. Hannon, Willoughby, Ohio, assignor to Laminex Industries, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 373,664, June 9, 1964. This application Aug. 14, 1967, Ser. No. 662,841
14 Claims. (Cl. 40—2.2)



Improved identification card in which printing is disposed between two layers of bonding material.

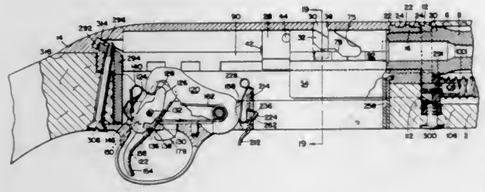
3,417.498
MOBILE DISPLAY DRIVE MECHANISM
Joseph Anthony, 577 Kingswood Place, Burlington, Ontario, Canada
Filed Apr. 22, 1966, Ser. No. 544,606
9 Claims. (Cl. 40—30)



A mobile display having a self-starting electric motor automatically reversible, upon physical impedance of a

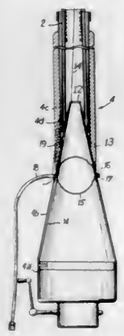
thrust stroke by an adjustable abutment, to reverse the direction of movement of a display element drivably coupled to the motor; said abutment being selectively adjustable relative to the display element for varying the amplitude of movement thereof.

3,417,499
RECEIVER AND HOUSING ASSEMBLY FOR A FIREARM
Harold D. Allyn, 10 Sumner Ave., Springfield, Mass. 01108
Original application Sept. 9, 1965, Ser. No. 485,990, now Patent No. 3,336,691, dated Aug. 22, 1967. Divided and this application Aug. 14, 1967, Ser. No. 660,522
7 Claims. (Cl. 42—75)



A firearm having a combination of: a barrel, a stock, a receiver, a cam surface on the receiver, a trigger housing, a cam surface on the trigger housing, a magazine housing, a rear bedding screw having a cam surface, and a cam surface on the magazine housing, the trigger housing and magazine housing being held in locked relationship with each other and with the receiver upon the tightening of the rear bedding screw against the cam surface of the trigger housing for effecting a simultaneous tightening of the cam surface on the magazine housing against the cam surface on the receiver.

3,417,500
MULTIPURPOSE FISHING ROD
André Carabasse, 20 Rue du Tribunal, Doullens, Somme, France
Filed June 15, 1967, Ser. No. 646,310
Claims priority, application France, June 24, 1966, 66,773; May 26, 1967, 108,113
9 Claims. (Cl. 43—18)



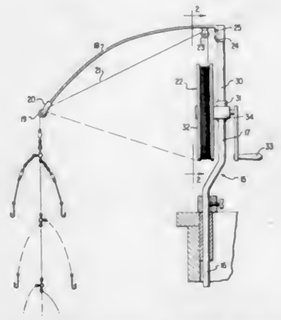
A multipurpose telescopic fishing rod having at least one rod section with interior guide means for the line and a removable axially hollow handle fixed thereto, the handle having a cylindrical portion carrying an internal axial reel and being extended by a truncated portion ending in a fixed ring for axial guiding of a line, such that the line, during winding and unwinding, describes an angle of no more than 75° between the ring and the reel. The truncated portion of the handle being surrounded by a substantially cylindrical portion which receives the telescoped end of the rod section is perforated to enable water collected therein to be evacuated and is provided with means for progressively braking and locking the line.

3,417,501
GUIDE FOR A FISHING LINE
Jules E. Fulop, Milwaukee, Wis., assignor to Allan Manufacturing Company, Hicksville, N.Y.
Filed Jan. 25, 1966, Ser. No. 529,600
3 Claims. (Cl. 43—24)



A line guide for a fishing line in which the line guiding opening of the guide member has a generally oval outline and is so oriented that the long axis of the opening is crosswise of the lengthwise axis of the fishing rod when the line guide is attached to the same. Such an oval shaped guide member has the advantage that its effective area is several hundred percent larger than that of conventional circular guide members and as a result it will outlast the conventional guides and markedly reduce line fraying and cutting.

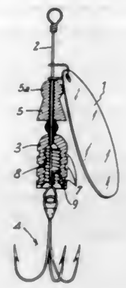
3,417,502
HEAVY LOAD FISHING DEVICE
Gerald I. Thomas, P.O. Box 3577, Panama City, Fla. 32404
Filed May 16, 1966, Ser. No. 550,411
4 Claims. (Cl. 43—27.4)



A fishing device whch has an upright reel spool secured to a support, a resilient arcuate arm extending from the support, and a main pulley mounted on the outer free end of the arm and spaced from the spool to enable unwinding of fish line therefrom without rotation of the spool. An auxiliary pulley is provided for selective use in winding line back onto the spool.

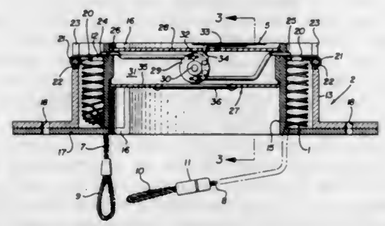
3,417,503
SPINNER FOR FISHING BY THE BAIT-CASTING METHOD
Andre Meulnart, 37 Ave. Paul Doumer, Paris 16eme, France
Filed Feb. 17, 1967, Ser. No. 616,936
Claims priority, application France, Dec. 20, 1966, 88,129
1 Claim. (Cl. 43—42.08)

A spinner for use in fishing by the bait-casting method is formed of a shank having a bent end arranged to receive hook means. A sinker is slipped freely on the shank and has a tapped axial cavity arranged to receive a nose on the bent end of the shank within threads formed in



the axial cavity. Further, the end face of the sinker directed toward the hook means is shaped to facilitate the entry of the nose into the cavity in the sinker.

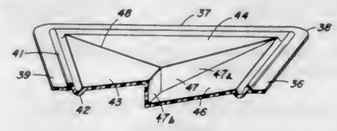
3,417,504
TRAP
Clarence V. Anderson, P.O. Box 488, Forestville, Calif. 95436
Filed June 14, 1967, Ser. No. 646,051
10 Claims. (Cl. 43—85)



A ring-like circular housing has an outwardly extending base flange and forms an annular channel into which is compressed a tubular gripper made of longitudinal spirally cross-woven spring strands biased so as normally to expand the tubular gripper longitudinally and contract it radially in proportion to its elongation for gripping the paw or nose of an animal caught therein. The inner ends of the strands are combined and are adapted to be tied or anchored in such a way that the harder the animal pulls the gripper the more it elongates the gripper and the firmer it grips. The compressed tubular gripper is held in position by diametrically opposite pivoted flaps which extend over the channel and over the top or outer end of the tubular gripper, and the flaps are held in obstructing positions by fingers extended through the inner wall of the channel. The fingers are held in a hollow brace diametrically across the inner surface of the inner wall of the channel, and are connected to a disc journalled vertically within the hollow brace near the center thereof and axially to the housing. A tripping arm extends from the disc eccentrically but in parallel with the axis of the housing and through the top wall of the hollow brace and has on it a suitable tripper pan.

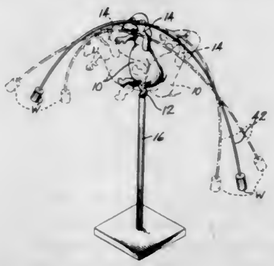
3,417,505
SPACE PANELS
Darald R. Schultz, 1856 D Ave. NE., Cedar Rapids, Iowa 52402
Filed May 24, 1965, Ser. No. 458,287
2 Claims. (Cl. 46—16)

A space panel toy comprising toy structural panels adapted to be attached together to build a composite structure. The panels are formed with an outer portion lying in a plane, a reinforcing groove and a plurality of



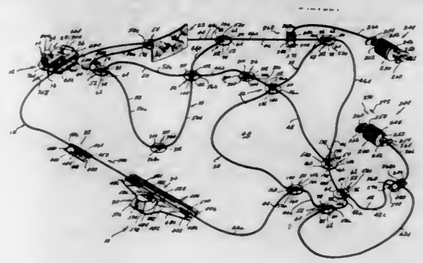
reinforcing intersecting planar sections forming the inner portion defined by the groove. Two of the planar sections are perpendicular to the plane of the outer portion.

3,417,506
DYNAMIC BALANCING DEVICE
Robert B. Howell, 2115 Madrona Point Drive, Bremerton, Wash. 98310
Filed Oct. 20, 1965, Ser. No. 498,631
5 Claims. (Cl. 46—131)



An articulated body composed of a lower hollow portion adapted to be balanced on a support, and an upper portion movably connected to the lower portion and carrying an arcuate balancing rod of substantial length and curvature which has a weight affixed to each of its ends. An electric motor is located within the hollow portion of the body and is adapted to move the upper portion of the body relative to the lower portion. Dry cell batteries are used for the weights and electrical conductor means extending through the arcuate rod electrically connect the batteries with the electric motor.

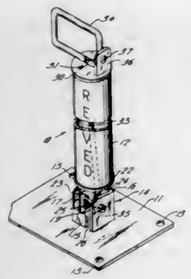
3,417,507
PROJECTILE-FIRING TOY
John W. Ryan, Bel-Air, Daniel H. Meggs, Redondo Beach, and Robert Edgar Hulse, Huntington Beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Feb. 10, 1966, Ser. No. 526,411
12 Claims. (Cl. 46—202)



A toy tank is guided along a flexible track and has an aimable projectile launcher releasable by means near the track. The projectile is aimed at a fixed target which, if

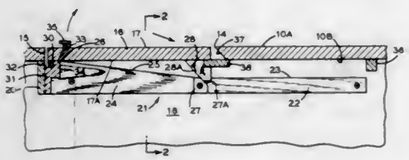
struck, is tipped over. If the projectile misses the target the tank passes the target and actuates means to fire a projectile from the target toward the tank, the projectile launcher of the target swings to follow movement of the tank and if a target on the latter, is struck the tank tips over. The track defines alternative path from which the tank projectile can be fired.

3,417,508
PARKING SPACE BARRIER
Abraham Sprung, 2200 Center Road, Fort Lee, N.J. 07024
Filed Jan. 17, 1967, Ser. No. 609,809
5 Claims. (Cl. 49—35)



A motor vehicle parking space barrier having a hollow stanchion and a fixed base upon which it is hingedly or swingably mounted upon a cross member or hinge pin for horizontal and vertical movements so that the stanchion can be swung from an inoperative position to a barricading position and fixedly locked in the latter position by an elongated shaft or rod extending through the stanchion, the shaft terminating in a latch or hook portion at one end projecting from one end of the stanchion for engagement with the cross or hinge member on the stationary base of the barrier and hand grip portion at its other end projecting from the other end of the stanchion. When the stanchion is placed in barricading position, the shaft is rotated by turning its hand grip portion thereby causing the hook portion of the shaft to firmly engage the cross member and hold the stanchion in barricading position. The hand grip portion may be locked in this position by locking means, such as a padlock or plunger type lock which fastens together the hand grip portion of the shaft to the stanchion.

3,417,509
SLIDABLE CLOSURE PANEL CONSTRUCTION FOR WALLED STRUCTURES
Charles E. Sherron, North Massapequa, N.Y., assignor of one-fourth to Louis J. Cook, Brooklyn, N.Y.
Filed Nov. 10, 1966, Ser. No. 593,500
5 Claims. (Cl. 49—130)

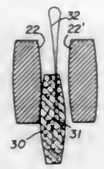


A slidable closure panel arrangement for an opening in a wall wherein the closure panel is movable between a concealed storage position and a position in which the wall opening is closed and the outer surface of the panel is flush with the outer surface of the wall.

ERRATUM

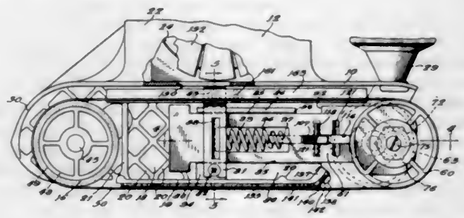
For Class 49—220 see:
Patent No. 3,417,515

3,417,510
METHOD AND MEANS FOR CROWNING TEETH
Ernest Wildhaber, Brighton, N.Y.
(124 Summit Drive, Rochester, N.Y. 14620)
Filed May 10, 1965, Ser. No. 454,330
9 Claims. (Cl. 51—95)



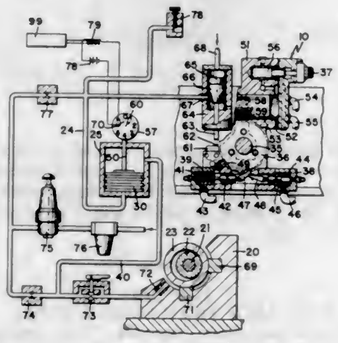
The teeth of gear couplings and of gears are crowned with form tools. To avoid or minimize errors in shape, the opposite sides of the teeth are crowned successively in one operation, one set-up. Crowning is obtained by relatively moving a form tool along a tooth space while the work spindle turns at a varying rate. The varying part of the motion reverses at about the middle of the teeth. Opposite tooth sides are preferably crowned in successive tool passes, each side being finished on alternate tool passes. An additional depthwide motion is used on gear coupling members which run at substantial angles. An additional motion is also used for crowing helical gear teeth.

3,417,511
BELT SANDER
Edmond C. Dudek, Pickens, S.C., assignor to G. W. Murphy Industries, Inc., a corporation of Texas
Filed Apr. 15, 1965, Ser. No. 448,458
4 Claims. (Cl. 51—135)



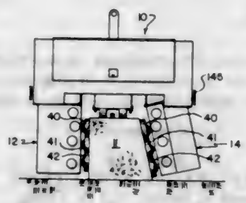
Surface dressing tools which are subjected to considerable shock loads between the motor and the working surface have a laminated fibrous gear positioned in the gear train to reduce transmission of the shock to the motor. In addition a special wear plate is provided for keeping the gear supporting shafts in position in the drive train for reducing the number of bearings in the system and prolonging the useful life of the remaining bearings. In continuous belt tools, a means is provided for cooling the upper reach of the belt by directing cooling air from the motor down onto the belt. A plate provides a cantilever arrangement for supporting the idler roll and which plate has a fixed axis about which it pivots and relative to which it translates in positioning the idler roll with respect to the driving roll. An adjusting member is used to vary the relationship between the axes of the idler and driving rolls, and also to serve as part of the latch for locking the idler roll in a retracted position relative to the driving roll.

3,417,512
GRINDING MACHINE
Edward G. Robillard, Leicester, and Martin L. Kuniholm and Norman S. Humes, Worcester, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 573,010
7 Claims. (Cl. 51—165)



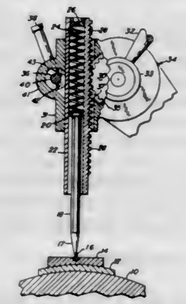
This invention relates to a grinding machine and, more particularly, to apparatus arranged to finish surfaces of revolution by the abrasive process wherein two gages are provided one proportional to the diameter of the surface of revolution being formed and the other one gaging the relative positions of the workhead and the wheelhead and wherein control means is provided for receiving these signals and changing the mode of operation when a predetermined relationship exists between the two signals.

3,417,513
FINISHING MACHINE
Joseph P. Zachek, Hilbert, Wis. 54129
Continuation-in-part of application Ser. No. 384,439, July 22, 1964. This application Sept. 30, 1965, Ser. No. 491,711
10 Claims. (Cl. 51—180)



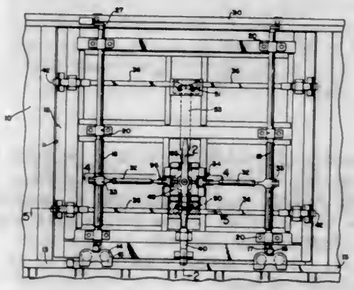
Apparatus for finishing the side wall surfaces of walls including a pair of housing assemblies which are adapted to straddle the wall and having a driving assembly fixedly mounted between them and arranged to ride on the top surface of the wall. Finishing means are secured to each of the housing assemblies and are adapted to be longitudinally positionably adjustable independently of each other.

3,417,514
PRESSURE MEANS FOR LENS LAPPING MACHINE
Dolph L. Gray, Muskogee, Okla., assignor to Coburn Manufacturing Company, Inc., Muskogee, Okla.
Filed May 2, 1966, Ser. No. 547,015
1 Claim. (Cl. 51—216)



A device for holding a block having a lens secured thereto in engagement with a rotating lap including a hollow cylinder mounted for lineal movement in a housing, the cylinder having a cap at one end, a pin with one end engaging the block and the other end forming an expansion chamber with the cylinder and the cap, a spring in the chamber biasing the pin toward the block, and means to lock the cylinder in a selected position.

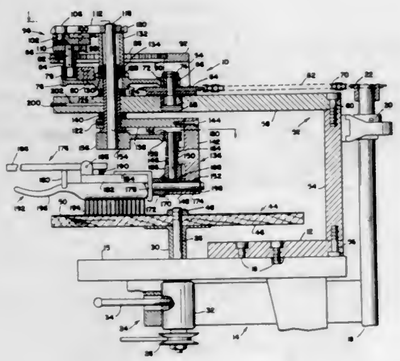
3,417,515
OPERATING MECHANISM FOR A RAILROAD CAR DOOR
Thorvald Madland, Arlington Heights, Ill., and Cornelius Bruce Kennedy, Youngstown, Ohio, assignors to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 27, 1966, Ser. No. 582,430
10 Claims. (Cl. 49—220)



Disclosed is a leverless operating mechanism for a railway car door of the type adapted to be received in an

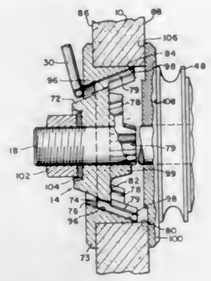
opening in the side wall of a railway car. The door has vertically extending pipes rotatably supported on the door with crank means on either end of the pipes attached to engage support means on the car to support the door for lateral movement into and out of the door opening. Locking means are provided on the door for securing it in the door opening as well as a manual operating means for actuating the pipes and the locking means. The operating means includes a sleeve means supported on the door for movement transverse to the plane of the door. The sleeve means has an internally threaded cylinder received within it and secured to the door. A shaft is threaded in the cylinder and has a handle mounted thereon for rotation therewith. A connection between the handle and the sleeve means permits relative rotational movement between the handle and the sleeve means and limits relative axial movement therebetween so that they move together transverse to the plane of the door. The sleeve means has a plurality of radially extending arms which are connected to a plurality of levers pivotally supported on the door. The adjacent arms and levers have a cam surface formed on one of them and a cam surface follower on the other of them so that movement of the sleeve means causes a timed pivoting movement of the levers. Some of the levers are interconnected by means of linkages to the pipes and others of the levers are connected with the locking means whereby transverse movement of the sleeve imparts movement to said pipes and said locking means.

3,417,516
METHOD FOR FORMING THE BRISTLES OF A BRUSH
Eberhard Maier, North Arlington, N.J., assignor to Gibson-Thomsen Co., Inc., Kearney, N.J., a corporation of New York
Original application Oct. 18, 1963, Ser. No. 317,382, now Patent No. 3,305,975, dated Feb. 28, 1967. Divided and this application Nov. 14, 1966, Ser. No. 604,505
2 Claims. (Cl. 51—281)



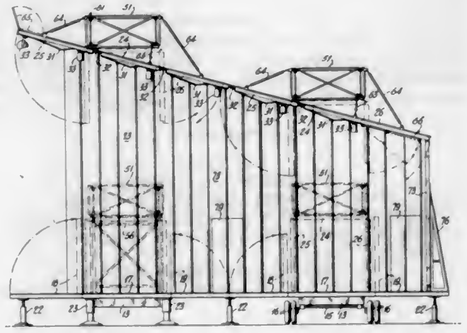
1. A method of providing the ends of the nylon bristles of a brush with a completely rounded contour that is completely smooth and comfortable to preclude any roughness and irritation to the person of a user, said method comprising the steps of:
oscillating a brush having nylon bristles about one of a plurality of axes;
said axes being angularly disposed relative to one another,
rotating said brush about another of said plurality of axes, and
rotating an abrasive about said other axis at a rotational velocity different than that of said brush about said other axis.

3,417,517
GRINDING APPARATUS
Howard E. Rose, 1628 N. Columbia Blvd., Portland, Oreg. 97217
Filed Dec. 14, 1965, Ser. No. 513,773
2 Claims. (Cl. 51—356)



Annular grinding wheels are mounted on flanged hubs which are individually driven by a double ended motor through stepped pulleys. Each hub is cup-shaped and has a stepped rim portion to which water passages extend to distribute water.

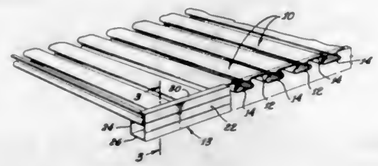
3,417,518
FOLDABLE TRAILERIZED SHELL
John Christopher Jaffe, Norwalk, Conn., assignor to Stagecraft Corporation, Norwalk, Conn., a corporation of New York
Filed June 30, 1966, Ser. No. 562,957
12 Claims. (Cl. 52—7)



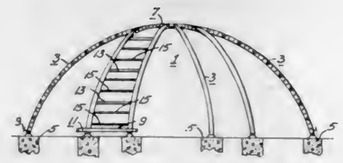
A trailerized shell for transport to a site in the form of multiple trailers and erection at the site to form a single large shell which can be used as a concert stage.

3,417,519
SHEET PANEL STRUCTURE
Joseph S. Hitter, 723 N. Croft, Los Angeles, Calif. 90069
Filed Oct. 22, 1965, Ser. No. 500,585
2 Claims. (Cl. 52—11)

A self-supporting, rigid sheet panel structure which may be used for awnings, roofs, etc. The structure is formed of a plurality of sheet panels having hook means along their sides securely interconnecting the panels. The ends of the panels are slidably secured into channel type peripheral edge members.



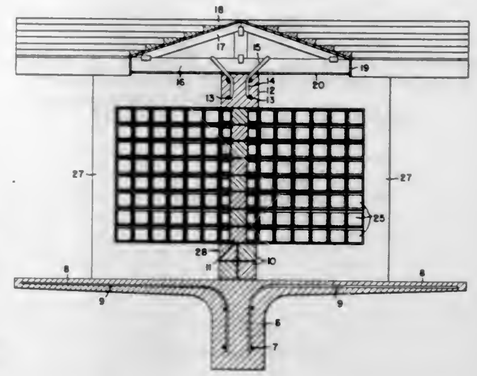
3,417,520
DOME STRUCTURE AND METHOD OF FABRICATION AND ERECTION
Albert A. Fink, Walnut Creek, Calif., assignor to General Conveyor Inc. of Northern California, a corporation of California
Filed Mar. 11, 1965, Ser. No. 438,957
3 Claims. (Cl. 52—80)



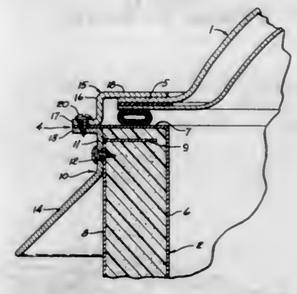
A dome shape structure formed from a plurality of prefabricated arcuate rib assemblies having their lower ends affixed to bases with moment free connections and their upper ends secured to a lantern ring. The disclosure includes a method of constructing and erecting a dome shape structure including anchoring the rib assemblies in position and relaxing the anchoring connections to relieve moment stresses between the rib assemblies and the bases they are secured to.

3,417,521
ANIMAL MAUSOLEUM
Charles E. Welsh, 4125 SW. 48th Court, Fort Lauderdale, Fla. 33314
Filed June 22, 1967, Ser. No. 648,098
3 Claims. (Cl. 52—90)

3. A building structure to constitute a mausoleum for dogs and cats that have been cremated, comprising a central wall section and lateral wall sections that form a multiplicity of cubicles upon each side of the walls, a concrete beam for supporting roof structures over the central wall and the lateral walls and with the roof structure being a truss that is tied to the lintel, a concrete footing supporting the several walls and with the footing being integral with slabs and with the slabs and the footing being reinforced, the slabs forming a walkway around the several walls, a double course of concrete blocks that is laid upon the slabs for the central and lateral walls, a single course of concrete blocks laid upon the uppermost course of double row of concrete blocks and a multiplicity of generally square concrete blocks that are laid upon the exposed upper side of the lower concrete blocks to be flush therewith, the last named concrete blocks being equally divided by partitions that form four separate cubicles that are open at their front and back and with the back of the cubicles being covered by the second named row of concrete blocks, each of the cubicles being closed upon their front by relatively thin plates that are flush with the partitions and with the plates overlying the cubicles and the receptacle within the cubicles.



3,417,522
SKYLIGHT FRAME CONSTRUCTION
Elmer C. Kiekhaefer, Winter Haven, Fla., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,929
2 Claims. (Cl. 52—97)

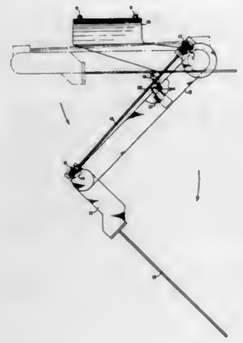


A frame for securing a skylight upon a curb of spaced vertical walls having foamed insulation therebetween and in which the frame is made up of two flanged members with an outward flange from the inner wall of the curb secured between the flanged members of the frame thereby providing a more rigid support for the skylight.

3,417,523
FOLDING ANTENNA MOUNT
William U. Matson, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 25, 1967, Ser. No. 634,799
3 Claims. (Cl. 52—110)

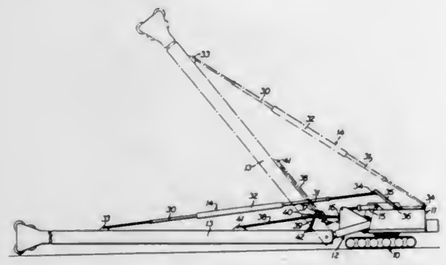
This invention is directed to an antenna system which folds the antenna for storage when not in use and which lowers and extends the antenna when in use. A single motor rotates a shaft that has a worm gear at each end thereof. One end rotates about a stationary gear secured

to the housing while the opposite end rotates a gear wheel which is attached to the antenna holder. The ratio of the worm gear pairs to each other is two to one such that the



section connected to the housing rotates through 90 degrees while the antenna holder section rotates about 180 degrees. Thus the antenna will be extended normal to the housing within which the antenna is stored.

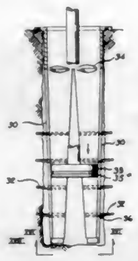
3,417,524
DEVICES FOR OPERATING THE HAMMER LEADS IN PILE DRIVING ATTACHMENTS
Knut Bertil Norlin and Sven Bertil Ingmar Borg, Eslov, Sweden, assignors to Akermans Verkstad AB, Eslov, Sweden
Filed Dec. 19, 1966, Ser. No. 602,671
Claims priority, application Sweden, Dec. 22, 1965, 16,614/65
6 Claims. (Cl. 52—115)



A tractor crane having a rotatable windlass frame, the hammer lead being universally pivoted to said windlass frame and the requisite movements of the hammer lead being brought about by a small number of hydraulic power means.

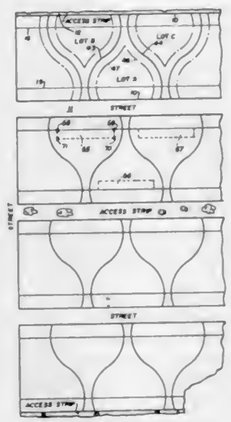
3,417,525
GROUND SUPPORTS FOR BUILDING STRUCTURES AND THE LIKE
John C. Dashio, Gibsonia, Pa., assignor of thirty-three and one-third percent to William B. Jaspert, Pittsburgh, Pa.
Filed Nov. 12, 1965, Ser. No. 507,455
2 Claims. (Cl. 52—160)

This disclosure relates to new and useful improvements in foundation supports for building walls, mounting posts or the like, more particularly to ground supports that eliminate the need for bulky concrete bases. The foundation supports are lowered into pre-formed holes in the ground and which have anchorage elements that are later-



ally displaceable from the longitudinal axis of said supports to be embedded in the soil around the hole.

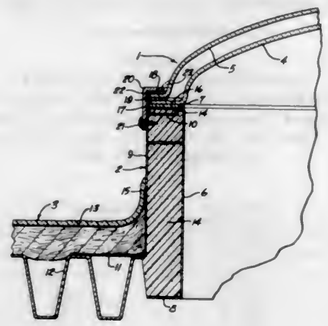
3,417,526
SUB-DIVIDED PARCEL OF BUILDING LAND
J. Wyburn Lawson, 1053 Chelsea Drive, Ottawa, Ontario, Canada
Filed Mar. 28, 1963, Ser. No. 268,636
2 Claims. (Cl. 52—169)



1. A subdivided parcel of building land comprising a pair of access strips in spaced apart relation in the earth, a plurality of individual building lots each of which is at least a minimum predetermined area and has at least a predetermined minimum access frontage between the access strips, the lots between the access strips being defined by metes and bounds including a marked access frontage line running along the length of one of the access strips, a marked rear line running along the length of the other of the access strips, a substantial proportion of the total number of said lots extending between the front line and the rear line, each lot of said substantial proportion having a marked major frontage and a marked minor frontage, said major and said minor frontages alternately coinciding with said front line and said rear line, the side lines of said substantial proportion of said lots being circular, the portions of the side lines intersecting the major frontage of a lot springing from a known point substantially on the longitudinal center line of said lot, the portions of side lines intersecting the minor frontage of said lot springing from known points substantially on the center lines of lots on either side of said lot, the portions of side line which respectively intersect the major frontage and minor frontage of said lot having a point of conjunction in the region of the median of the depth

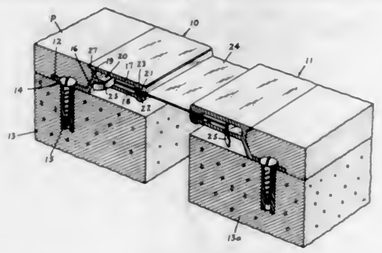
of said lot and a common tangent at said point of conjunction such that the side lines are generally S-shaped, building sites staked out on said lots respectively adjacent to the major frontages and orientated transversely of the longitudinal center lines thereof such that the building sites on adjacent lots are at staggered depths from a given access strip.

3,417,527
SKYLIGHT DOME
Elmer C. Kiekhaefer, Winter Haven, Fla., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 608,927
4 Claims. (Cl. 52—200)



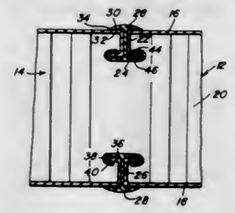
A skylight structure having a curb of spaced vertical walls with foamed plastic insulation therebetween and a lower outward flange sealed to the roof, and an outer frame secured to the outer wall and extending over the edge of the skylight to retain the latter in place.

3,417,528
EXPANSION JOINT COVERS
Edward C. Hallock, 86 Woodland Ave., Summit, N.J. 07901
Filed July 25, 1966, Ser. No. 567,697
2 Claims. (Cl. 52—367)



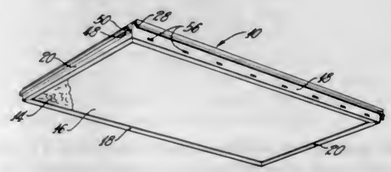
An expansion joint assembly for closing a joint between a pair of relatively movable structures, including a pair of mounting members fastened to the moving structures and each including a portion defining a recess having an open end facing the open end of the other mounting member. A closure plate is slidably received in the recesses of the mounted members and is kept centered over the joint by a spring in each recess acting against the edge of the plate. Each of the mounting members includes a flange by which the members may be mounted to the structure and also includes a stop flange for plaster and the like, the mounting flange being so arranged so that it is covered by the finishing material which abuts and is flush with the stop flange to provide a simple, neat-appearing joint assembly.

3,417,529
DRIVE CLEAT CONNECTOR
William F. Archinal, Miami, and Harry M. Brazener, Miami Beach, Fla., assignors to Panelfab Products, Inc., a corporation of Florida
Filed Oct. 19, 1966, Ser. No. 587,788
5 Claims. (Cl. 52—468)



A connector and sealing strip for the facing sheets of honeycomb panels in which each facing sheet is provided with a reversely folded channel-shaped edge. The connector is in the form of an elongated strip of vinyl plastic having a laterally extending flange along both edges thereof. The outer flange is provided with a concave outer surface and a convex inner surface tapering to a thin lip and the inner flange is provided with reversely curved edge portions and inwardly extending flanges extending therefrom which are in diverging relation to the flange connected to the web portion with the terminal flanges and flange on the web portion having opposed ribs for grippingly engaging the terminal flange on the channel-shaped edge portion of the facing sheets of the honeycomb panel.

3,417,530
SUSPENDED CEILING SYSTEM
James M. Long, Pataskala, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,751
5 Claims. (Cl. 52—496)

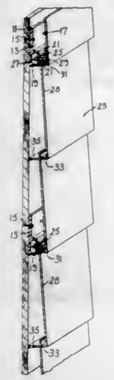


A ceiling system and more particularly to a suspended ceiling construction including preframed panels which are readily mountable and demountable on a suspension system.

3,417,531
ALUMINUM AND VINYL SIDINGS
Robert B. Jones, Litchfield Turnpike, Bethany, Conn.
Filed Oct. 21, 1966, Ser. No. 588,488
2 Claims. (Cl. 52—520)

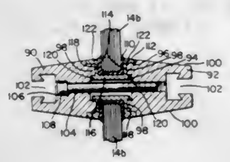
This disclosure relates to a siding structure for buildings. The siding structure comprises an elongated attachment strip which is connected directly to the existing

sheathing or other framing of the building. This attachment member defines a horizontally extending locking channel with a horizontally directed opening thereto. Such attachment strips are spaced vertically along the side of the building to be covered. A plurality of panels are provided, each having an inwardly directed flange along



the top edge thereof adapated to be received in the locking channel and an outwardly directed downturned flange along the top edge thereof. Each panel has an inwardly directed upturned flange along the lower edge thereof adapted to engage the outwardly directed downturned flange of an adjacent panel.

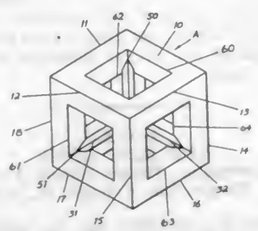
3,417,532
BARRIER STRUCTURE
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Original application Dec. 13, 1963, Ser. No. 330,389, now Patent No. 3,312,029, dated Apr. 4, 1967. Divided and this application Dec. 12, 1966, Ser. No. 601,182
2 Claims. (Cl. 52—584)



The post for mounting a panel comprises a front member and a rear member secured to one another by fastening means. Between the front and rear members there is a longitudinally extending U-shaped member which is keyed along its outer edges to the front and rear members. Disposed in the U-shaped member is a plastic or rubber molding or glazing strip which forms the edge of a solid panel member.

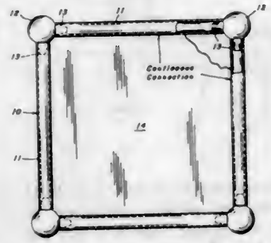
3,417,533
DIAGONALLY REINFORCED HOLLOW BUILDING BLOCK
Jack Sparling, Falls Village, Conn. 06031
Filed Jan. 9, 1967, Ser. No. 607,955
3 Claims. (Cl. 52—589)

The disclosure describes a hollow building block of rectangular or square shape having relatively strong edge structures on each of the twelve edges, which extend the full length and width of the edges and are of rectangular or square cross-section. Interiorly, the block consists of



diagonally extending members, joining at the center and integrally molded with the block, which may be of cement.

3,417,534
STRUCTURAL METAL PANEL
John F. McDermott, Monroeville, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 18, 1967, Ser. No. 610,180
1 Claim. (Cl. 52—624)



A polygon formed of pipe lengths has balls at the corners with studs extending into the ends of the pipe lengths. A sheet secured laterally to the pipe lengths completes the panel and maintains it is assembled relation.

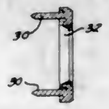
3,417,535
GRID FOR SUSPENDED TILE CEILINGS AND SUSPENSION MEANS THEREFOR
Jack I. Zuckerman, 4525 Henry Hudson Parkway, Bronx, N.Y. 10471
Filed Sept. 23, 1966, Ser. No. 581,611
9 Claims. (Cl. 52—650)



In a grid for a suspended tile ceiling, the combination of a tile-supporting runner including an upright section having a suspender-engaging bead of substantially triangular cross-section on its edge, with its apex at the

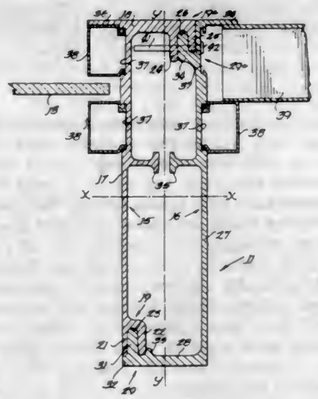
top, and having a bottom wall which is inwardly indented, and a suspension element comprising a metal strip, twisted at its center to dispose its end portions at right angles to one another, one end portion having a hook for suspending the element; the other end portion slitted to provide at least two sections which are divergently spread with their ends inwardly offset and their edges spaced a distance less than the width of the base of the bead and adapted to have the bead snap-fitted on the element between them.

3,417,536
ATTACHABLE METAL OBJECT AND METHOD FOR MAKING THE SAME
Gerald V. Jakeway, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich., a corporation of Michigan
Filed Nov. 7, 1966, Ser. No. 592,374
20 Claims. (Cl. 52—673)



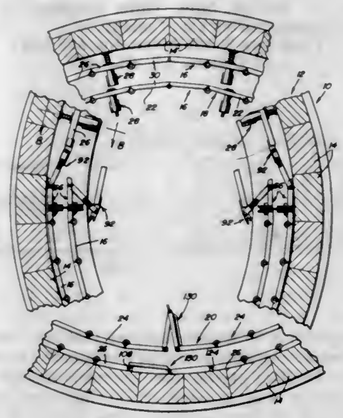
A method of making metal trim letters and the like having integral attachment studs, wherein the trim letter and the integral studs are formed by means of a progressive die stamping procedure in which a rough blank of metal is first formed to have stud blank areas, and such areas are then moldably upset to form the attachment studs, with such moldable upsetting including the gathering of stock from some portions of the stud blank areas into the stud projections themselves and the finished stud projections therefore having a thickness which can be greater than that of the original rough blank stock.

3,417,537
LOAD-BEARING STRUCTURAL COLUMN
James D. Wilson, 2514 Laurel Lane, Wilmette, Ill. 60091
Filed Aug. 4, 1966, Ser. No. 570,340
6 Claims. (Cl. 52—731)



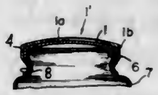
A load-bearing structural tubular column formed of two non-identical open channel-shaped members where one member has male reentrants and the other member has cooperating female reentrants; the male and female reentrants being formed at the free edges of the members and engage in the direction of the minor axis of the tubular column to provide for shear transfer about the minor axis. A shear pin extends through the male and female reentrants adjacent one corner of the tubular column parallel to the major axis thereof to provide for shear transfer about the major axis of the column.

3,417,538
KILN LINER BLOCK SUPPORTING STRUCTURE
Calvin B. Dean, P.O. Box 138, Brookwood, Ala. 35444
Filed Feb. 17, 1967, Ser. No. 616,854
11 Claims. (Cl. 52—749)



Twin side-by-side downwardly opening and generally semi-circular arch assemblies adapted to support upper portions of longitudinally spaced circumferential courses of kiln liner blocks, the arch assemblies each including opposite side support means adapted to be supported from lower portions of an associated kiln and from which the opposite side lower portions of the arch assemblies are supported for limited vertical movement and each of the arch assemblies including a pair of generally quarter circular arch sections joined at the top of the corresponding arch assembly for relative pivotal movement about an axis extending longitudinally of the associated kiln with the corresponding pair of support means on each side of the arch assemblies being supported from one another for swinging movement by means of a horizontal connecting link having its opposite ends pivotally connected to the corresponding support means for rotation relative thereto about generally vertical axes.

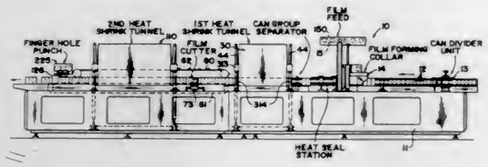
3,417,539
METHOD OF FORMING A CONTAINER CLOSURE
Juji Hirohama, 17 Ishihara-cho, Sumida-ku, Tokyo, Japan
Filed Oct. 6, 1966, Ser. No. 584,748
1 Claim. (Cl. 53—42)



A method of closing a container using a resilient cap member having a curved top wall with a skirt which extends downwardly for engaging around the rim of the container and an annular sealing member, comprising

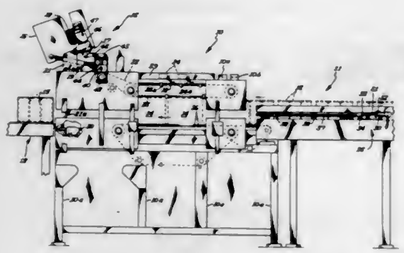
positioning the sealing member around the cap member and heating the sealing member to cause it to shrink and engage the side walls and a portion of the top of the cap member. The top wall of the cap member is depressed to deflect the side walls of the cap member and the sealing member outwardly in order to permit the cap member to be engaged over the rim of the container. The sealing member is then heated to cause the cap assembly to tightly engage on the rim of the container.

3,417,540
APPARATUS FOR FORMING PACKAGES OF ARTICLES BY BANDING IN A HEAT SHRUNK PLASTIC FILM
Bruce G. Copping and Walter D. Hardee, Akron, and Robert W. McGill, Stow, Ohio, assignors to Geo. J. Meyer Manufacturing Co., Cudahy, Wis.
Filed Jan. 9, 1967, Ser. No. 608,116
13 Claims. (Cl. 53—48)



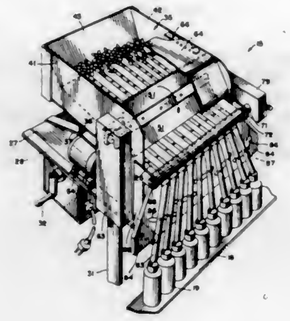
This apparatus processes articles that are fed along in one or more continuous streams of abutted articles enclosed in a band of plastic film. Members engage certain of the articles and separate them into longitudinally spaced groups of articles while cutter means of a flying shear type are provided to sever the film into sections intermediate the longitudinally spaced article groups. Members engage opposed top and bottom portions of the grouped articles and film thereon when a heat shrink action on the film is effected to draw the film into tight engagement with the articles for completing the package, which action draws end film portions into engagement with vertical sections of end articles in the article groups.

3,417,541
APPARATUS FOR AUTOMATING PACKAGING MACHINES AND PACKAGING PRODUCTION LINES
Gerald F. Wedl, Coon Rapids, and Darwin D. Draisey, Minneapolis, Minn., assignors to Grain Belt Breweries, Inc., a corporation of Minnesota
Filed Mar. 3, 1966, Ser. No. 531,572
7 Claims. (Cl. 53—55)



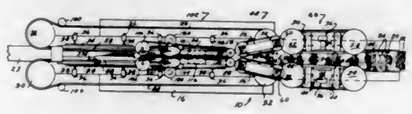
A beer can packaging apparatus sensing a shortage of beer cans to stop the flow of cartons, and sensing a shortage of cartons to stop the flow of beer cans.

3,417,542
DESICCANT CAPSULE FEEDING MACHINE
Leland H. Merrill and Charles F. Bross, Chicago, Ill., assignors, by direct and mesne assignments, to Merrill Machinery Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 26, 1965, Ser. No. 516,203
4 Claims. (Cl. 53—78)



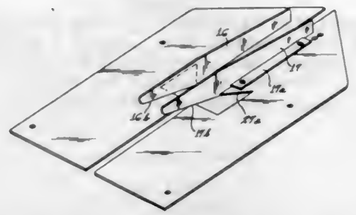
Apparatus for feeding capsules containing a dessicant, to containers incident to movement of the containers thru a tablet or capsule counting and packaging mechanism. The capsules move down a series of tracks to an oscillating discharge bar containing a series of spaced pockets aligned with the tracks for receiving the capsules and rocking them approximately 90° to discharge whereby a single capsule is discharged into a container.

3,417,543
BAG CLOSING MACHINE
Benjamin B. Jones, Jr., Savannah, Ga., assignor to Savannah Sugar Refining Corporation, Savannah, Ga., a corporation of New York
Filed Aug. 2, 1965, Ser. No. 476,431
21 Claims. (Cl. 53—126)



Apparatus for forming uniform closures of open mouthed bags each having two opposite sides, two opposite ends and a bottom comprising: means for filling flowable material into each bag up to a level which is below the top of each bag; means forcing the portions of said opposite sides which are above said level toward one another: means engaging the opposite ends of each bag above said level centrally of each end and forcing said opposite ends generally convexly toward one another to form incipient gables; means forcing said opposite side portions into close lateral adjacency, means simultaneously engaging each incipient gable substantially at said level thereby forming a laterally flattened vertically upwardly projecting top portion on each bag, a transitional region overlying said level and uniform gables at each end of the flattened top portion; means forcing the transitional region into contact with the flowable material at said level; and means sealing each flattened bag top portion to close the bags and prevent egress of said flowable material therefrom.

3,417,544
FORMER FOR WRAPPING WEB MATERIAL AROUND AN ARTICLE
John J. Grevich, Star Prairie, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed Aug. 22, 1966, Ser. No. 573,898
10 Claims. (Cl. 53—180)



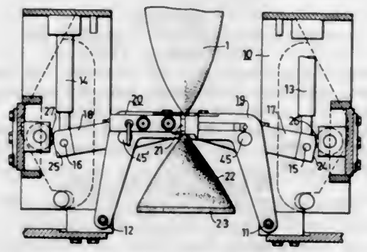
1. A former for wrapping a web of material around an article traveling in a predetermined and generally horizontal direction,

comprising a pair of elongate substantially parallel and rigid guides spaced from each other to receive the article therebetween, said guides extending obliquely downwardly in said direction to receive the web of material thereunder and carry the web downwardly of said article moving therebetween,

generally horizontal panel means supporting the article an manipulating the web of material, said panel means including a first portion adjacent said guides and supporting the article traveling therebetween,

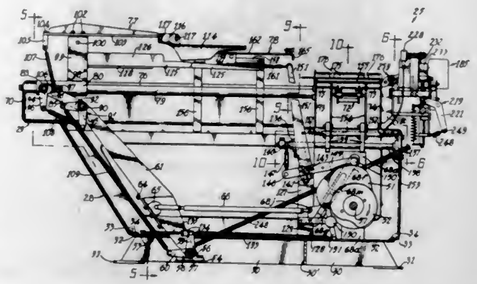
said panel means also including second and third portions spaced from said first portion in the direction of travel to receive the article therefrom, said second and third portions having juxtaposed web guiding edges in substantially end to end relation with said rigid guides to receive the web therefrom, the juxtaposed edges of said second and third portions converging with respect to each other in the direction of travel and carrying the web of material beneath the article moving therealong, until the edges of the web confront each other and depend from the article to be sealed together.

3,417,545
APPARATUS FOR DETACHING FILLED AND SEALED PACKAGES FROM A PACKAGE BLANK
Per-Allan Ljungberg, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Feb. 3, 1966, Ser. No. 524,786
Claims priority, application Switzerland, Feb. 5, 1965, 1,591/65
3 Claims. (Cl. 53—182)



Apparatus to sever flat pressed and sealed filled packages from a package blank which includes a pair of sealing jaws, one of which has a cutting blade therein which severs the package blank and projects into a notch in the other when the jaws are brought together.

3,417,546
BREAD BAGGER
Jere F. Irwin, % Irwin Research and Development, Inc., 1702 S. 24th Ave., P.O. Box 221, Yakima, Wash. 98901
Filed Aug. 5, 1966, Ser. No. 570,667
3 Claims. (Cl. 53—190)



1. In a machine for bagging a product, such as a loaf of bread, in a flexible plastic bag made of polyethylene or the like, the combination of:

(A) means for successively feeding individual product entities along a given path to a bagging station;

(B) scoop means reciprocating along a second path which crosses said first path in the area of said station so that said scoop means has alternately a retracted position in said second path in which said scoop means is withdrawn from the area of said station, and an extended position in which said scoop means extends through and beyond said station;

(C) bag supply means for supplying a distended bag to an end portion of said scoop means when this is extended beyond the said station whereby said scoop means extends within said bag and grips the same carrying the same with it as said scoop means retreats through said station;

(D) means on said scoop means positioned opposite said station when said scoop means is extended, for receiving a product entity fed to said station;

(E) blockade means positioned to retain said product entity at said station during retraction of said scoop means whereby said bag is drawn over said entity, enveloping the same;

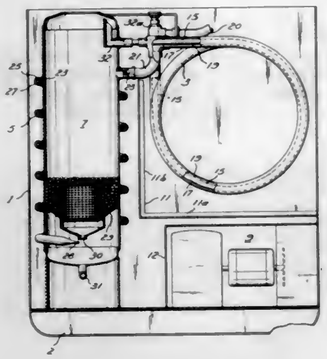
(F) engagement of said bag with said product entity halting said bag at said station and facilitating withdrawal of said scoop means from said bag as said scoop means return to its retracted position; and

(G) means for coordinately reciprocating said scoop means, operating said product entity feed means, and operating said bag supply means to produce recurrent product entity bagging cycles, said scoop reciprocating means accomplishing the movement of said scoop means from retracted position to extended position during substantially less than half of the time period of each such bagging cycle, the balance, and major portion, of said time period being occupied by the reverse movement of said reciprocation.

3,417,547
METHOD FOR DRYING COMPRESSED AIR
Vincent Q. Rapp, Erie, Pa., assignor to General-Erie Corp.
Filed Dec. 7, 1966, Ser. No. 599,884
2 Claims. (Cl. 55—27)

A method for drying compressed air by passing the hot compressed air through two cooling zones. The com-

pressed air is then expanded and passed through a non-regenerative moisture adsorbing means. In the first cooling



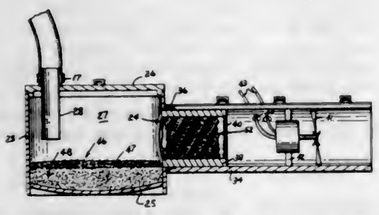
zone the cooled compressed air is heat exchanged with the hot compressed air.

3,417,548
APPARATUS AND METHOD FOR PERFORMING A CONTINUOUS CHROMATOGRAPHIC ANALYSIS
Donald W. Thompson, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,969
3 Claims. (Cl. 55—67)



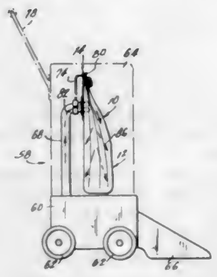
A continuous chromatographic unit using two closely spaced parallel surfaces with at least one of the surfaces being rotated. One of the surfaces is coated with non-volatile or solid material that serves as the partition phase while the carrier gas is fed from a first inlet and the feed vapor is injected slightly downstream from the first inlet. The different components of the feed vapor are removed at different locations around the periphery of the surfaces.

3,417,549
EXHAUST FILTER DEVICE
Blanche E. Leosis, 1748 Evergreen Ave., Walla Walla, Wash. 99362
Filed Aug. 21, 1967, Ser. No. 662,047
6 Claims. (Cl. 55—316)



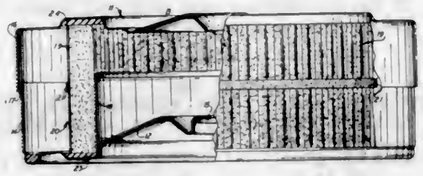
An exhaust filter device for internal combustion engines is described that removes the moisture, particles, fumes, and smoke from the exhaust. The device is such that it may be attached to the end of an automobile tailpipe. A filter having a mixture of granulated bentonite clay and activated charcoal is provided upstream of a filter containing natural sponge treated with lightweight oil. An exhaust fan is mounted downstream of the filters for drawing the exhaust through the filters without providing a back pressure on the engine.

3,417,550
DISPOSABLE VACUUM CLEANER FILTER BAG
John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,395
3 Claims. (Cl. 55—376)



A vacuum cleaner bag provided with a stiff planar collar about the inlet of the bag and extending beyond the upper end of the bag including a support therefor at the upper end.

3,417,551
AIR FILTER
Arthur J. Bonell, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 508,102
5 Claims. (Cl. 55—498)



An annular filter element provided with an elastomeric band bonded to the outer edges of the pleats.

3,417,552
FILTER ELEMENT MADE OF POLYMERIC FILM
Richard F. Dyer and John M. Wininger, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 446,059, Apr. 6, 1965. This application Jan. 6, 1967, Ser. No. 607,736
10 Claims. (Cl. 55—528)

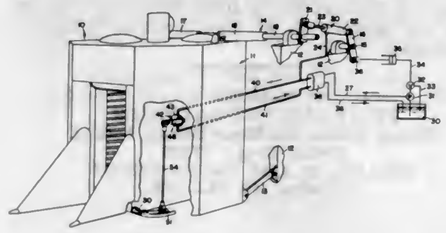
A filter element for removing unwanted particles, vapors and the like from a flowing gas, composed of a plurality of intermingled, flat ribbons having numerous very small fibrils attached to and extending outward from the surface thereof. The ribbons of the filter element are produced by orienting a polymeric film to a high degree and subjecting it to the beating action of a flow of a gas,

such as air, under high pressure. The beating action of the air jet fractures the film into the ribbon and, be-



cause of the high degree of orientation of the film, causes the fibrils to be formed.

3,417,553
COTTON HARVESTER
Arthur Lowell Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,100
5 Claims. (Cl. 56—11)



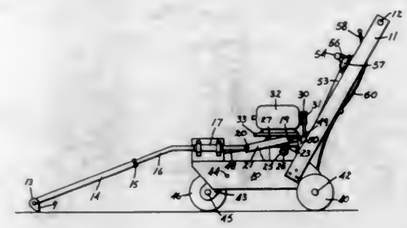
1. In a cotton harvester having a housing structure supported on a frame for vertical movement, the improvement comprising: horizontal rockshaft means; link means between the rockshaft means and housing structure for raising and lowering the harvester upon rocking of the rockshaft means; a fluid source; pump means for moving the fluid from the source; a hydraulic power unit for rocking the rockshaft means; a fluid connection between the pump and power unit including a control valve; a fluid conduit system extending from the pump and having a return to the fluid source; an extendible and retractable hydraulic link in the aforesaid link means adapted to vertically adjust the harvester independently of the hydraulic power unit; a fluid passage extending between the hydraulic link and the conduit system; a restrictor valve in the conduit system downstream from the passage and supported on the harvester housing structure; a ground-engaging member supported on the housing structure for vertical movement and adapted to shift vertically relative to the housing structure in accordance with the relative vertical spacing between the structure and the ground level; and a connection between the restrictor valve and member for affecting the effective restriction in the valve to thereby adjust in accordance therewith the length of the hydraulic link.

3,417,554
POWER RAKE FOR REMOVING DEAD GRASS IN LAWNS
Otto E. Sudhoff, W. 3114 Glass, Spokane, Wash. 99205
Filed Aug. 15, 1966, Ser. No. 572,358
5 Claims. (Cl. 56—27)

1. A power rake adapted to be steered by a walking attendant, comprising:

a ground supported mobile frame having a handle;

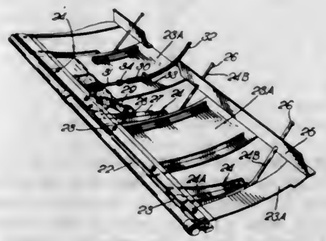
a transverse rake member having downwardly directed teeth and an integral stem movably supported on said frame for longitudinal motion relative to said frame;



a power source on said frame;

and means interconnecting said power source and the stem of said rake to reciprocate the stem and rake longitudinally relative to said frame.

3,417,555
AUTOMATIC TABLE HEIGHT CONTROL
Wilfred L. Watkins Earlsdon, Coventry, and Leslie L. Kepkay, Leamington Spa., England, assignors to Massey-Ferguson Service N.V., Curacao, Netherlands Antilles
Filed Sept. 24, 1965, Ser. No. 489,948
Claims priority, application Great Britain, Sept. 24, 1964, 38,917/64
7 Claims. (Cl. 56—208)

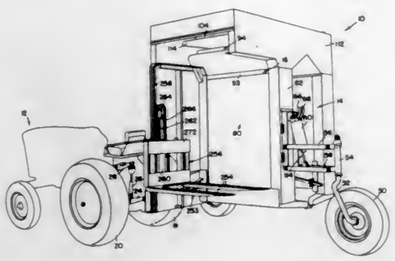


Mechanism for sensing changes in ground contour and automatically adjusting the height of a combine harvesting table accordingly. Feeler members are pivotally mounted beneath the harvesting table and are biased into engagement with the ground. An actuating lever engages one of the feeler members and actuates a control valve to hydraulically raise and lower the table in response to the pivotal movement of the feeler members relative to the harvesting table caused by undulations in the ground surface.

3,417,556
TOBACCO HARVESTER
Frank D. Jones, George H. Shriver, and Roy E. Harrington, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,229
9 Claims. (Cl. 56—27.5)

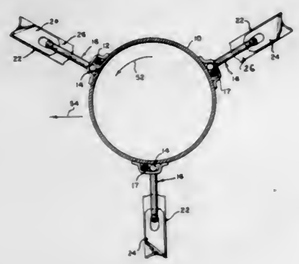
A drawn tobacco harvester adapted to be secured to a tractor having a conventional three-point hitch. The tobacco harvester has side-by-side defoliating stations and collecting stations. The harvester is supported partially by the three-point hitch of the tractor and also by vertically movable ground-engaging wheel means which are mov-

able with the tractor three-point hitch by the tractor operator. Novel drive means are provided for the defoliating



mechanisms, and a novel belt tensioning device is provided.

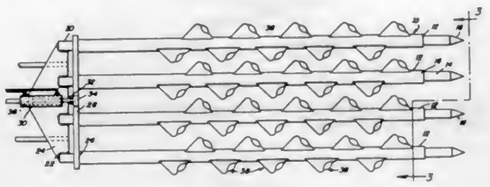
3,417,557
CUTTING ASSEMBLY FOR FLAIL TYPE MOWER
Willie F. Brewer, Minden, La., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,241
5 Claims. (Cl. 56—294)



For use in a flail type mower, a cutter assembly comprising a pair of mowing blades having a thatching blade of continuous flat sheet material mounted between the mowing blades with a cutting edge in the plane of the blade and extending below the mowing blades for the purpose of cutting thatched over vegetation not reachable by the mowing blades; in addition, the thatching blade has a part extending radially inwardly from its mounting opening, the purpose of the inwardly extending part being to partially counter balance the outwardly extending part of the thatcher blade whereby the latter is readily oscillatable so that the outwardly and inwardly extending parts are continuously swept between the mowing blades and between the elongated legs of a hanger member, respectively, to maintain said hanger member, mowing blades and cutter assembly free of vegetation which might otherwise be caught and retained on the assembly through centrifugal force.

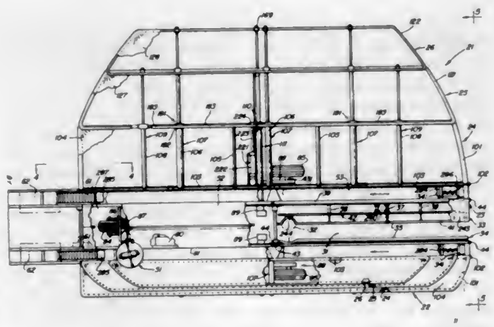
3,417,558
TREE FRUIT HARVESTER
Charles C. Granger, 1203 Chestnut St., Henderson, N.C. 27536
Filed July 22, 1966, Ser. No. 567,127
18 Claims. (Cl. 56—328)

1. A tree fruit harvesting unit comprising at least one elongated supporting arm unit adapted to be bodily inserted radially into a tree between the branches supporting fruit connected thereto by stems, fruit capturing and separating members projecting laterally outwardly from the arm unit and spaced apart along the longitudinal axis of said arm unit, each of said members having a fruit capturing portion and means adjoining such portion for snaggingly engaging the stem joining the fruit to a branch and twisting the stem to break it off from the branch, said supporting arm unit being movable in its inserted



position within the branches for causing fruit to be captively engaged by the capturing portion of each member with the associated supporting stems for the fruit engaged by the adjoining stem engaging means and being twisted off the carrying branch under the movement of the supporting arm unit so that the freed fruit is captively received and retained by the fruit capturing portion of each member.

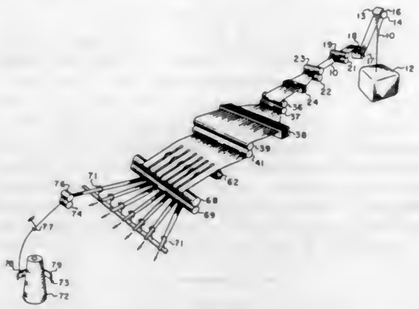
3,417,559
FRUIT AND NUT GATHERER
Donald Boman and Elmer Boman, both of Dallas, Oreg. 97338
Filed July 19, 1965, Ser. No. 472,767
9 Claims. (Cl. 56—329)



A gatherer having folding wings having telescopic cylinders forming part of the frame is supported by wheels carried by arms pivoted to the frame for leveling the frame on sloping ground. The gatherer has a self-aligning delivery belt and a blower for removing debris and carries a shaker.

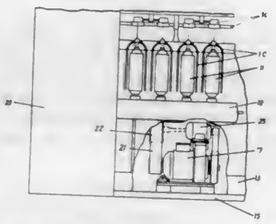
3,417,560
METHOD AND APPARATUS FOR PRODUCING A SEMI-CONTINUOUS FILAMENT YARN
George A. Watson, Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 382,263, July 13, 1964. This application July 3, 1967, Ser. No. 650,795
15 Claims. (Cl. 57—34)

A method, apparatus and product comprising producing a semi-continuous filament yarn having staple yarn characteristics from crimped tow comprising longitudinally slitting a deregistered tow into strips of filaments



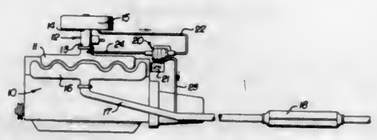
either with or without a tow spreading stage and subsequently twisting the strips into yarn.

3,417,561
DRIVES FOR TEXTILE MACHINERY
Horst Wolf, Albershausen, Germany, assignor to Zinser-Textilmaschinen Gesellschaft mit beschrankter Haftung, Ebersbach (Fils), Germany, a company of Germany
Filed Mar. 31, 1966, Ser. No. 539,009
Claims priority, application Germany, Apr. 1, 1965, Z 11,449
10 Claims. (Cl. 57—100)



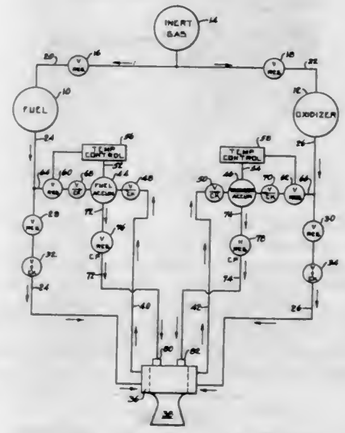
A spinning machine drive provided with a main drive motor which can drive the machine at a slow speed and at a normal speed, an auxiliary motor which can drive the machine in slow motion, and an electric circuit arranged so that the machine can be driven by the auxiliary motor in slow motion in order to check its operation, and then the machine can be driven at slow speed by the main drive motor until a time relay in the electric circuit causes the machine to be driven at the normal speed after a predetermined length of time.

3,417,562
SELF-LUBRICATING AIR SEALED BEARING APPARATUS
Charles W. Morris, 11769 Chenault St., Los Angeles, Calif. 90049
Filed Oct. 26, 1966, Ser. No. 589,571
19 Claims. (Cl. 60—30)



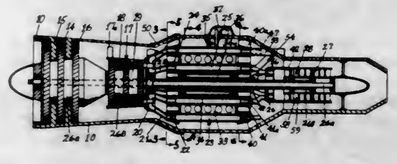
A self-lubricating air sealed bearing apparatus for use in rotatably mounting a shaft extending between two zones of different air pressure within a housing. The bearing is sealed against passage of air from the higher to the lower pressure zone to prevent contamination of the bearing by such air flow. The bearing is continuously and effectively self-lubricated during operation in response to the zone pressure differential.

3,417,563
ISOTHERMAL GAS GENERATOR
Joseph F. Loprete, Wayne, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,724
10 Claims. (Cl. 60—39.27)



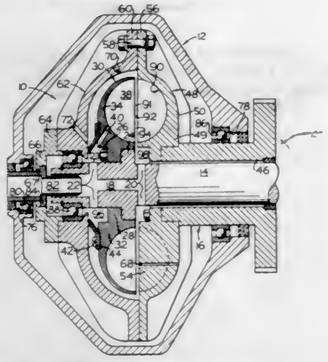
A liquid propellant is stored in a tank for use in a rocket engine. The liquid propellant is passed through a heat exchanger structure surrounding the engine combustion chamber such that the combustion chamber wall is cooled by the propellant and the propellant is vaporized by absorbing heat from the combustion gases. The vaporized propellant is then supplied to a storage tank or accumulator. A temperature control means is provided to supply liquid propellant to the accumulator from the storage tank to cool the vaporized propellant to maintain the propellant at a predetermined temperature. A pressure regulating valve is provided between the accumulator and the rocket engine so that the cooled propellant vapor is supplied to the rocket engine at a constant pressure.

3,417,564
JET ENGINE WITH RELATIVELY ROTATABLE COMBUSTION MEANS, INTAKE MANIFOLD AND EXHAUST MANIFOLD
John G. Call, 2332 NE. 20th St., Fort Lauderdale, Fla. 33305
Filed Apr. 19, 1967, Ser. No. 631,951
33 Claims. (Cl. 60—39.34)



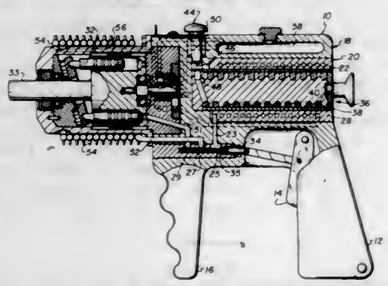
A constant volume combustion gas turbine engine which utilizes either stationary manifolds and the firing of rotary cylinders, or rotary manifolds and the firing of stationary cylinders.

3,417,565
FLUID COUPLING
Edwin E. Hanson, Peoria, and Harry B. Newman, Washington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 19, 1967, Ser. No. 654,572
10 Claims. (Cl. 60—54)



A fluid coupling having an impeller and a runner and in which hydraulic fluid is supplied to the toroidal chamber through passageways opening into the impeller pockets, fluid also being supplied through the clearance between the impeller and runner faces, air and foam being bled from the coupling through passageways in the runner blades, and also through passageways in a casing enveloping the impeller.

3,417,566
UNDERWATER POWER SOURCE
Donald M. Gould, Glen Cove, N.Y., assignor to General Precision Systems, Inc., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,363
9 Claims. (Cl. 60—95)



A portable power tool has a steam generating plant comprised of a disposable fuel cartridge producing heat through burning for generating steam in a boiler system. In addition, the power tool is provided with an energy converter such as a multiple piston swash plate receiving the steam for its operation and thereby driving a shaft or any tool that can be adapted thereon.

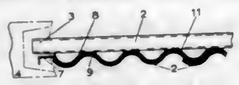
3,417,567
SOIL STABILIZATION
Einosuke Higashimura, Tokyo, and Masao Ishii and Yoshio Ishikawa, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Mar. 16, 1967, Ser. No. 623,557
Claims priority, application Japan, Mar. 18, 1966, 41/16,806, 41/16,807
11 Claims. (Cl. 61—36)

The present invention relates to a process for treating soil which comprises applying to soil an aqueous solution of a mixture consisting of one or more water-soluble monomers (a) represented by the formula

$$(RCH{=}COO)_nXOCOC{=}CHR$$

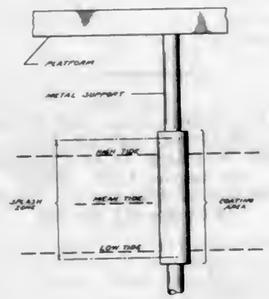
wherein R and R^1 each represent a hydrogen or methyl group, n is 1 or 2, and X represent a group containing 2 to 18 carbon numbers and having at least one hydroxyl group and moreover having in the main chain less than 4 of oxygen atom or nitrogen atom or both the two in total, and one or more other polymerizable monomers (b) to soil in the presence of redox catalyst to carry out copolymerization reaction and converting said soil and said polymerizable mixture into a concentrated mass of soil capable of being substantially insoluble in water and of strong structure in said desired form.

3,417,568
MINE SHAFT BRATTICING
Herbert Victor Henderson, Dawnview, Germiston, Transvaal, Republic of South Africa, assignor to Wright Anderson (South Africa) Limited, Klipfontein, Boksburg North, Transvaal, Republic of South Africa
Filed Oct. 17, 1966, Ser. No. 587,328
Claims priority, application Republic of South Africa, Oct. 21, 1965, 65/4,746
2 Claims. (Cl. 61—40)



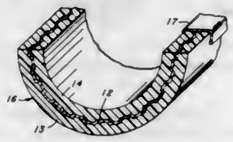
A vertical concrete lined mine shaft has vertically spaced horizontally disposed buntons therein carrying vertically extending corrugated steel panels which divide the shaft into updraft and downdraft compartments. The buntons have their ends embedded in the concrete walls. Anchor plates also embedded in the walls are secured to the sides of the panels.

3,417,569
PROTECTIVE COATING AND METHOD
William N. Laughlin, 129 Brentwood Blvd., Lafayette, La. 70501
Continuation-in-part of application Ser. No. 496,153, Oct. 14, 1965. This application Jan. 25, 1968, Ser. No. 703,516
9 Claims. Cl. (61—46)



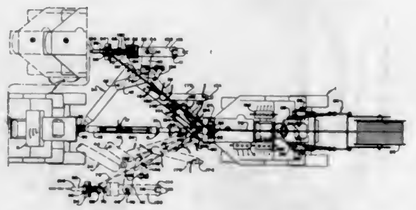
Supports for offshore platforms are provided which give effective and long-lasting protection to the corrosive forces existing in the splash zone adjacent the platform. Such supports comprise metal pipes which are covered over that portion thereof which is positioned in the splash zone with a corrosion-inhibiting coating of an elastomeric material. The coating is cured to the metal pipe to form a firm bond between coating and support. A process for coating the support in the splash zone is provided.

3,417,570
RAIN-WATER DISPOSAL SYSTEMS
John R. Pegan, Pittsburgh, and Charles E. Newcomb, Industry, Pa., assignors to Vi Vox, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of applications Ser. No. 490,798, Sept. 28, 1965, Ser. No. 559,259, June 21, 1966. This application Feb. 2, 1967, Ser. No. 613,590
4 Claims. (Cl. 61—15)



This invention relates to new and improved rain-water disposal systems comprising lightweight, corrosion-resistant composite gutters and downspouts of enhanced strength and impact resistance, comprising a strengthening and reinforcing flat rolled and embossed metal core, and non-metallic layers overlying and bonded to the core, and to methods of fabricating and assembling the same.

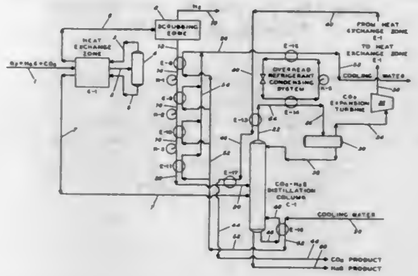
3,417,571
DUAL TRACTOR MOUNTED, ARTICULATED CABLE LAYING DEVICE
Leon O. Kelley, P.O. Box 488, Stamford, Tex. 79553
Filed June 5, 1967, Ser. No. 643,606
11 Claims. (Cl. 61—72.6)



A cable laying device which utilizes two spaced apart traction elements each of which are coupled in pivoted, articulated relation by an elongated, adjustable member to enable the power of the rear traction element to be transmitted in line with the movement of the traction elements to eliminate or minimize side draft. A cable laying plow support frame and plow is pivotally associated with the elongated, adjustable member to enable the plow to open a furrow and lay cable or the like to a predetermined depth in selected offset relation to a longitudinal line passing medially through the traction elements. One operator performs the various operations of the mechanisms.

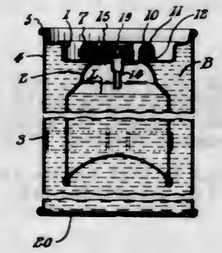
3,417,572
SEPARATION OF HYDROGEN SULFIDE FROM CARBON DIOXIDE BY DISTILLATION
Arthur W. Pryor, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,058
9 Claims. (Cl. 62—17)

Hydrogen sulfide and carbon dioxide are condensed and separated from a hydrogen rich gaseous feed mixture. The mixture of hydrogen sulfide and carbon dioxide is passed to a distillation column where carbon dioxide is separated as overhead product and hydrogen sulfide as



bottoms product. The distillation column bottoms is reboiled by employing cooling water as reboiler heating medium.

3,417,573
METHOD OF MAKING A SELF-CONTAINED REFRIGERATION SYSTEM
John M. Warner, 326 W. Willow Grove Ave., Philadelphia, Pa. 19118
Original application Nov. 6, 1963, Ser. No. 321,792. Divided and this application Aug. 17, 1965, Ser. No. 489,093
2 Claims. (Cl. 62—60)

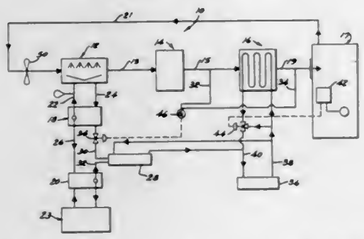


In a method of forming and filling a composite beverage and refrigerant container having a single, rigid, outer container and a single, rigid, inner container disposed within the outer container and affixed thereto along a single common end wall, and having a single valve disposed in engagement with the inner container only for communicating the inner container with the atmosphere, the steps of first sealing a tubular member at one end, and then placing the open tubular end in overlapping relationship with an upraised lip on the inner annular periphery of an annular member, then rolling the tubular end outwardly to form a sealed connection between the tubular member and the annular member, then placing the tubular member within a second tubular member, then sealing the outer periphery of the annular member to one end of the second tubular member to form an open-ended container, then filling the container so formed with a beverage through the open tubular end, then placing a member across the open tubular end and sealing it to form a sealed beverage container, then charging the inner tubular member with a liquid coolant through the open tubular end thereof, and then placing a valve assembly in said open tubular end so as to seal it.

3,417,574
METHOD AND MEANS FOR PROVIDING HIGH HUMIDITY, LOW TEMPERATURE AIR TO A SPACE

Gilbert A. Kelley, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio

Filed May 31, 1967, Ser. No. 642,392
9 Claims. (Cl. 62—93)

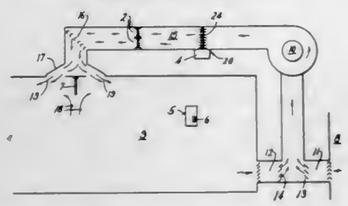


This invention relates to a method and apparatus for supplying low temperature air with high relative humidity to a refrigerated chamber. Air is removed from an outlet duct of the refrigerated chamber and passed through a spraying tower where the air is contacted with a hygroscopic solution, such as lithium chloride, to reduce the dew point of the air. The air is then passed through an eliminator where traces of hygroscopic solution picked up by the air in the tower are removed, and the air is then passed over cooling coils that reduce the temperature. Because of the decrease in dew point of the air, the temperature of the air may be reduced substantially, and the relative humidity placed at a high point without having excessive moisture condense from the air onto the cooling coils. Means is provided to control the thickness of frost upon the cooling coils at a desirable thickness to obtain optimum heat transfer from the air to the coils.

3,417,575
METHOD OF AND MEANS FOR COOLING SEMICONDUCTOR DEVICES

Ernest H. Stark, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed Apr. 10, 1967, Ser. No. 629,684
9 Claims. (Cl. 62—119)



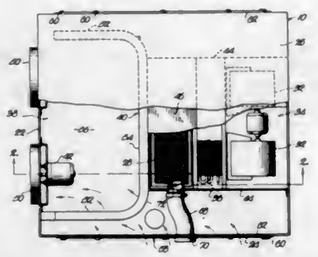
An electrically insulating volatile fluid extracts heat from a heat sink for a current controlling semiconductor device by evaporation and releases it to a cooling medium by condensation in a condenser insulated from the heat sink.

3,417,576
AIR CONDITIONER

Elmer F. Stucky, Hesston, Kans., assignor to Centaur, Incorporated, Newton, Kans., a corporation of Kansas

Filed Mar. 23, 1967, Ser. No. 625,415
9 Claims. (Cl. 62—244)

An air conditioner for agricultural and industrial vehicular equipment is mounted on the cab of the vehicle and utilizes a U-shaped condenser coil in conjunction with a pair of side air intakes to provide increased condenser capacity, eliminate windmilling of the condenser fans by ram air, and minimize reduction of the airflow across the condenser coil by clogging of the intakes caused by foreign matter in the air. Quick release fasteners adjacent each condenser intake provide a means

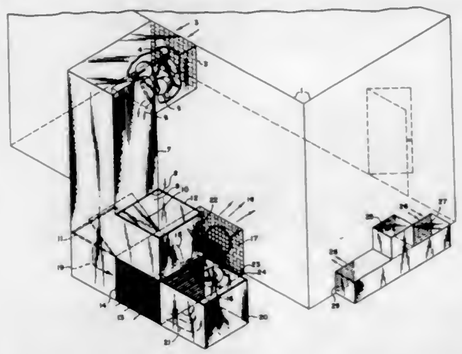


of rapidly attaching and detaching a frame which carries a filter medium suited to the conditions to be encountered. A valved air duct communicates the evaporator airstream with the atmosphere to permit fresh air to be drawn into the evaporator stream as desired to pressurize the cab in order to prevent the ingress of fine dust and the like thereinto.

3,417,577
ROOM AIR PURIFIER

Cloyd D. Waldron, 1308 Willow Lane, Mobile, Ala. 36605

Filed June 3, 1966, Ser. No. 555,141
5 Claims. (Cl. 62—263)



Room ventilating apparatus that positively replaces foul air in the room with fresh air by using a fan to remove foul air from near the ceiling of the room, and by using another fan to add fresh air near the floor of the room. The positive exchange of heat between removed air and inducted air by positively forcing both through a heat exchanger. The use of a flat plate heat exchanger that can have more heat flow area than exchangers formerly proposed.

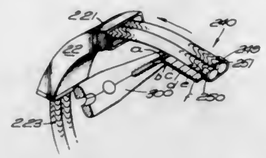
3,417,578
ADJUSTABLE CLASP

Olof Verner Anderson, North Kingston, R.I., assignor to Anson, Inc., Providence, R.I., a corporation of Rhode Island

Filed Apr. 8, 1965, Ser. No. 446,497
2 Claims. (Cl. 63—5)

This invention discloses an adjustable bracelet comprising a band, a clasp casing having an end wall formed with an opening through which one end of said band

passes, a clasp secured to the other end of said band, cooperating elements of a detachable connection on said clasp and casing, an abutment plate in said casing and normally in abutting engagement with said end wall, and

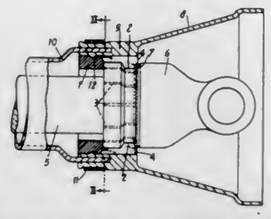


an anchor member fixedly secured to the band end within the casing, said abutment plate being structurally designed to have said anchor member secured thereto at one of several locations spaced from its engagement with said end wall.

3,417,579
COUPLING SHAFTS

Herbert Vissers, Nieuw-Vennep, Netherlands, assignor to Landbouwwerktuigen Machinefabriek H. Vissers N.V., Nieuw-Vennep, Netherlands, a company of the Netherlands

Filed May 9, 1967, Ser. No. 637,201
Claims priority, application Netherlands, July 14, 1966, 6609891; Feb. 20, 1967, 6702507
2 Claims. (Cl. 64—32)



The invention relates to a coupling shaft, which at least at one of its ends is provided with a universal joint and enclosed by a tubular protecting sheath which at least at one of its ends is supported on the shaft by means of a sleeve of synthetic material, said sleeve engaging by means of an inwards projecting ridge an annular groove of the shaft and at least at one end of the tubular sheath a cap widening towards its free end is secured. Said sleeve at its outer circumference on its whole or substantially whole length lies against the inner wall at the narrow end of the cap.

3,417,580
METHOD OF MAKING TEXTILE FABRIC ON SEWING-KNITTING MACHINES

Walter Ernst Scholtis, Siegfried Ploch, and Heinz Walter Zschunke, Karl-Marx-Stadt, Germany, assignors to Forschungsinstitut Fur Textil-Technologie, Karl-Marx-Stadt, Germany

Filed Mar. 9, 1966, Ser. No. 532,920
5 Claims. (Cl. 66—120)

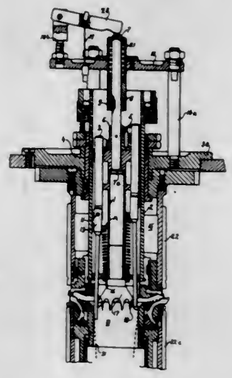


A needle for use in sewing-knitting machines in the production of a textile fabric composed of a layer of fibers reinforced by loop chains, which has a shank provided with a recess defined by a first surface sloping inwardly at a relatively small angle from the outer surface of the shank and facing toward said needle head, and by a second surface sloping from the outer surface at a relatively steep angle, facing away from said head and joining said first surface. In an alternative embodiment, the recess is formed by a series of coherent notches on the back of shank.

3,417,581
APPARATUS FOR TENSIONING A FABRIC DURING KNITTING

Jaroslav Docekal and Miloslav Losert, Trebic, Czechoslovakia, assignors to Elitex, zavody Textilniho Strojirenstvi Reditelstvi, Liberec, Czechoslovakia

Filed July 21, 1966, Ser. No. 567,336
10 Claims. (Cl. 66—147)



Rotating tensioning members are mounted for axial movement into the needle cylinder for tensioning the knitted fabric during working strokes under the action of springs, and are moved in return strokes by stationary cam means while releasing the fabric.

3,417,582
COMBINATION WASHING-EXTRACTING MACHINE

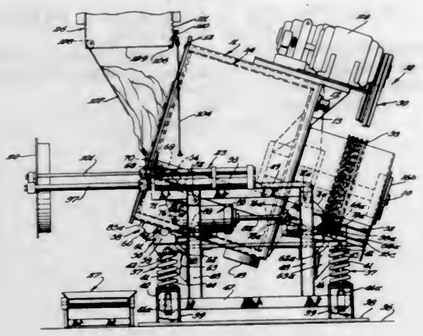
Max Hertig, Onondaga Hill, and Peter J. Meier, Syracuse, N.Y., assignors to G. A. Braun, Inc., Syracuse, N.Y., a corporation of New York

Filed Apr. 14, 1967, Ser. No. 631,076
13 Claims. (Cl. 68—24)

A combination washer-extracting laundry machine comprising an imperforate shell and a coaxial perforate washing cylinder mounted for rotation within the shell. The shell is pivotally mounted on a supporting frame for movement between a washing-extracting position at which the axis of the shell is horizontally disposed, a loading position at which a door or front end of the shell is raised to receive laundry material from an overhead storage bin, and an unloading position at which the front end of the shell is lowered to discharge the washing material gravitationally to a conveyor system.

Low and high speed electric motors are mounted on the shell for rotating the washing cylinder at a relatively low speed during a washing operation, and at a relatively high speed during an extracting operation. The shell may be subjected to substantial centrifugal forces during an extracting operation. In order to fasten the shell securely to the mounting frame during an extracting operation to preclude relative movement therebetween, while accommodating movement of the shell relative to the frame during

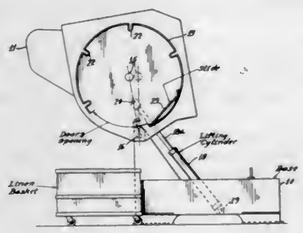
loading and unloading operations, the shell is mounted on the frame by means of front and rear lockable bearing units, each of which comprises a mounting stud connected in fixed assembly to the shell and a releasable bearing lock mounted on the frame. Front and rear guide rail assemblies also interconnect the shell and the frame to pivot the front end of the shell upwardly during a loading



operation, and the rear end upwardly during an unloading operation.

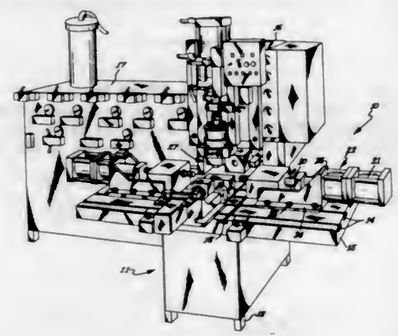
The releasable bearing locks each include a pressurized fluid-operated power cylinder for performing a locking function, and a pressurized fluid-operated power cylinder is connected to the guide rail assemblies for pivoting the front and rear ends of the shell.

3,417,583
AUTOMATIC UNLOADING WASHING MACHINE
Martin Hutterer, Forest Hills, N.Y., assignor to Cummings-Landau Laundry Machinery Co., Inc., a corporation of New York
Filed Apr. 27, 1967, Ser. No. 634,247
6 Claims. (Cl. 68—210)



A self-unloading laundry machine of the commercial type, including a horizontal axis, rotary basket in a watertight housing with aligned access doors in a portion of the top half of each for loading and unloading. The entire machine including its driving motors is carried by a frame mounted on pivots spaced forwardly from the axis of rotation of the basket and double-acting jacks and controls are provided to rotate the assembly upwardly at predetermined rates around the pivots for an angular distance to aim the aligned doors downward to cause the load to drop out of the basket. The jacks are controlled as the unit moves over top center to bring the assembly to rest at an over-centered position by reversing the forces applied to the piston rods of the jacks. The basket includes access doors and, internally, a flat surface extending across a chord of the circle from the edge of the access door opening to a point part way around the circle, thereby forming a slide to prevent the hanging up of the work load in the basket in the portion nearest the pivot when the machine is in unloading attitude.

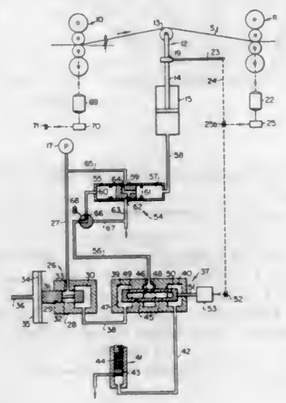
3,417,584
MATERIAL WORKING PROCESS AND APPARATUS
William E. Boker, Minneapolis, Minn., assignor to Boker's, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 13, 1966, Ser. No. 542,352
4 Claims. (Cl. 72—7)



Apparatus for forming, shaping, and/or piercing an article of work, including a support having a die mounted on the support for supporting the work thereon. A plurality of piston and cylinder units, each having work-engaging mechanisms thereon and cooperating with the die for engaging and forming the work. An electrical system being presettable to program the sequence of operation of each piston and cylinder unit so that the units may operate simultaneously or in a preselected sequence.

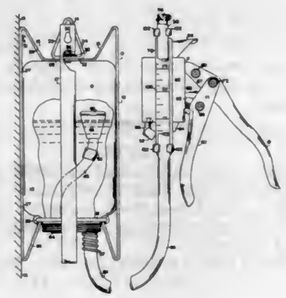
3,417,585
STRIP LOOP TENSION CONTROL MEANS
Wayne G. Ritter, Pittsburgh, Pa., assignor to Ritter Engineering Company, a corporation of Delaware
Filed Apr. 16, 1963, Ser. No. 273,446
5 Claims. (Cl. 72—8)

3. In apparatus comprising at least one pair of adjacent strip rolling stands which have drive means for controlling the length of strip between the stands to thereby control loop size between the stands, and which have a loaded strip support means to take up slack and form a substantially straight-sided loop and impose tension on the strip, means for mounting said strip support means for vertical translation, said strip support means constituting a vertically reciprocating linkage, hydraulic means for generating a tension-establishing hydraulic pressure that varies substantially as the sine of the angle which is formed between a straight side of the loop and the plane of the pass line between the roll stands and for imposing said pressure on said roller through said vertically reciprocating linkage, said pressure generating means comprising means for producing a pressure output that varies substantially as the sine of said angle, said pressure-output producing means comprising a proportioning valve having a high constant pressure chamber, an intermediate variable pressure chamber, and a low constant pressure chamber, and means for valving hydraulic fluid from the high pressure chamber successively to the intermediate pressure chamber and then to the low pressure chamber, said valving means comprising a sliding member extending from the high pressure chamber through a first bore and through the intermediate pressure chamber and through a second bore and into the low pressure chamber, said



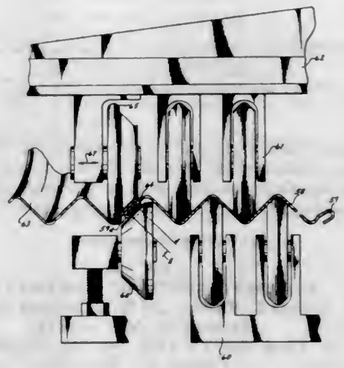
sliding member being apertured to define, at its intermediate sliding position, a first variable orifice between said high constant pressure chamber and said intermediate variable pressure chamber and a second orifice between said intermediate variable pressure chamber and said low constant pressure chamber.

3,417,586
COMBINATION LEVELER-BENDER
Aubrey H. Hughes, 903 Weizmann, San Antonio, Tex. 78213
Filed Oct. 8, 1965, Ser. No. 494,138
11 Claims. (Cl. 72—32)



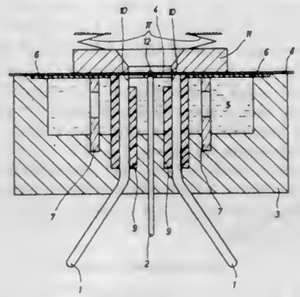
Apparatus for suspending and leveling ceilings and the like including a liquid leveling device in combination with a wire bender, said leveling device comprising a liqud container with one end of a hose communicating therewith; the remote, closed end of said hose detachably connects to said wire bender whereby the user may work to a predetermined reference prior to activating said wire bender.

3,417,587
SPIRAL PIPE MACHINE
George L. Campbell, Phoenix, Ariz., assignor to Garland Steel Company
Filed Aug. 15, 1966, Ser. No. 572,584
5 Claims. (Cl. 72—50)



An improved machine for producing spiral lock-seam pipe in which the diameter of the pipe is accurately controlled by providing means for adjusting the lap of the locking seams prior to crimping the seams into locking engagement.

3,417,588
DEVICE FOR OBTAINING MECHANICAL MATERIAL DEFORMATIONS BY MEANS OF COMPRESSION WAVES
Siegfried Schmidt, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,518
Claims priority, application Germany, Feb. 27, 1965, P 36,179
6 Claims. (Cl. 72—56)

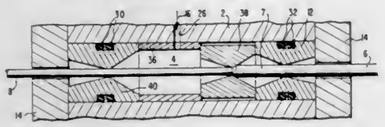


A device for producing mechanical deformations in a material, comprising an electric discharge chamber and spaced electrodes projecting into the chamber. The material to be deformed is held to form one boundary surface of the chamber and a liquid layer extending between the electrodes forms the opposing boundary surface. The construction minimizes erosion of the electric discharge chamber. In a second embodiment the liquid layer is formed on the surface of a rotating disc which thereby continuously replenishes the liquid layer forming the boundary surface.

3,417,589
PROCESS AND APPARATUS FOR WORKING METALS UNDER HIGH FLUID PRESSURE

Alfred Bobrowsky, Livingston, N.J., assignor to Pressure Technology Corporation of America, Woodbridge, N.J., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 497,324
7 Claims. (Cl. 72—60)

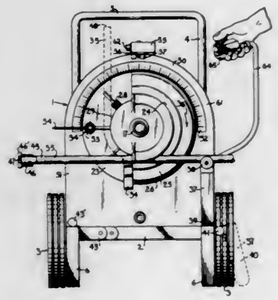


Method and apparatus for strawing and raffing at the highest pressure short of pinch off, in a pressure box having substantially landless seals at the entry end and exit end and each of said seal means being non-self-energizing.

3,417,590
CONDUIT BENDING APPARATUS

Glover C. Ensley, 525 N. Woodland Drive, Kansas City, Mo. 64118

Filed May 23, 1966, Ser. No. 551,991
9 Claims. (Cl. 72—157)



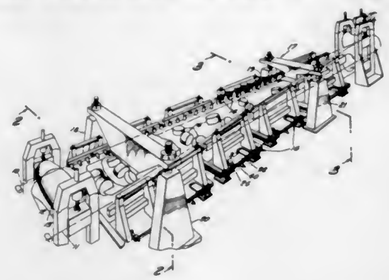
1. Portable bending apparatus comprising:
(a) a frame having a bending reel supporting shaft thereon, a pair of spaced apart wheels rotatably mounted on said frame on a common axis extending transversely of said shaft and spaced therefrom,
(b) a bar member rigidly mounted on said frame and spaced from said shaft, said bar member being positioned with respect to said wheels for supporting said shaft vertically when said bar member and wheels are resting on the ground, and
(c) means on said frame and spaced from said wheels, said means being positioned for supporting said shaft horizontally when said means and wheels are resting on the ground.

3,417,591
TUBE MILL

Charles A. Babbitt, Palos Verdes Estates, Calif., assignor to Torrance Specialty Fixtures, Inc., doing business as Torrance Machinery and Engineering, Inc., Torrance, Calif.

Filed Oct. 21, 1965, Ser. No. 499,724
1 Claim. (Cl. 72—181)

A continuous sheet of metal from which tubing is to be made has its outer edge margins engaged throughout the forming process by rollers spaced along the path of movement. A plurality of sets of rollers are disposed generally above the sheet and engage the sheet major surface at what is to be the interior of the tubing. The sets include mutually spaced rollers arranged transversely of the sheet where adjacent sets engage areal surfaces of

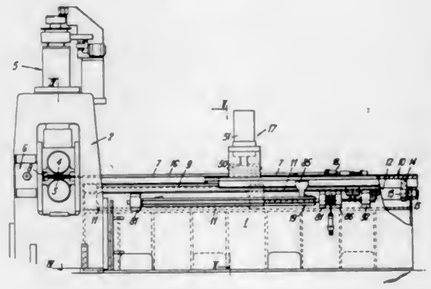


the sheet which are not engaged by rollers of adjacent sets.

3,417,592
TAPER-ROLLING OF METALS

Ronald Fielding, Sheffield, England, assignor to English Steel Corporation Limited

Filed Mar. 1, 1967, Ser. No. 619,851
Claims priority, application Great Britain, Mar. 4, 1966, 9,490/66
16 Claims. (Cl. 72—199)



Apparatus for and method of taper-rolling a length of metal suitable e.g., for leaf springs comprises applying lengthwise tension to the length of metal while the length is gripped between a fixed roll and a movable roll, the degree of taper being determined by tapered forming means interposed between the rolls the length of metal and forming means being drawn through the rolls and tapered by a balanced combination of drawing action and rolling action.

3,417,593
METHOD AND APPARATUS FOR FORMING SQUARE OR RECTANGULAR WIRE

Thomas E. Lewis, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Feb. 25, 1964, Ser. No. 347,218
4 Claims. (Cl. 72—211)



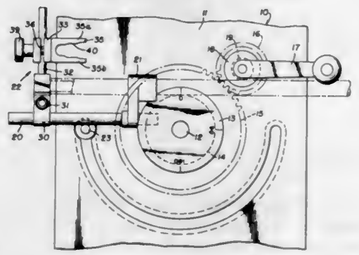
1. An apparatus for squaring round wire, comprising a base, two longitudinally closely spaced roller assemblies

carried by said base, each of said roller assemblies including a slotted U-shaped support member defining substantially parallel spaced legs, a freely rotatable roller mounted upon each of said legs adjacent the closed end of said slot in parallel spaced relation to the roller on the adjacent leg, adjusting means bridging the gap between said legs adjacent the open end of said plot adjusting the spacing between said legs and thereby the spacing between said rollers against the resilient resistive force of said U-shaped block, each of said roller assemblies being mounted on said frame to dispose the respective roller pairs of each block at right angles to each other to thereby define a longitudinal path of travel for the wire between the rollers of said pairs for reforming said wire into substantially square configurations.

3,417,594
TUBE BENDING TOOL

Emery J. Zahuranec, Solon, and Zoltan Szohatzky, Mentor, Ohio, assignors to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio

Filed Sept. 30, 1966, Ser. No. 583,301
11 Claims. (Cl. 72—318)

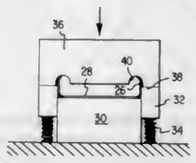


A tube bending tool having a base, a shaft rotatably supported on the base, a forming mandrel secured to said shaft, an elongated bar secured to one end to said forming mandrel for rotation therewith an a tube abutment block. The tube abutment block is mounted on said bar for movement in a multiplicity of directions for the purpose of accommdating a tube when forming bends in various planes. The tube abutment block is capable of movement about a first axis of rotation coincident with the longitudinal axis of said bar, movement about a second axis of rotation parallel to the longitudinal axis of said bar, and movement in a line of travel parallel to the longitudinal axis of said bar.

3,417,595
FORMATION OF WRAP-AROUND-EDGE TAB HANDLE

William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware

Filed May 3, 1966, Ser. No. 547,211
1 Claim. (Cl. 72—354)

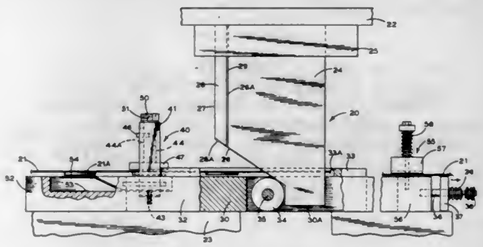


Single stroke method for curling the edge of a sheet metal blank having a cup-like cross-sectional configuration in which the base section of the sheet metal is supported by fixed die means and the sidewall portion is held in position for curling by yieldably mounted die means. The yieldably mounted die means support the sidewall while a movable punch with curling contour contacts the sidewall portion. During the curling portion of the stroke the yieldably mounted die means is moved by the movable punch means.

3,417,596
DRAW DIES AND PULL THROUGH FEEDER SYSTEM THEREFOR

Walter Richter, Syosset, N.Y., assignor to Hudson Machine & Tool Corporation, Farmingdale, N.Y., a corporation of New York

Filed Oct. 12, 1965, Ser. No. 495,178
17 Claims. (Cl. 72—361)



This disclosure is directed to a die set comprising a pair of relatively movable die members and having incorporated therewith a pull-through feed system in which the material to be worked on is advanced in a rectilinear manner a predetermined amount as the die set closes to form the work material disposed therebetween.

3,417,597
WELD STUD

Francis S. Napoli, 7 Rajdoot Marg, Chanakyapuri, New Delhi 21, India

Continuation-in-part of application Ser. No. 436,547, Mar. 2, 1965. This application Feb. 6, 1967, Ser. No. 614,159
8 Claims. (Cl. 72—377)



This invention relates to a metal welding stud and method of making same. More particularly, this invention relates to a cold formed welding stud having a shank with an enlarged recessed head at one end and a reduced tip at the opposite end of the shank. The weld stud is formed by reducing the diameter of a cylindrical workpiece at one end in several steps and enlarging the diameter of the opposite end at the same time using a sliding die and at least two punches.

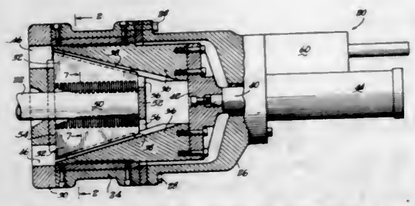
3,417,598
APPARATUS FOR POINTING WORK PIECES

Raymond L. Valente, Kankakee, Ill., assignor to Manco Manufacturing Co., Bradley, Ill., a corporation of Illinois

Filed Aug. 19, 1966, Ser. No. 573,650
17 Claims. (Cl. 72—383)

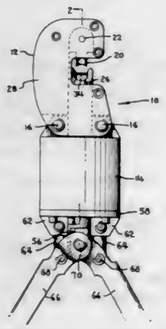
9. A tube shaping machine including: a housing means; a plurality of die means mounted in said housing means, each of said die means including a plurality of rib means extending outwardly from a base means and a bar mem-

ber interconnecting said rib means; and a hydraulic means for moving said die means from a first relatively spaced-apart position to a second position in which the rib



means associated with adjacent die means are interleaved and the bar members are positioned adjacent to each other, said die means being moved from said first position to said second position to shape a tube.

3,417,599
COMPRESSING TOOL
William Curtis Burns, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 517,582, Dec. 30, 1965. This application Oct. 26, 1966, Ser. No. 589,613
6 Claims. (Cl. 72—410)



1. A compressing device comprising a tool body, a first die fixed to said body, a second die movable relative to said body and cooperable with said first die to compress an article disposed therebetween, first means secured to said second die and movable relative to said body, second means movable relative to said body and said first means, operating means to effect movement of said second means, and first and second resilient means interposed between said first and second means, the first said resilient means having different force transmitting capabilities than the second said resilient means, whereby said operating means causes said resilient means to transmit force from said dies to an article disposed between said dies, the amount of said force being dependent upon the degree of compression of said first and second resilient means.

3,417,600
WIRE HEADING MECHANISM
Donald K. Sandmore, Oak Lawn, and Gustav O. Stegner, Naperville, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 10, 1966, Ser. No. 585,466
5 Claims. (Cl. 72—437)

1. In a device of the type described, the combination of:

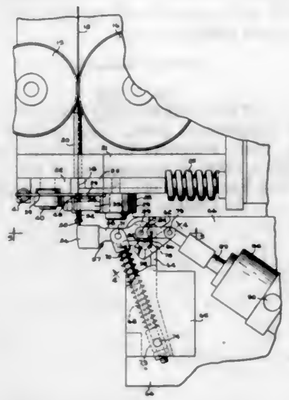
a hammer mounted for pivotal movement to and from a cocked position and an operative position and having a head for imparting an impact to an element in its path at the operative position;

means for stressing said hammer for movement from the cocked position to the operative position;

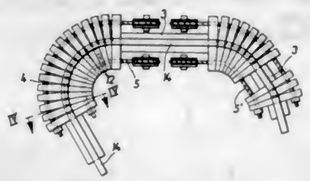
a latch releasably connectable to said hammer for effecting the movement thereof from the operative position to the cocked position;

actuating means pivotally connected to said latch for imparting back and forth movement thereto through a predetermined distance whereby said latch is connected to said hammer in its operative position in response to said movement of said latch in one direction, and said hammer is moved to the cocked position in response to movement of said latch in the reverse direction; and

means operable in response to the initial portion of the movement of said latch in said one direction after said hammer has been moved to the cocked position for disengaging said latch from said hammer whereby said hammer is actuated to the operative position.

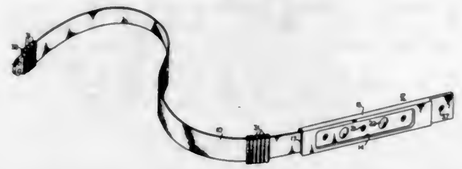


3,417,601
APPARATUS FOR THE BENDING OF SECTIONS, TUBES OR THE LIKE
Johannes Werner, Offenbach am Main, Germany, assignor to H. T. Golde G.m.b.H., Frankfurt am Main, Germany
Filed June 20, 1966, Ser. No. 558,982
Claims priority, application Germany, June 21, 1965, G 43,924
8 Claims. (Cl. 72—465)



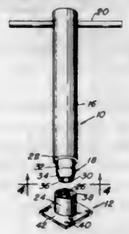
Bending apparatus in which a workpiece is accommodated in a housing duct formed by openings in a plurality of adjacent pivotable plates which can be pivoted by traction cables from an initial position in which plane parallel faces of the plates are in abutment to form a straight duct, to a fan-like positional arrangement in which tapered faces of the plates are caused to abut and the duct takes a curved course to effect bending of the workpiece in the duct.

3,417,602
TUBE BENDING MANDREL
John G. Schmitt, 2516 Norcross St., Hillcrest Heights, Md. 20031
Filed June 30, 1966, Ser. No. 562,452
12 Claims. (Cl. 72—466)



This invention is directed to a waveguide mandrel which is capable of forming a waveguide surface free of scratches or burrs. Further, the corners are at right angles and the waveguide body is free of any sidewall wrinkles. A plurality of crescent shaped pins each having a concave face that matches an adjacent circular pin are placed onto a flexible elongated rectangular strap. The flexible strap is then provided with a pulling head that pulls the mandrel through the waveguide.

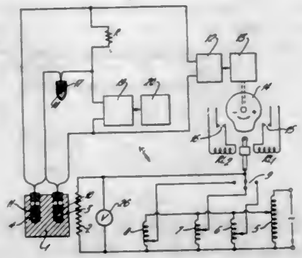
3,417,603
ELECTRICAL CONNECTOR STRAIGHTENER
Frederick A. Loew, 10141 Chestnut St., Franklin Park, Ill. 60131
Filed Oct. 12, 1965, Ser. No. 495,075
6 Claims. (Cl. 72—479)



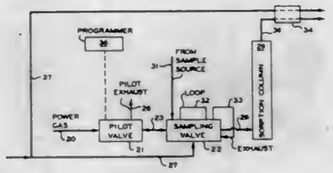
A tool for straightening and re-shaping the outer metal protective wall of electrical connectors.

3,417,604
METHODS AND APPARATUS FOR DIFFERENTIAL THERMAL ANALYSIS
Cecil Morris Bean, Basingstoke, and Robert Hirst Oliver, Sherfield-on-Loddon, Basingstoke, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 12, 1965, Ser. No. 479,224
Claims priority, application Great Britain, Sept. 3, 1964, 36,433/64
6 Claims. (Cl. 73—15)

A method and an apparatus for differential thermal analysis wherein a common environmental temperature which changes in a given direction, is applied to a sample substance and to a reference substance. A predetermined value of differential temperature between the sample substance and the reference substance, due to the onset of a reaction in the sample substance, is detected, and the differential temperature is caused to reverse the direction of change of the common environmental temperature until the differential temperature falls below the predetermined value. The common environmental temperature then resumes its change in the given direction until the predetermined value is again attained.



3,417,605
VALVE SAMPLING SYSTEM FOR TAKING GASEOUS SAMPLES AT ABOUT ATMOSPHERIC PRESSURE
William C. Hahn, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,081
5 Claims. (Cl. 73—23)

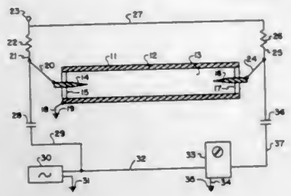


5. In a two-position, fluid-actuated, diaphragm-sealed valve in which there is provided at least two pistons for actuating the sealing of ports for sample entry, sample exhaust, sample loop, and carrier gas entry and exhaust, a first conduit means for introducing sample into said valve, a second conduit means for exhausting sample from said valve, a third conduit means for supplying carrier gas to said valve, a fourth conduit means for removing carrier gas from said valve, a sample loop connected at one interval of time to said first conduit means and said second conduit means and connected at a second interval of time to said third conduit means and said fourth conduit means, a first piston chamber defined by a first and second piston, a second piston chamber defined by the valve body and by said second piston, means to supply power gas to said first piston chamber, the improvement which comprises means for connecting said second conduit means to said second piston chamber, the volume of said second piston chamber being greater than the volume of said sample loop and said first conduit means to thereby pump sample into said sample loop by the actuation of said second piston.

3,417,606
ELECTRIC DISCHARGE DEVICE
Frank D. Werner, Bloomington, Minn., and Tenny D. Lode, Madison, Wis., assignors to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 11, 1965, Ser. No. 424,490
8 Claims. (Cl. 73—24)

An electrical measurement dependent upon temperature and molecular weight of a gas sample is obtained by providing a periodic electric discharge in a gas sample

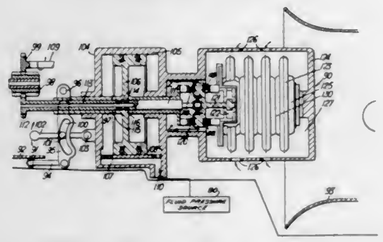
within a cavity to excite resonant acoustic waves and detecting the resonant frequency through the resulting variation in electrical impedance of an electrical discharge in the gas due to the acoustical vibration.



3,417,607
APPARATUS FOR CONTROLLING THE POSITION OF A MEMBER IN ACCORDANCE WITH THE DENSITY OF A GAS

Christopher Linley Johnson, Allestree, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed May 17, 1965, Ser. No. 456,104
Claims priority, application Great Britain, June 4, 1964, 23,303/64
3 Claims. (Cl. 73—30)



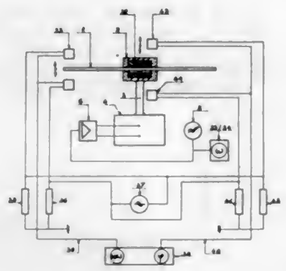
A gas turbine engine fuel system includes an apparatus responsive to the density of a gas, the apparatus controlling the position of a part of a balance mechanism for adjusting the fuel flow to the engine. The apparatus includes a chamber with a sealed bellows containing a reference gas therein, the outside of the bellows being subjected to compressor inlet air pressure. A servo mechanism is responsive to movements of the bellows due to any pressure differences thereacross, the said part of the balance mechanism being connected to the servo mechanism.

3,417,608
DEVICE FOR DETERMINING THE MODULUS OF YOUNG OF VISCO-ELASTIC MATERIALS

Pierre Barigant, Paris, France, assignor to L'Electronique Appliquee, Paris, France

Filed May 12, 1966, Ser. No. 549,666
Claims priority, application France, June 8, 1965, 19,793
3 Claims. (Cl. 73—67.1)

An apparatus is disclosed for measuring Young's modulus for visco-elastic materials, which materials have the characteristic that the ratio of the passband of the resonance curve does not exceed ten percent. A test specimen is clamped at a fixed point along its length in a vibrator device which causes flexure of the specimen between a free end thereof and the clamping point. Vibration amplitude and frequency sensors are positioned on either side of the specimen at the clamping point and at a free end of the specimen. The signals from the sensors are used to separately modulate the output of a signal generator having a frequency which is high with respect to the frequency of the vibrator, and the modulated signals are then compared by measuring the ratio of their amplitudes and the relative phase shift of their waveforms to yield results proportional to the modulus and

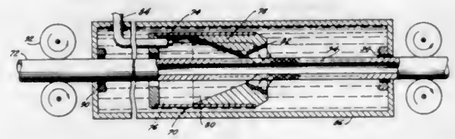


argument of the coefficient of mechanical amplification of the test piece. The actual value of Young's modulus may then be determined from these values and the value of the period of the vibration of the test piece.

3,417,609
ULTRASONIC INSPECTION TRANSDUCER

Robert L. Graham, Boulder, Colo., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California

Filed July 26, 1965, Ser. No. 474,560
2 Claims. (Cl. 73—71.5)

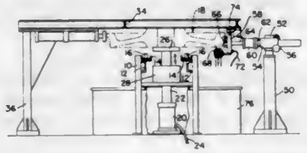


The present invention relates to nondestructive testers particularly adapted for inspecting elongated objects, such as pipes, tubes, rods, etc. A search unit is provided which has a conical transducer for transmitting and receiving ultrasonic energy in a conical pattern focused around the entire cylindrical surface of the workpiece. The search unit includes dampening means for absorbing any ultrasonic energy radiated from the back side of the transducer.

3,417,610
AUTOMATIC ULTRASONIC RAILROAD WHEEL INSPECTION SYSTEM

Roy A. Nance, Malvern, and John W. Shull, West Grove, Pa., assignors, by mesne assignments, to Automation Industries, Inc., a corporation of California

Filed Dec. 29, 1965, Ser. No. 517,363
4 Claims. (Cl. 73—67.7)

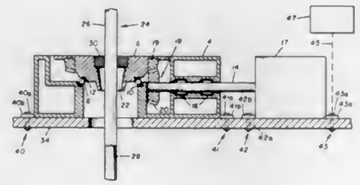


An automatic ultrasonic wheel inspection system forming a station on a conveyor line wherein a turntable on a piston automatically raises a railroad wheel from the conveyor and centers the wheel on the turntable. An ultrasonic transducer and squirter assembly is positioned at the rim of the wheel, and the wheel is rotated to enable ultrasonic inspection through 360 degrees of rotation. The ultrasonic equipment is retracted and the wheel is stopped and lowered to the conveyor line.

3,417,611
SYSTEM FOR DETERMINING DRILL-PIPE TORQUE

James T. Dean, Dallas, Wilton Gravley, Carrollton, Luther W. Randerson, Midland, and Warren B. Brooks, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Sept. 22, 1966, Ser. No. 581,215
7 Claims. (Cl. 73—136)

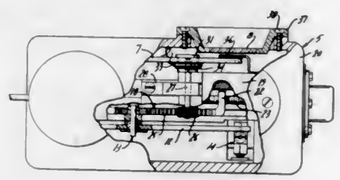


A rotary drilling system adapted to measure torque applied to the drill pipe. In the system, either the rotary table housing or the prime mover is rigidly connected to a base by means of locking means which include as a part thereof a load-sensing means, e.g., strain gauge. A force reaction which is responsive to the torque on the drill pipe will be imposed on the rotary table housing or the prime mover and will be sensed by the strain gauge in the locking means.

3,417,612
CALIBRATING DIAL MOUNTING FOR FLOW METERS

Richard A. Cedel, Erie, Pa., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Oct. 23, 1965, Ser. No. 503,312
6 Claims. (Cl. 73—272)

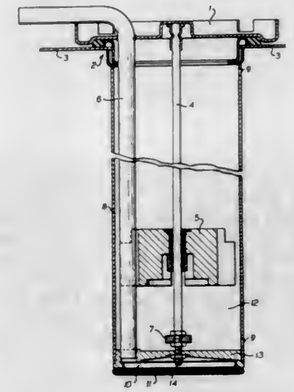


A volumetric flow meter includes a temperature and coefficient of expansion compensation system to record the volumetric flow to a selected base temperature. A pivotal lever is interconnected between a temperature responsive bellows and a variable ball type transmission unit to continuously adjust the transmission rate in accordance with the actuation of the bellows unit. The relative degree or ratios of movement of the opposite ends of a lever as a result of temperature changes varies in accordance with the setting of the pivot point. The operator adjusts the pivot point in accordance with the known specific gravity of the material being metered. The adjustment means includes a visual calibrating dial to permit rapid and accurate positioning of the pivot point. The dial is clamped to a mounting hub by a flat annular spring washer disposed between suitable flange on the mounting hub and the dial proper. The dial is provided with circumferential spaced openings such that at least one opening is always within a dial window such that with the window removed, the dial can be rotated by inserting a suitable pointed tool within one of the small openings to reset the dial. The spring washer provides sufficient frictional forces to insure that the dial is not inadvertently moved and accurately follows the positioning of the pivot point. However, the dial may be independently moved on the mounting hub for calibration by use of the proper tool.

3,417,613
IMMERSED TUBE LEVEL INDICATOR IN AUTOMOTIVE VEHICLES

Ingo Barnstorf, Frankfurt am Main-Sossenheim, Germany, assignor to VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 27, 1967, Ser. No. 612,164
Claims priority, application Germany, Feb. 4, 1966, V 30,298
11 Claims. (Cl. 73—319)

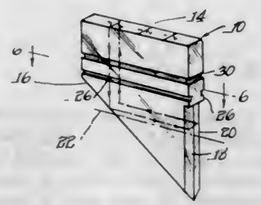


The present invention relates to an immersed tube indicator for the electrical measuring of the tank content, wherein a measuring float is guided in the immersed tube for axial movement and a suction tube is disposed in the immersed tube. A closure member closes up a tank opening and carries an indicator, and a fuel filter is disposed in the suction mouth of the immersed tube, the bottom of the latter defining a suction chamber.

3,417,614
LIQUID LEVEL INDICATOR

Francis E. Ryder, Bartlett, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

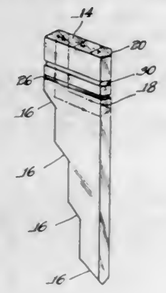
Filed Feb. 21, 1966, Ser. No. 529,019
9 Claims. (Cl. 73—327)



A liquid level indicator in the form of a transparent plate-like light transmitting member having a first edge

surface extending downwardly at an angle of forty-five degrees from an upper light receiving edge for reflecting light to a pair of V-shaped surfaces depending vertically downward from the opposite extremity of the light receiving edge whereby the light will be reflected back to the first edge surface and upwardly to the light receiving edge.

3,417,615
LIQUID LEVEL INDICATOR
Francis E. Ryder, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 26, 1967, Ser. No. 633,828
6 Claims. (Cl. 73—327)



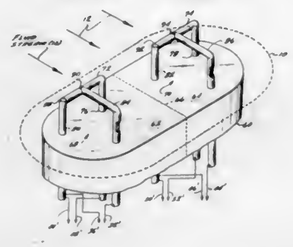
A liquid level indicator having a plate-like light transmitting body wherein a first light reflective edge of generally V-shaped cross-section depends from adjacent one extremity of the light receiving edge and a second light reflective means in the form of a series of step-like edge surfaces depends from an opposite extremity of the light receiving edge, the step-like surfaces being positioned for reflecting light to the generally V-shaped edge and back to the step-like surfaces and upwardly to the light receiving edge.

3,417,616
DEVICE FOR MEASURING DEGREE DAYS AND B.T.U.'S
William A. Smith, Rte. 3, Newton, Iowa 50208
Continuation-in-part of application Ser. No. 296,591, July 22, 1963. This application Apr. 18, 1966, Ser. No. 543,344
3 Claims. (Cl. 73—339)



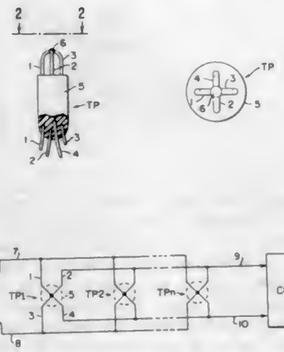
A device for measuring degree days and B.t.u.'s comprising a supporting means having a temperature responsive means such as a Bourdon tube mounted thereon. The Bourdon tube includes a shaft which is rotated upon a change in temperature. A cam gear is mounted on a power shaft which is rotatably mounted in the supporting means. A limiting arm is fixed to the shaft for rotation therewith and is movable towards and away from the cam gear. An idler gear is mounted on an idler arm which is connected to the limiting arm. The cam gear intermittently meshes with the idler gear between the extreme rotational positions of the idler arm and a counter mechanism is operatively connected to the idler gear whereby the proportional rotational displacement of the idler gear by the cam gear will be recorded when the power shaft is rotated.

3,417,617
FLUID STREAM TEMPERATURE SENSOR SYSTEM
Dieter Rall, 1133 N. Circle Drive, Whittier, Calif. 90601
Filed Dec. 13, 1965, Ser. No. 513,201
3 Claims. (Cl. 73—341)



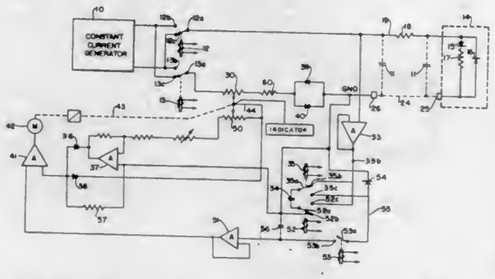
A fluid stream temperature responsive transducer having two thermal sensors with different heat exchange rates, the outputs of which are utilized to determine the solution to two heat transfer equations, disclosed sensors include: foil calorimeters with differently sized heat sinks and protruding rod-like sensors, wherein one rod is hollow to provide the desired heat exchange rate difference.

3,417,618
THERMOCOUPLE PROBE ASSEMBLY AND TEMPERATURE SENSING CIRCUITS COMPRISING THE SAME
Milton J. Morrisette, Ashland, Mass., assignor to Fenwal Incorporated, Ashland, Mass., a corporation of Massachusetts
Filed May 31, 1966, Ser. No. 553,795
2 Claims. (Cl. 73—359)



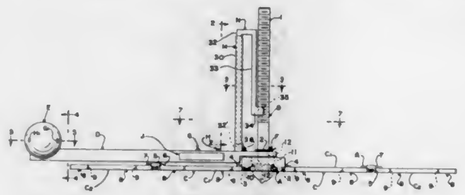
A thermocouple probe having two pairs of conductors extending through an insulating support. Each pair of conductors is of the same metal and is different from the metal of the other pair. Two of the conductors extend from the end of the insulator in one plane and the other two in a plane normal to the first plane for resistance to vibration. These ends of the conductors are electrically and mechanically connected together in a single common junction which lies on the line defining the intersection of the two planes, so as to form a pair of identical thermocouple junctions.

3,417,619
SINGLE WIRE MEASURING DEVICE FOR BATHYTHERMOGRAPH SYSTEM
Samuel A. Francis, Marion, Mass., assignor to The Buzzards Corporation, Marion, Mass., a corporation of Massachusetts
Filed Jan. 24, 1966, Ser. No. 522,505
8 Claims. (Cl. 73—362)



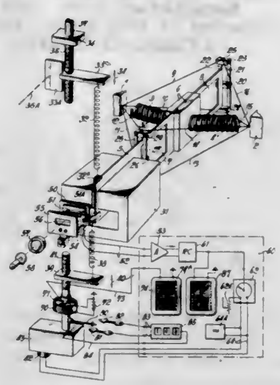
A condition sensing resistance in a sensor probe is connected by a single wire and a sea return path to a known resistance within the measuring system. The sensing resistance is supplied through the transmission path with a constant current. Polarity sensitivity switches are connected in a circuit in such a manner that unipolar constant amplitude current pulses alternately flow through the known and unknown resistances in opposite directions. By measuring the difference in the signal amplitudes developed across the known and unknown resistance, an error signal can be obtained. The error signal is then amplified by a servo amplifier and a drive motor which then repositions the known resistance to produce a zero error voltage. The actual adjustment of the resistance then provides a direct indication of the actual fluid condition being measured.

3,417,620
GOLF PRACTICE DEVICE
John Curry, 5393 Sayre Ave., Fremont, Calif. 94536
Filed Oct. 24, 1966, Ser. No. 588,952
9 Claims. (Cl. 73—379)



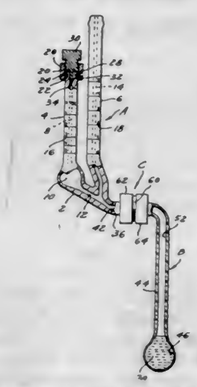
A golf practice device whereby a simulated ball is struck by the golf club, and an indication of the yardage and trueness of the stroke is indicated. Said indication of the yardage being recorded by a rotatable arm which drives a threaded indicator pin along an upright screw threaded post, the distance traveled by the pin along an adjacent scale carried by the arm being the measure of the yardage. Said trueness of the stroke being recorded by electrical contacts positioned inside the simulated ball, and upon impact with the club, the contacts are activated to complete an electric circuit, whereby indicator lights are flashed to produce the indication of trueness.

3,417,621
METHOD AND APPARATUS FOR GRAVITY MEASUREMENTS
Reinhard F. K. Schulze, Berlin-Lankwitz, Ernst Heinrich Brede, Berlin-Tegel, and Eberhard Thebis, Berlin-Lichterfelde, Germany, assignors to Continental Elektroindustrie A.G. Askania-Werke, Berlin-Mariendorf, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 212,516, July 26, 1962. This application Aug. 23, 1965, Ser. No. 483,022
5 Claims. (Cl. 73—382)



A gravimeter for use on moving vehicles has its gravity-responsive mass pivoted and restrained for motion about a horizontal axis. The mass is balanced by spring force which is continuously adjusted to normally hold the mass in null position. Any gravity-responsive tendency of the mass to slowly depart from the null position is sensed electrically and causes a signal to control a motor which changes the spring adjustment in the sense required to preserve the null position, such change being indicated as a measure of gravity. Fast departures of the mass from the null position, as are due to vehicle attitude, are damped by speed-responsive magneto-electric damping.

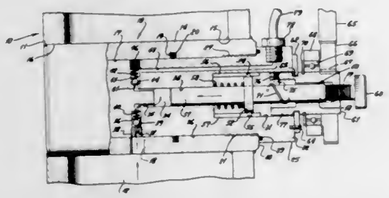
3,417,622
PRESSURE GAUGE
Roger Gilmont, Douglaston, N.Y., assignor to Roger Gilmont Instruments, Inc., Great Neck, N.Y., a corporation of New York
Filed May 17, 1966, Ser. No. 550,654
15 Claims. (Cl. 73—400)



A pressure gauge comprising a fixed pressure-measuring assembly designed to function with a supply of measuring liquid adapted to be fed to and drained from said

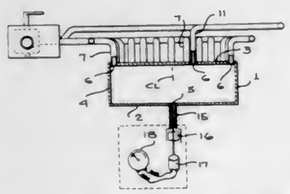
assembly, said liquid being adapted to be contained within a reservoir which is rigidly pivotally mounted on said assembly so as to be pivotally movable from an inoperative position progressively through a plurality of operative positions, the reservoir portion of the equipment preferably being removable therefrom for cleaning purposes.

3,417,623
FLUID SAMPLER
Leslie M. Andrasko, 631 N. Milpas St., Santa Barbara, Calif. 93103
Filed Oct. 11, 1965, Ser. No. 494,347
6 Claims. (Cl. 73—422)



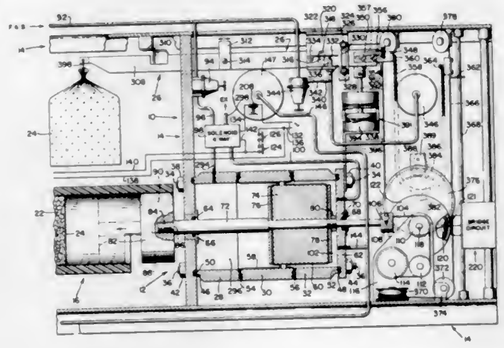
A sampler for removing a fluid sample from a closed conduit. A tubular bushing is permanently installed transverse to the conduit. A housing enclosing a reciprocating sampling pump is removably inserted within the bushing so that the input check valve opening is aligned with an opening in the bushing. The pump element is a plunger normally elevated by means of a spring and adapted to be depressed by cam actuation in response to a rotating drive element thereby to reciprocate the plunger. The plunger is nonrotatably mounted in its housing in a reciprocating position and has on it an interrupted spiral cam. A drive cam mounted on a rotating cap sleeve presses against the spiral cam causing the reciprocating movement and the cap sleeve is rotated by a pair of gears. An adjusting screw modifies the extent of reciprocation of the plunger, thereby to adjust the pump action.

3,417,624
FLUID VORTEX TRANSDUCER
Romald E. Bowles, 12712 Meadowood Drive, Silver Spring, Md. 20904, and Billy M. Horton, 9712 Kensington Parkway, Kensington, Md. 20795
Application Feb. 23, 1965, Ser. No. 439,500, now Patent No. 3,276,259, dated Oct. 4, 1966, which is a continuation of application Ser. No. 49,601, Aug. 11, 1960. Divided and this application Apr. 19, 1966, Ser. No. 543,722
16 Claims. (Cl. 73—432)



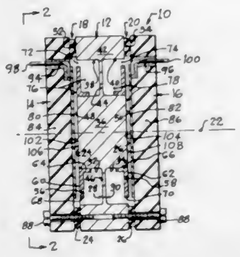
The invention provides a vortex chamber into which fluid is introduced radially so as to flow to an egress orifice coaxial with the chamber. A rotary device is located downstream of the egress orifice so as to rotate in a sense and at a velocity determined by the sense and rate of rotation of fluid in the egress orifice. The rate and sense of rotation of the device is converted to an electrical signal by a generator driven by the rotary device.

3,417,625
APPARATUS FOR MEASURING THE FAT CONTENT OF ANIMAL TISSUE
Robert C. Whitehead, Jr., Oreland, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,390
10 Claims. (Cl. 73—432)



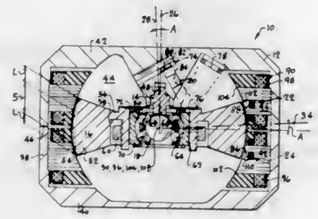
This application discloses a semi-automatic push button operated apparatus that is useful in measuring the percent of fat in animal tissue that employs: a sleeve for retaining a porous bag of animal tissue therein; a first push button operated fluid actuated ram to compress the tissue in the sleeve so that an indicator on the ram can indicate the volume of the compressed deaerated animal tissue; a second push button operated unit to inject probes into the compressed animal tissue to take its temperature and a unit to weigh the animal tissue after it has been compressed and wherein the utilization of these values of volume, temperature and weight measurement provide a percent of fat measurement in the animal tissue.

3,417,626
SINGLE-AXIS ACCELEROMETER
Hugh E. Riordan, Wyckoff, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,539
7 Claims. (Cl. 73—516)



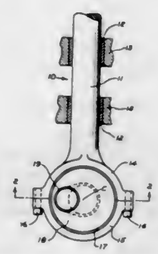
An accelerometer comprising a conductive center plate with a sensing axis and a pair of axially-spaced conductive end plates, which are sealingly connected to said center plate. The center plate has a pair of axially-spaced end faces respectively having annular, coaxial grooves disposed in back-to-back arrangement. Said grooves have radially-inner sidewalls defining a proof-mass portion with axially-outer surfaces disposed substantially at right angles to said axis and have radially-outer sidewalls defining a support frame portion, and have a common bottom wall defining a diaphragm-spring portion, which interconnects said proof mass and said frame. Said end plates sealingly connect to said frame portion to form a pair of variable-volume chambers for containing damping fluid. Said end plates also have axially-inner surfaces arranged parallel to said proof-mass surfaces and separated therefrom by a pair of axial gaps, which vary oppositely in thickness with a displacement of said proof mass relative to said end plates.

3,417,627
FREE-ROTOR GYRO
Bernard Parker, Teaneck, N.J., and Leon Weisbord, New York, N.Y., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Mar. 17, 1966, Ser. No. 535,191
4 Claims. (Cl. 74—5.6)



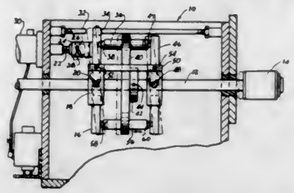
Arrangement for minimizing the quadrature-type null-seeking error torque produced by casing axis on a free rotor gyro using a twin-stack drive with the pair of stacks axially spaced about the casing axis and having a pair of coil windings respectively wound thereon to provide a corrective torque substantially equal and opposite to the error torque.

3,417,628
MOTION CONVERTING MECHANISM
Herman L. Paul, Jr., 450 Westover Road, Stamford, Conn. 06902
Filed Oct. 21, 1966, Ser. No. 588,509
3 Claims. (Cl. 74—48)



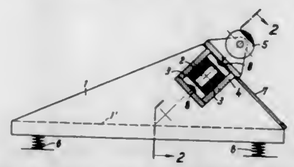
A compact, relatively lightweight mechanism for converting reciprocating motion to rotary motion and vice versa in which a reciprocable unit is slidable in a support and a rotatable unit is mounted for rotation relative to the support. The reciprocable unit carries a disc which is rotatable about a first axis. The rotatable unit includes a shaft which is rotatable about a second axis that is parallel to the first axis. Integral with the shaft is a pin which registers with an opening in the disc and is rotatable relative to the disc about a third axis which is parallel to the first and second axes. The third axis is offset at all times from the first and second axes.

3,417,629
CAM MECHANISM
Meyer Bloom, 955 Rutland Road, Brooklyn, N.Y. 11212
Filed Aug. 16, 1966, Ser. No. 572,727
2 Claims. (Cl. 74—56)



Cam mechanism for imparting axial oscillatory motion to a rotating shaft is provided by a parallel pair of plates having central apertures with the shaft extending through the apertures. The plates extend across the axis of the shaft and are pivoted for inclining their planes with respect to the axis of the shaft. A push rod adjusts the inclination of the plates and a cross strap holds the plates parallel. A radially-extending cam follower plate attached to the shaft extends between the pair of plates and carries a first cam follower shaft which extends between and rides on the inner surfaces of the plates to oscillate the rotating shaft axially in accordance with the inclination of the plates. A second cam follower shaft is slidably carried through the cam follower plate at a point diametrically opposed from the first cam follower shaft and extends between and rides on the inner surfaces of the plates to balance the first cam follower.

3,417,630
VIBRATORY APPARATUS
Johannes Brüderlein, Rheinhausen, Germany, assignor to Fried Krupp Gesellschaft mit beschrankter Haftung
Filed June 27, 1966, Ser. No. 560,473
Claims priority, application Germany, July 3, 1965, B 82,669
4 Claims. (Cl. 74—61)

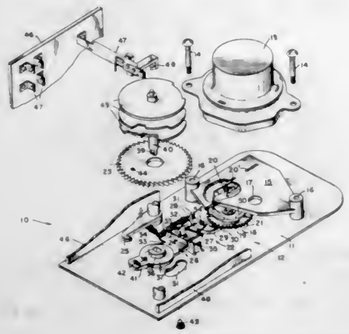


Resonant vibratory apparatus arrangement having a working mass to be linearly vibrated, a counter mass, and connecting spring means, the working mass including two spaced side walls and a transverse member which interconnects the side walls and reinforces the working mass. The counter mass is subjected to a periodically varying force and is formed by a hollow box oriented transversely to the principal direction of vibration of the working mass and encloses the transverse member of the working mass. The spring means are disposed connectingly between the transverse member and the box enclosing the same.

3,417,631
INTERMITTENT DRIVE MECHANISM AND A TIMER UTILIZING SAME
Stephen F. Murray, Heather Hills, and George A. Hamilton, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,917
12 Claims. (Cl. 74—125)

A spring biased dog means pivotally mounted on the free end of an arm pivotally mounted on a shaft, inter-

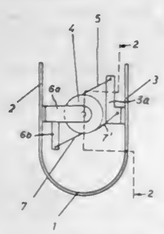
mittently engages a drive means. Engagement of the dog means by the drive means causes an engaging means pivotally mounted on the dog means to drive a ratchet means mounted on the shaft.



3,417,632
DEVICE FOR CONVERTING TUNING FORK VIBRATION TO ROTARY MOTION

Roland Siefert, Bad Durrheim, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany

Filed Apr. 24, 1967, Ser. No. 633,223
Claims priority, application Germany, Apr. 22, 1966, 59,065
5 Claims. (Cl. 74—142)



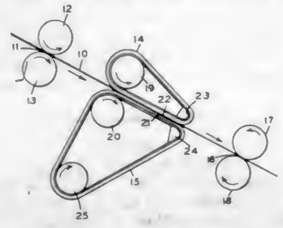
One tine of a timepiece tuning fork carries a bearing for one end of a ratchet wheel shaft and, if desired, a detaining pawl engaging on the wheel to prevent backward rotation of the wheel and shaft, while the other tine carries at least one drive pawl for engagement with the wheel to impart forward rotation. The other end of the shaft is held in virtually fixed location where it provides a takeoff for a work train.

3,417,633
DRAFTING APRON HAVING IMPROVED FRICTIONAL QUALITIES

James E. Robinson, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Nov. 27, 1964, Ser. No. 414,183
5 Claims. (Cl. 74—232)

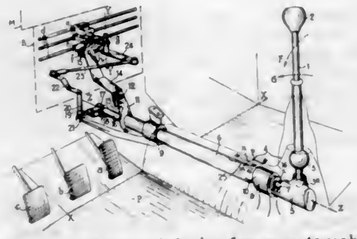
1. A textile fiber drafting apron having inner and outer layers of synthetic rubber, said inner layer having dispersed throughout the body thereof, an additive comprising alkali metal salts selected from the group consisting of aliphatic sulfates, aliphatic sulfonates and mixtures thereof, said salts containing 10–16 carbon atoms, said additive being compatible with said inner layer rubber and present therein in the range of from 1 to 6 parts by weight of the additive to 100 parts by weight of the rubber, said additive imparting a surface characteristic thereto which does not impair its frictional qualities, allowing it to be easily and efficiently driven by a rearwardly positioned drive roll and making it possible for the apron to pass over a nose bar with a minimum of grabbing or vibration.



3,417,634
CONTROL DEVICE FOR AN AUTOMOBILE GEAR-BOX

Marcel Dangauthier, Paris, France, assignor to La Publicite Francaise, Paris, France, a French body corporate

Filed Jan. 31, 1967, Ser. No. 612,963
Claims priority, application France, Feb. 1, 1966, 47,939
9 Claims. (Cl. 74—473)

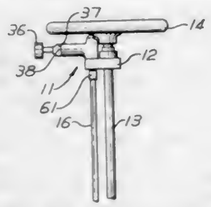


A floor-mounted control device for an automobile gearbox comprising a change-speed lever pivotally mounted on the vehicle floor by means of a ball joint and connected to a block which is rotatable and slidable by the change-speed lever on a fixed axis and is connected to the speed selecting lever and to the speed engaging lever of the gearbox in such manner that angular oscillations of the block about said axis shifts the selecting lever and axial movemeans of the block along said axis shifts the speed engaging lever.

3,417,635
TRANSMISSION CONTROL MECHANISM

Ralph R. Day, Aurora, and Raymond W. Faberé and Karl J. Mogk, Naperville, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed July 1, 1966, Ser. No. 562,170
4 Claims. (Cl. 74—484)

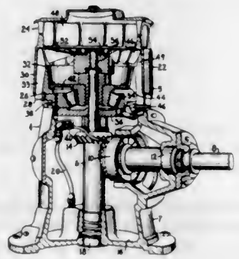


For a heavy motor driven vehicle a single shift control lever mounted on the steering column provides reversing direction with no need to pass through any other range. This control handle is manipulated in two independent ways: swingable parallel to the steering wheel between forward and reverse positions and turned about its own axis to change speed ranges, the latter action requiring more rotation to shift between successive drive ratios than can be effected by the operator without releasing and regrasping the control handle knob.

3,417,636
HEAT TRANSFER APPARATUS

Troy Dawn Randolph, Lubbock, Tex., assignor to Randolph Manufacturing Company, Lubbock, Tex., a corporation of Texas

Filed Apr. 25, 1966, Ser. No. 545,015
5 Claims. (Cl. 74—606)



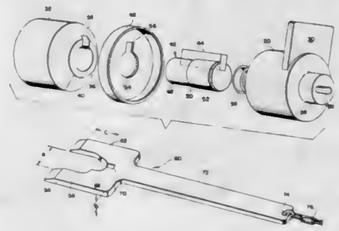
This invention discloses a heat exchanger for a gear drive, particularly adapted for use in connection with deep well turbine pumps for irrigation and other industrial uses. It includes a vertical driven shaft with a carrier mounted within a housing and through which the shaft extends. The housing supports a bearing member and the heat exchanger surrounds the bearing member and also is in contact with the carrier. The carrier takes the thrust from the bearing member. The heat exchanger includes an inner wall with vertical fins or fins running parallel to the shaft, and also includes an outer wall spaced from the inner wall and fins are closely adjacent the outer wall to provide air passageways for movement of air therethrough, to dissipate the heat from the bearing. There is a fan mounted on the upper end of the shaft and a cover for the heat exchanger to prevent dust and dirt from entering the mechanism from the top. The lower portion of the housing includes a pump mechanism for pumping lubricant through tubes to the bearing member, and the oil is brought back to the housing through tubes after it has lubricated the bearing, if there is any excess left over. The oil does not aid in preventing the bearing from becoming hot except as a lubrication. The bearing is entirely air cooled otherwise. The reason is the oil does not contact the carrier below the bearing, so that there is no possibility of the oil cooling the bearing.

3,417,637
MANUAL OVERRIDE UNIT FOR AUTOMATIC VALVES

John H. Vanderbilt, Windsor, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 29, 1966, Ser. No. 568,819
20 Claims. (Cl. 74—625)

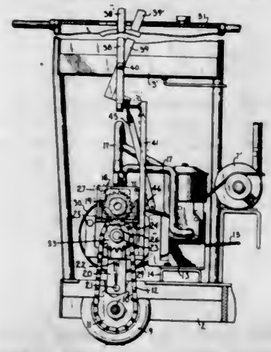
A manual override unit is provided for use with automatic valves that have rotatable stems to permit the valves to be safely disengaged from the automatic control and operated manually. The unit includes a first member having means connected to the stem of the valve to rotate the stem when the first member is rotated, a second member, means connected to the second member to rotate the second member when the automatic control is actuated, connecting means connecting the first and second members to transmit rotary motion from the second member to the first member with the connecting means being slidably engageable with the second member, and a manual override lever including disengaging means for contacting the second member and wedging the connecting means and the second member out of engagement and engaging means for engaging the connecting means when the connecting means is disengaged from the second member to permit the manual override member to be used manually to rotate the connecting means and hence to rotate the first member and the valve stem.



3,417,638
ROAD SPEED DRIVE MECHANISM FOR SELF-PROPELLED CONCRETE SAWS AND THE LIKE

Victor H. Haase and John R. Harclerode, Kansas City, Mo., assignors to Robert G. Evans Company, Kansas City, Mo., a corporation of Missouri

Filed July 24, 1967, Ser. No. 655,618
10 Claims. (Cl. 74—720)



A drive mechanism for self-propelled concrete saws utilizes a rocking bracket to selectively engage and disengage a drive connection to a prime mover and a platform hinged for rocking on the bracket for selectively engaging and disengaging alternate drive means operative through a hydraulic motor driven by a pump which is in turn powered by the prime mover.

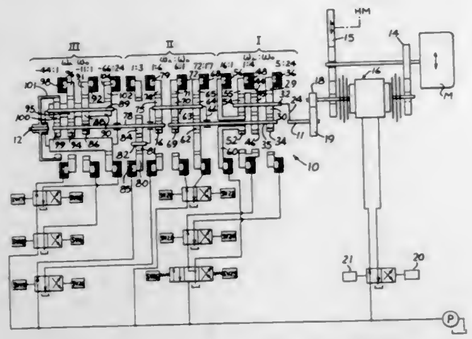
3,417,639
PLANETARY SPEED CHANGE TRANSMISSION FOR MACHINE TOOL FEED DRIVES

Earl E. Johnson and Walter L. McCann, Fond du Lac, Wis., assignors to Giddings & Lewis Inc., a corporation of Wisconsin

Filed Apr. 6, 1966, Ser. No. 540,541
3 Claims. (Cl. 74—758)

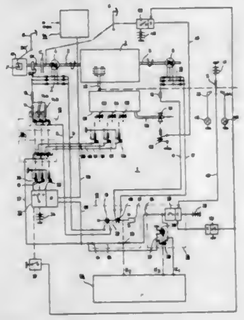
A machine tool feed drive transmission is described in which three modular planetary transmission units are

stacked in series to effect a large number of closely spaced output speed steps in an upper range, and a plurality of more widely spaced steps in a lower range, and



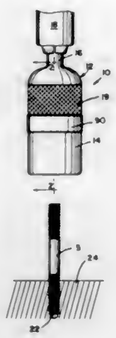
in which a differential planetary gear set is employed to achieve both updrive and downdrive output speed ratios in the first transmission unit.

3,417,640
ELECTRIC CONTROL MEANS FOR SYNCHRONIZED GEAR SHIFTING IN MOTOR VEHICLE VARIABLE SPEED GEAR BOXES
Karl Heinz Schmidt, Kreis Hersbruck, Vorra, and Benno Bildat, Erlangen, Germany, said Bildat assignor to said Schmidt
Filed Oct. 18, 1965, Ser. No. 497,399
Claims priority, application Germany, Nov. 4, 1964, Sch 36,060
20 Claims. (Cl. 74—866)



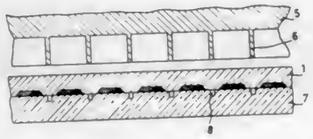
A gear shifting system for a variable speed gear box transmission having electric generators connected to be driven by the input and output shafts of the gear box to provide electrical quantities responsive to the speeds of these respective shafts. A coupling for momentarily uncoupling the engine drive shaft and the gear box input shaft while the gears are shifted into neutral preparatory to shifting to a preselected gear ratio. Circuit elements having electrical characteristic quantities relatively proportional to the selectable gear ratios of the gear box and connected by a preselector to the input and output shaft generators and an electrical comparing device such that when the gears to be engaged to provide the desired ratio are in synchronism a gear shifting motor is energized to effect the selected engagement after the gears of the gear box are in neutral without further uncoupling the gear box input and engine shafts. In a vehicle having a plurality of driving motors, a locking system is provided for maintaining the same transmission gear ratio for all gear boxes of the driving motors.

3,417,641
POWER WRENCH FOR TIGHTENING STUDS IN ENGINE BLOCKS AND THE LIKE
Ernest R. Shinn, Palos Park, Ill., assignor of one-half to Robert M. Bencur, Oak Lawn, Ill.
Filed July 19, 1967, Ser. No. 654,666
7 Claims. (Cl. 81—53)



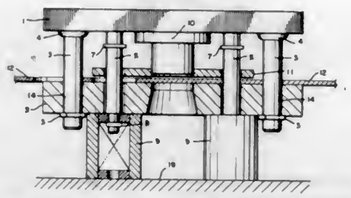
A power wrench for driving and tightening studs in engine blocks and the like. The wrench body has a shank suitable for mounting in a drill press chuck and a socket for telescopic reception over the stud to be tightened. As the stud bottoms in the socket of the continuously rotating wrench body, a series of wedge elements are caused to move into wedging engagement with the stud and, thereafter, the rotational movement of the wrench body causes the wedge elements to become self-energized against the stud with increased wedging action so that the stud is turned in a tightening direction. Withdrawal of the wrench from the stud deenergizes the wedge elements so that they release the stud.

3,417,642
METHOD OF DIVIDING A BODY COMPRISING A NUMBER OF ELECTRIC CIRCUIT ELEMENTS INTO PARTS
Louis Kempenaers, Forest Bruxelles, Belgium, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,736
Claims priority, application Belgium, Aug. 27, 1965, 668,918
3 Claims. (Cl. 83—13)



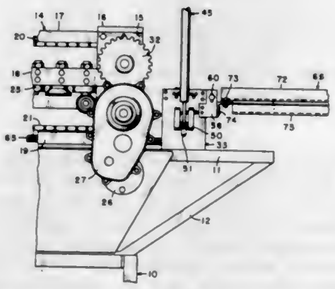
A method of dividing a body comprising a plurality of circuit elements, i.e., a semiconductor wafer having diodes, resistors, etc. formed at selected surface portions thereof, into a multiplicity of portions each containing a circuit element comprising the steps of forming on a transparent plate a pattern corresponding to the cellular form of the cutting tool, securing the body to be cut onto the transparent plate with the circuit elements of the body within the bounds of the pattern formed on the transparent plate and thereafter operating the cutting tool to form the desired division.

3,417,643
PUNCHING APPARATUS
Edward D. Bennett, 1053 Coolidge Ave., Union, N.J. 07083
Filed July 13, 1966, Ser. No. 564,909
2 Claims. (Cl. 83—146)



A parallel plate die set unit is provided in which a die opening is formed directly in one of the plates and a stripper is provided for separating a punch member on the punch plate from the material punched.

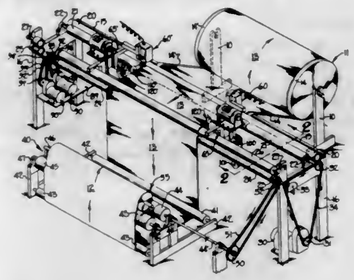
3,417,644
STRIP-FEEDING AND SHEARING MECHANISM
Theodore J. Bottom, Kirkwood, Mo. (% Aluma-Kraft Manufacturing Co., 1030 Manchester Road, Manchester, Mo. 63011)
Filed Aug. 23, 1965, Ser. No. 481,714
16 Claims. (Cl. 83—230)



A strip-feeding and shearing mechanism which includes a means for feeding a strip across a cutting plane, defined by a blade mounted on a cutting head, and into a receiver attached to and movable with the cutting head. The strip engages a stop means connected to the receiver a predetermined distance from the cutting plane to move both the receiver and cutting head from one limit to another, whereby to maintain the strip length constant between the stop means and cutting plane. An electrical circuit is conditioned by the movement of the cutting head from the said one limit so as to halt the strip-feeding means. The strip-feeding means holds the cutting head in the said other limit by engagement of the strip with the stop means. The blade is actuated to shear the strip while the head is located in the said other limit, and the head is subsequently returned to the said one limit to condition the electrical circuit for starting the strip-feeding means.

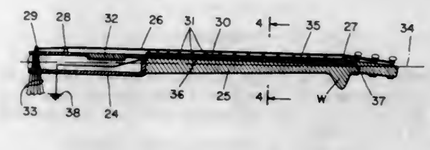
3,417,645
APPARATUS FOR SENSING AND CUTTING ALONG THE EDGE OF A THICKENED PORTION OF A TRAVELING WEB
John D. Brock, Dalton, Ga., assignor of fifty percent to Richard A. Burnette, Dalton, Ga.
Filed July 6, 1965, Ser. No. 469,608
10 Claims. (Cl. 83—368)

Apparatus for sensing the edge of a thickened portion of a traveling web having both thickened and unthickened portions. Movement of the edge sensing means in either direction from a neutral position will actuate a switch to



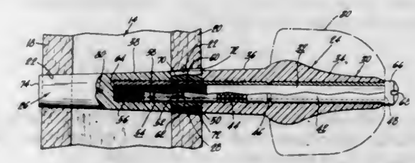
compensate for variations in the transverse position of the traveling web.

3,417,646
NECK CONSTRUCTION FOR A STRINGED MUSICAL INSTRUMENT
Jack C. Cookerly, 7655 Atoll Ave., North Hollywood, Calif. 91605; and George R. Hall, 13613 Huston St., Sherman Oaks, Calif. 91403
Filed Oct. 22, 1965, Ser. No. 501,572
3 Claims. (Cl. 84—293)



An electrical stringed musical instrument incorporates an elongated metallic plate immediately beneath the fingerboard and above the longitudinal center line of the neck portion of the instrument. The plate is oriented to serve the dual purpose of absorbing compression to resist bowing tendencies of the neck portion and acting as a return circuit for current passing through the instrument strings.

3,417,647
MECHANICAL TUNING PEG FOR STRINGED INSTRUMENTS
Kenneth S. Clark, 300 Croyden Road, Cheltenham, Pa. 19012
Filed Dec. 8, 1967, Ser. No. 689,060
6 Claims. (Cl. 84—305)



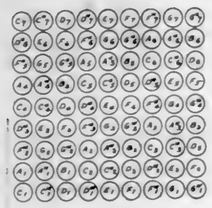
A tuning peg for stringed instruments which may be locked in the desired position to a bushing inserted in the peg box of the instrument. The locking mechanism

includes an internal axial screw which draws axially opposed sections of the peg against the side faces of the bushing, and at the same time by means of beveled inserts in the peg sections, provides a radial expansion force against the bore of the bushing to provide a double acting locking effect.

3,417,648
MATRIX KEYBOARD PIANO INSTRUMENT

Arnold Honig, 317 Allen St., Syracuse, N.Y. 13210

Filed Oct. 23, 1965, Ser. No. 503,772
15 Claims. (Cl. 84—423)

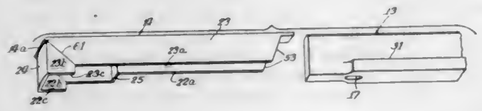


This invention relates essentially to a keyboard for use in combination with a pneumatic piano instrument. Said keyboard having a plurality of keys in a two-dimensional array corresponding to musical notes in a like chromatic succession, whereby a piano will respond to the actuation of said keys.

3,417,649
KEYBOARD CONSTRUCTION

Orville T. Wood, Essex, Conn., assignor, by mesne assignments, to Vocaline Company of America, Incorporated, Old Saybrook, Conn., a corporation of Connecticut

Filed Sept. 4, 1964, Ser. No. 394,586
17 Claims. (Cl. 84—433)



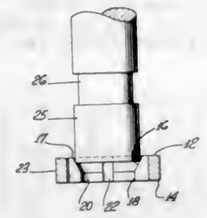
Musical instrument keyboard including keys with wooden shanks and molded plastic key caps thereon. The key caps have tops with sides extending downwardly having edges engaging shoulders on the shanks, and fronts extending downward below the edges positioned on the shoulders with sides extending back therefrom. The caps are molded with a parting line protuberance extending from the front and top of the cap rearwardly and downwardly to the edge of the sides.

3,417,650
RETAINING RING

Andre J. Varrin, Long Beach, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Sept. 26, 1966, Ser. No. 582,135
8 Claims. (Cl. 85—8.8)

A deformable retaining ring adapted to be snapped into an annular groove on a shaft. The ring has a chamfered inner surface on one end and a series of spaced axially extending grooves on its inner surface between the end faces of the ring. The grooves permit temporary enlargement of the ring so that it may be forced onto the shaft.

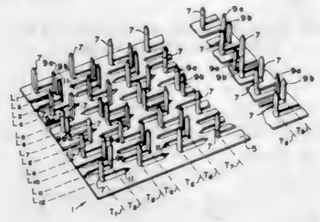


The ring snaps into the annular shaft groove when in axial alignment therewith.

3,417,651
CONNECTOR PLATES

Walter G. Moehlenpah, Ladue, Mo., assignor to Hydro-Air Engineering, Inc., St. Louis, Mo., a corporation of Missouri

Filed Oct. 21, 1966, Ser. No. 588,510
8 Claims. (Cl. 85—13)

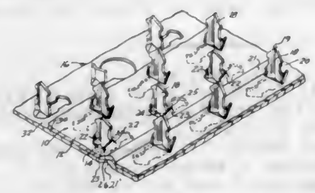


Toothed integral metal connector plates for securing together wood members. Each of the teeth has a shank portion joint at one end to the face of the plate and a tip portion at its other end. The tip portions have side edges converging to a point. Some of the teeth have their points centered and are therefore symmetrical teeth, while the points of other of the teeth are offest from the center and are unsymmetrical teeth. The teeth are arranged in rows of unsymmetrical teeth and rows of symmetrical teeth with the latter rows lying to the sides of the rows of unsymmetrical teeth. When the teeth are driven into wood members the unsymmetrical teeth bend transversely to a controlled or limited degree toward an adjacent row of symmetrical teeth and cooperate with the symmetrical teeth to grip the wood member.

3,417,652
REINFORCING GUSSET PLATE

Donald C. Menge, Warren, Mich., assignor to Troy Steel Corporation, Troy, Mich., a corporation of Michigan

Filed Dec. 23, 1966, Ser. No. 604,422
2 Claims. (Cl. 85—13)



A nailing plate having a plurality of projecting teeth adapted to be pressed into wood members to form a joint

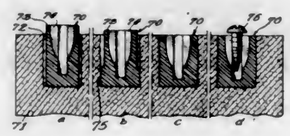
of a truss structure or the like and a reinforcing gusset plate positioned intermediate the wood members and the nailing plate and having apertures for receiving the teeth so that the gusset plate reinforces the joint.

3,417,653
SPIN FASTENED ANCHOR

Henry N. Staats, 1344 Linden Ave., Deerfield, Ill. 60015, and Maurice D. Levitan, 411 Romona Road, Wilmette, Ill. 60091

Filed Jan. 14, 1966, Ser. No. 520,734
2 Claims. (Cl. 85—63)

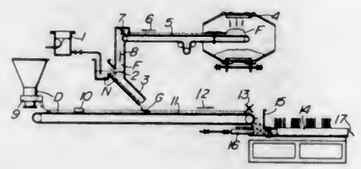
An anchor or a fastener which has at least a skin portion of a thermoplastic resin material on a cylindrical body; the body of the anchor being provided with internal means engageable with a rotatable tool to be driven at electric hand drill speed in order that the anchor may be frictionally heated by rotation against the sides of an aperture to receive the anchor, thereby softening the thermoplastic resin to a flowable state while the anchor is inserted into the aperture whereafter the rotation is stopped so that the resin may harden, thus securing the anchor in the aperture within the base material.



3,417,654
AUTOMATIC CONTINUOUS APPARATUS FOR PRODUCING DYNAMITE

Kazuo Tsuzihashi, Katsushige Matsumoto, Yoshichika Ueno, Toshiaki Okamoto, Kesatoshi Nagaoka, and Yasuhiro Ono, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Original application Sept. 7, 1965, Ser. No. 485,271, now Patent No. 3,329,540, dated July 4, 1967. Divided and this application June 2, 1966, Ser. No. 571,662
Claims priority, application Japan, Sept. 8, 1964, 39/50,636; Nov. 14, 1964, 39/64,063; Mar. 15, 1965, 40/15,159, 40/15,160, 40/15,161
5 Claims. (Cl. 86—1)

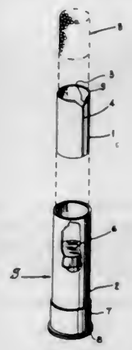


A constant volume feeding apparatus for wet collodion cotton comprising a rotary drum having opposite sides with openings and a plurality of lifting blades on the interior of the drum for lifting cotton from a mass in the drum at the bottom thereof. A conveyor belt extends through the drum and a pair of guide plates are mounted in the drum on both sides of the conveyor belt to straddle the same and define therewith a measuring chamber for receiving cotton from the lifting blades. Rotary cutters are disposed at the level of the top of the guide plates and adjacent the outlet opening of the drum for forming a continuous and constant level of cotton deposited into the measuring chamber.

3,417,655
METHOD FOR LOADING SHOTGUN SHELLS

William J. Middleton, Jr., Orlando, Fla., assignor to Chellife Corporation, Orlando, Fla., a corporation of Florida

Original application June 10, 1964, Ser. No. 373,944, now Patent No. 3,313,235, dated Apr. 11, 1967. Divided and this application Feb. 13, 1967, Ser. No. 645,070
5 Claims. (Cl. 86—25)

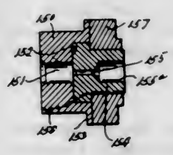


A method for loading shotgun shells which comprises the steps of (1) positioning a member within the shell so as to form a concentrically aligned receptacle having one of its ends protruding above the peripheral edge of the open end of the shell, (2) inserting a predetermined quantity of shot within the receptacle, and (3) folding the protruding end of the receptacle so as to terminate the open end of the shell and prevent undesirable emergence of the shot from the shell prior to firing thereof.

3,417,656
POWER CONTROLLER AND AUGMENTOR FOR CARTRIDGE AND PYROTECHNICALLY POWERED DEVICES

John A. Wells, Northridge, Calif., assignor to Irving Air Chute Company, Inc., Lexington, Ky., a corporation of New York

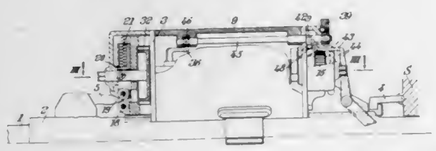
Filed Sept. 20, 1965, Ser. No. 488,482
2 Claims. (Cl. 89—1)



A power controller and augmentor provided in connection with pyrotechnically powered devices, such as a mortar. It has an orifice providing member located between a load receiving chamber and a breech mechanism and which orifice providing member is constructed of erodable, combustible or consumable material which during the passage of an explosive charge through the orifice will enlarge the orifice for the purpose of increasing the energy output in the load receiving chamber whereby to

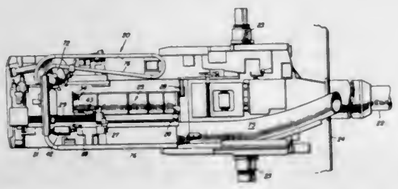
maintain a substantial constant pressure in order to move the load in the chamber of the actuator from the start of load movement and during travel along the chamber.

3,417,657
TOOTHED ROTOR MECHANISMS FOR AUTOMATIC GUNS FED FROM TWO CARTRIDGE BELTS
Bernard Maillard, Geneva, and Paul Hug, Aire-Geneva, Switzerland, assignors to Brevets Aero-Mecaniques S.A., Geneva, Switzerland
Filed June 26, 1967, Ser. No. 648,930
Claims priority, application Luxembourg, July 1, 1966, 51,456/66; Feb. 23, 1967, 53,051/67
16 Claims. (Cl. 89—33)



A feed mechanism including two tubular toothed rotors is actuated, from an oscillating pinion operated by the recoil of the gun, through two torsion rods housed in said rotors and coupled together in series.

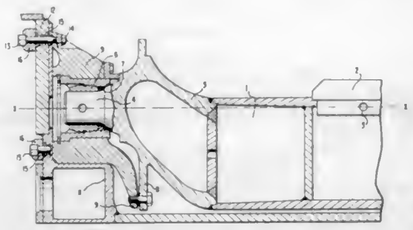
3,417,658
EMPTY CASE EJECTOR MECHANISM
Edward R. Betzold and Carl T. Johnson, Minneapolis, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 31, 1967, Ser. No. 658,310
8 Claims. (Cl. 89—33)



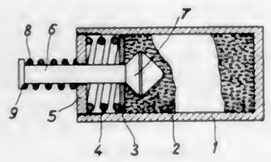
An empty case ejector mechanism including an empty case tray which recoils as a unit with the gun housing and receives the spent powder can extracted during the counter-recoil of the gun. After the powder can is latched into the tray, an empty case tray drive rotates the tray through an arc of about 180° to position the can in alignment with the empty case ejector. A chain is activated to push in a single motion, the empty case from its tray, down a chute, and to the outside of the gun mount shielding.

3,417,659
VEHICULAR SUPPORT FOR A MORTAR
Ewald Poppe, Obervellmar, Germany, assignor to Rheinstahl Henschel A.G., Kassel, Germany, a corporation of Germany
Filed Feb. 16, 1967, Ser. No. 616,718
Claims priority, application Germany, Nov. 11, 1966, R 44,560
5 Claims. (Cl. 89—40)

This invention relates to a support for mounting a heavy gun, particularly a mortar, in a vehicle. The support comprises a horizontal support means which is positioned transversely to the vehicle driving direction and in proximity to the bottom of the vehicle. The support means is supported by ball and socket joints at the sides of the vehicle, the ball and socket joints receiving journals therein which are fixed to the end of the support means.

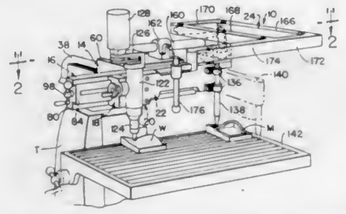


3,417,660
SHOCK ABSORBER FOR AN AUTOMATIC FIREARM
Karl Harbrecht, Eisental, near Buhl, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Oct. 5, 1966, Ser. No. 584,413
Claims priority, application Germany, Oct. 8, 1965, R 41,719
1 Claim. (Cl. 89—198)



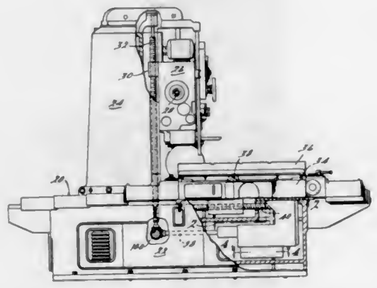
A shock absorber for an automatic firearm having a cylinder containing a plurality of pellets and a push rod with a displacement piston in the pellets operative under spring action against an end wall of the cylinder and a cover plate in contact with the pellets.

3,417,661
THREE DIMENSIONAL MILLING MACHINE WITH PANTOGRAPH CONTROL
Joseph J. Dancsik, 23550 Oneida, Oak Park, Mich. 48237
Filed Sept. 8, 1966, Ser. No. 578,039
14 Claims. (Cl. 90—13.1)



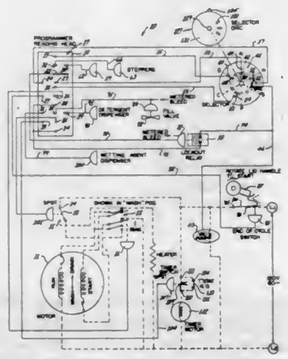
The invention involves a three-dimensional milling machine device with a pantograph control having the capability of machining in three dimensions over an area defined by a substantially rectilinear perimeter, having adjustable features permitting shift of the machining cutter over such area without change of the workpiece position, and further having a vertically slidable unitary motor-driven cutter and tracer structure in balanced relationship to and upon a supporting cross-slide arm member in the device.

3,417,662
POSITIONING MECHANISM FOR MACHINE TOOLS
Charles B. De Vlieg and Charles R. De Vlieg, Bloomfield Hills, and Richard A. Jerue, Birmingham, Mich., assignors to De Vlieg Machine Company, Royal Oak, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 485,506, Sept. 7, 1965. This application Oct. 23, 1965, Ser. No. 511,274
4 Claims. (Cl. 90—16)



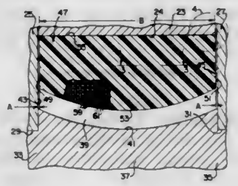
A machine tool having electrically controlled clutches disposed in the drive train between the drive motor and a work or tool support. These clutches can be used for selecting a gear path through which power will be delivered to the support and they are also effective for disengaging the motor from the support at certain critical times in the positioning cycle. At such times the support is isolated from the inertia of the motor. The machine tool is further equipped with fluid power operated gear shifters for remotely establishing speed settings for the support.

3,417,663
PNEUMATIC PROGRAMMING MEANS AND THE LIKE
Roland D. Beck, Anaheim, and Harold W. Rice, Fullerton, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,169
6 Claims. (Cl. 91—36)



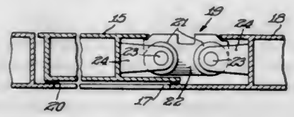
This disclosure relates to a program member that is rotated relative to a reading head to fluidly interconnect together various ports interrupting the reading surface of the reading head by a timer motor and that is rapidly rotated relative to the reading head by a pair of pneumatically operated actuators to override the timer motor with such overriding actuators being controlled by the program member itself, the disclosure also relating to a selector valve being mounted on the same plate that forms the reading head and to various shapes and combinations of channel means formed in the program member for interconnecting various ports of the reading head together.

3,417,664
VANE CONSTRUCTION FOR PNEUMATIC MOTOR
William S. Brucker, Towson, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Aug. 29, 1966, Ser. No. 575,887
8 Claims. (Cl. 91—119)



The device disclosed is a portable, power tool having a pneumatic motor which includes a rotor and stator. The rotor has a plurality of radially movable vanes each of which is reinforced with relatively hard, low moisture absorbing, low expansion threads extending in a direction longitudinally of the vane and axially of the motor.

3,417,665
ROTARY ACTUATOR ASSEMBLIES FOR RESTRICTED DIAMETER USES
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Original application July 10, 1963, Ser. No. 293,997. Divided and this application Sept. 27, 1965, Ser. No. 490,582
6 Claims. (Cl. 91—177)

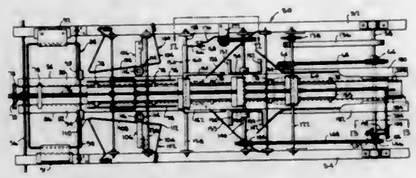


A powered hinge structure comprises a pair of rotary hydraulic actuators which are coupled for coordinated operation, with means supplying one of the actuators with hydraulic actuating fluid, and means hydraulically coupling the other of the actuators operatively with the one actuator whereby the other of the actuators is actuated by the hydraulic fluid supplied to the one actuator. Seals along the wing shafts of the actuators are drained off to the lowest pressure prevailing in the coupled actuators.

3,417,666
APPARATUS FOR SETTING UP PACKAGING TRAYS
Frederick T. Waterhouse, Wilbraham, Mass., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 6, 1966, Ser. No. 540,570
14 Claims. (Cl. 93—52)

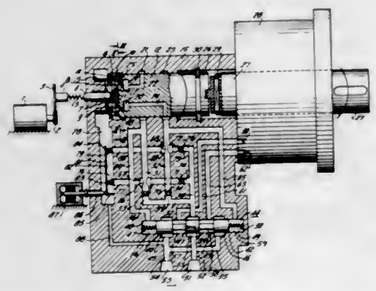
Apparatus for continuously setting up pre-assembled, self-erecting, self-locking, folded-flat rectangular trays including means whereby folded-flat cartons are continuously conveyed along a horizontal path of travel and in which

the cartons include one pair of opposed walls having lock flaps which walls and flaps are "reverse folded" below the path of travel, and another pair of forwardly and rearwardly extending walls is erected in sequence, causing all



walls to be automatically oriented into a rectangular relation and the "reverse folded" side wall lock flaps are folded into locked engagement with the other pair of opposed walls.

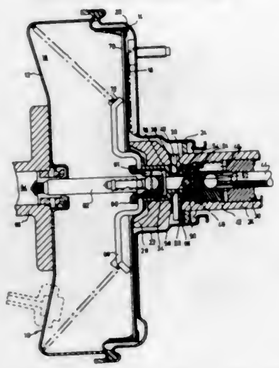
3,417,667
OIL PRESSURE TORQUE AMPLIFIER
Yo Ikebe and Jun Ikebe, Tokyo, and Seiuemon Inaba, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Nov. 7, 1966, Ser. No. 592,655
Claims priority, application Japan, Nov. 10, 1965, 40/91,167; 40/91,168; 40/91,169; 40/91,170; 40/91,171
9 Claims. (Cl. 91—375)



An input torque is applied to a rotatably mounted disc in a housing. A shaft coaxially mounted with the disc for rotation has an end area having an end surface in close proximity with the disc. A hydraulic motor is coupled to the shaft at its end opposite the end area. A pair of slots are formed in the end area of the shaft in spaced relation to each other, each being of substantially lunar configuration with varying radial width. A chamber is formed in the housing adjacent the disc. A pair of spaced windows formed in the disc and cooperating with the slots to provide variable openings from the slots to the chamber through the windows upon relative angular displacement of the disc and shaft. A pilot valve includes a piston member in a valve chamber. Fluid under pressure is supplied to and removed from the valve chamber. Conduits extend from the valve chamber, the slots and the hydraulic motor.

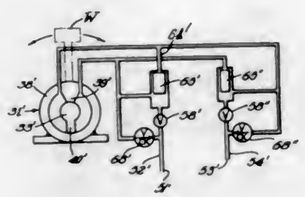
3,417,668
FLUID FLOW CONTROL VALVES
Thomas G. Lawson, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Mar. 4, 1966, Ser. No. 531,854
Claims priority, application Great Britain, Mar. 5, 1965, 9,377/65
14 Claims. (Cl. 91—376)

A valve arrangement, particularly for servo boosters, comprising first and second co-axial valve seats and first and second valve elements arranged for cooperation with the respective valve seats, there being a press-fit connection between the valve elements which allows one of said elements to rock relative to the other thereof; a servo-booster incorporating said valves also including a lost motion connection whereby an inner thrust member connected to an output member may be mechanically picked



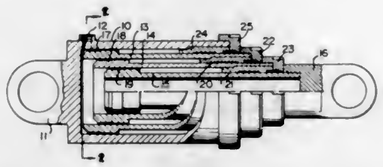
up by an outer sleeve connected to the input member whereby the members may be operated mechanically in the event there is failure of fluid pressure for operating the booster, the lost motion connection comprising a radial pin on the outer sleeve extending into an annular recess on the inner sleeve, the annular recess having a greater width than the pin.

3,417,669
ROTARY ACTUATOR CONTROL CIRCUIT MEANS
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Application Sept. 27, 1965, Ser. No. 490,582, which is a division of application Ser. No. 293,997, July 10, 1963. Divided and this application Sept. 19, 1967, Ser. No. 668,791
8 Claims. (Cl. 91—421)



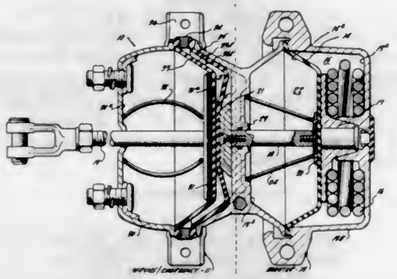
A hydraulic rotary actuator has means for supplying and exhausting hydraulic fluid alternatively with respect to the subchambers therein to effect relative oscillations of the shaft and the body of the actuator and the hydraulic circuitry has flow control valving functioning in response to overload on one exhaust side of the system to shut off the hydraulic supply to the other side of the system, and during reversals in the supply/exhaust relationship controlling exhausting fluid to bypass through a check valve.

3,417,670
HYDRAULIC RAM
Rolf A. Madland, Arlington Heights, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 18, 1966, Ser. No. 543,422
3 Claims. (Cl. 92—52)



A telescoping ram is disclosed including a plurality of coaxial piston members each including abutment means at the load end thereof for contacting one another and transmitting forces through such abutment means rather than through the length of the piston members. All but the smallest piston member includes an internally mounted sleeve maintained captive between an intermediate internal shoulder and the aforementioned abutment means for applying the force exerted by the fluid within the ram to the corresponding piston member adjacent the load end of that piston member. Each of the piston members includes an integrally formed outwardly extending member for contacting the base end of the internally mounted sleeve of the next outermost piston member.

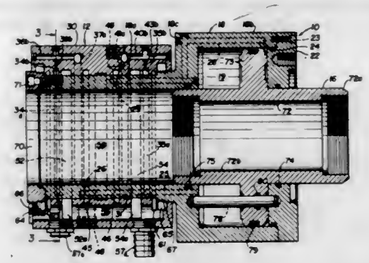
3,417,671
MOTOR VEHICLE BRAKING APPARATUS
Billy E. Stevenson, Huntington Beach, and Thomas R. Rumsey, Inglewood, Calif., assignors to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Filed Nov. 14, 1966, Ser. No. 593,818
3 Claims. (Cl. 92—62)



A brake assembly comprising a housing having two similar diaphragms therein abutting one another over diaphragm areas having a non-friction agent thereon and a ring with undercut portions for sealingly supporting the diaphragms within the housing.

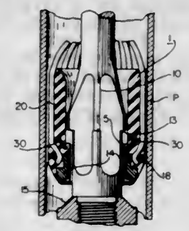
3,417,672
ROTARY HYDRAULIC CYLINDER
Merritt B. Sampson, Shaker Heights, Ohio, assignor to The S-P Manufacturing Corporation
Continuation-in-part of application Ser. No. 467,346, June 28, 1965. This application June 28, 1967, Ser. No. 649,515
19 Claims. (Cl. 92—106)

A compact rotary hydraulic cylinder for actuating a work holder, having a non-rotary fluid distributor mating with a portion of the cylinder. Annular grooves in the distributor supply fluid to a rotating piston chamber, interconnected spaced cavities provide a fluid bearing sup-



port for the distributor, and drain grooves are distributed along the mating portion.

3,417,673
SWAB CUP
Hulie E. Bowerman, deceased, late of Tarrant County, Tex., by Zora Mae Bowerman, executrix, Tarrant County, Tex., assignor to Oil States Rubber Co., a corporation of Texas
Filed Aug. 1, 1966, Ser. No. 569,527
4 Claims. (Cl. 92—241)

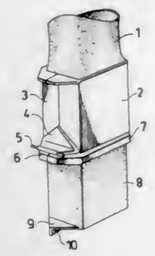


A resilient swab cup body having a rigid base and having reinforcing wires embedded axially in the periphery of the cup and pivotally captivated in the base, and reinforcing means to uniformly distribute loading pressures in the lower end of the cup body and to control the degree of extrusion of the body material downwardly and outwardly between the lower ends of the wires, the reinforcing means comprising a rigid cup-shaped ring member embedded in the body just above the base and opposite the lower ends of the wires, the ring being displaceable toward the base to thereby flow a controlled amount of base material toward and between the wires before the ring contacts the base.

3,417,674
METHOD AND APPARATUS FOR FORMING PARALLELEPIPEDIC PACKAGES HAVING FOLDED-UP END FLAPS FROM A CONTINUOUS TUBULAR MATERIAL AND FOR EFFECTING A TWO-STAGE ADVANCE OF THE MATERIAL TO ENSURE PROPER REGISTRATION FOR INDICIA ON THE PACKAGE
Hans A. G. Abrahamson, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a company of Sweden
Filed Dec. 10, 1965, Ser. No. 512,984
Claims priority, application Switzerland, Jan. 12, 1965, 862/65
6 Claims. (Cl. 93—8)

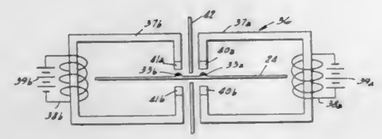
A method and apparatus for forming parallelepipedic packages from a continuous length of tubular material comprises a pair of mold halves which square up the tubular material into a rectangular configuration, a pair of pressing jaws coordinated with the mold halves which

form a transverse seal and effect a primary advance of the package material between the mold halves, and a pair of folding flaps which function to flat-press triangular flaps projecting from both sides of the package body and also serve to effect a secondary advance of the package



material, the extent of this secondary advance being determined by the amount of movement imparted to the folding flaps and being adjustable to ensure proper placement of printing or other indicia on the package material in relation to the package being formed.

3,417,675
METHOD OF MAKING A PLASTIC BAG AND A MAGNETIC SLIDERLESS FASTENER THEREFOR
Steven Ausnit, 124 E. 61st St., New York, N.Y. 10021
Original application Mar. 10, 1965, Ser. No. 438,510, now Patent No. 3,326,399, dated June 20, 1967. Divided and this application Feb. 3, 1967, Ser. No. 613,821
5 Claims. (Cl. 93—35)



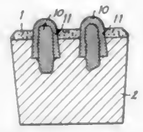
A method for making a magnetic plastic fastener comprising either forming integrally with or extruding on or bonding to a thermoplastic sheet one or more thermoplastic beads having embedded therewithin magnetizable wires or particles and magnetizing the wires or particles to form a closed magnetic circuit when a pair of the beads are brought into abutting engagement with one another. A similar method for making a plastic bag or pouch having such a magnetic plastic fastener.

ERRATUM

For Class 93—52 see:
Patent No. 3,417,666

3,417,676
REFLECTING PRODUCTS IN CEMENT CONGLOMERATE AND THE PROCESS FOR THEIR MANUFACTURE
Raymond Lenoble, Rue du Moulin 1, Gosselies, Belgium
Filed June 8, 1965, Ser. No. 462,352
Claims priority, application Belgium, June 22, 1964, 649,560
1 Claim. (Cl. 94—1.5)

1. Reflecting products for roads, comprising a bottom layer consisting of a cement conglomerate and a reflecting mass constituting a top layer and consisting of a thorough mixture of cement, finely divided hard rock, glass spheres and dyeing pigments, said reflecting mass



having an outer reflecting surface provided with locally projecting portions made of rock fragments.

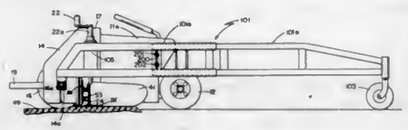
3,417,677
METHOD OF BRIGHTENING BITUMINOUS STREET SURFACES AND BITUMINOUS STREET SURFACES SO BRIGHTENED
Erwin Moser, Rheinfelden, and Johannes Schmitt, Efringen, Kirchen, Germany, assignors to Swiss Aluminum Ltd., Chippis, Switzerland, a joint-stock company of Switzerland
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,572
Claims priority, application Switzerland, Mar. 10, 1965, 3,336/65
5 Claims. (Cl. 94—22)

Brightening of bituminous street coverings by scattering on the still hot and to some extent pasty covering layer aluminium granules having a diameter from 0.5 to 10 mm. and having an especially intensely cleft and fissured surface, and rolling said granules into the covering layer.

3,417,678
BITUMINOUS RESINOUS COMPOSITIONS FOR CONSTRUCTION PURPOSES
Johannes W. Ewers, Hamburg, Germany, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 21, 1965, Ser. No. 427,173
Claims priority, application Germany, Feb. 24, 1964, S 89,666
18 Claims. (Cl. 94—23)

Novel polyepoxide compositions containing bituminous materials are disclosed. These compositions comprise (1) a polyepoxide, (2) a naphthenic acid amide having at least three hydrogen atoms attached to amino nitrogen atoms and (3) a bitumen. Uses of the above-noted compositions, such as in the preparation of coatings and floor coverings, are also disclosed.

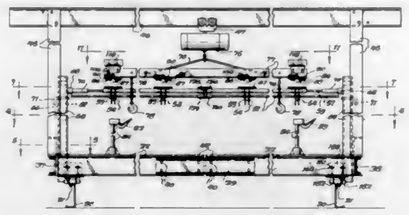
3,417,679
ROAD SURFACING MACHINE
Charles A. Crayton, 455 North St., Randolph, Mass. 02368
Continuation-in-part of application Ser. No. 482,474, Aug. 25, 1965. This application Oct. 25, 1967, Ser. No. 680,612
5 Claims. (Cl. 94—46)



A machine is described which is suitable for forming a new surface of asphalt on a road which has been pitted and eroded by use and weather. A smooth level surface is automatically obtained without any special adjustment, and the machine can also be used in small confined areas

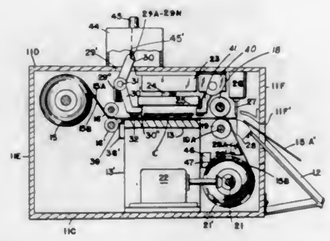
such as parking lots. The machine comprises a hopper, a rear screed, a rear roller and two forward arms, each supported by a separate pivotable wheel and by the roller shaft.

3,417,680
POSITIONING HIGHWAY JOINT SUPPORTS AND SHEAR PLATES IN PAVING MATERIAL
Alfred F. Crone and Freel F. Bryan, Williamsville, N.Y. assignors to Acme Highway Products Corporation, Buffalo, N.Y.
Filed July 10, 1967, Ser. No. 652,198
27 Claims. (Cl. 94—51)



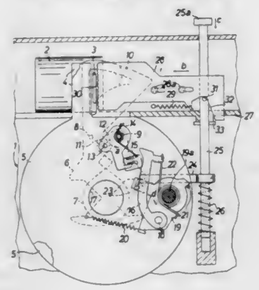
This invention relates to the positioning of joint support assemblies, which include joint supports and center or shear plates, in paving material while the same is in plastic or semi-liquid condition, and the apparatus shown for this purpose includes means for positioning the joint support assemblies in correct relation to the pavement. The apparatus also includes supporting brackets on which the center plate and joint supports may be assembled in correct relation to each other and to the machine for sinking into the pavement. The invention also includes cooperating parts on the center plate and the joint supports for facilitating assembly of these units on the apparatus.

3,417,681
APPARATUS FOR TRANSDUCING AND RECORDING INFORMATION
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 297,719, July 25, 1963. This application May 27, 1966, Ser. No. 553,396
7 Claims. (Cl. 95—1.1)



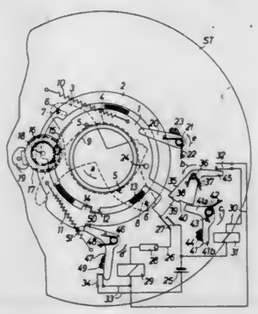
The disclosure broadly teaches recording apparatus for providing an original and a duplicate copy of a business or other similar type transaction, including a housing having means for receiving a card from a card holder, said card being of the credit card type and having indicia identifying the particular holder. The housing is provided with a recording member, at least one portion of the surface thereof being photosensitive to record images. Manually settable means are provided for setting in variable type information such as the particular goods or services being purchased and the value thereof. Further means are provided for developing the images upon the recording member and for dispensing one receipt of the transaction while retaining at least one other receipt of the transaction within the housing.

3,417,682
EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERAS HAVING STATIONARY SUPPORT FOR INDICATOR NEEDLE
Franz Landbrecht, Unterhaching, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Nov. 30, 1965, Ser. No. 510,599
Claims priority, application Germany, Dec. 17, 1964, A 22,969
10 Claims. (Cl. 95—10)



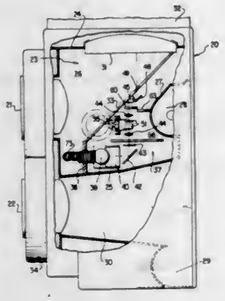
One of two pivotable blades of a diaphragm shutter for photographic cameras is provided with a tracking portion which can engage the needle of an exposure meter to thus insure that the aperture size is a function of scene brightness. The blades are biased to uncocked positions by a spring and are moved to cocked positions by an impeller. A fixed stop serves as an abutment for the needle when the latter is engaged by the tracking portion of the one blade.

3,417,683
EXPOSURE CONTROLLING STRUCTURE FOR PHOTOGRAPHIC CAMERAS
Gerd Kiper, Unterhaching, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed Apr. 9, 1965, Ser. No. 446,890
Claims priority, application Germany, Apr. 24, 1964, A 45,859
22 Claims. (Cl. 95—10)



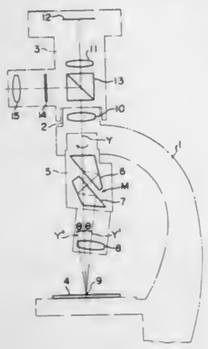
A photographic camera wherein the armature (41) of a relay (31) prevents movement of shutter blades (3, 4) when the charge of the battery (25) for the relay decreases below an arbitrarily selected minimum level.

3,417,684
TWIN LENS REFLEX CAMERA WITH BUILT-IN SPOT PHOTOMETER
Jacob Krebs, 2445 Fairmount Ave., Philadelphia, Pa. 19130
Filed Oct. 8, 1965, Ser. No. 494,014
5 Claims. (Cl. 95—10)



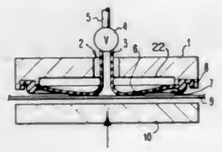
A twin lens reflex camera has a viewing screen at the top of the viewing chamber to allow simultaneous composing and focusing of an upright image and matching of a comparison spot of light with the hue of a small portion only of the image on said screen. A diagonal mirror in the viewing chamber has a small opening through which a small spot of light is directed onto the screen while the intensity of the light spot is being varied until the desired matching is obtained.

3,417,685
STEREOSCOPIC PHOTOGRAPHING DEVICE AND PHOTOGRAPHING DIRECTION INDICATOR FOR SUCH DEVICE
Jinichi Kato, Hiroshi Hasegawa and Mitsutaka Miyadera, Tokyo, Japan, assignors to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Oct. 20, 1965, Ser. No. 498,781
Claims priority, application Japan, Oct. 26, 1964, 39/83,328; Dec. 14, 1964, 39/70,036
7 Claims. (Cl. 95—12)



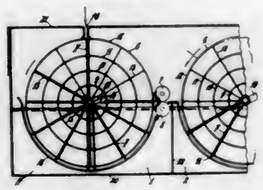
A stereoscopic photographic device in which a rotatable single objective and a prismatic reflector are provided between a camera casing and a movable stage for a specimen. The reflector inclines the objective optical axis relative to the principal optical axis, the front conjugate point of the objective being the cross point of the objective and principal optical axis and in which the objective optical axis is rotatable about the principal optical axis. A reducing optical system is also provided for projecting reference indicia provided on two spaced plates to be photographed to provide an indication of the direction from which a specimen was photographed.

3,417,686
VARIABLE VOLUME HIGH PRESSURE AMMONIA DEVELOPMENT DEVICE
Jack O. Hildebrand and Richard B. Mulvany, San Jose, and Perrin F. Smith, Saratoga, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 3, 1965, Ser. No. 511,406
10 Claims. (Cl. 95—89)



A variable volume ammonia developer including means for sealing a development chamber to a film to be developed. A rigid plate is held from contact with the film to be developed by clearance heels upon sealing such that excess air is removed from the face of the film to provide a minimum amount of air in the development chamber during development. The rigid plate is affixed to a resilient pad which in turn is affixed to the top wall of the development chamber. Application of ammonia into the development chamber after sealing causes the rigid plate to depress the resilient pad and the plate to rise from the face of the film to be developed to thereby provide a development chamber which is large in volume as compared to the development chamber, in which air is contained, prior to application of ammonia to the development device.

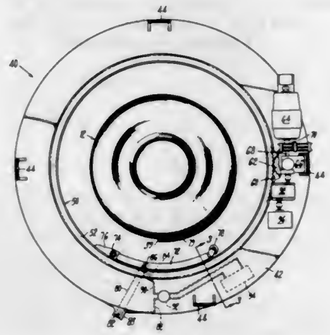
3,417,687
AUTOMATIC FILM PROCESSING APPARATUS
Thomas Henry Hills, Church Hill House, Church Hill, Merstham, Redhill, Surrey, England
Filed Nov. 17, 1965, Ser. No. 508,245
Claims priority, application Great Britain, Nov. 25, 1964, 47,885/64
10 Claims. (Cl. 95—93)



A transport device for cut photographic film in a processing apparatus consisting of a rotatable paddle wheel, for each of a plurality of stages in the process, for receiving a flat portion of cut film between adjacent paddles, a pair of rollers associated with each paddle wheel for receiving each portion of film from the associated paddle wheel, and transferring the film to the paddle wheel in the next following container. Each paddle wheel is provided with a member for pushing each portion of film radially outwards with respect to the axis of rotation of the paddle wheel, so as to cause the outside

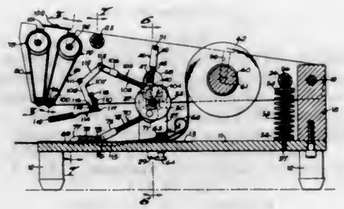
edge of the film to enter the pinch of the associated pair of rollers.

3,417,688
COIL-TIGHTENING APPARATUS
Howard W. Shakely, deceased, late of Coraopolis, Pa., by Caroline E. Shakely, executrix, Coraopolis, Pa., assignor, by mesne assignments, to The Stanley Works, New Britain, Conn., a corporation of Connecticut.
Filed July 13, 1966, Ser. No. 565,020
10 Claims. (Cl. 100—8)



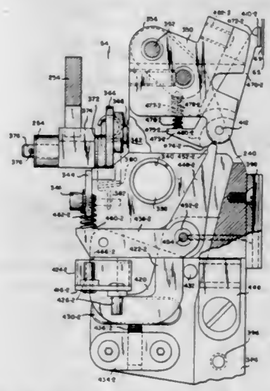
A coil tightener having a power operated pressure arm supported on a frame and engageable with a coil for applying a radial force thereto, and drive means for effecting relative rotation between the arm and the coil to apply said radial force circumferentially about the coil in a coil winding direction.

3,417,689
LABEL IMPRINTER
Chester A. Brethen, 6916 S. Tamiami Trail, Sarasota, Fla. 33581
Continuation of application Ser. No. 482,804, Aug. 24, 1965. This application Oct. 30, 1967, Ser. No. 679,263
8 Claims. (Cl. 101—69)



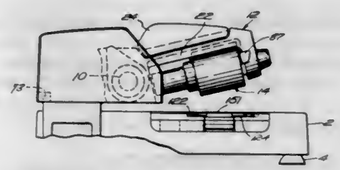
A label imprinter having a base for supporting a strip of labels to be imprinted, a carriage pivotally mounted to the base and crank means for reciprocating the carriage to move imprinting means carried on the carriage toward and from the base for imprinting the labels as an incident of the pivotal reciprocation of the carriage. The imprinter further includes means for steppedly advancing the labels for seriatim imprinting thereof and inking means for adjustably inking the imprinting means. The imprinter includes independent adjusting means for permitting control of the printing pressure independently of the inking pressure and for adjusting the advance of the labels.

3,417,690
ROLLING CONTACT PRINTER HAMMER AND HAMMER CARRIAGE
Clayton H. Clark, Mundelein, and Donald J. Stefanik, Berwyn, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Original application Oct. 25, 1962, Ser. No. 233,109, now Patent No. 3,291,909, dated Dec. 13, 1966. Divided and this application May 2, 1966, Ser. No. 546,670
14 Claims. (Cl. 101—93)



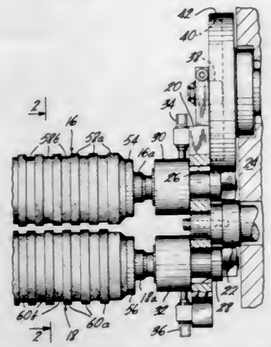
Together with a rotary type carrier printer, there is a pivotally mounted print hammer with its head movable toward and away from the type carrier and a pivotally mounted operator for operating the print hammer, with rolling kinematic pairing between the print hammer and the operator. An electromagnet coacts with an armature of the operator to pivot the operator which engages and pivots the print hammer to drive its head toward the type carrier. A carriage shiftable lengthwise relative to the type carrier includes first and second sets of such pivotally mounted print hammers and operators.

3,417,691
ROLLER PLATEN PRESSURE ADJUSTING MEANS IN HAND-OPERATED PRINTING MACHINE
Joseph V. Kubovy, Stamford, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,554
22 Claims. (Cl. 101—269)



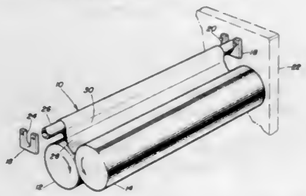
A hand-operated printing device of the type having a platen adapted to support embossed printing plates. The device comprises a print roll carriage, means for automatically raising and lowering the print roll carriage at the start and finish of printing movement, means for positively driving the print roll so as to prevent skidding thereof on a printing surface, means for releasing locking a printing plate on the platen, and means for at least partially ejecting a printing plate when the locking means is released.

3,417,692
DOUBLE DUCTOR
George R. Brodie, Narberth, Pa., assignor to John C. Motter Printing Press Co., York, Pa., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,257
2 Claims. (Cl. 101—350)



A ductor for the ink distributing apparatus of a printing press comprising a pair of spaced-apart, rotatable ductor rolls mounted in the space between the fountain roll and the first distribution roll for movement of each roll alternately with the other between contact with the fountain roll and contact with the first distribution roll such that the ductor rolls alternately transfer ink from the fountain roll to the first distribtuion roll. Each of the ductor rolls has a surface constituted by a series of spaced, raised ink transfer portions and recesses between the transfer portions, the transfer portions of one ductor roll being staggered with respect to the transfer portions of the other.

3,417,693
DEVICE FOR REDUCING TURBULENCE IN PRINTING PRESS FOUNTAINS
Theodore J. Hartka, Baltimore, Md., assignor to The Ward-Turner Machinery Company, Baltimore, Md., a corporation of Maryland
Filed Dec. 2, 1966, Ser. No. 598,722
3 Claims. (Cl. 101—364)

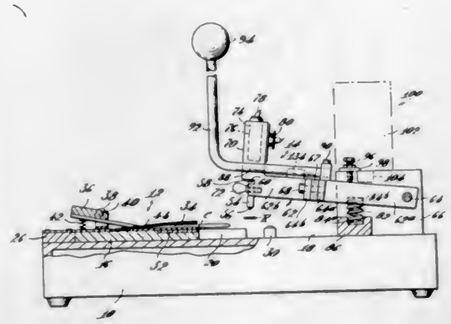


A thin flexible sheet is suspended in a liquid reservoir formed between two rotating rollers, with the flexible sheet dividing the reservoir into unequal portions and the free end of the sheet coming into tangential contact with the surface of one of the rollers, to reduce turbulence in the reservoir upon rotation of the rollers.

3,417,694
METHOD AND DEVICE FOR THE APPLICATION OF LATEX
Richard Winkler, Rengsdorf, and Kurt Dünnebier, Gladbach, Germany
Filed Oct. 6, 1966, Ser. No. 584,764
Claims priority, application Germany, Nov. 9, 1965, W 40,264
1 Claim. (Cl. 101—401.1)

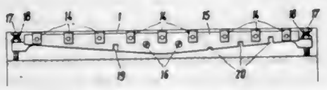
A profiled gum applicator capable of being placed upon the cylinder of a gumming machine to apply sections of latex to envelopes, bags and other articles, consists of a plate of soft polyvinyl chloride having raised portions upon one side and a wax cloth covering on the other side. The gum applicator is made from a strip of metal of the same shape which is used to emboss a matrix, whereupon a layer of soft polyvinyl chloride is placed upon the matrix and coated with a wax cloth, while a sheet of silicone paper is placed under the matrix and over the cloth. Then the applicator is made by embossing this layer.

3,417,695
CARD POSITIONING MEANS IN RECIPROCATING BED AND PLATEN PRINTING PRESS
Alec Peters, 250 Garth Road, Scarsdale, N.Y. 10583
Filed Feb. 1, 1967, Ser. No. 613,268
2 Claims. (Cl. 101—407)



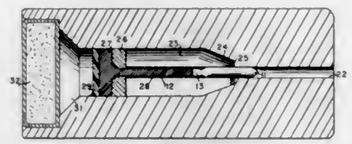
A machine for applying printed indicia to any selected one of a plurality of defined areas on the surface of a card, the machine comprising a printing element which moves in a vertical path toward and from a base, a carriage movable horizontally in a fixed rectilinear path from a card-receiving position to indicia-receiving position, and card-locating means on the carriage with which any selected one of said defined areas of the card may be registered, the locating means being such that when a card has been placed on the carriage and so registered, the mere movement of the carriage to the card marking position automatically places the selected area of the card in position to receive printing indicia from the printing element.

3,417,696
GRIPPERS WITH ADJUSTABLE GRIPPER PADS
Werner Koch, Offenbach am Main, and Friedrich Preuss, Neu-Isenburg, Germany, assignors to Roland Offsetmaschinenfabrik Faber & Schleicher AG., Offenbach am Main, Germany, a company of Germany
Filed Dec. 13, 1965, Ser. No. 513,486
Claims priority, application Germany, Dec. 17, 1964, R 39,473
8 Claims. (Cl. 101—409)



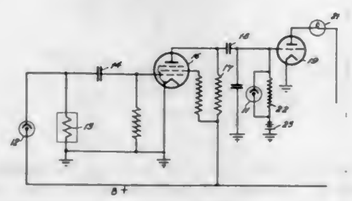
A gripping device for a sheet-feeding press in which a row of grippers and a corresponding row of gripper pads coact with each other for gripping therebetween the leading edge of a sheet to be worked on in the press. The positions of the gripper pads are jointly or individually adjustable in a plane substantially normal to the plane of a gripped sheet.

3,417,697
PROJECTILE
Carl F. Lucy, Mountain View, and Harold J. Woods, San Benito County, Calif., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,809
6 Claims. (Cl. 102—41)



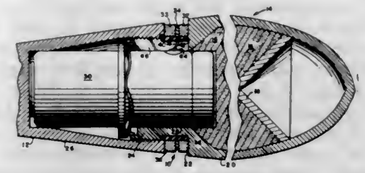
Firearms and projectiles which do not reveal themselves by a flash of light and loud noise have been desired for a long time. This disclosure describes a special cartridge which fulfills that desire. A metal housing is perforated longitudinally to accept a projectile. An explosive-filled chamber is provided at one end of the cartridge and the perforation at the other end of the cartridge is about the same diameter as the projectile. Between the two is a chamber larger than the projectile which contains a piston formed of a malleable material. Firing the cartridge causes the explosive charge to explode, generating gas at high pressure. The gas pressure pushes forward the piston which accelerates the projectile. As the piston reaches the end of its chamber, it is compressed by a sloping forward portion to seal into the cartridge the exploding gas. The projectile continues free on its own momentum.

3,417,698
ELECTRO-OPTICAL DEVICE
Andrew L. Hopper, Summit, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed July 31, 1950, Ser. No. 176,865
2 Claims. (Cl. 102—70.2)



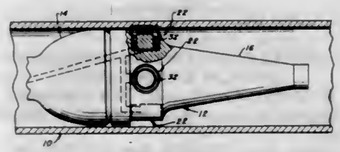
1. A photoelectric fuse comprising: first light-collecting means for collecting light from a predetermined first field of view with respect to the fuse; first photoelectric means for producing a first voltage varying with the amplitude of the light so collected; first differentiator means for differentiating said voltage; amplifier means for amplifying the output of said first differentiator; a thyratron, a first capacitor connecting the output of said amplifier to the grid of said thyratron; a resistor and a bias means connected between the grid and cathode of said thyratron; second light-collecting means for collecting light from a field of view including but greater than said first field of view; and a photocell responsive to light from said second light-collecting means, said photocell shunting said resistor, the impedance of said photocell decreasing with increase in light, so that large amounts of light striking said second light-collecting means render the fuse unresponsive to changes in the light collected by said first light-collecting means.

3,417,699
CONTACT FUZE
William M. Piper, McLean, Va., Jacob Rabinow, Takoma Park, and Ralph B. Rizer, Forest Heights, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed May 28, 1956, Ser. No. 587,909
2 Claims. (Cl. 102—70.2)



1. In an ordnance projectile having an explosive charge, improved means for detonating said explosive charge in response to impact of said projectile, said improved means comprising in combination: a projectile case having a plane-surfaced annular step therein located near the base of said projectile, a ring-shaped piezoelectric detecting element disposed in said step so as to intercept the shockwaves generated in said case upon impact, said piezoelectric detecting element comprising two washers of piezoelectric material and an electrically conductive washer therebetween, said washers being concentric and snugly fitted in said step, one side of each piezoelectric washer being in contact with a side of said conductive washer and the other sides of said piezoelectric washers being in contact with said case at opposite sides of said step, means insulating said conductive washer from said case, detonator means within said case adapted to detonate said explosive charge in response to the electrical pulse generated between said conductive washer and said case upon impact of said projectile, and means connecting said detonator means to said conductive washer to transfer said electrical pulse therebetween.

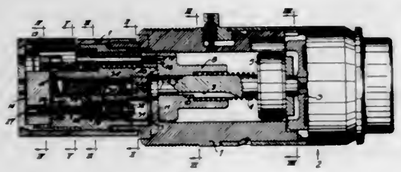
3,417,700
FUZE ARMING SYSTEM
John J. Furlani, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed July 12, 1957, Ser. No. 671,671
1 Claim. (Cl. 102—70.2)



1. A fuze arming device for incorporation in a missile and adapted to arm the missile in response to the missile

leaving its launcher barrel, said device comprising: a substantially cup-shaped first magnet housed in the body of said missile, said first magnet having its longitudinal axis substantially perpendicular to the axis of said missile, said first magnet having an open and a closed end, the extremities of said open end being substantially flush with the outer surface of said missile body; a cylindrical second magnet within said first magnet, said second magnet being substantially coaxial to the longitudinal axis of said first magnet, one end of said second magnet being affixed to the inner wall of said closed end of said first magnet, the other end of said second magnet being free and flush with the outer surface of said missile body; a wire coil wrapped in convolutions around said second magnet so as to be intermediate the outer periphery of said second magnet and the inner walls of said first magnet; detonator release means adapted to be activated to release a detonator for rotation to an armed position in response to a voltage applied thereto; and switch means responsive to forces of set-back for electrically connecting said coil to said detonator release means when said missile is fired in said barrel; said barrel providing a low resistance magnetic path between said extremities of said first magnet and said free end of said second magnet so that relatively intense and constant magnetic field exists in said second magnet while said missile is in said barrel, said magnetic field in said second magnet decreasing rapidly when said missile leaves the end of said barrel, the rapid decrease of said magnetic field causing a voltage to be induced in said coil which activates said detonator release means, thereby arming said missile.

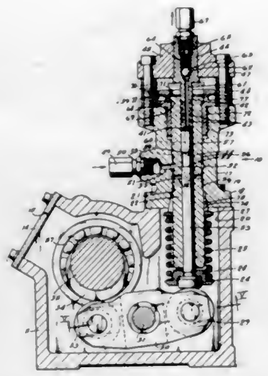
3,417,701
DETONATING FUSE FOR BOMBS AND THE LIKE
Gaston Jean O. Bodinaux, Seny-en-Condroz, Belgium, assignor to Les Forges de Zeebrugge S.A., Herstal-lez-Liege, Belgium, a company
Filed Apr. 28, 1967, Ser. No. 634,735
Claims priority, application Belgium, Oct. 28, 1966, 688,993
5 Claims. (Cl. 102—75)



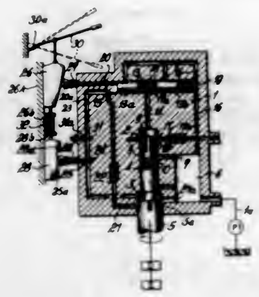
A detonating fuse of a bomb is provided with an additional safety device to cause the explosion at a predetermined time after impact, the device having an additional locking element for the movable detonator carrying member, whereby the locking element is released after impact by a portion of the pyrotechnic chain conditioned for that purpose.

3,417,702
CONSTANT STROKE VARIABLE DISPLACEMENT PUMP
William F. Behm, Cowlesville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Apr. 18, 1966, Ser. No. 543,199
9 Claims. (Cl. 103—37)

A constant stroke variable displacement pump has one or more pistons driven reciprocably in pumping strokes in a respective cylinder which is reciprocably adjustably mounted in a housing to vary the stroke by adjusting means acting between the cylinder and the housing. Releasable means comprising a clutch retain the cylinder against movement out of adjusted relation.

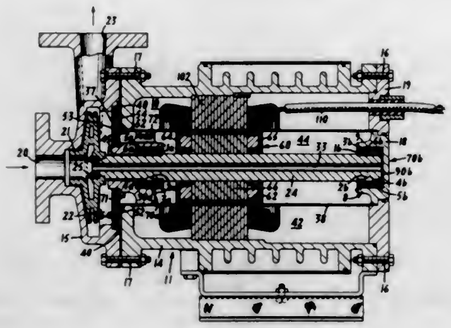


3,417,703
FUEL INJECTION PUMP
Konrad Eckert, Stuttgart-Bad Cannstatt, and Franz Eheim, Stuttgart, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Oct. 21, 1966, Ser. No. 588,550
Claims priority, application France, Oct. 21, 1965, 35,803
18 Claims. (Cl. 103—41)



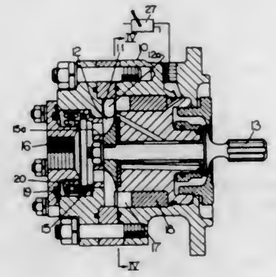
A fuel injection pump for internal combustion engines wherein the amounts of fuel admitted to the cylinders of the engine can be varied infinitely by means of a shuttle piston movable from a starting position to an open position in which latter position fuel pumped by the pump is discharged through an overflow channel so that injection of fuel to the cylinders of the engine is terminated and in which a return movement of the shuttle piston to the starting position under the force of a return spring is regulated by adjustable throttling means controlling outflow of fuel from the chamber in which the shuttle piston reciprocates. The pump includes further first adjusting means for regulating the distance between the starting and open position of the shuttle piston, second adjusting means for regulating the braking action of the throttling means, and common actuating means for the two adjusting means.

3,417,704
CENTRIFUGAL PUMP HAVING AN IMPELLER SHAFT MOUNTED ON A ROTATING BEARING
David B. Pall, Roslyn Estates, and Joseph F. Campolong, Oyster Bay, N.Y., assignors, by mesne assignments, to Laboratories for Electronics, Inc., Waltham, Mass., a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 613,305
17 Claims. (Cl. 103—87)



A centrifugal canned motor pump is provided in which the impeller shaft is supported by front and rear rotating bearings. The bearings are mounted within bearing supports and are fixed to the shaft for rotation therewith. The material of which the bearings are made wears at a rate that exceeds that of the material of the bearing support. Thus, as the shaft rotates, bearing wear occurs uniformly over the entire circumferential surface of the bearing.

3,417,705
LIQUID DISPLACEMENT PUMPS
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed June 13, 1966, Ser. No. 557,044
4 Claims. (Cl. 103—97)



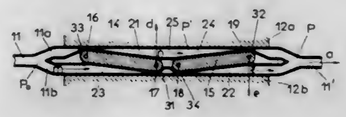
A liquid displacement pump having a body, a bladed rotor mounted within a cavity in the body, an inlet and an outlet in the body angularly spaced positions in the cavity, an inlet plate in which are formed ports communicating with the inlet in the body, the inlet plate being movable between a first position in which it is closely adjacent to the rotor side face so that inlet of liquid is confined to a position angularly spaced from the outlet, and a second position in which the inlet port is spaced from the rotor so that liquid entering the cavity can do so over a relatively large area of the side face of the rotor, and means for use when the inlet plate is in said first position for defining a part annular recess in the wall of the cavity of the body at the side of the rotor remote from the inlet plate.

3,417,706
SLOTS-CONTAINING BODIES IN FLUID HANDLING DEVICES
Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan
Continuation-in-part of application Ser. No. 328,395, Dec. 5, 1963. This application May 22, 1967, Ser. No. 640,132
22 Claims. (Cl. 103—136)



This disclosure is related to a slotted body in a fluid handling device wherein vanes move outwards and inwards in slots. In order to handle high pressure fluid, the body is provided with uninterrupted integral annular peripheral portions which partially close the radially outer ends of the slots and rigidly connect sections of the body formed between the slots.

3,417,707
HOSE PUMP
Joseph Zimmer, 2 Rue du Canal, Illkirch-Graffenstaden, France
Filed June 6, 1967, Ser. No. 643,877
Claims priority, application France, June 15, 1966, 8,638
17 Claims. (Cl. 103—148)

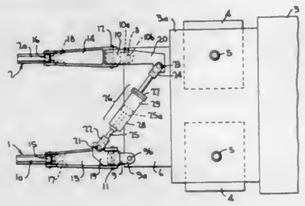


A hose pump comprising a flexible hose having an inlet end and an outlet end and a pair of branches between the ends, the branches of the hose extending between a pair of fixed rigid abutment plates and a pair of movable plates are arranged spaced in longitudinal direction of the hose in the space between the branches. Upstream and downstream extremities of the plates are alternatingly moved to and fro in a predetermined sequence in a direction substantially normal to said abutment plates between a pair of end positions in which they press the engaged branch portions fluid-tightly against the respective abutment plates to thereby pump fluid from the inlet to the outlet end of the hose.

3,417,708
APPARATUS FOR LINING A RAILROAD TRACK
Gerard Sauterel, Pully, Switzerland, assignor to Matisa Materiel Industriel S.A., Crissier (VD), Switzerland, a corporation of Switzerland
Filed Aug. 10, 1967, Ser. No. 659,741
Claims priority, application Switzerland, Aug. 16, 1966, 12,908/66
7 Claims. (Cl. 104—8)

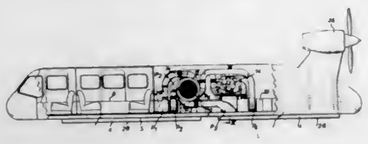
An apparatus for lining a railroad track and which is mounted at a mobile track vehicle capable of moving along the railroad track. The inventive apparatus comprises a pair of slewing arm means, each of which is

operably associated with a given one of the rails of the railroad track and carries lateral rail impact means for each such associated rail. Further, the slewing arm means are pivotably mounted at the mobile track vehicle, and there is further provided a single drive means for operating both of the slewing arm means. Additionally, means



pivotably connect the drive means with the pair of slewing arm means such that operation of the drive means effectuates pivotable movement of both of the slewing arm means in a manner that the lateral rail impact means are displaced in a substantially horizontal plane in the same direction and transverse to the rails of the railroad track.

3,417,709
AIR-CUSHION SUSTAINED VEHICLES
Jean Henri Bertin, Neuilly-sur-Seine, Marcel Leon Barthelemy Feve, Taverny, and Paul Francois Guienne, Paris, France, assignors to Bertin & Cie, Paris, France, a company of France
Filed May 31, 1966, Ser. No. 553,738
Claims priority, application France, June 3, 1965, 19,438
9 Claims. (Cl. 104—23)



A multi-cushion, tracked ground effect machine having a cushion fluid supply plant which comprises centrifugal blowers or like shrouded fans so arranged with respect to the longitudinal medial plane of the machine that the impellers rotate, their intakes open, and their discharge ducts extend, in planes parallel to said longitudinal medial plane, thereby allowing for an overall design which is concentrated transversely of the machine and expanded longitudinally thereof.

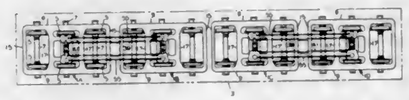
3,417,710
CONVEYOR APPARATUS
Steven Kokes, 4212 Great Oak Road, Rockville, Md. 20853
Filed Jan. 13, 1967, Ser. No. 609,148
9 Claims. (Cl. 104—173)

A plurality of spaced conveyor means are provided along a supporting means which moves the conveyor means in a particular path of movement past a loading station. A fixed diverting means is disposed at the loading station and is engageable with anti-friction means on the conveyor means. The anti-friction means of successive conveyor means are offset on opposite sides laterally of the path of movement of the conveyor means so that successive ones of the conveyor means are diverted to opposite sides of the diverting means whereby the conveyor



means may be loaded at opposite sides of the diverter means.

3,417,711
MULTI-INTERCONNECTED TRUCK RAIL VEHICLE
Richard L. Lich, Pasadena Hills, Mo., assignor to General Steel Industries, Inc., Granite City, Ill., a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 581,067
12 Claims. (Cl. 105—157)

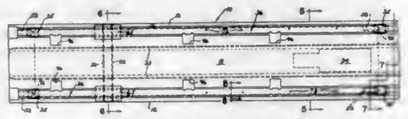


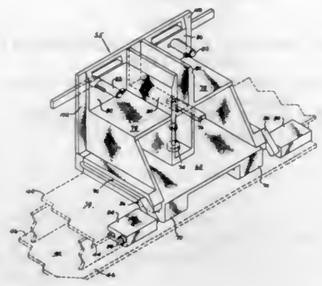
A suspension for railway vehicle body directly on two pairs of trucks whereby the vehicle is operable on horizontally curved track and on track having vertical curvature without affecting the equal distribution of load to the axles and without requiring the provision of span bolsters between the trucks and the underframe. The vertical load supporting bearings of the individual trucks of each pair are hydraulically interconnected to produce reverse vertical movements of the individual trucks as required by vertical track curvature and the vertical axis pivot bearings of the individual trucks of each pair are hydraulically interconnected to produce reverse transverse movements of the individual trucks as required by horizontal track curvature.

3,417,712
RAILWAY FLAT CAR FOR THE TRANSPORT OF CONTAINERS OR TRAILERS
Frank C. Pulcrano, St. Charles, Walter E. O'Leary, Creve Coeur, and Edwin A. Zambruski, St. Louis County, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Apr. 3, 1967, Ser. No. 627,808
14 Claims. (Cl. 105—368)

A railway flat car for the transport of containers or trailers and having a pair of spaced rails extending generally the length of the car along the treadways and mounted within cutouts in the deck to form a continuation of the deck surface thereby to provide a generally even and flush deck so that roadway vehicles may be easily driven over the deck and rails. The rails are mounted for cushioned sliding movement relative to the underframe and have a plurality of container corner pedestals mounted for sliding movement thereon for positioning at selected intervals along the length of the car to accommodate containers of varying lengths. The pedestals may be pivoted into cutout portions in the deck to

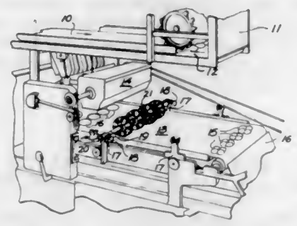
stored or inoperable positions and permit a relative cushioned sliding movement of the associated rail when in





the stored position while covering the cutout portions and forming a continuation of the deck surface.

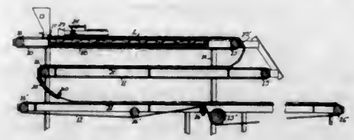
3,417,713
FORMING DEVICE FOR BUN MAKING MACHINE
Irving Schwebel, Youngstown, Ohio, assignor to Lake Park Machinery, Inc., Youngstown, Ohio, a corporation of Ohio
Filed Mar. 3, 1967, Ser. No. 620,358
4 Claims. (Cl. 107—4)



A device attachable to a bun forming machine providing a plurality of rotary dough embossing members acting to engage pieces of shaped dough formed by said machine to substantially separate said pieces of dough into a plurality of sections whereby buns baked from said shaped pieces of dough have the characteristics of buns formed from a group of individual pieces of dough.

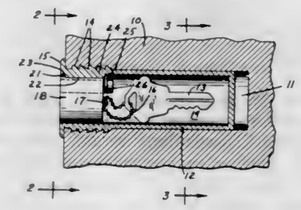
3,417,714
METHOD OF MANUFACTURING CANDY
John B. Coppedge, Atlanta, Ga., assignor to Sophie Mae Candy Corporation of Georgia, Atlanta, Ga., a corporation of Georgia
Original application May 16, 1966, Ser. No. 550,449, now Patent No. 3,333,554, dated Aug. 1, 1967. Divided and this application Oct. 13, 1966, Ser. No. 586,527
4 Claims. (Cl. 107—54)

A method of manufacturing peanut brittle made from a mixture comprising nut meats and syrup including sugar, corn syrup, and bicarbonate of soda. The method comprises depositing the mixture on a flat surface, continuously cooling the mixture until the syrup solidifies about the nut meats, and during the cooling of the mixture, continually turning the mixture over and momentarily holding the mixture in an upwardly extending plane as it is turned over to stretch the mixture under the force



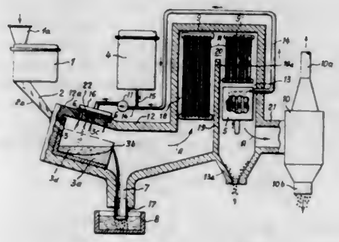
of gravity until the syrup portion of the mixture is approximately one half the thickness of the nut meats and until the syrup portion of the mixture solidifies at a position approximately midway of the thickness of the nut meats of the mixture.

3,417,715
LOCKABLE KEY-HOLDING RECEPTACLE
Joseph P. Krieger, 402 Chisholm Trail, and George A. Krieger, 619 S. 58th Ave., both of Yakima, Wash. 98902
Filed May 23, 1967, Ser. No. 640,685
7 Claims. (Cl. 109—50)



A receptacle for a concealed house key having a key-operated closure plug, the receptacle being mountable within a wall recess or the like.

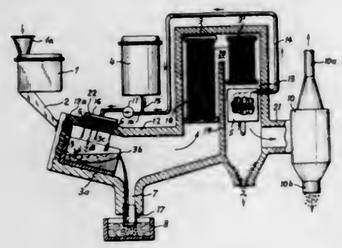
3,417,716
METHOD FOR THE COMBUSTION OF WASTE MATERIALS, PARTICULARLY REFUSE
Theodore Iacobovici, Zurich, Switzerland, assignor to Von Roll AG, Gerlafingen, Switzerland, a corporation of Switzerland
Filed July 2, 1965, Ser. No. 469,104
Claims priority, application Switzerland, July 8, 1964, 8,954/64
4 Claims. (Cl. 110—7)



A method for the combustion of waste materials of all types containing combustible and normally non-combustible components, in particular refuse, in a combustion compartment of a furnace, comprising the steps of enriching the combustion air with oxygen, and burning the waste material in the combustion compartment

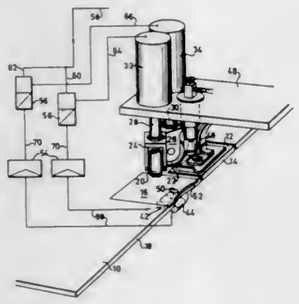
in the presence of pre-heated and oxygen-enriched combustion air, to thereby attain and maintain a temperature in the combustion compartment which is above the melting point of the residues of combustion.

3,417,717
FURNACE FOR THE COMBUSTION OF WASTE MATERIALS, PARTICULARLY REFUSE
Theodor Jacobovici, Zurich, Switzerland, assignor to Von Roll AG, Gerlafingen, Switzerland, a Swiss corporation
Original application July 2, 1965, Ser. No. 469,104. Divided and this application July 24, 1967, Ser. No. 655,629
Claims priority, application Switzerland, July 8, 1964, 8,954/64
5 Claims. (Cl. 110—7)



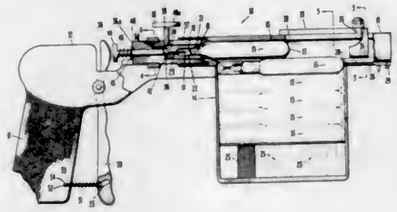
A furnace for the combustion of waste materials of all types containing combustible and normally con-combustible components, particularly refuse, comprising means providing a combustion compartment internally of the furnace. Further, support, or receptacle, means for the waste material which is to be burned is located in the aforesaid combustion compartment, such support means possessing a substantially pocket-like construction, that is being substantially trough-shaped or bowl-shaped, as defined herein, as well as an overflow edge for removal of liquid slag.

3,417,718
SYSTEM FOR AUTOMATICALLY GUIDING THE WORK IN A SEWING MACHINE
Lars Mårten Andersson, Skovde, Sweden, assignor to Aktiebolaget Melka
Filed Mar. 21, 1966, Ser. No. 536,061
Claims priority, application Sweden, Mar. 23, 1963, 3,722/65
4 Claims. (Cl. 112—203)



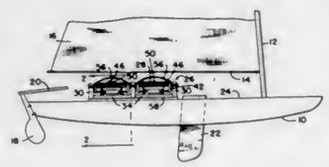
A sewing machine is provided with a device for maintaining a line of stitching parallel to the edge of the fabric. Adjacent the presser foot, there is provided a device for sensing lateral deviation of the edge of the fabric. Responsive to this sensing means, one or more rollers contacts the fabric at an angle to shift the fabric in a direction perpendicular to the axis of the roller. The edge sensing may be done either photo-electrically or mechanically. The shifting roller may be in the form of two angularly related rollers alternately selectively individually engageable with the fabric, or by a single roller whose axis is angularly shiftable in a horizontal plane.

3,417,719
ADAPTER MEANS FOR AN UNDERWATER PROJECTILE
Edward Nitenson, 2089 Dorchester Ave., Dorchester, Mass. 02124
Filed July 6, 1966, Ser. No. 563,210
2 Claims. (Cl. 114—20)



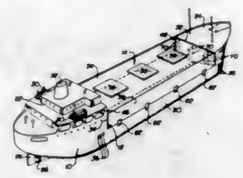
An underwater projectile is provided comprising an elongated hollow casing with a gas contained within the casing. A rear wall of the casing defines a preselected area for penetration and means are located in association with the preselected area for uniformly discharging gases from the casing when the preselected area is punctured. An underwater gun is provided having means for frictionally engaging the projectile in the barrel and means for piercing an area of the projectile to permit uniform gas escape therefrom. Magazines are mounted on the barrel for feeding a series of projectiles to the barrel.

3,417,720
BALANCING APPARATUS
Otis Dexter Covell, Jr., 23 Riverside Terrace, Madison, Conn. 06443
Filed Oct. 3, 1966, Ser. No. 583,577
7 Claims. (Cl. 114—39)



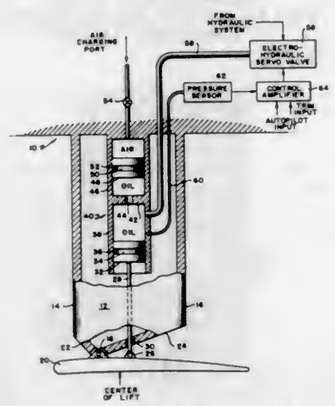
Balancing apparatus for a sailing vessel comprising a frame secured to the hull of the vessel and a rail which is slidable in the frame, the frame and hull supporting the rail and restricting its movement to a direction substantially perpendicular to the vessel's axis. The apparatus also comprises a platform or seat which moves transversely on the rail and stop means for limiting the movement of the rail relative to the frame and the platform relative to the rail in the outward direction relative to the vessel axis.

3,417,721
CARGO SHIPS
Arthur William Vienna, 16519 Oldham St., Encino, Calif. 91316
Filed Apr. 4, 1966, Ser. No. 539,868
4 Claims. (Cl. 114—43.5)



A cargo carrying ship comprised of at least two integrated sections forming a conventional vessel. The first section is a vessel containing the propulsion generating part of the ship. The second section is the cargo carrying section of the ship, and is floatably disengageable from the first section for independent movement therefrom. Thus, cargo may be loaded and unloaded from the ship by interchanging cargo carrying sections without the necessity of docking the ship for extended periods of time.

3,417,722
HYDRAULIC SUSPENSION AND CONTROL SYSTEM FOR HYDROFOIL CRAFT
William C. O'Neill, Montgomery County, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 28, 1967, Ser. No. 650,163
9 Claims. (Cl. 114—66.5)



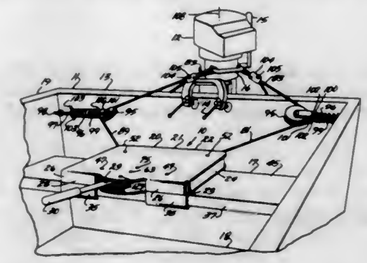
A soft hydraulic suspension and control system, for hydrofoil craft using submerged hydrofoils having a movable foil pivoted forward of its center of lift, and a control rod attached thereto for changing the angle of attack, operated by an oil pressure piston and cushioned by a pneumatic spring.

3,417,723
AUXILIARY STEERING DEVICE FOR AN OUTBOARD MOTOR BOAT
Andrey O. Akermanis, 3401 N. Westmoreland Drive, Orlando, Fla. 32804
Filed Aug. 18, 1967, Ser. No. 661,662
8 Claims. (Cl. 114—144)

The disclosure relates to an auxiliary steering device for an outboard motor boat. The device is portable and is attachable to a seat in a small boat and whereat a flat housing for certain components of the device is provided as a sitting place for the helmsman. The device is characterized by a manually manipulatable pivot arm which extends forwardly from the flat housing and which enables the helmsman to steer the boat with either his hands or his legs from a sitting position or from a standing position at which the pivot arm is manipulatable by leg movements.

The housing is made from two plates in the embodiments disclosed and the bottom plate is appropriately bent to enable a screw element to be used in clamping the housing to the seat. The other plate component of the housing is bent to provide appropriate side walls in the housing.

The pivot arm extends through a front opening in the housing and is pivotally connected internally of the housing to the plate components of the housing. Internally of the housing is another arm member which is provided with arcuate grooved edge portion. This arm member is also arranged to pivot about an axis. In one embodiment the pivot arm and the rigid arm member are rigidly interconnected and are pivotally movable together about the pivot axis for the arm in a center lever type arrangement. In the preferred embodiment, both the pivot arm and the



rigid arm member, carrying segments which mesh so that the rigid arm member is pivotally moved through a gear connection with the pivot arm. The arrangement is such that the housed arm member pivots about a pivot axis which is offset from the pivot axis for the manipulatable pivot arm.

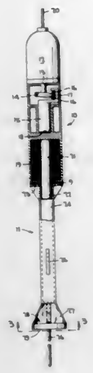
The pivotal motion of the arm member is transmitted to the motor by means of cable lengths that are trained around spaced pulleys which are connected to the hull of the boat to the rear of the housing through spring devices that maintain the cable lengths under tension. Guide pulleys for the cable lengths are also provided internally of the housing and here the lengths are fastened to the housed arm member. An outer edge portion of the housed arm has a groove for each cable length and these grooves are vertically spaced to prevent entanglements between the lengths as the lengths are drawn in and paid out during the pivotal movement of the rigid arm.

The cable lengths are fastened to the housed arm by a fastener carried by the arm and which is located between the arcuate edge and the pivot axis for the arm member and to maintain proper orientation of the lengths in the grooves, guide holes are provided in one embodiment at the opposite ends of the arcuate portion of the arm.

3,417,724
VIBRATORY SEA ANCHOR DRIVER
Theodoric B. Edwards, deceased, late of Lorton, Va., by Helen M. Edwards, executrix, Manassas, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 27, 1967, Ser. No. 671,168
5 Claims. (Cl. 114—206)

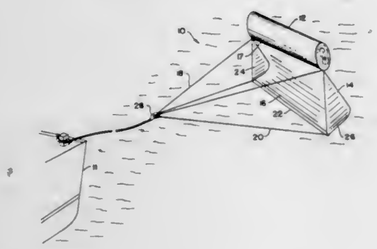
This invention is directed to embedment of anchors and, more particularly, to a driver to embed an anchor by using the resonant frequency of the driver and anchor

coupled together by an electromagnet. A variable speed motor is used to impart reciprocating motion to the anchor through a converter means. Inactivation of the current that energized the electromagnet permits the driver to be re-



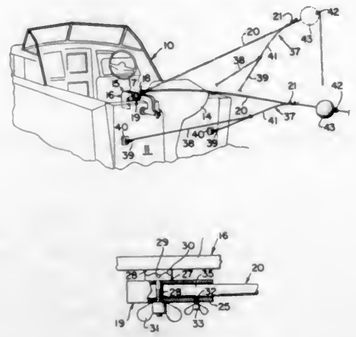
covered while the anchor remains embedded. An indicating means enables the operator, aboard a vessel to determine that the anchor has been embedded and to what depth.

3,417,725
BOAT DRAG
Frank F. Fisher, 14111 Sussex, Detroit, Mich. 48227
Filed July 10, 1967, Ser. No. 652,274
7 Claims. (Cl. 114—209)



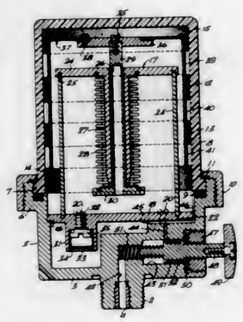
The invention relates to a so-called sea anchor or boat drag which will hereinafter be termed a boat drag adapted to be secured to the bow of a boat in rough seas to orient the boat perpendicular to waves with the boat heading into waves to allow the boat to more successfully ride out the rough seas and to slow drifting of the boat and refers more specifically to such a boat drag having separable float and drag units with the drag unit including a drag bag and drag line parts wherein the separated float unit and drag unit are capable of serving as a life preserver and utility cover respectively and the units assembled are capable of serving as a boat cushion or as an auxiliary life preserver. The deployed drag unit may also serve as a signal. In addition the drag bag of the drag unit is so formed as to be maintained substantially vertical in the water and to dig deeper into the water on movement of the boat to which the sea anchor or boat drag is secured and the drag lines connected to the drag bag are unitary at each end of the drag bag.

3,417,726
WATER-SKI TOWING APPARATUS
Leon J. Marino, 411 Liberty St., Hammonton, N.J. 08037
Filed June 28, 1967, Ser. No. 649,694
2 Claims. (Cl. 114—235)



The instant invention is concerned essentially with a mount at the stern of a watercraft and carrying a resiliently flexible shaft extending aft for retaining a ski-tow line clear of the tow vehicle and its appurtenances.

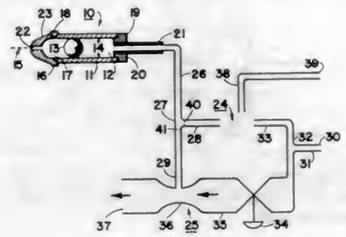
3,417,727
PRESSURE RESPONSIVE SIGNAL AND INDICATOR
Laszlo Nemes, 700 Kennedy Blvd. E., Weehawken, N.J. 07087
Filed Jan. 27, 1967, Ser. No. 612,199
13 Claims. (Cl. 116—70)



An instrument for detection and indication of small changes of pressure in a closed system, embodying a unitized sealed pressure capsule having a bellows as a wall portion thereof. The capsule is enclosed in a pressure-tight casing in communication with the system and has indicator means in the casing directly connected with the bellows.

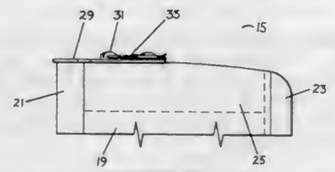
3,417,728
FLUID-ACTIVATED INDICATOR
Hans-Dieter Kinner, Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed May 22, 1967, Ser. No. 640,025
7 Claims. (Cl. 116—70)

A cylindrical housing is enclosed by a convex-concave translucent lens at a first end thereof; a colored ball having a diameter slightly less than the cylindrical housing interior diameter is enclosed therein; a fluid pressure supplied to the second end of the cylinder operates to conformably impress the ball against the inner concave face of the lens, thereby illuminating the lens for large viewing angles about the housing center line; pressure



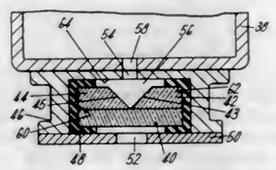
aspiration at the second end of the cylindrical housing operates to withdraw the colored ball from the lens, thereby darkening the lens; a constant aspiration bias may be employed in conjunction with a controlled pressure signal to actuate the indicator in response to a fluidic binary signal.

3,417,729
ROTOR BLADE STRIKE INDICATOR
John F. Gilday, Fort Worth, and George L. Rodriguez, Arlington, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Mar. 4, 1966, Ser. No. 531,896
1 Claim. (Cl. 116—114)



A tab is attached to the outer end of a rotor blade extending beyond at least a portion of the rotor blade's curvatured leading edge and being yieldable in a direction parallel to the longitudinal axis of the rotor blade. Permanent yielding of the tab will indicate the striking of foreign material such as water, weeds, etc.

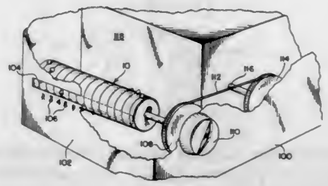
3,417,730
SIGHT GAUGES
Rowan H. Colley, Sunny Hill, Derby, and Frank D. Brownhill, Chaddesden, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Feb. 8, 1967, Ser. No. 614,614
Claims priority, application Great Britain, Feb. 10, 1966, 5,793/66
4 Claims. (Cl. 116—118)



A sight gauge for indicating liquid level is provided with a transparent body having a liquid contacting surface which is angled with respect to a viewing surface so

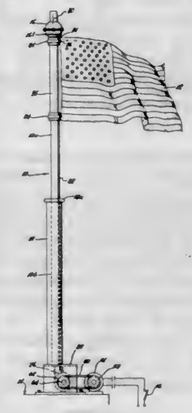
that an image of indicating means positioned along the sides of the transparent body is internally reflected off from the angled surface and to the viewing surface when there is no liquid in contact with the liquid contacting surface. Further indicating means may be provided in line with the viewing surface for viewing only when liquid contacts the contacting surface of the gauge.

3,417,731
ROTATABLE INDICATOR ASSEMBLY
Louis J. Wronke, Hillpoint, Wis., and Edwin Grant Swick, Bartlett, Ill., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,310
11 Claims. (Cl. 116—124.1)



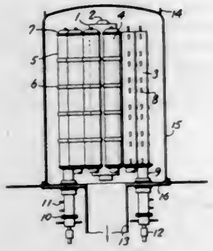
A rotatable indicator assembly of a plurality of spacer means and indicia means mounted on a shaft in fixed axial and angular relationship to the shaft, the indicia means defining a fixed helix on an imaginary cylinder coaxial with the shaft. The device is suitable for use with television sets requiring a fixed angular movement to control a tuner and to indicate the channel with which the tuner is aligned.

3,417,732
FLAG DISPLAY AND HOUSING POLE
Leland H. Platt, Jr., 27016 Spring Creek Road, Palos Verdes Peninsula, Calif. 90274
Filed May 23, 1966, Ser. No. 552,226
6 Claims. (Cl. 116—173)



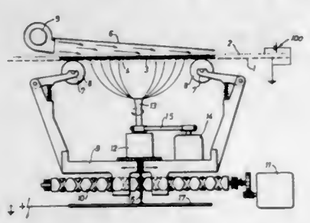
The invention is directed to novel arrangements for the mounting and manipulation of a flag in association with a pole for normal display in elevated position, and providing about a lower or bottom extent of the pole an annular flag storage chamber into and out of which the flag is displaceable by manipulation of a flag carrying line.

3,417,733
APPARATUS FOR VACUUM COATING
Katsuo Makino, Odawara-shi, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Minami-ashigara-machi, Kanagawa-ken, Japan, a corporation of Japan
Filed Nov. 25, 1964, Ser. No. 413,847
Claims priority, application Japan, Dec. 2, 1963, 38/64,619
1 Claim. (Cl. 118—49)



Apparatus for vacuum coating articles wherein a vertically disposed evaporation bath disperses coating material in a horizontal direction to the articles being coated.

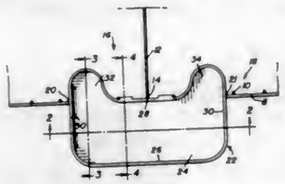
3,417,734
APPARATUS FOR DEVELOPING A LATENT ELECTROSTATIC IMAGE WITH A LIQUID AEROSOL
Walter Simm, Opladen, Otto Koch, Cologne-Stammheim, and Gottfried Taterra, Leverkusen-Steinbuchel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed Mar. 18, 1965, Ser. No. 440,850
Claims priority, application Germany, Apr. 7, 1964, F 42,540
7 Claims. (Cl. 118—637)



An apparatus for developing a latent electrostatic image on a photoconductive layer on a photoconductive material with a liquid aerosol comprises means for transporting the developer liquid to the atomizing electrode with the grid electrode arranged between the atomizing electrode and photoconductive layer and with the grid being parallel to the layer and a counterelectrode supports the photoconductive material. The counterelectrode is made of electrically conductive wire mesh. The apparatus also includes means for generating a stream of gas from behind and through the counterelectrode with the gas flowing in the opposite direction as the liquid aerosol.

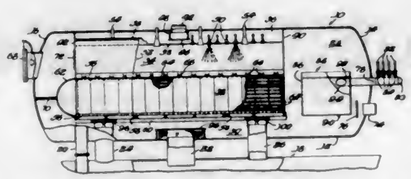
3,417,735
TWIN SPOUT MINK WATERING CUP
Ralph W. Drake, Rte. 5, Box 1025, Bremerton, Wash. 98310
Filed Aug. 5, 1966, Ser. No. 570,561
3 Claims. (Cl. 119—18)

The front vertical wall of an openwork wire mink cage has prescribed spout inlet openings to the right and left, respectively, of an interior partition dividing the enclosed space into separate pens. This wall serves to accommodate a watering pan having twin spouts which are properly aligned with and project through the inlet holes into



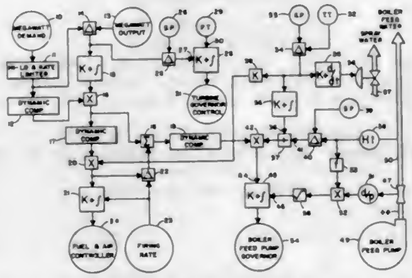
the coacting pens. Suitable attaching hooks, with or without optional bracket means, are preferably used to mount the pan on the cage.

3,417,736
DEAERATING HEATER
Alfonse J. Soriente, Gillette, N.J., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Apr. 28, 1967, Ser. No. 634,541
5 Claims. (Cl. 122—406)



A deaerating feedwater heater for use in a steam system employing a once-through steam generator. An integral centrifugal steam separator is provided within the heater to remove much of the kinetic energy from a flashing steam-water mixture used during startup, thus preventing internal heater damage.

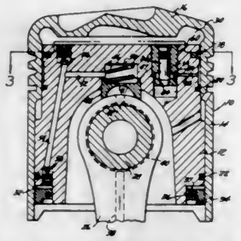
3,417,737
ONCE-THROUGH BOILER CONTROL SYSTEM
Francis G. Shinskey, Foxboro, and John R. Louis, Lexington, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Sept. 20, 1966, Ser. No. 580,815
7 Claims. (Cl. 122—448)



In a once-through boiler control system a modified power demand signal sets the boiler firing rate, the modification including the integrated difference between power demand and power output which integration represents an overall system efficiency factor; the feedwater flow control section is also responsive to the power demand signal, in this case modified by the integrated difference between final steam pressure set-point and final steam pressure which integration represents a lumped boiler and fuel efficiency factor; the power demand signal may

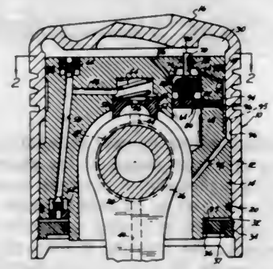
be derived from a megawatt demand setting, or alternatively from first stage turbine pressure and final steam pressure error; dynamic compensation modifications are made in the boiler firing and feedwater control signals to provide for improved dynamic response and for adjustment required by changes in the load level of the boiler.

3,417,738
COMPRESSION RATIO PISTON INCLUDING OIL FILTERING MEANS
John C. Basiletti, Royal Oak, and Walter F. Isley, Grosse Pointe Farms, Mich., assignors to Continental Aviation and Engineering, Detroit, Mich., a corporation of Virginia
Filed Dec. 8, 1967, Ser. No. 689,104
7 Claims. (Cl. 123—78)



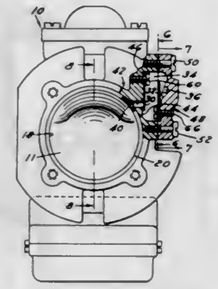
A two-part variable compression ratio (VCR) piston is provided with an upper and lower chamber, supply valve means connected with the lubrication system of the engine for supplying oil to the chambers in a manner which permits the parts by inertial forces and the forces generated by combustion chamber pressures to move relative to each other at a controlled rate to increase the compression ratio of the engine until a predetermined constant maximum combustion chamber pressure has been achieved and a discharge valve assembly for discharging some of the oil from the upper chamber to the engine crankcase when the pressure in the upper chamber exceeds a predetermined maximum value. A filter ring is carried by the inner member of the piston and the oil is directed through the filter ring before being directed to the discharge valve so that impurities which might retain the discharge valve in an open position are filtered out of the oil before they have a chance to do so.

3,417,739
VARIABLE COMPRESSION RATIO PISTON VALVE CONSTRUCTION
Ross L. Fryer, Grosse Pointe Woods, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Dec. 8, 1967, Ser. No. 689,105
11 Claims. (Cl. 123—78)



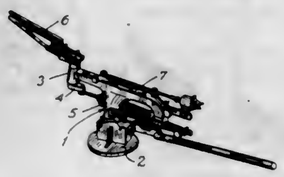
A pressure regulating valve construction especially suitable as a discharge valve for variable compression ratio piston assemblies but having other uses as well and including a first pressure actuated area for producing initial opening of the valve and a larger pressure actuated area opened only after initial opening of the valve to produce a quick, full opening once initial opening has been achieved.

3,417,740
AUTOMATIC COMPRESSION RELEASE FOR INTERNAL COMBUSTION ENGINE
Robert E. Perlewitz, Mequon, Wis., assignor to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan
Filed Oct. 18, 1967, Ser. No. 676,153
5 Claims. (Cl. 123—182)



An automatic compression release mechanism for an internal combustion engine wherein two independently operating valves, preferably self-biasing reed valves, are mounted to respectively control serially connected inlet and outlet ports of a valve chamber which forms part of a compression release passageway connecting the combustion chamber of the engine with a zone of lower pressure, such as the exhaust passage of the engine. The valves are each one-way check valves acting oppositely to one another. The valve controlling the outlet port is normally biased to an open position so that it remains open when the engine is turned over at the relative slow cranking speeds normally used to start the engine to thereby relieve compression and thus facilitate starting of the engine. The outlet valve projects into the gas-flow stream so that it is yieldably flexed to closed position in response to explosive pressure generated in the passageway when the fuel-air charge is ignited in the combustion chamber, thereby sealing the compression release passage after the engine starts.

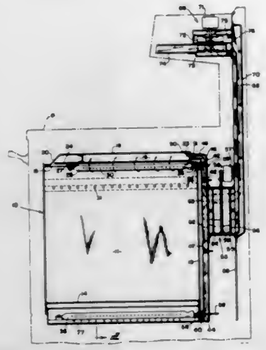
3,417,741
APPARATUS FOR THROWING A DISC-SHAPED TARGET
Ib Schreiner Hansen, Willesmoesvej 3, Svendborg, Denmark
Filed Oct. 22, 1965, Ser. No. 500,722
Claims priority, application Denmark, Oct. 23, 1964, 5,253/64
1 Claim. (Cl. 124—8)



A target throwing apparatus for throwing disc-shaped targets and having a throwing arm which is pivotably

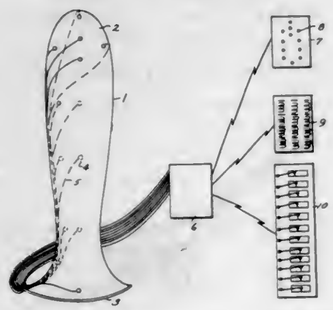
movable in a plane which is inclined in relation to a horizontal plane and is moved by a power source, preferably a spring. The throwing arm has a sliding and supporting surface for the target during the throwing, the surface being shaped as a right-angled triangle with a maximum width only slightly greater than the radius of the target.

3,417,742
DOMESTIC OVEN
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed June 2, 1967, Ser. No. 643,104
7 Claims. (Cl. 126—21)



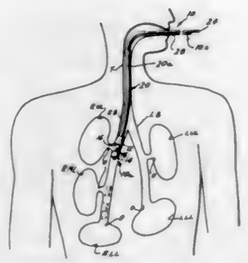
A domestic gas-fired oven having a top burner in the cooking cavity and a bottom burner fully concealed beneath the bottom of the cavity. The heated products of the bottom burner are caused to flow in a wrapper over the bottom and partially over the side walls to openings in the latter where these products enter the cavity. Air under pressure is supplied to the burners by a fan and another fan withdraws flue products from the top of the cavity, with the incoming air and the exhaust flowing through different sections of a rotating regenerator wheel for heat transfer therebetween. The burners can be operated separately for broiling and baking and together for high temperature self-cleaning of the oven.

3,417,743
TRAINING AND DIAGNOSTIC APPARATUS
Rafael Carrera, 5300 Westband Ave., Bethesda, Md. 20016
Filed June 23, 1965, Ser. No. 466,386
5 Claims. (Cl. 128—2)



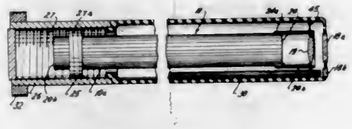
An apparatus which comprises a flexible receptacle shaped to fit over the male penis, a plurality of pressure sensitive devices or sensors fastened at spaced positions on the receptacle, signalling and/or recording equipment and a plurality of connecting means between the pressure sensitive devices and the signalling and recording equipment. The receptacle is placed over the penis prior to emission and the sensors provide signals whereby pressure between the penis and the walls of the vagina increases above a pre-set minimum in the respect areas.

3,417,744
CATHETER FOR SELECTIVE BRONCHOGRAPHY
Sidney Mishkin, 10 Wooley Lane, Great Neck, N.Y. 11023, and Robert E. Bidwell, 40 Florida St., Farmingdale, N.Y. 11735
Filed Mar. 15, 1966, Ser. No. 534,443
5 Claims. (Cl. 128—2)



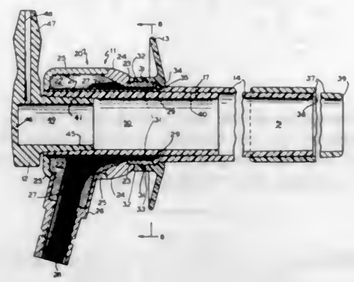
A catheter adapted for selective bronchography of a lung lobe comprising a flexible elongated tubular portion terminating at a distal end opening and a body member connected to the distal end of the tubular portion. The body member includes an upper deflector surface for receiving and deflecting fluids from the tubular portion. A pair of inflatable collars are mounted on the catheter, one on the tubular portion and one on the body member, these collars being adapted to being inflated to form with said upper surface a transverse passageway. The construction may be such that only the collar on the tubular portion is inflated.

3,417,745
FIBER ENDOSCOPE PROVIDED WITH FOCUSING MEANS AND ELECTROLUMINESCENT MEANS
Edward Emanuel Sheldon, 30 E. 40th St., New York, N.Y. 10016
Filed Aug. 23, 1963, Ser. No. 304,053
14 Claims. (Cl. 128—6)



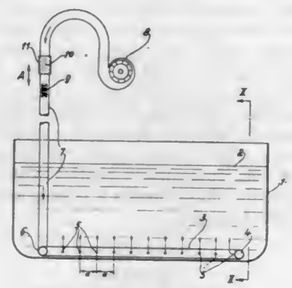
This invention relates to new endoscopic instruments which can transport the image of the examined part to the observer through tortuous passages regardless of the angulation of said part or of said passages. This device is further characterized by having means for image focusing which produce the focusing motion at the proximal end of the endoscope. In some devices illumination of the examined part is provided by flexible electroluminescent means attached to walls of said endoscope.

3,417,746
ILLUMINATING ENDOSCOPE WITH DISPOSABLE ELEMENTS
William C. Moore and Melvin R. Caldwell, Skaneateles, N.Y., assignors to Welch Allyn, Inc., Skaneateles Falls, N.Y.
Continuation of application Ser. No. 508,976, Nov. 22, 1965. This application Feb. 27, 1968, Ser. No. 708,725
11 Claims. (Cl. 128—6)



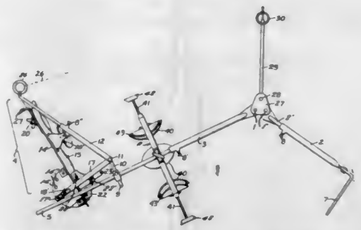
An endoscope having means for transmitting light from a source adjacent the proximal end of the instrument to the distal end thereof, the light transmitting means including in part optical fibers and in part solid plastic material. The endoscope comprises a non-disposable light head which carries the optical fibers and is releasably engaged with disposable components including a speculum, an obturator, a liner member and an eye piece member.

3,417,747
DEVICE FOR THE PRODUCTION OF PRESSURE WAVES IN LIQUIDS
Hilde Beger, Garmisch-Partenkirchen, Bavaria, Germany
Filed Jan. 7, 1966, Ser. No. 519,218
Claims priority, application Germany, Apr. 10, 1965, B 81,393
1 Claim. (Cl. 128—66)



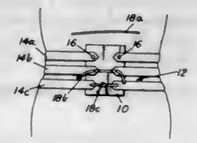
A therapeutic bath device including a tubular distribution member having a plurality of axially spaced discharge openings formed on the inner side thereof. The distribution member is connected to a blower for supplying pressurized air thereto, the blower preferably supplying approximately 300 cubic meters of air per hour at a pressure in excess of atmospheric pressure. The air, in passing through the discharge openings, creates pressure waves within the liquid for causing a massaging effect.

3,417,748
JOINTED SPLINT FOR THE TREATMENT OF FRACTURES ESPECIALLY LEG FRACTURES
Rudolf Bimler, 9 Deichstrasse, 219 Cuxhaven, Germany
Filed Aug. 26, 1965, Ser. No. 482,758
Claims priority, application Germany, Aug. 28, 1964, B 78,296
12 Claims. (Cl. 128—85)



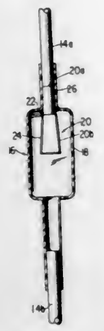
A splint structure characterised in providing support for each section of a fractured limb member and having joints which can be adjusted to coincide with the joints of the fractured member; and including in connection with the leg splint, a foot supporting member to which the foot is anchored and which has complete adjustability in all space coordinates for properly locating the foot in view of the fracture condition to be held in the splint.

3,417,749
SURGICAL BANDAGE
Irene R. Bailey, 241 Trier St., Saginaw, Mich. 48602
Filed Oct. 20, 1966, Ser. No. 588,120
5 Claims. (Cl. 128—171)



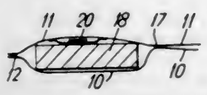
1. A surgical bandage comprising:
an elongated web member of suitable length to encircle members of a body to retain a surgical dressing in place, said web member having elastic properties light enough to retain said dressing in place without constricting the members to a point where encircled muscles are supported thereby;
first fastener means disposed on one surface of said member proximate an end thereof;
second fastener means disposed on said one surface of said member intermediate the ends thereof at a distance spaced from said first recited fastener means;
third fastener means disposed on the other surface of said member proximate the other end thereof;
fourth fastener means disposed on said other surface of said member proximate a distance equal to the spacing between said first and second recited fastener means; and
stiffening means associated with said member to maintain a flat configuration transverse the longitudinal direction thereof;
said first and fourth recited fastener means cooperating to connect said member when encircled around a member of a body with the ends thereof overlapping; said second and third recited fastener means cooperating to connect said member at a point spaced from the connection afforded by said first and fourth recited fastener means.

3,417,750
ASPIRATING MEANS AND ONE-WAY VALVE
Ralph Carson, Kearney, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,357
3 Claims. (Cl. 128—278)



A surgical drainage system which includes a simple pump in the form of a compressible cylindrical chamber containing a one-way flutter valve connected to the inlet from a drainage tube, the outlet end of the chamber being connected to a collection receptacle or the like, the flutter valve being preferably of a tapering form. A second one-way valve may be provided downstream of the chamber.

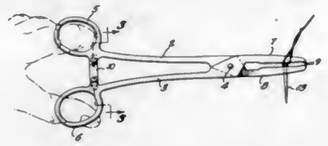
3,417,751
BABIES' PANTS
Ian Lindsay Murdoch, London, England, assignor to Bowater-Scott Corporation Limited, London, England, a corporation of Great Britain
Filed Aug. 26, 1966, Ser. No. 575,444
Claims priority, application Great Britain, July 26, 1966, 33,548/66
3 Claims. (Cl. 128—287)



1. Waterproof pants comprising a main sheet of waterproof material having a front portion, a rear portion, and a disposable wad holding crutch portion joining the front portion and the rear portion; fastening means for holding together the said front and rear portions whereby the pants may be secured in place on a wearer; sleeves of waterproof material extending along the side margins of the said crutch portion; readily compressible pads fitted within the said margins; and elastic means extending along the outside of the said pads.

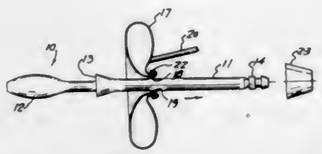
3,417,752
MAGNETIC CLAMP CLOSING DEVICE FOR USE WITH SURGICAL INSTRUMENTS
Byron C. Butler, 550 W. Thomas Road, Phoenix, Ariz. 85021
Filed Nov. 12, 1965, Ser. No. 507,296
4 Claims. (Cl. 128—322)

A magnetic clamp closing device for use with surgical instruments of the character having a pair of pivotally connected arms or handles incorporating a pair of gripping jaws at one end thereof, wherein magnetic means comprising a pair of permanent magnets carried by the handles, and adapted for complementary overlapping engagement, are employed to retain the gripping jaws in closed gripping position. In lieu of permanent magnets,



an electro-magnet of the solenoid-plunger type is operatively connected to the handles, whereby upon energization of the solenoid, the gripping members are moved into clamping position, and retained in such position.

3,417,753
DISPOSABLE CATHETER AND METHOD FOR FORMING SAME
Martin Mattler, Huntington Woods, Mich. (11000 W. McNichols, Detroit, Mich. 48221)
Continuation-in-part of application Ser. No. 499,784, Oct. 21, 1965. This application Dec. 5, 1967, Ser. No. 688,170
4 Claims. (Cl. 128—349)

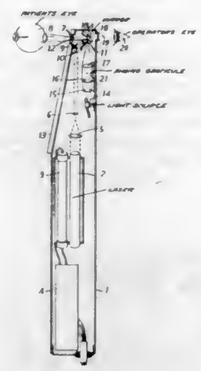


A disposable catheter formed of a rigid, elongated catheter tube having an inflatable ring mounted upon the tube, the ring being formed of a latex-like, flexible material, thin-walled balloon having opposed originally outwardly nipples opening into the balloon. One of said nipples is approximately twice the length of the second nipple and is turned inside out, to extend through the balloon and through the shorter nipple, with the free half of the longer nipple then being bent outwardly around and surrounding the outside of the shorter nipple, wherein both the exterior and interior surfaces of the shorter nipple are lined, in surface to surface contact, by the longer nipple to form an air seal therebetween, and with the interior surface of the longer nipple being the only part of the ring normally in contact with the tube. An air entry into the ring provides a passageway for inflating the ring upon the tube.

3,417,754
OPHTHALMOSCOPES
Desmond Smart, Fossway, Newcastle-upon-Tyne, England, assignor to International Research & Development Company Limited, Newcastle-upon-Tyne, England
Filed July 12, 1965, Ser. No. 470,977
Claims priority, application Great Britain, July 16, 1964, 29,295/64
5 Claims. (Cl. 128—395)

An ophthalmoscope incorporating a laser for treatment of the eye wherein in order to prevent the laser beam reaching the eye of the user the optical axis of an observing lens used for visual observation of the eye to be

treated is offset at an angle to the optical axis of a focusing lens through which the laser beam and an illuminat-



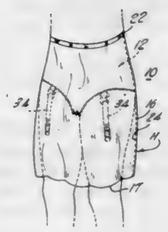
ing beam reach the eye to be treated and through which observation is effected.

3,417,755
BREAST PADS AND METHOD OF MAKING SAME
Jack E. Howard and Lewis A. Kaplan, Los Angeles, Calif., assignors to United Cellular Products Corp., Los Angeles, Calif., a corporation of California
Filed July 15, 1966, Ser. No. 565,858
10 Claims. (Cl. 128—516)



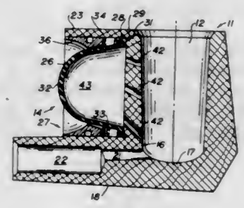
9. A breast pad formed from flat fiberfill material or the like, said pad being substantially conical in shape, said pad having on at least one side thereof a coating of Hypalon or the like, to provide a pad which is substantially stronger, more resilient and more washable than the material from which it was formed.

3,417,756
COMBINATION PANTY GIRDLE AND SLIP
Muriel Leventhal, 4 Harbor Way, Great Neck, N.Y. 11024
Filed Oct. 10, 1966, Ser. No. 585,512
8 Claims. (Cl. 128—519)



1. An article of apparel comprising a skirt section including a front skirt panel and a rear skirt panel having coinciding side edges, and a panty section including a front panty panel and a rear panty panel disposed between said skirt panels and having coinciding edges sandwiched between corresponding of said skirt side edges, said coinciding skirt side edges and panty side edges being joined to form common opposite side seams.

3,417,757
SMOKING PIPES
Duncan C. Killen, 52 Rue Dauphine, Paris, France, and Ralph Anspach, 2320 Blake St., Berkeley, Calif. 94704
Filed Oct. 24, 1965, Ser. No. 504,866
8 Claims. (Cl. 131—171)



A smoking pipe comprising an improved forced draft device in combination with a conventionally constructed pipe, with the draft device being formed above the pipe stem adjacent to the entire height of the rear wall of the bowl and including a housing formed integrally with the bowl, the housing is open at the rear end and in communication with a plurality of vertically disposed passages extending through the rear wall of the bowl; a resilient pumping means is carried within the housing and manually operable to provide a draft, the pumping means is preferably a hemispherical diaphragm of silicone-rubber material and removably secured within the housing; an alternate form provides an auxiliary passage and valve associated with the forced draft device for pumping fresh air into the pipe bowl.

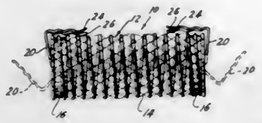
3,417,758
FILTER ELEMENTS AND ADDITIVES THEREFOR
Cephas H. Sloan and Bobby J. Sublett, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 15, 1965, Ser. No. 425,920
2 Claims. (Cl. 131—266)

A selective tobacco smoke filter element containing a water-soluble, weak basic inorganic salt which is capable of chemically reacting with and rendering harmless substantially all hydrogen cyanide vapors contained in the tobacco smoke passing through the filter elements. The organic salt is selected from the group consisting of sodium phosphite and potassium phosphite.

3,417,759
FILTER ELEMENT FOR SELECTIVELY REMOVING NICOTINE FROM TOBACCO SMOKE
George P. Touey and Robert C. Mumpower II, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 5, 1967, Ser. No. 665,272
4 Claims. (Cl. 131—267)

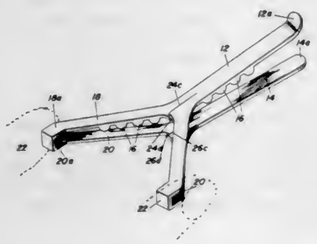
A filter element containing 1,4-butanediol for selectively removing nicotine from tobacco.

3,417,760
HAIR CURLING DEVICE
Amy Safady Silver, Great Neck, N.Y.
(4303 W. 82nd St., Prairie Village, Kans. 66208)
Filed Feb. 15, 1966, Ser. No. 538,511
4 Claims. (Cl. 132—40)



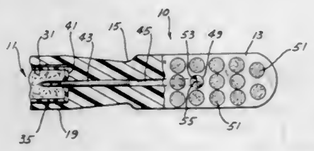
A hair curling device which allows the hair wound thereon to be engaged close to the scalp and which also engages the hair extending directly from the scalp. The device includes a substantially cylindrical body member about which the hair is wound, the member having a ring with an inner groove at one end. A hair retaining means is pivotally and rotatively received within the groove and has a plurality of staggered fingers extending along the member and conforming to its external shape.

3,417,761
HAIR CLIP
Robert Kulnis, 522 Denver Ave., and Edward Isaac, 928 Warren Ave., both of New Castle, Pa. 16101
Filed Mar. 11, 1965, Ser. No. 438,913
8 Claims. (Cl. 132—46)



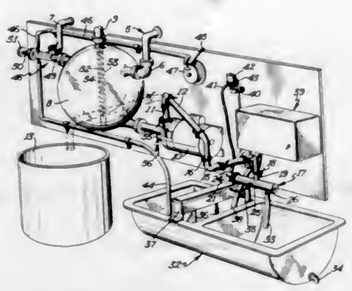
An improved hair clip which can easily be digitally operated to engage and retain a curl of hair. The clip comprises a generally Y-shaped unitary resilient member having spaced parallel upper and lower central and branch legs. When the diverged ends of the branch legs are digitally squeezed toward one another the upper and lower central and branch legs will relatively separate to receive a curl of hair between them.

3,417,762
TOOTHBRUSH
Michael J. Hall, Highway 30 E., Carroll, Iowa 51401
Filed May 26, 1967, Ser. No. 641,700
1 Claim. (Cl. 132—84)



A toothbrush having a tooth paste cartridge contained within its handle portion. The tooth paste is ejected from the cartridge by means of a slidable piston member and is ejected into the bristle area by the movement of the piston. The tooth paste is ejected through a normally closed discharge valve which is positioned within the bristles.

3,417,763
MILK LINE WASHING SYSTEM
Arnold R. Fjermestad and La Verne C. Christensen, Albert Lea, Minn., assignors to Universal Milking Machine Division, National Cooperatives, Inc., Albert Lea, Minn., a corporation of Minnesota
Filed Dec. 27, 1966, Ser. No. 604,729
8 Claims. (Cl. 134—58)



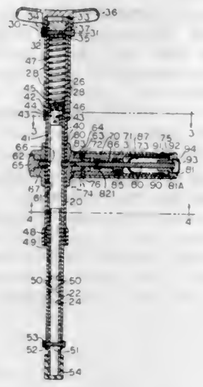
Apparatus for washing out a milk line in a continuous operation which is automatic, once it is commenced, and which uses a vacuum-controlled flow-directing valve connected to the discharge of the pump normally utilized to evacuate the receiver of the system and is controlled by and coordinated with a programmed water supply system so as to automatically direct the wash water back into its supply for recirculation and to direct the rinse water to a drain to avoid its recirculation.

3,417,764
KNOCK-DOWN AWNING DEVICE AND PACKAGE
Earl M. Hemenway, 1472 Hoover St., Eureka, Calif. 95501
Filed Dec. 27, 1966, Ser. No. 604,918
4 Claims. (Cl. 135—5)



An awning device adapted to be quickly assembled from straight, rigid frame elements to provide a support for an awning, and which support is adjustable for releasable securement to tables, or the like, of different lengths, and to support said awning over such tables and which support and awning may be quickly knocked down to form a compact package, without the aid of tools and without removing screws, bolts and the like that are susceptible to loosening and loss.

3,417,765
TELESCOPING AND LONGITUDINALLY ADJUSTABLE CRUTCH
Raymond William Slater, 164 Cottonwood St., West Island, Fairhaven, Mass. 02719; George R. Bryant, 122 Pollett St., Cumberland, R.I. 02864; and Lewis Bryant, 21 Williams St., Pawtucket, R.I. 02860
Filed Sept. 14, 1967, Ser. No. 667,733
4 Claims. (Cl. 135—50)



Telescoping and longitudinally adjustable crutch with swivel hand grip control of extensible spring.

3,417,766
AUTOMATIC ALIGNMENT OF IRRIGATION SYSTEM
Rufus J. Purtell, Brownfield, Tex., assignor, by mesne assignments, to Tri-Matic, Inc., Terry County, Tex., a corporation of Texas
Filed Feb. 21, 1967, Ser. No. 617,610
26 Claims. (Cl. 137—1)



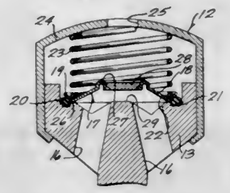
The drive shaft of a laterally movable irrigation system is mounted horizontally displaced from the pipe. Therefore, misalignment will result in a change in length of the drive shaft, which change of length is used to realign the system, using a variable diameter sheave. A reversing mechanism is employed to permit the drive shaft to lead the pipe or follow the pipe as the system is reversed.

3,417,767
SELF-RESTARTING SUPERSONIC INLET
Louis C. Young, Palos Verdes Peninsula, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,275
11 Claims. (Cl. 137—15.2)



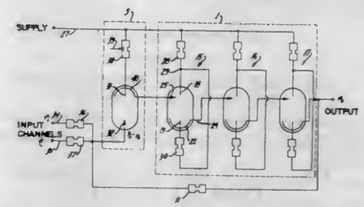
A high performance mixed compression air inlet for a supersonic aircraft having a movable ramp with a plenum chamber transmitting ramp boundary layer bleed air from a downstream high pressure region of the ramp to an upstream low pressure region on the ramp to cause boundary layer separation and aerodynamically reduce the flow area at the inlet lip thereby effectively increasing the internal contraction ratio to permit restarting of the inlet without physical change in the structure geometry.

3,417,768
RELIEF VALVE MECHANISM
Loerwood C. Wasson, Wauwatosa, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Dec. 5, 1966, Ser. No. 599,311
10 Claims. (Cl. 137—73)



1. A relief valve mechanism for use with a vessel containing a liquid under pressure, comprising conduit means having an inlet end communicating with the vessel and having an outlet end, a valve seat disposed in said conduit means between said inlet end and said outlet end, a snap-acting valve member engaged with the valve seat and having a generally convex shape in a direction toward said inlet end, and resilient means for urging the peripheral edge portion of said valve member into engagement with said valve seat to close off said conduit means, internal pressure within said vessel forcing said valve member into tight sealing engagement with the valve seat and said valve member characterized by the ability to snap to a generally concave shape to open said conduit means when subjected to a predetermined internal pressure above pressures normally encountered in said vessel.

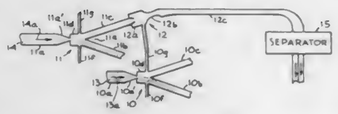
3,417,769
PURE FLUID OPERATIONAL AMPLIFIER
Bjorn G. Bjornsen, Milwaukee, Thomas J. Lechner, Jr., Menomonee Falls, and Paul H. Sorenson, West Allis, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 30, 1964, Ser. No. 414,808
9 Claims. (Cl. 137—81.5)



A set point impact modulator forms the input to a high gain fluid amplifier forming a part of a pure fluid operational amplifier. The set impact modulator includes a pair of opposed nozzles. A first nozzle is connected to a supply through an adjustable restrictor and the second nozzle is connected to the input signals through restrictors. A feedback restrictor connects the output of the pure fluid amplifier to the second nozzle and the flows and signals at the second nozzle are the summation of

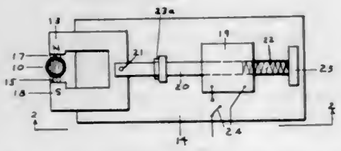
the input signals and the feedback signal which is the total or net error signal. The set point modulator through the adjustable restrictor connected to the first nozzle provides adjustment of the zero signal level such that the error pressure signal is biased to a raised level such that both positive and negative feedback can be provided.

3,417,770
FLUID AMPLIFIER SYSTEM
Mathew R. Denison, Tarzana, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed June 7, 1965, Ser. No. 461,956
21 Claims. (Cl. 137—81.5)



A multi-media fluid amplifier system where a first fluid flowing through a first fluid amplifier and jet pump controls the flow of a second fluid flowing through a second fluid amplifier by connecting the jet pump to the control channel of the second fluid amplifier.

3,417,771
FLOW CONTROL APPARATUS FOR FLUENT MAGNETIC MATERIALS
Hans Ernst, 1021 Eldorado Ave., Clearwater, Fla. 33515
Filed Sept. 24, 1965, Ser. No. 489,951
2 Claims. (Cl. 137—81.5)



The disclosed apparatus employs the selective introduction of a magnetic field in a channel through which flows a fluid having magnetizable particles dispersed therein in order to control fluid flow. A magnetic control valve disposed in or adjacent the channel includes a permanent or electromagnet for developing a magnetic field through which the fluid flows. The viscosity of the fluid increases with the strength of the magnetic field to restrict or inhibit fluid flow, as desired.

3,417,772
ROCKET MOTOR PROPELLANT INJECTION SYSTEM
John I. Schaeffer, Towaco, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 9, 1966, Ser. No. 593,050
1 Claim. (Cl. 137—81.5)

1. A fluidally controlled system for injecting liquid propellant into the combustion chamber of a rocket motor, comprising:

a liquid propellant supply reservoir;

a first wall attachment amplifier having first and second inlets and first and second outlets and arranged so that selective variation of the volume of fluid injected into said second inlet directs the fluid injected into said first inlet through said first outlet only, through said second outlet only, or through both said first and second outlets;

a first conduit communicatively connecting said first inlet of said first wall attachment amplifier with said liquid propellant supply reservoir;

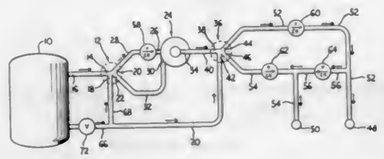
a vortex amplifier having a first inlet through which fluid can be injected radially into the interior thereof, a second inlet through which fluid can be injected tangentially into the interior thereof and into impingement with fluid injected into said first inlet, and an outlet;

a second conduit communicatively connecting said first inlet of said vortex amplifier with said first outlet of said first wall attachment amplifier;

a third conduit communicatively connecting said second inlet of said vortex amplifier with said second outlet of said first wall attachment amplifier;

a second wall attachment amplifier having first and second inlets and first and second outlets and arranged so that selective variation of the volume of fluid injected into said second inlet directs fluid injected into said first inlet through said first outlet only or through said second outlet only;

a fourth conduit communicatively connecting said first inlet of said second wall attachment amplifier with said outlet of said vortex amplifier;



a fifth conduit communicatively connecting said first outlet of said second wall attachment amplifier with said combustion chamber;

a sixth conduit communicatively connecting said second outlet of said second wall attachment amplifier with said combustion chamber; a seventh conduit communicatively connecting said fifth and sixth conduits;

a first check valve disposed in said second conduit and adapted to prevent fluid flow from said vortex amplifier to said first wall attachment amplifier;

a second check valve disposed in said fifth conduit and adapted to prevent gas flow from said combustion chamber to said second wall attachment amplifier;

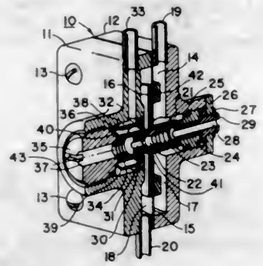
a third check valve disposed in said sixth conduit and adapted to prevent fluid flow from said first outlet of said second wall attachment amplifier to said second outlet of said second wall attachment amplifier;

a fourth check valve disposed in said seventh conduit and adapted to prevent fluid flow from said sixth conduit to said fifth conduit; and

flow control means for simultaneously injecting fluid into said second inlets of said first and second wall attachment amplifiers at a selected time.

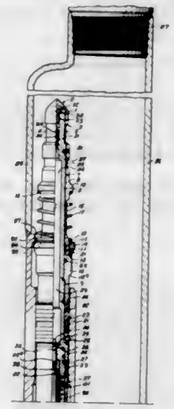
3,417,773
PNEUMATIC REPEATER
Richard W. Hatch, Jr., Norwell, and Lawrence W. Murphy, North Attleboro, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Feb. 13, 1967, Ser. No. 615,546
14 Claims. (Cl. 137—85)

A diaphragm separates a recess within a housing into a signal pressure chamber and a repeating pressure chamber; for the condition of signal pressure lower than repeating pressure, the diaphragm is moved away from an exhaust valve permitting pressure in the repeating chamber to vent to atmosphere; for the condition of signal pressure higher than repeating pressure the diaphragm forces the exhaust valve to move which in turn unseats



a supply valve permitting the supply pressure to enter the repeating pressure chamber; thus the repeating chamber pressure follows the pressure of the signal chamber.

3,417,774
RETRIEVABLE GAS LIFT VALVE ASSEMBLY
Bobby L. Douglas, Dallas, Tex., and Stephen M. Fotiades, Harvey, La., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,081
8 Claims. (Cl. 137—155)

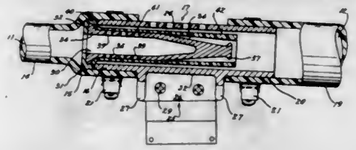


1. In a flow valve, a pressure chamber, a sealed bellows diaphragm suspended below the pressure chamber and being in fluid communication therewith, said pressure chamber and bellows diaphragm being charged at a predetermined pressure; a valve stem and head suspended below the bellows diaphragm; a valve seat housing having a passage therethrough with a valve seat thereabout arranged to receive the valve head; a bellows housing about the bellows diaphragm between the pressure chamber and the seat housing; a port through the wall of the bellows housing communicating with the valve head and seat; and a latch assembly surrounding the pressure chamber arranged to disengagably latch the flow valve in a mandrel receptacle.

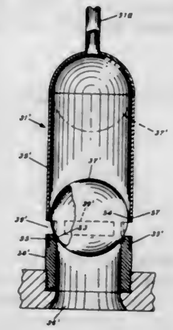
3,417,775
VACUUM BREAKER DEVICE
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,006
3 Claims. (Cl. 137—218)

A vacuum breaker device is disclosed including a sleeve member connected into a fluid conduit and defining openings venting the conduit to the atmosphere.

Positioned within the sleeve member is a nozzle having an inlet at one end and radially outwardly directed egress openings in a sidewall portion. A resilient valve member in sleeve-like engagement with the egress-defining portion of the nozzle normally closes the egress openings and is responsive to positive fluid pressure at the inlet for expanding the valve member to permit fluid flow through the egress openings toward the outlet of the conduit.



3,417,776
RELIEF VALVE SYSTEM FOR VESSELS UNDERGOING INTERMITTENT EXPLOSIONS
Milton Ludwig, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed July 16, 1964, Ser. No. 383,195
1 Claim. (Cl. 137—512.5)

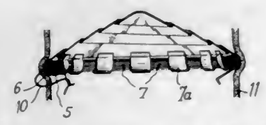


1. In a relief system for an explosion-prone vessel having a head, at least one inlet and one outlet, a central reaction zone and at least one reactant within said zone, the combination of support means having a series of openings therethrough in operative contact with said central reaction zone, a plurality of spherical relief valves attached to said support means in cooperative alignment with said openings, each of said valves including a cylindrical valve cage in alignment with one of said openings, a separate seating element attached within each of said openings wherein said valve cage and said seating element have surfaces in cooperating contact within said opening, a hollow sphere slidable within said valve cage and having a first arcuate portion in operable contact with said seating element to provide a seal and a second arcuate portion remote therefrom, and a source of pressurized gas controllably connected to each of said valves for providing gas pressure over said second portion of said sphere to maintain a substantially constant pressure differential between said first and second portions of said sphere and maintain said sphere in contact with said seating element except in response to explosion-created increases in pressure in said reaction zone of said vessel.

ERRATUM

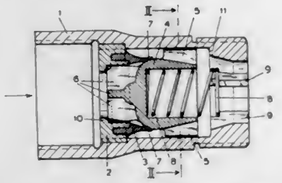
For Class 137—514 see:
Patent No. 3,417,795

3,417,777
VALVE
Raymond Heim de Balsac, 104 Ave. Raymond Poincare, and Didier Boyer, 7 rue Dupleix, both of Paris, France
Filed Oct. 24, 1966, Ser. No. 588,873
Claims priority, application France, Oct. 25, 1965, 36,106
15 Claims. (Cl. 137—525)



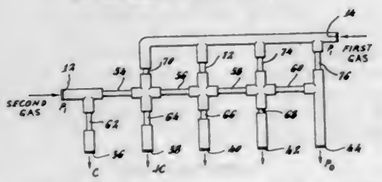
1. A valve comprising a member of flexible strip material coiled to form a resilient spiral of conical shape which starts from a rigid annular support, the width of said strip varying in the direction from the central portion of the valve to its periphery, constituting the annular rigid base, said base consisting of the overlap of the outer peripheral portion of the coiled strip and its connection to the lower adjacent turn.

3,417,778
CHECK VALVE WITH RESILIENT SEAT MEANS
Johannes B. Ratelband, Zutfensestraatweg Velp 44, Velp, Netherlands
Continuation of application Ser. No. 415,927, Dec. 4, 1964. This application Oct. 5, 1967, Ser. No. 673,235
2 Claims. (Cl. 137—543.23)



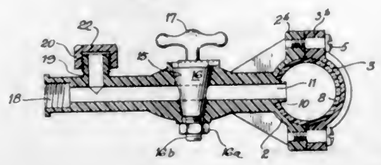
A check valve having a valve seat in the form of a thin, annular, resilient lip, and a valve member having a rounded body with a diameter increasing in the direction remote from the valve seat and engageable with said lip substantially at its maximum diameter. An abutment is provided in the casing upstream from the valve seat lip, and the valve body has guide means extending into the valve seat element and engageable with said abutment to limit engagement pressure by the valve body on the valve seat lip. Under fluid pressure, the lip is subject to expansion from the valve body to reduce resistance to retractive movement by the body.

3,417,779
SELECTABLE CONCENTRATION GAS MIXING APPARATUS
Marcel Golay, Rumson, N.J., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Jan. 9, 1967, Ser. No. 607,942
10 Claims. (Cl. 137—604)



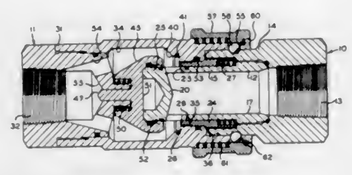
A network of fluid flow impedances is employed for mixing different flowing fluids to provide a plurality of predetermined output fluid mixtures.

3,417,780
BRANCHING DEVICE FOR FLUID DISTRIBUTION
Leonce Lienard, Bazainville, Yvelines, France
Filed Oct. 27, 1965, Ser. No. 505,334
Claims priority, application France, Nov. 13, 1964, 994,858
1 Claim. (Cl. 137—608)



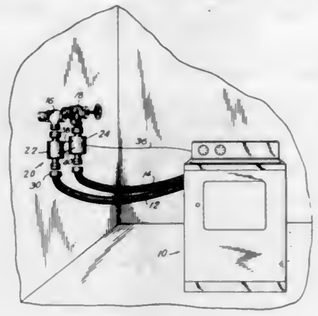
A device for distributing fluid from a main conduit comprising a pair of flanged sections defining opposed semi-cylindrical interior surfaces whereby the flanged sections can be fit around and secured relative to the conduit. One of the flanged sections carries a nipple which extends through an opening in the side wall of the conduit. The nipple is frusto-conical in shape so that it can be wedged into position to provide a tight seal. A passage is defined by the nipple for communication with a tap so that fluid can be withdrawn from the main conduit and discharged from the passage.

3,417,781
QUICK-CONNECT-DISCONNECT COUPLING
Eric Gregg, St. Louis, Mo., assignor to Stile-Craft Manufacturers, Inc., St. Louis, Mo., a corporation of Missouri
Filed July 1, 1965, Ser. No. 468,739
2 Claims. (Cl. 137—614.04)



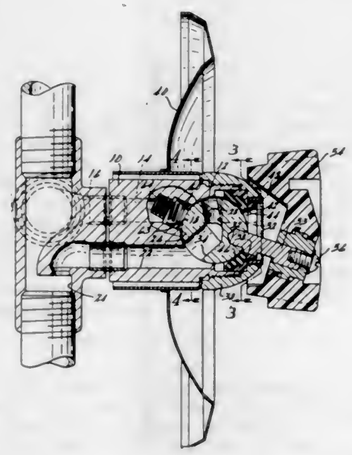
A coupling having a female member in which the body includes a poppet valve mounted in a socket and provided with a forwardly facing recess, and having a male member in which the plug includes a closed end received in the poppet valve recess and engaging the poppet valve upon insertion. A sealing means is provided between a sleeve movably mounted on the plug and the body forwardly of the valve port and plug port and between the side of the plug end in the poppet recess and the poppet valve at the side of the poppet valve recess rearwardly of the valve port and plug port. A spring is located in a rear recess in the poppet valve and located between the stem fixed in the socket and the poppet valve at the side of the rear recess. A sealing means is provided between the plug and sleeve. The relative size of the effective diameter of the sealing means between the sleeve and body is slightly greater than the sealing means between the plug and poppet valve whereby a slightly unbalanced pressure tends to urge the plug axially outwardly of the socket. This small unbalanced pressure exerts a small axial force between the plug and locking means.

3,417,782
VALVE CONTROL
Adelbert Mentnech, Locust Valley, N.Y., assignor of thirty-three and one-third percent to Albert C. Nolte, Jr., New York, N.Y.
Filed July 11, 1966, Ser. No. 564,111
5 Claims. (Cl. 137—624.11)



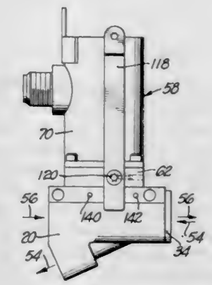
Solenoid operated valve device interposed between household faucets and connecting hoses of a household appliance, for instance a washing machine, the control for the solenoid valves of the device being arranged to operate the solenoid valves in synchronism with the inlet valves of the appliance thus releasing the appliance valves and the hoses of liquid pressure when the faucets are open and the appliance valves closed.

3,417,783
MIXING VALVE
Alex Manoogian, Detroit, and Harry Kief, Allen Park, Mich., assignors, by mesne assignments, to James E. Meagher, Altadena, Calif.
Filed May 3, 1965, Ser. No. 452,696
6 Claims. (Cl. 137—625.41)



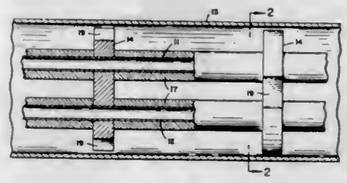
A single handle mixing faucet of the ball type wherein the hot and cold water inlets open into a valve seat in the valve body and a valve member is movable against the valve seat and has three inlet ports therein in constant fluid flow communication with an outlet duct in the valve seat. The valve member is rotatable about two mutually perpendicular axes so that one of the inlet ports in the valve member may be communicated only with the hot water inlet, another inlet port may be communicated only with the cold water inlet, and the third inlet port may be communicated with either the hot or cold water inlet.

3,417,784
SHUTOFF AND DRAIN VALVE
Arnold A. Cowan, Tarzana, Calif., assignor, by mesne assignments, to The Bobrick Corporation, North Hollywood, Calif., a corporation of California
Filed Nov. 14, 1966, Ser. No. 593,911
12 Claims. (Cl. 137—625.65)



A drain is arranged at the outlet side of the solenoid actuated valve for automatically draining the valve and any connected outlet lines when the valve is closed. Mechanism is included in the valve for positively latching it in each of its open and closed positions until it is solenoid actuated to its opposite position. Manual operating means may be incorporated overriding the solenoid actuation of the valve, said manual operating means when operated preferably conditioning the solenoid actuating means inoperative.

3,417,785
PIPE SUPPORT
Thomas I. Andrews, Los Altos Hills, Calif., assignor to Seefore Corporation, San Jose, Calif., a corporation of California
Filed Oct. 14, 1965, Ser. No. 496,081
3 Claims. (Cl. 138—108)

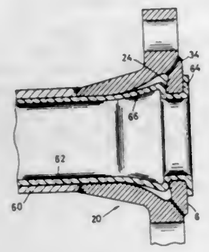


A pipe support for maintaining pipes in a casing in spaced relationship comprising a homogeneous mixture of polyester and limestone having apertures for slidably receiving pipes.

3,417,786
ASSEMBLY OF TUBES OF DIFFERENT COEFFICIENTS OF THERMAL EXPANSION

Ernst Schnabel, Offheimer Weg,
6250 Limburg an der Lahn, Germany

Filed Aug. 4, 1966, Ser. No. 570,215
Claims priority, application Germany, Aug. 6, 1965, Sch 37,508
9 Claims. (Cl. 138—140)

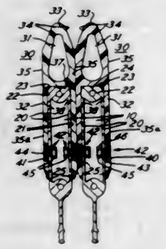


1. A tubular assembly comprising outer and inner tubular means connected to each other at least at one end, said outer and inner tubular means having substantially different coefficients of thermal expansion, said inner tubular means extending along the interior of said outer tubular means and forming a liner therefor, said outer tubular means having an annular wall portion surrounding said inner tubular means and having an inner surface formed with an annular groove, said inner tubular means having an annular expansion bulge spanning said groove and extending only partly into said groove and providing said inner tubular means with an inner annular groove and with an outer circumferential rim extending partially into said groove of said outer tubular means, so that during expansion and contraction of said inner tubular means with respect to said outer tubular means said expansion bulge of said inner tubular means can move in said groove of said outer tubular means.

3,417,787
LOOM HARNESS

Frank H. Kaufmann, Huntingdon Valley, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 7, 1966, Ser. No. 579,797
3 Claims. (Cl. 139—91)

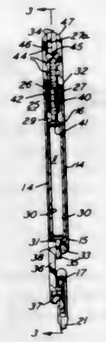


Attachment for the metal rails of harness frames of looms to prevent rubbing of the metal rails during shedding, the attachment being a guide of material of low coefficient of friction and being held in fixed engagement with the side faces of the rails without distortion thereof by fasteners in shear, and preferably separate fastening members at each side wall of the rail, the attachment being suitable for various shapes of metal rails and not being limited for use with specific cross section, as heretofore.

3,417,788
LOOM HARNESS

Charles F. Kramer, Philadelphia, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1967, Ser. No. 625,659
8 Claims. (Cl. 139—92)

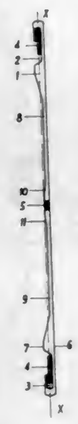


Attachments for the top and bottom rails of heddle frames for the adjustable connection of the heddle supporting rods and the protection of the rails against abrasion.

3,417,789
HEDDLE

Martin Graf, Zurich, Switzerland, assignor to Grob & Co. Aktiengesellschaft, Horgen, Switzerland

Filed Jan. 17, 1967, Ser. No. 609,868
Claims priority, application Switzerland, Dec. 16, 1966, 577/66
4 Claims. (Cl. 139—96)



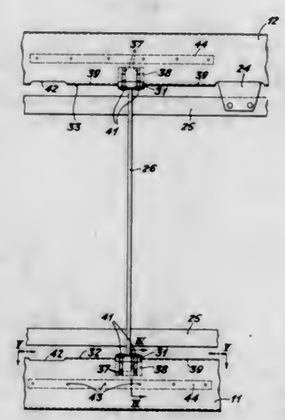
A heddle is made from strip material (e.g. steel) and is punched out so that there is a straight edge along one side at least in the zone of the warp shed. Consequently, the heddle only needs to be polished on the other edge.

The eye is offset to one side of the line joining the centers of the carrying rods and is also displaced laterally in regard to the center line of the adjoining heddle shaft portion, and if two sets of heddles are provided with eyes offset on opposite sides, a Duplex arrangement of heddles can be assembled.

3,417,790
HEDDLE FRAMES

Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

Filed Oct. 11, 1966, Ser. No. 585,858
Claims priority, application Switzerland, Oct. 12, 1965, 14,043
4 Claims. (Cl. 139—91)



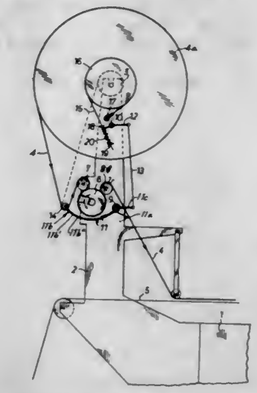
There is disclosed a heddle frame for looms including one or more crossbars for connecting together the upper and lower horizontal members of the heddle frame, these crossbars being adjustably fixable at various locations lengthwise of the frame. To this end the longitudinal members are hollow, taper in cross-section toward each other, and have in their adjacent edges each a slot through which fastening means may extend from one end of the cross-bar into the interior of the longitudinal member and into a movable anchoring member disposed inside the longitudinal member. The anchoring member is inside the hollow longitudinal member and is tapered to match the tapering shape of the inside cross-section of the longitudinal member. The crossbar is then affixed to the remainder of the heddle frame, upon tightening of the fastening means, by frictional engagement between the ends of the cross bar and the exterior of the longitudinal members, and by frictional engagement between the anchor members and the interior of the longitudinal members.

3,417,791
WARP BEAM TAKE-OFF DRIVE

Ernst Gattiker, Thurgau, Switzerland, assignor to Adolph Saurer Ltd., Thurgau, Switzerland

Filed Mar. 1, 1967, Ser. No. 619,804
Claims priority, application Switzerland, Mar. 28, 1966, 4,456/66
9 Claims. (Cl. 139—109)

A control roller extends across the pile warp unwound by transporting rollers from a pile warp beam, and exerts an unwinding force on the same. Levers supporting the roller are connected with a brake for braking the

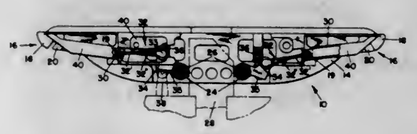


warp beam with a brake torque depending on the tension of the warp.

3,417,792
SHUTTLE

Gordon T. Gurney, Worcester, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Oct. 14, 1966, Ser. No. 586,882
8 Claims. (Cl. 139—125)

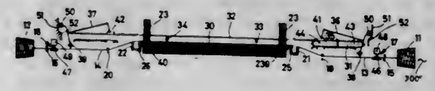


A gripper shuttle which has fixed and movable gripping jaws, with the movable jaw being urged into gripping contact with the fixed jaw by a spring acting through a toggle-like system of links and levers.

3,417,793
WEAVING LOOM

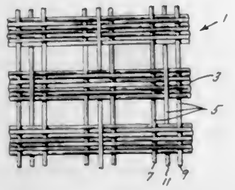
Alexis Freihofer, Tann-Ruti, Zurich, Switzerland, assignor to Ruti Machinery Works Ltd., Ruti, Zurich, Switzerland, a corporation of Switzerland

Filed June 9, 1966, Ser. No. 556,499
Claims priority, application Switzerland, June 18, 1965, 8,557/65
22 Claims. (Cl. 139—126)



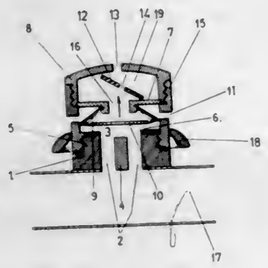
A weaving loom having a yarn supply arranged externally of the shed, yarn picking means for drawing weft yarn from the yarn supply into the shed which retains the yarn with a force that is smaller than the tearing strength of the yarn, braking means for retaining the yarn during selected periods of the working cycle of the loom, which is disposed between the yarn supply and the picking means and control means for actuating the braking means to release the yarn during travel through the shed and thereafter to retain the yarn to remove it from the picking means after it has passed through the shed.

3,417,794
SHADE SCREENING
Thomas G. Lynch, Wyckoff, and Henry E. Dietrich, River Edge, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 536,796, Mar. 23, 1966. This application May 1, 1967, Ser. No. 635,226
3 Claims. (Cl. 139—420)



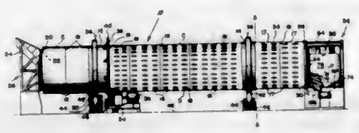
A woven fabric comprising a series of threads arranged to form bars, said bars being spaced a predetermined distance apart; a second series of groups of threads, said groups being spaced a predetermined distance apart and having at least two threads in each of said groups in said second series interlaced with alternate threads in each of the said bars, and the remaining threads in each of said groups interlaced with alternate bars whereby said bars are held in a fixed position.

3,417,795
PRESSURE RELIEF VALVE
Holger Hesse, Skovtoftebakken 19, Copenhagen-Virum, Denmark
Filed Nov. 24, 1965, Ser. No. 509,540
Claims priority, application Great Britain, Dec. 1, 1964, 48,782/64
9 Claims. (Cl. 137—514)



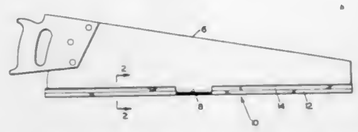
A relief valve for breathing apparatus having means tending to hold a movable valve element in a closed position at any gas pressure lower than a threshold pressure and means adapted at least temporarily to retain the valve element in the open position to which it moves upon the application of a pressure equal to or higher than the threshold pressure. The latter means includes an aperture extending through the body of the valve opposite the valve inlet port, a bellows having a closed end carrying the movable valve element and an open end sealingly attached about said aperture, and check valve means permitting substantially unrestrictive flow of fluid from the interior of the bellows through the open end thereof and through said aperture when the bellows is being compressed and restricting return flow of fluid into the interior of the bellows when the bellows is being expanded.

3,417,796
DEBARKING APPARATUS
Daniel K. Leider and Richard E. O'Brien, Manitowoc, Wis., assignors to Manitowoc Shipbuilding, Inc., Manitowoc, Wis., a corporation of Wisconsin
Filed Feb. 15, 1966, Ser. No. 527,463
20 Claims. (Cl. 144—208)



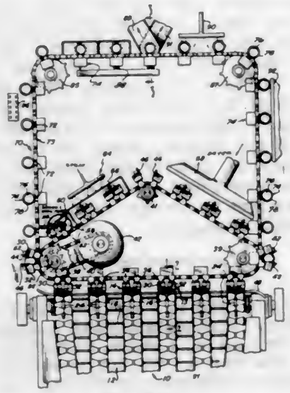
A log debarking apparatus is provided which comprises means for controlling discharge of material therefrom.

3,417,797
HAND SAW GUARD
Patrick M. Grogan, Salem, Oreg., assignor of one-fourth to Laurence V. Martin and Lillian N. Martin jointly, both of Redondo Beach, Calif.
Filed Feb. 21, 1967, Ser. No. 617,620
1 Claim. (Cl. 145—35)



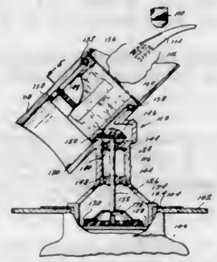
A guard for covering the teeth of hand saws during transportation and storage comprises a continuous length of extruded plastic having a longitudinal chamber section dimensioned to receive the teeth and a communicating longitudinal grip section adapted to grip the saw blade immediately above the teeth, thereby releasably retaining the guard on the saw.

3,417,798
EGG BREAKING AND SEPARATING APPARATUS
Leonard Shelton, Omaha, Nebr., assignor to Continent Egg Corporation, a corporation of Illinois
Filed Sept. 2, 1966, Ser. No. 577,065
10 Claims. (Cl. 146—2)



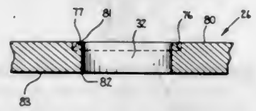
1. Apparatus for handling egg products comprising a first conveyor system including a chain made up of a plurality of link means, a second conveyor system disposed below said first conveyor system and including a chain having a plurality of link means, a plurality of spaced egg receiving units comprising egg cup halves connected to the link means of said first conveyor system for receiving eggs to be broken, a plurality of egg cup assemblies connected to the link means of said second conveyor system and spaced apart an amount equal to the spacing of said egg receiving units and adapted to receive the egg contents of said eggs in the egg receiving units, means for opening the eggs received in said egg receiving units including knife means secured to said egg cup halves and disposed therebetween, means for controlling the action of said knife means, means for driving and synchronizing the movement of said first and second conveyor systems, the drive means for said first conveyor system including a sprocket whereby when the chain is moved about said sprocket the cup halves of each egg receiving unit are separated to split the egg shell of the egg contained therein and dump the contents thereof into the egg assemblies disposed therebelow.

3,417,799
KITCHEN SINK ROTARY APPLIANCE
Wilford A. Swanson, Sun Valley, Calif. (10730 Wheatland Ave., Sunland, Calif. 91040)
Filed Dec. 9, 1965, Ser. No. 512,491
1 Claim. (Cl. 146—50)



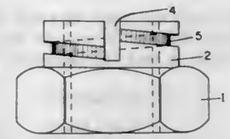
A rotary appliance is disclosed, e.g. potato peeler, which is mounted for use in a kitchen sink. The disclosed embodiments include a water turbine drive and a power take-off drive for connection to a garbage disposal in the sink. Two embodiments of the disposal power take-off are disclosed, one of which is aligned with the disposal, the other of which is angularly offset therefrom. The power take-offs include a mechanical coupling for snugly engaging the drain of the sink, and includes a resilient member for engaging the disposal rotary unit, which member is backed by radial braces to preserve a passage open to the disposal.

3,417,800
GRINDING APPARATUS
Larry M. Tipton, 316 Wood Road, Anderson, Ind. 46011
Continuation-in-part of application Ser. No. 329,669, Dec. 11, 1963. This application July 21, 1966, Ser. No. 566,918
3 Claims. (Cl. 146—186)



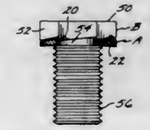
Apparatus for grinding and chopping meat including a cutter plate assembly made up of a plastic backing plate and a metal face plate. Another embodiment of the cutter plate assembly includes a plurality of stacked metal cutter plates.

3,417,801
SELF-LOCKING NUT AGAINST VIBRATIONS
Vartan Berberian, Maisons Alfort, France, assignor to Bemex, Cusset (Allier), France, a society of France
Filed Apr. 19, 1966, Ser. No. 543,601
Claims priority, application France, May 17, 1965, 17,316
1 Claim. (Cl. 151—21)



A self-locking nut having a slotted prolongation formed with a helicoidal groove, which tightly receives a helicoidal resilient ring to bind the nut against a threaded rod. The pitch of the groove and ring are inverse to that of the nut, so that the binding action is somewhat relaxed while the nut is being tightened, but is fully effective when the nut is stationary.

3,417,802
CAPTIVE LOCK WASHER ASSEMBLY
Carl O. Oldenkott, 213 N. Evergreen, Anaheim, Calif. 92805
Continuation of application Ser. No. 568,842, July 29, 1966. This application Nov. 16, 1967, Ser. No. 683,736
3 Claims. (Cl. 151—37)

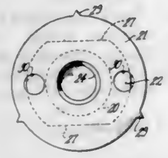


A fastener assembly for holding first and second elements together including a bolt member having an enlarged head and a threaded shank with a lock washer being captively mounted on the shank adjacent the head and being free for rotatable and limited axial movement thereon. The underside of the bolt head and the adjacent face of the washer are formed with complementary configurations cooperating to lock the bolt against unintentional rotation relative to the first and second elements.

3,417,803
MOLDABLE INSERT HAVING POSITIONING MEANS FOR INSTALLATION IN SANDWICH PANEL
Frederick W. Rohe, Placentia, and Charles S. Phelan, Tustin, Calif., assignors to Shur-Lok Corporation, Santa Ana, Calif., a corporation of California
Original application Apr. 20, 1962, Ser. No. 189,194, now Patent No. 3,282,015, dated Nov. 1, 1966. Divided and this application Sept. 6, 1966, Ser. No. 596,029
10 Claims. (Cl. 151—41.73)

A fastener insert for potted anchorage in a lightweight sandwich panel, having a tubular body to receive a fastener stud and a flat radial flange head provided on its periphery with a number of small circumferentially-spaced projections adapted, under axial pressure, to pierce and become slightly embedded in the edge of an aperture

in a skin of the panel, without warping the panel skin, such opening forming the mouth of a hole in which the insert is embedded in potting material, the projections



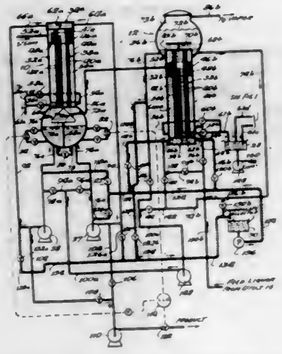
temporarily holding the insert in place while potting material is inserted through a port in the insert head and allowed to harden so as to permanently anchor the insert in the panel.

3,417,804

METHOD AND APPARATUS FOR SIMULTANEOUSLY WASHING AND WORKING AN EVAPORATOR EFFECT

Anthony N. Chirico, Naperville, Ill., assignor to Chicago Bridge and Iron Company, Oak Brook, Ill., a corporation of Illinois

Filed May 15, 1964, Ser. No. 367,665
9 Claims. (Cl. 159—20)



Separate segments of a multiple effect evaporator are selectively removed from operation for scale removal. The segment from which scale is to be removed is bypassed from feed circuit so that the evaporating side is open to condensate flow while the condensing side is exposed to vapor for heat exchange therewith and condensation and accumulation of the vapor condensate.

3,417,805

EMERGENCY OPENING PROTECTIVE GATE

Stanley Kaufman, 20 Cairngorm Road, New City, N.Y. 10956, and David Kaufman, 35 Country Ridge Drive, N. Portchester, N.Y. 10573

Filed July 19, 1967, Ser. No. 654,497
10 Claims. (Cl. 160—152)

A protective gate subject to being opened in emergencies, the gate having a latch bar pivotally mounted on a closure plate positioned to engage the free end of the gate when the gate is oriented in an operative protecting position. The latch bar is formed with detents extending through openings in the closure plate to retain the gate in operative protecting position when the latch bar overlies the closure plate, and manually operable locking means accessible only from the protected area, are extended between the latch bar and closure plate to retain same in a juxtaposed relationship, so that opening of the gate may be readily accomplished only from the protected area in



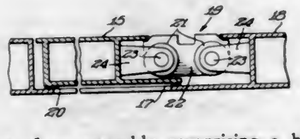
a rapid fashion during emergencies, but may not be accomplished from the outside.

3,417,806

ROTARY ACTUATOR ASSEMBLIES FOR RESTRICTED DIAMETER USES

Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed July 10, 1963, Ser. No. 293,997
22 Claims. (Cl. 160—188)



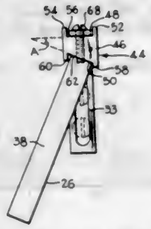
Members of an assembly comprising a hatch cover, door and the like are hingably relatively movable by rotary actuators which have either their housings rigidly connected together and rotary shafts projecting from the housings and fixedly connected to the members, or the housings attached to the members and the shafts rigidly connected together. Thereby rotary vane actuators each of which effects 90° rotation cooperate to afford 180° hinging movement. Means may be provided (segmental gears) to assure movement of the cover panels simultaneously and at the same rate of speed.

3,417,807

ADAPTER FOR DRAPERY SUPPORT

Douglass R. Falkenberg, 20997 Lake Road, Rocky River, Ohio 44116

Filed Mar. 23, 1966, Ser. No. 536,702
7 Claims. (Cl. 160—348)



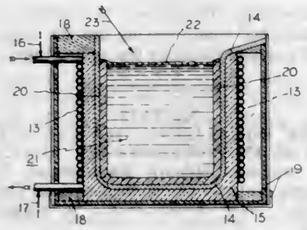
A drapery holder and bracket used for holding draperies in pleated fashion around a window or door opening. An adapter is provided intermediate the bracket and holder for maintaining the holder in a position which is angularly disposed to the plane of the bracket. This particular structure permits mounting the bracket in a normally vertical position rather than in an angularly disposed one.

3,417,808

MELTING AND CASTING OF TITANIUM

Robert A. Rosenberg, Norwood, Mass., assignor to Mitron Research & Development Corporation, Waltham, Mass., a corporation of Delaware

Continuation of application Ser. No. 507,611, Oct. 22, 1965, which is a continuation of application Ser. No. 325,067, Nov. 20, 1963. This application Feb. 23, 1967, Ser. No. 632,127
5 Claims. (Cl. 164—68)



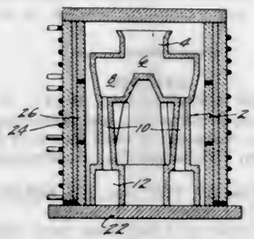
A quantity of molten titanium is protected against embrittling contamination by containing all of the molten titanium within a receptacle and releasing along all titanium surfaces which are in contact with the receptacle the liquid and gaseous halide products of melting and decomposition (caused by heat of the molten titanium) of non-reactive flux consisting essentially of at least one halide which generates these protective products on exposure to temperatures of molten titanium.

3,417,809

METHOD OF CASTING DIRECTIONALLY SOLIDIFIED ARTICLES

Larry W. Sink, Northford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Original application Ser. No. 472,530, July 16, 1965. Divided and this application June 30, 1967, Ser. No. 662,230
1 Claim. (Cl. 164—127)



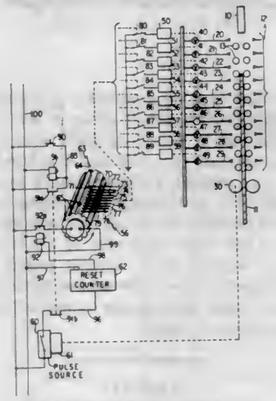
A mold and heater for use in producing directionally solidified articles in which the mold rests on a chill plate and the mold cavity includes an extension, adjacent to the chill plate, which constitutes a growth zone for containing the initial random crystallization and in which the growth zone material forms no part of the finished article.

3,417,810

SYSTEM FOR PROGRESSIVE SHUTDOWN OF COOLING WATER SPRAYS

John R. Tiskus, Monroeville Borough, and Regis A. Vey, Ben Avon, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Sept. 1, 1965, Ser. No. 484,398
5 Claims. (Cl. 164—150)



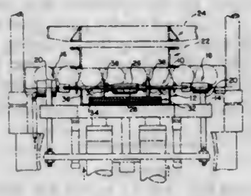
A system for progressively closing the valves controlling the water supply to cooling nozzles, as the trailing end of a casting travels down between banks of guide rollers, includes a counter set in operation at a predetermined time and actuated by successive pulses, one for each increment of travel of the casting. After a predetermined number has been accumulated by the counter, it notches forward a sequence switch one step and resets itself to zero for a repeat operation. The sequence switch operates valve actuators to close the valves successively.

3,417,811

MATCHPLATE SUPPORT ASSEMBLY

Anthony Masi, 1437 W. 36th St., Erie, Pa. 16508

Filed Feb. 14, 1966, Ser. No. 527,278
4 Claims. (Cl. 164—240)

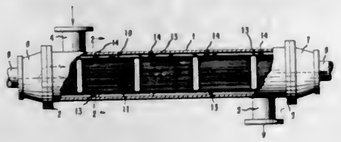


The upstanding side walls of a pattern well form an indexing surface for a matchplate which supports a mold box. Additional support members for the matchplate within the area bounded by said side walls and engaging the bottom of the pattern well accommodate for surface irregularities in the matchplate and rigidify the matchplate against deflection when the mold sand is rammed in the mold box.

3,417,812
HEAT EXCHANGER APPARATUS WITH A NOVEL BY-PASSING ARRANGEMENT FOR SHELLSIDE FLOW

Robert Dilman Smith, Chalfonte, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 30, 1966, Ser. No. 598,070
5 Claims. (Cl. 165—1)

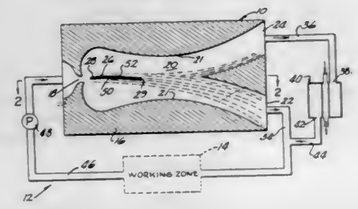


A tube in shell type heat transfer apparatus having a bundle of highly flexible plastic tubes of low thermal conductivity positioned in a hollow shell with an elongated annular space between the shell and the bundle and having at least one annular baffle mounted in the annular space for selective positioning to achieve an optimum combination of pressure drop and heat transfer coefficient, the portions of the tubes upstream of the baffle provided with means to support them against radial compaction of the bundle and the portions of the tubes downstream of the baffle provided with means to support them against radial expansion of the bundle.

3,417,813
FLUIDIC THERMOSTAT

Charles C. Perry, Ann Arbor, Mich., assignor to W. M. Chace, Detroit, Mich., a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,633
8 Claims. (Cl. 165—35)



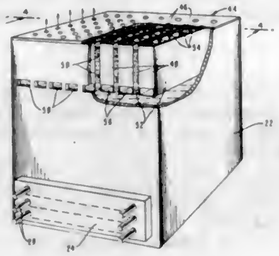
A thermostat in which a hollow body has a chamber provided at one end with an inlet port and at the opposite end with outlet ports, the chamber being in substantially the shape of a proportional fluid amplifier. A bimetallic deflector is mounted in the chamber at a location generally between the inlet and outlet ports and at a position to be engaged by fluid entering the chamber through the inlet port. The deflector moves in response to a change in the temperature of the fluid in the chamber so as to vary the proportional amounts of fluid which flows to the outlet ports.

3,417,814
AIR COOLED MULTILIQUID HEAT TRANSFER UNIT

Sevgin Oktay, Beacon, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 26, 1967, Ser. No. 648,719
3 Claims. (Cl. 165—105)

A sealed container is provided in which first and second fluids of different boiling points which are immiscible with one another are contained. The first lower boiling point liquid is located at the bottom of the container and has immersed therein, a heat generating assembly. An interface is formed between the two liquids which condenses some of the vapor bubbles arriving thereat, from the heat

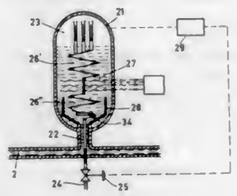


generating assembly. The top of the container is formed by a heat exchange means having fins for conducting the heat from the second liquid to the ambient air.

3,417,815
PRESSURE EQUALIZING DEVICES SUITABLE FOR USE IN POWER-WATER REACTORS

Alexander van den Honert, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 4, 1966, Ser. No. 584,141
Claims priority, application Netherlands, Oct. 7, 1965, 6512979
4 Claims. (Cl. 165—107)



A pressure equalizing device for equalizing pressure fluctuations in a closed fluid circulating system, comprising a container having a lower portion connected by a first conduit to a portion of the system operating at a given pressure and providing the lower portion with a reservoir filling of the liquid, the upper portion is connected by a conduit to a second portion of the system operating at a lower pressure, a liquid heater is provided in the container and is positioned within the reservoir filling, the second conduit comprises a heat exchanger disposed within the lower container portion in the reservoir filling.

3,417,816
METHOD OF CEMENTING WELL CASING

Richard A. Morris, Monroeville, and Abraham J. Teplitz, Penn Hills, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 29, 1967, Ser. No. 649,896
11 Claims. (Cl. 166—24)

After the borehole of a well has been drilled to the desired depth, small diameter pipe having scratchers mounted on its outer surface is run into the well and moved vigorously while circulating a liquid to remove drilling cuttings and mud filter cake from the borehole wall through the interval to be cemented. A liquid sealing material, ordinarily a hydraulic cement, is displaced down the tubing to fill the borehole of the well above

the level of the interval to be cemented. Movement of the small diameter pipe is continued while the sealing liquid is displaced into the well to reduce channeling of the sealing material. Thereafter, small diameter pipe is



pulled from the well and casing is lowered into the desired position in the well. The sealing liquid is then allowed to set to form a solid material. Setting of the sealing material may be triggered by heating or radiation.

3,417,817
STIMULATION USING DRY ACID SLURRY

John P. Moore, Metairie, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

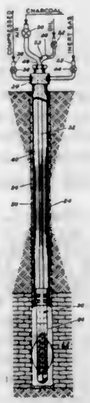
No Drawing. Filed Aug. 8, 1967, Ser. No. 659,043
7 Claims. (Cl. 166—30)

A process for stimulation of underground formations having heterogeneous permeable productive zones utilizing a technique to temporarily but selectively plug portions of the formation with a solid acidic material readily susceptible to chemical dissolution, acidizing the less permeable productive areas and thereafter unplugging the temporarily plugged areas in the productive zone by chemical dissolution and, thereby, improve the recovery of oil therefrom.

3,417,818
METHOD FOR INITIATING UNDERGROUND COMBUSTION

Charles C. Dyson, Taft, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Jan. 9, 1967, Ser. No. 608,208
2 Claims. (Cl. 166—39)

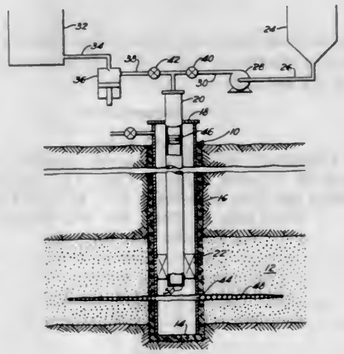


A method of igniting underground petroleum formations having a perforated liner in the well adjacent the formation by packing the annular space between the exterior of the perforated liner and the well wall with a combustible material, igniting the combustible material and injecting air through the perforations of the liner to burn the combustible material and to cause the ignition of the petroliferous material in the formation.

3,417,819
METHOD OF FRACTURING WITH A HIGH-VISCOSITY LIQUID

Malcolm Robert Jesse Wyllie, Allison Park, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 1, 1966, Ser. No. 591,232
4 Claims. (Cl. 166—42)



A method of fracturing a subsurface formation penetrated by a well allowing use of pumps of low volumetric capacity in which a fracturing liquid having a viscosity in excess of 100,000 centipoises and an API liquid loss less than 5 milliliters per 30 minutes is placed in a well. Propping agent particles having a size of ⅛ inch to 1 inch are suspended in the fracturing liquid. A readily pumpable following liquid is pumped into the well after the fracturing liquid to increase the pressure to initiate a fracture in the formation surrounding the well and displace fracturing liquid into the fracture.

3,417,820
WELL TREATING WITH AQUEOUS GELLED SALT SOLUTIONS

Walter N. Epler and William T. Malone, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,352
10 Claims. (Cl. 166—42)

This patent describes a novel thickened and gelled fluid composition comprising an aqueous solution of a salt selected from the group consisting of alkali and alkaline earth metal chlorides containing an effective thickening and gelling amount of hydroxyethyl cellulose, and the method of treating a well traversing a producing formation which comprises injecting said composition into the well. The hydroxyethyl cellulose is adapted to be subsequently removed from the formation.

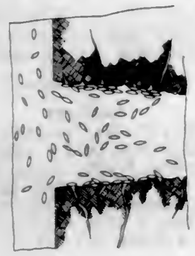
3,417,821
FLUID LOSS CONTROL

John M. Tinsley and William T. Malone, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,081
6 Claims. (Cl. 166—42)

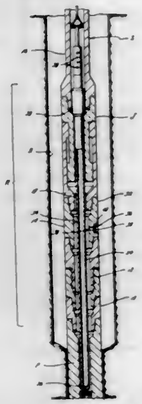
1. The method of fracturing in a well traversing a producing zone which comprises injecting into the for-

mation in the vicinity of the producing zone a fracturing fluid comprising a fracturing fluid containing an effective



sealing amount of a fluid loss control additive comprising a disk-like elastic member which is thicker at the center than at the periphery.

3,417,822
FISHING METHOD AND APPARATUS
Thomas D. Howell, Bossier City, La., assignor to Tri-State Oil Tool Industries, Inc., Bossier City, La.
Filed July 29, 1966, Ser. No. 568,862
11 Claims. (Cl. 166—43)

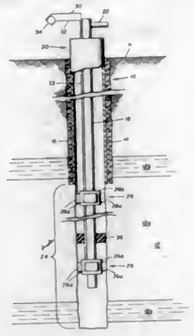


A method and an apparatus for retrieving objects stuck in a well bore which includes the establishing fluid circulation from the interior to the exterior of the retrieving string even though the lower end of the retrieving string is blocked.

3,417,823
WELL TREATING PROCESS USING ELECTROOSMOSIS
Sam R. Faris, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 22, 1966, Ser. No. 603,810
11 Claims. (Cl. 166—45)

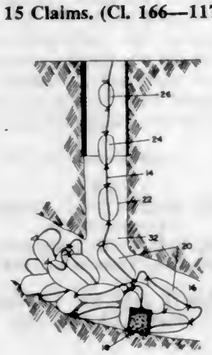
This specification discloses a formation treating process in which water adjacent a well is subjected to electroosmotic transportation. This is accomplished by establishing a unidirectional potential gradient between anode means in contact with the formation within an open flow interval and cathode means in contact with the formation at a location spaced from the anode means. Under the applied potential gradient water is electroosmotically transported in the direction of the cathode means, thus decreasing the water saturation adjacent the anode means.

This invention relates to the treatment of subterrenean, hydrocarbon-bearing formations, and more particularly



to a method of decreasing the water content of such a formation in the vicinity of a well therein by means of electroosmosis.

3,417,824
LOST CIRCULATION RESTORING DEVICES
Hendrik K. van Poollen, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 598,557, Oct. 10, 1966. This application Dec. 26, 1967, Ser. No. 693,504
15 Claims. (Cl. 166—117)

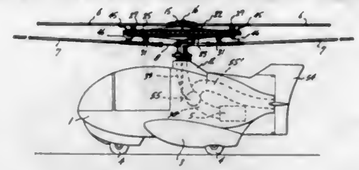


A device for restoring lost circulation in the drilling of a subterranean formation, the device comprising a plurality of sealed, flaccid, water-soluble bags containing lost circulation restoring materials, the bags attached in series to a water-insoluble rope strong enough to support the aggregate weight of said bags. The bags can be fitted one inside the other, the inner bag containing the lost circulation restoring materials and the composite being less water soluble.

3,417,825
HELICOPTER ROTOR AND TURBINE ASSEMBLY
Maurice L. Ramme, 2831 62nd SW., Seattle, Wash. 98116
Filed May 29, 1967, Ser. No. 641,836
18 Claims. (Cl. 170—135.28)

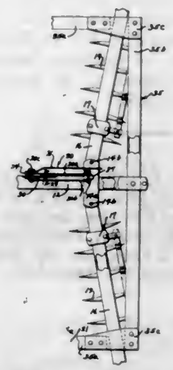
Between upper and lower contrarotating helicopter rotors is a multistage turbine having unconnected contrarotating turbine wheels rotatively integrated, respectively, with the contrarotating rotors. Turbine engine exhaust gas is supplied to the turbine wheels by nozzles directed in opposite tangential directions, respectively,

and the supply of gas to such nozzles can be controlled to balance their opposite thrust reactions or unbalance the reactions for yaw control. Brakes which can be applied independently to the two rotors enable the yaw of the fuselage to be altered during autorotation of the rotors.



Spent turbine gas can be collected in a canopy and directed rearwardly to increase thrust and improve yaw control in flight. Gas may be bled from the turbine supply to the rotors for de-icing, boundary layer control and blade tip propulsion, or directed from the rotor turbine to jets on the body for ground or water propulsion.

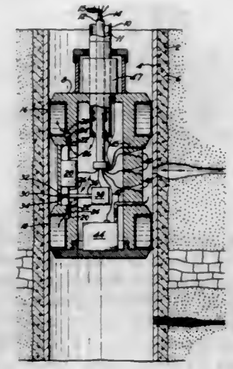
3,417,826
ADJUSTING AND LOCKING STRUCTURE
Oscar D. Jackson, Vanderburgh County, Ind., assignor to Burch Plow Works Inc., Evansville, Ind., a corporation of Indiana
Filed June 6, 1966, Ser. No. 555,550
4 Claims. (Cl. 172—591)



An adjusting and locking structure having particular adaptability for use on disc harrows characterized by an articulated pivotal handle assembly which selectively engages notches in a rack disposed on a portion of the framework of the disc harrow, where gangs of discs are disposed on opposite sides of such portion of the framework, connecting to a member which is slidable along such portion of the framework and to which the handle assembly is pivotally secured.

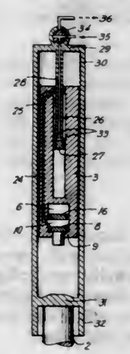
3,417,827
WELL COMPLETION TOOL
Francis M. Smith, Gibsonia, and Paul L. Terwilliger, Fox Chapel Borough, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 608,135
8 Claims. (Cl. 175—4.52)

An apparatus mounted on the lower end of two concentric strings of continuous tubing adapted to be wound on a reel. A bundle of electrical control lines extend from the tool upwardly through the innermost string of tubing to recording and operating surface positioned equipment. By signals passing through the electrical control lines and fluids delivered through the tubing, the apparatus during a single run into a well can log the formation, seal fluids entering the casing from perforations through the casing above and below the tool, create



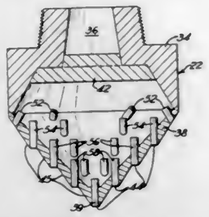
multiple perforations, control treating of the formation with treating fluids, permit fluid flow testing of the formation, consolidate formation sands, temporarily or permanently seal performations and record well pressures and temperatures.

3,417,828
METHOD FOR DRIVING PILES AND SIMILAR OBJECTS
Hoite C. Duyster, The Hague, Sybrand Noyon, Bennekom, and Joost W. Jansz, The Hague, Netherlands, assignors to Hollandse Beton Maatschapplj N.V., The Hague, Netherlands
Filed Feb. 3, 1966, Ser. No. 524,773
Claims priority, application Netherlands, Feb. 3, 1965, 6501373; Jan. 24, 1966, 6600863
20 Claims. (Cl. 175—19)



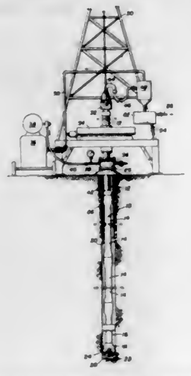
A pile driving apparatus having a resilient cap or shoe between the pile head and the hammer, said cap or shoe being precompressible and maintainable in a particular state of precompression such that when the hammer strikes the cap, substantially no energy is lost by dissipation and the maximum impact force which is transmitted through the cap to the pile is less than the critical force at which the pile is damaged.

3,417,829
CONICAL JET BITS
Willard P. Acheson, Pittsburgh, and Michael A. Torcaso, Arnold, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 580,035
7 Claims. (Cl. 175—67)



A method and apparatus for the hydraulic jet drilling of the borehole of a well in which high-velocity streams of abrasive-laden liquid are discharged from nozzles extending downwardly at different distances from the center of rotation of a drill bit having a downwardly tapering conical bottom member to cut a plurality of concentric grooves separated by thin ridges. Each groove is lower than any groove of larger diameter. The drill bit is urged downwardly whereby upon rotation the lower surface of the drill bit urges the ridges outwardly to break the rock forming the ridges.

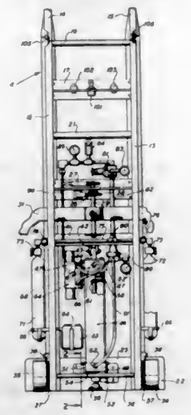
3,417,830
APPARATUS FOR DRILLING A BOREHOLE WITH A GASEOUS CIRCULATION MEDIUM
Dean P. Nichols, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 3, 1966, Ser. No. 555,101
6 Claims. (Cl. 175—209)



This specification discloses a crossover sub to be used primarily in conjunction with reverse circulation drilling. The sub is internally vertically partitioned and has a packer journalled thereon, permitting the use of a drill bit with jet nozzles for efficiently removing cuttings while utilizing conventional drill pipe.

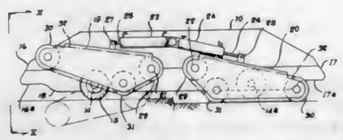
3,417,831
HAND TRUCK WITH POWER LIFT
Samuel H. Lake, Jr., 16342 Devonshire, Granada Hills, Calif. 91344
Filed Aug. 15, 1966, Ser. No. 572,469
13 Claims. (Cl. 180—8)

A hand truck with a conventional channel frame with cross braces and a load bearing tongue on the frame members has a pneumatic lift cylinder pivoted to a cross member to swing in a plane perpendicular to the common plane of the frame members. The pneumatic cylinder has a downwardly thrusting piston rod with a contact foot which elevates the truck. A conventional liquefied CO_2 container carried by the hand truck frame feeds into a manifold connected to a pressure regulator or reducer feeding through a control valve to the lift cylinder.



The valve controls flow to the cylinder and to a low pressure regulator connected to the cylinder for piston rod return. A piston rod return control at the base of the cylinder actuates a control valve to return the piston rod, after it has been extended to lift the hand truck, in response to the attitude of the load bearing portion of the hand truck with respect to the vertical attitude of the cylinder and piston rod.

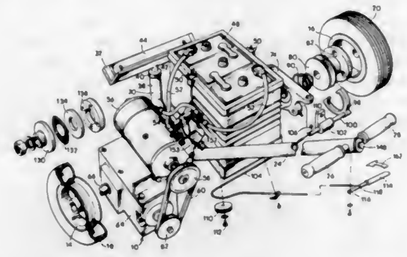
3,417,832
WHEELED VEHICLE SELECTIVELY CONVERTIBLE TO ENDLESS TRACK VEHICLE
John J. Ziccardi, Evans City, Pa., assignor of fifty percent to William B. Jaspert, Pittsburgh, Pa.
Filed Oct. 24, 1966, Ser. No. 589,001
3 Claims. (Cl. 180—9.3)



This invention relates to new and useful improvements in articulated tracked vehicles of the kind employing endless traction chains, and it is among the objects thereof to provide such a vehicle in which the tracks are mounted on articulated housings or legs relatively movable to the vehicle body to place the traction chains in different elevated positions which enables the vehicle to move through obstacle courses and bogs of swampy terrain.

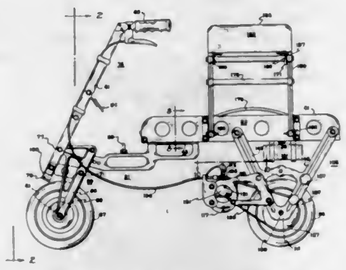
3,417,833
APPARATUS FOR PUSHING VEHICLES
Thomas J. McRae, 3511 Owaissa Way, Fort Wayne, Ind. 46807
Continuation of application Ser. No. 473,905, July 12, 1965, which is a continuation-in-part of application Ser. No. 282,661, May 23, 1963. This application Sept. 28, 1966, Ser. No. 583,126
8 Claims. (Cl. 180—19)

A two-wheel vehicle for pushing automobiles or the like which has an axle mounted between the two wheels to form an axis about which the carriage will pivot. A battery is carried by the vehicle to furnish power to an electric motor which drives one or more wheels through a gear transmission. A lifting arm having a portion which



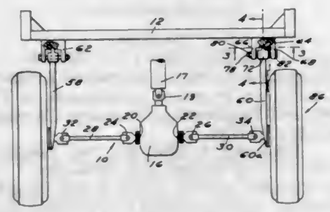
is V-shaped in cross section with a rubber bumper disposed thereon, extends at an angle of less than 90° with respect to the horizontal from the vehicle to effect a lifting force on the object to be moved and transfers weight onto the ground engaging wheels.

3,417,834
TELESCOPING MOTORSCOOTER
Ernest D. Smith, 448 Blue Ridge Drive, Martinez, Calif. 94553
Filed Sept. 6, 1966, Ser. No. 577,486
10 Claims. (Cl. 180—33)



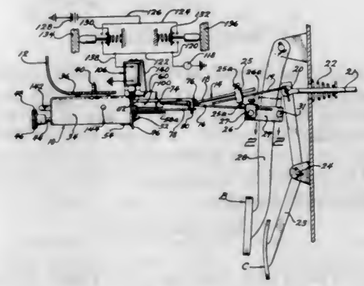
A motorscooter having a telescoping frame, rotatable handle bars, and a foldable seat whereby the motorscooter can be collapsed to a compact package.

3,417,835
WHEEL TOE CONTROL FOR INDEPENDENT REAR SUSPENSION
David M. Tenniswood, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,126
9 Claims. (Cl. 180—73)



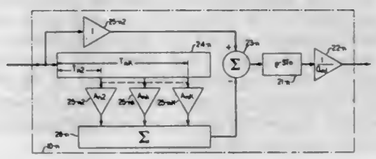
A wheel toe control for a motor vehicle equipped with an independent rear suspension. Each of the rear wheels of the vehicle is connected to a differential half shaft by means of a universal motion connection. One of a pair of control rods is operatively connected to each of the rear wheels and monitors movement of the vehicle frame in a vertical direction. These control rods adjust the wheel toe of the rear wheels in response to the jounce and rebound movements of the frame relative to the wheels.

3,417,836
VEHICLE THROTTLE CONTROL MECHANISM
Robert H. Thorner, 8750 W. Chicago Blvd., Detroit, Mich. 48204
Filed Oct. 22, 1965, Ser. No. 500,984
36 Claims. (Cl. 180—109)



The main disclosure herein comprises a manual speed control in which the driver must "turn on" the device only each time the vehicle is driven. Thereafter, the device is rendered inactive by depressing the brake pedal; and the speed control is reactivated automatically without manual reset upon again depressing the accelerator until a click is heard indicating reactivation. The speed control is rendered safe by automatically "locking out" the device whenever there is a change in drivers, controlled by the vehicle door-operated dome light switch in one form; and the speed is selected by the sense of touch enabling the driver to keep his sight on the road at all times. These functions are controlled by a single guide member operated either by the brake pedal, door-operated solenoid or a manual lever.

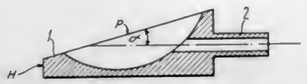
3,417,837
SIGNAL PROCESSOR FOR MULTIPATH SIGNALS
James L. Flanagan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Sept. 30, 1966, Ser. No. 583,185
25 Claims. (Cl. 181—.5)



Signals transmitted through a multipath transmission medium are processed by an array of frequency inverse filters each with selected phase and amplitude characteristics so as to improve the quality of a received signal. Conversely, an undistorted signal can be transmitted by an array of transducers to a selected point in space by first

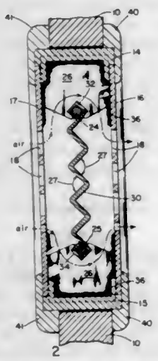
passing the signal to be transmitted through an array of appropriate frequency inverse filters.

3,417,838
FUNNEL OF FLEXIBLE STETHOSCOPE FOR MEDIATE AUSCULTATION
Isaak Abramovich Shlyakhter, Vasilievsky ostrov, 2 linia, 43, kv. 14, Leningrad, U.S.S.R.; Boris Nikolaevich Krupin, p/o Mendeleevo, 29, kv. 34, Moskovskaya oblast, U.S.S.R.; and Ravil Ibragimovich Gismatullin, Lesnoi prospekt, 4, kv. 42, Leningrad, U.S.S.R.
Filed Dec. 14, 1966, Ser. No. 601,593
1 Claim. (Cl. 181—24)



A stethoscope funnel having a circular housing with an open cavity of circular extent eccentrically disposed in the housing and defining an upper rim of variable thickness bounding the cavity. A sound transfer duct opens into the cavity and is positioned at an acute angle with respect to the rim of the housing at the location of smallest width of the housing.

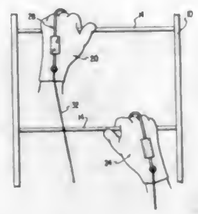
3,417,839
AIR VENTILATOR SOUND CONTROL ASSEMBLY
Robert D. Lowry and John W. Harrison, Winchester, Mass., assignors to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts
Filed Jan. 31, 1967, Ser. No. 612,957
4 Claims. (Cl. 181—50)



A sound control assembly for an air ventilator has a baffle made of continuous lead sheeting for sound absorption interposed in the direct cross air path with the sheeting being corrugated to provide oppositely facing indentations presenting angled, and preferably perpendicular, surfaces for reflecting sound waves back in the direction of their entering paths, space being provided around edges of the baffle for permitting air to pass tortuously through the assembly around the baffle.

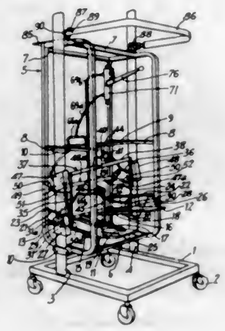
3,417,840
SAFETY DEVICE
Walter L. Farnsworth, Jr., 517 World Trade Center, Houston, Tex. 77002
Filed Oct. 26, 1967, Ser. No. 678,399
6 Claims. (Cl. 182—8)

A safety device including a glove with elongated hooks slideably received on the back thereof. When the gloves are worn by a person climbing a ladder, the hooks are disposed to overhang the rungs. If the person climbing the ladder loses his grip, the hooks will engage the rungs and prevent him from falling. In one embodiment, the hook is



secured to a wristlet and means are provided to permit the hook to be turned toward or away from the palm of the hand. In another embodiment of the invention, the hooks are connected to a safety belt worn by the climber.

3,417,841
INDIVIDUAL SAFETY ELEVATOR
Charles Jean Pierre Lèbre, 35 Ave. de l'Orangerie, 91 Sainte-Genevieve-des-Bois, France
Filed July 12, 1967, Ser. No. 652,935
Claims priority, application France, July 16, 1966, 69,663
9 Claims. (Cl. 187—1)

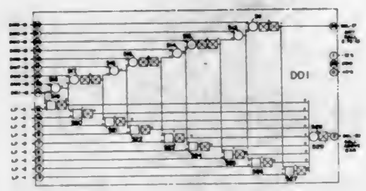


An elevator having two parallel vertical uprights and a movable cage mounted between said uprights. The power necessary for moving the cage on the uprights is obtained by two pedal-gears connected to the cage and to clamping blocks mounted on the uprights, which cause the cage to move or be retained along said uprights.

3,417,842
ELEVATOR CONTROLS
James H. Kuzara, Sylvania, and Orval J. Martin, Toledo, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 8, 1965, Ser. No. 494,056
13 Claims. (Cl. 187—29)

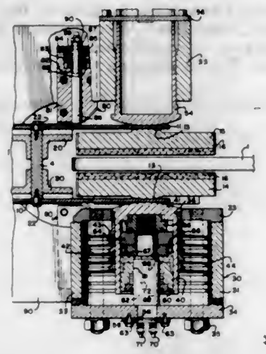
2. An elevator cor trol circuit for ascertaining the existence of any call for service at a landing having a given relationship to the effective location of the elevator car, comprising a plurality of OR's each associated with a landing, first and second inputs and an output for each

of said OR's, a signal source representative of a call for service at said associated landing coupled to said first input, said OR's being connected in series with the output of each OR for each landing but the last in the series being connected to the second input of the OR for the landing next adjacent in a given direction, a plurality of AND's each associated with a given landing, first and second inputs and an output for each AND, a coupling to the first input of each AND from the output of an OR associated with a landing having a given relationship to the landing of said AND, and a signal source representative of effective car position at said associated landing coupled to the second input of each AND, whereby a



signal gated at any of said AND's indicates the effective location of said car at the landing associated with said AND and the registration for a call for service at a landing having said given relationship to said effective car position.

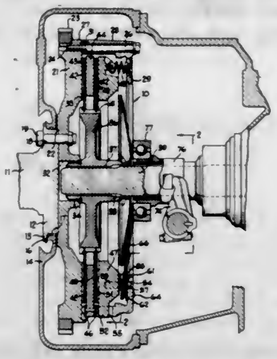
3,417,843
DISC BRAKE FOR MINE HOISTS
William G. A. Trollope, Sherbrooke, Quebec, Canada, assignor to Canadian Ingersoll-Rand Company Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Oct. 26, 1966, Ser. No. 589,689
10 Claims. (Cl. 188—170)



A spring-applied, fluid-released disc brake including a pivoted yoke carrying a pair of brake shoes on opposite sides of the disc whereby a spring-applied bearing of one shoe against the disc sets up a reaction in yoke causing the other shoe also to bear against the disc. Other springs cooperate with pressurized fluid to retract the shoes from the disc.

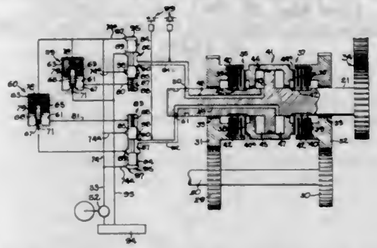
3,417,844
CLUTCH ACTUATING MECHANISM
Reinhold C. Zeidler, Detroit, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 8, 1967, Ser. No. 614,647
3 Claims. (Cl. 192—70.3)

A friction disc clutch assembly in which the force multiplying actuating lever apparatus includes a number of accurately positioned parts arranged to minimize



slippage between actuating members and thereby reduce friction and wear.

3,417,845
ACTUATING SYSTEM FOR MULTI-RATIO TRANSMISSION
James P. Swanson, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 6, 1967, Ser. No. 628,897
9 Claims. (Cl. 192—87.19)

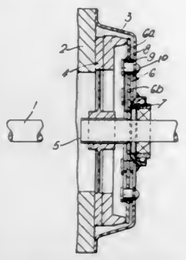


A multi-ratio transmission having input shafts driven by a prime mover and adapted to be coupled to an output shaft through different sets of gears providing different drive ratios. The sets of transmission gears on each input shaft are journaled on the shaft for selective coupling thereto by two disk clutches actuated by a hydraulic cylinder movable back and forth relative to a fixed piston on the shaft in response to the delivery of pressure fluid to the opposite ends of the cylinder through passages in the shaft. A bearing cap covering the exposed end of each input shaft houses two valve mechanisms each including a solenoid valve adapted to be energized from a remote location, and a slave valve operated by the solenoid valve to transmit pressure fluid to an end of the clutch cylinder from a single line supplying pressure fluid to the bearing cap and thus to the cylinder. In the modified form, the solenoids are directly connected to the control valve spools.

3,417,846
CLUTCH AND DISC SPRING WITH STIFF LEVERS
Ronald Alan Cook, Hockley, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,901
1 Claim. (Cl. 192—89)

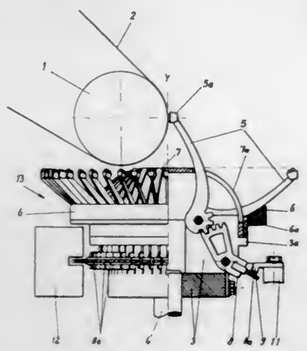
A clutch mechanism for a motor vehicle having a clutch cover connected to a flywheel, a pressure plate

positioned between the cover and the flywheel, and a clutch disc positioned between the pressure plate and the flywheel. A flat spring, having a substantially flat annular portion and a plurality of integral fingers extending radially inwardly from the annular portion, exerts a force



tending to move said pressure plate away from said cover into engagement with said disc. The spring fingers are bent along a pair of diverging lines that extend the length of the fingers to form a generally channel-shape cross section and whereby said fingers are substantially stiffer than flat springs of the same thickness.

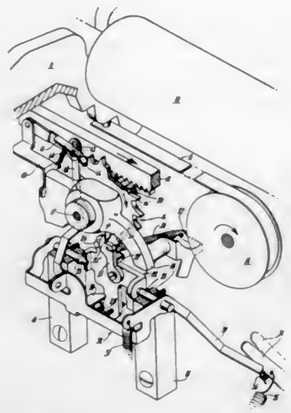
3,417,847
PRINTING MECHANISM HAVING A RIM OF ROTATING TYPE LEVERS
Manfred Fleischer and Folker Galaske, Pforzheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,527
Claims priority, application Germany, Apr. 7, 1966, St 25,216
7 Claims. (Cl. 197—18)



A printing mechanism in which the printing elements consist of a rim of type levers arranged radially in relation to their axis of rotation. The arrangement with respect to the printing plane being such that the extended center line of this axis intersects at the printing point in the printing plane.

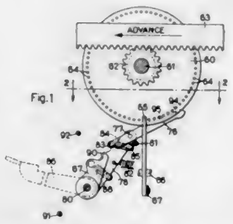
3,417,848
REPEAT SPACING MECHANISM FOR TYPEWRITERS
Reginald R. Gallant, Bristol, Conn., assignor to Olivetti Underwood Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,460
6 Claims. (Cl. 197—82)

A repeat spacing key through its operation causes a member to become operated under the tension of a spring and thereby will act on a carriage escapement to operate it to institute a full escapement step of a carriage. So long as said repeat spacing key is held operated said member is forcibly restored through carriage movement toward each new step position and is suddenly released for reoperation by said spring just before the end of each step movement is reached. Said member is additional to



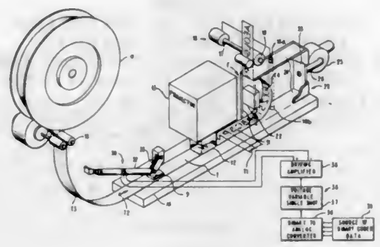
the carriage escapement and because it has mass the said spring is able to assert itself thereon only after a momentary delay so that the carriage will distinctly and reliably become arrested by the escapement at the conclusion of each repeat step movement which takes place while the repeat spacing key is held operated.

3,417,849
BACKSPACING DEVICE FOR A PROPORTIONALLY SPACING TYPEWRITER
Fedele Terenzani, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Continuation-in-part of application Ser. No. 420,923, Dec. 24, 1964. This application Dec. 19, 1966, Ser. No. 602,741
Claims priority, application Italy, Jan. 4, 1964, 472/64
9 Claims. (Cl. 197—91)



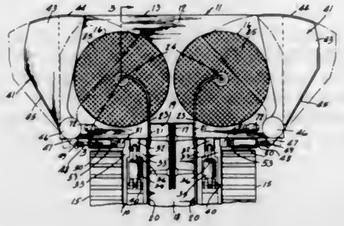
A rotary memory disk which is in mutual motion transmitting communication with a proportional letter-feeding carriage and which has settable memory elements thereon which under control of successive typing operations produce a running record of a series of proportional space typing positions of said carriage, and a backspacing device utilizing said record to impart appropriate-extent rotary motions to said disk to recall one by one said typing positions in an order of succession reverse to which said record was made. Mechanism providing that after each backspacing, each tabulating, and each carriage returning operation, said memory disk is in condition to receive a new running record.

3,417,850
PNEUMATIC INCREMENTAL TAPE ACTUATOR
Arthur L. Mix, Jr., and Donald L. West, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 12, 1965, Ser. No. 495,220
1 Claim. (Cl. 197—133)



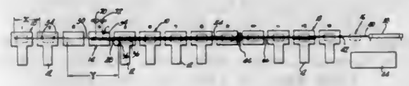
A continuous web is fed incrementally in precise steps past an operating station by the application of a substantially constant pneumatic loading directly on the web, in combination with a brake that initiates and terminates web motion. High speed precision stepping is obtainable due to the absence of any incrementing mechanical feed members moving with the web. The feed increment is readily variable by control of brake timing.

3,417,851
LOADING HEAD
Joseph Gonski, Chicago, and Gustaf Albert Marberg, Oak Park, Ill., assignors to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1967, Ser. No. 608,889
3 Claims. (Cl. 198—9)



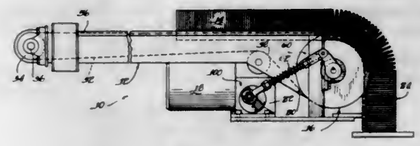
A loading head for coal and like loose materials, having an inclined apron having a plow-like nose crowded into the loose material by continuous traction tread devices. Two counter-rotating, relatively large diameter discs, positioned closely adjacent each other and equal distances from opposite sides of the center of the apron, are recessed in the apron, behind the plow-like nose of the apron. These discs have textured faces to provide friction gripper surfaces for the loose material and are driven at equal speeds to rotate toward each other at the front of the apron, and away from each other as they approach the conveyor of the machine. Strippers of a modified cycloidal form, extend over the discs from the centers of rotation of the discs to the side walls of the conveyor. Wings extend along each side of the apron and are pivotally mounted on the apron at their rear ends and have upright side walls and flat bottom plates, which are movable over the discs as the wings are moved inwardly.

3,417,852
DUAL BAR TRANSFER DEVICE
Walter L. Kidd, Warren, Mich., assignor to F. Jos. Lamb Company, Incorporated, Detroit, Mich., a corporation of Michigan
Filed May 29, 1967, Ser. No. 641,866
20 Claims. (Cl. 198—19)



1. A workpiece transfer mechanism comprising a series of stations divided into at least three groups, the first group of stations comprising at least one station at which workpieces are adapted to remain for a predetermined unit of time, the second group of stations comprising a series of stations at which the workpieces are adapted to remain at each station therein for a period of time equal to a multiple (greater than 1) of said unit of time, the number of stations in said second group being equal to said multiple, the third group of stations comprising a plurality of stations equal in number to said multiple, said third group of stations being located immediately between said first and second group, means at each station of the first and second group for performing an operation on the workpieces at said stations, the second group of stations comprising idle stations, a pair of reciprocal transfer members extending along said groups of stations, each transfer member having means thereon actuatable to engage workpieces at the stations to advance them to successive stations, means for reciprocating the two transfer members simultaneously in opposite directions and such that the stroke of one transfer member is equal to said multiple of the stroke of the other transfer member, means associated with said other transfer member for advancing workpieces upon each stroke thereof in the work advancing direction, means associated with said one transfer member for advancing workpieces upon each stroke thereof in the work advancing direction which is said multiple of the stroke of the other transfer member, said one transfer member being adapted to advance workpieces between the second and third group of stations and the other transfer member being adapted to transfer workpieces between the first and third group of stations.

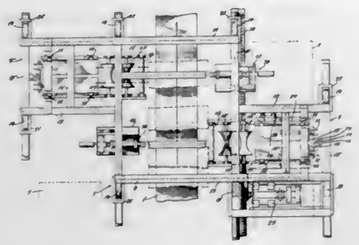
3,417,853
CONVEYOR ASSEMBLY
Wallace W. Mojden, Palos Heights, and Norman J. Chivas, Naperville, Ill., assignors to Fleetwood Systems, Inc., Lyons, Ill., a corporation of Illinois
Filed Dec. 6, 1966, Ser. No. 599,460
9 Claims. (Cl. 198—22)



A transfer apparatus for can ends or the like comprising a magnetic roller upon which an endless conveyor is mounted for movement in response to the rotation of the roller. A drive mechanism is provided which includes a motor having a pushrod connected at one end thereto and at the other end is connected to the roller for rotating the latter in a step-like manner. If the quantity of articles being transferred by the conveyor and roller becomes too great at a depositing station at the end thereof, so that the can ends are bunched up along the

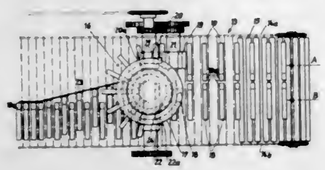
conveyor and on the roller, a disabling mechanism incorporated in the drive apparatus causes the force normally transmitted by the pushrod from the motor to the roller, to be discontinued until the quantity of articles is reduced.

3,417,854
SYSTEM FOR ELECTRO-MECHANICALLY FEEDING WOOD LOGS INTO SHAFTS
Georges A. Bilocq, Plessisville, Quebec, Canada, assignor to Forano Limitee, Plessisville, Quebec, Canada
Filed June 22, 1967, Ser. No. 648,015
5 Claims. (Cl. 198—24)



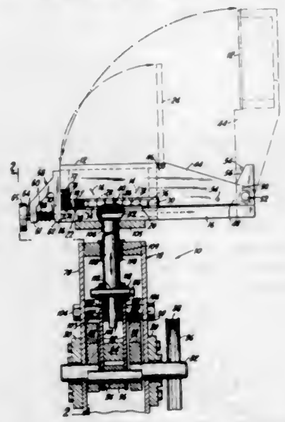
The system comprises a travelling conveyor displaceable along aligned shafts and a vehicle mounted for displacement along the conveyor. A discarding piston is mounted on the vehicle on one side of the conveyor for striking the logs on the conveyor to drive them into the shafts, selectively. A hopper is provided on the vehicle, across the striking piston in relation to the conveyor, into which the logs are pushed by the piston, the hopper serving to ensure straightening and aligning of the logs prior to their being discarded into a shaft over which the hopper is positioned. The hopper is a V-shaped trough disposed to receive the logs longitudinally therein and formed of a pair of downwardly extending side plates inclined toward one another. An upstanding wall closes the trough on the side thereof opposite the conveyor to arrest the logs when the latter are pushed off the conveyor by the piston. The arresting wall hangs from the top to pivot, when struck by a log, to close a solenoid valve that actuates a time delay controller sending fluid to two hydraulic pistons operating the side plates to open the trough and allow the log to drop into the shaft after having been straightened.

3,417,855
DEVICE FOR TURNING OBLONG ARTICLES, PARTICULARLY FILTER TIP CIGARETTES
Kurt Liedtke, Verden (Aller), Germany, assignor, by mesne assignments, to Molins Machine Company Limited, London, England, a corporation of Great Britain
Continuation of application Ser. No. 572,083, Aug. 12, 1966. This application Jan. 4, 1968, Ser. No. 695,809
5 Claims. (Cl. 198—32)



Conveyor apparatus is described for consolidating two continuously moving rows of filter tipped cigarettes with the filter tips of each row adjacent each other into a single continuously moving row with all of the filter tips arranged in the same direction. A turning trough wheel spaced above the path of the cigarettes transfers the cigarettes from one row to a position above the other row and simultaneously orients the cigarettes with the filter tips in the same direction as those of the other row. A delivery trough wheel transfers the turned cigarettes to the other row, feeding them to the other row in the same direction as the other row is moving.

3,417,856
METHOD OF AND APPARATUS FOR ORIENTING SMALL ARTICLES
John C. O'Brien, 88 Netherwood Ave., North Plainfield, N.J. 07060, and William H. Cox, 10 White Birch Ave., Pompton Plains, N.J. 07444
Filed Aug. 9, 1966, Ser. No. 571,280
12 Claims. (Cl. 198—33)

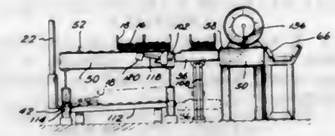


Automatic orientation of a number of relatively small randomly positioned articles, such as metal inserts for molded parts. The articles are randomly positioned in a confined area over a plurality of orifices for receiving the articles, such as a container having a bottom with a plurality of orifices therethrough arranged in the desired pattern for said inserts. The container is rapidly reciprocated to cause the articles to freely move up and down and over said container orifices without hindering the movement of one another. Simultaneously a flow of fluid is maintained through the orifices to induce the freely moving articles to enter into the same. In one embodiment of the invention, a carrier is placed directly beneath the container orifices before the operation begins so that the articles after entering the container orifices immediately pass into aligned orifices within the carrier. In another embodiment of the invention a movable transfer plate is provided directly beneath the orifices in the container which prevents the inadvertent removal of the inserts from the container orifices but which allows the inserts to pass into a carrier after they have been oriented in the container orifices.

3,417,857
MATERIAL HANDLING APPARATUS AND METHOD
William M. Hickey, Chicago, Ill., assignor to Lapham-Hickey Steel Corp., Chicago, Ill., a corporation of Illinois
Filed Sept. 9, 1966, Ser. No. 578,339
9 Claims. (Cl. 198—39)

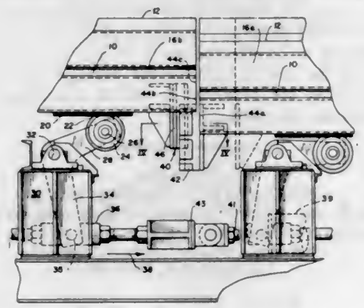
A material handling apparatus for transferring articles such as metal rods, tubes, or other elongated articles to an operator so that orders for the articles can be readily filled by the operator, the apparatus including a power driven conveyor to controllably move the articles from

a receiving position to a manual handling position, and a vertically moving table for supporting and transferring the articles. A pair of stripper bars are movably mounted adjacent the table and means are provided for controlling the lowering of the table and raising of the stripper bars so that a desired number of articles can be removed by



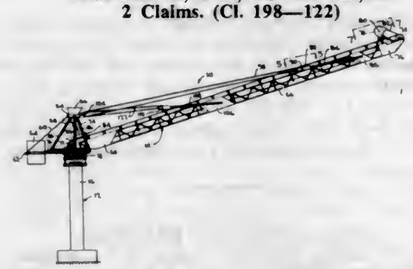
the operator when filling orders. The vertically moving table also includes a reversible conveyor for moving the articles towards the pickup position with the table in the raised position and for transferring the articles from the table for return to storage with the table in the lowered position.

3,417,858
CONVEYOR APPARATUS
Harold Raymond Heard, Pittsburgh, Pa., assignor to Salem-Brosius, Inc.
Filed May 16, 1967, Ser. No. 638,777
5 Claims. (Cl. 198—110)



A conveyor apparatus having a framework of stationary beams and a plurality of sectionalized movable beams intermittently disposed within the framework of stationary beams. Each section of movable beams is independently operable so that supported material can be advanced at varying rates.

3,417,859
MATERIAL HANDLING APPARATUS
Salvatore O. Clemente, Rte. 49, Farrell Road Extension, North Troy, N.Y. 13209
Filed Feb. 28, 1967, Ser. No. 619,352
2 Claims. (Cl. 198—122)



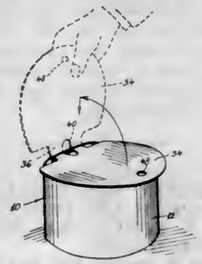
This disclosure is related to a pivotal, counterbalanced, conveyor-boom which is normally loaded by a compressive force to counteract tensile forces due to weight and loading of the conveyor-boom.

3,417,860
BRANCH CONVEYOR
Kjell Olof Gunnar Herolf, Stig Arthur Johnsson, and Per-Gustaf Mellgren, Sundsbruk, Sweden, assignors, by mesne assignments, to Soderhamns Verkstader Aktiebolag, Soderhamn, Sweden, a corporation of Sweden
Continuation of application Ser. No. 530,858, Mar. 1, 1966. This application Sept. 14, 1967, Ser. No. 667,866
Claims priority, application Sweden, Mar. 2, 1965, 2,718/65
1 Claim. (Cl. 198—197)



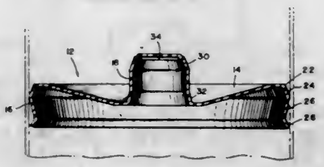
A branch conveyor comprising a supporting frame having a slide for branches and at least one conveyor belt moving relatively to the slide. The belt is intermittently driven and is equipped with a plurality of projecting means for holding branches during transport. The ratio of breadth of the conveyor belt to the slide is preferably on the order of between 1:2 to 1:3. The conveyor transports piles of branches from a loading area adjacent ground level to a remote, elevated discharge area.

3,417,861
DISPLAY CONTAINER
Milton Levy, Woodmere, N.Y. (43–47 W. 23rd St., New York, N.Y. 10010)
Filed July 6, 1967, Ser. No. 651,605
4 Claims. (Cl. 206—45.28)



A hollow cylindrical container having readily mountable bottom closure and a slidable and swingable top closure, with means for holding the cover in swung upright position, the cover being adapted to bear advertising matter on either or both surfaces thereof. The bottom closure end cover have means in common for mounting the same.

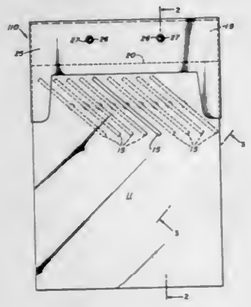
3,417,862
CONFECTIONARY CONTAINER
Gim P. Fong, Newton, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Filed Dec. 2, 1966, Ser. No. 598,673
3 Claims. (Cl. 206—56)



A plastic container for ice cream, sherbet and other dairy products comprising a cylinder, a piston slidable in

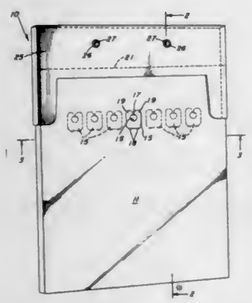
the cylinder and an actuating handle removably secured to the piston.

3,417,863
FLEXIBLE PLASTIC BAG STACK, INDIVIDUAL BAGS OF WHICH ARE PROVIDED WITH RESPECTIVELY ECHELONED FILAMENTARY CLOSURE FACILITIES
Jerre H. Paxton, P.O. Box 2098, Yakima, Wash. 98902
Filed Aug. 24, 1967, Ser. No. 662,950
3 Claims. (Cl. 206—57)



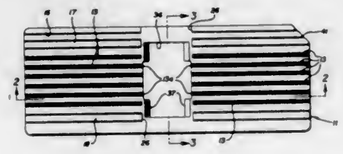
A stack of flexible plastic bags in which said bags are bound together along one edge so that each bag is readily tearable from its binding, each of said bags having integrated therewith, a suitable distance below the open mouth thereof, a twistee-type bag closure for uniting the bunched neck of the bag after the latter has been detached from said stack, said closures being applied to the bags of the stack in relatively echeloned positions to minimize the thickening of said stack by the application of said closures to said bags.

3,417,864
FLEXIBLE PLASTIC BAG STACK, INDIVIDUAL BAGS OF WHICH ARE PROVIDED WITH RESPECTIVELY ECHELONED SHEET PLASTIC CLOSURE FACILITIES
Jerre H. Paxton, P.O. Box 2098, Yakima, Wash. 98902
Filed Aug. 24, 1967, Ser. No. 662,952
3 Claims. (Cl. 206—57)



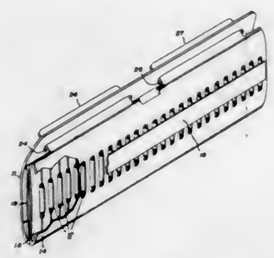
A stack of flexible plastic bags in which said bags are bound together along one edge so that each bag is readily tearable from its binding, each of said bags having integrated therewith a suitable distance below the open mouth thereof a Kwik Lok type bag closure for uniting the bunched neck of the bag after the latter has been detached from said stack, said closures being applied to the bags of the stack in relatively echeloned positions to minimize the thickening of said stack by the application of said closures to said bags.

3,417,865
FLAT PACKAGE CARRIER BLOCK AND ASSEMBLY
Claus P. J. Suverkropp, Sunnyvale, and Charles M. Bodine, Los Altos, Calif., assignors to Signetics Corporation, Sunnyvale, Calif., a corporation of California
Filed Oct. 3, 1966, Ser. No. 583,919
10 Claims. (Cl. 206—46)



A flat package containing a semiconductor device having a plurality of spaced leads extending from opposite ends of the package and a carrier block therefor. The carrier is formed with a large recess between the end to receive the flat package and with a plurality of ribs forming recesses to receive the leads. Means are provided on certain of the ribs to hold the flat package in the carrier. Other means are provided to aid in removing the flat package from the carrier.

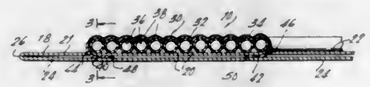
3,417,866
REED SWITCH FOLDER PACK
Kenner Seaton Omer, Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 18, 1967, Ser. No. 668,506
4 Claims. (Cl. 206—65)



A folder pack for reed switches or similar elongated articles comprising a plurality of panels having rows of slots therein for receiving the articles. The slots in alternate panels are offset or staggered with respect to the next adjacent panel so that the articles nest together without touching each other, thereby protecting the articles from shock or vibration damage in a minimum volume of space.

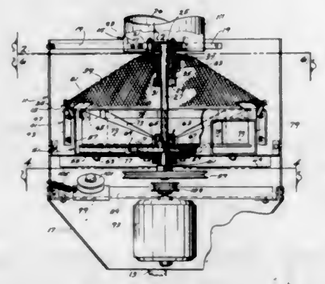
3,417,867
HOSE MOUNTING BRACKET
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 12, 1967, Ser. No. 630,397
5 Claims. (Cl. 206—80)

A bracket for mounting a coiled length of hose onto a display card. There are three similar brackets, and each is spaced 120° from its neighbors to hold a different portion of the coiled hose. Each bracket includes an elongated body which is grooved, with each groove overlying a different convolution of the coiled hose. Each bracket further has its opposite ends turned inwardly, and said opposite ends pass through and are in contact



with the back face of the top layer of the display card. The bottom layer of the display card overlies the ends of the brackets and prevents them from being seen from the back of the card. The brackets maintain the coiled hose in a secure position with respect to the display card, and can be easily removed subsequently by a purchaser.

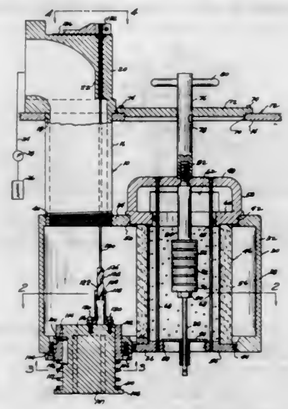
3,417,868
GRAIN CLEANER
Harlan J. Donelson, Jr., W. Highway 330, Marshalltown, Iowa 50158
Filed June 6, 1966, Ser. No. 555,628
10 Claims. (Cl. 209—28)



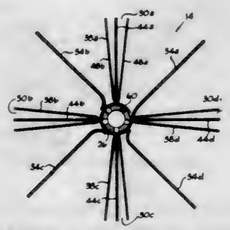
A grain cleaner adapted to clean grain passing therethrough and which may be used independently or in combination with a storage bin grain dryer or grain spreader as desired. The cleaner includes a housing having a scroll means therein and including a vibrating screen means positioned over the scroll means. A rotating fan means is positioned in the scroll means and is adapted to discharge the material dropping through said screen means outwardly of the housing. The material passing from the outer end of the screen means is discharged from the lower end of the housing.

3,417,869
FILTER DEVICES
Nils O. Rosaen, Bloomfield Hills, Borje O. Rosaen, Ann Arbor, and Oscar E. Rosaen, Grosse Pointe, Mich., assignors to The Rosaen Filter Company, Hazel Park, Mich., a corporation of Michigan
Filed Jan. 24, 1966, Ser. No. 522,775
10 Claims. (Cl. 210—90)

A filter device is mounted to the top plate of a fluid reservoir and extends downwardly to position a filter element below the level of fluid in the reservoir. The filter element is supported by a housing mounted within the reservoir so that fluid is drawn from the reservoir through the filter element and through an outlet structure connected with the housing. The filter element is removable vertically upwardly from the housing and from the reservoir.



3,417,870
REVERSE OSMOSIS PURIFICATION APPARATUS
Donald T. Bray, San Diego, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,591
1 Claim. (Cl. 210—321)

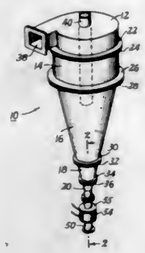


A membrane module for use in apparatus for separating a first fluid component from a fluid mixture. A plurality of laterally coextensive leaves of sheetlike backing material extend outward from a hollow mandrel, each leaf being associated with a sheet of semipermeable membrane, and are spirally wound therewith around the mandrel in overlapping arrangement upon one another. Means, such as separator grid material, provides axially extending passageways between adjacent spiral windings for supply of the fluid mixture to be separated to the membrane surface. Illustrated is an apparatus using sheets of cellulose acetate material folded over glass felt and sealed along the edges with epoxy adhesive.

3,417,871
CENTRIFUGAL CONCENTRATOR
Orlan M. Arnold, Grosse Pointe Park, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.
Filed Oct. 10, 1967, Ser. No. 674,328
7 Claims. (Cl. 210—512)

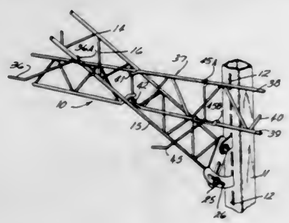
A centrifugal concentrator for clarifying liquids wherein the centrifugal concentrator utilizes a high pressure tangential inlet flow of liquid containing solid suspensions to create a vortexing action within a conically shaped separating chamber. The solid particles suspended in the

liquid, due to centrifugal force, migrate outward toward the confining wall of the separating chamber and then settle along the inwardly slopng wall of a lower part of the chamber, where they are removed through an exit port. Provision is made to agitate the concentrated slurry within



the exit port to prevent clogging and coalesence of the solid particles, thereby to eliminate constriction of the outlet flow and prevent liquid build up within the separating chamber which would adversely affect the clarity of the clear liquid being removed.

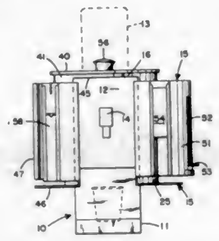
3,417,872
DISPLAY RACK
Garth Close, Lubbock, Tex., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed June 14, 1966, Ser. No. 557,529
2 Claims. (Cl. 211—59)



A merchandising display unit mountable upon bracket means securable to upright wall means. Said display unit has at least two horizontally spaced and substantially coextensive arms comprising at least two vertically spaced, elongated and substantially coextensive rods adjustably secured to said bracket means, said rods having stiffening means secured therebetween and further including connecting means releasably securable to said arms. The merchandising display unit further includes article engaging means releasably securable to said arms and said connecting means.

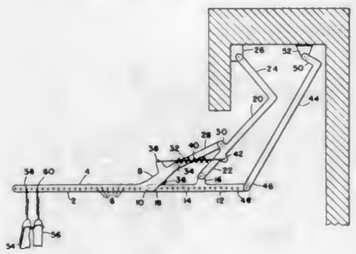
3,417,873
FOOD DISPENSING RACK
Samuel Leptrone, 1731 Robinhood Lane, Clearwater, Fla. 33516
Filed May 18, 1966, Ser. No. 551,073
3 Claims. (Cl. 211—77)

A dispenser for hot water is shown comprising an upright water container structure having a rack rotatably supported on the top thereof, which rack includes first and second top plates, the first plate being centered across the top of the container structure and the second plate being rotatably supported on the first plate and having a depending skirt member extending downwardly from the edges thereof and alongside the container structure, the skirt having rack means projecting therefrom for supporting supplies for the making and consuming of liquid refreshments and foods. In one form of the invention



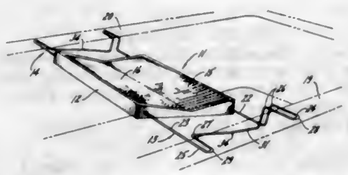
an aperture is provided in one side of the skirt by which access may be had to a valve in the side of the container. In another form of the invention the first plate comprises a lid for the open top of the container structure.

3,417,874
EXTENDIBLE CLOTHING RACK
Billy V. Bryant, 2021 Durham, Irving, Tex. 75060
Filed Aug. 25, 1967, Ser. No. 663,331
6 Claims. (Cl. 211—100)



A retractable clothing hanger supporting rack having a pair of pivotally interconnected elongated hanger supporting arms. One of the arms has an offset portion adjacent the pivotal connection of the arms. A support member is connected to the other of the pair of arms and a link member extends between the support member and the offset portion.

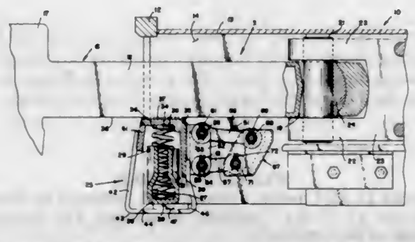
3,417,875
CONVENIENCE RACK STORABLE AS A DECORATIVE HANGING
Stanley G. Barker, 607 Madison St., Joliet, Ill. 60435
Filed Feb. 14, 1967, Ser. No. 615,947
9 Claims. (Cl. 211—126)



A convenience rack which includes a tray and support members which laterally extend from opposite sides of the tray. The tray and support members are each formed

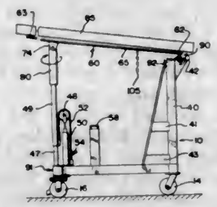
and related to the other so that the rack may be bridged between the opposed sidewalls of a bathtub or the like in which position the tray provides a horizontal portion which may be used as a rest for whatever comfort items the user wishes to have at hand and an inclined portion which may be used as a reading material support, and so that the rack may be stored as a decorative hanging from a generally horizontal support in which case the tray provides a geometrically pleasing face which is symmetrical about the vertical plane passing through the support. Additionally, the surface of the tray is perforated to provide drainage therefrom thus adapting the rack for use as a drying support.

3,417,876
COUPLER CARRIER
Arnold L. Stretch, Highland, and William R. Shaver, Munster, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 12, 1966, Ser. No. 572,120
7 Claims. (Cl. 213—60)



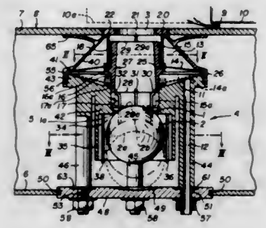
A coupler carrier support assembly for yieldably supporting a coupler in substantially horizontal alignment with the coupler line of draft, the support assembly includes a pocket member fixed to and extending transversely across the end portion of a central sill means, a compression resilient means supported by said pocket member, a vertically movable coupler carrier means disposed in the pocket member and yieldably supported by the resilient compression means and lever means connected to the coupler carrier means and the end portion of the center sill and arranged to limit movement of the support means to a substantially vertical direction.

3,417,877
PORTABLE HOIST
Gale C. Corley, 1207 Beech St., Valparaiso, Ind. 46383
Filed Dec. 30, 1965, Ser. No. 517,555
7 Claims. (Cl. 214—1)



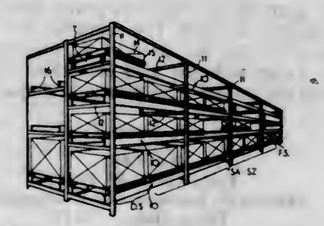
A device including a movable cart for handling a substantially flat structural member wherein the mounting structure for supporting the member includes a universal pivot joint that permits the mounting structure to be moved about the pivot between the horizontal and vertical planes through an angle of at least 90°, and rotated in a horizontal plane through an angle of at least 180°. Movable stops connected to the cart frame are adjusted so that when the mounting structure is against the stops in the vertical position the structural member is aligned in the vertical plane. Spacers index the cart with respect to a vertical surface for setting the structural member into position.

3,417,878
VALVE FOR PNEUMATIC FLOATING MEANS
Max Schonfelder, Petit-Lancy, Geneva, Paul Zuppiger, Carouge, Geneva, and Gabriel Bouladon, Versoix, Geneva, Switzerland, assignors to Spencer (Melksham) Limited, Melksham, Wiltshire, England, a British company
Filed Apr. 12, 1967, Ser. No. 630,304
Claims priority, application Switzerland, Apr. 14, 1966, 5,589/66
19 Claims. (Cl. 214—1)



A valve for use in conveyors, floors and other surfaces over which loads are to be slidingly moved. The valves are so constructed that they automatically open when an object approaches them thereby to form or maintain between the object and the surface a thin film of fluid which supports the object and enables the object to move with very little frictional resistance. Once the object moves away from a valve, the latter closes automatically. The valves are pressure responsive and are constructed so as to be quick-acting and highly sensitive to pressure changes.

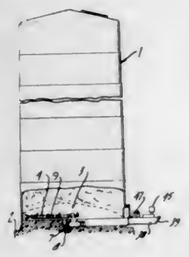
3,417,879
TRANSPORTING SYSTEMS
Bernard Alfred Gough, Birmingham, England, assignor to B. A. Gough Equipment Limited, Birmingham, England, a British company
Filed Oct. 18, 1966, Ser. No. 591,065
Claims priority, application Great Britain, Oct. 22, 1965, 44,739/65
12 Claims. (Cl. 214—16)



A live storage system including one or more tracks each of which serves as a support affording feed, storage, and discharge stations for a plurality of load bearing pallets. Each track carries a vehicle which runs along the length of the track and is provided with a platform which is movable between a raised position in which it lifts a pallet clear of the track for transport therealong and a

lowered position in which it can pass beneath pallets deposited on the track. The vehicle is provided with operating elements which detect the presence of pallets on the track, the position of the vehicle on the track, and the position of the platform, and these operating elements actuate a control circuit which causes the vehicle to proceed selectively through either of two cycles of operation so that pallets are transferred from the feed station to the discharge station, or from the feed station to a storage station and then from such storage station to the discharge station.

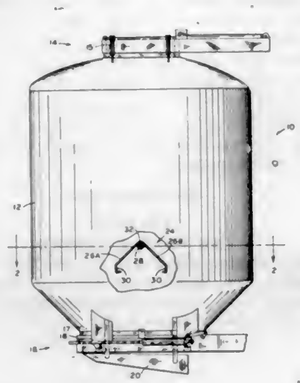
3,417,880
UNLOADING MECHANISM FOR A STORAGE STRUCTURE
Leonard E. Broberg, Milwaukee, Wis., assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,541
16 Claims. (Cl. 214—17)



The invention relates to an improved hydraulic unloading mechanism for a sealed storage structure. The unloading mechanism includes a cutter arm which is journaled for rotation about a vertical axis at the center of the structure and the cutter arm carries an endless cutter chain which dislodges the stored material and delivers it to the center of the silo where it falls into a radially extending trough formed in the foundation. A conveyer mechanism operating within the trough conveys the dislodged material to the exterior of the structure. The conveyor and the cutter chain are driven by a hydraulic motor which is located on the exterior of the structure and is operably connected to the conveyor. To rotate the cutter arm about the structure, a pair of drive cylinders having a common piston are located within the trough adjacent the center of the silo. The piston carries a rack which engages a gear segment journaled on the central shaft or post. By moving the piston in one direction the segment and the cutter arm are rotated through an arc or increment, and a clutch mechanism is included which disengages the rack from the gear segment when the piston member is moved in the opposite direction. The hydraulic drive mechanism is designed so that the speed of the material dislodging member varies with the load conditions so that under light loads the unloading mechanism will operate at higher speeds.

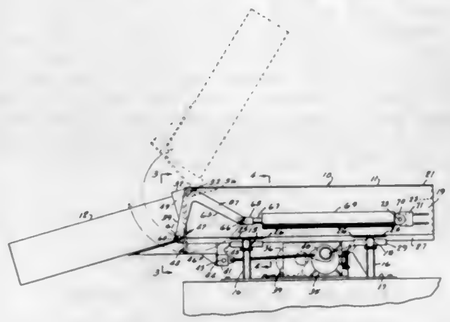
3,417,881
CANNING RETORT
Marion W. Loveless, 419 S. Allegheny, Tulsa, Okla. 74112
Filed Apr. 14, 1966, Ser. No. 542,572
2 Claims. (Cl. 214—17)

The invention relates to an improved canning retort including means of automatically limiting the discharge of cans from a lower opening of the retort. More particularly, the invention includes an upstanding pressurizable vessel having a sealable opening in the top for receiving cans and a sealable opening in the bottom for the discharge of cans and including a horizontal free swinging can retarding baffle pivoted within the vessel in the lower portion thereof, the baffle extending substantially of the full interior width of the vessel and having



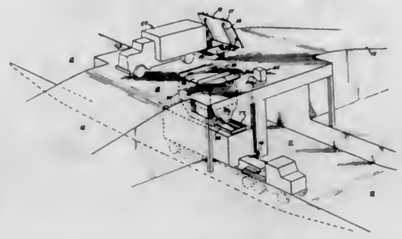
opposed downwardly inclined winged portions, the baffle pivoting to one side or the other by action of cans passing downwardly in the vessel, the pivoting baffle serving to limit the rate of discharge of cans from the vessel.

3,417,882
SHAKER LOADER
Charles D. McConnell, Hinsdale, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 16, 1966, Ser. No. 557,931
9 Claims. (Cl. 214—18)



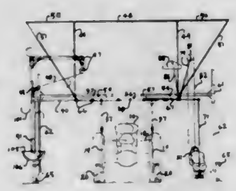
Shaker conveyor furnace charger in which a loading trough is mounted on a stationary base for reciprocable movement and is reciprocably driven with a shaker conveyor motion by a shaker conveyor drive mechanism on the base. A delivery trough is pivoted to the discharge end of the loading trough and is reciprocably driven thereby. A fluid pressure operated hydraulic jack is connected between the loading trough and the delivery trough to pivot the delivery trough upward to an out-of-the-way position when the furnace has been charged. Cooperating the stop plates on the loading trough and delivery trough are provided to limit downward movement of the delivery trough to a delivery position. A switch is connected in the energizing circuit to the shaker conveyor drive mechanism and is actuated by the delivery trough when in its delivery position to prevent the operation of the shaker conveyor drive mechanism except when the delivery trough is in a delivery position.

3,417,883
TRANSFER STATION FOR HANDLING REFUSE
Wallace M. Felts, Fort Worth, Tex., assignor to Fruehauf Trailer Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 31, 1966, Ser. No. 590,885
1 Claim. (Cl. 214—41)



A transfer station for handling refuse including upper and lower levels one above the other, upper and lower roadways connected with said upper and lower levels for accommodating collecting vehicles and transfer vehicles respectively thereon, and a hopper, the upper end of which hopper opens through said upper level and in line with said upper roadway, the lower end of said hopper being in line with the lower roadway and terminating a distance thereabove to accommodate a transfer vehicle therebeneath.

3,417,884
COMBINATION AGRICULTURAL IMPLEMENT
Clarence M. Edwards, Whitefield St., Knightdale, N.C. 27545
Filed Apr. 28, 1967, Ser. No. 634,619
11 Claims. (Cl. 214—83.1)



In abstract, a preferred embodiment of this invention is an agricultural implement witth a mounting frame onto which may be interchangeably connected an irrigation pipe carrier and a row crop, riding type, harvester rig including provision for a crop spray and dusting attachments.

3,417,885
AUTOMATIC FRAME STACK TRANSFER DEVICE
Adolph Czarnecki, Birmingham, Mich., assignor, by mesne assignments, to Standard Alliance Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,624
10 Claims. (Cl. 214—95)

A workpiece transfer device comprising a vertically movable support having an intermediate frame supported thereon and movable longitudinally thereof, a table on the intermediate frame and movable longitudinally relative thereto and to the support, rotatable drive means on the support, first linearly movable flexible means in driving engagement with the drive means and fixed to the intermediate support, second linearly movable flexible means interconnected with the first flexible means and fixed to the

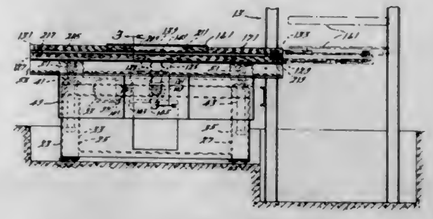
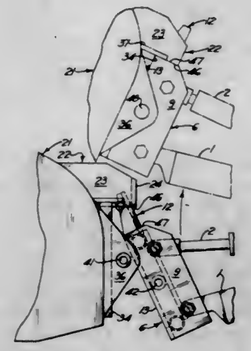


table whereby the drive means effects movement of the intermediate frame to longitudinally spaced positions relative to the support and the table to longitudinally spaced positions relative to the intermediate frame.

3,417,886
IMPLEMENT HITCH FOR TRACTORS AND LOADERS
Clifton F. Stuart, State St., R.D. 1, Box 20, Kinsman, Ohio 44428
Filed June 7, 1967, Ser. No. 644,346
13 Claims. (Cl. 214—145)

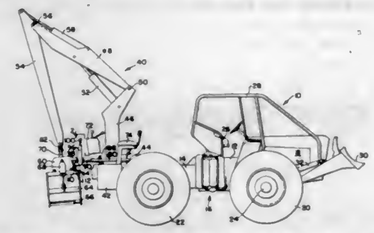


A laterally extending frame is pivotally connected to the lifting and breakaway arms. A horn is rigidly mounted on the frame midway between its ends and extends above the frame when the latter is oriented in a generally vertical plane. A saddle is provided at the base of the horn. A horn receiver is rigidly mounted on the implement, the sides of the receiver converging to an apex that is spaced from the implement to provide a generally triangular opening with the apex located midway between the sides of the implement and preferably normally above its center of gravity. Locking means are provided for locking the frame and implement together at spaced lateral points below the saddle.

3,417,887
CHOKERLESS SKIDDER
Edward G. Nelson, Atlanta, Ga., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,662
6 Claims. (Cl. 214—147)

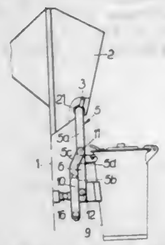
An apparatus for skidding logs in which a rotary hydraulic crane having a grapple is mounted on a logging tractor, the tractor being provided with a hook that en-

gages an eye on the grapple to relieve the structure of the rotary hydraulic crane of the stresses imposed by



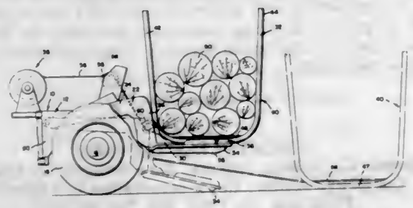
the logs when they are held by the grapple and skidded over the ground.

3,417,888
DUMP-TYPE LIFTING DEVICE FOR EMPTYING CONTAINERS
Jakob Naab, Schillerstr. 17, Laubenheim (Rhine), Germany
Filed May 12, 1967, Ser. No. 638,002
Claims priority, application Germany, May 13, 1966, Z 12,218
11 Claims. (Cl. 214—303)



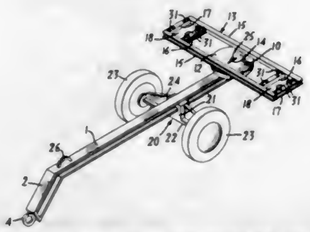
The dump-type lifting device disclosed herein for emptying containers comprises a container support carriage having upper and lower rollers which are advanced along guideways by actuation of a hydraulically operated cylinder to first raise the carriage and then tilt it to dump the contents of the container. The guideways have sloping surfaces extending at an acute angle with vertical guide track sections and being engageable with the lower carriage rollers to cam the lower end of the carriage rearwardly, thus tilting it in a dumping direction and increasing torque arm along which the cylinder acts to swing the carriage to its final dumping position.

3,417,889
MATERIAL HANDLING MACHINE
Luther Clary Anthony, 107 4th St. NW., Springhill, La. 71075
Filed Sept. 28, 1966, Ser. No. 582,676
5 Claims. (Cl. 214—505)



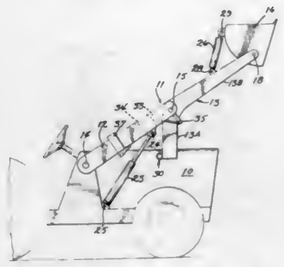
A pallet handling machine is provided which has means for dragging a loaded pallet from a position remote from the machine on to a liftable platform forming a part of the machine, and thereafter for transporting the loaded and lifted pallet to another location. The means for dragging the loaded pallet is also utilized in holding the loaded pallet on the lifting arms of the machine.

3,417,890
TRAILER FOR TOWING CARS
Kichisaburo Yamazaki, 237 2-chome, Koyasu Dori, Kanagawa-ku, Yokohama, Japan
Filed July 18, 1966, Ser. No. 565,942
6 Claims. (Cl. 214—506)



A trailer for towing disabled automobiles has a longitudinal shaft provided at its front end with a hitch for attachement to a towing vehicle. A cross frame adapted to receive opposite wheels of a vehicle to be towed is supported on a turntable which is slidable longitudinally on the shaft. A running gear comprising road wheels is also slidable longitudinally on the shaft. Means is provided for releasably securing the slides in fixed position.

3,417,891
LOADER LINKAGE
Glen E. Smelcer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,403
5 Claims. (Cl. 214—778)



A front end loader linkage for use with a prime mover. The linkage has a jointed boom with a cam and lock device to provide either standard loader operation with the cam disengaged and lock engaged, or high lift operation with the lock disengaged and the cam operable to pivot the front section of the boom to a higher position when the back section of the boom is raised.

3,417,892
CONTAINERS WITH SQUEEZED BOTTOM SEAM
Josef Schweiger, Kalsdorf, Styria, Austria, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,361
Claims priority, application Austria, May 11, 1964, A 4,119/64
1 Claim. (Cl. 215—1)

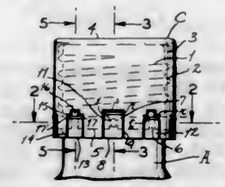
A container of plastic material is disclosed. This container includes a bottom portion provided with a sealing

seam of which at least the portion nearest the bottom of the container has a thickness greater than the wall thickness of the main body of the container, said seam being positioned in a recessed portion of the container body.



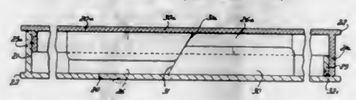
The invention relates to containers of plastic material. More particularly, the invention relates to containers having a bottom portion which is provided with a sealing seam of which at least the portion nearest the bottom of the container has a thickness greater than the wall thickness of the main body of the container.

3,417,893
CONTAINER CLOSURE
Heiman G. Lieberman, 3809 E. Mulberry, Evansville, Ind. 47715
Filed May 23, 1967, Ser. No. 640,706
12 Claims. (Cl. 215—9)



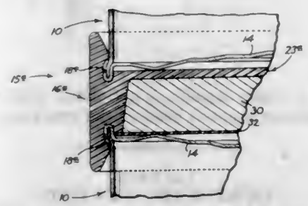
A closure for bottles designed primarily for medicine comprising a cap engageable upon the neck of the container and adapted for securement thereon by interlocking threads, and incorporating a plurality of first and second sets of tabs with projections for acceptance by cooperating means on the bottle neck for preventing unauthorized cap removal, said tabs of said first set being engageable when in cap-conforming or downwardly presented relationship, and the tabs of said second set being engageable when in outwardly presented position or out-of-surface conformity with the cap.

3,417,894
CONTAINER
Allan Gittler, Jamaica, N.Y., assignor to Masterel Industries, Inc., a corporation of New York
Filed June 8, 1967, Ser. No. 644,523
10 Claims. (Cl. 220—4)



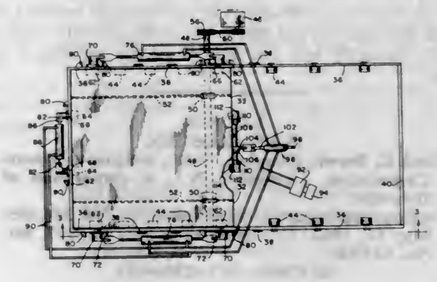
Two cooperable parts of container may be identical, and each includes a main wall and a rim. Latter carry locking means which cooperate to prevent separation of parts in a direction perpendicular to plane of main wall. Latching plates prevent lateral movement of parts, and grips permit separation of latching plates to permit disengagement of locking means by relative lateral movement of container parts.

3,417,895
AUXILIARY CONTAINER
Edgar W. Penton, 702 W. Main St., Auburn, Wash. 98002
Continuation of application Ser. No. 533,962, Mar. 14, 1966. This application Dec. 1, 1967, Ser. No. 687,908
7 Claims. (Cl. 220—23)



An annular base member of synthetic thermoplastic material has an internal groove adapted to recieve the flanged periphery of a can-type container releasably to secure the base member and container together. In one embodiment the base member is integral with an auxiliary container. In another embodiment the base member is separate from an auxiliary container and has a flange adapted to overlie a flange on the auxiliary container to secure the latter to the can-type container. In still another embodiment the base member is integral with a dome in which an auxiliary container is removably confined.

3,417,896
LID FOR CANNING RETORT
Marion W. Loveless, 419 S. Allegheny, Tulsa, Okla. 94112
Filed Feb. 17, 1967, Ser. No. 616,939
4 Claims. (Cl. 220—41)

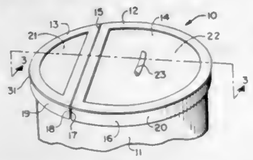


This invention relates to an improved closure for a pressurized vessel, particularly the type of pressurized vessel described as a canning retort. More particularly, this invention relates to an improved closure for a lower opening of a pressurized vessel.

3,417,897
HINGED OVERCAP
Charles L. Johnson, Deer Park, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 29, 1967, Ser. No. 694,579
6 Claims. (Cl. 220—60)

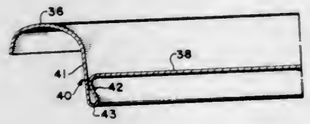
A unitary overcap having an integral hinge dividing the overcap into a cover portion and a door portion. The cover portion is adapted to remain stationary with respect to the container to which it is attached by means of a pair of spaced, depending, peripheral skirts which cooperatively grip an outwardly extending peripheral ridge in the sidewall of the container. The door portion is hinged

to the cover portion and is movable, permitting access to the interior of a container and subsequent reclosure by



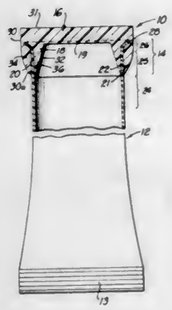
means of a single depending peripheral skirt which engages the circumferential bead of the container.

3,417,898
DUAL WALL CAN END
John S. Bozek, Chicago, and John S. Song, Addison, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 20, 1965, Ser. No. 498,365
7 Claims. (Cl. 220—66)



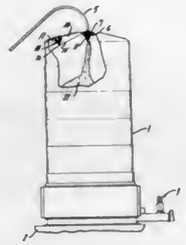
This disclosure has to do with a can end particularly adapted for use as a part of a can which is subjected to high internal pressures. The high internal pressures react against the end panel of the can end and tend to outwardly bow the end panel. This bowing reaction of the end panel results in a radially inwardly directed force being applied upon the chuck wall which, when the pressure is sufficient, pulls the chuck wall away from the can body and opens the double seam. This is prevented by providing the can end with a double wall construction between the chuck wall and the end panel, which double walls projects axially inwardly into the interior of the associated can body.

3,417,899
TUBE CLOSURE
Frank E. Brown, Glendale, Calif., assignor to Unette Corporation, Livingston, N.J., a corporation of Delaware
Continuation-in-part of application Ser. No. 366,495, May 11, 1964. This application May 9, 1967, Ser. No. 643,000
15 Claims. (Cl. 220—67)



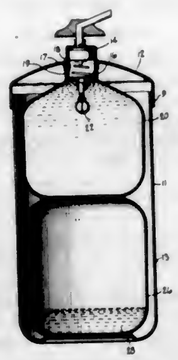
A head of plastic is injection molded on the end portion of a tube of the same or a dissimilar plastic in such way that there is no significant fusion of the plastic but the head resists pull-out of the tube end up to the tensile strength of the tube or a value only slightly less. The end portion of the tube is curved inwardly or outwardly by the heat and flow of the injected plastic that solidifies with the curved end portion within the confines of the head, so that the curved end portion is in a curved groove of the head from which it cannot be withdrawn without overcoming the frictional retention and without significant change in shape of the groove and/or the embedded end portion, resisted by the plastic of the head and the tube.

3,417,900
AUTOMATIC PRESSURE COMPENSATING ACCESS SYSTEM FOR FILLING SEALED STORAGE STRUCTURE
Donald R. Landphair, Arlington Heights, Ill., assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Ill., a corporation of Delaware
Filed Oct. 4, 1966, Ser. No. 584,197
2 Claims. (Cl. 220—86)



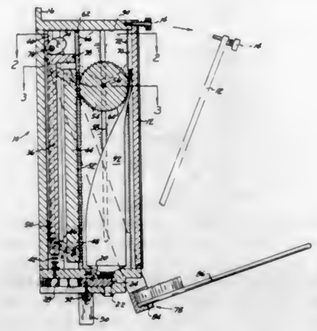
A remotely operated, automatic pressure compensating access system for filling a sealed storage structure, and more particularly, to an interlinked door access-exhaust system for a sealed storage structure such as a silo which is kept sealed from the atmosphere, but is loaded with additional perishable materials from time to time from the top. The weight of the material being filled into the top of the structure causes the access-exhaust system to open during filling operations.

3,417,901
REUSABLE PRESSURIZED DISPENSING DEVICE
Charles L. Sands, 901 Mayfair, Champaign, Ill. 61820
Filed July 6, 1967, Ser. No. 651,593
6 Claims. (Cl. 222—95)



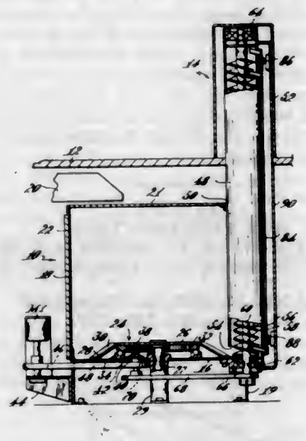
Disclosed is a reusable pressurized dispensing device which has a sealed chamber to hold a propellant which can be liquified in a home refrigerator, and which will boil below operating temperatures in order to force the liquid to be dispensed from the dispensing device. The device may be refilled by cooling to liquefy the propellant and opening the device to add more material to be dispensed.

3,417,902
DISPENSER FOR VISCOUS MATERIALS
Steve Mirka, 9908 Beaverland, Detroit, Mich. 48239
Filed Sept. 11, 1967, Ser. No. 666,908
5 Claims. (Cl. 222—96)



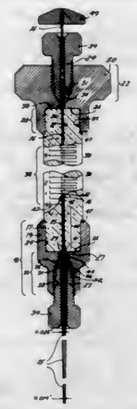
A dispenser for extracting in pre-selected quantities viscous materials packaged in collapsible containers.

3,417,903
ICE DISPENSING APPARATUS
Robert H. Callen, Peabody, Mass., assignor to Market Forge Company, Everett, Mass., a corporation of Massachusetts
Filed Oct. 18, 1966, Ser. No. 587,582
6 Claims. (Cl. 222—238)



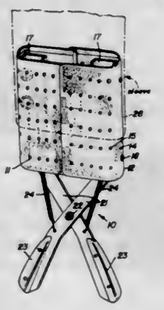
A storage bin for holding particles of ice, a conductor extending from near the bottom of the bin upwardly through a counter top, a screw in the conductor for elevating ice particles from the bin, and a discharge head above the counter top at the upper end of the conductor through which ice raised by the screw is discharged for use.

3,417,904
SYRINGE AND METHOD OF MAKING SAME
Joseph F. McLay, Warminster, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Jan. 11, 1966, Ser. No. 519,874
33 Claims. (Cl. 222—386)



A micro-syringe with a thick-walled glass barrel having unglazed outer terminal portions and a glazed outer portion intermediate the unglazed terminal portions and a plunger-mounting gland-body and a needle mounting gland-body formed of Teflon or the like, each having a thick-walled cup-like barrel-receiving portion telescoped over the respective unglazed terminal portions of the glass barrel and fixedly bonded thereto without external clamping means, and a tubular gland-operator screw-threaded to each gland-body, and a radially compressible tubular sleeve formed of Teflon or the like and having an outer wedging surface disposed in each gland-body and arranged to be radially compressed by tightening the screw-threads between the gland-body and the gland-operator.

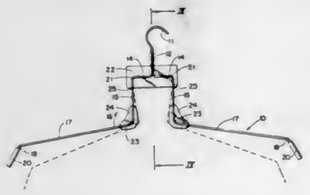
3,417,905
GARMENT SLEEVE SPREADER
Alfred Aloi, 116 Old Bergen Road, Jersey City, N.J. 07305
Filed July 7, 1966, Ser. No. 563,463
7 Claims. (Cl. 223—74)



A sleeve spreading device including a lazy tong actuator pivotally linked to a pair of U-shaped foraminous

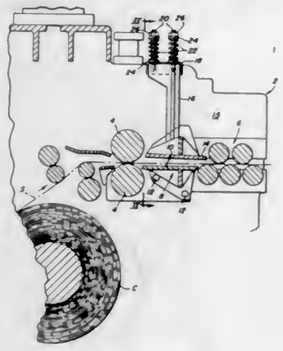
plates mounted upon the actuator in a parallel manner. The bight portions of the plates are concavely confronting and the corresponding leg portions of the U-shaped plates are positioned in overlying sliding relation with each other whereby the plates form a continuous surface of substantially oblong cross-section when inserted into a sleeve and actuated to spread the sleeve. The interior of the oblong cross-section is sufficiently hollow to permit the passage of fluid longitudinally through the spreader plates. The tong actuator is spring-biased to normally reduce the major axial length of the oblong cross-section.

3,417,906
SPRING SKIRT HANGER
David L. Taylor, 1184 Arroyo Drive, Pebble Beach, Calif. 93953
Filed Oct. 26, 1966, Ser. No. 589,671
2 Claims. (Cl. 223—95)



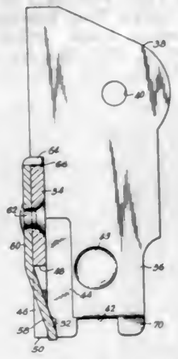
A spring skirt hanger providing greater tension and holding power at the arm tips, where the tension is required, by means of springing the arm members from a solid block which encases the beginning of the arm members and the lower portion of the hook shank. If more tension and less spring are required then the juncture between the neck members and the arms may also be made rigid and encased in a solid block.

3,417,907
YIELDABLE ENTRY GUIDE FOR STRIP-PROCESSING LINE
David E. Westbury, West Chester Township, Porter County, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,734
1 Claim. (Cl. 226—198)



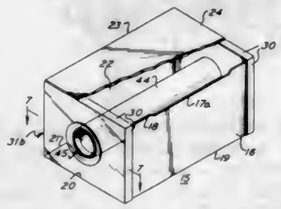
The guide includes a fixed lower guide plate and a resiliently mounted upper guide plate adapted to move vertically toward and from the lower guide plate under the stress of strip accumulated between the plates.

3,417,908
TACKER WITH ATTACHMENT FOR OUTWARD CLINCH
Eli Treatman, Astoria, N.Y., assignor to Markwell Manufacturing Company, Inc., New York, N.Y., a corporation of New York
Filed June 6, 1966, Ser. No. 555,458
6 Claims. (Cl. 227—83)



The tacker comprises a staple magazine with a staple drive at the forward end of the magazine, and a front wall outside the driver defining part of a staple driving passage. To cause outward spread or clinching of the staple without using an anvil, the tacker is provided with a deflector made of a single piece of resilient sheet metal having downwardly divergent edges near its lower end to deflect the staple legs outward as the staple is driven. The lower end of the front wall is cut away to receive the lower end of the deflector, with the divergent edges disposed in the path of the staple. The upper end of the deflector is secured directly against the outer face of the front wall in face to face contact by means of a single rivet. The lower end of the deflector is offset inwardly relative to its fixed upper end and is resiliently bendable outward in order to afford passage of the crown of the staple. The upper end of the deflector preferably has a rearwardly bent lug received in a slot in the front wall, which slot is slightly larger than the lug in order to afford a limited sideward self adjustment of the deflector about the rivet. The front wall to which the deflector is riveted is preferably part of an openable door for front loading, and for this purpose the said wall is formed integrally with side walls which extend upward and have pivot holes receiving a pivot pin about which the door may be turned outward to open the same.

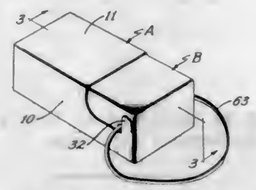
3,417,909
BOX CONSTRUCTION
Peter Stern, Elkins Park, Pa., assignor to Metal Edge Industries, Barrington, N.J., a corporation of New Jersey
Filed May 18, 1967, Ser. No. 639,325
2 Claims. (Cl. 229—15)



Composite boxboard-plastic receptacles employing a boxboard body with relatively rigid transparent or

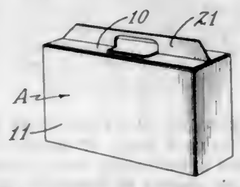
translucent synthetic plastic ends, adhesively secured to the body, with the ends shaped to facilitate assembly and optionally having interior mounting provisions for articles, or partitions.

3,417,910
CARRIER CARTON
Ronald V. Johnson, South Bloomington, Minn., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,259
6 Claims. (Cl. 229—19)



A carrier carton including an inner portion and an open topped outer portion telescoped together. The outer portion includes a pair of opposed hook-shaped projections near the upper end thereof. A flexible handle is anchored to the inner portion and extends beneath the hooked-shaped projections on opposite sides of the outer portion to hold the two portions assembled.

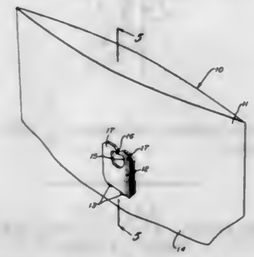
3,417,911
CARRIER CARTON
Russell J. Hennessey, St. Paul, Minn., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,311
3 Claims. (Cl. 229—37)



The invention lies in a carrier handle for use on a regular sealed end carton. A glue flap is provided to hold the wall panels in rectangular tubular relation. The glue flap preferably extends about half way across a carton end wall, and is provided with closure flaps which are anchored to the conventional closure flaps of the carton. A handle panel is hinged to the edge of the glue flap and normally lies in the plane of the glue flap. Preferably a handle reinforcing panel is adhered in face contact to the handle panel. A finger opening is provided in the handle panel by providing a U-shaped cut line in the handle panel terminating at the fold line connecting the handle panel to the glue flap. The handle panel may be hinged into right angular relation to the glue flap to serve as a handle.

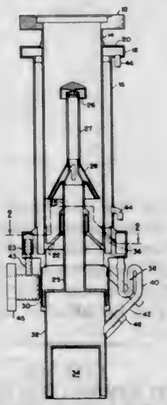
3,417,912
PLASTIC BAG WITH INTEGRAL CLOSING FACILITY
Jerre H. Paxton, P.O. Box 2098, Yakima, Wash. 98902
Filed Apr. 10, 1967, Ser. No. 629,441
1 Claim. (Cl. 229—62)

A transparent flexible bag, made of a suitable sheet plastic material such as polyethylene, which has integrated therewith at a suitable distance below the open mouth of the bag a Kwik Lok type bag closure so that when the neck portion of the bag is brought together and twisted to reduced it to a compact rope of small diameter, said closure is properly located and swingable about its lower end, where it is united with said bag, by the application of a



single hand thereto thereby allowing the neck of the bag to remain gripped in the hand by which it was twisted while said closure is pressed by the other hand into encircling relation with the neck of said bag thereby closing the latter.

3,417,913
MERCURY DIFFUSION PUMP
Wallace S. Kreisman, Malden, Mass., assignor to GCA Corporation, Bedford, Mass., a corporation of Delaware
Filed Jan. 17, 1967, Ser. No. 609,804
9 Claims. (Cl. 230—101)

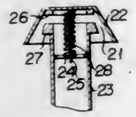


An all-metal mercury diffusion pump capable of withstanding high baking temperatures and including an annular water jacket joined to the barrel of the pump by an expansion joint. The water jacket also substantially encloses the vacuum fore-line and the condensate return line, and an isolation chamber separates the pump boiler from the pump manifold.

3,417,914
TOP NOZZLE OF MULTISTAGE DIFFUSION PUMP
Hiroaki Okamoto, Tokyo, and Yoshio Murakami, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed June 6, 1967, Ser. No. 646,794
Claims priority, application Japan, June 9, 1966, 41/36,798
4 Claims. (Cl. 230—101)

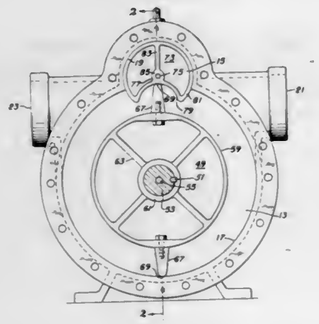
A multistage diffusion pump having a novel top nozzle which automatically opens the jet clearance thereof at its normal operation time, and also automatically closes the

clearance at its stopping time, by means of a movable nozzle cap driven by a thermal moving device utilizing



a ring of ferromagnetic substance, a bimetallic plate or a like spiral band.

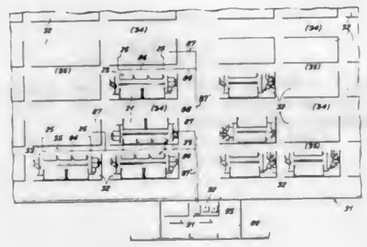
3,417,915
ROTARY BLOWER AND TIMING ADJUSTMENT MECHANISM
Albert J. Granberg, 6001 Rockwell St., Oakland, Calif. 94618
Filed Oct. 10, 1966, Ser. No. 585,591
2 Claims. (Cl. 230—150)



An apparatus for the movement of gases utilizing a vaned rotor and an escapement rotor having a concavity for receiving the vanes of the vaned rotor. The rotors are lubricated by a self-contained system and are secured to meshed gears having a timing adjustment mechanism permitting the rotors to be adjusted relative to each other.

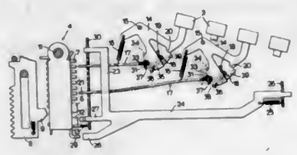
3,417,916
METHOD AND APPARATUS FOR RECORDING WEAVING DATA
Gerhard Rudolf Bröckel, Winterthur, Ronald J. Hug, Wiesendangen, and Kurt Rütschi, Sulz-Attikon, Switzerland, assignors to Sulzer Brothers Limited, Winterthur, Switzerland, a company of Switzerland
Filed Mar. 25, 1966, Ser. No. 537,496
Claims priority, application Switzerland, Apr. 6, 1965, 4,777/65
5 Claims. (Cl. 234—1)

There is disclosed a method and apparatus for recording, on a single punched tape, of operational data pertaining to a plurality of looms. Each loom is connected to a separate data storage device and presents to that device a signal representative of a loom operating condition, e.g., no warp threads broken, or one or more warp threads broken. Periodically the storage devices are scanned in succession to compare the data stored therein with the signal presented thereto, and in the event of a disparity detected at any of the storage devices (representative of a change in operational condition for the loom to which that storage device pertains since the last previous scanning), the content of the storage device is changed to reflect the new operational condition. Moreover, each such detected disparity causes recording on the tape of a group of punches representative of the change in loom



condition, of the identity of the loom affected, and of the time of occurrence of that change.

3,417,917
HIGH SPEED SET UP DEVICE FOR A TEN KEY ADDING OR LIKE MACHINE
Natale Capellaro, Ivrea, Turin, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Nov. 4, 1966, Ser. No. 592,070
Claims priority, application Italy, Nov. 18, 1965, 25,956/65
3 Claims. (Cl. 235—60)



1. A high speed up device for a ten key adding or like machine, having a group of numeric keys, a set up carriage provided in each order with a column of settable stop pins, means adapted to cooperate with a predetermined one pin of said columns for controlling a step by step movement of said carriage upon setting up each order of an amount, a group of setting members movable from a rest position to an operated position for setting a corresponding stop pin plus said predetermined one pin of each one of said columns, a key stem secured to each one of said numeric keys, and comprising in combination:

(a) a notch provided in each one of said setting members,

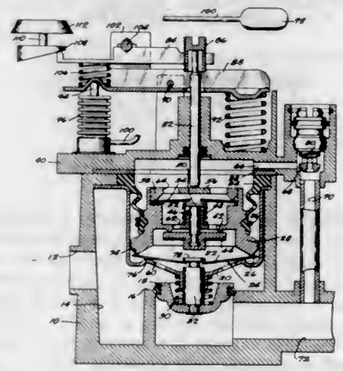
(b) a projection integral with each one of said key stems and normally entering said notch to positively operate the corresponding setting member at the depression of the corresponding numeric key,

(c) a spring tensioned between each setting member and the corresponding key stem for urging each setting member and said key stem toward said rest position,

(d) and a cam element integral with each setting member and adapted to engage a stationary member for disengaging said notch from said projection when said setting member approaches said operated position, whereby said setting member is restored by said spring independently from the corresponding key stem.

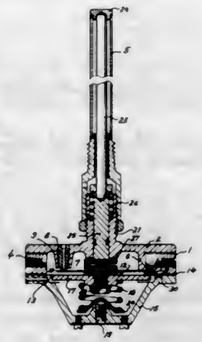
3,417,918
GAS CONTROL SNAP ACTING AND MODULATING VALVE ASSEMBLY
Elmer E. Wallace, Fullerton, Calif., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,766
1 Claim. (Cl. 236—48)

The manually actuated knob is rotated to adjust the compound leverage actuated by the bellows to impart movement to the valve assembly with the initial movement operating a snap disc to open a valve for low flow



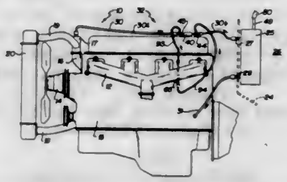
as determined by the adjustment of a valve in the bypass. Continued movement flexes a spider to gradually actuate the main valve.

3,417,919
PNEUMATIC TEMPERATURE TRANSMITTERS
Hans D. Baumann, Decatur, Ill.
(Route des Isles 14, Conde-sur-Noireau, France)
Filed Mar. 28, 1966, Ser. No. 537,848
1 Claim. (Cl. 236—87)



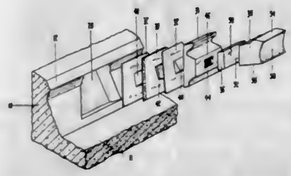
Apparatus for transforming the expansion of a bi-metallic bulb, caused by changes in fluid temperature to be measured, into a proportional pneumatic signal capable of being transmitted to a remote indicating gage. In the apparatus the proportion between the sensed temperature and the span of air signal pressure can be adjusted through a variation in the effective area of a stiff, flexible metal diaphragm.

3,417,920
AUXILIARY HEATING APPARATUS
Donald F. Tyson, 861 Brock St., Victoria, British Columbia, Canada
Filed Mar. 6, 1967, Ser. No. 621,025
2 Claims. (Cl. 237—12.3)



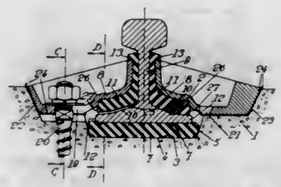
An apparatus for extracting heat from exhaust gases of an internal combustion engine and using such heat to supplement the heat supplied by the operating engine to a hot water heating system.

3,417,921
RAILWAY TRACK
Louis X. H. Maynier, 7 Scott St., Waverley, Johannesburg, Republic of South Africa
Filed Nov. 29, 1966, Ser. No. 597,640
Claims priority, application Republic of South Africa, Dec. 6, 1965, 65/6,538
15 Claims. (Cl. 238—264)



A rail is held in "floating" condition above a support, usually the sleeper, by means of wedge formations, engaged between head and foot of the rail, that are upwardly inclined. Adjusting plates are located between the wedges and the supports and are slidable relatively to the wedges to permit the rail limited upward movement. Resilient shock-absorbing pads are provided between the wedges and the supports. The assembly, including the rail, is located within a recess in the support.

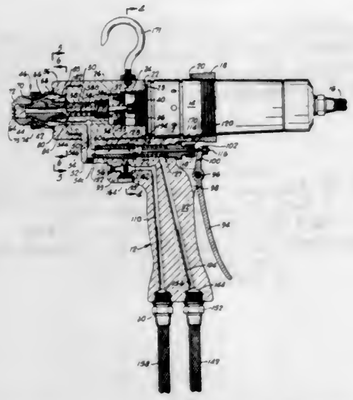
3,417,922
DEVICES FOR FIXING RAILROAD RAILS TO THEIR SLEEPERS
Jean Dargier de Saint Vaulry, Paris, France, assignor to Paulstra, Levallois-Perret, France, a French society
Filed Oct. 21, 1966, Ser. No. 588,562
Claims priority, application France, Nov. 5, 1965, 37,495
5 Claims. (Cl. 238—292)



The device is provided with a sole of resilient material mounted in fixed position on a support such as a sleeper and supporting the rail base flange. Two clips are rigidly

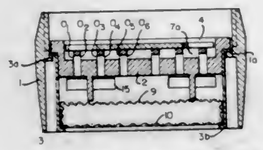
secured to said support, respectively on opposite sides of said rail. Two resilient material packings are tightly held between said clips, respectively, and said rail, said packings being of L-shaped cross-section and bearing upon the rail web and the upper face of the rail base flange.

3,417,923
SPRAY GUN FOR APPLYING A TWO-COMPONENT MIXTURE
Ronald E. Carlson, P.O. Box 708, Hobart, Okla. 73651
Filed Nov. 4, 1966, Ser. No. 592,222
11 Claims. (Cl. 239—112)



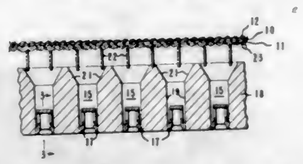
A spray gun having two basic parts constituted by a mixing head and a handle portion which is quick detachably secured to the mixing head during the use of the gun. The handle portion carries valving positioned in a plurality of fluid conduits extending through the handle portion, and communicating with fluid conduits in the mixing head. A trigger mechanism is provided on the handle portion which permits the valving to be operated. The mixing head portion of the gun includes a motor, a central body which is connected to the motor, and a spray head secured to the central body on the opposite side thereof from the motor. Inside the central body is a mixing chamber in which the several components of the fluid mixture are brought together and intimately mixed. A mixing shaft is drivingly connected to the motor and extends into the mixing chamber formed in the central body of the mixing head.

3,417,924
AERATOR WITH VARIABLE PROPORTIONING
Elie P. Aghnides, 795 5th Ave., New York, N.Y. 10021
Filed Feb. 15, 1967, Ser. No. 616,286
8 Claims. (Cl. 239—428.5)



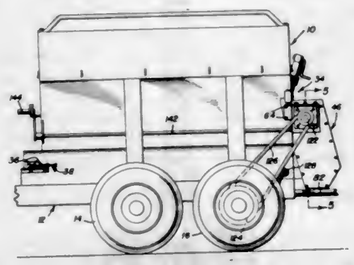
The disclosure relates to water aerators of the type in which air is intimately admixed with the water to provide a highly aerated, bubbly jet of water issuing from the aerator. According to the disclosure, a low-cost, convenient-to-use aerator is provided comprising an element which effects ideal proportioning between the velocity of the jet streams within the aerator and the resistance of the mixing screen to produce optimum water aeration, whereas removal of said element increases the rate of flow, causing an impairment of the aforesaid proportioning but substantially reducing the back pressure created by the aerator to minimize its interference with operation of gas-fired heaters.

3,417,925
DIFFUSION APPARATUS
Garo Krikorian, Paxton, Mass., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,815
1 Claim. (Cl. 239—504)



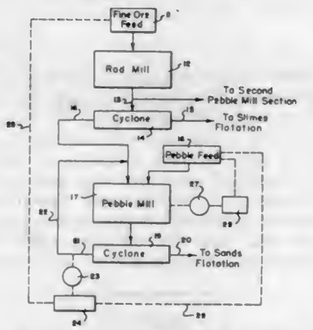
A gas diffusion apparatus that includes a drum having a perforated outer wall, the perforations forming apertures in communication with a gas supply in the interior of the drum, and inserts positioned in each aperture. The inserts have a cylindrical base and integral therewith, a cylindrical upper member having a smaller radius than the base. The base engages the aperture wall and has a gas entry-office therein, communicating with a passageway extending axially through the base and into the upper member and terminating in an end wall. There is at least one side opening in the upper member located short of the end wall communicating with the passageway and being positioned with its longitudinal axis substantially perpendicular to the axis of the passageway.

3,417,926
SPREADER CHAIN AND FAN DRIVE ASSEMBLY
Dwight F. De Vorak, Crowley St., Hazen, Ark. 72064
Filed Aug. 5, 1966, Ser. No. 570,560
2 Claims. (Cl. 239—673)



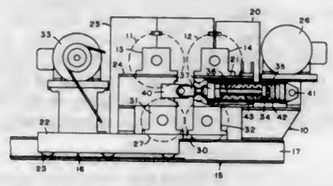
A wheeled material spreader including an elongated longitudinally extending hopper provided with a lower material outlet opening at its rear end and including a longitudinally extending conveyor in the bottom of the hopper registered with the outlet opening. A spreader fan and conveyor drive assembly is removably supported from the rear end of the hopper and driven from one of the ground engaging wheels of the material spreader. The drive assembly includes an upper transverse shaft driven from the wheels of the spreader and which is disposed exteriorly of the hopper above the outlet opening thereof. A pair of upstanding journalled spreader fan shafts are journalled from the drive assembly, driven from the transverse shaft at their upper end and extend downwardly on opposite sides of the outlet opening. The conveyor is of the endless flexible belt type and a horizontal transverse drive shaft for the rear end of the conveyor is journalled from the drive assembly below the transverse shaft driving the spreader fan shaft and in registry with the outlet opening of the hopper and one end of the conveyor drive shaft is driven by the corresponding end of the spread fan drive shaft.

3,417,927
ORE GRINDING CONTROL
Bunting S. Crocker, Toronto, Ontario, Canada, and Theodore G. Fulmor, Francis L. Holderreed, William Lucy, and John F. Mahoney, Anaconda, Mont., assignors to The Anaconda Company, New York, N.Y., a corporation of Montana
Filed June 30, 1965, Ser. No. 468,505
5 Claims. (Cl. 241—24)



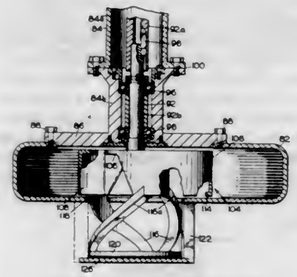
An ore grinding control system is shown in which radiation gauge means are used to measure the level and density of the circulating load of a grinding mill. The output signal of the density gauge is transmitted to controller means to regulate either the ore feed input to the grinding mill or the ore feed to a preceding grinding stage. The system additionally provides for power sensor means to measure the power consumption of the grinding mill and controller means responsive to the measured power for regulating the ore feed input to the grinding mill.

3,417,928
GAS-HYDRAULIC SYSTEM FOR CRUSHERS
Theodore F. Gundlach, Belleville, Ill., assignor to T. J. Gundlach Company, Belleville, Ill., a corporation of Illinois
Filed Nov. 14, 1966, Ser. No. 593,757
10 Claims. (Cl. 241—32)



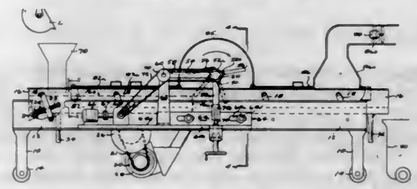
1. In a material crusher:
(a) a pair of spaced crushing elements having crushing surfaces and adapted by movement of the crushing elements relative to each other to crush material therebetween,
(b) at least one of the crushing elements being movable with respect to the other to adjust the spacing between the crushing surfaces, and
(c) a gas-hydraulic means operatively associated with the movable crushing element, the gas-hydraulic means including at least one piston housing,
(d) a piston slidably mounted in the housing,
(e) a hydraulic fluid in the housing at one side of the piston opposing relative movement of the crushing elements toward each other to maintain the predetermined spacing between the crushing elements, and
(f) a gaseous fluid under pressure in the housing at the other side of the piston opposing movement of the crushing elements away from each other up to a predetermined load.

3,417,929
COMMINUTING PUMPS
Ralph T. Secrest, Elma, Wash., assignor to Secrest Manufacturing Company, Bellevue, Wash., a corporation of Washington
Continuation-in-part of application Ser. No. 454,353, May 10, 1965. This application Feb. 8, 1966, Ser. No. 534,268
7 Claims. (Cl. 241—46.04)



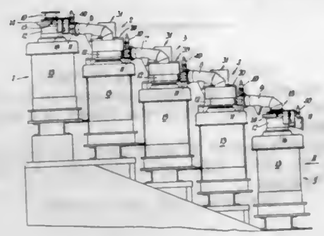
The pump is supported in suspended relation in a tank and is driven by a motor supported on the tank. Rotatably supported in the pump housing is an impeller assembly including pumping blades and depending cutter blades. Shear blades also depend from the pump housing and are engaged by the cutter blades for comminuting material to be pumped. The pump has a first outlet in the form of a vertical pipe extending through the top of the tank and a second outlet terminating within the tank. The valve is included in the outlet for directing the pump outflow either through the vertical outlet or the outlet within the tank. The entire pump assembly is vertically adjustable by a lift apparatus.

3,417,930
APPARATUS FOR TREATING ALUMINUM DROSS
Thomas H. Brumagin, Westfield, N.Y., and Stanley H. Brown, Newark, Ohio, assignors to Ajax-Newark, Inc., Westfield, N.Y., a corporation of New York
Filed Apr. 13, 1965, Ser. No. 447,725
14 Claims. (Cl. 241—64)



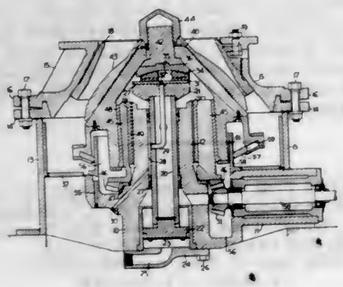
Apparatus for disintegrating and cooling aluminum dross having a vibrating conveyor and a rotary flail intermediate the ends of the conveyor.

3,417,931
PLANT FOR PROCESSING SEMI-LIQUID SUBSTANCES OR GRANULAR SUBSTANCES IN A LIQUID CARRIER
Ronald Redfern, Banstead, Surrey, England, assignor to John F. Renshaw & Company Limited, Mitcham, Surrey, England, a British company
Filed Jan. 20, 1966, Ser. No. 534,949
Claims priority, application Great Britain, Feb. 1, 1965, 4,359/65
6 Claims. (Cl. 241—161)



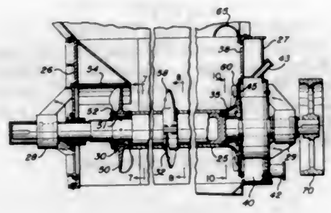
Equipment for, and methods of, processing semi-liquid or liquid substances, or granular substances in a liquid carrier, in a set of mills connected in series, each mill having a rotor and a stator arranged to co-operate with one another to reduce to a colloidal system material fed to the mill, means for adjusting the spacing between the stator and the rotor of at least one of the mills, means for feeding material to be processed to the first mill of the set, and means for controlling the feed rate of the feeding means.

3,417,932
GYRATORY CRUSHER
Warren R. Patterson, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 28, 1966, Ser. No. 537,868
3 Claims. (Cl. 241—208)



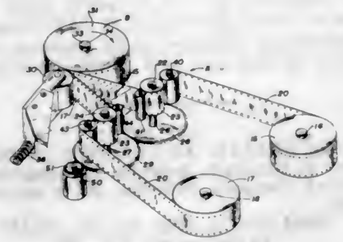
A spiderless gyratory crusher having a hydraulically adjustable crusher head wherein said crusher head is supported by a hydraulically, operable crusher post slidably mounted within the crusher frame. A step bearing assembly is provided between the crusher post and crusher head so that a rotating eccentric member directly gyrates the crusher head and not the crusher post. A lubricating fluid inlet port passes through the crusher frame to an annular fluid chamber about the crusher post, and an outlet port is provided through the crusher post to the step bearing assembly.

3,417,933
PULPER
John A. Buck, Owen Sound, Ontario, and Frank D. Taylor, North Vancouver, British Columbia, Canada, assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed July 11, 1966, Ser. No. 564,245
Claims priority, application Canada, July 12, 1965, 935,550
11 Claims. (Cl. 241—280)



1. A pulper comprising a tank forming a pulping vat, a shaft extending transversely of said vat adjacent the bottom thereof, an extraction plate on one end wall of said vat forming a tank outlet in surrounding relation to said shaft, a pulping rotor mounted on said shaft and having a plurality of vanes operably associated with said extraction plate for directing stock slurry therethrough, and a propeller mounted on said shaft in axially spaced relation to said rotor for directing stock under force axially toward said rotor vanes and said extraction plate.

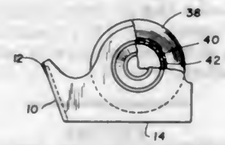
3,417,934
MAT PROCESSING REGISTRATION DEVICE
George U. Palm, San Jose, Calif., assignor to Mark Systems, Inc., Santa Clara, Calif.
Filed Oct. 25, 1966, Ser. No. 589,442
5 Claims. (Cl. 242—55)



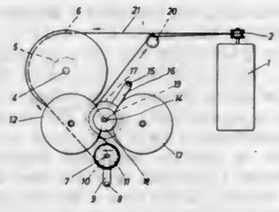
A system for simultaneous positive-negative processing of a film of the Bimat type in which separately metered sprocket holed mat and film materials are fed under tension through synchronized, separate, spaced-apart sprockets to obtain sprocket hole registry of the mat and film and thence are fed in a converging angle for mating in sprocket hole registration onto a processing reel.

3,417,935
TAPE DISPENSER
Arthur J. Douglas, Rockport, Mass., and Seymour Scheckner, Pittsburgh, Pa., assignors to LePage's, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 17, 1967, Ser. No. 661,362
6 Claims. (Cl. 242—55.2)

A tape dispenser formed from a single piece of plastic material, and fabricated by initially molding an essentially flat form and thereafter folding the flat form into a dispenser configuration having a front tape-cutting edge and integral, folded side walls fastened together in parallel relationship to form a hub for supporting a roll of tape to be dispensed.



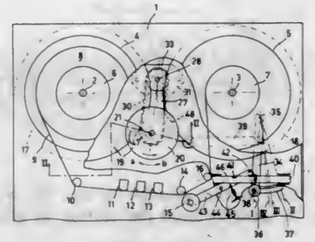
3,417,936
DRIVE ARRANGEMENT FOR A TAPE RECORDER
Klaus Paape, Berlin, Germany, assignor to Robert Bosch Elektronik und Photokino G.m.b.H., Berlin-Wilmersdorf, Germany
Filed Nov. 28, 1966, Ser. No. 597,430
Claims priority, application Germany, Nov. 30, 1965, B 84,771
8 Claims. (Cl. 242—55.12)



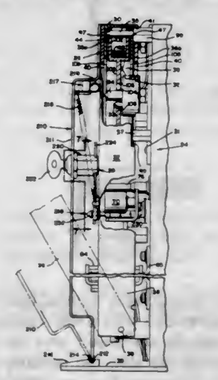
A drive arrangement for a tape recorder including a wind-off disk, a take-up disk, and a capstan shaft with flywheel and drive pulley, in which a first friction wheel with a coaxial pulley is movable between an active position engaging the take-up disk for driving the same during normal operation of the recorder and an inactive position, and a second friction disk with a coaxial pulley is movable between a pair of end positions respectively engaging the take-up disk or the wind-off disk for respectively driving the same, in which a slip clutch is located between the first friction disk and its coaxial pulley, whereas the other pulleys are fixed to the respective wheels for synchronous rotation therewith, and in which the three pulleys are driven by an endless rubber cord from a motor.

3,417,937
DEVICE FOR ADJUSTABLY DRIVING TWO PARALLEL REEL SPINDLES
Nanno van Slageren, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1966, Ser. No. 603,380
Claims priority, application Netherlands, Jan. 6, 1966, 6600123
3 Claims. (Cl. 242—55.12)

A driving mechanism for the reels of a tape recorder/reproducer is described. As shown, the spindles of the two tape reels are each provided with an electrically conductive disc. The discs are arranged in a common plane and spaced apart. Interposed between confronting peripheries of the discs is a permanent magnet with multiple poles and rotatable on a driven shaft with axis parallel to the axes of the discs. By translatory movement of the axis of the magnet so that its periphery is coupled to the periphery of one or the other disc to a greater or lesser extent, the degree of coupling is varied between the driven shaft and each reel spindle and the corresponding rotation force for the reel is accordingly varied.



3,417,938
TAPE TRANSPORT
Michael J. Markakis, Palo Alto, and Sammy J. Ferguson, San Jose, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 19, 1964, Ser. No. 353,110
4 Claims. (Cl. 242—55.13)

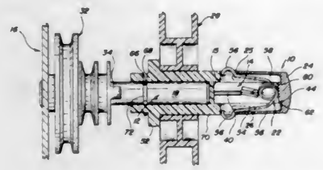


A tape transport including a chassis, a carrier for receiving a tape cartridge therein, the carrier being pivotally mounted on the front of the chassis, a cover plate and spring means releasably connecting the cover plate and carrier whereby the cover plate and carrier can pivot as a unit for quick loading or unloading of the cartridge, or the cover plate can be readily removed to provide access to the tape deck. The transport further includes means for aligning the tape with the capstan and tape transducing heads when the carrier is pivoted towards the tape deck.

3,417,939
SPINDLE FOR SUPPORTING REELS OR SPOOLS FOR ROTATION
Leslie J. Bunting, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 591,315, Nov. 1, 1966. This application Oct. 16, 1967, Ser. No. 679,587
15 Claims. (Cl. 242—68.3)

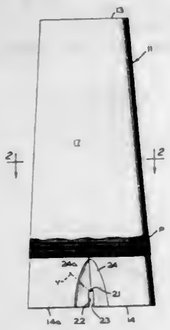
An apparatus for receiving and supporting for rotation on a film projector a reel of strip material. The apparatus comprises a spindle in the shape generally of a hollow cylinder having at one end an open ended chamber which is adapted to be received and to rotate on a fixed shaft of the projector, and having at the other end slots and

an open ended chamber to receive and support a reel drive spring and a reel detent spring to drive and to re-



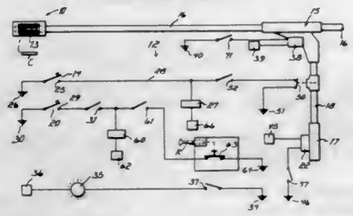
tain the reel on the spindle. A cap fits over the latter chamber to securely hold the springs in proper position.

3,417,940
TEXTILE CARRIER
Willard S. Hawkins, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed May 8, 1967, Ser. No. 641,734
4 Claims. (Cl. 242—125.1)



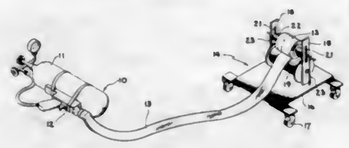
A textile carrier including a tubular body having a base with the end edge provided with a slot opening into the base end edge and a radially depressed area on the body outer surface encompassing the slot, the radially depressed area being arranged to accommodate an overlying portion of a textile strand material in underlying, nondestructive relationship with an associated driving surface positioned in parallel frictional driving engagement with the body outer surface.

3,417,941
LOCKABLE RECEIVER FOR PNEUMATIC TUBE CONVEYING SYSTEMS
Wolfgang R. Stieber, River Vale, N.J., assignor, by mesne assignments, to The Mosler Safe Company, a corporation of New York
Filed Apr. 18, 1967, Ser. No. 631,812
12 Claims. (Cl. 243—16)



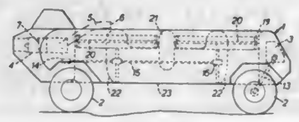
A pneumatic tube conveying system is disclosed having receiver devices which are provided with electromagnetically operated locks for locking the receiver devices and thereby preventing unauthorized removal of the carrier upon arrival at the receiver. The electromagnetic locks are selectively actuated to lock the receiver in response to a command signal generated by the one initiating the carrier transmission and are deenergizable for unlocking the receiver in response to a key operated switch located at the receiving station for which only authorized personnel are provided keys.

3,417,942
PROJECTABLE STRUCTURE
Earl M. Van Alstyne, Garden Grove, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 492,649
19 Claims. (Cl. 244—1)



A projectable structure including a deployment vehicle, a flexible inflatable tube stored on a drum on the vehicle, and means for inflating the tube for propelling the vehicle are described. Rollers on the vehicle pinch the tube shut and are moved along the tube upon inflation thereof. Uninflated tube is concurrently payed out from the drum. In various embodiments the storage drum also forms one of the rollers or may be separated therefrom on the vehicle. Likewise a plurality of tubes may be employed between the vehicle and the means for inflating for better rigidity and control. The means for inflating comprises a hand held control gun with a control of gas used for inflation of the tube or, when a plurality of tubes are used, differential inflation of the several tubes. Breathable gas may be employed in space rescue applications for tapping at points along the length of the tube.

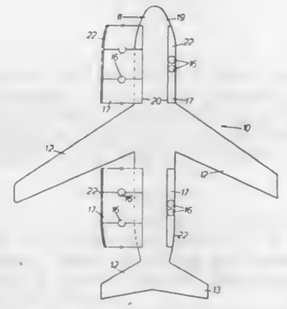
3,417,943
AIR JET THRUST SUPPORTED CRAFT
Frederick William Page, Raymond Frederick Creasey, and Joseph Thomas Froud, Lytham St. Annes, England, assignors to British Aircraft Corporation (Operating) Limited, London, England
Continuation-in-part of application Ser. No. 150,095, Nov. 3, 1961. This application Dec. 4, 1964, Ser. No. 416,162
Claims priority, application Great Britain, Nov. 18, 1960, 39,833/60; Aug. 30, 1961, 31,277/61
13 Claims. (Cl. 244—23)



A temporary ground effect cushion supported vehicle having a prime mover capable of generating a sustained gaseous jet thrust of a magnitude less than the weight of said vehicle, a plurality of nozzles disposed along the perimeter of the vehicle producing a static height near the ground, resulting in a thrust less than the height of the vehicle, energy storage means installed in the vehicle capable of temporarily increasing the thrust of said gaseous jet curtain to a magnitude exceeding the weight of

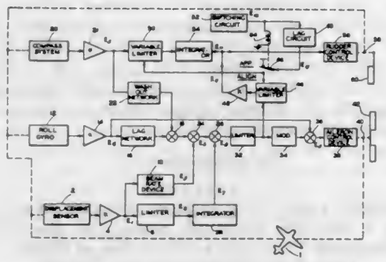
the vehicle, propulsive gaseous jet producing means installed in the vehicle and in operation imparting a substantially horizontal thrust to the vehicle for enabling the vehicle to leap over an obstacle of up to a predetermined length and height, and then returning to a static height beyond said obstacle, wherein the ratio of the thickness of the curtain to the equivalent-diameter of the vehicle is given as a ratio within a specified range.

3,417,944
VERTICAL TAKE-OFF AIRCRAFT
Philip Charles Ruffles and Paul Alfred Taylor, Derby, England, assignors to Rolls-Royce Limited, Derbyshire, England, a British company
Filed Feb. 23, 1967, Ser. No. 617,894
Claims priority, application Great Britain, Mar. 11, 1966, 10,943/66
4 Claims. (Cl. 244—54)



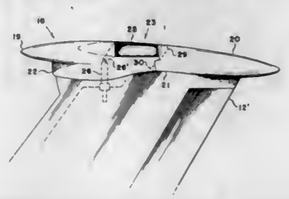
Aircraft having lift engines in ducts, each engine having a vaned rotor through which the turbine exhaust gases flow and which causes the latter to induce swirl in the air flowing through the duct, whereby to augment thrust.

3,417,945
AIRCRAFT CONTROL SYSTEM FOR LATERAL RUNWAY ALIGNMENT
Gibson Reynolds, Tuxedo Park, N.Y., and Jerry Doniger, Montvale, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 30, 1965, Ser. No. 510,483
8 Claims. (Cl. 244—77)



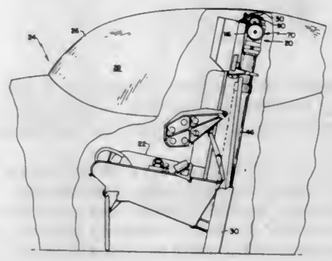
A system for controlling an aircraft during runway approach and runway alignment maneuvers while landing the aircraft including controlling the aircraft rudder during the approach maneuver in response to lateral displacement integral, lateral displacement differential, heading displacement and roll angle signals; controlling the rudder during the alignment maneuver in response to heading displacement integral signals; and controlling the aircraft ailerons during the approach and alignment maneuvers in response to lateral displacement integral, lateral displacement differential, heading displacement, and roll angle signals.

3,417,946
T-TAIL CONSTRUCTION FOR AIRCRAFT
William L. Hartley, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 29, 1967, Ser. No. 694,556
8 Claims. (Cl. 244—87)



A T tail construction for aircraft is provided which is predicated on two basic concepts—(1) the extension of an uninterrupted horizontal stabilizer box beam across the vertical stabilizer (pivot) intersection and the capability of this horizontal stabilizer of assuming various pitch trim angles, and (2) the hinged aerodynamic fairing which has its forward portion mounted to and rotating with the horizontal stabilizer box beam and the aft portion rigidly attached to the vertical stabilizer box beam. The horizontal stabilizer box beam is constructed of ribs joining front and rear beams skinned with milled integral riser skin planks and/or conventional skin-stringer type skins.

3,417,947
CATAPULT ROCKET REPOSITIONING DEVICE
Gordon A. Valentine, Denver, Colo., assignor to Stanley Aviation Corporation, Denver, Colo., a corporation of New York
Filed Feb. 15, 1966, Ser. No. 527,412
22 Claims. (Cl. 244—122)

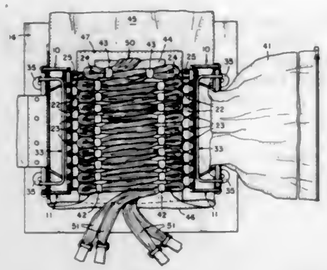


A catapult rocket repositioning device having an inertia wheel for sensing the pitch attitude of a seat structure during its ejected flight from a parent vehicle. The rocket thrust vector is corrected by operation of the inertia wheel to minimize pitch perturbations of the seat structure during rocket ignition.

3,417,948
PARACHUTE STOWAGE TOOL
Aloysius H. Hoormann, 11911 Natural Bridge Ave., Bridgeton, Mo. 63042
Filed Mar. 30, 1967, Ser. No. 627,042
18 Claims. (Cl. 244—148)

A tool to facilitate the stowing of parachute suspension lines, the tool including a pair of oppositely facing frames each having a row of hooks along its length adapted to

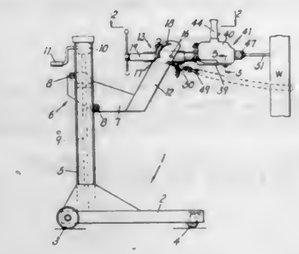
be placed over the parachute pack. The hooks on each row are spaced apart at equal intervals, and each row is spaced apart from its associated row to provide an apparatus for gauging and tensioning the length and spac-



ing of the loops of the suspension lines in preparation for stowage.

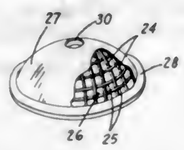
Also disclosed is a method of preparing the lines for stowage utilizing oppositely facing rows of hooks.

3,417,949
MOBILE SUPPORT FOR ELECTRIC DRILLS
Morris L. Waber, Kalamazoo, Mich., assignor to Waber Tool & Engineering Co., Kalamazoo, Mich., a partnership
Filed Oct. 28, 1966, Ser. No. 590,379
4 Claims. (Cl. 248—13)



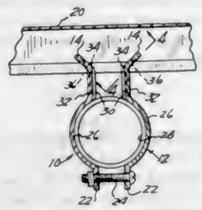
1. A portable drill support comprising a mobile carriage having a vertically adjustable support thereon with a portion projecting laterally from the vertical adjusting mechanism,
spaced parallel arms secured to the projecting portion of said support and projecting therebeyond,
a slide housing secured between said arms and having a bore formed through the housing generally parallel to the arms with a shaft bearing at one end coaxial with the bore,
a hollow cylindrical slide reciprocable in said bore,
means forming an internal thread within said slide,
a feed shaft rotatably and axially fixed journalled in said bearing and having an adjusting handle on one end,
a screw thread on the other end of said shaft drivingly engaged with said thread in said slide,
longitudinal grooves formed in angularly spaced positions around said slide,
lock means movably mounted on said housing and spring biased toward selective engagement in one of said grooves,
a drill support bracket having angularly disposed flanges connected to the opposite end of said slide from said screw and adapted to support the body of a power drill with the chuck of the drill generally coaxial with said slide,
a chain pivotally connected to one of said arms adjacent said housing,
and means on the other of said arms selectively engageable with links of said chain.

3,417,950
VIBRATION ISOLATOR
Kenneth W. Johnson, 4113, Lakeshore Drive, Rte. 1, Jamestown, Ohio 45335
Original application July 11, 1966, Ser. No. 564,351, now Patent No. 3,337,167, dated Aug. 22, 1967. Divided and this application July 21, 1967, Ser. No. 655,133
3 Claims. (Cl. 248—24)



A vibration isolator device having dome-shaped resilient spring elements in frictional rubbing interengagement and encased in a resilient rubber-like casing member for synergistically combining vibration-absorption action with frictional-engaging action when supporting an object.

3,417,951
PIPE SUPPORT
Hugo E. Rebentisch, Jr., Wayne, Mich., assignor to Unistrut Corporation, Wayne, Mich., a corporation of Michigan
Filed Oct. 7, 1966, Ser. No. 585,042
2 Claims. (Cl. 248—62)

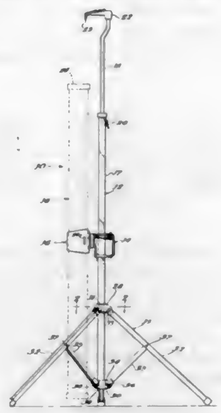


A clamp for attaching a pipe or conduit to a U-shaped channel supporting member with the pipe or conduit spaced from the surface of the channel member. The clamp includes rigid strap sections having an intermediate portion embracing the pipe or conduit, outer ends provided with fastening means and inner ends extending from the intermediate portion and provided with notches for engaging the flanges of the channel sections upon tightening of the fastening means.

3,417,952
TRIPOD LOCK FOR MOVIE SCREEN STAND
Hillard J. Bieschke, Itasca, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed Aug. 15, 1966, Ser. No. 572,532
3 Claims. (Cl. 248—171)

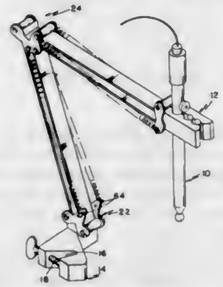
Arrangement for holding a swingable leg unit of a movie screen stand in a spread supporting position, the stand having a telescoping rod in the leg unit swingably connected to a collar slidably mounted on the lower end of the standard, characterized in that the collar carries a spring-urged plunger normally urged inwardly of the standard and the standard is provided with an opening in the sidewall thereof, the opening being positioned

for occupation by the plunger of the collar when the leg is in a spread supporting position, with the tele-



scoping rod having a camming portion positioned to force the plunger outwardly of the opening when the rod is depressed inwardly of the stand.

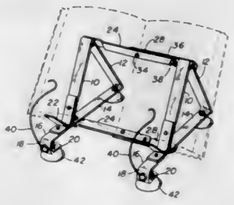
3,417,953
MECHANICAL SUPPORT ASSEMBLIES
Warren K. Hillquist, Boston, and Paul A. Hillquist, Cambridge, Mass., assignors to Instrumentation Laboratory, Inc., Watertown, Mass., a corporation of Massachusetts
Filed Oct. 31, 1966, Ser. No. 590,690
4 Claims. (Cl. 248—280)



An adjustable mechanical support assembly for stably positioning a tubular electrode in a wide range of positions includes four metal straps, each of which has a 0.125 inch O.D. transverse pin press fitted in each end. The assembly also includes a base, an electrode receptacle and a joint, each of which is of plastic and includes two pairs of spaced ears. Each ear has an 0.116 inch diameter aperture and a radial slot and the pins extend through the apertures to define friction joints. Equipoising springs are connected between the pins secured to the plastic components.

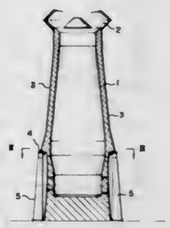
3,417,954
FOLDABLE BOOKHOLDER
Arthur G. Croninger, 36 C St. NW., Miami, Okla. 74354
Filed Nov. 21, 1966, Ser. No. 595,831
6 Claims. (Cl. 248—462)

This invention relates to portable copy and bookholders. More particularly, this invention relates to portable devices which are placeable upon a table or other similar structure to hold a book or similar copy material in an inclined position while at the same time providing adequate front support for the book or copy material. The preferred embodiment of the invention comprises a pair of triangular end members separated by pivotally attached and interlocking frame members so that the frame members may be interlocked to provide a sturdy support for the structure. Means are pro-



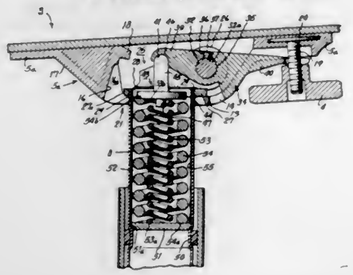
vided on the front face of the triangular members to support a book thereon, and swingable finger members are provided so that when a book is in an open position the pages are held in position by the finger members. The invention further includes a plate-like adapter member positionable upon the structure to receive thereon and hold in proper alignment, papers or other non-rigid material.

3,417,955
METHOD OF SUPPORTING THE SHELL SECTION OF A BLAST FURNACE
Akio Kishimoto, Hiroshima-ken, and Kimiaki Ohtawa, Hiroshima-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Oct. 24, 1966, Ser. No. 589,027
Claims priority, application Japan, Oct. 26, 1965, 40/65,658
6 Claims. (Cl. 248—351)



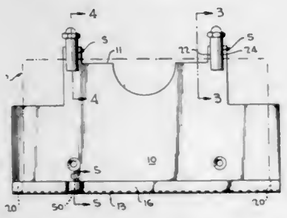
A method of supporting the shell sections of a blast furnace includes using at least three pole braces or columns each of which carries a plurality of flat circumferentially widened supporting plates which are spaced apart by an amount sufficient to insure that their respective supporting influences on the shell of the blast furnace are independent from one another and they are separated to provide a plurality of unsupported cooling areas beneath the shell. In a preferred arrangement for a blast furnace having an output of 2600 tons per day, the pole braces are constructed in a number and arrangement to provide supporting plates at intervals at 3000 mm., a distance which insures that the support of each plate does not interfere with the next adjacent plate. Each pole brace or column advantageously carries two supporting plates arranged adjacent each end of an upper cross member in the configuration of a T.

3,417,956
CHAIR CONTROL
Charles Robert Helms, East Greenville, Pa., assignor to Art Metal-Knoll Corporation, a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,640
8 Claims. (Cl. 248—379)



A chair control mechanism for controlling tilting movement of a chair seat from a horizontal position, wherein the support column includes a pivot bracket having spaced vertical arms, said chair seat includes a mounting bracket including a second pair of spaced vertical arms, a control means comprising a pair of lever arms, a pivot pin pivotally mounting said first and second pair of vertical arms and said pair of lever arms, adjustment means mounted on the mounting bracket comprising a threaded stud fixedly mounted to the mounting bracket and a handwheel threadedly engaged on the stud and rotatable to vary the position of the second lever arm, and resilient means engaging the first lever arm and referencing it to the support column.

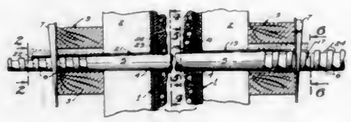
3,417,957
QUICK-CHANGE LICENSE PLATE HOLDER
Duncan Malloy Wilson, Jr., R.F.D. 2, Manning, S.C. 29102
Filed Oct. 14, 1966, Ser. No. 586,800
7 Claims. (Cl. 248—488)



This invention relates to a license plate holder which is adapted to hold plates of different sizes without the use of separate fasteners. The device has a lower plate receiving flange and a pair of upper adjustable yieldable retainers for holding the upper edge of the plate in position.

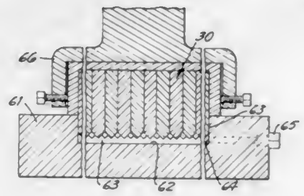
3,417,958
CONCONCRETE FORM SECURING MEANS
Warren E. Rugger, Torrance, Calif. (P.O. Box 445, Redondo Beach, Calif. 90277)
Filed Jan. 26, 1967, Ser. No. 611,859
9 Claims. (Cl. 249—40)

The concrete form securing means utilizes a tapered rod which extends through opposed forms defining the wall to be constructed and is provided with a series of notches at each protruding extremity which receive fastening means that engage the studs or walers which reinforce the forms to restrain the forms from spreading. More particularly, the securing means incorporates a pair of special retainer members which extend alongside the tapered rod into the forms and have inner ends overlying the inner surfaces of the forms and outer, exposed ends arranged to be removably connected to the tapered rod near its extremities. One form of the securing means includes a bracket having means for securing a vertical



stud and a horizontal waler to each other and also has spaced and aligned apertures dimensioned to receive the tapered rod as well as the retaining members. Still further, the securing means facilitates the casting of a seal element so as to close the opening in the wall formed by the tapered rod after the securing means and the forms have been removed.

3,417,959
DIE FOR FORMING RETRO-REFLECTIVE ARTICLE
Thomas E. Schultz, Roseville Village, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 593,948
10 Claims. (Cl. 249,117)

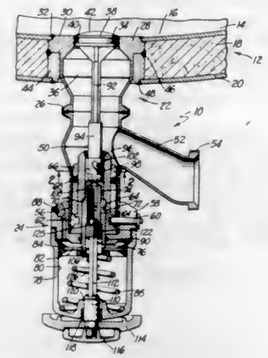


1. A die for forming a retro-reflective article having a plurality of cube-corner retro-reflecting units embossed on one surface thereof together with septa dividing said units into isolated cells when a backing sheet is disposed adjacent to the article and secured to the free edges of said septa, said die comprising a plurality of members, each member having disposed thereon three planar surfaces joined to form a trihedron having a trihedral angle of 90°, arranged to form an array of cube-corner projections and depressions, means defining notches extending directionally along edges of some of said surfaces to define on the face of said die interconnected slots which divide said face into cells with each cell containing several cube-corner depressions.

3,417,960
PISTON AND MANUAL OPERATED RECIPROCATING VALVE
Theodore A. Stehlin, 54 Grace Walk, Pasadena, Calif. 91105
Continuation-in-part of application Ser. No. 454,414, May 10, 1965. This application June 15, 1967, Ser. No. 646,346
9 Claims. (Cl. 251—14)

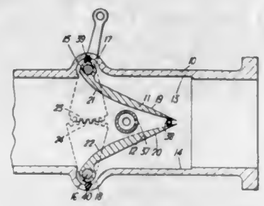
The valve operating part which moves a disc with respect to a seat is a dual purpose operator. It is primarily operable by means of a cylinder. The cylinder is spring urged in the valve closing direction. The piston rod is tubular with the valve stem passing into the tube. A pin passes through a helical slot in the piston rod and through the valve stem. The pin also extends into an L-shaped

slot within the fixed portion of the valve operator so that when the valve is moved to the closed position the pin moves into the foot part of the L-shaped slot to lock



the valve closed. In addition to piston actuation of the piston rod, a hand wheel is engageable so that interaction of screw threads causes motion of the piston rod upon rotation of the hand wheel.

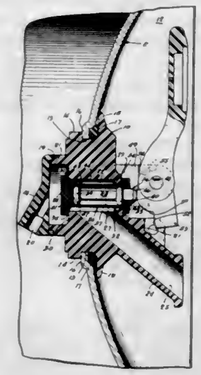
3,417,961
THROTTLE VALVES
Christopher Shorrock, Preston, England, assignor to Rubery Owen & Co. Ltd.
Filed Jan. 5, 1966, Ser. No. 518,931
5 Claims. (Cl. 251—212)



A throttle valve comprising two plates, the plates being pivotally attached to opposed walls of a rectangular section conduit, and means for pivoting said two plates in synchronism with one another to move them from a first or open position in which each plate lies along the respective wall of the conduit to which it is pivotally attached, to a second position in which the downstream tips of the plates are close together, and in which the facing faces of the plates are curved to assist in directing any flow of fluid through the conduit between the two plates with a minimum of turbulence.

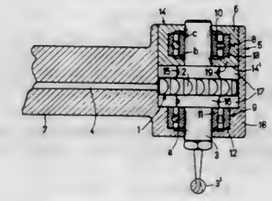
3,417,962
LIQUID DISPENSING VALVE
William R. Fuerst, Park Ridge, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Dec. 16, 1965, Ser. No. 514,182
10 Claims. (Cl. 251—262)

A liquid dispensing valve having a valve head and an integrally formed sleeve and having a valve push-rod inserted interiorly of the sleeve against the valve head and moved in a reciprocating motion by an operator handle. Movement of the handle causes the rod to be depressed thereby extending the resilient sleeve and opening the valve head. Restoring the position of the handle releases



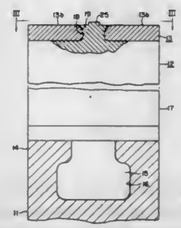
the push-rod and allows the resilient sleeve to urge the valve head into a closed position.

3,417,963
AUTOMATIC SLACK TAKEUP DEVICE FOR TOOLS ROTATED AT HIGH SPEED AND MOUNTED ON BALL BEARINGS
Emilio Maverna, Via per Bellusco 9, Ornago, Milan, Italy
Filed June 1, 1966, Ser. No. 554,514
Claims priority, application Italy, June 5, 1965, 12,624/65
4 Claims. (Cl. 253—2)



A rotary dental tool in which bearings support a pneumatically driven rotor and part of one bearing is displaceable by the pneumatic pressure to take up slack in the bearings.

3,417,964
SHROUDED BLADE ARRANGEMENT
Ralph J. Ortolano, Saratoga, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 20, 1967, Ser. No. 684,124
7 Claims. (Cl. 253—77)

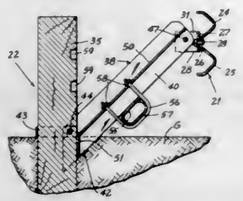


This invention provides an improved shrouded blade arrangement of the riveted tenon type for an axial flow

elastic fluid utilizing machine such as a turbine or a compressor. The improved structure is particularly advantageous when employed in a rotor because of its ability to withstand high centrifugal forces without loosening.

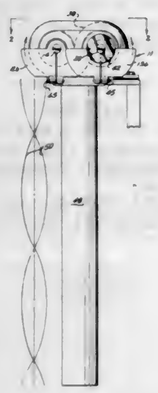
The novel feature resides in forming the holes in the shroud with a flared trumpet shape and riveting the tenons to the shroud in such a manner that the tenons are deformed into a flared trumpet shape complementary to the shape of the holes and in intimate compressive abutment therewith.

3,417,965
VEHICLE GUARD RAIL
James H. Gray, 75840 Altamira Drive, Palm Desert, Calif. 92260
Filed May 25, 1967, Ser. No. 641,244
3 Claims. (Cl. 256—13.1)



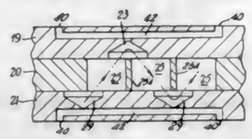
A vehicle guard rail assembly particularly for erection alongside a highway or between divided highways which is capable of positively but yieldably arresting the lateral travel of vehicles which hit it, and support their return to the traffic lane. The guard rail is pivotally supported, and a torque tube resists pivoting upon impact of a vehicle.

3,417,966
ADJUSTMENT OF ORBITING MASS OSCILLATOR DRIVING RESONANT SONIC VIBRATION SYSTEM FOR OPTIMUM SYSTEM STABILITY
Albert G. Bodine, 7877 Woodley Ave., Van Nuys, Calif. 91406
Continuation-in-part of application Ser. No. 402,529, Oct. 8, 1964. This application Jan. 3, 1967, Ser. No. 606,742
4 Claims. (Cl. 259—1)



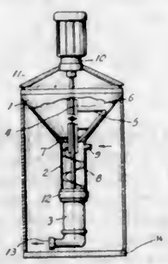
The degree of effective mass unbalance of an orbiting mass oscillator utilized to drive an elastic vibration system is adjusted to provide optimum stability of the vibration system. The oscillator is operated to have its output at a frequency slightly below resonance, so that the vibration system exhibits compliance reactance characteristics. Under such conditions the force vector lags the velocity vector by an angle of between 0 and 90°. The mass unbalance of the rotor is then adjusted for the particular load and power input conditions at hand to provide an optimum output whereby the phase angle by which the force vector lags the velocity vector, and the amplitude of vibration of the vibrational members make for optimum stability of operation.

3,417,967
FLUID MIXING DEVICES
Raymond Harold Richens, William James White, and William Frank Cole Richardson, Filton House, Bristol, England, assignors to Bristol Aeroplane Plastics Limited
Filed July 17, 1967, Ser. No. 653,699
Claims priority, application Great Britain, July 20, 1966, 32,630/66
2 Claims. (Cl. 259—4)



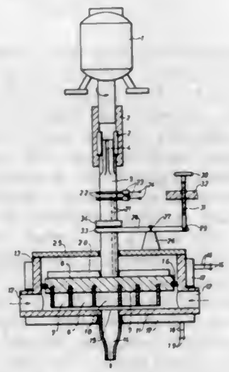
A device for mixing liquids which eliminates any moving parts. The liquids are caused to flow through a sinuous passageway having a number of flow-reversing channels defined by sharp-edged baffles. Two ways of providing such a channel are described.

3,417,968
MIXING AND DELIVERING APPARATUS
Karl Schlecht, 91, Echterdinger Strasse, 7024 Bernhausen, Filder, Germany
Filed May 11, 1966, Ser. No. 549,219
Claims priority, application Germany, May 12, 1965, Sch 37,038
15 Claims. (Cl. 259—7)



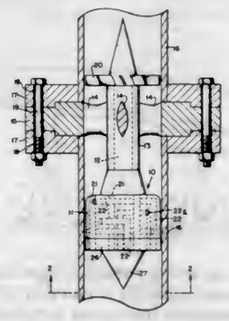
Apparatus for continuously mixing a flowable particulate material with a liquid. A mixing container, in which the particulate material and the liquid are mixed, has an upper inlet end and a lower outlet end, and rotary mixing means is situated in the mixing container, a liquid supply means communicating with the mixing container for supplying liquid thereto. A pump means communicates with the container at its lower outlet end to pump the mixture therefrom, and a supply means communicates with the inlet end of the container to supply the particulate material thereto. This supply means has a lower outlet end directly connected with the upper inlet end of the mixing container and it has an interior volume which is substantially greater than the interior volume of the mixing container. A de-aerating means communicates with and is situated at least partly within the interior of the mixing container to provide a passage through which gases can escape from the mixture of the liquid and the particulate material in the interior of the mixing container.

3,417,969
APPARATUS FOR FEEDING AND MIXING FREE-FLOWING MATERIALS
Walter Meskat, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 24, 1967, Ser. No. 611,452
Claims priority, application Germany, Feb. 3, 1966, F 48,340
16 Claims. (Cl. 259—7)



A feeding apparatus comprising a housing; inlet means through the side walls of the housing; outlet means through the bottom of the housing; a rotatable body within the housing adapted to receive material from the inlet and force such through the exit; and motor means to impart rotation to the rotatable body. The rotatable body has at least one helix thereon, directed with the crown thereof toward the exit.

3,417,970
METHOD AND APPARATUS FOR INTERFUSING THERMOPLASTIC MATERIAL
Robert Charles Schwindy, Terre Haute, Ind., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Nov. 13, 1967, Ser. No. 682,328
10 Claims. (Cl. 259—7)



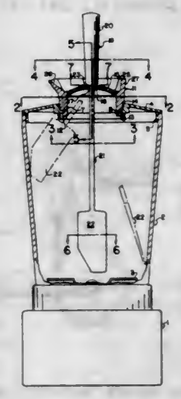
An apparatus for interfusing molten thermoplastic material flowing through a cylindrical passage. The interfusing device includes a generally cylindrically shaped body positioned within the passage conveying fluid thermoplastic material. The body provides a plurality of passages extending therethrough and carries a conical projection on its forward end to divert the plastic stream into the passages. A series of longitudinally aligned parallel passages are provided in an evenly spaced pattern around the face of the diffuser together with a series of passages having a ninety degree turn so that they terminate in openings provided in the sidewall of the cylindrically shaped body. By mixing and breaking the plastic flow into a number of small streams moving in different directions and by providing a close fit between the cylindrical wall of the diffuser body and the interior wall of the conduit a thorough mixing of the thermoplastic material is achieved which alleviates streaks caused by poor homogenization or melt channeling of the thermoplastic material.

3,417,971
MIXING AND EJECTION TOOL
Robert J. Blank, 4002 Buchanan St., and David E. Snyder, 4910 Jackson St., both of Hollywood, Fla. 33021
Filed Feb. 23, 1967, Ser. No. 618,142
3 Claims. (Cl. 259—37)



A dental tool for mixing and ejecting impression paste or similar materials. The tool utilizes a single chamber for mixing material and from which materials are ejected.

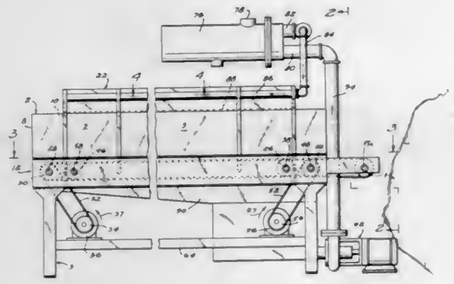
3,417,972
BLENDER JAR WITH STIRRER AND STRAINER
Conway Vincent, Canton, Ohio, assignor to The Hoover Company, Canton, Ohio, a corporation of Ohio
Filed Jan. 31, 1968, Ser. No. 702,019
10 Claims. (Cl. 259—37)



A blender jar has a stirrer mounted in its removable top cover to feed thick materials into the agitator. Means is provided to prevent contact of the stirrer with the agitator. The cover may also include a strainer to strain liquid

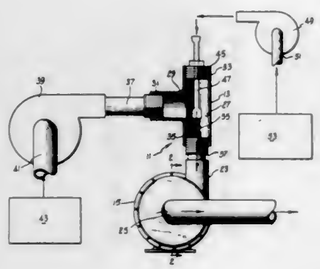
from the jar after solid material has been shredded by the agitator.

3,417,973
TEMPERATURE MODIFYING APPARATUS FOR CONTAINERS WITH SHIFTABLE CONTENTS
Robert A. Englander, Lynchburg, Va., assignor to Simplimatic Engineering Co., Lynchburg, Va., a corporation of Virginia
Filed June 1, 1967, Ser. No. 642,940
22 Claims. (Cl. 259—54)



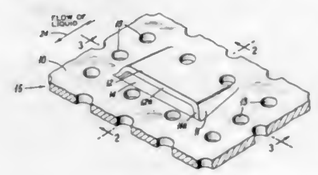
A cooling or heating chamber is provided through which containers are conveyed as they are subjected to a change in temperature, the contents of the containers being shiftable therein and the containers being so manipulated as they pass through the chamber as to cause their contents to shift, thereby producing a rapid temperature change of the containers and their contents, the manipulation of the containers being effected by mechanical displacement thereof, as through rapid changes in direction of movement, jogging and the like.

3,417,974
GAS DISPERSION DEVICE
Emmett P. Glynn, Lemont, Ill., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 593,482
3 Claims. (Cl. 261—28)



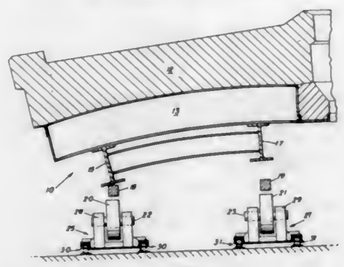
A gas dispersion device including a chamber of circular cross section wherein a plurality of circular perforated plates are rotated upon a common shaft. The plates are spaced apart by unobstructed regions, and the inlet stream of gas and liquid is tangentially pumped into the chamber in a direction opposite to the direction of rotation of the perforated plates. The chamber outlet is axially aligned with the shaft.

3,417,975
APPARATUS FOR LIQUID-GAS CONTACTING TRAY
Benjamin Williams, Grand Island, and Edward F. Yendall, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 417,264, Dec. 1, 1964. This application Apr. 1, 1966, Ser. No. 547,118
12 Claims. (Cl. 261—114)



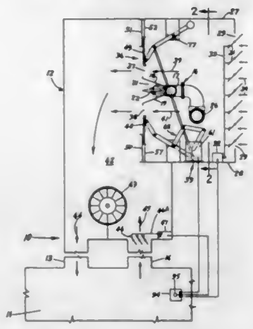
1. In a liquid-gas contacting tray of the sieve-type for effecting intimate contact between rising gas and liquid flowing across the tray from a liquid inlet to a liquid downcomer in which a member with main flat top and bottom surfaces has a plurality of fixed size openings uniformly distributed across such surfaces and extending therethrough with walls perpendicular to said surfaces for gas flow, the improvement comprising: a plurality of sections formed from said member uniformly distributed across said surfaces, each with a top surface raised from said main flat top surface, having a front leading edge separated from said main flat top surface to form an elongated aperture therewith of greater width than height, the raised top surface being inclined obliquely to said main flat top surface and having a back edge integral with such surface, each section being spaced from adjacent sections by said main flat top surface entirely surrounding such section and each section being oriented with its back edge upstream of its aperture and the aperture widths parallel to each other, the fixed size openings and apertures being sized to provide a wet plate pressure drop Δh_w of between 0.05 and 0.5 inch liquid, the total open area of said apertures being less than the total open area of said fixed size openings and the total open area of said apertures and said fixed size openings jointly forming the entire open area through said member.

3,417,976
SPRING BOX SUPPORT FOR ROTARY HEARTH FURNACE AND THE LIKE
Hugh Cunningham, Corpus Christi, Tex., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Filed Sept. 27, 1966, Ser. No. 582,294
10 Claims. (Cl. 263—7)



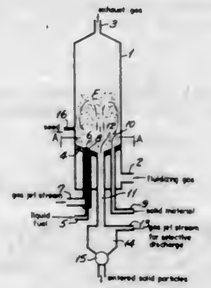
7. A resilient mounting means comprising a self-contained spring assembly having a plurality of helical compression spring members interposed between a base plate member and a cover plate member, said base plate member carrying thereon a plurality of vertical guide members over which said spring members are received and means for adjusting the spacing between said base plate member and said cover plate member against the action of said compression spring members.

3,417,977
AIR CONTROL SYSTEM FOR HEATING UNIT
Charles E. Nelson, Excelsior, Minn., assignor to Mammoth Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 9, 1967, Ser. No. 614,991
11 Claims. (Cl. 263—19)



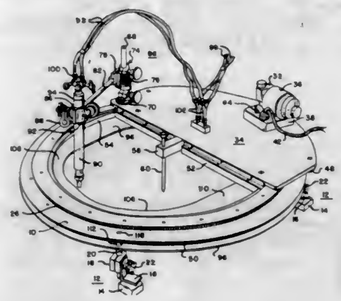
An air flow control system for a heating unit having a line direct fired gas burner. Movement of air around the burner is controlled by a pair of linearly movable profile plates located adjacent the upper and lower sides of the shielding and mixing walls of the burner. The profile plates are part of a system of dampers in the heating unit to regulate the ratio of fresh air and return air discharged by the heating unit. A control unit is part of a damper control system which selectively moves the profile plates to open and closed positions in conjunction with changing the positions of fresh air intake damper blades and return air damper blades whereby a substantially constant velocity of air flows past the burner to provide uniform firing characteristics.

3,417,978
METHOD AND APPARATUS FOR THE GASIFICATION AND COMBUSTION OF LIQUID FUEL IN A FLUIDIZED BED
Yuichi Suzukawa, Hisashi Kano, Haruhiko Miyazaki, and Muneki Saito, Yamaguchi-ken, Japan, assignors to Ube Industries, Ltd., Yamaguchi-ken, Japan, a corporation of Japan
Filed Feb. 1, 1966, Ser. No. 524,338
Claims priority, application Japan, Sept. 17, 1965, 40/56,596; Dec. 7, 1965, 40/74,784
14 Claims. (Cl. 263—21)



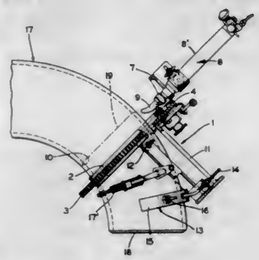
A method and apparatus for the gasification and combustion of liquid fuel in a fluidized bed comprising the injection of at least one gas jet stream directly into the fluidized bed to realize the forced circulation flow of solid particles in the bed.

3,417,979
WELDING OR CUTTING MACHINE WITH REMOVABLE TEMPLATE
Harold Edward Cable, Thornburg, and Herbert E. Cable, Mount Lebanan Township, Allegheny County, Pa., assignors to Weld Tooling Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 10, 1965, Ser. No. 478,587
12 Claims. (Cl. 266—23)



A machine for cutting, welding and the like provides in combination an annular support, a carriage rotatably mounted on the support, a drive means coupled to the carriage and support for rotating the two relative to one another, an adjustable tool support on the carriage, a tool guiding means on the annular support defining a path of tool travel and a biasing means acting on a tool in the tool support holding the tool against the guiding means.

3,417,980
PIPE ELBOW BEVEL CUTTER CONSTRUCTION
William D. Greene, 540 Prospect Ave., Canal Fulton, Ohio 44614
Filed Mar. 24, 1966, Ser. No. 537,043
3 Claims. (Cl. 266—23)

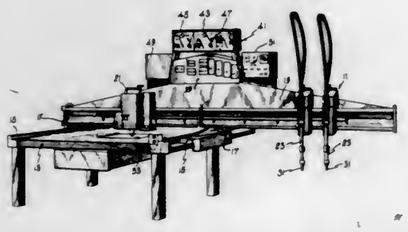


A pipe cutting and beveling machine having segmental ring and track members provided with ends spaced apart to pass over a pipe to be cut. The machine has a saddle supporting the track member and a pair of support members on the saddle adjacent the track member for engagement with the pipe to position the axis of the track member concentric with the axis of a straight pipe, and clamping means for securing the saddle to a pipe section. A segmental ring is rotatable on the track member and a torch is mounted on the ring for planetary movement therewith.

Elbow locator means is mounted upon the saddle which, when the saddle is clamped to a pipe elbow

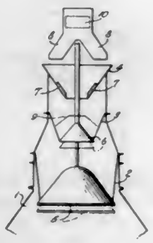
section, positions the axis of the track member concentric with the intersection of the axis of the elbow section and a plane perpendicular to the elbow axis in defining the location of an elbow end to be cut. The cutting torch is parallel to the segmental ring and has an angled tip provided with an end angled to cut said elbow end with a bevel of predetermined angle.

3,417,981
CONTROL SYSTEM FOR A FLAME CUTTING MACHINE
Clarence E. Edman, Joliet, John R. Kelly, Park Ridge, William J. Murphy, Oak Park, and Lawrence T. Skolds, Joliet, Ill., assignors to Harris Calorific Sales Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 7, 1966, Ser. No. 541,019
11 Claims. (Cl. 266—23)



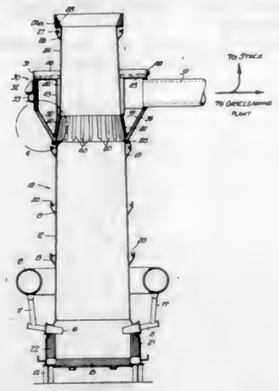
A control system for a flame cutting machine automatically operates one or more cutting torches in various predetermined modes of operation wherein the flow of oxygen and fuel gas may be automatically regulated for preheating and cutting operations according to various controlled timing and sequencing functions.

3,417,982
FURNACE TOP CHARGING EQUIPMENT
Teruo Tsutsumi, Yokohama-shi, Tatsuo Yamada, Tokyo-to, and Tadahiro Nagai and Tatsuaki Wada, Muroran-shi, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Filed Jan. 3, 1966, Ser. No. 518,179
Claims priority, application Japan, Jan. 7,1965, 40/450
4 Claims. (Cl. 266—27)



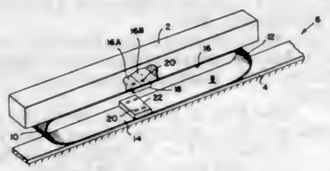
A stationary throttle hopper, provided with a number of rigid rectifying partitions on its inner surface and cooperating with a stationary bifurcated chute and/or with a number of auxiliary hoppers, is centrally arranged above the uppermost bell of a furnace bell hopper system to evenly distribute charging materials poured in said chute or auxiliary hoppers from a conventional transport means.

3,417,983
CUPOLA CONSTRUCTION
William A. Van Dril, Chicago Heights, Ill., assignor to Whiting Corporation, a corporation of Illinois
Filed Feb. 23, 1966, Ser. No. 529,300
10 Claims. (Cl. 266—31)



The cupola consists of upper and lower frusto-conical sections, the lower end of the upper section being in vertical spaced relation from the upper end of the lower section thereby defining an open space in communication with an annular gas take-off section. An apertured barrier connects the lower end of the upper section with the upper end of the lower section. This barrier consists of spaced, axially extending hollow pipes through which cooling water is passed. Preferably, these pipes define an upright frusto-conical section thereby to minimize the possibility of jamming of the charge material.

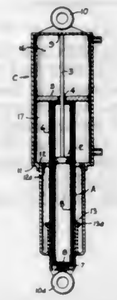
3,417,984
BEARING
Norman E. Sindlinger, Medford Lakes, N.J., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,191
12 Claims. (Cl. 267—1)



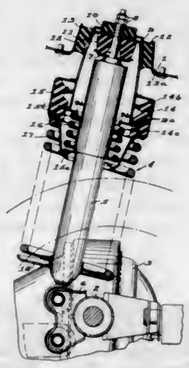
A load member is solely supported by one or more strips of resilient material each bent into a loop with an arcuate portion joining a pair of opposite reaches. One reach of each strip is secured to the load member at a point remote from the arcuate portion and the other reach is secured to a support at a point remote from the arcuate portion. Each strip, when free, is substantially straight.

3,417,985
AUTOMATIC ANTISWAY MECHANISM FOR VEHICLES
Jerry M. Hannan, 476 18th Ave., San Francisco, Calif. 94121
Filed Apr. 16, 1965, Ser. No. 448,602
5 Claims. (Cl. 267—11)

The automatic sway mechanism can be applied to a vehicle and it will cause the vehicle body to be banked laterally in the right direction and at the proper angle when the vehicle takes a curve. This will shift the center of gravity of both the vehicle body and passengers and overcome any tendency for any lateral movement of the passengers in the vehicle.



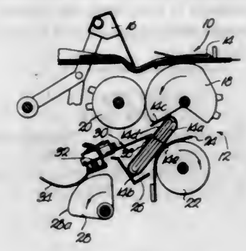
3,417,986
VARIABLE RATE SUSPENSION
William Alfred Fuke, Witham, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,614
Claims priority, application Great Britain, Oct. 1, 1965, 41,694/65
11 Claims. (Cl. 267—33)



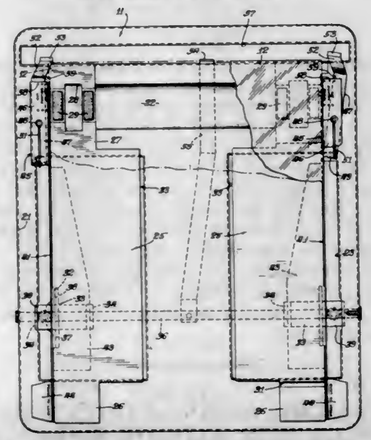
A suspension means for an automotive vehicle having a primary spring element and a preloaded secondary spring element. The primary spring operates during the entire range of jounce and rebound. The secondary spring operates in series with the primary spring during a selected portion of the deflection range of the primary spring.

3,417,987
DOUBLE-ACTING FINGER MECHANISM FOR PRIMARY FOLDING STATION OF NEWSPAPER FOLDING AND WRAPPING MACHINE
Warren W. Hannon, 501 S. Chestnut, Olathe, Kans. 66061, and Charles N. Hannon, Olathe, Kans.; said Charles N. Hannon assignor to said Warren W. Hannon
Filed July 18, 1966, Ser. No. 565,913
3 Claims. (Cl. 270—61)

In a newspaper folding and wrapping machine, a presser finger is provided having two spaced pivotal joints that permit the free end of the finger to move either toward or away from a folded, composite newspaper unit which such end engages during operation of the machine. The two sections of the finger thus formed are yieldably biased in opposite directions against stops which normally prevent movement of the finger under either biasing force.

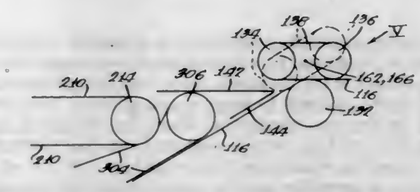


3,417,988
SHEET GUIDING MECHANISM
Edward M. Springer, Chicago, Ill., assignor to Heyer Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1967, Ser. No. 622,530
10 Claims. (Cl. 271—19)



Fingers for engaging the forward corners of the uppermost sheet in a stack to facilitate separation only of the top sheet for feeding from the stack which are selectively adjustable to vary the effective area of the sheet engaged thereby and may be moved to an inoperative position.

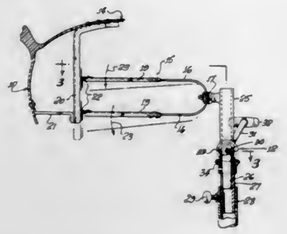
3,417,989
SHEET INSPECTING AND SORTING APPARATUS
William J. Haselow, Kalamazoo, Mich., and William E. Aschenbrenner, Wisconsin Rapids, Wis., assignors to Consolidated Paper, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Aug. 29, 1966, Ser. No. 575,704
15 Claims. (Cl. 271—64)



Apparatus for automatically inspecting sheets of paper and separating acceptable and unacceptable sheets.

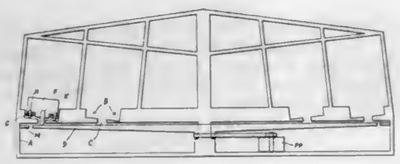
The sheets are moved by a conveyor over a suction surface of variable effective width, past a scanning means. The sheets are diverted into selected paths by an endless flexible member which is mounted for pivotal movement and which cooperates with a guide roll to define the path to be followed.

3,417,990
CHILD'S TOY
Vincent Marasco, 1364 N. Western Ave., Los Angeles, Calif. 90027
Filed Sept. 14, 1966, Ser. No. 579,269
8 Claims. (Cl. 272—30)



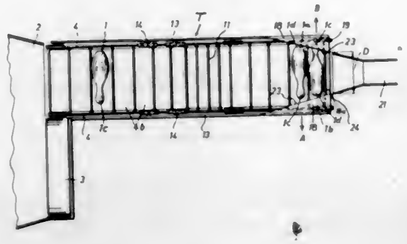
A child's toy comprising in combination; a supporting base with an upright post having a centilever type spring consisting of two vertically spaced arms each of which arms are rigidly connected at one end to the post and pivotally at the other end to a body having a seat for the child. The body may be pivotally mounted on the post and have a second seat at a position horizontally removed from the first seat and facing laterally of the body with respect to the first seat so that a child in the second seat, by reaching the floor with his feet, can turn the body by walking. Additionally, the post, located centrally of the body, includes pedals reached by a child in the first seat on the body for causing the body to turn pivotally about the axis of the post.

3,417,991
MERRY-GO-ROUND HAVING TRACK SUPPORTED VEHICLES WITH SELECTIVE BRAKE SYSTEMS FOR CONTROLLING THEIR SPEED
Milos Jindrich Novak, 100 Braebrook Ave., Pointe Claire, Quebec, Canada
Filed Feb. 28, 1966, Ser. No. 530,299
6 Claims. (Cl. 272—35)



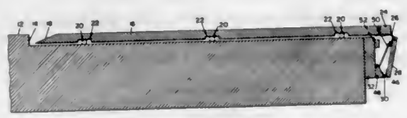
A merry-go-round comprising a rotatable platform adapted to be driven by a power plant and stopped by a brake, with a track arranged above and independent of the platform, adapted to support and guide at least one vehicle having two supporting wheels on the track and one motion pick-up wheel supported on the platform. The supporting wheels and motion pick-up wheel have a selectively engageable braking system selectively engageable either with the motion pick-up wheel or the supporting wheels to cause the vehicle to be propelled with controllable speed by the rotating platform or to be stopped on the track, depending upon whether the motion pick-up wheel or the supporting wheels are braked.

3,417,992
ALIGNING AND TRANSPORT MECHANISM FOR CABLELESS BOWLING PIN SETTING MACHINES
August Schmid, Schwerzenbach, Switzerland, assignor to Patentverwertungs- und Finanzierungsgesellschaft Serania A.G., Glarus, Switzerland
Filed Nov. 4, 1964, Ser. No. 408,991
Claims priority, application Switzerland, Nov. 11, 1963, 13,802/63
5 Claims. (Cl. 273—43)



An aligning and transport mechanism for cableless bowling pin setting machines incorporating bowling pin conveying means formed of a pair of endless spaced conveying means formed of a pair of endless spaced conveyor elements, such as conveyor chains, which are guided through a predetermined path of travel. Extending between the spaced and substantially parallel conveyor chains are a plurality of transverse bars between each two adjacent pair of which there can be supported a bowling pin. A base plate is disposed beneath the conveyor chains at a suitable distance. The base plate successively includes in the direction of travel of the bowling pins a substantially horizontal portion which is in substantial parallelism with the conveyor chains, an upwardly inclined ascending portion and a merging downwardly inclined descending portion.

3,417,993
PLATFORM CONSTRUCTION FOR BOWLING ALLEYS
Paul Roberge, 281 Ashby Road, Ashburnham, Mass. 01430
Filed Aug. 9, 1966, Ser. No. 571,260
5 Claims. (Cl. 273—51)



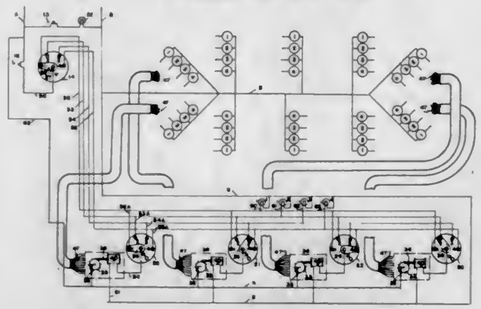
1. A platform construction for pins in a bowling alley comprising a support, a movable platform thereon for reception of the pins in upright, predetermined relation thereon, yielding means normally holding the platform in a normal forward position on the support but allowing said platform to move towards the rear of the alley, away from the bowler, under impact of a bowling ball on the pins, said yielding means tending to return the platform to normal position on the support subsequent to the impact.

3,417,994
ARROW WITH INTEGRAL TRAILING DEVICE
George W. Rohrbaugh, Jr., 815 McKee St., State College, Pa. 16801
Filed Apr. 8, 1965, Ser. No. 446,583
3 Claims. (Cl. 273—106.5)



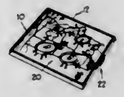
This invention relates to a device that will discharge a continuous line of marking yarn from a hunting arrow imbedded in fleeing game, making it possible to follow the path of the wounded game by following the yarn trail. The device is comprised of a yarn holding bobbin attached to the arrow, an anchor means attached to the end of the yarn and which is adapted to hold one end of said yarn in place while the arrow is in flight or imbedded in moving game. The yarn will unravel from the bobbin and leave a marking trail wherever the arrow may be carried.

3,417,995
CHANCE CONTROLLED ELECTRICAL RACING GAME APPARATUS
Robert J. Creely, 2758 SE. 82nd, Portland, Oreg. 97266
Filed Oct. 3, 1966, Ser. No. 583,771
5 Claims. (Cl. 273—134)



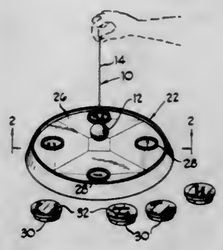
1. Electrical racing game apparatus comprising a playing surface having a racecourse thereon delineated by individual paths of travel for players of the game,
said paths having scoring areas therealong identified by transverse rows of numbered scoring lights with one side of said lights in electrical circuit with one side of a source of electric current,
a master switch including a movable switch arm in circuit with the other side of said source, and a plurality of cooperating contacts numbered in accordance with the numbering of said scoring lights,
a plurality of player switches each having a movable switch arm and numbered contacts matching those of said master switch and in circuit therethrough with said other side of said source,
a solenoid associated with each of said player switches,
said switch arm of each player switch also in circuit through its respective solenoid with said one side of said source,
a stepping switch associated with each player switch and having a plurality of fixed contacts each in circuit through a scoring light in a different row with said one side of said source,
each stepping switch having a contact rotatably carried thereby and cooperating with the fixed contacts thereof, said contact in circuit with said other side of said source, means responsive to energization of the corresponding solenoids for rotating said contact,
whereby coincidental setting of any of said player switches in accordance with the setting of said master switch will actuate one of said stepping switches to move its rotatable contact one step to complete a circuit through one of said scoring lights.

3,417,996
JIGSAW PUZZLE WITH ROTATABLE PIECES
Anthony T. Janiszewski, Elmwood Park, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 23, 1966, Ser. No. 529,321
3 Claims. (Cl. 273—157)



A jigsaw puzzle with a backing board including one or more wells or recesses each containing a rotatable member having its upper surface flush with the face of the backing board, manually operable means extending outwardly from one edge of the board which is effective to provide rotation of the rotatable members, and a plurality of jigsaw pieces adapted to be positioned on said board and including pieces overlying the rotatable members and connected therewith for rotation in response to operation of the manually operable means.

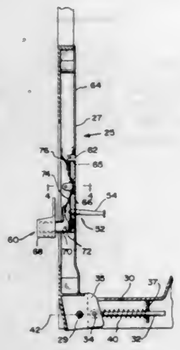
3,417,997
PENDULUM INDICATOR DEVICE
Gordon A. Barlow, Chicago, and Norman T. McFarland, Urbana, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Nov. 25, 1966, Ser. No. 597,044
3 Claims. (Cl. 273—161)



1. An amusement device comprising a board having indicia thereon for indicating a plurality of different answers to a question posed, only one of said answers being the appropriate answer to a given question, a pendulum ball element having a flexible supporting means fixed thereto in a manner such that said ball element is free to swing clockwise, counter-clockwise, or in either of two linear directions when supported by means of a person holding the free end of said flexible supporting means, and movable market elements each having indicia

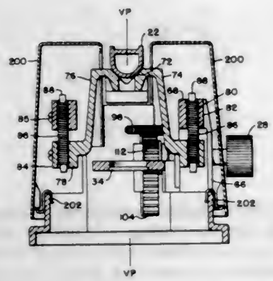
thereon pictorially representing one of said paths of movement of said ball element and adapted to be placed on said board a predetermined selected position with respect to one of the indicia thereon.

3,417,998
VERTICAL RECORD PLAYER
Joseph Horzick, West Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 18, 1967, Ser. No. 631,631
7 Claims. (Cl. 274—10)



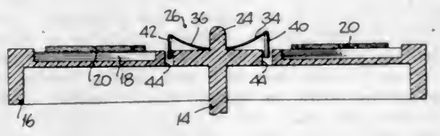
This record player utilizes a vertical turntable and an automatic record changer adapted to receive various size records. The changer includes a record loading arm that functions to position the records to the turntable spindle and also holds them firmly in place on the spindle record shelf. An adjustable record support is slidably mounted to the loading arm and is variable to index the center hole in the various size records with the spindle.

3,417,999
PHONOGRAPH TONE ARM
Gerald H. Freier, Berrien, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Jan. 26, 1967, Ser. No. 611,886
20 Claims. (Cl. 274—23)



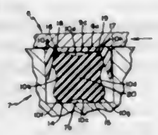
Record player in which the tone arm is suspended from a horizontally swinging mount by two coils of wire wound such that their axial bending moment is equivalent to a single strand of smaller wire, the two wire coils defining a horizontal axis about which the tone arm swings vertically, the tone arm having a slidable counterweight for balancing, and a tension spring anchored at one end to the tone arm behind said horizontal axis and anchored at its other end to the mount in front of said horizontal axis, the geometry of the tension spring anchor position being selected such that the tension spring produces a substantially constant stylus force at different record heights, the anchor of the spring end to the mount being also vertically adjustable to change the stylus pressure.

3,418,000
TURNTABLE FOR PHONOGRAPH RECORDS
Henry A. Sherwood, Short Hills, N.J., assignor to Electra Associates, Bridgeport, Conn., a partnership
Filed June 19, 1967, Ser. No. 646,911
9 Claims. (Cl. 274—39)



A turntable for phonograph records of different types having a rotatable platform for supporting phonograph records. A first record centering and retaining member is provided which extends generally upwardly from the center of rotation of the platform. The first record centering and retaining member is of relatively small width for reception in the relatively small centering aperture of a record of a type adapted to fit on the first centering and retaining member. A second record centering and retaining device is provided for centering and retaining records of the type having a relatively larger centering aperture than the records of the type having a relatively small centering aperture adapted to fit on the first centering and retaining member. The second record centering the retaining device is retained on the platform adjacent the first record centering and retaining member and has a plurality of relatively resilient arms extending outwardly and upwardly therefrom. The arms are adapted to center and retain a record of the type having a relatively large centering aperture and to be depressed against the platform by a record of the type having a relatively small centering aperture adapted to receive the first record centering member.

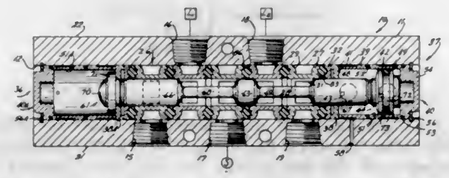
3,418,001
FLUID SEAL
John J. Rentschler, Minneapolis, and Lee J. Urbashich, Spring Park, Minn., assignors to Minnesota Rubber Company, Minneapolis, Minn., a corporation of Minnesota
Continuation of application Ser. No. 466,598, June 24, 1965. This application Nov. 1, 1967, Ser. No. 679,943
6 Claims. (Cl. 277—165)



Disclosed herein is a high pressure seal consisting of a pair of relatively movable members having movably

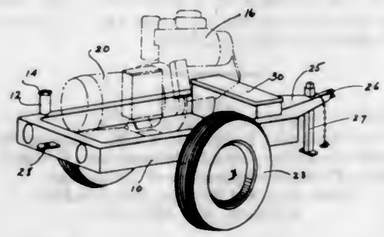
fitted complementary working surfaces formed of metal only with a groove formed in one and defined by only metal walls with a circumferentially continuous sealing ring of generally cross-sectional U-shape positioned within the groove and with a generally rectangular relatively resilient back-up member positioned in the bottom of the groove between the legs of the sealing ring, the back-up member having concaved sides merging into convexed shaped lobes disposed at each of its corners.

3,418,002
SEAL RING CONSTRUCTION
Ransom J. Hennells, Plymouth, Mich., assignor to W. E. Hennells Co., Inc., Belleville, Mich., a corporation of Michigan
Filed Dec. 27, 1965, Ser. No. 516,542
5 Claims. (Cl. 277—188)



A seal ring construction for a reciprocating core valve having a segmented liner, the seal ring having a substantially rectangular central portion with the axial ends thereof being snugly received within rectangular grooves formed in the adjacent axial end faces of the liner segments. The seal ring also has integral inner and outer portions extending radially from the central portion, the inner and outer portions having rounded ends thereon adapted to sealingly engage the periphery of the valve core and the valve housing, respectively.

3,418,003
POWER UNIT MOUNTING
John Tate, 207 North St., Sausalito, Calif. 94965
Filed Apr. 21, 1966, Ser. No. 544,303
3 Claims. (Cl. 280—5)



A portable power unit mounting in the form of a wheeled rectangular frame having hollow rectangular frame members interconnected to form an endless toroidal fuel tank for a power plant mounted on brace members connecting the sides of the frame. A tank filling opening and fuel supply and fuel return connections are provided on the hollow frame members and one end of the frame is provided with a hitch member to permit the portable power unit mounting to be towed from one place to another by another vehicle.

3,418,004
MOUNTING BASE FOR A PORTION OF A SKI BINDING
Arthur Welker, Zurich, Switzerland, assignor to A. Attenhofer A.G., Zurich, Switzerland
Filed Dec. 2, 1966, Ser. No. 598,729
Claims priority, application Switzerland, Dec. 7, 1965, 16,860/65
4 Claims. (Cl. 280—11.35)

A longitudinally slidably adjustable plate carrying a part of a boot engaging ski binding is provided along its downwardly directed longitudinal edges with oblique serrations adapted to slide freely along oppositely disposed serrations on a base plate fixed to the ski. By inserting an intermediate plate between said slidably adjustable

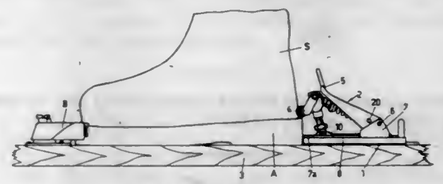
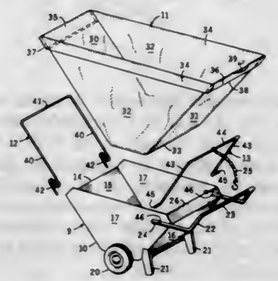


plate and said base plate the slidably adjustable plate is raised from the base plate thereby causing a locking engagement between the serrations on said two plates and a locking of the slidable plate in a selected position to the base plate.

3,418,005
GARDEN CART AND LINER BAG ASSEMBLY
Stanley F. Allina, Ladue, Mo., assignor to The Perfection Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Aug. 28, 1967, Ser. No. 663,688
12 Claims. (Cl. 280—47.26)

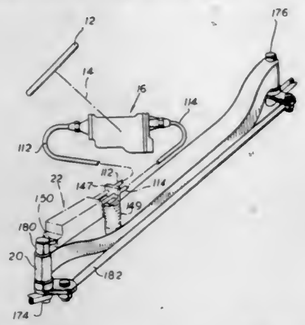


The cart includes a top-open container. Inverted U-shaped frames extend upwardly and outwardly above the front and rear ends of the container to provide support means for opposite ends of a liner bag disposed in the container. The frames are received in bottom-open pockets formed on the bag. The liner bag includes a pair of downwardly tapered walls, and a lower portion compatibly shaped to fit the container. The liner bag as a whole increases in cross-sectional area upwardly to provide an overall capacity substantially greater than that of the container alone.

3,418,006
STEERING MECHANISM
Russell G. McMillen, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,776
11 Claims. (Cl. 280—96)

A vehicle steering mechanism wherein a gearing arrangement is utilized for operatively connecting a steer-

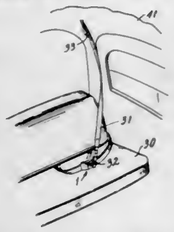
ing knuckle actuating means to a steering knuckle and flexible motion transmitting means are employed for operatively connecting the vehicle steering wheel and the steering knuckle actuating means.



3,418,007
COMBINATION SHOULDER HARNESS AND SEAT BELT BUCKLE SYSTEM

George Jantzen, New York, N.Y., assignor to M. Steinthal & Company Incorporated, New York, N.Y., a corporation of New York

Filed July 10, 1967, Ser. No. 652,343
19 Claims. (Cl. 280—150)

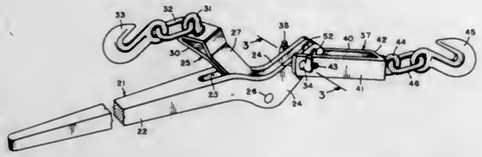


A combination seat belt buckle in which one of a series of loops towards the end of a retractable shoulder harness strap engages a hook formed on the buckle release fitting. When the release fitting is engaged in the buckle, the hook is closed off, retaining the harness strap. Upon release, the harness strap is automatically retracted behind the roof fabric of the vehicle into a constant tension retractor which extends the end of the strap into the vehicle in the fully retracted condition.

3,418,008
LOAD BINDERS

Votaw S. Durbin, % Durbin-Durco, Inc., 1435 Woodson Road, St. Louis, Mo. 63132

Filed Aug. 8, 1966, Ser. No. 570,873
6 Claims. (Cl. 280—179)

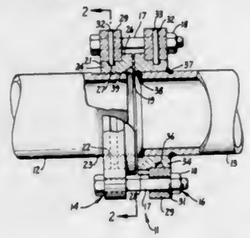


The load binder includes a lever with a bifurcated end providing a pair of jaws. Tension members are pivotally mounted internally and externally of the jaws, the pivot axes of the members being relatively spaced longitudinally of the jaws. With the lever disposed in one position, the tension members are extended. In a reversed position the tension members are retracted. The jaws include outwardly projecting ears received by keyhole slots in the external or clevis member, whereby to secure said member pivotally to the jaws. A latch pin holds the tension members in a locked position when the binder is in use.

3,418,009
FLANGED PIPE JOINT

Andrew A. Pollia, San Francisco, Calif., assignor to Raphael T. Pollia, San Francisco, Calif.

Filed Nov. 22, 1966, Ser. No. 596,138
7 Claims. (Cl. 285—39)

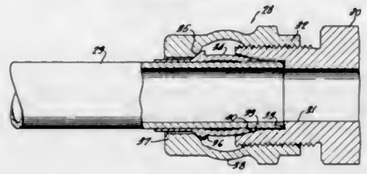


A flanged pipe joint and a method and tool for assembling same, in which the flanged pipe joint comprises a flanged hub for fitting over the end of a pipe to be joined to a flanged pipe element, a fastening ring fitting over the flanged hub and sized to fit laterally against the flange thereof with the ring having substantially circular inside and vertical outside whereby tightening forces of the ring against the flange will be substantially entirely axial and allow relative rotation thereof after assembly under severe conditions of stress; said fastening ring having a plurality of spaced holes for receiving securing bolts, and holding means for holding the fastening ring in position on the hub with the fastening ring held for relative rotation with respect to the hub whereby the ring may be manually rotated upon assembly to align the bolts. The construction provides for connecting the hub to the pipe end by either fitting it thereover and welding it in place or by screwing onto the pipe end; when welding, the construction provides advantages in relative masses of metal at the welding area whereby a superior weld may be achieved, and in the embodiment for screwing the hub on, longitudinally extending recesses are provided to receive a tool suitable for tightening the hub on the pipe. The invention also provides for a novel method of assembly and tool therefor whereby the flange may be quickly and easily assembled in field conditions.

3,418,010
ATTACHING DEVICE

Wilbur G. Buckner, Fallbrook, Calif., assignor to The Deutsch Company Metal Components Division, Los Angeles, Calif., a corporation of California

Filed Aug. 4, 1967, Ser. No. 658,506
9 Claims. (Cl. 285—92)



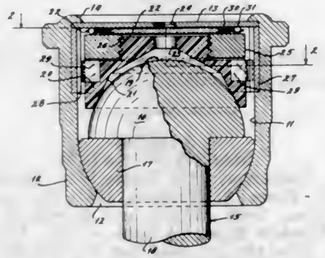
An attaching device to serve as a coupling for effecting a connection in a fluid system or as a compression member including a tubular element having an internally

threaded portion at one end beyond which is a yieldable arcuate portion providing a resilience at the joint when the nut secures mating components.

3,418,011
WEAR-COMPENSATING BALL JOINTS

William A. Scheublein, Jr., Ballwin, and Louis P. Fister, St. Louis, Mo., assignors to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri

Filed May 31, 1966, Ser. No. 553,758
10 Claims. (Cl. 287—87)

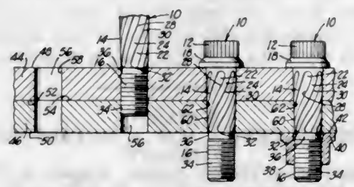


A movable joint device for connecting two parts which have at least relative rotational movement, the device including housing having a bearing seat for a load transmitting stud and means periodically adjusting for wear or looseness due to wear between the stud and its seat. The periodically adjusting means consists in two relatively movable parts which are able to take up looseness when one turns with the stud or housing and the other remains relatively stationary due to means exerting a drag or friction force which checks movement thereof.

3,418,012
FASTENER FOR PRESTRESSING OBJECTS CONNECTED THEREBY

Jack La Torre, Long Beach, Calif., assignor of thirty-three and one-third percent to Thomas P. Mahoney, Malibu, Calif.

Filed Oct. 17, 1966, Ser. No. 587,268
7 Claims. (Cl. 287—189.36)



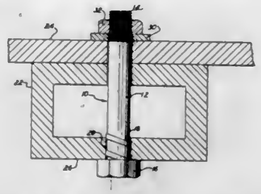
A fastener which is adapted to prestress the metal surrounding a bore into which it is inserted. The fastener has a shank incorporating a tapered swaging portion which is provided with a plurality of swaging flutes that cause the metal of the straight bore to be displaced into a tapered configuration corresponding to the taper of the swaging portion. This is accomplished by the method of driving the fastener in a rotary manner into the straight bore which is also a feature of the invention.

3,418,013
NONSPINNING THREADED FASTENER

Francis J. Kelly, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 22, 1966, Ser. No. 574,221
5 Claims. (Cl. 287—189.36)

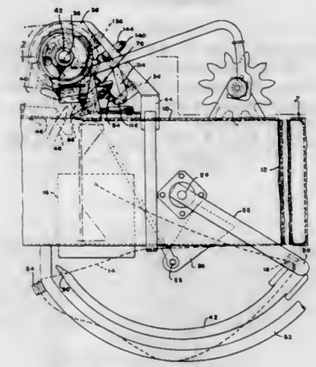
Screw threads with flattened crests such as Acme, square, or worm threads are formed adjacent the head of a bolt and conventional threads of the opposite hand are formed on the end of the bolt cylindrical portion. The threads adjacent the head frictionally contact the surface of the hole in one of the members being fastened and the friction force generated thereby draws the bolt head into contact with the fastened member.



3,418,014
KNOTTER CLAMP MEANS FOR BALER

Edwin B. Nolt, New Holland, and Richard R. Eby, Ephrata, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 660,967
12 Claims. (Cl. 289—13)



Clamp means for twine in a knotter unit of a baler comprising relatively stationary and movable clamp members having complementary clamping surfaces, the movable clamp member being supported by a shaft rotatable and longitudinally movable through said stationary clamp member, said shaft having terminal means engaged directly by pressure mechanism operable to provide desired clamping movement upon the movable clamp member to urge it into engagement with the stationary clamp member independently of any driving means for said shaft and movable clamp member.

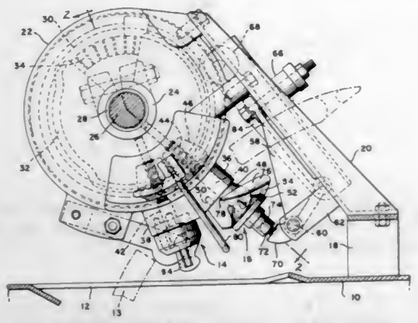
3,418,015
TWINE CLAMPING MEANS AND CUTTER FOR BALER

Edwin B. Nolt, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 660,968
5 Claims. (Cl. 289—13)

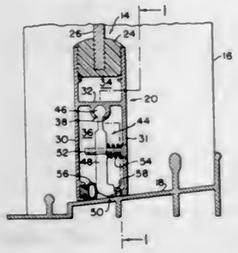
Twine-tying mechanism for a baler having a clamping unit including complementary clamping members to clamp the leading end of a strand of twine therebetween and associated with an adjacent knotter unit, one of the clamping members being stationary and the other being rotatably supported by a shaft and provided with an arcuate twine guide hook which engages an elongated loop of twine of which one side strand comprises the end of a

tied strand extending around a bale and the other side strand comprises the leading end of a new strand for another bale, said guide hook supporting a planar twine-



cutting blade relatively close to the axis of said shaft and firmly secured against radial movement for cutting said tied strand from the leading end of the next strand accurately and with minimum torque requirement.

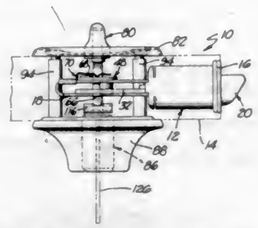
3,418,016
SILL LOCK FOR STATIONARY PANEL OF SLIDING GLASS DOOR UNITS
Sidney Levine, Stoneham, Mass., assignor to American Aluminum Window Corp., Malden, Mass., a corporation of Massachusetts
Filed May 2, 1967, Ser. No. 635,503
6 Claims. (Cl. 292—96)



A glass door unit includes a frame having a sill with an upwardly projecting rib over which a stationary panel is assembled, and to which the panel is lockable by screw operated latches visible only from the interior side of the unit. The panel has a channel-shaped bottom edge concealing one or more latches pivotal within and slidable along the channel for alignment with locking slots in the rib.

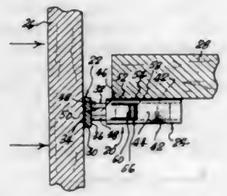
3,418,017
CYLINDER SPRING LATCH LOCKSET
John R. Gerlach, Los Angeles, Calif., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Feb. 10, 1966, Ser. No. 526,509
6 Claims. (Cl. 292—169)

A case mounted bolt, spring urged to forward extended position, is rearwardly retracted by rotating a cam in either of first and second directions of rotation. The cam, in addition to bolt retracting cam surfaces, has a disc urged into axial abutment with a case extension by a leaf spring to retain the cam in bolt retracting assembly. The cam disc has an axially projecting detent positioned free of engagement by a dogging portion of the leaf spring when the cam is rotated in the first direction and engaged by the dogging portion when the cam is rotated in the



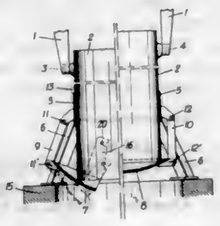
second direction to releasably retain the bolt retracted in said cam second direction of rotation.

3,418,018
MAGNETIC LATCH
Ivan L. Marburger, 1315 Tulare Way, Upland, Calif. 91786, Elmer A. Haglund, 1667 Deventer Drive, La Verne, Calif. 91750, and Donald W. Howell, 311 Bowdoin Road, La Verne, Calif. 91750
Filed Oct. 21, 1965, Ser. No. 500,073
25 Claims. (Cl. 292—251.5)



A magnetic latch for releasably joining two members with the latch parts being in mutual contact with the parts in latching relation, with one latch part including a permanent magnet and the other latch part an armature thereby releasably joining the parts by magnetic attraction, with one of the latch parts secured on one member so that when the members are moved toward one another the other latch part contacts the other member in a gripping relationship that prevents the part and the member from separating when the latch is separated.

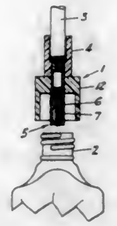
3,418,019
CHARGING DEVICE FOR A METALLURGICAL FURNACE
Walter Fadler, Vienna, Austria, assignor to Wiener Schwachstromwerke Gesellschaft m.b.H.
Filed Sept. 1, 1966, Ser. No. 587,631
Claims priority, application Austria, Sept. 6, 1965, A 8,123/65
8 Claims. (Cl. 294—71)



A charging device for a metallurgical furnace comprises a tubular charging shell which is movable within

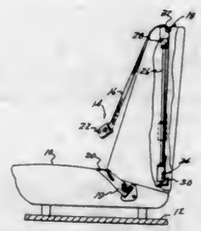
a mounting ring stand. The shell has a bottom closure that will be opened when the shell is moved downwardly relative to the ring stand.

3,418,020
WAREHOLDER
John G. Brubaker, Park Forest, Ill., assignor to Brockway Glass Company, Inc., Brockway, Pa.
Filed Oct. 22, 1965, Ser. No. 501,537
4 Claims. (Cl. 294—93)



A device for lifting and supporting bottles during manufacture and treatment thereof, consisting of an elongated brush having radiating bristles which are compressed or crushed when inserted in the upper end of a bottle to thereby engage the bottle for lifting purposes. An open-ended cylindrical cap is connected to the upper end of the brush and fits over the upper end portion of the bottle to center the same.

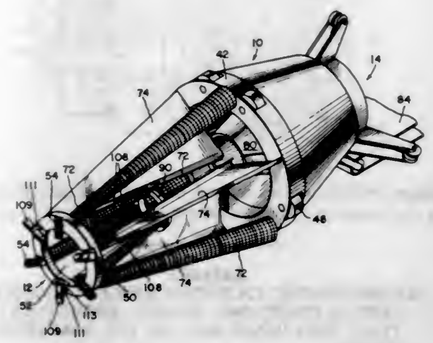
3,418,021
BELT RETRACTING DEVICE WITH COLLET LOCKING MEANS
Gerald F. Lewis, Berkley, Mich., assignor to Jim Robbins Seat Belt Co., Royal Oak, Mich.
Filed Apr. 19, 1967, Ser. No. 632,092
9 Claims. (Cl. 297—388)



A device for controlling the extension and retraction of a vehicle safety seat belt from a stored position. A locking unit, attached to the stored end of the belt, is slidably mounted on an elongated vertical rod fixed to the vehicle. The locking unit moves upwardly to permit the belt to be extended upon the application of a normal pull-out force. The weight of the locking unit provides a downward retracting force on the belt.

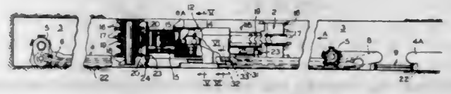
The locking unit comprises a pair of interconnected, coaxial sleeves having tapered surfaces engaging one another when an abnormal pull-out force is appleid to the belt. The inner sleeve has an axially slotted portion which clamps the locking unit to the rod upon engagement of the tapered surfaces. A spring disengages the sleeves when the abnormal pull-out force has been relieved from the belt.

3,418,022
TUNNEL BORING APPARATUS
Carl R. Peterson, Princeton, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 22, 1966, Ser. No. 603,929
17 Claims. (Cl. 299—31)



A tunnel boring apparatus comprising a rotatable supporting frame provided along its outer periphery with skewed cutting rollers which cooperate with the frame to form a truncated cone having its minor base at the frame leading end, and inwardly of such cutting rollers provided with other skewed cutting rollers which cooperate with the frame to form a second truncated cone having its major base at the frame leading end.

3,418,023
LONGWALL COAL-CUTTING MACHINE
Frederick Webster, Sheffield, England, assignor to Webster Machine Development Limited
Filed Nov. 14, 1966, Ser. No. 594,231
Claims priority, application Great Britain, Nov. 18, 1965, 49,967/65
3 Claims. (Cl. 299—43)

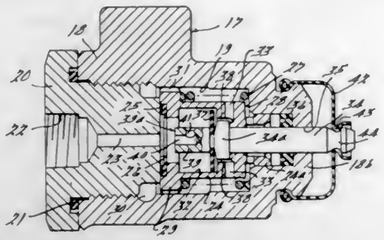


A longwall coal-cutting machine of the type including two vertical axis cutting drums enabling the machine to cut in both directions of an armoured base conveyor, a frame for the drums located wholly to the face side of the armoured base conveyor and pivotally attached to a support guided by the conveyor and, a hydraulically adjustable support in the area of each cutting drum adapted to rest on and be movable along the floor formed by the bottom end of whichever is the leading drum.

3,418,024
PRESSURE METERING VALVE
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,893
6 Claims. (Cl. 303—6)

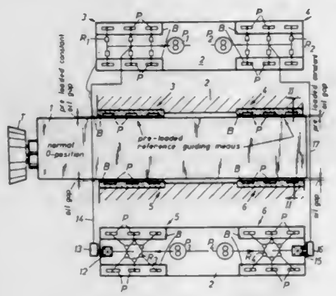
There is disclosed herein a metering device adapted to delay the flow of fluid pressure from the master cylinder to the front brakes of a motor where the front wheels are

equipped with disk brakes and the rear wheels are equipped with drum brakes. The device incorporates a



plunger which can be moved manually to permit bleeding the brakes at a lower pressure.

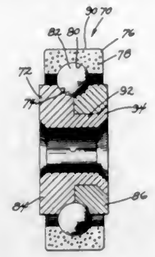
3,418,025
HYDROSTATIC GUIDING ARRANGEMENT FOR SUPPORTING BEAMS, ESPECIALLY TOOL HOLDING MEANS ON MACHINE TOOLS
Helmut Hucks, Monchen-Gladbach, Fritz Binder, Rheydt, and Heinz Ludwigs, Erkelenz, Rhineland, Germany, assignors to Maschinenfabrik Froriep G.m.b.H., Rheydt, Rhineland, Germany
Filed May 11, 1966, Ser. No. 549,363
Claims priority, application Germany, May 12, 1965, M 65,206
4 Claims. (Cl. 308—5)



Hydrostatic bearing and guiding arrangement for beams in which a pair of hydrostatic bearings are arranged in spaced relation to each other on opposite sides of the beam and in opposed relation with the hydraulic fluid supplied to the bearings being controllable so as to permit adjustment of the inclination of the beam.

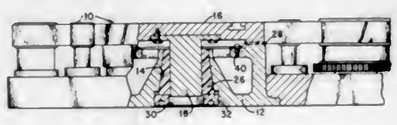
3,418,026
BALL BEARING ROLLER ARRANGEMENT FOR FILE CABINET DRAWERS
John Philip Ericson, St. Charles, Ill., assignor to All-Steel Equipment Inc., a corporation of Illinois
Filed Nov. 1, 1965, Ser. No. 505,870
1 Claim. (Cl. 308—6)

The ball bearing roller arrangement of the invention is especially adapted for file drawer suspensions and is in the form of a ball bearing unit in which the outer race is an annular or ring shaped sintered member having a porosity in the range of 5.5 to 5.9 gram per cubic centimeter, and which is lubricant impregnated to a minimum of 24 percent by volume. The sintered member defines a cylindrical periphery that rides on the trackway formed by the cabinet case slide, and is machined about its inner surface to define the bearing ball raceway forming groove. The sintered member is formed from a special composition of iron, copper and carbon that provides adequate strength for long wearing characteristics as the file cabinet drawer suspension roller while being soft enough to permit machining of the bearing ball outer raceway, and is assembled within inner race and bearing balls to provide a ball bearing unit adapted for incorporation in a file



drawer suspension. The special porosity, lubricant content, and strength characteristics of the roller provide a ball bearing roller arrangement especially adapted for file drawer suspensions that avoids a long standing problem in this field having to do with the galling of the case slide under the rolling action involved, which permits such equipment to stand up to 500,000 cycles of operation, as distinguished from about 15,000 cycles obtainable using conventional solid steel rollers.

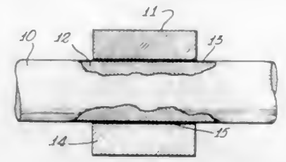
3,418,027
ROTARY TABLE
Charles Asmanes, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 15, 1966, Ser. No. 565,494
2 Claims. (Cl. 308—70)



Rotary tables are provided with a bearing system which assures that rotation of the table about its central axis is established and retained during continuous use of the table even though the latter is subjected to unequal or excessive loadings. The bearing system utilizes a polytetrafluorethylene bushing to provide the bearing surface with the bushing being stressed sufficiently to take on an isostatic property which causes the bushing to uniformly contact the contiguous surface of a centrally disposed shaft projecting from the table.

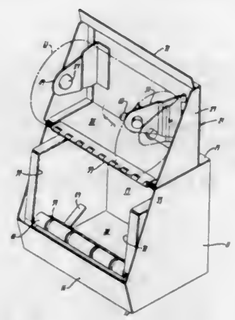
3,418,028
BEARING STRUCTURE
Robert D. Watson, James H. C. Long, and Robert V. Hacking, Deep River, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed May 11, 1966, Ser. No. 549,226
1 Claim. (Cl. 308—241)

The invention comprises a bearing member and a journal rotatably mounted in the bearing member, both members being from a nickel alloy consisting essentially of Sn 3–5%, Bi 3–4.5%, Cr 11–14%, Fe 4–6%, Mo 2.5–3.5%,



C up to 0.05%, Mn 0.65–1.0%, Si 0.15–0.50%, and remainder Ni, each member is provided with a tightly adherent oxide film formed by heating the member in air.

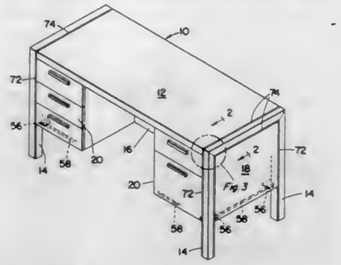
3,418,029
CABINET FOR DISPENSING PAPER TOWELING IN ROLL FORM
Richard L. Wooster, Cloverdale, Calif., assignor to Philip A. Wooster, Belvedere, Calif.
Filed Aug. 12, 1966, Ser. No. 572,132
1 Claim. (Cl. 312—39)



The dispensing cabinet for paper roll-toweling includes a crank-actuated, paper feed mechanism and a hinged front cover having a pair of roll supporting brackets. For stability in loading, the cover's center of gravity is placed over-center of the hinge axis. One bracket, in the non-loaded condition, pivots to an interfering position with respect to an improperly placed fresh roll of paper, preventing proper closure of the cover. Within the cabinet spacer members limit movement of the brackets outwardly from the roll of paper. A support for a partially used roll of paper is furnished adjacent to the feed mechanism.

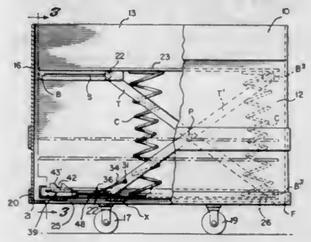
3,418,030
REINFORCED CONSTRUCTION UNIT
Seymour W. Golden, Philadelphia, Pa., assignor to Robert John Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1967, Ser. No. 630,008
5 Claims. (Cl. 312—194)

A construction unit, such as a desk, chair, panel, or the like, which consists of a primary surface made of wood, plastic or similar relatively fragile material, with a substantially hidden reinforcement made of relatively durable material such as metal or the like, wherein the reinforcement is a separate, preformed framework that is assembled with preformed elements of the surface material in such a manner that the surface material almost completely covers the framework but is rigidly secured



thereto by hidden securing means in the form of locking flanges extending from the framework.

3,418,031
FLOATING PLATFORM LOCK-DOWN MECHANISM FOR SPOOLER TROUGHS AND DOFF TRUCKS AND THE LIKE
James Glenn Fisher, Hartwell, Ga., assignor to NVF Company, Wilmington, Del.
Filed Aug. 30, 1967, Ser. No. 664,458
4 Claims. (Cl. 312—319)

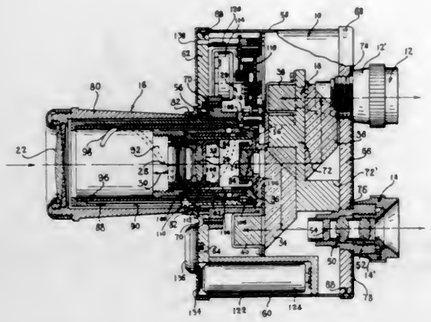


This invention for the lock-down mechanism is comprised of unique reinforced toggle arms that support a platform in a receptacle and said arms provide for a unique attachment for pivotally attaching a shaft thereto and carrying and uniquely supporting outwardly thereof latch rod means and a pair of spaced oppositely disposed resilient flat spring means extending forwardly of and carried by similar latch keeper means and a centrally disposed latch bar elevating means extending substantially midway between the said keeper means and the sides of a frame in which certain ends of the toggle arms are slidably maintained, and the said elevating means being so formed and of varying heights as to properly guide the latch bar onto the said springs and up over inclined edges of the keeper means and into an aligned notch in each of the keeper means and for releasing the latch rod from the keeper means to a second position of lowering of said platform supported by the toggle arms and the return of the latch rod from beneath the keeper means and snapping past the respective springs of the keeper means and being raised by the elevating means for a repetition of this movement.

3,418,032
VARIFOCAL LENS BINOCULAR
Kaku Kajiro, 495 Tozukamachi 1-chome, Shinjuku-ku, Tokyo, Japan
Filed Dec. 21, 1964, Ser. No. 419,941
7 Claims. (Cl. 350—35)

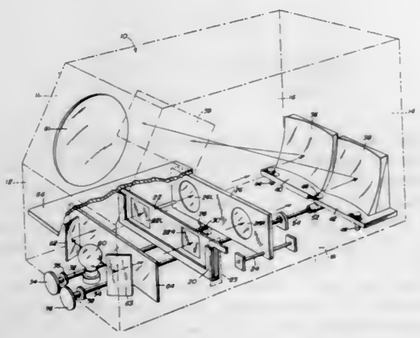
A varifocal or zoom lens binocular. A zoom lens binocular in which the zooming or magnification varying effect for both eyepieces of the binocular is obtainable with one

zoom lens set in a continuous, smooth and uniform manner by battery operable means and in which all of the



parts including the movable and operable parts are mounted within and on a binocular housing structure.

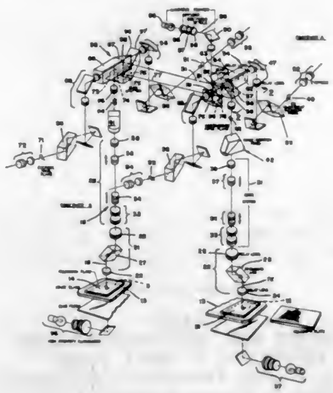
3,418,033
THREE DIMENSIONAL VIEWER
Donald S. Hope, 281 Garth Road, Scarsdale, N.Y. 10583
Filed Mar. 6, 1964, Ser. No. 349,856
1 Claim. Cl. 350—138)



An apparatus for stereo viewing of right and left hand slide images having a slide support for holding the slides in side by side relationship, first and second magnifying means in spaced axial relationship with the right and left hand slides, first and second concave mirrors, a light source for projecting the images through the magnifying means against the mirrors at an angular disposition for reflecting the images for convergence in a plane between the mirrors and the viewing lens.

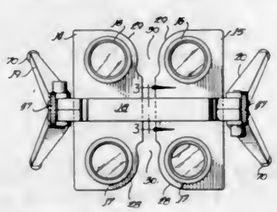
3,418,034
DUAL VIEWING STEREOSCOPE
Walter R. Ambrose, Perinton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 3, 1967, Ser. No. 650,772
3 Claims. Cl. 350—138)

A stereoscope used by two observers facing each other to view simultaneously a pair of corresponding photographic films such as aerial photographs, said stereoscope embodying a pair of similar optical systems which individually form a right eye image of one of said films and a left eye image of the other of said films, the optical systems further embodying individual beam dividing prism



clusters having such a construction that the image seen by the left eye of the observer appears in the same orientation as the image seen by the corresponding eye of the other observer.

3,418,035
ADJUSTABLE MULTI-POWER STEREOSCOPE WITH COLLAPSIBLE SUPPORT
Ben W. Rau, 1535 Knollwood, Highland Park, Ill. 60035
Continuation-in-part of application Ser. No. 569,516, Aug. 1, 1966. This application Jan. 31, 1968, Ser. No. 702,067
10 Claims. (Cl. 350—139)

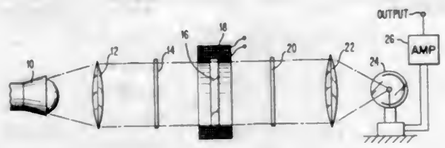


A multi-power stereoscope including a body portion having a pair of lens mounting supports adjustably mounted therein in a fashion such that a two-power and a four-power lens are disposed on opposite sides thereof and the interpupillary distance between the lenses can be simultaneously adjusted. A pair of legs are adjustably affixed to the body portion, to permit the height of the stereoscope to be easily and quickly adjusted to a two-power, a four-power and a collapsed storage position.

3,418,036
MAGNETO-OPTICAL ROTATION DEVICE WITH EUROPIUM CHALCOGENIDE MAGNETO-OPTICAL ELEMENTS
Frederic Holtzberg, Pound Ridge, Siegfried I. Methfessel, Montrose, and James C. Suits, Mount Kisco, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 16, 1964, Ser. No. 411,525
14 Claims. (Cl. 350—151)

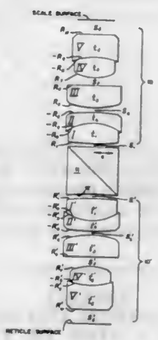
A light modulating system utilizing europium chalcogenides in pure form or in solid solutions with other rare

earth chalcogenides as the magneto-optically active element is described. These materials, because of cubic symmetry, are optically isotropic to render them useful in



either single crystalline or polycrystalline form. They have increased V constants over materials commonly known in the art.

3,418,037
OPTICAL SYSTEM FOR ANGULAR MEASURING INSTRUMENTS
Brian H. Welham, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 2, 1964, Ser. No. 379,991
1 Claim. (Cl. 350—202)

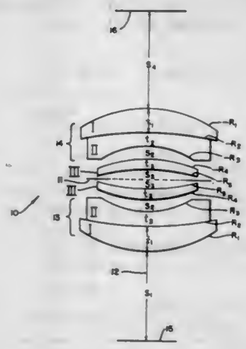


An optical angular measurement instrument having two substantially similar optical objectives having one of their conjugates at infinity and being placed back-to-back in optical alignment with and between a confronting measuring scale and a reticle surface, a beam dividing cube being located between the adjacent inner ends of said objectives whereby light may be projected onto said surfaces and observation of the superimposed images formed by said objectives may be provided.

3,418,038
FOUR-COMPONENT SYMMETRICAL PROJECTION OBJECTIVE
Richard A. Buchroeder, Brighton, and George F. Ziegler, Gates, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Apr. 20, 1966, Ser. No. 544,008
2 Claims. (Cl. 350—209)

1. A symmetrical projection objective for use at equal conjugates having an aperture of substantially $f/5.6$, said objective comprising

a pair of negative meniscus doublet lens members which are duplicates of each other and are concave toward each other, said members being equally spaced from opposite sides of an interposed diaphragm and being optically aligned on a common axis, each of said members being composed of an outer convex-concavo lens element of positive power designated I which lies in contact with an inner convex-concavo negative lens element designated II, said objective being further composed of a pair of singlet positive meniscus lens members designated III spaced between said doublet members and spaced symmetrically from either side of said diaphragm and being concave thereto, said members and elements having lens parameter values as specified in the table herebelow wherein F_I, $-F_{II}$ and F_{III} designate the focal lengths of the lenses I, II and III respectively and the minus (—) sign means negative focal length, R_1 to R_5 and $-R_1$ to $-R_5$ represent the radii of the successive lens surfaces and the minus (—) sign used therewith means that such radii are concave toward the obect side, t_1 to t_3 represent the successive axial thicknesses of said lenses numbering toward the diaphragm, S_1 and S_4 represent the front and back air spaces, S_2 represents the space between the doublet lens and the singlet lens, S_3 represents the air spaces at either side of the diaphragm, and n_D and ν represent the refractive index and Abbe



number respectively of the glasses from which the lenses are made,

Table of values

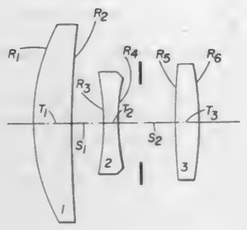
$F_I = .404F$
$-F_{II} = .333F$
$F_{III} = 1.194F$
$R_1 = -R_1 = .242F$
$R_2 = -R_2 = 2.105F$
$R_3 = -R_3 = .183F$
$R_4 = -R_4 = .266F$
$R_5 = -R_5 = .395F$
$t_1 = .0526F$
$t_2 = .0276F$
$t_3 = .0215F$
$S_1 = S_4 = 1.870F$
$S_2 = .0214F$
$S_3 = .0178F$
$n_D(I) = 1.670$
$n_D(II) = 1.605$
$n_D(III) = 1.638$
$\nu(I) = 47.2$
$\nu(II) = 38.0$
$\nu(III) = 55.5$

wherein F represents the equivalent focal length of the objective.

3,418,039
TRIPLET COVERING A WIDE FIELD

Rudolf Kingslake, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 27, 1965, Ser. No. 516,275
1 Claim. (Cl. 350—226)



1. A wide angle photographic objective consisting of two outer positive elements separated by and airspaced from a central negative element in which the radii of curvature R, the separations S, the thicknesses T, the refractive indexes N_D, and the dispersive indexes V, each numbered by subscripts from front to rear, conform substantially to the following specifications:

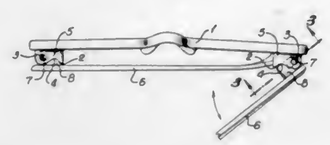
F=100 mm. f/6.3

Element	N_D	V	Radius in mm.	Thickness or Separation in mm.
1	1.61	57.2	R_1=26.4 R_2=585 R_3=−81.0	T_1=4.15 S_1=4.30
2	1.58	41.0	R_4=27.0 R_5=225	T_2=1.13 S_2=9.25
3	1.61	57.2	R_6=−54.7	T_3=2.95

3,418,041
SPECTACLE HINGE PIN FOR DETACHABLE TEMPLE PIECES

Gerald Courtney, 6311 Yucca St., Hollywood, Calif. 90028

Filed Aug. 18, 1964, Ser. No. 390,316
1 Claim. (Cl. 351—153)

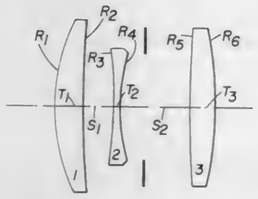


A spectacle temple piece is provided with a lug mounted curved hinge pin which removably engages a spectacle frame lug hole and thereby operatively secures the temple piece to the frame. The attachment of the temple piece to the frame is facilitated by a notch in the rear of the frame lug.

3,418,040
WIDE ANGLE TRIPLETS

Muriel D. Ackroyd and William H. Price, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 27, 1965, Ser. No. 516,459
2 Claims. (Cl. 350—226)



1. A wide angle photographic objective consisting of two outer positive elements separated by and airspaced from a central negative element in which the radii of curvature R, the separations S, the thicknesses T, the refractive indexes N_D, and the dispersive indexes V, each numbered by subscripts from front to rear, conform substantially to the following specifications:

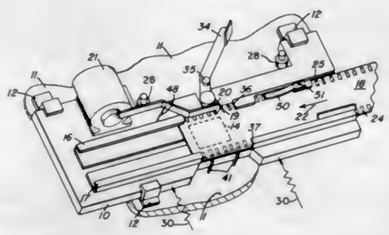
F=100 mm. f/6.3

Element	N_D	V	Radius in mm.	Thickness or Separation in mm.
1	N_1=1.61	V_1=58.8	R_1=31.4 R_2=585 R_3=−80.8	T_1=6.33 S_1=5.38
2	N_2=1.61	V_2=38.0	R_4=33.4 R_5=174	T_2=2.32 S_2=8.77
3	N_3=1.61	V_3=58.8	R_6=−53.8	T_3=4.04

3,418,042
MEANS FOR HOLDING AND PERIODICALLY ADVANCING A STRIP OF FILM OR THE LIKE

Paul F. Sigl, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 22, 1965, Ser. No. 500,990
6 Claims. (Cl. 353—18)

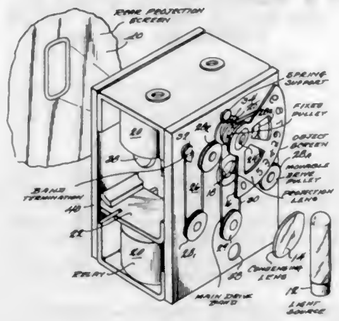


A device for holding and periodically advancing a strip of negative film in a projection printer including a guide track and a claw. The claw is driven through a cycle of operation including an advance stroke for moving the film with respect to the guide.

3,418,043
APPARATUS FOR DISPLAYING CHARACTERS SELECTABLE BY DIGITAL DATA

Gerald I. Williams, Minneapolis, Joseph H. Boucher, Hopkins, and John M. Duffy and Wayne L. Olson, Minneapolis, Minn., assignors to Central Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed May 5, 1966, Ser. No. 547,888
6 Claims. (Cl. 353—25)

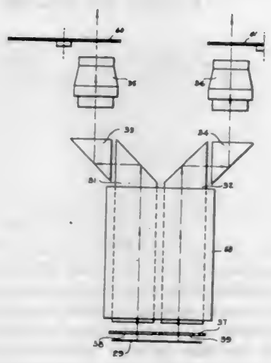


Apparatus for displaying characters or symbols selectable by digital data, the format being suitable for visual interpretation. The device includes a mechanism for directly converting binary data to a format suitable for visual interpretation.

3,418,044
PHOTOGRAPHIC SYSTEM FOR THREE-DIMENSIONAL PROJECTION

Stewart L. Sheldon, 105 N. Broadway, Trotwood, Ohio 45407

Filed Dec. 9, 1965, Ser. No. 513,672
10 Claims. (Cl. 353—7)

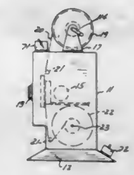


A three-dimensional image projection system comprising a film strip with right and left eye image frames in a laterally spaced relation and a sound track intermediate thereof. A pair of spaced apart elongated hemicylindrical prisms in side by side relation are aligned with each image frame on the film strip to conduct the images directly from the film strip and reduce the straying or diffusion of light, resulting in sharper and more precise images. A pair of intermediate prisms pick up the images from the elongated prisms and reflect them to a pair of projection lens elements. A pair of timed, out of phase, shutters are spaced outwardly from each lens element to produce a time spaced projection of right and left eye images as each pair of laterally spaced frames reaches the lens elements. Each intermediate prism is connected to its respective lens element for unison and adjustment therewith.

3,418,045
INTERMITTENTLY OPERATED MOVIE FILM PROJECTOR FOR PROJECTING STILL PICTURES

Edward J. Rovsek, Elk Rapids, Mich.
(P.O. Box 592, Dearborn, Mich. 48121)

Filed Aug. 24, 1966, Ser. No. 574,581
21 Claims. (Cl. 353—122)

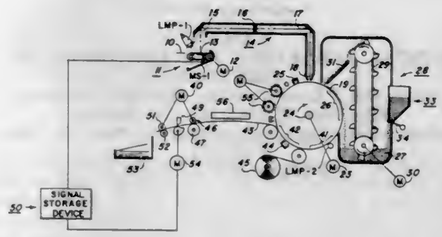


A film projector for projection of movie film having a series of individual still pictures thereon, one frame at a time. The projector comprises, besides the conventional light source, lens assembly, film feeding and takeup elements, a film engaging stripper and a manually and intermittently operable film engaging device for advancing the film one frame at a time. Furthermore a series of film drivepins is included for projection into the marginal film apertures for intermittent driving engagement with the film, one frame at a time.

3,418,046
SIGNAL STORAGE DEVICE

Richard C. Hansen and Jack O. Wilson, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed July 19, 1966, Ser. No. 566,332
12 Claims. (Cl. 355—13)



9. In a xerographic reproduction apparatus including means to form reproductions of original copy during the course of its movement onto a continuously moving web and cutter means for cutting said web in spaced relation to the reproduction thereon, a signal storage device for emitting a time delayed output signal for the operation of said cutter from an input signal generated by the movement of the original copy comprising in combination:

(a) means adapted for movement at a rate having a predefined time relation between the receipt of a said input signal and the required corresponding output signal thereof;

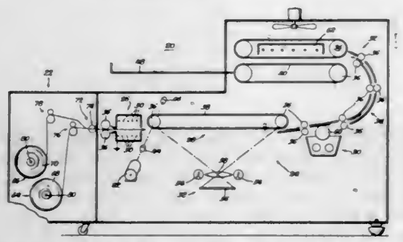
(b) switch actuating means slip-coupled to said last recited means to slip relative thereto when impeded and when unimpeded to move coupled therewith to a switch actuating position;

(c) release means operably supported in the path of said switch actuating means to impede said switch

actuating means in the absence of a received input signal to be stored and to release said switch actuating means on receipt of an input signal; and

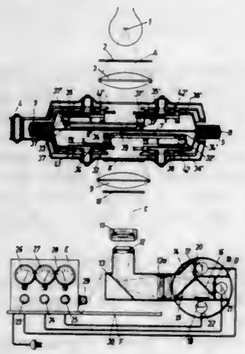
(d) switch means operably supported interposed in the path of said actuating means when moving to emit an output signal for effecting operation of said cutter when actuated by said switch actuating means.

3,418,047
COPY MAKING APPARATUS
Richard G. Lee, Weston, and James S. Groom, Brookline, Mass., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,918
16 Claims. (Cl. 355—28)



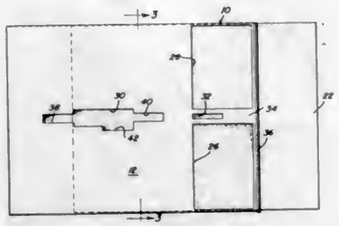
A copying machine provides copies on copy sheets of various lengths and widths. Two rolls of sheet material are selectively fed through a cutting assembly and severed into sheets of selected length. Sheet sensing means at the exposure station are controlled by selection of a sheet length to halt the severed sheet at a centered location for exposure in accordance with an original. The cutting assembly is rotatable to engage stationary and movable blades, and the advancing web is fed through a slot in the assembly. The web is cut without halting the feed of the web into the machine by developing a slack portion which is fed while the web is stopped and cut by the cutting assembly.

3,418,048
OPTICAL APPARATUS FOR PHOTOGRAPHIC PRINTING
Anton Veit, 7 Gozbertstrasse, Munich 9, Germany
Filed Nov. 9, 1965, Ser. No. 506,947
Claims priority, application Germany, Nov. 10, 1964, V 27,122
10 Claims. (Cl. 355—38)



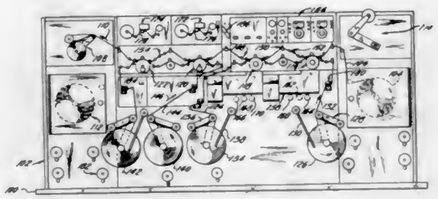
An optical filter assembly with three filter arrays, each array comprising a plurality of mutually parallel wedge-shaped filter elements of a common primary color, e.g. yellow, cyan and magenta. The elements of each array are directed to a center and marginal elements of each said array are overlapping with marginal elements of respective adjacent arrays. Said optical filter assembly may be used in an optical projection apparatus for the photographic printing or enlargement of transparent color originals.

3,418,049
EASEL FOR PHOTOGRAPHIC ENLARGERS
Robert W. Whitlatch, Box 85, Mattoon, Ill. 61938
Filed Dec. 20, 1965, Ser. No. 515,101
3 Claims. (Cl. 355—54)



An easel for holding sensitized photographic paper to be used in combination with photographic enlargers where both surfaces of the easel have cutouts forming masks and the cutouts on the surfaces can produce all the standard size exposures without employing multiple masks with a separate easel.

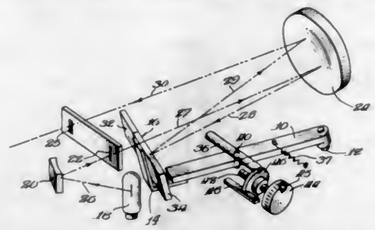
3,418,050
APPARATUS FOR PRINTING MULTIPLE IMAGES ON PHOTOGRAPHIC RAW STOCK AND RELATED FADER
Saul Jeffee, Scarsdale, N.Y., and John J. Kowalak, River Edge, N.J., assignors to Movielab, Inc., New York, N.Y.
Continuation-in-part of application Ser. No. 641,079, Mar. 20, 1967. This application Nov. 2, 1967, Ser. No. 680,134
5 Claims. (Cl. 355—90)



A device for printing from a movie film negative onto photographic raw stock in which the negative or the raw stock is shifted laterally relative to the other and the negative is used repeatedly in a single pass for printing on a plurality of parallel strips on the raw stock. The raw stock can then be split to obtain a plurality of positive films. The device also contains vacuum means for cleaning the negative and fader means for securing the desired light properties.

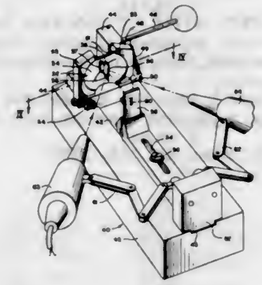
3,418,051
MONOCHROMATOR SYSTEM WITH SELECTIVE DIFFRACTION GRATING SYSTEM
John J. J. Staunton, Oak Park, Ill., assignor, by mesne assignments, to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Sept. 8, 1964, Ser. No. 394,997
8 Claims. (Cl. 356—101)

A monochromator system which utilizes a particular type of light-dispersing medium, namely, a selective diffraction grating (grating plus interference wedge or graduated filter layer) as disclosed in U.S. Patent No. 3,334,956. The grating swings on an arm to facilitate adjusting the wavelength, which arm is located out of the plane of the light beam portions passing directly from the entrance and exit slits to the collimating mirrors. The system is of



simple, compact, low cost construction and provides a light beam within a range of desired wavelengths accompanied by little stray light and no extraneous orders. The invention is particularly adapted for use in a double monochromator using two gratings, at least one of which is a selective diffraction grating.

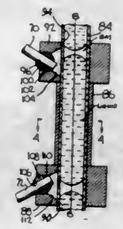
3,418,052
APPARATUS FOR ALIGNING A REFLECTOR AND A LIGHT SOURCE
Thomas A. Hoffmann, Morris Plains, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Original application Dec. 5, 1961, Ser. No. 157,217, now Patent No. 3,194,626. Divided and this application Nov. 16, 1964, Ser. No. 411,260
6 Claims. (Cl. 356—123)



An apparatus for determining the position of a component, such as a filament, relative to a curved reflector to which it is attached and detecting deviations, if any, from a given alignment. The reflector-filament assembly is locked in predetermined position of a chassis which carries a screen and a light source that are so oriented with respect to each other and the assembly that a shadow of the filament is projected by the reflector onto the screen when the light source is energized. The position of the projected shadow relative to a reference mark on the screen indicates the degree of misalignment, if any, between the reflector and filament.

3,418,053
COLORIMETER FLOW CELL
Milton H. Pelavin, Greenburgh, N.Y., assignor to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Aug. 28, 1964, Ser. No. 392,692
2 Claims. (Cl. 356—181)

A flow cell assembly for a colorimeter comprises a vertical conduit, a first bundle of light conducting fibers which is adjustable with respect to angle to and location along the conduit for inserting light into the conduit, and a second bundle of light conducting fibers which is

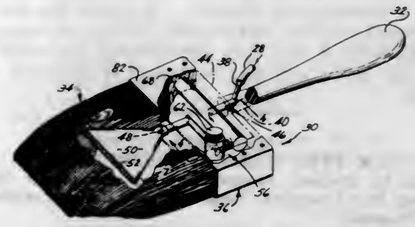


adjustable with respect to angle to and location along the conduit for receiving light from the conduit. The bundles are spaced apart by a tube having an inner reflecting surface.

ERRATUM

For Class 356—246 see:
Patent No. 3,418,061

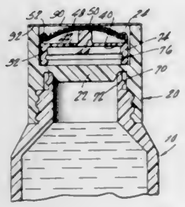
3,418,054
APPLICATORY-LIQUID FEEDING AND APPLYING APPARATUS
Paul W. Kirch, Altadena, Calif.
(% P.O. Box 18948, Los Angeles, Calif. 90018)
Filed July 14, 1966, Ser. No. 565,302
8 Claims. (Cl. 401—188)



The specification discloses a pressurized applicatory-liquid feeding and applying apparatus which includes applicatory-liquid storage reservoir means, such as for paint or the like, means for pressurizing the interior thereof, and a length of small diameter flexible feed tubing means in communication with the pressurized applicatory liquid or paint at the rear end thereof and in communication at the forward end thereof with an applicatory brush means, such as a paint brush or the like, which is provided with a finger operable valve of a normally closed type adapted to prevent the passage of any of the pressurized liquid or paint therethrough except when controllably opened to any desired extent by applying a finger to an exterior pushbutton controlling the valve and mounted at a convenient location on a rear top surface portion of the brush body. When the valve is finger operated into open position, the paint is fed therethrough and into the interior of a plurality of brush bristles by way of a laterally outwardly diverging, flat, spatulate, disseminating, outlet nozzle means of a flexible type positioned entirely within and hidden by the plurality of bristles forming the forward brush portion of the paint brush. In a preferred form, the connection of the forward end of the feed tubing to the applicatory brush means is by way of an inlet

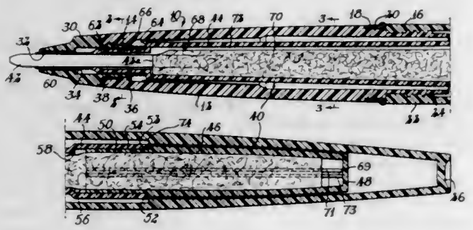
coupling means which is positioned adjacent to an interconnection junction of a forward end of the brush handle and a rear end of a body portion carrying the brush bristles at a location such as to provide a minimum of interference with a hand adapted to manually hold the handle during a liquid applying operation, such as a painting operation or the like.

3,418,055
PRESSURE OPERATED APPLICATOR AND CAP CONSTRUCTION
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Apr. 3, 1967, Ser. No. 628,045
6 Claims. (Cl. 401—206)



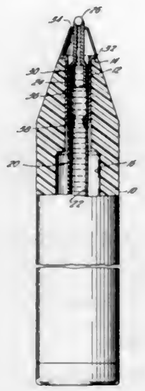
An applicator comprising a container for fluid and provided with a novel arrangement including an applicator head and a cap for initially providing a seal for the container, which cap carries the applicator head therein so that upon removal of the cap, the applicator head can be subsequently fastened on the neck of the container for use in applying various fluids. The applicator head includes a retaining ring provided with a web that has a stud integral with and rising therefrom which web engages a fabric cover so that upon depression of the cover a helical slit in the web may be opened by distortion of the web.

3,418,056
WICK TYPE WRITING INSTRUMENT
William H. Derbins, Janesville, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin
Filed Nov. 29, 1965, Ser. No. 510,329
5 Claims. (Cl. 401—199)



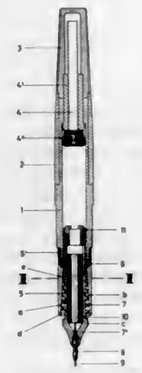
A self-contained replaceable cartridge includes a tubular housing closed at one end and necked down at its other end to a narrow opening that tightly holds a wick extending therefrom. An ink-retaining capillary filler material fills the rearward internal portion of the housing except for an air-replacement channel that extends along the longitudinal length of the housing from a location near the necked down portion. A transverse aperture extends through the housing into the air channel.

3,418,057
WRITING INSTRUMENT WITH CONVERTIBLE CARTRIDGE
John H. Shea, 1498 Golf St., Scotch Plains, N.J. 07076
Filed Jan. 25, 1967, Ser. No. 611,645
4 Claims. (Cl. 401—209)



A writing instrument known as a stick pen employing a standard ink cartridge and a special adaptor into which the standard cartridge is permanently crimped to convert the retractable ink cartridge into a non-retractable type required for insertion into the barrel of the writing instrument from its writing end.

3,418,058
FOUNTAIN PEN WITH SIPHON-PEN INSERT
Edgar Hans Gössel, Nurnberg, Germany, assignor to A. W. Faber-Castell, Stein, near Nurnberg, Germany, a firm of Germany
Filed July 7, 1966, Ser. No. 563,460
Claims priority, application Germany, July 9, 1965, F 46,562
6 Claims. (Cl. 401—259)



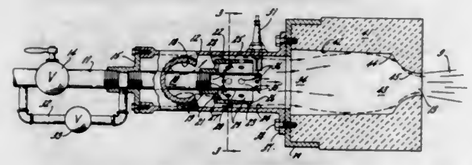
A fountain pen is provided with a siphon-pen insert in one end with a detaching tool for removing the insert from the tubular body of the pen. The insert has a frusto-conically shaped surface which fits in frictional engagement into a similarly shaped surface on the body of the pen. The insert has helical grooves in its frusto-conically shaped surfaces for providing compensating channels communicating with the ink chamber within the pen. A gasket is positioned within the pen to provide a seal between different parts of the tubular body of the pen and between the body of the pen and the insert.

3,418,059
DISPENSER PACKAGE FOR FLOWABLE MATERIALS AND METHOD OF FORMING SAME
Harlan K. Robe, % Robe Associates, 1833 Edgewood Drive, Palo Alto, Calif. 94303
Filed Mar. 20, 1967, Ser. No. 624,520
7 Claims. (Cl. 401—266)



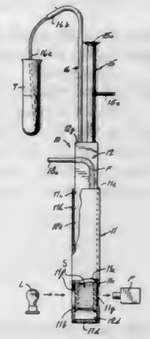
A dispenser package in the form of a flexible pouch having a constricted throat orifice separating the main portion of the pouch from a dispenser portion having one or more dispensing outlets, the pouch also having one or more secondary throats at the dispensing outlets, the throats serving to smooth out the flow material being pressed from the pouch. In one form of the invention, the dispenser portion of the pouch is flattened and stiffened to provide a spreader. The walls of the pouch may be thickened to make them stiffer at the throat and at the dispenser portion. Relatively stiff members are arranged on opposite sides of the pouch for protection and to assist in expelling the contents. A method is provided for forming the pouch by sealing together stacked sheets of plastic around a periphery to form a pouch of the desired configuration and, in another version, by forming a tube, gathering the tube material at spaced locations and applying heat to form a thickened, stiffened portion for the throat orifice.

3,418,060
NOZZLE MIXING GAS BURNER
Lyle S. Spielman and Edward E. Moore, Rockford, Ill., assignors to Eclipse Fuel Engineering Co., Rockford, Ill., a corporation of Illinois
Filed May 25, 1967, Ser. No. 641,338
7 Claims. (Cl. 431—158)



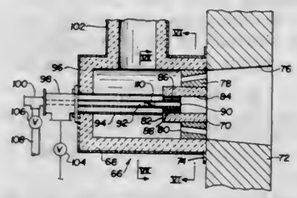
A gas delivery pipe extends through the closed end and terminates near the open end of a cup which is disposed within and concentric with a tube to which air is delivered so as to be formed into a curtain around the cup and the stream of gas discharged from the end of the pipe. Some of the gas flows out of the pipe through holes and is mixed within the cup with air entering through holes so as to provide a continuing pilot flame. Partial combustion of the remaining gas occurs within the tube beyond the cup and is completed beyond a high velocity nozzle as a result of a necking down of the air tube starting well beyond the cup and leading to a restricted discharge nozzle.

3,418,061
FLOW CELL CONSTRUCTION WITH DELIVERY AND DISCHARGE MEANS
Eugene L. Schultz, Hollywood, Fla., assignor to Dade Reagents, Inc., Miami, Fla., a corporation of Florida
Filed Dec. 30, 1963, Ser. No. 334,334
8 Claims. (Cl. 356—246)



A flow cell and adapter therefor in which the cell has an inlet tube for filling and an outlet tube for applying suction from a laboratory source by finger pressure to selectively fill and empty the cuvette and for cleaning and drying thereof. The cell incorporates a liquid circulating conduit for temperature control and is adjustably mountable by the adapter in conventional spectrophotometers for rapid change of position with respect to the instruments' light beam to effect calibration and sample testing.

3,418,062
BURNER STRUCTURES
James E. Hovis, Jefferson Township, Allegheny County, and Rolland L. Hoffman, Mount Lebanon Township, Allegheny County, Pa., assignors to Bloom Engineering Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1966, Ser. No. 571,085
14 Claims. (Cl. 431—350)



There are disclosed means and methods for operating a soaking pit, together with a burner structure for this purpose and for general utility. The burner structure comprises a body member, means mounted on said body member for defining a relatively larger outer firing port and a relatively smaller inner firing port disposed coaxially and inwardly of said outer firing port, first annular air passage means coupled to said outer firing port in bypassing relation to said inner firing port, fuel passage means coupled centrally to said inner firing port, second annular air passage means coupled to said inner firing port and surrounding said fuel passage means, and valve means coupled to each of said first and said second air supplying means, at least said second air passage means being so shaped that combustion air passing therethrough forms a confining envelope around fuel passage means in avoidance of the surfaces of said outer firing port.

3,418,063
PROCESS FOR DYEING AND PRINTING CELLULOSE FIBRES

Paul Ulrich and Heinz Peter Schaub, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed July 12, 1965, Ser. No. 471,400
Claims priority, application Switzerland, July 14, 1964, 9,225/64
12 Claims. (Cl. 8—21)

1. Process for coloring cellulosic-polyester fiber blends comprising impregnating the fibres with an aqueous preparation containing dyestuffs at the most traces of which are soluble in water and 10–30%, calculated on the weight of the whole preparation, of at least one compound of the formula



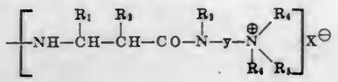
wherein D is a member selected from the group consisting of oxygen, sulfur and the grouping NH, Y is a member selected from the group consisting of a primary, secondary and tertiary amino group, Z is a member selected from the group consisting of a primary, secondary and tertiary amino group, an alkyl and an alkoxy group and then subjecting the fibres so treated to a treatment with dry heat at a temperature from 120–250° C. for 10 seconds to 5 minutes.

3,418,064
PROCESS FOR THE DYEING, PADDING AND PRINTING OF TEXTILE MATERIALS WITH ANTHRAQUINONE DYES

Paul Buecheler, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Apr. 23, 1964, Ser. No. 362,169
Claims priority, application Switzerland, Apr. 23, 1963, 5,094/63; Apr. 8, 1964, 4,470/64
11 Claims. (Cl. 8—39)

1. A process which comprises one of dyeing, padding and printing a member selected from the group consisting of polyacrylonitrile fibers and acrylonitrile copolymer fibers with an anthraquinone dye having directly bound to at least one α-carbon of the anthraquinone nucleus in its molecular structure a substituent of the formula



wherein:

one of R_1 and R_2 is a hydrogen atom, and the other of R_1 and R_2 is a member selected from the group consisting of a hydrogen atom and methyl,

R_3 represents a member selected from the group consisting of a hydrogen atom and low-molecular alkyl radicals,

R_4 represents a member selected from the group consisting of alkyl, cycloalkyl and aralkyl radicals,

R_5 represents a member selected from the group consisting of alkyl, cycloalkyl and aralkyl radicals,

R_6 represents a member selected from the group consisting of a hydrogen atom, alkyl, cycloalkyl and aralkyl radicals,

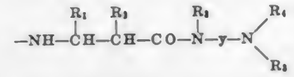
y represents a member selected from the group consisting of a methylene and a phenylene group, and a divalent and a trivalent organic radical bound through the cited methylene and phenylene group to the adjacent N-atom,

$X^{\ominus}$ denotes an anion equivalent to the dye cation,

and the radicals R_4 and R_5 together with the adjacent N-atom alternatively represent a heterocyclic ring system,

and the radicals R_4, R_5 and R_6 together with the adjacent N-atom alternatively represent a heterocyclic aromatic ring system.

8. A process which comprises one of dyeing, padding and printing of a member selected from the group consisting of polyacrylonitrile fiber and acrylonitrile copolymer fiber with an anthraquinone dye having directly bound to at least one α-carbon of the anthraquinone nucleus in its molecular structure a substituent of the formula



wherein:

one of R_1 and R_2 is a hydrogen atom, and the other of R_1 and R_2 is a member selected from the group consisting of a hydrogen atom and methyl;

R_3 is a member selected from the group consisting of a hydrogen atom and lower alkyl;

each of R_4 and R_5 is, independently, a member selected from the group consisting of alkyl, cycloalkyl and aralkyl;

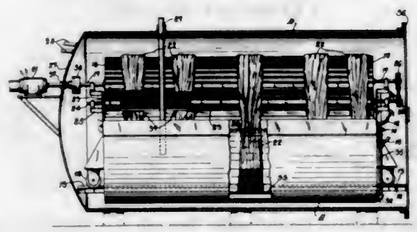
y is a member selected from the group consisting of a methylene and a phenylene group, and a divalent and a trivalent organic radical bound through the cited methylene and phenylene group to the adjacent N-atom; and

R_4 and R_5 together with the adjacent N-atom is, alternatively, a heterocyclic ring system.

3,418,065
METHOD FOR HIGH TEMPERATURE DYEING

Charles Blount, Jr., Westport, Conn., assignor to The United Piece Dye Works, New York, N.Y., a corporation of New Jersey

Division of application Ser. No. 81,780, Jan. 10, 1961. Continuation of application Ser. No. 295,592, July 9, 1963, both now abandoned. This application Oct. 4, 1965, Ser. No. 498,194
2 Claims. (Cl. 8—55)



1. A method of dyeing fabrics comprising polyester fibers comprising the steps of:

(a) loading an endless loop of said fabric in an exposed and unconfined manner on a suitable feeding means which is carried on a tub for containing a dye bath,

(b) filling the tub with a dye bath,

(c) elevating the temperature of the dye bath to a temperature ranging between 180° F. and 212° F. at atmospheric pressure and circulating the loop of said fabric through said dye bath as said dye bath is being brought up to said temperature,

(d) positioning said heated dye bath and partially dyed fabric into a pressure tight chamber,

(e) sealing the dye bath and fabric pressure tight in said pressure chamber,

(f) elevating the temperature of said dye bath within said pressure chamber to a temperature of approximately 250° F. by introducing steam within the sealed vessel, and

(g) continuously feeding the endless loop of fabric free of restriction through said dye bath at said elevated temperature until the dyeing operation is completed whereby intermediate folding of the fabric occurs in the dye bath during said operation,

(h) gradually cooling down the dye bath by reducing the temperature and pressure within the pressure vessel in a manner wherein the pressure is maintained to prohibit boiling of the dye bath, and

(i) removing the dye bath and material from the pressure vessel upon the gradual cooling thereof.

3,418,066
SURFACE OXIDATION AND TREATMENT OF POLYMERS

John R. Caldwell and Clarence C. Dannelly, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 539,295, Apr. 1, 1966, which is a continuation-in-part of application Ser. No. 213,143, July 30, 1962. This application Nov. 8, 1966, Ser. No. 592,732
15 Claims. (Cl. 8—115.5)

This invention concerns the oxidation and treatment of the surface of hydrophobic polymeric substrates particularly to form sites for the formation of graft polymers and to attach other groups. In one aspect of the invention, the polymeric article is treated with an oxidation catalyst, and while said oxidation catalyst is in contact with said surface, the article is contacted with an oxidizing agent. After cleansing of the surface, it has a large proportion of oxygen-containing groups chemically bound thereto, giving improved surface characteristics. Another aspect of the invention is to further modify the oxidized surface by converting the oxygen containing groups to acid chloride groups. Still another aspect of the invention is to then react an amine or alcohol with the acid chloride groups.

3,418,067
MODIFICATION OF CELLULOSIC TEXTILES WITH COMBINATION OF A DIVINYL SULFONE MONOESTER AND AN AMINOPLAST RESIN OR WITH A REACTION PRODUCT OF SAID MONOESTER AND SAID RESIN

William L. Mauldin and Donald J. Gale, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

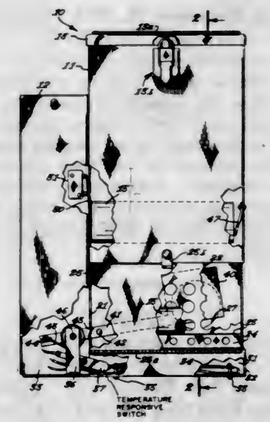
No Drawing. Continuation of application Ser. No. 96,673, Mar. 20, 1961. This application Sept. 28, 1966, Ser. No. 582,757
21 Claims. (Cl. 8—116.2)

A process which comprises heating a dry, essentially unswollen cellulosic textile material to an elevated temperature, impregnating the textile material with an acid acting catalyst and the reaction product of a methylol textile resin and an ester of a sulfone or sulfoxide, the reaction product having at least one functional group which is reactive to cellulose under textile resin curing conditions and at least one activated ester group which is substantially inert under such curing conditions but which is reactive to the cellulose in the presence of a strong aqueous base. The reaction product is chemically fixed to the textile material and thereafter is impregnated with a strong aqueous base so that the textile material is cross-linked by the reaction product. At least one linkage occurs while the textile material is in a dry, essentially unswollen condition and at least one linkage occurs while the textile material is in a wet, essentially swollen condition.

3,418,068
CONTROL APPARATUS FOR AIR TREATING SYSTEMS

Lynn A. Gilbertson, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 19, 1965, Ser. No. 457,133
14 Claims. (Cl. 21—74)

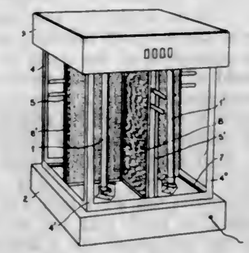


An air treating apparatus and control system; the apparatus having an air inlet, a vaporizing area, and an air outlet; with a heater disposed in the air inlet to heat the air before it reaches the vaporizing area, with a thermostat controlled damper controlled by the air temperature in the inlet and arranged to allow increased air flow when the heater is energized, and with a manually operated and timer controlled switch to energize the heater; the air treating apparatus being associated with a forced air heating or cooling system; and with electrical circuitry to allow selective remote control of the heater and the blower of the forced air system.

3,418,069
ULTRA-VIOLET RAY STERILIZERS

Jean Joseph Eugène Alexandre Decupper, Neuilly-sur-Seine, France, assignor to Detec S.A., Geneva, Switzerland, a Swiss body corporate

Filed Dec. 22, 1965, Ser. No. 515,701
7 Claims. (Cl. 21—74)



1. Apparatus for sterilising the atmosphere by the emission of ultra-violet rays comprising a plurality of vertical

tubes for the emission of ultra-violet rays arranged between a lower base and an upper cover and several movable protective shutters, a reflecting metal coating arranged on the inner face of said shutters, means to displace said shutters into the interior of the apparatus when open, and to position same between the tubes, in such a manner that the inner face of the shutters provided with a reflecting metal coating is exposed to the emitting tubes.

3,418,070

COMPOSITIONS AND PROCESSES FOR TREATING EXHAUST

James F. Roth, St. Louis, Mo., assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 20, 1963, Ser. No. 289,393

14 Claims. (Cl. 23—2)

A catalytic composition and a process for the catalytic oxidation of exhaust gases from an automobile combustion engine where the exhaust is passed over a catalytic composite which comprises an active copper oxide component which is contained on an alumina base and which has a crystalline content of less than 2% based on the weight of the composite. Furthermore, the catalytic composite has a macropore volume determined by the mercury penetration method of about 0.05 to 0.30 cubic centimeter per gram.

3,418,071

METHOD FOR PRODUCING YTTRIUM ALUMINATE CRYSTALS

Russell Seitz, Elberon, N.J. 07740

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,125

2 Claims. (Cl. 23—22)

YAl_2O_4 crystals are prepared under ambient conditions by supporting yttrium chloride and sodium aluminate solutions in contact with different portions of the surface of a silica gel and allowing the solutions to permeate the gel, and come into chemical contact at a common interface within the gel.

3,418,072

PROCESS FOR PRODUCING ION EXCHANGERS

Jean Piret, Watermael-Boitsfort, Belgium, assignor to Societe d'Etudes, de Recherches et d'Applications pour l'Industrie S.E.R.A.I., Brussels, Belgium

No Drawing. Filed June 19, 1964, Ser. No. 376,581

Claims priority, application Austria, July 1, 1963, A 5,230/63; Great Britain, Mar. 13, 1964, 10,793/64

4 Claims. (Cl. 23—23)

A process for preparing ion exchangers in the form of crystalline grains, comprises the treatment of an acid salt of a polybasic acid selected from phosphoric, vanadic, tungstic, phosphotungstic, molybdic and phosphomolybdic and of a metal selected from titanium, zirconium, tin and niobium. A compound of the metal is heated with 98% sulphuric acid to a temperature above 120° C. and is kept at this temperature until a clear solution is obtained. The solution is cooled, and the selected anhydrous polybasic acid is added, and then the mixture is heated to 100°–200° C. until a gel is obtained, from which crystalline grains are recovered. In another embodiment, grains of the amorphous salt are mixed with an aqueous solution of sulphuric or nitric acid and of the polybasic acid from which the amorphous salt is derived, the mixture then being heated to a temperature of 50°–80° C. until crystalline grains are obtained.

3,418,073

PRODUCTION OF AMMONIUM ZIRCONYL CARBONATE

Warren B. Blumenthal, North Tonawanda, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,502

15 Claims. (Cl. 23—23)

Ammonium zirconyl carbonate is produced in solution by the reaction of CO_3 and NH_4 ions, which may be supplied by ammonium bicarbonate, on finely divided barium zirconate in an aqueous slurry at a pH in the range from about 8.0 to about 10.5.

3,418,074

PROCESS FOR CHLORINATING TITANIFEROUS ORES

Herb G. Sargeant, White Clay Creek Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,360

4 Claims. (Cl. 23—87)

An improvement in processes for chlorinating ferrotitaniferous ores in which (a) the particulate ore is subjected to contact with chlorine in a reaction zone at 800 to 1200° C., whereby a portion of the ore is chlorinated to titanium chloride and iron chloride vapors, (b) said vapors are withdrawn as a stream from the reaction zone together with suspended particulate solids containing soluble chlorides and insoluble, titanium-bearing residues, and (c) said withdrawn vapors are cooled to about from 60 to 180° C. and solids are separated therefrom, said improvement comprising the steps of (1) subjecting said separated solids to contact with a liquid solvent under high shear forces to extract soluble chlorides from the solids, and (2) recovering the remaining, insoluble, titanium-bearing residues for reuse in the chlorination reaction.

3,418,075

PREPARATION OF TITANIUM PHOSPHATE

Jean Marie Piret, 5 Rue de Chantilly Watermael, Belgium

No Drawing. Filed Feb. 25, 1966, Ser. No. 529,968

Claims priority, application Great Britain, Mar. 19, 1965, 11,724/65

5 Claims. (Cl. 23—105)

Ion-exchange properties of titanium phosphate produced by treating a titanium compound with a sulfate in the presence of sulphuric acid of specific gravity of 1.84 and then treating the resulting titanyl sulphate with 85% phosphoric acid are improved by adding in the latter step enough water to cause a spontaneous temperature increase to 90–100° C. upon mixing, wtihout external heating.

3,418,076

METHOD FOR CONTROLLING THE FEED OF NUCLEI IN THE PRODUCTION OF CRYSTALS BY VAPOR DEPOSITION

William B. Campbell, Belmont, Mass., assignor to Lexington Laboratories Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Apr. 14, 1965, Ser. No. 447,994

8 Claims. (Cl. 23—142)

An improved method of delivering solid nuclei to the reaction zone where single crystal whiskers are grown on the nuclei by deposition from the vapor phase. The nuclei are removed from a supply station and conveyed as a stream along a tube by mechanical vibrations which constantly agitate the nuclei and control the density of the stream. A carrier gas is injected into the stream at a point remote from the supply station to produce a mixture consisting of carrier gas and nuclei which is fed to the reaction zone.

3,418,077

PHOSPHORIC ACID

Norman Robinson, Felixstowe, Suffolk, England, assignor to Fisons Fertilizers Limited, Felixstowe, Suffolk, England

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,490

Claims priority, application Great Britain, Feb. 12, 1965, 6,101/65

13 Claims. (Cl. 23—165)

A method for making concentrated phosphoric acid directly from phosphate rock and sulphuric acid wherein the calcium sulphate is precipitated as hemihydrate. The method involves reacting the phosphate rock with the recycle phosphoric acid, preferably recycle phosphoric acid slurry, containing a specified percentage of dissolved sulphate ion and then treating the product with a specified excess of sulphuric acid.

3,418,078

METHOD OF DETECTING FLAWS

Adolf Mlot-Fijalkowski, Elmwood Park, and Joseph A. Strosnik, Hillside, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,566

18 Claims. (Cl. 23—230)

A penetrant for the non-destructive testing for flaws in surfaces that come in contact with liquid oxygen, the penetrant consisting essentially of a non-flammable, relatively non-volatile, polymer of chloro-trifluoroethylene. The penetrant may be in the form of a liquid for spraying or brushing onto surface undergoing test or may be in the form of an aerosol, and may contain a color or dye, or be colorless where a dye or penetrant is contained in the developer. A volatile chlorinated hydrocarbon, as a coupler, and a solvent for the dye, such as a non-flammable chlorinated diphenyl can be used with the polymer of chloro-trifluoroethylene.

3,418,079

TEST PAPER FOR THE DETERMINATION OF PROTEIN IN BIOLOGICAL FLUIDS

Hans-Georg Rey, Mannheim, and Peter Rieckmann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,497

Claims priority, application Germany, Nov. 13, 1964, B 79,314

24 Claims. (Cl. 23—253)

1. Diagnostic test paper for the determination of protein in biological fluids, comprising an absorbent carrier which has been impregnated with

(1) a dyestuff indicator exhibiting the so-called "protein error,"
(2) an acidic buffer substance, and
(3) at least one inorganic sulfate.

3,418,080

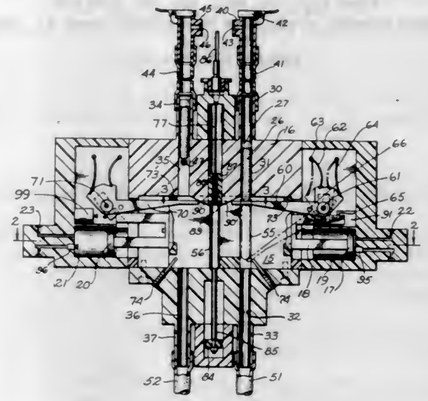
SAMPLE TRANSPORT SYSTEM

Jerry Edward Rochte, Long Beach, and Donald Norman Martin, Whittier, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Oct. 26, 1964, Ser. No. 406,367

18 Claims. (Cl. 23—259)

Sample handling system for wet chemical analyzers in which one or more sample tubes are transported through a wet chemical analyzer by pneumatic means to various stations where various procedures, such as, withdrawing or inserting samples, adding reagents and/or treating the sample, withdrawing the treated sample and transporting the same to an analyzer, may be performed. Also, specific pneumatically operated mechanism for transporting



the sample tube or tubes within the various stations to positions where the sample may be withdrawn, inserted into the tube, and/or reagents added thereto or transferred to treating stations.

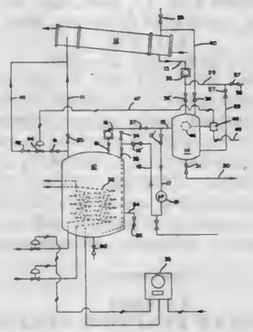
3,418,081

REACTOR WITH FLUID LEVEL CONTROLLER

Richard B. Graver, Savage, and Newton D. Farel, Minneapolis, Minn., assignors, by mesne assignments, to Ashland Oil and Refining Company, a corporation of Kentucky

Application Aug. 25, 1966, Ser. No. 575,049, now Patent No. 3,325,428, dated June 13, 1967, which is a continuation-in-part of application Ser. No. 1,249, Jan. 8, 1960. Divided and this application Apr. 14, 1967, Ser. No. 630,945

5 Claims. (Cl. 23—285)

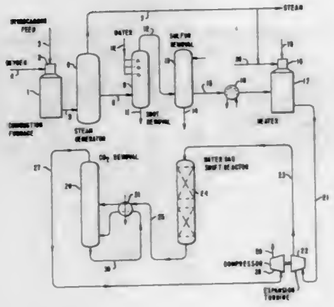


Apparatus comprising, in combination, a closed reactor adapted to operate under atmospheric or elevated pressure, a condenser adapted to condense vapor withdrawn from said reactor, a tank adapted to receive condensate from said condenser and recycle the same to said reactor as reflux, and means to regulate and control the rate of said recycle in proportion to the rate of said withdrawal of vapor from said reactor when the same is operated under elevated pressure.

3,418,082
PROCESS FOR THE PREPARATION OF A HYDROGEN-CONTAINING GAS MIXTURE

Leonard W. Ter Haar, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Sept. 13, 1966, Ser. No. 579,108
Claims priority, application Netherlands, Sept. 13, 1965, 6511884
7 Claims. (Cl. 23—213)



1. A process for preparing high pressure hydrogen-containing gas which comprises subjecting a hydrocarbon to partial combustion at a pressure above about 50 atmospheres, expanding through a gas expansion turbine to a pressure of about 20 to 40 atmospheres, subjecting the expanded gases to a water gas shift reaction, removing carbon dioxide from the reacted gases, and compressing at least a portion of the resulting gas from the carbon dioxide removal step by means of a compressor driven by the gas turbine.

3,418,083
HYDROPHOBIC TEST STRIP FOR ANALYZING WHOLE BLOOD

Hans-Georg Rey, Mannheim, and Peter Rieckmann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,010
Claims priority, application Germany, May 20, 1965, B 82,023
8 Claims. (Cl. 23—253)

1. A diagonstic agent for use in the detection of chemical and biochemical components in whole blood comprising an absorbent carrier support impregnated with a composition forming color in response to said chemical component and treated with a hydrophobing agent rendering the impregnated absorbent carrier hydrophobic, wherein said hydrophobing agent is a member selected from the group consisting of natural and synthetic fats, oils, waxes, paraffins, silicones, and mixtures thereof.

3,418,084
RECTANGULAR FRACTION COLLECTOR

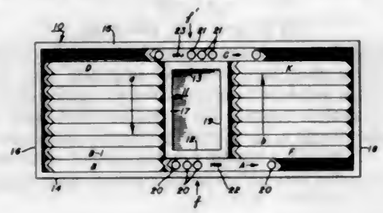
John R. Allington, Lincoln, Nebr., assignor to Instrumentation Specialties Company, Lincoln, Nebr., a corporation of Nebraska

Filed Oct. 27, 1966, Ser. No. 589,878
10 Claims. (Cl. 23—259)

1. Apparatus comprising,

(a) two spaced, parallel chambers having front and rear transfer passageways formed at the ends,

(b) a plurality of shuttles having complementary camming surfaces formed at the ends thereof, two reference shuttles being disposed in othe passageways and the remaining shuttles disposed in rows in the chambers, one reference shuttle being initially in end engagement with the rearmost shuttle disposed in one chamber and the other reference shuttle being initially in side engagement with the rearmost shuttle in the other passageway, and



(c) drive means for simultaneously moving the said reference shuttles through the passageways in opposite directions, the camming surfaces of the engaged shuttles effecting a lateral displacement of such rearmost shuttle in its chamber.

3,418,085
APPARATUS FOR PRODUCING CHANNEL BLACK

Floyd C. Adams, Pampa, and Roy N. Jones, Skellytown, Tex., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

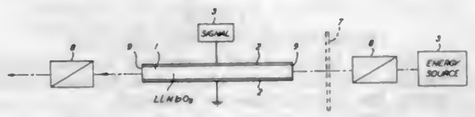
Continuation-in-part of application Ser. No. 377,844, June 25, 1964. This application May 2, 1967, Ser. No. 650,558
3 Claims. (Cl. 23—259.6)

The present invention relates to an improvement in channel house equipment designed for the production of channel blacks. This improvement comprising suspending a plurality of free swinging chains from a series of points above the channels so that said chains extend down through the space between adjacent channels before terminating with their free ends below the channels. Said chains thus not only prevent build-up and bridging of carbon black upon and between the channels and other structural members of the channel table, but also remain clean and free of black deposits themselves due to the freedom of movement between the individual link members thereof.

3,418,086
LITHIUM META-NIOBATE CRYSTALLINE GROWTH FROM MELT CONTAINING MAGNESIUM OXIDE

Gabriel M. Loiacono, Lodi, and Kurt Nassau, Bernardsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed June 20, 1966, Ser. No. 558,976
10 Claims. (Cl. 23—301)



Crystalline lithium meta-niobate is grown from a melt containing a magnesium value to yield from 0.02 weight percent magnesium oxide. A seed of niobate is inserted and pulled from the melt in growing the crystal rod. The rod is then poled by passage of current therethrough to eliminate ferroelectric domain walls.

3,418,087
HYDRATED MAGNESIUM ALUMINATE CONTAINING BOUND SULFATE AND PROCESSES FOR PREPARING SAME

Remsen Ten Eyck Schenck, Bangor, Pa., assignor to Keystone Chemurgic Corporation, Bethlehem, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 319,695. Oct. 29, 1968. This application Feb. 9, 1966, Ser. No. 526,123
8 Claims. (Cl. 23—315)

Hydrated magnesium aluminate containing bound sulfate and characterized by the oxide ratio $2Al_2O_3$, 2MgO, SO_3 is prepared by reacting alkali metal aluminates with magnesium sulfate. Simultaneously, a dilute acid solution is added to the reaction mixture at a rate to maintain a pH between 6 and 10 thereby precipitating the aluminate product. The product is useful as an ingredient in pharmaceutical formulations designed for the control of gastric acidity.

3,418,088
SULFURYL HALIDES AND PROCESS

Raymond J. Shozda, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

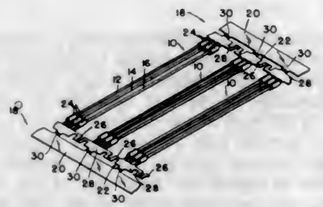
No Drawing. Filed Mar. 21, 1966, Ser. No. 535,724
8 Claims. (Cl. 23—357)

New chemical compounds having the formula XSO_2N_3, wherein X is Cl or F, are prepared by bringing together at least one ionic azide, i.e., N_3^-, and at least one of (a) SO_2X_2, wherein X is Cl or F, and (b) SO_2 and at least one chlorine or fluorine carrier less active in the system than Cl_2 and F_2, at temperatures preferably within the range of 0° to 50° C. and at preferred pressures of 1 to 5 atmospheres. The new compounds may be used as dye fixation agents.

3,418,089
ASSEMBLY FOR TRANSISTOR MANUFACTURE

Quentin Berg, Berg Electronics, Inc., New Cumberland, Pa. 17070

Filed Dec. 16, 1965, Ser. No. 524,986
7 Claims. (Cl. 29—193.5)



1. An assembly for use in the manufacture of circuit elements comprising two spaced parallel carrier strips and groups of parallel wires running between said carrier strips, each carrier strip comprising a strip including wire holding sections and stress relief portions located alternately along the length of said strip so that each of said sections is isolated from adjacent sections by one of said portions, means for securing the wires in each of said group to one of said wire holding sections of each strip, and removable means for holding each of said sections rigidly in fixed relation to each other whereby removal of said removable means frees said group of wires for movement relative to each other in response to flexing of said portions.

3,418,090
COMPOSITE ALUMINUM ARTICLE

Thomas L. Fritzlen, Henrico County, Va., assignor to Reynolds Metal Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 538,485
9 Claims. (Cl. 29—197.5)

Composite articles having a core and cladding composed of heat-treatable aluminum base alloys, in particular a core alloy containing zinc, magnesium and copper as the principal alloying elements, clad with an alloy containing about 4–5.5% zinc and about 1–1.6% magnesium.

3,418,091
TETRAMETHYLLEAD AND ARYLPHOSPHATE GASOLINE COMPOSITION

Maurice R. Barusch, Richmond, Wallace L. Richardson, Lafayette, George J. Kautsky, El Cerrito, and Donel R. Olson, San Bernardino, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 118,503, June 21, 1961. This application June 8, 1966, Ser. No. 555,960
The portion of the term of the patent subsequent to Apr. 25, 1984, has been disclaimed
3 Claims. (Cl. 44—69)

High octane hydrocarbon base gasoline contains at least 20% by volume of aromatic hydrocarbons, tetramethyllead and arylphosphate.

3,418,092
INHIBITED DISTILLATE FUEL OILS

Harry J. Andress, Jr., Pitman, and Paul Y. C. Gee, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 188,564, and Ser. No. 188,580, Apr. 18, 1962. This application May 13, 1965, Ser. No. 455,610
6 Claims. (Cl. 44—71)

Petroleum distillate fuel compositions are provided containing, as rust inhibitors and detergents, small amounts of amino acids having alkyl groups containing from about 4 to about 30 carbon atoms and having a tertiary carbon atom attached to the nitrogen atom.

3,418,093
STEAM REFORMING OF HYDROCARBONS

Phineas Davies, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 16, 1964, Ser. No. 338,019
Claims priority, application Great Britain, Jan. 29, 1963, 3,628/63
4 Claims. (Cl. 48—214)

In a process of steam reforming hydrocarbons the catalyst comprises nickel in a concentration of 20–80% calculated as NiO and a refractory support consisting essentially of co-precipitated alumina-chromia and a hydraulic binding agent. The process is continuously operable at low steam excesses without carbon lay-down.

3,418,094
ANTI-STATIC AGENTS FOR GLASS FIBER MATERIALS

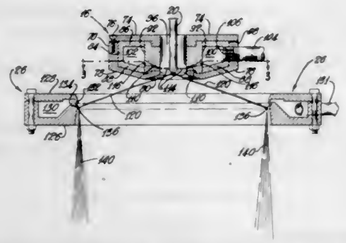
James G. Marsden and Samuel Sterman, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 29, 1964, Ser. No. 422,031
22 Claims. (Cl. 65—3)

A coating composition for sizing glass fibers and rendering them anti-static, comprising a film-forming binder, a glass fiber lubricant, a coupling agent for coupling the film-forming binder to the glass fibers, and an anti-static agent, the improvement in such coating compositions

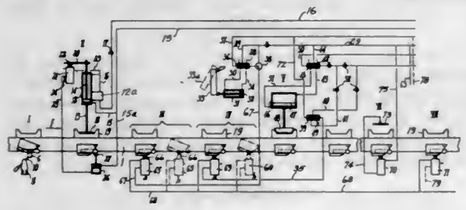
wherein the anti-static agent is the reaction product of a soluble salt of a transition metal and an amino-organosilicon compound selected from the group consisting of amino-organo (hydrocarbonoxy) silanes and amino-organosiloxanes, said amino-organosilicon compound having the amino groups bonded to the silicon atom through at least three successive carbon atoms of a divalent hydrocarbon chain.

3,418,095
METHOD AND APPARATUS FOR PRODUCING FIBERS
Dale Kleist, St. Louisville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 499,181, Oct. 21, 1965. This application Feb. 12, 1968, Ser. No. 704,749
14 Claims. (Cl. 65—5)



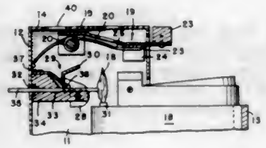
The disclosure embraces a method of and apparatus for forming fibers from heat-softened mineral material, such as glass, wherein a stream of the molten material or glass is engaged by tangentially directed high velocity jets of gas subdividing the stream into linear bodies or primary filaments which are projected by the jets of gas into an annular attenuating blast which attenuates the bodies or primary filaments to fibers.

3,418,096
OPERATIONAL SAFETY MOLD CAM BYPASS
Louis Robert Marie Bathellier, La Chapelle-Saint-Mesmin, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Sept. 15, 1964, Ser. No. 396,600
Claims priority, application France, Sept. 20, 1963, 948,173
20 Claims. (Cl. 65—29)



Apparatus for the fabrication of objects molded from plastic material such as hot glass. A turret rotatable about a central axis, carries a plurality of molds uniformly spaced about and adjacent its periphery, and is automatically stepped around, with dwell between each step, to bring each mold into registration with a number of successive work stations. The turret carries at its periphery a number of safety cam devices, one adjacent each respective mold. Each cam device is pivotable between active and inactive position and is releasably latchable in each position. At a selected station means operates to eject a finished article from each mold, in succession. On the next step an abutment fixed adjacent the turret engages and successively operates each cam device to inactive position. On the second or succeeding step a plunger descends into the mold thereat. If the mold at that station is empty, the plunger descends for a full stroke into it and thus operates a valve effecting return of the corresponding cam device to active position. However, if an object has been left in the mold through failure to eject, the plunger is stopped short of a full stroke, fails to operate the valve and leaves the corresponding cam device inactive. When an empty mold is detected, the cam for that mold, being active, operates at subsequent and sequential stations to deposit a gob of plastic material into that mold, to press the material to shape in the mold, to cool the shaped article, and to eject it from its mold. However, if an object is detected in any given mold after passing the ejection station, the corresponding cam device remains inactive and in failing to operate subsequent valves, prevents deposit of material into that mold, renders the press inactive, etc. Thus, while the failure to eject an article from any given mold, in effect withdraws that mold from production until the article is removed therefrom, it does not affect the functioning of the machine with respect to the remaining molds which have been properly vacated. The ejecting means passes the finished articles to a conveyor and means automatically operated by the machine pushes, for example, each tenth article, off the conveyor at an inspection station.

3,418,097
MICROHEMATOCRIT TUBE SEALER
Edward Louis Drummond and Michael E. Drummond, Havertown, Pa., assignors to Drummond Scientific Company, Broomall, Pa.
Filed Aug. 30, 1965, Ser. No. 483,648
4 Claims. (Cl. 65—269)

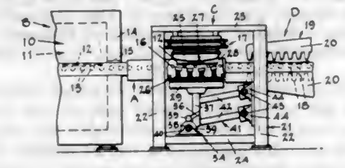


A microhematocrit tube sealer including a unit having a self-contained heater adapted for the reception of the terminal of a glass capillary hematocrit tube which is to be sealed, an assembly in the unit operable to position a part thereof in the path of the tube to limit the extent of its movement into the unit, the assembly further including means for moving said part of the assembly away from the tube to expose the inner end of the latter to heat from the self-contained heater of the unit, to effect sealing.

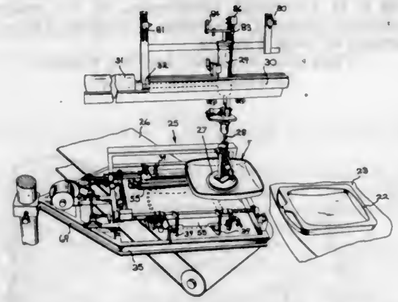
3,418,098
APPARATUS FOR PRESS BENDING GLASS SHEETS
William Kirkman, Ottawa, Ill., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 13, 1965, Ser. No. 486,907
5 Claims. (Cl. 65—273)

Apparatus for press bending glass sheets, including male and female mold parts relatively movable toward and away from one another and having complemental shaping surfaces facing one another, the female mold part comprising tubular members having top, bottom and side walls defining passageways therethrough, with the shaping

surface formed on the top walls of said tubular members, and means for introducing a cooling fluid into said passageways to flow therethrough in contact with said top walls.



3,418,099
APPARATUS FOR SUPPORTING AND GLAZING GLASS ARTICLES
Jack Carter, Mario Cuniberti, and John E. Scott, Columbus, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Continuation of application Ser. No. 453,966, July 7, 1965. This application Jan. 2, 1968, Ser. No. 695,287
7 Claims. (Cl. 65—284)



This application discloses apparatus for flame-glazing the mold or seam line of a glass television faceplate. The glazing station is located proximate to the molding station so that the faceplate may be glazed while it still retains much of its latent heat. The faceplate is transferred to support means at the glazing station by means of a transfer device comprising a suction head attached to the vertically reciprocatable rod of a fluid cylinder, the cylinder being reciprocatable in a horizontal direction between the molding and glazing stations. At the glazing station the article is glazed by spaced, opposed reciprocatable line burners while the article is supported along each of an opposed pair of sides by at least a pair of arms attached to a common shaft. After the glazing cycle is completed, the support arms are rotated downwardly in unison out of their supporting position to drop the article upon the upper reach of a transfer conveyor for transfer to a subsequent processing station.

3,418,100
METHOD OF MANUFACTURING A PARTICULATE AMMONIUM HUMATE FERTILIZER
Albert M. Cooley, 405 Cambridge St., Grand Forks, N. Dak. 58201
No Drawing. Filed Jan. 5, 1965, Ser. No. 423,578
8 Claims. (Cl. 71—24)

The relatively dry method of forming the fertilizer utilizing leonardite as a source of humates by pulverizing metal humate-containing leonardite ore and preferably enriching the pulverized leonardite ore with predetermined amounts of fertilizer compositions such as ammonium nitrate, muriate of potash, urea and the like, and then admixing the pulverized enriched ore with a phosphoric acid and wherein an excess of the acid necessary to bring about the conversion of the metal humates to humic acid is utilized but wherein the amount of acid utilized does not sufficiently wet the enriched ore sufficiently to cause it to become a slurry, whereby the maintaining of the acidified enriched ore in such a relatively dry state greatly simplifies the process whereby significant economies are realized by avoiding the necessity of having to mechanically separate or remove moisture from a slurry. The maintenance of a relatively dry state permits the simultaneous pelletizing of the moist acidified enriched ore whereby the exothermic nature of the ammoniation reaction to form ammonium humates by reaction of the humic acid with the ammonia effects sufficient drying of the pellets so formed whereby relatively little additional heat is required to dry the fertilizer pellets formed to an equilibrium state which for the product produced is approximately 16% moisture.

3,418,101
PROCESS FOR PLANT DESICCATION
Bernard Buchholz, Blue Bell, and Ivan Christoff Popoff, Ambler, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 15, 1965, Ser. No. 514,124
6 Claims. (Cl. 71—72)

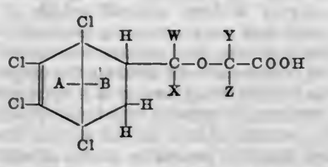
A process for desiccating plants by contacting said plants with an aryl vinyl sulfone or structure

$$(R_1)_n\text{—Ar—}SO_2\text{—}\underset{X}{\overset{|}{C}}\text{=}\underset{X}{\overset{|}{C}}\text{—}R_2$$

where Ar is aryl containing from 6 to 10 carbon atoms, where R_1 is hydrogen, halogen, nitro, amino, or lower alkyl, R_2 is hydrogen or —SO_2—Ar, X is hydrogen or halogen, and n is a small integer.

3,418,102
HERBICIDAL COMPOSITIONS
Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed July 17, 1964, Ser. No. 383,489
14 Claims. (Cl. 71—106)

1. A compound selected from the group consisting of a compound of the formula:



wherein A and B are independently selected from the group consisting of chlorine and hydrogen atoms, and W, X, Y, and Z are independently selected from the group cosisting of hydrogen, and methyl and ethyl radicals; its mono-, di- and trichlorinated derivatives wherein from one to three, respectively, of W, X, Y and Z are chlorine atoms; its esters, in which the esterifying group is an unsubstituted alkyl group which contains from 1 to 10 carbon atoms, its alkali metal salts; its ammonium salt; its unsubstituted alkylamine salt in which the amine group contains up to 10 carbon atoms; its unsubstituted alkanolamine salt in which the amine group contains up to 10 carbon atoms; and its amides in which the amine group is an alkylamine group containing up to 10 carbon atoms.

14. A method of destroying growing weeds which comprises contacting said weeds with a herbicidal composition comprising an inert carrier and as the essential active ingredient in a quantity which is herbicidally toxic to said weeds of a compound of claim 1.

3,418,103
PROCESS FOR MAKING TUNGSTEN AND MOLYBDENUM ALLOYS

Lloyd Ivan Lasdon, Scarsdale, N.Y., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 132,306, Aug. 8, 1961. This application Dec. 11, 1964, Ser. No. 417,800
3 Claims. (Cl. 75—.5)

1. A method of producing an alloy powder of 5% nickel, 5% copper and 90% refractory comprising the steps of: introducing an aqueous solution of nickel and copper to a dry salt of said refractory; coating refractory particles by continuous blending and evaporation of the solution, said refractory selected from the group consisting of tungsten and molybdenum; and the step of co-reduction to the alloy metal powder by use of hydrogen or carbon.

3,418,104
PRODUCING PULVERULENT IRON FOR POWDER METALLURGY BY COMPACTING FEED STOCKS

Harry R. Hatcher, Crown Point, Ind., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,557
14 Claims. (Cl. 75—.5)

1. In a process for producing pulverulent iron adapted for powder metallurgy by reducing a powder feed stock comprising a mixture of iron, iron carbide, and iron oxide in a reaction zone having a non-oxidizing atmosphere, the improvement which comprises: compacting said powder feed stock by a factor of at least about one-quarter of its original bulk density, and subjecting the resulting compacted feed stock to said reaction zone.

3,418,105
IRON POWDER FOR FORMING SINTERED ARTICLES OF IMPROVED STRENGTH

Harry R. Hatcher, Crown Point, Ind., and William Holtzman, Wilkes-Barre, Pa., assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

Filed Apr. 19, 1966, Ser. No. 543,570
10 Claims. (Cl. 75—.5)

1. A feed stock for producing compactible iron metal powder adapted to form sintered articles of improved strength, said feed stock consisting essentially of a powdered mixture of iron, iron carbide, iron oxide and minor amounts of components not affecting the properties thereof, the iron carbide being present in a hypereutectic composition consisting essentially of primary platelets of iron carbide in a matrix of iron carbide-gamma iron eutectic, and at least about 72 percent by weight of said powdered mixture having a particle size passing 250 mesh.

3,418,106
REFRACTORY METAL POWDER

James A. Pierret, Muskogee, Okla., assignor to Fansteel, Inc., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 639,039, May 17, 1967. This application Jan. 31, 1968, Ser. No. 701,870
13 Claims. (Cl. 75—0.5)

An agglomerated refractory metal powder comprised of polynodal granules of adhered particles with the nodes being of a size the same order of magnitude as the size of the individual particles. Such agglomerated powder is produced by the method including the steps of heating a powder under chemically non-reactive conditions to effect agglomeration between the powder particles, and subsequently crushing the resultant particulate porous agglomerated mess to form said agglomerated polynodal granules.

3,418,107
PRODUCTION OF IRON FROM ORES OF LOW PARTICLE RELEASE SIZE

James W. Carr, Jr., Francis X. Mayer, and John F. Moser, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

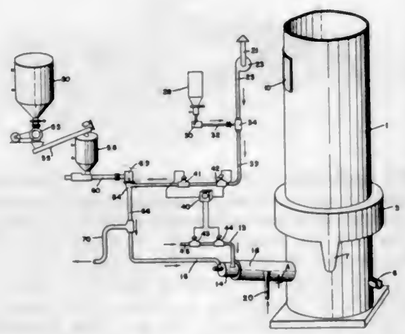
No Drawing. Filed Dec. 10, 1965, Ser. No. 513,101
8 Claims. (Cl. 75—26)

This invention relates to a process, the major advantage of which is that very finely divided ores of low release particle size, which are normally unsuitable for use in a fluidized iron ore reduction process, can be utilized if first reduced and then beneficiated. In the process, a low release size oxidic iron ore is progressively reduced in a series of staged fluidized beds to substantially metallic iron and then crushed or ground at elevated temperatures ranging above about 300° F. The reduced iron product is crushed to form mixtures wherein the largest particle sizes range from about 65 mesh, and finer, and often from about 150 mesh, and finer, preferably by jet attrition. By use of magnets, the metallic iron particles can be readily concentrated and recovered.

3,418,108
EXTERNALLY FIRED CUPOLA FURNACE AND METHOD OF OPERATION THEREOF

Gerald F. H. Von Stroh, Huntington, W. Va., assignor to Industrial Science Corporation, Cleveland, Ohio, a corporation of West Virginia

Filed Dec. 17, 1965, Ser. No. 514,625
10 Claims. (Cl. 75—43)



An apparatus and method for reforming metal in a cupola-type furnace wherein the burner thereof is located exteriorly of the furnace column, the charge is supported upon a fixed, perforate bed above the combustion zone, and particulated reforming metal oxides, such as lime, along with particulated combustible substances, such as coal, are fed in a combustion supporting medium, such as oxygen enriched air, to the burner where the mixture is combusted and then fed to the cupola below the top of the perforate bed.

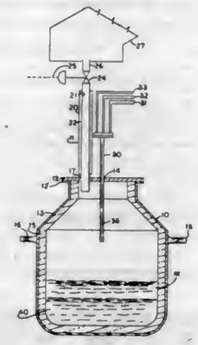
3,418,109
METHOD FOR PRODUCING STEEL BY AN OXYGEN LANCE

Joseph K. Stone, Berkeley, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Continuation-in-part of application Ser. No. 341,376, Jan. 30, 1964. This application Mar. 13, 1967, Ser. No. 622,726
2 Claims. (Cl. 75—60)

Refining iron to produce steel by the oxygen steel process wherein oxygen is blown downwardly onto the surface

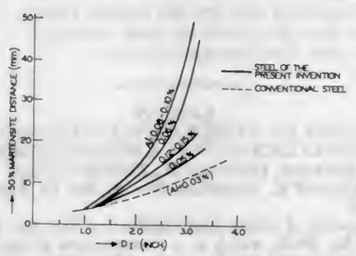
of a mixed solid and molten ferrous charge contained in a converter by a process where a superatmospheric pressure is maintained in the converter by regulating the discharge of converter gas from the system that includes at least the converter and preferably part of the gas collecting assembly. Superatmospheric pressure favors desirable exothermic reactions, it reduces the volume and velocity of gas for the same mass flow thereby causing less dust entrainment, and it provides a low volume gas stream from which particles can be more readily removed.



3,418,110
HARDENABLE STEEL MATERIAL CONTAINING ALUMINUM

Susumu Goda, 500–15, Ohaza Ohkura, Yawata-ku, Isao Kimura, 3–1, Tenjin-cho, Yawata-ku, and Hiroki Masumoto, 200–1 Aza Hagiwara, Ohaza Ano, Yawata-ku, all of Kitakyushu, Fukoaka Prefecture, Japan

Continuation-in-part of application Ser. No. 426,231, Jan. 18, 1965. This application Oct. 31, 1967, Ser. No. 679,355
Claims priority, application Japan, Jan. 22, 1964, 39/2,651
1 Claim. (Cl. 75—124)



The present invention is to provide an alloyed steel having excellent mechanical properties and high hardenability obtained by adding Al in an amount of 0.06 to 0.15 wt. percent to a steel consisting of 0.25 to 0.65 wt. percent C, 0.005 to 0.30 wt. percent Si, 0.20 to 2.0 wt. percent Mn, 0.03 to 1.50 wt. percent Cr, 0.03 to 0.50 wt. percent Mo, 0.005 to 0.30 wt. percent V, 0.0005 to 0.003 wt. percent B and balance being Fe and unavoidable impurities.

3,418,111
COBALT BASE ALLOY

Robert B. Herchenroeder, Kokomo, Ind., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,822
3 Claims. (Cl. 75—171)

1. An alloy characterized by improved resistance to oxidation at elevated temperatures consisting essentially in weight per cent of about:

	Percent
Chrominum	18–30
Tungsten	8–18
Iron	Up to 10
Carbon	0.01–0.35
Nickel	8–30
Silicon	Up to 1
Lanthanum	0.02–0.2

Cobalt, balance to 61% maximum.

wherein the

$$\frac{\text{percent Cr} + \text{percent W}}{\text{percent C}}$$

ratio in the alloy is at least about 110, with an alloy having a ratio of less than about 200 containing at least about 0.2% silicon.

3,418,112
METHOD FOR FORMING SEAMLESS PRESSURE VESSELS

William A. Zoran, Windsor Locks, Conn., assignor to United Aircraft Corporation, Hartford, Conn., a corporation of Delaware

No Drawing. Filed Oct. 7, 1966, Ser. No. 584,981
3 Claims. (Cl. 75—208)

Powders of metals such as beryllium, titanium, aluminum, molybdenum and tungsten are pressed and sintered to form a fully dense, powder metallurgy article which is subsequently deformed against a jacket in a hot working operation utilizing a fluid pressure applied to the unclad surface of the articles.

3,418,113
ADDITION AGENTS FOR SINTERING PROCESSES

Mlarur L. B. Rao, Burlington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Original application June 1, 1965, Ser. No. 460,044, now Patent No. 3,322,535, dated May 30, 1967. Divided and this application Mar. 20, 1967, Ser. No. 655,250
10 Claims. (Cl. 75—214)

A method for fabricating a porous metallic structure from metallic powder or fibers having an impurity oxide film on the surface thereof selected from the group consisting of aluminum, zinc, zirconium, magnesium and titanium. The method includes forming the metallic powder or fibers into a mass and sintering the mass to convert the mass to a porous metallic structure. The method further includes, prior to sintering, reacting a molten halide salt selected from the group consisting of the halides of zinc, silver and mercury to remove, in situ, the impurity oxide carried by the surface of the metallic powder or fibers by an electrochemical displacement reaction and form a porous metallic mass.

3,418,114
METHOD OF PRODUCING A METAL SHEET BY SLIP CASTING

Frances H. Clark, Summit, N.J., assignor to The Comstock Company, Higganum, Conn., a corporation of Connecticut

Filed Nov. 28, 1967, Ser. No. 686,059
7 Claims. (Cl. 75—214)

This invention provides a mechanism and method for rapidly forming metallic sheets from metal powder by the procedure known as slip casting in the art of powder metallurgy.

3,418,115

BLEACHING OUT ELECTROPHOTOGRAPHIC SENSITIZERS BY SIMULTANEOUS EXPOSURE TO LIGHT AND CORONA DISCHARGE

Richard Menold, Leverkusen, Gerhard Heyl, Cologne-Stammheim, and Walter Simm, Opladen, Germany, assignors to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,088
Claims priority, application Germany, Sept. 30, 1964, F 44,094
2 Claims. (Cl. 96—1)

Dye-sensitized electrophotographic layer has the dye bleached out after image is developed by exposing the layer to dye-absorbing light in presence of corona discharge.

3,418,116

ELECTROPHOTOGRAPHIC MATERIALS COMPRISING POLYMERIC INTRAMOLECULAR CHARGE TRANSFER COMPLEXES

Akira Inami, Hirakata-shi, Japan, and Kazuhisa Morimoto, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,129
Claims priority, application Japan, Feb. 21, 1963, 38/9,063
9 Claims. (Cl. 96—1.5)

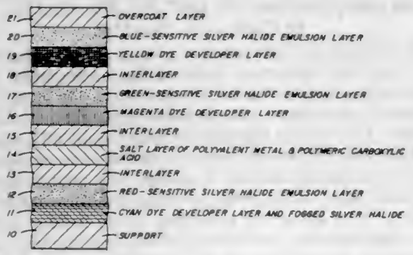
An electrophotographic material comprising an organic photoconductive compound consisting of a vinyl monomer unit carrying an aromatic and/or heterocyclic substituent capable of being of being an electron donor and a vinyl monomer unit carrying an aromatic and/or heterocyclic substituent capable of being an electron acceptor.

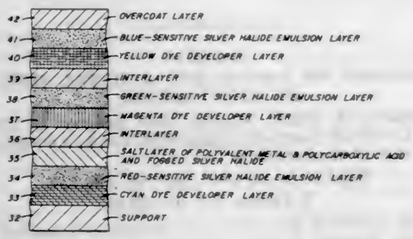
3,418,117

MULTICOLOR DYE DEVELOPER IMAGE TRANSFER SYSTEMS

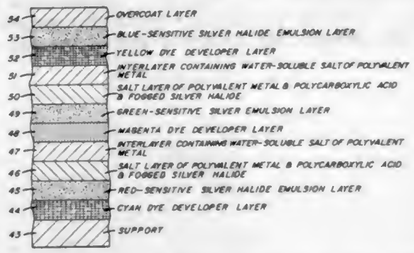
Richard W. Becker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 24, 1966, Ser. No. 574,698
17 Claims. (Cl. 96—3)





Fog reduction and increase of maximum density are obtained by the use of fogged silver iodide incorporated in



any of the non-light sensitive layers of a color diffusion transfer element.

3,418,118

PHOTOGRAPHIC PROCESSES AND PRODUCTS

Glen Anthony Thommes and Peter Walker, Red Bank, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 461,199, June 3, 1965. This application Oct. 22, 1965, Ser. No. 502,462
8 Claims. (Cl. 96—11)

1. A photopolymerizable dispersion comprising an organic polymeric dispersion medium containing a dispersed phase having a nongaseous ethylenically unsaturated compound with a boiling point above 100° C. at normal pressure, being capable of forming a high polymer by free-radical initiated, chain-propagating addition polymerization and in reactive association with said ethylenically unsaturated compound, a free-radical generating photoinitiator system said dispersed phase containing part of a standard color system said part being incapable of singularly forming a color image, said color system being nonreactive with said unsaturated compound, and

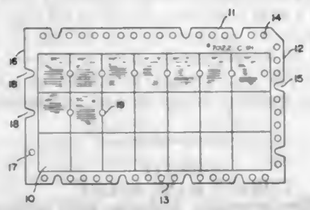
(1) a color coupler, color developer, oxidizing-agent system,
(2) diazonium salt, azo dye coupler system,
(3) a leuco dye, oxidizing-agent system, or
(4) a dye, bleaching-agent system.

3,418,119

METHOD OF CUMULATIVELY RECORDING INTELLIGENCE ON A RECORD CARD

Morris Schwartz, Hultenius St., Plainville, Conn. 06062, and Edward K. Kaprelian, Rte. 3, Box 14, Joppa, Md. 21085

Continuation of abandoned application Ser. No. 283,670, May 24, 1963, which is a continuation of application Ser. No. 437,540, June 17, 1954. This application July 12, 1965, Ser. No. 471,172
9 Claims. (Cl. 96—27)



There is disclosed a method of cumulatively recording independent intelligence entries spaced in time in the form of photographic images by producing on a carrier such as a card providing space for a plurality of photographic images each representing one entry, a photographic image occupying a selected one of several predetermined fractional areas on the card while shielding the remaining fractional areas, and producing after an arbitrary period of time a second photographic image representing a second entry on another selected fractional area of the card and so forth, thereby accumulating on the same card a sequence of entires representing a continuing transaction in numerical and chronological order.

3,418,120

METHOD FOR DEVELOPING ONE-COMPONENT DIAZOTYPE MATERIALS

Bernard I. Halperin, Glen Aubrey, N.Y., and James O. Thompson, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,082
9 Claims. (Cl. 96—49)

1. A method for developing a one-component diazotype element comprising,

vaporizing a diazo coupler, and

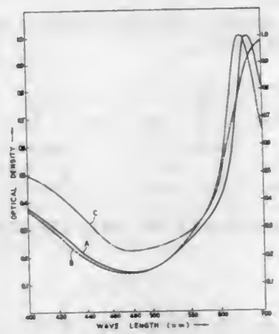
contacting said element with said coupler at a pressure of at least about 2 atmospheres.

3,418,121

PHOTOGRAPHIC DEVELOPER COMPOSITION CONTAINING 2-(o-PROPIONAMIDO-β-PHENYLETHYL) - 1 - HYDROXYNAPHTHAMIDE AS A COLOR FORMER

Makoto Yoshida and Akio Okumura, Minamiashigara-machi, Ashigarakami-gun, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan

Filed Nov. 3, 1965, Ser. No. 506,232
Claims priority, application Japan, Nov. 11, 1964, 39/63,523
1 Claim. (Cl. 96—55)



The novel color former 2-(o-propionamido-β-phenylethyl)-1-hydroxynaphthamide incorporated in a photographic developer composition containing 2-methyl-4-(N-ethyl-N-2-hydroxyethyl) aminoaniline sulfate reduces undesirable magenta dye formation in the cyan layer and of undesirable cyan dye in the other layers.

3,418,122

PHOTODEVELOPMENT OF SILVER HALIDE PRINT-OUT MATERIAL

Ralph S. Colt, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,918
17 Claims. (Cl. 96—63)

Process for providing a direct-print material which is chemically developable to a visible image comprising imagewise exposing a fine-grain silver halide photographic print-out material comprising silver halide grains which have trivalent metal ions occluded therein, repressing the print-out ability of the silver halide by heating to at least 300° F. and exposing said silver halide to light to produce a visible image.

3,418,123

INTENSIFICATION PROCESS UTILIZING SUPERPOSED SILVER HALIDE LAYERED STRUCTURE

Eugene Frederick Haugh, Old Bridge, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,419
7 Claims. (Cl. 96—63)

Process for forming images comprising (1) imagewise exposing an outer silver iodobromide stratum of an element, (2) developing said stratum in contact with an inner silver chloride or silver chlorobromide layer to form a precursory image in said inner layer, (3) developing said precursory image in the presence of an antifogging agent and (4) fogging the silver chloride or silver chlorobromide layer prior to completion of the second developing step wherein a secondary image in the inner layer is formed in registration with the primary silver image in the outer stratum.

3,418,124

HIGH CONTRAST DIRECT POSITIVE BY USING ACTIVE CATIONS IN SILVER HALIDE SOLVENT

Heman Dowd Hunt, Eatontown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,919
6 Claims. (Cl. 96—64)

Process for forming positive images comprising the steps of (a) exposing, imagewise, a photosolubilizable layer containing light-sensitive silver halide crystals having associated therewith a silver salt of an organic mercaptan compound and (b) prior to any reducing step treating the layer with an aqueous solution of sodium thiosulfate and an inorganic cation, e.g., potassium, cesium or rubidium.

3,418,125

PROCESS FOR PREPARING DIRECT-POSITIVE IMAGES WITH PHOTODEVELOPABLE DIRECT-PRINT SILVER HALIDE COMPOSITIONS

Edward A. Sutherns, Harrow, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,002
7 Claims. (Cl. 96—64)

A photographic process for preparing direct-positive images with a photographic element containing a layer of a photodevelopable, direct-print silver halide composition. The process comprises (1) imagewise exposing said composition to a low intensity light, (2) uniformly exposing the resulting imagewise exposed composition to short duration high intensity light, and (3) thereafter uniformly exposing the resulting exposed silver halide composition to light of lower intensity than the second said exposure to effect photodevelopment of a positive image.

3,418,126

PHOTOGRAPHIC FILM WITH MAGNETIC RECORDING STRIPES

Ken-ichi Ariga, Syōtarō Watanabe, and Rikiji Godai, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,547
3 Claims. (Cl. 96—79)

Photographic film with magnetic recording stripes comprising a light sensitive photographic emulsion layer

and magnetic recording stripe, between which a subbing layer may be interposed, at least one of the recording stripes and subbing layer contains a carboxamide having the general formula

$$R_n(CONH_2)_m$$

wherein R is a member selected from the group consisting of hydrogen atom and an aliphatic lower hydrocarbon radical which may have an oxygen-containing substituent, said hydrocarbon radical having the total carbon number of up to 10, *n* is a whole number of 0 to 1 and *m* is a whole number of 1 to 5.

3,418,127
METHOD OF MAKING FLUORESCENT COATING FOR PHOTOGRAPHIC ELEMENTS
Allan G. Millikan, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 389,457, Aug. 13, 1964. This application May 3, 1965, Ser. No. 452,854
11 Claims. (Cl. 96—82)

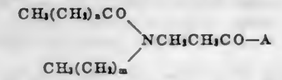
Method of making fluorescent coatings for photographic elements comprising organic fluorescent compound in emulsion polymerized organic resin latex comprising dispersing fluor in aqueous dispersion of the monomer then polymerizing by emulsion polymerization technique. Product has extremely fine dispersion of fluor in the latex. The fluorescent latex is especially suitable for coating a fluorescent layer over a photographic silver halide emulsion, for example, in making a direct-electron recording film, and provides improved fluorescent efficiency over previously described fluorescent layers for such films.

3,418,128
PHOTOSENSITIVE COMPOSITIONS COMPRISING ACID ADDITION SALTS OF SUBSTITUTED LEUCOCYANIDE TRIPHENYLMETHANE DYES AND METAL PERCHLORATES
Georg C. Huett, Philadelphia, Pa., assignor, by mesne assignments, to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,290
4 Claims. (Cl. 96—90)

This invention relates to light sensitive dyes for use in direct print-out photosensitive copy systems and particularly, with preparation of new photosensitive derivatives of triarylmethane dyes, comprising acid addition salts of substituted leucocyanide triphenylmethanes and metal perchlorates, for use in such systems.

3,418,129
COLOR PHOTOGRAPHIC SILVER HALIDE EMULSION
Shiro Kimura and Makoto Yoshida, Odawara-shi, Japan, and Kazuya Sano, University Park, Pa., assignors to Fuji Shoshin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan
No Drawing. Filed Dec. 9, 1964, Ser. No. 417,243
Claims priority, application Japan, Dec. 27, 1963, 38/70,436
The portion of the term of the patent subsequent to Aug. 22, 1984, has been disclaimed
6 Claims. (Cl. 96—100)

A color photographic silver halide emulsion containing as a coupler a compound of the formula:



wherein A is a coupling component having at least a member selected from the group consisting of ketomethylene group, pyrazolone nucleus, phenol nucleus, and napthol nucleus, *m* is an integer from 2 to 7 and *n* is an integer from 6 to 14 when *m* is 2, 4, 5, 6 or 7 and *n* is 14 when *m* is 3.

3,418,130
NONSENSITIZING TRIAZOLOPYRIMIDINE ANTIFOGGANTS FOR SILVER HALIDE EMULSIONS
John Stevens, Harlow, and George Frank Duffin, Romford, England, assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Jan. 6, 1965, Ser. No. 423,841
Claims priority, application Great Britain, Jan. 28, 1964 3,654/64
4 Claims. (Cl. 96—109)

Certain novel tetrazaindene compounds contained within silver halide photographic emulsions are shown, which compounds reduce fog formation in the emulsions but do not cause desensitization thereof.

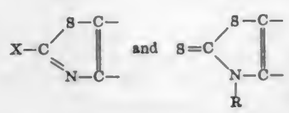
3,418,131
METHOD OF STABILIZING THE BACKGROUND IN LIGHT DEVELOPABLE SILVER HALIDE EMULSIONS USING THIAZOLE CONTAINING COMPOUNDS
John Howard Bigelow, Rochester, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,961
8 Claims. (Cl. 96—109)

1. A process for making a light-developable, direct-writing silver halide emulsion which comprises

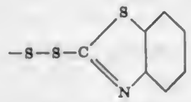
(1) admixing a water-soluble silver salt with an acidified aqueous solution of a water-soluble chloride containing a water-permeable organic colloid binding agent,

(2) adding thereto, an organic sovent solution containing from 0.001 to about 0.8 mole percent based on the silver of

(a) a thiazole compound containing at least one of the nuclei:



wherein X is Cl, SH, NH_2, CH_3, C_2H_5, phenyl or



R is alkyl of 1-4 carbons, e.g., methyl, ethyl, isopropyl and n-butyl or substituted alkyl, e.g., 3(N-piperidinomethyl)- and 3-(beta-naphthyl-N-phenylaminomethyl)-, or

(b) an organic amine salt of said thiazole compound;

(3) ripening the precipitated silver chloride emulsion and adding thereto at ripening temperature from 50 to 200 mole percent based on the silver of a water-soluble bromide, and

(4) digesting the resulting emulsion and prior to completion of the digestion or coating, incorporating with the emulsion based on the silver,

(i) a water-soluble salt of copper or lead in an amount of about 0.1 to 25 mole percent, and

(ii) a halogen acceptor.

3,418,132
ALDEHYDE GELATIN HARDENING COMPOSITION WITH CARBOCYCLIC DIONES
Theodore J. Kitze, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 1, 1965, Ser. No. 460,583
24 Claims. (Cl. 96—111)

Photographic elements comprising a gelatin hardening aldehyde precursor, with carbocyclic 1,3-diones in an unhardened layer are disclosed. Such elements are particularly useful in rapid access photographic recording. Photographic emulsions comprising unhardened gelatin, silver halide and the aforesaid combination of precursor and diones are also disclosed.

3,418,133
EDIBLE SPREADS OF UNCTUOUS CONSISTENCY AND LOW CALORIE VALUE
Gerard J. J. Nijhoff, Nijmegen, Netherlands, assignor to Kunstzijdespinnerij Nyma N.V., Nijmegen, Netherlands
No Drawing. Continuation-in-part of application Ser. No. 297,986, July 26, 1963. This application Aug. 10, 1966, Ser. No. 571,380
Claims priority, application Netherlands, July 30, 1962, 281,523
2 Claims. (Cl. 99—1)

Edible spreads of low caloric value are prepared mainly from water, sodium carboxymethylcellulose (CMC), and relatively small amounts of taste and odor imparting ingredients. The spreads have the consistency of butter or mayonnaise when the degree of substitution of the CMC is between 0.1 and 0.6. The range of effective degree of substitution varies with the viscosity of the CMC.

3,418,134
AROMATIZING FOOD CONCENTRATES
William A. Rooker, 112 E. Piccadilly, Winchester, Va. 22601
No Drawing. Continuation-in-part of application Ser. No. 301,639, Aug. 12, 1963. This application Dec. 17, 1964, Ser. No. 419,232
13 Claims. (Cl. 99—23)

Adsorb released volatile aromatics on porous activated charcoal prior to their deterioration in the preparation of concentrates from coffee, tea, or cocoa. The released volatiles are recovered from at least one conventional processing step where volatiles are released. The adsorbed aromatics are extracted from the charcoal by a solvent having a boiling point between 32° F. and 10° F. and returned to the concentrate.

3,418,135
LIGHT-INSENSITIVE MALT BEVERAGE AND PROCESS OF PRODUCING THE SAME
Peter D. Bayne, Milwaukee, Wis., assignor to Jos. Schlitz Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed Sept. 30, 1964, Ser. No. 400,580
6 Claims. (Cl. 99—31)

The invention relates to a process for producing a light insensitive malt beverage by reducing the isohumulones of the hop constituents by use of an alkali metal dithionite.

3,418,136
METHOD OF STERILIZING A MALT BEVERAGE
Peter D. Bayne, Milwaukee, and Joseph A. Kozulis, Fox Point, Wis., assignors to Jos. Schlitz Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed July 16, 1965, Ser. No. 472,676
5 Claims. (Cl. 99—48)

A method of sterilizing a malt beverage containing less than 1% by weight of protein by adding to the beverage from 0.0005% to 0.05% by weight of 2,3-epoxypropanol.

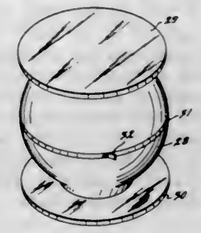
3,418,137
SHELF-STABLE DUMPLING MIX
Ransom N. Getchell, Santa Monica, and Ralph J. Trickel, Torrance, Calif., assignors to Milani Foods, Inc., Los Angeles, Calif., a corporation of Illinois
No Drawing. Filed June 1, 1965, Ser. No. 460,568
9 Claims. (Cl. 99—94)

A dry dumpling and matzo ball mix and batters characterized in that they include, in addition to farinaceous material and shortening, egg solids which are substantially free of egg yolk, and an improved leavening system including a leavening agent which is stable and inactive below a temperature of about 120° F.

3,418,138
APPARATUS FOR AND METHODS OF TREATING BIVALVES
John M. Dennis, Essex Farms, Royal Oak, Md. 21662, and Michael Rossnan, 11724 Lovejoy St., Silver Spring, Md. 20902
Filed Jan. 7, 1965, Ser. No. 424,093
6 Claims. (Cl. 99—158)

1. The method of treating tainted bivalves comprising submerging the tainted bivalves in a tank containing continuously moving ultra-violet ray treated salt water, the depth of which varies from 1/16 of an inch to 12 inches in the sluiceway, for from 1 hour to 336 hours at water temperatures of 34° to 90° F., and causing the water to circulate during this period while subjecting said treated salt water to artificial ultra-violet light.

3,418,139
FRUIT PACKAGE WITH INTEGRAL STAND SUPPORT
Douglas R. Craig, 3018 S. Vermont Ave., Los Angeles, Calif. 90007
Filed Oct. 9, 1964, Ser. No. 402,723
3 Claims. (Cl. 99—171)



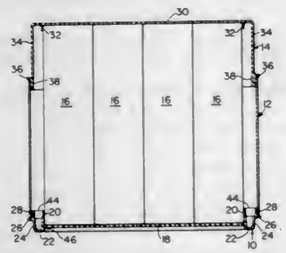
A processed fruit package wherein a prepared segmented fruit is enclosed in a divided mold and held together by a tear tape with said mold having stand supports on each end thereof for supporting the segmented fruit upon removal of said tear tapes.

3,418,140
METHOD OF MANUFACTURING CUPS
Harland S. Fisher, Longmeadow, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine
Filed Dec. 17, 1964, Ser. No. 419,169
6 Claims. (Cl. 99—171)

Forming drinking cups containing a portion of soluble, edible material, by first depositing individual portions of such material at spaced points along a web of liquid-proof material, entrapping said edible material by securing a self-sustaining film of soluble, edible material thereto, severing the resultant composite web into blanks, each containing

one portion of the soluble, edible material, with each blank being further shaped and joined with a sidewall forming blank to form a complete cup, the blank containing the soluble material forming the bottom of the cup.

3,418,141
PACKAGE INCLUDING DISH AND COVER
Thomas William Orlando, Colerain Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 15, 1965, Ser. No. 507,804
6 Claims. (Cl. 99—179)



1. A package for stick-type products such as butter, margarine and the like comprising a base member having a bottom wall and upwardly projecting retaining means, said upwardly projecting retaining means surrounding and receiving the ends of a plurality of product sticks in side-by-side snug relationship, a sleeve member, means for joining the opening at one end of said sleeve member to said base member, a cover member, said cover member having a top wall and downwardly extending retaining means, said downwardly extending retaining means surrounding and receiving the other ends of said plurality of product sticks in side-by-side snug relationship, means for joining the opening at the other end of said sleeve member to said cover member to fully enclose and support said plurality of product sticks, said base member having a depression for receiving and supporting one of said product sticks after the package components are disassembled to remove the contents thereof, said cover member fitting on said base member to cover said product stick whereby said base member and said cover member combine to form a serving dish.

3,418,142
DEHYDRATION OF MASHED POTATOES WITH A COOLED SPREADER ROLL AND APPARATUS THEREFOR
Miles J. Willard, 3067 Gustafson Circle, Idaho Falls, Idaho 83401
Filed Oct. 12, 1964, Ser. No. 403,050
15 Claims. (Cl. 99—207)

A mashed potato dehydration method which includes the steps of spreading a thin layer of the mashed potatoes on a moving drying surface with the help of at least one spreader roll, heating the layer on the drying surface and cooling the spreader roll to lower the temperature of the mashed potatoes disposed thereon. The apparatus includes a movable drying surface adjacent to and spaced apart from the spreader roll which is rotatable about an axis transverse to the direction of movement of the drying surface. A surface of the spreader roll is cooled to maintain the potatoes disposed on it at the temperature which is less than the temperature of the potatoes disposed on the drying surface.

3,418,143
BATH FOR THE ELECTROLESS DEPOSITION OF PALLADIUM
Alexander Sergienko, La Puente, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
No Drawing. Continuation of application Ser. No. 391,727, Aug. 24, 1964. This application Aug. 15, 1967, Ser. No. 660,588
22 Claims. (Cl. 106—1)

A bath for the electroless deposition of palladium comprising an aqueous solution of divalent palladium, ethylenediaminetetraacetic acid, or a salt of that acid, ethylenediamine, and hypophosphite ion. The ethylenediamine and ethylenediaminetetraacetic acid, or a salt of that acid, form chelates with the divalent palladium in the plating solution to thereby provide an exceptionally stable plating bath.

3,418,144
REFRACTORY METAL COATING
John D. Culp, Ferguson, and Thaddeus C. Grimm, Kirkwood, Mo., and Thomas H. Fitzpatrick, College Park, Ga., and Ralph D. Patterson, St. Louis, Mo., assignors to McDonnell-Douglas Corporation, St. Louis, Mo., a corporation of Maryland
No Drawing. Filed Nov. 12, 1964, Ser. No. 410,725
5 Claims. (Cl. 106—14)

A coating process and composition for diffusion reaction with a refractory metal structure which can be painted onto the surface. The composition comprises silicon metal, sodium fluoride activator in the ratio of one part activator to 6.3 to 19 parts silicon, and aqueous carrier containing 0.3–1% methyl cellulose binder.

3,418,145
COATING COMPOSITION COMPRISING ALUMINUM AND METAL FLUORIDES
David L. Yenawine, El Campo, Tex., and Emanuel C. Hirakis, Mansfield Center, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a Delaware corporation
No Drawing. Original application Dec. 2, 1963, Ser. No. 327,554. Divided and this application Apr. 12, 1965, Ser. No. 448,577
6 Claims. (Cl. 106—286)

1. A coating composition for application to columbium and its alloys to impart oxidation resistance thereto which consists essentially of a slurry of aluminum, water and glass powders, the glass consisting essentially of a mixture of metal fluorides selected from the group consisting of the fluorides of the alkali metals, the alkaline earth metals and aluminum having a fusion point of 800°–1400° F. and sufficient viscosity at 18° F. to remain adherent to the surface to which it is applied, the aluminum comprising the predominant element in the slurry by weight.

3,418,146
PROCESS FOR PRODUCING STABILIZED TITANIUM DIOXIDE PIGMENTS
Carl J. Rieger, Ossining, and Charles A. Quinn, Yorktown Heights, N.Y., assignors to The Mearl Corporation, Ossining, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 5, 1965, Ser. No. 493,224
5 Claims. (Cl. 106—300)

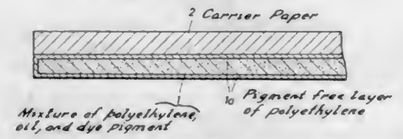
Process for producing titanium dixoide pigment of improved light stability and weathering characteristics, involving treatment of uncalcined hydrous titanium dioxide with a cadminum salt solution containing from 0.1 to 10% by weight cadmium, drying and calcining the thus

treated material to produce a pigment product containing from 0.1 to 10% by weight cadmium.

3,418,147
SURFACE TREATING PIGMENTS WITH HYDROUS METAL OXIDES
David Palmer Fields, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 27, 1966, Ser. No. 560,839
8 Claims. (Cl. 106—308)

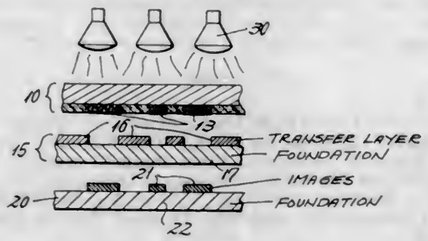
Coating a TiO_2 pigment in aqueous slurry with the white oxide of a metal by introducing into the slurry a salt of a metal, which salt has a volatile anion, and thereafter heating to volatilize both water and anion.

3,418,148
DYE LAYER FOR CARBON PAPER, COPYING PAPER, HECTOGRAPHIC PAPER, AND THE LIKE, AND METHOD OF MAKING SAME
Günter Barz, Dusseldorf, Germany, assignor, by mesne assignments, to Ancar A.G., Zug, Switzerland
Filed Jan. 6, 1965, Ser. No. 423,780
Claims priority, application Germany, Jan. 9, 1964, B 74,924
2 Claims. (Cl. 117—36.1)



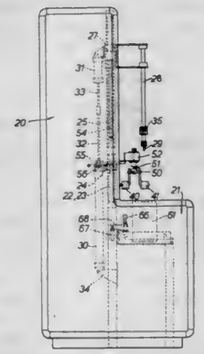
A dye transfer medium, as for instance copying paper, and method of making same, said transfer medium comprising a carrier paper and a polyethylene film having two spaced dye pigment-free outer layers of polyethylene with one of said outer layers bonded to said carrier paper, and an intermediate layer interposed between said outer layers and representing a mixture of polyethylene, oil, and a dye pigment. The said method comprises the steps of applying the above mixture to one side of said carrier paper, and passing the thus coated carrier paper on the non-coated side over a heated roller having a temperature of about 185° F.

3,418,149
THERMOGRAPHIC COPY PROCESS
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed May 18, 1965, Ser. No. 456,754
6 Claims. (Cl. 117—37)



Reflex thermographic method of producing single copies of original images through the use of infrared radiation. The copy sheet has a semi-opaque coating which reflects infrared radiation to some substantial degree except in the areas to which imaging composition is transferred. This permits selective heating in the image areas and prevents heat build-up in the non-image areas.

3,418,150
METHOD AND APPARATUS FOR PREHEATING, MASKING AND COATING AN ARTICLE
Samuel H. Jones, Kempston, Ronald Alfred Allwood, Newport Pagnell, and Gunas Bundza, Bromham, England, assignors to Ashdown Brothers & Company (Engineers) Limited
Filed Feb. 17, 1965, Ser. No. 433,336
Claims priority, application Great Britain, Feb. 18, 1964, 6,671/64
9 Claims. (Cl. 117—38)



A method and apparatus for coating portions of an article with a fluent coating is disclosed. The article is attached to a movable support member throughout the operation. The movable support member and article are conveyed to respective positions at which the article is preheated, masked by an inflatable masking member, and coated by immersion, while masked, in a fluent material.

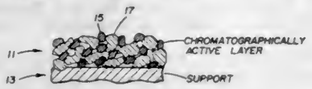
3,418,151
TREATED SOIL ADJUVANT PLANT-GROWING PRODUCT
Joseph V. Otrhalek, Dearborn, and Robert E. Gansser, Wyandotte, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,084
3 Claims. (Cl. 117—62.1)

A solid product suitable for use in growing plants consisting essentially of about 60 to 99.5 weight percent of (A) porous angular particles of a solid mineral product having a pore size ranging from about 4 to 35 angstroms, a particle size ranging from about 5 to 80 mesh, and which weighs about 20 to 60 pounds per cubic foot, consisting essentially of about 40 to 80 weight percent silica as SiO_2, about 2 to 30 weight percent alumina as Al_2O_3, about 0.5 to 15 weight percent of iron as Fe_2O_3, about 0.5 to 10 weight percent of lime as CaO, and about 0.5 to 10 weight percent magnesium as MgO, impregnated with about 0.5 to 40 weight percent of (B) material selected from the group consisting of alkyl polysiloxanes, aryl polysiloxanes and metal salts of organic acids having about 8 to 24 carbon atoms in the molecule.

3,418,152
METHOD OF MAKING A CHROMATOGRAPHIC ELEMENT CONTAINING A RESINOUS BINDER AND PRODUCT PRODUCED THEREBY
William Joseph Staudenmayer and Edmond S. Perry, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 450,362, Apr. 23, 1965. This application Aug. 1, 1966, Ser. No. 569,441
20 Claims. (Cl. 117—63)

A thin-layer chromatographic element made by coating on an inert support a dispersion of particulate finely-di-

vided chromatographically-active adsorbent and particulate resinous binder in a liquid dispersing medium, removing the dispersing medium, and softening the particles of resinous binder to render them adherent and thereby



form a continuous, coherent, porous layer. The support can be utilized as a permanent part of the chromatographic element or the coated layer can be stripped from the support and used as a self-supporting layer.

3,418,153
METHOD OF IMPARTING ABRASION AND SCRATCH RESISTANCE TO GLASS SURFACES AND GLASS ARTICLES PRODUCED THEREBY

Leon Levene, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,067
17 Claims. (Cl. 117—72)

1. A method for imparting abrasion and scratch resistance to a glass surface comprising treating said surface with a metal-containing compound to form the corresponding metal oxide on said glass surface while the surface is at a temperature sufficient to form said metal oxide coating and thereafter applying to the glass surface a fluorocarbon compound represented by the structural formula:

$$CF_3-(CF_2)_n-(CH_2)_m-\left[\begin{array}{c}R_1\\|\\Si\\|\\R_2\end{array}\right]_x-R_3$$

wherein n is an integer with a value of 4 to 18, m is an integer with a value of 1 to 10, x is an integer with a value of 1 to 3, and R_1, R_2 and R_3 are alkyl or alkoxy, at least one of which is alkoxy, to form a continuous uniform and transparent coating on the glass surface.

3,418,154
METHOD OF RENDERING GLASS SURFACES ABRASION-RESISTANT AND GLASS ARTICLES PRODUCED THEREBY

David P. Rawski, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

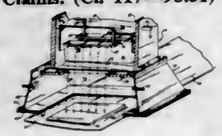
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,541
15 Claims. (Cl. 117—88)

Method of forming a thin, substantially colorless, transparent coating on glass surfaces, particularly glass containers, by applying a pyrolyzable titanium-containing compound to the glass surface and form a titanium oxide coating, cooling the glass surface and applying an emulsion of a fatty amide of the formula $RCONH_2$, wherein R is alkyl.

3,418,155
ELECTRON DISCHARGE CONTROL

Alex D. Colvin, Livonia, and Allen H. Turner, Ann Arbor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 30, 1965, Ser. No. 491,603
9 Claims. (Cl. 117—93.31)



Method for irradiating a substance comprising transmitting an electron beam from a zone of lesser pressure through a first electron window, through an expanding zone to a second electron window and through the latter to the surface to be irradiated. The zone between the first and second electron windows contains a gaseous medium which is maintained at an average density that is substantially below that of air at 1 atmosphere pressure.

3,418,156
ART OF DECORATING GLASS-CERAMIC SUBSTRATES

Warren C. Medert, Toledo, and Richard W. Petticrew, Perrysburg, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed May 12, 1965, Ser. No. 455,305
18 Claims. (Cl. 117—124)

A high-expansion glaze is applied to a low-expansion glass-ceramic substrate and preferably fired thereon while nucleating and crystallizing the crystallizable glass to form a decorated glass-ceramic body. The glass-ceramic substrate has an average linear coefficient of thermal expansion at 0° to 300° C. of less than about 25×10^{-7}/° C. while the coefficient of expansion of the fired glass is about 3 to 4 times that of the glass-ceramic substrate. The glaze does not craze or peel from the substrate and the resultant article is used as decorated cookware.

3,418,157
LUBRICATING SURFACES

Melvin F. Katzer, Danville, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

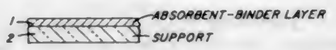
No Drawing. Filed Feb. 15, 1965, Ser. No. 432,861
4 Claims. (Cl. 117—132)

Friction between a surface and clayey earth or materials of construction is reduced by the application to the surface of an aqueous solution of a high molecular weight, essentially linear acrylic amide polymer.

3,418,158
CHROMATOGRAPHIC SHEETS

Edmond S. Perry and William J. Staudenmayer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 23, 1965, Ser. No. 450,362
13 Claims. (Cl. 117—132)



A thin-layer chromatographic element comprised of a coherent chromatographically-active layer, containing a chromatographically-active adsorbent and a polymeric binder, firmly adhered to a flexible inert support.

3,418,159
METHOD FOR FIRE-PROOFING WOOD

Christen Christoffersen and Karl-Otto Sörensen, Nestved, Denmark, assignors to Vedex Dansk Skovindustri A/S, Nestved, Denmark, a company of Denmark

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,643
Claims priority, application Denmark, June 15, 1964, 3,000/64
1 Claim. (Cl. 117—137)

A method for fire-proofing wood by impregnating the same with an agent containing an ammonium salt and a polyethylene glycol of a molecular weight of between 600 and 2000. The ratio by weight between the ammonium salt and the polyethylene glycol in the impregnating agent is between 10:1 and 4:5. Having such a composition, the impregnating agent is prevented from being washed away so that the impregnated material is maintained fire-proof.

3,418,160
PROCESS FOR COATING POLYESTER FIBERS WITH A MIXTURE OF LANOLIN AND AN OILY SILICONE

Steven Abashian, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

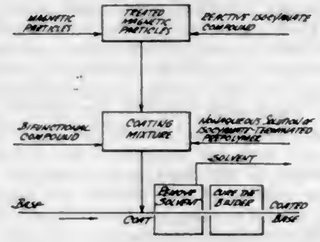
No Drawing. Filed May 14, 1965, Ser. No. 455,987
2 Claims. (Cl. 117—138.8)

The process for imparting a durable, aesthetically-pleasing cashmere-like feel to polyester fabrics which comprises coating the fibers of the fabric before being made into yarn with an aqueous emulsion of lanolin and a specific oily silicone with the weight ratio of silicone to lanolin being within the range of 1.5 to 3, and then heating the coated fibers to cross-link the silicone and to provide the improved durable aesthetics.

3,418,161
PROCESS FOR PREPARING A MAGNETIC RECORDING ELEMENT

Herbert Bauer, Metuchen, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 18, 1963, Ser. No. 309,852
10 Claims. (Cl. 117—161)



1. A method for preparing a magnetic recording element comprising

(1) treating magnetic particles by contacting said particles with a reactive isocyanate compound selected from the group consisting of aromatic and aliphatic isocyanates,

(2) preparing a dispersion of said treated particles in a nonaqueous medium, containing an isocyanate-terminated prepolymer,

(3) adding to said dispersion a nonpolymeric bifunctional compound having at least two hydrogen atoms which are capable of reacting with isocyanate groups, said bifunctional compound being added in an amount insufficient to react with all of the free isocyanate groups in said prepolymer to produce a coating mixture,

(4) coating a base with said coating mixture,

(5) and then curing said coating.

3,418,162
COMPOSITION OF WATERPROOF AGENT AND PROCESS FOR MANUFACTURE OF WATERPROOF CLOTH USING THE SAME

Nobuyuki Adachi, Amaka-shi, Japan, assignor to The Shin-etsu Chemical Industry Company, Limited, Tokyo, Japan, a corporation of Japan

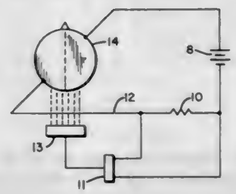
No Drawing. Filed Dec. 1, 1964, Ser. No. 415,152
Claims priority, application Japan, Dec. 7, 1963, 38/65,838; June 13, 1964, 39/33,361
6 Claims. (Cl. 117—161)

A waterproofing composition comprising (1) a hydroxyl terminated polydimethylsiloxane, (2) a methyl hydrogen polysiloxane, (3) an aminoalkyloxysilane, (4) a tetravalent organotin compound, and (5) an organic solvent. The invention also includes the combination of said waterproofing composition and an organic resin. The invention further includes cloth which is waterproofed with the aforesaid compositions and the processes for preparing said waterproofed cloth.

3,418,163
MAGNETORESISTIVE MAGNETOSTRICTION MONITORING

Paul E. Oberg, Minneapolis, and Charles H. Tolman, Bloomington, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,251
8 Claims. (Cl. 117—201)



1. In a method of continuously monitoring the magnetostriction of a magnetic film during deposition wherein a zero magnetostriction film may be deposited at a first temperature, said method including the steps of: depositing a magnetic film on a substrate, said film having two magnetic states and a magnetic vector along an easy axis of magnetization; cyclically applying varying stresses to said element to cause said magnetic vector to rotate away from said easy axis when said film does not have zero magnetostriction; and applying an A.C. drive field to said film parallel to said easy axis to switch the magnetization of said film, the improvement comprising the steps of:

(a) providing first and second electrical conductors to form a completed electrical circuit with said film on said substrate;

(b) coupling said first and second conductors in series with a circuit for passing a current through said film, said series circuit including a source of power and a signal detecting device;

(c) detecting a change in an electrical variable of the completed circuit caused by the cyclical stressing and the applied A.C. field when a non-zero magnetostriction condition exists; and

(d) controlling the deposition process with the change in said variable whereby a zero magnetostriction film is deposited at said first temperature.

3,418,164
FILAMENT WIRE FOR USE IN THE CATHODE OF A THERMIONIC VALVE

Henri Provisor, Suresnes, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

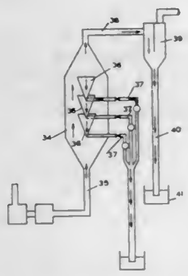
No Drawing. Continuation of application Ser. No. 331,762, Dec. 19, 1963. This application Jan. 19, 1968, Ser. No. 699,272
Claims priority, application France, Feb. 6, 1963, 923,898
5 Claims. (Cl. 117—215)

An indirectly heated cathode having a filament coated with alumina and a layer of zirconium, niobium, tantalum or titanium to reduce leakage and failure between the cathode and filament.

3,418,165
PROCESS FOR THE CLARIFICATION OF SUGAR JUICES AND THE LIKE

Arnold E. Rabe, % Umzimkula Sugar Company Limited, Port Shepstone, Natal, Republic of South Africa

Filed Sept. 7, 1965, Ser. No. 485,477
Claims priority, application Republic of South Africa, Sept. 18, 1964, 4,465/64
10 Claims. (Cl. 127—48)



1. A process for the clarification of sugar juice which comprises the liming of the juice to a controlled pH value, thus effecting precipitation of impurities, the addition of a polyacrylic electrolyte coagulant to the mixture, the subjection of the mixture to a reduced pressure to effect flotation of the coagulated precipitate and the removal of the coagulated precipitate from the surface of the clarified juice.

3,418,166
ALKALINE STORAGE CELL HAVING SILICATE DISSOLVED IN THE ELECTROLYTE

Herbert Donald Carter, Claverdon, England, assignor to Alkaline Batteries Limited, Redditch, England, a company of Great Britain

No Drawing. Filed Oct. 6, 1964, Ser. No. 402,013
10 Claims. (Cl. 136—24)

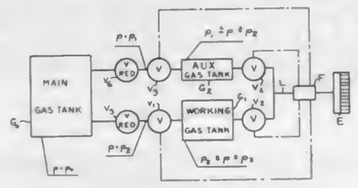
1. An alkaline storage cell having a negative active material selected from the group consisting of cadmium and iron and a liquid electrolyte comprising an aqueous solution of alkali and a silicate, said silicate being present in said electrolyte while said cell is in the charged condition, the concentration of said silicate when said cell is in the discharged condition following said charged condition being within the range of 0.5 to 5 grams per litre of electrolyte calculated as silicon dioxide.

3,418,167
SYSTEM FOR THE OPERATION OF A FUEL CELL WITH GAS DIFFUSION ELECTRODES

Heinz-Günther Plust, Spreitenbach, Aargau, and Carl Georg Telschow, Zurich, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed June 28, 1963, Ser. No. 291,409
Claims priority, application Switzerland, July 6, 1962, 8,139/62
4 Claims. (Cl. 136—86)

1. In an arrangement for operating a fuel cell with a gas diffusion electrode, the combination comprising means providing a first supply of pressurized gas at a first predetermined pressure, a first pipe line means extending between said first gas supply means and said fuel cell electrode, said first pipe line means including therein a working gas tank, a first inlet valve interposed between the inlet to said working gas tank and said first gas supply means and a first outlet valve interposed between the outlet from said working gas tank and said fuel cell electrode, means providing a second supply of pressurized gas at a second predetermined pressure, a second pipe line means extending between said second gas supply means and said fuel cell electrode, said second pipe line means including therein an auxiliary gas tank, a second inlet valve interposed between the inlet to said auxiliary gas tank and said second gas supply means and a second outlet valve interposed between the outlet from said auxiliary gas tank and said fuel cell electrode, the predetermined pressure of the gas obtained from said second gas supply means being higher than the predetermined pressure of the gas obtained from said first gas supply means whereby the pressure of the gas existing in said auxiliary gas tank is higher than that which exists in said working gas tank when said tanks are gas filled, means sensing a decrease in pressure of the gas in said working

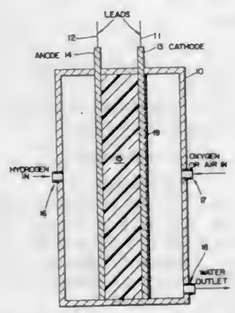


gas tank from a predetermined initial value to a lower predetermined value as a result of cell operation to furnish electrical power, and means actuated by said pressure sensing means and effecting selective operation of said first and second inlet and outlet valves in accordance with the variation in gas pressure in said working gas tank between said predetermined initial and lower values such that said first outlet valve from said working gas tank and said second inlet valve to said auxiliary gas tank are normally open but are closed during refilling of said working gas tank, and such that also during refilling of said working gas tank said first inlet valve to said working gas tank and said second outlet valve from said auxiliary gas tank are open thereby to deliver gas from said auxiliary gas tank to said cell electrode to effect rinsing of the pore system of said electrode.

3,418,168
FUEL CELL WITH WATER REMOVING MEANS AT CATHODE

Ralph L. Wentworth, Watertown, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Dec. 7, 1964, Ser. No. 416,370
5 Claims. (Cl. 136—86)

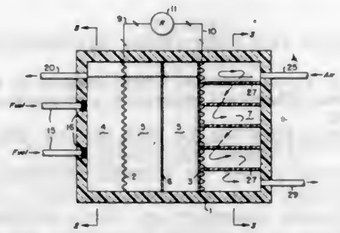


A microporous sheet for use as a wick in fuel cells is composed of a hydrophilic filler and a vinyl chloride/acrylonitrile copolymer.

3,418,169
DIRECT FEED FUEL CELL WITH POROUS HYDROPHOBIC DIFFUSER

John M. Matsen, Roselle, and Duane G. Levine, Fanwood, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,738
2 Claims. (Cl. 136—86)



In a direct feed fuel cell a porous hydrophobic diffuser element closing the fuel inlet conduit where fuel is injected into anolyte prevents back flow of electrolyte and water into said conduit.

3,418,170
SOLAR CELL PANELS FROM NONUNIFORM DENDRITES

Michael F. Amsterdam, Greensburg, Pa., Mohammed S. Shaikh, Mountain View, Calif., and Krishan S. Tarneja, Pittsburgh, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 9, 1964, Ser. No. 395,343
1 Claim. (Cl. 136—89)



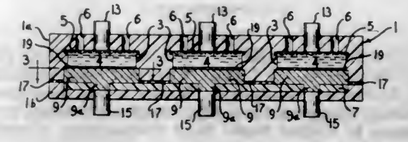
A solar cell panel, made with a nonuniform width N-type dendrite semiconductive material webbing, has a doped layer of P-type material extending over the top, one edge and a portion of the bottom of the panel. A contact for the P-type material extends from the top at one end of the panel over the edge and a portion of the bottom at the other end of the panel. The width of the contact, at the narrow end of the dendrite semiconductive webbing, is equal to the difference in width of the two ends of the dendrite webbing. A contact for the N-type material is provided on the bottom of the panel adjacent the other edge.

3,418,171
ELECTROCHEMICAL POWER SUPPLY SYSTEMS

Pranjivan Velji Popat, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 15, 1966, Ser. No. 602,072
12 Claims. (Cl. 136—100)

Electrochemical power supplies are described which include a housing with several compartments, each containing a body of aqueous electrolyte. Each compartment has an electrically conductive cathode permeable to the passage of air or oxygen therethrough while being substantially impermeable to the passage of electrolyte. A surface of each cathode is in electrolytic contact with the electrolyte and each compartment has passages to provide a supply of oxygen-containing gas to an opposite surface of the cathode. Each compartment also has an elongate electrically conductive porous strip of anode material having at least one surface adapted for electrolytic contact with the electrolyte in the respective compartment. Means are provided for concurrently moving the strips of anode material relative to respective cathodes in the respective compartments. Electrical terminals are



connected to each cathode, and each compartment also has electrical terminal means for maintaining electrical contact with the individual strips of anode material during concurrent movement thereof relative to said cathodes. These terminals may be interconnected so that the cells in the various compartments are serially or parallel connected to an electrical load.

3,418,172
METHOD OF MANUFACTURING A SMALL, BUTTON-TYPE ALKALINE CELL HAVING A LOOSE, POWDERED ZINC ANODE

Robert W. Fletcher, Mount Prospect, Ill., assignor to The Electric Storage Battery Company, a corporation of New Jersey

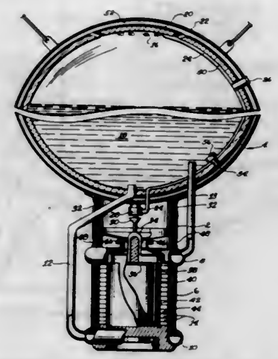
Filed June 29, 1965, Ser. No. 467,837
4 Claims. (Cl. 136—111)

A method of manufacturing a small, button-type alkaline cell comprising placing powdered zinc active material in a loose, uncompressed form into the anode container and thereafter adding the cell electrolyte in "two shots." A minor portion of the alkaline electrolyte is added directly to the loose zinc powder, and thereafter an absorbent separator is placed on the wetted zinc powder and the balance of the cell electrolyte is added to the absorbent separator. Alkaline cells made in this manner have zinc anodes of increased surface area which provides improved cell capacity and improved low temperature performance.

3,418,173
THERMOELECTRIC GENERATOR WITH LIQUID HYDROCARBON FUEL COMBUSTION HEATER

Robert Addis Lockwood, Northridge, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 524,162
8 Claims. (Cl. 136—208)



1. In a thermoelectric generator having an array of thermoelectric elements and a fuel tank containing a

liquid hydrocarbon fuel, the heat of combustion of which is converted directly to electricity by said thermoelectric elements:

means contacting said thermoelectric elements for cooling said thermoelectric elements with said liquid fuel, thereby preheating and pressurizing said fuel and maintaining a uniform pressure on said thermoelectric elements.

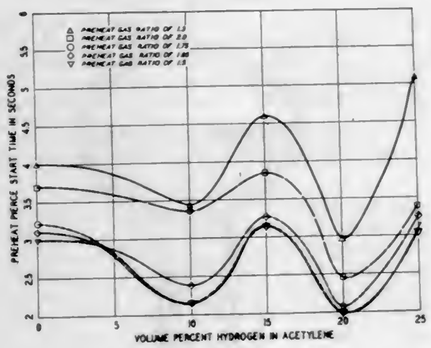
3,418,174
METHOD OF MAKING GALVANNEALED FERROUS METAL OF IMPROVED SOLDERABILITY
Paul R. Carter, Monroeville Borough, and Lawrence E. Helwig, Hampton Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Aug. 20, 1964, Ser. No. 390,998
2 Claims. (Cl. 148—6.35)

A process for producing galvannealed ferrous metal of improved solderability is disclosed. A ferrous metal base is galvanized with zinc which contains aluminum. The coated base is galvannealed by heating to substantially completely alloy the coating with the ferrous metal. The galvannealed material is treated with steam, preferably under pressure, to improve the solderability thereof.

3,418,175
METHOD FOR PRODUCING A ROUGH CORROSION RESISTANT SURFACE ON REINFORCING MATERIAL OF IRON ADAPTED FOR CASTING INTO CONCRETE
Claes Hommerberg, Falsterbo, Sweden, assignor to Halmstads Jarnverks AB, Halmstad, Sweden, a joint stock company of Sweden
No Drawing. Filed May 17, 1965, Ser. No. 456,538
Claims priority application Sweden, May 19, 1964, 6,058/64
3 Claims. (Cl. 148—6.35)

Iron reinforcing material for inclusion in a concrete object is provided with a rough-corrosion-resistant rust coating. This is accomplished by immersing the material in an aqueous solution of ferric chloride, after which the material is left to dry in air.

3,418,176
FUEL GAS MIXTURE AND PROCESS FOR USE THEREOF
Clifford C. Anthes, Union, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 20, 1965, Ser. No. 498,718
10 Claims. (Cl. 148—9)



A process for improving the spot heating effect produced by the heat from a flame formed from the combustion of an acetylene mixture and oxygen comprising the use of a critical gaseous composition of (A) about 7.5 to about 12.5 percent by volume hydrogen with from about 92.5 to 87.5 percent by volume acetylene, or of (B) about 17.5 to about 22.5 percent by volume hydrogen with from about 82.5 to about 77.5 percent by volume acetylene, by which the preheat pierce start time is minimized.

3,418,177
PROCESS FOR PREPARING ALUMINUM BASE ALLOYS
Michael J. Pryor, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,147
12 Claims. (Cl. 148—11.5)

An improved process for preparing aluminum base alloys in wrought form, especially conductors, wherein the alloy contains magnesium and silicon including the steps of holding at an elevated temperature, hot rolling with a cooling rate during hot rolling of greater than 100° F. per minute and cooling to below 250° F. at a rate greater than 100° F. per minute with less than 20 seconds delay between said cooling and said hot rolling.

3,418,178
BAINITIC STEEL OF THE 94XX TYPE POSSESSING HIGH STRENGTH AND FRACTURE TOUGHNESS
Saul A. Kulin, Waltham, and David Kalish, Cambridge, Mass., assignors to ManLabs, Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed June 23, 1965, Ser. No. 466,417
17 Claims. (Cl. 148—12.4)

The specification describes a thermomechanical process for strain-tempering the bainitic form of so-called "94XX" steels. The lower bainites of such steels are shown to have high strength and fracture toughness when strain-tempered at some temperature below the temperature of bainite formation. A process in which the reduction in cross-section is limited to between 5% to 10% followed by a tempering step also provides such properties.

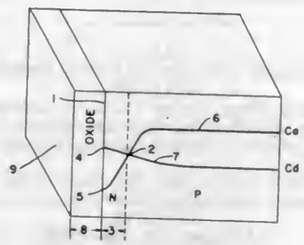
3,418,179
MATERIALS FOR PRODUCING SOFT SOLDER JOINTS
Bertram C. Raynes, Pepper Pike, and Michael Pescatrice, Lakewood, Ohio, assignors, by mesne assignments, to Nibco Inc., Elkhart, Ind., a corporation of Indiana
Filed Nov. 22, 1965, Ser. No. 509,053
8 Claims. (Cl. 148—24)

In the art of forming soft solder sweat joints between copper parts, a mixture of a flux and discrete particles of a solid, solder-reinforcing agent which is inert to electrochemical action in a soft solder-copper system.

3,418,180
p-n JUNCTION FORMATION BY THERMAL OXYDATION
Han Ying Ku, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed June 14, 1965, Ser. No. 463,747
3 Claims. (Cl. 148—187)

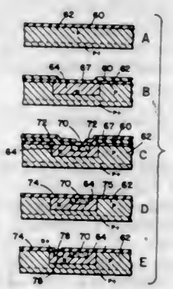
The present invention relates to a method of making an n-type zone under only an unmasked surface area of a selectively masked p-type silicon doubly-doped crystal containing boron and phosphorus or boron and arsenic, by depositing a sufficiently thick silicon oxide layer mask over the surface of said silicon doubly-doped crystal but

for a selected area and thermally oxidizing said unmasked surface area at a rate sufficient to cause formation of an



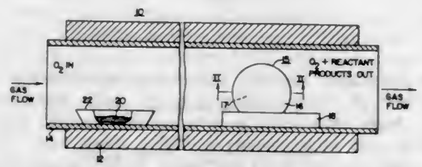
n-type zone under only the unmasked area of the p-type silicon doubly-doped crystal.

3,418,181
METHOD OF FORMING A SEMICONDUCTOR BY MASKING AND DIFFUSING
Peter T. Robinson, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Oct. 20, 1965, Ser. No. 498,338
3 Claims. (Cl. 148—187)



The manufacture PNP semiconductor structures has as a last procedural step an N type diffusion. The method includes depositing layers of semiconductor by gaseous deposition, diffusing a dopant by gaseous deposition and forming a masking layer with an opening therein. The above steps are performed under certain specified temperature ranges and in certain limits of time.

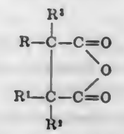
3,418,182
HIGH CONCENTRATION DOPING OF SILICON USING AMMONIUM PHOSPHATE
Richard A. Forrest, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1965, Ser. No. 474,777
5 Claims. (Cl. 148—188)



A high concentration doping of a body of semiconductor material comprises the utilization of ammonium phosphate as a source of the dopant phosphorus. Ammonium phosphate is first preheated to an elevated temperature. Dry oxygen gas is then caused to flow over the source, the oxygen gas reacting with the ammonium phosphate vapor to produce at least phosphorus pentoxide which is deposited by the gas flow on a heated surface of a suitable substrate. The phosphorus pentoxide reacts with the semiconductor material of the surface it is deposited upon forming elemental phosphorus. Deep diffusion of the phosphorus is accomplished in a separate diffusion process carried out in an inert atmosphere.

3,418,183
PROPELLANT COMPRISING HYDRAZINE NITROFORM STABILIZED WITH DICARBOXYLIC ACID ANHYDRIDE
Howard Ernest Rice, Elkton, Md., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Dec. 4, 1963, Ser. No. 328,125
20 Claims. (Cl. 149—6)

11. A propellant composition composed of from about 20 to 85% by weight of hydrazine nitroform, from about 10 to 50% by weight of combustible fuel binder, up to 30% by weight of propellant adjuvants and a stabilizing amount of anhydrides of dicarboxylic acid stabilizers of the formula:



wherein R, R^1, R^2 and R^3 are selected from the group consisting of hydrogen, alkyl, alkenyl, arylalkyl and arylalkenyl radicals.

17. A propellant composition consisting of from about 20 to 85% by weight of hydrazine nitroform, from about 2 to 6% of dodecenyl succinic anhydride, from about 10 to 50% of a carboxyl-terminated carborane polyester and up to 30% weight of propellant adjuvants.

18. The composition of claim **17** wherein the propellant adjuvants are magnesium oxide and aluminum.

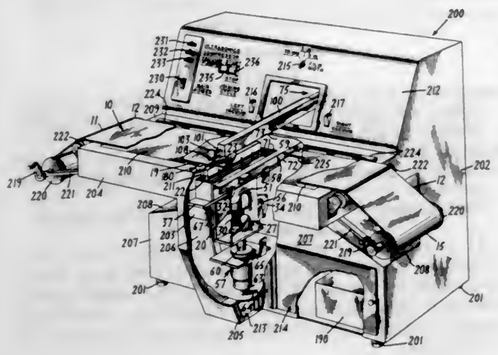
3,418,184
SMOKE PRODUCING PROPELLANT
Ronald F. Vetter, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Continuation-in-part of application Ser. No. 380,709, July 6, 1964. This application Jan. 16, 1968, Ser. No. 698,100
3 Claims. (Cl. 149—19)

A smoke producing composition particularly for use in influencing the weather. It comprises a mixture of Butarez CTL II, MAPO, trimethylol ethane trinitrate and aluminum preferably loaded with silver iodate.

3,418,185
METHOD AND APPARATUS FOR SPLICING MATERIALS
Lewis Balamuth, New York, N.Y., David D. Grimes, Silver Spring, Md., Carey A. Evans, Huntington, N.Y., Clive S. Axtell, Vienna, Va., Clifford A. Robertson, Bay Shore, N.Y., and Charles T. Higgins, Alexandria, Va., said Balamuth, said Evans and said Robertson assignors to Cavitron Corporation, a corporation of New York
Filed Aug. 3, 1965, Ser. No. 476,812
29 Claims. (Cl. 156—73)

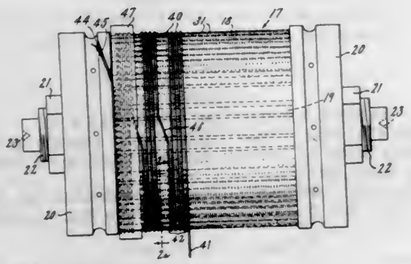
1. A method of joining sheet materials, at least one of which is thermoplastic, comprising the steps of overlapping the segments of the material to be joined, applying high frequency vibratory forces and static forces to respective opposite sides of said overlapped segments at spaced locations in the area of overlap to join said segments thereat, and subsequently applying said high fre-

quently vibratory forces and static forces to respective opposite sides of said overlapped segments and moving the point of application thereof along a line traversing



the area of overlap while said forces are continuously applied to said materials, thereby to effect joinder of said materials along said continuous line.

3,418,186
METHOD FOR MAKING TOOTHED DRIVE BELTS
Robert E. Wetzel, Huntingdon Valley, Pa., assignor to Uniroyal, Inc., a corporation of New Jersey
Filed Jan. 11, 1965, Ser. No. 424,760
11 Claims. (Cl. 156—140)

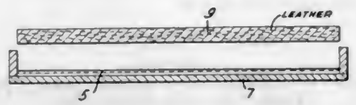


A method of making toothed positive drive belts. Flock is applied to the surface of a mold, whereafter, uncured elastomeric material is applied over the flock in a manner to compress the flock against the mold surface and to bond the flock together to form a wear-resistant covering for the teeth of the drive belt.

3,418,187
FILTER ELEMENTS
Frank Reeder and Wladyslaw Adam Dziuba, Coventry, England, assignors to Courtaulds Limited, London, England, a British company
No Drawing. Filed Aug. 16, 1965, Ser. No. 480,171
Claims priority, application Great Britain, Aug. 27, 1964, 35,098/64
2 Claims. (Cl. 156—180)

A process for the production of filter elements comprises forming a band or web of filaments or fibres, applying to the band a bonding agent in the form of a fusible powder consisting of a polyethylene glycol of molecular weight greater than 100,000, condensing the band into a cylindrical shape of the required dimensions and subjecting the formed cylindrical elements to heat in order to fuse the bonding agent.

3,418,188
METHOD FOR PRODUCING PATENT LEATHER
Wilfrid Henry Hogg, Sutton Coldfield, and Peter Ford, Erdington, Birmingham, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
Filed May 1, 1963, Ser. No. 277,105
Claims priority, application Great Britain, May 9, 1962, 17,762/62
14 Claims. (Cl. 156—246)



1. A method for the production of patent leather which comprises applying a layer of a curable, liquid, polymer composition to a smooth supporting surface, partially curing said composition, applying leather to said partially cured film so obtained, completing the cure of said film, and releasing the cured film adhering to the leather from said supporting surface.

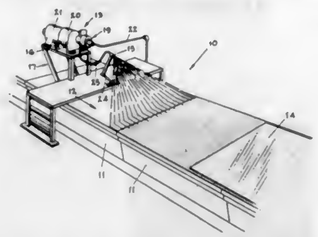
3,418,189
PROCESS FOR MAKING DECORATIVE LAMINATES
Gene Edward Grosheim, Cincinnati, Ohio, assignor to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed June 2, 1964, Ser. No. 372,026
6 Claims. (Cl. 156—277)



A decorative laminate comprising an assembly of a plurality of thermosetting phenolic resin impregnated core sheets onto which is superimposed a noble thermosetting resin impregnated decorative sheet, said decorative sheet having on its decorative surface a plurality of discrete protuberant areas of a different color and a different optical reflectivity than the areas of the decorative surface that are not in relief, said assembly having been heat and pressure consolidated to a unitary structure, during which heat and pressure consolidation step said thermosetting resins are converted to the thermoset state and to the process for preparing the same.

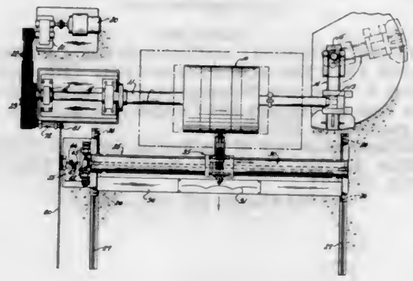
3,418,190
METHOD AND APPARATUS FOR BEDDING GLASS PLATES FOR GRINDING AND POLISHING
Frank L. Barton, Jr., Perrysburg, and Leonard F. Kaiser, Maumee, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed May 17, 1965, Ser. No. 456,284
13 Claims. (Cl. 156—295)

Bedding glass blanks in a plaster-like material on surfacing tables by forming a fluid suspension of the bedding material, reducing the suspended particles of bedding material to a size not larger than a predetermined maximum,



depositing the fluid suspension on the surfacing tables in a thin, uniform layer, and laying glass blanks on the tables while the layer is still wet and fluid.

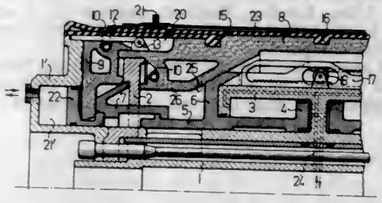
3,418,191
APPARATUS FOR APPLYING ELASTOMERIC MATERIAL TO A VEHICLE TIRE CARCASS
James Robert Dieckmann, Cuyahoga Falls, Ohio, and Walter Franklin Bishop, Colonial Heights, Va., assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 31, 1964, Ser. No. 422,797
9 Claims. (Cl. 156—397)



Apparatus for applying an endless thread portion to a tire carcass including a carriage moveable toward and away from the carcass and supplied with a continuous ribbon traversing over the carcass surface, wherein a single power means is connected to rotate the carcass and to traverse the ribbon carriage; and, selectively, a contour follower reflecting the buildup of the ribbon in comparison to a desired outline.

3,418,192
TIRE BUILDING DRUM
Heinrich Nädler, Hagen, Kreis Neustadt am Rubenberge, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Apr. 26, 1965, Ser. No. 450,742
Claims priority, application Germany, Apr. 27, 1964, C 32,739
6 Claims. (Cl. 156—401)

A segmental drum for building tire carcasses with inflatable means respectively extending around the end portions of the drum in foldable inflatable condition outwardly, which includes lever means respectively pivotally connected to the end portions of the drum adjacent said inflatable means, and actuating means arranged within

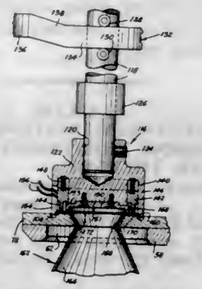


the segments of said drum, and operable successively to move along inclined surfaces for adjusting said segments radially outwardly and for actuating means pivoting said lever means.

ERRATUM

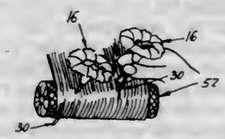
For Class 156—468 see:
Patent No. 3,417,358

3,418,193
HEAT-SEALING HEAD
Fulton W. Hallowell, Jr., Levittown, Pa., assignor to R. E. Hartung Company Inc., a corporation of New Jersey
Original application May 29, 1963, Ser. No. 284,261, now Patent No. 3,309,836, dated Mar. 21, 1967. Divided and this application Jan. 20, 1967, Ser. No. 636,555
4 Claims. (Cl. 156—583)



An electrically heated annular member slidably mounted between concentric walls for heat-sealing a closure to the mouth of a thermoplastic bottle while the closure and mouth of the bottle are held pressed against a support by said walls.

3,418,194
DECORATIVE FLOWER AND FLOWER HOLDER
Lester C. Loftice, 3509 June Drive, Dallas, Tex. 75211
Filed June 2, 1965, Ser. No. 460,652
1 Claim. (Cl. 161—27)



A flower holder including a plurality of superposed layers of plastic material formed into intertwined loops

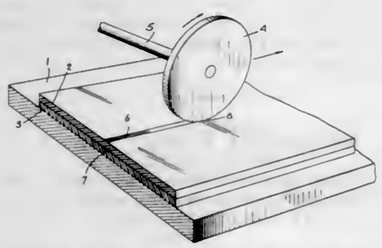
such that an artificial flower stem may be inserted through a plurality of the loops in a plurality of the layers is disclosed.

3,418,195
FABRICATED SHEETS OF WOOD VENEER
Morris Allan, London, England, assignor to Aaronson Bros. Limited, Rickmansworth, Hertfordshire, England, a British company
Original application Nov. 14, 1963, Ser. No. 323,745, now Patent No. 3,277,938, dated Oct. 11, 1966. Divided and this application Aug. 11, 1965, Ser. No. 478,958
3 Claims. (Cl. 161—37)



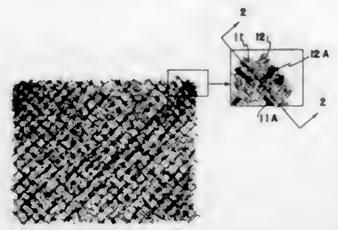
A fabricated sheet of wood veneer having a flower which simulates the flower obtained in a sheet of veneer sliced from a substantially perfect natural wood is obtained by slicing from a block of wood veneer laminations, each of which is similarly bent to have overlapping curvatures in two directions, so that each complete wood veneer lamination in the block has a domed convex surface. The appearance of the flower in the fabricated sheet of wood veneer obtained by slicing this block includes a V-shaped apex from which the arms of the V extend in a direction towards the side edges of the rectangular sheet of wood veneer and a majority of the arms then change direction to intersect an end of the rectangular sheet of wood veneer.

3,418,196
METHOD OF SEALING MATERIALS TOGETHER BY A RUBBING TREATMENT AND ARTICLES PRODUCED THEREBY
Jane Luc, 17 Blvd. Clemenceau, Strasbourg, Bas-Rhin, France
Filed Feb. 18, 1964, Ser. No. 345,561
Claims priority, application Great Britain, Feb. 22, 1963, 7,326/63; June 25, 1963, 25,265/63; Oct. 8, 1963, 39,675/63
19 Claims. (Cl. 161—38)



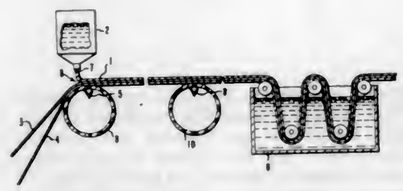
A process of sealing or laminating a plurality of materials superimposed on one another and comprising a sealable plastic material, the process comprising the steps of, forming an assembly of superimposed materials comprising a sealable plastic material and, rubbingly contacting a surface of the assembly with at least sufficient pressure to insure that the superimposed materials in the assembly touch one another in the areas of the contact, and wherein the rubbing movement is at a relative speed about equivalent to a 1 inch diameter wheel rotating at least several hundred revolutions per minute, thereby causing materials capable of being sealed which are in contact with one another in the assembly to seal in the areas of the contact.

3,418,197
FIBER REENFORCED BONDING TAPE
William J. Hampshire, Cuyahoga Falls, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Mar. 17, 1965, Ser. No. 440,580
4 Claims. (Cl. 161—58)



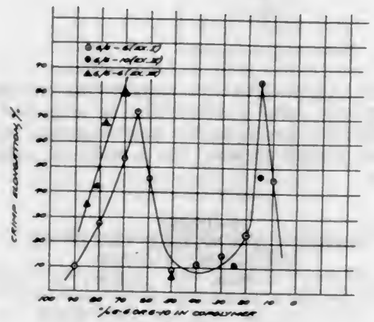
An adhesive tape material utilizing oriented short lengths of reenforcing fibers to provide great strength to the tape material wherein the fibers are oriented into streams with the streams being interwoven in a criss-crossed relationship. The fibers are overlapped within the formed streams and are able to slide relative to each other within the stream as well as with fibers in adjacent streams during molding thereof. Further, the fibers tend to flow or be associated with the surrounding resin during the flowing which thereby allows the tape material to flow without losing its strength characteristics.

3,418,198
NON-ROUGHENING MICROPOROUS LAMINATE AND PROCESS FOR PRODUCING THE SAME
Robert V. Einstman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 350,056, Mar. 6, 1964. This application Nov. 14, 1966, Ser. No. 594,122
18 Claims. (Cl. 161—84)



A process for producing a non-roughening microporous laminate useful as a leather replacement by:
(a) coating a surface of a porous fibrous web with a liquid dispersion of a polymeric component and a solvent therefor; the dispersion having a viscosity high enough to permit its retention by the web under the coating conditions and low enough to permit complete penetration of the web under the conditions of step (b) below in which the opposite surface of the web is in contact with a flexible porous fibrous substrate sheet;
(b) applying suction to the free surface of the substrate sheet which draws the dispersion through the porous web and at least partially into the substrate sheet to form a laminate; and
(c) bathing and drying the resulting laminate.

3,418,199
CRIMPABLE BICOMPONENT NYLON FILAMENT
Anthony Anton, Wilmington, Del., and Emil John Volcheck, Jr., Chattanooga, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 494,556, Oct. 11, 1965. This application Dec. 27, 1967, Ser. No. 693,810
6 Claims. (Cl. 161—175)



A bicomponent, nylon filament with continuous, adherent, eccentric components, one a homopolyamide, the other a copolyamide, the latter being a 6/6–6 or a 6/6–10 copolymer containing either 6—6 or 6–10 in the ranges of either 8–18% or 57–87%, the filament being crimpable against fabric restraints and having a crimp elongation of at least 30%.

3,418,200
SPLITTABLE COMPOSITE FILAMENT
David Tanner, Salisbury, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 414,225
5 Claims. (Cl. 161—177)



A composite filament with core and minute lobe components of different synthetic polymers. The lobes are disposed about the core and, due to the difference in compositions, readily separable when the filament or a fabric is subjected to mechanical agitation in boiling water.

3,418,201
POLYCHLOROPRENE-FLUOROELASTOMER COMPOSITE ARTICLES
John Michael Bowman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 28, 1965, Ser. No. 451,669
4 Claims. (Cl. 161—184)

Process for forming a composite article of polychloroprene and a fluoroelastomer which comprises incorporating an epoxy resin and a silica filler into a polychloroprene, placing the resulting polychloroprene stock and a fluoroelastomer in physical contact and vulcanizing the resulting structure.

3,418,202
HOT METAL ADHESIVE COMPOSITION
Marion O. Brunson and Kenneth W. Hyche, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 17, 1966, Ser. No. 535,026
7 Claims. (Cl. 161—192)

Hot melt adhesive compositions useful for adhering stamps, envelopes and the like, and adapted for water reactivation comprising 50 to 80% by weight polyvinyl alcohol of a hydrolysis value not greater than 85 percent containing substantially uniformly dispersed therein 20 to 40% by weight of at least one solid glycol selected from the group consisting of neopentyl glycol and 2,2,4-trimethyl-1,3-pentanediol, and 5 to 15% by weight of normally liquid plasticizer.

3,418,203
PROCESS OF FORMING WATER-LAID PRODUCTS OF CELLULOSIC FIBERS AND GLASS FIBER CONTAINING LIGNO-SULFONIC ACID AND SODIUM SILICATE AND PRODUCTS THEREOF
Saara K. Asunmaa, Laguna Beach, Calif., assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Sept. 7, 1965, Ser. No. 485,599
5 Claims. (Cl. 162—145)

A method of making products from aqueous homogeneous mixtures of cellulosic pulp fibers and finely divided glass solids by mixing therewith a solution of lignosulfonic acid and sodium silicate, agitating the mixture to form a homogeneous dispersion and removing the major portion of the aqueous phase and shaping the resulting mass with heat and pressure.

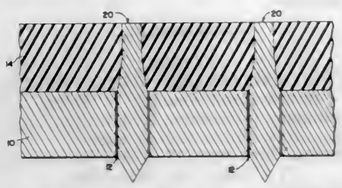
3,418,204
POLYALKYLENE IMINE PARTIALLY CROSS-LINKED WITH FORMALDEHYDE AND PIGMENT RETENTION IN PAPER-MAKING THEREWITH
Albert Goldstein, New Shrewsbury, and Donald R. Hobbs, Jamesburg, N.J., assignors to Chemirad Corporation, East Brunswick, N.J., a corporation of Delaware
No Drawing. Filed Aug. 4, 1965, Ser. No. 477,301
7 Claims. (Cl. 162—164)

An anchoring agent for bonding pigments and polyolefins to cellulosic materials, the anchoring agent formed by cross-linking polyalkylene imines with sufficient formaldehyde to react with from about one-half to three-quarters of the —NH— groups in the polyalkylene imine. Improving pigment retention in cellulosic fibrous materials by reacting with the anchoring agent.

3,418,205
SUCTION PRESS ROLL AND METHOD FOR MANUFACTURING SAME
James E. Post, South Duxbury, Mass. (62–B Byrne Court, Wayne, N.J. 07470)
Filed Apr. 19, 1965, Ser. No. 449,035
3 Claims. (Cl. 162—372)

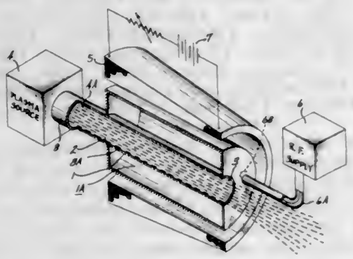
A suction press roll including a perforated metal roll to which is secured a resilient material having smooth surfaced holes extending radially therethrough which are in alignment with the perforations in the metal roll. The holes can be of substantially uniform diameter or provided with a flared portion adjacent to the metal roll. The suction press roll is produced by covering a perforated metal roll with a predetermined thickness of a re-

silient material in an uncured state, curing the resilient material to a predetermined hardness in the presence of smooth surfaced elongated inserts of suitable configura-



tion which extend radially through the resilient material covering and into the metal roll perforations and then removing the inserts.

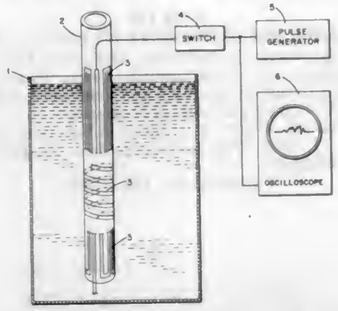
3,418,206
PARTICLE ACCELERATOR
Richard B. Hall, Bellevue, Wash., and Terenzio Consoli, Paris, France, assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,179
19 Claims. (Cl. 176—2)



A high energy particle accelerator is described which makes use of a radio frequency cavity disposed within a longitudinal magnetic field extending between opposite openings in the ends of the cavity. The magnetic field is established with a field gradient existing within the cavity being of such a magnitude that at one point in the cavity the frequency of the RF signals applied to the cavity will correspond to the cyclotron frequency of the particles for the magnetic field at that point. The magnetic field strength is established to be greater than and less than the field strength at said point at respective locations on opposite sides of said point with the arrangement being such that charged particles entering the apparatus will be highly accelerated. An improved evacuation apparatus is disclosed making use of the described particle accelerator to remove particles from a container. In a further embodiment of the invention a pair of the particle accelerators are illustrated in combination with a magnetic bottle for generating high temperatures.

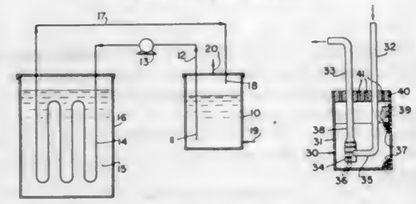
3,418,207
SYSTEM FOR FUNCTIONAL SUPERVISION OF HEAT-INSULATING LAYERS IN NUCLEAR REACTOR CHANNELS
Winfried Becker, Arolo, Varese, Sergio Finzi, Masnago, Ernst R. Jorzik, Cardana di Besozzo, and Eggert Ohlmer, Velate, Varese, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed June 6, 1966, Ser. No. 555,530
Claims priority, application Germany, June 24, 1965, E 29,569
6 Claims. (Cl. 176—19)

A system for the operational monitoring of thermal insulating layers which are to impede heat transfer from nuclear-reactor fuel elements to the channel tubes surrounding them by means of an electric cable which is in good heat contact with the tube and the characteristic impedance of which changes according to temperature changes. A pulse generator and oscilloscope are connect-



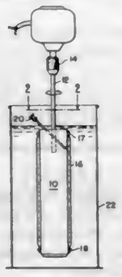
ed to the cable to detect hot spots by the principle of reflection. The cable is a two wire cable housed in a channel member opening against the channel tube. Spacers divide the channel member into a series of watertight segments.

3,418,208
GROWING INCREASED YIELDS OF MICRO-ORGANISMS
Vernon F. Coty, Trenton, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Feb. 28, 1966, Ser. No. 530,637
9 Claims. (Cl. 195—1)



A method is provided for increasing the growth of micro-organisms by dialyzing a culture mixture containing them against an unfermented aqueous liquid to take up therein cell growth inhibitors, removing such inhibitors from the liquid, and reusing the latter.

3,418,209
RED CELL PRESERVATION
Alexis E. Ushakoff, Beverly, Mass., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed June 16, 1964, Ser. No. 375,573
11 Claims. (Cl. 195—1.8)



Red blood cells are rendered storable at normal temperatures, 4–20° C., by equilibrating them with a glycerin solution containing at least 60% glycerin by volume.

3,418,210
HAMSTER ASCITES TUMOR CELL LINE BHK 21/C.13/T.6/ASCITES USEFUL IN SUBMERGED SERUM-FREE AGAR CULTURES TO SUPPORT VIRUS GROWTH
Frank Kingsley Sanders, London, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain
No Drawing. Filed Dec. 3, 1964, Ser. No. 415,779
Claims priority, application Great Britain, Dec. 6, 1963, 48,206/63
8 Claims. (Cl. 195—1.8)

Polyoma-modified BHK 21 cells are modified to produce new cell lines which can be cultivated in agar. A new agar-containing culture medium is provided which is free of serum and which is useful for culture of the cell lines themselves and for the culture of viruses therein. Polyoma-modified BHK 21 baby hamster kidney cells are inoculated into the hamster cheek pouch to form tumors, removing such a tumor and inoculating it into a hamster subcutaneously to form subcutaneous tumors, inoculating material from the subcutaneous tumors intraperitoneally into a hamster to form hamster ascites tumors and recovering ascites tumor cells from the hamster.

3,418,211
PROCESS OF PRODUCING GLUCAMYLASE AND AN ALCOHOL PRODUCT
James M. Van Lanen and Merritt B. Smith, Peoria, Ill., assignors to Hiram Walker & Sons, Inc., Peoria, Ill., a corporation of Michigan
Filed Dec. 13, 1965, Ser. No. 513,227
14 Claims. (Cl. 195—31)

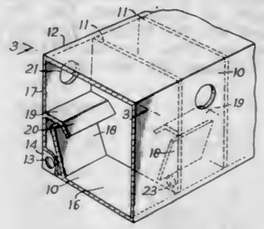
A process of producing a high potency glycamylase enzyme system by cultivation under submerged aerobic conditions of an exceptionally active strain of *Aspergillus niger* in a cereal grain medium of high concentration, to which a nutrient supplement consisting of grain stillage or distillers dried solubles is added; and a process of saccharifying and fermenting a starch product to alcohol by adding thereto a ferment including an enzyme system produced by cultivation of such strain in a suitable growth medium.

3,418,212
INDICATOR COMPOSITION FOR MICRO-ORGANISMS AND TEST METHOD EMBODYING SAME
William O. Fitzgibbons, Hudson, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed July 28, 1965, Ser. No. 475,552
7 Claims. (Cl. 195—103.5)

1. A sterile composition suitable for field testing for the presence or absence of viable microorganisms in hydrocarbon fuels and water-bottoms associated therewith, comprising an aqueous solution of nutrient salts, a water soluble lactate, a normally liquid substantially olefin-free hydrocarbon and a triphenyl tetrazolium chloride indicator.

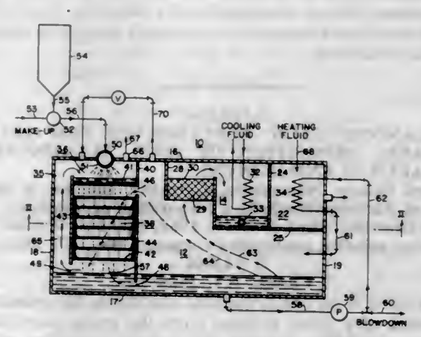
3,418,213
MULTISTAGE EVAPORATOR WITH EVAGINATED VENTURI INLET FOR EACH STAGE
William R. Williamson, Waterford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 17, 1965, Ser. No. 440,493
Claims priority, application Great Britain, Mar. 23, 1964, 12,180/64
6 Claims. (Cl. 202—173)

A stage for a multistage flash distillation unit having an entrance surrounded by a venturi flow control device comprising an upward wall and a horizontally extending wall defining between them a narrow unobstructed opening



across the stage causing the incoming fluid to flow in a horizontal sheet across the bottom wall.

3,418,214
INTEGRAL MAKE-UP DEAERATOR FOR FLASH EVAPORATOR
Domenick Cane, Springfield, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1967, Ser. No. 616,564
4 Claims. (Cl. 202—176)



A compact deaerator apparatus for removing air, carbon dioxide and other non-condensible gases from a make-up liquid directed to a flash evaporator for flash evaporation. The deaerator apparatus is formed integrally with and disposed within the flash evaporator and comprises generally a heating section and a gas stripping or deaerating section. Vapor is generated in the flash chamber, the greater portion of which is directed into a condensing space where it is condensed to form a substantially pure product liquid. A lesser portion of the generated vapor is directed through the stripping section to strip the incoming, preheated make-up liquid of non-condensible gases. The stripped gases and steam are then routed to the heating section to which the make-up liquid is first directed. The steam preheats the make-up liquid to saturation temperature which causes the release of a major portion of the non-condensible gases contained in the liquid before the liquid is directed into the stripping section for the srtipping action. From the stripping section, the substantially deaerated make-up liquid joins the body of recirculating liquid for flash evaporation. The air and other non-condensible gases are vented from the heating section.

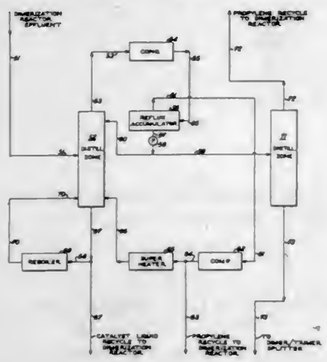
3,418,215

DISTILLATION OF PROPYLENE DIMERIZATION REACTION EFFLUENT USING COMPRESSED PROPYLENE AS STRIPPING VAPOR

Lester Nirenberg, Brooklyn, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

Continuation-in-part of applications Ser. No. 125,886, May 3, 1961, and Ser. No. 481,995, June 16, 1965. This application Aug. 18, 1966, Ser. No. 573,222

3 Claims. (Cl. 203—49)



This invention relates to a process for the recovery of trialkyl aluminum catalysts from a propylene dimerization reaction effluent and, more particularly, this invention relates to such a process wherein the catalyst is recovered substantially free of propylene trimer and in a high activity form. This is accomplished by stripping propylene trimer from the catalyst with vaporized propylene under specific conditions.

3,418,216

ORGANOMETALLIC ELECTROLYTE FOR GALVANIC DEPOSITION OF ZINC, ALUMINUM, GALLIUM AND INDIUM

Richard Dotzer, Nuremberg, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

No Drawing. Filed Dec. 16, 1965, Ser. No. 515,804

Claims priority, application Germany, Dec. 17, 1964, S 94,664

7 Claims. (Cl. 204—14)

Described is an organometallic electrolyte for galvanic depositing of a metal selected from the group consisting of zinc, aluminum, gallium and indium consisting of a complex compound between an organometallic compound of the formula MeX_mR_n and a quaternary onium salt of the formula $[R^1R^2R^3R^4Y]X$, whereby Me is a zinc, aluminum, gallium or indium atom, X a halogenide, pseudohalogenide or half a sulphate radical, R an alkyl radical with C_1 to C_6, Y a nitrogen, phosphorus, arsenic or tellurium atom, and R^1, R^2, R^3, R^4 represent hydrocarbons and m the values 0, 1, or 2, n the values 1, 2 or 3 and $m+n$ is equal to the valence of the Me-atom, wherein at least one of the hydrocarbon radicals R^1 to R^4 is selected from the group of benzyl, phenyl, cyclohexyl and strongly branched hydrocarbon radical with C_3 to C_{12} and the remaining radicals of the onium salt are C_1 to C_4 alkyls.

3,418,217

ELECTROLYTIC IMAGE FORMATION

Clarence O. McMaster, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 23, 1959, Ser. No. 829,124

13 Claims. (Cl. 204—18)

This application discloses image forming processes in which an insoluble metal hydroxide precipitate is electrolytically provided on the light exposed areas of a photoconductive copysheet. The resulting metal hydroxide precipitate may be utilized in several ways, such as in lithography, or may be visually developed to provide a print of the original light image, such as by depositing silver or a dyestuff in the alkaline precipitate areas of the copysheet.

3,418,218

SEALING OF ALUMINUM SURFACES

Gert G. Levy, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

No Drawing. Filed Mar. 11, 1966, Ser. No. 533,410

3 Claims. (Cl. 204—35)

A process for sealing aluminum oxide coatings which comprises contacting the coating with an aqueous solution of a polyoxyalkylene glycol. This solution should have a minimum temperature of about 175° F. and contain at least about 0.1 weight percent of a polyoxyalkylene glycol having a molecular weight in the range of about 100 to 20,000.

3,418,219

COLORING ANODIZED ALUMINUM

William A. Fahlbusch, Arlington Heights, Ill., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Mar. 29, 1966, Ser. No. 538,389

12 Claims. (Cl. 204—38)

1. A process for producing a color on anodized metal comprising impregnating a porous anodized layer on said metal with a stable, aqueous solution containing both a precipitant ion donor and an ion, said solution being unstable at an elevated temperature of a metal capable of forming a colored precipitate with said precipitant ion and subsequently heating the thus impregnated anodized layer at a temperautre effective to induce formation of said colored precipitate.

3,418,220

ELECTRODEPOSITION OF CHROMIUM AND DUPLEX MICRO-CRACK CHROMIUM COATINGS

Wilhelm Roggendorf, 3 Alte Zollstrasse, 7460 Kehl am Rhine, Germany

No Drawing. Filed Aug. 18, 1964, Ser. No. 390,463

Claims priority, application Germany, Aug. 26, 1963, R 35,983

17 Claims. (Cl. 204—41)

A chromium plating aqueous solution is used in which tetrachromate of the type of sodium tetrachromate ($Na_2Cr_4O_{13}$) or which may also be expressed as $Na_2O \cdot 4CrO_3$ is the principal, predominant, basis or major constituent and in which a lesser but appreciable amount of free chromic acid is also a constituent. This primary part of the plating solution may be obtained by adding chromic acid to water and then adding sodium hydroxide or carbonate to convert a greater part of the chromic acid to sodium tetrachromate. The solution also employs a chemical complex of dissolved materials in relatively minor amounts. Such materials include a sulfate which may be provided by adding sulfuric acid; cations of metals of the class of titanium and zirconium (essential) and fluoride which may be provided by the addition of a sodium fluoride of one or both of the metals; soluble silicon; and selenium. The silicon may be provided by adding silicon fluoride and selenium by adding selenium dioxide. Where silicon is to be used, it may be added as silicon fluoride and the titanium and zirconium may be added in the form of potassium titanate and zirconate. The solution is maintained within a relatively low operating temperature range of about 18° to 39° C., preferably about 18° to 32° C. when the solution is used without selenium and 30° to 32° C. when it is used with selenium. The selenium is particularly useful when a dual coating is to be provided on a metal workpiece. The solution has a ratio of total chromic acid to free chromic acid content of about 1 to 3 up to about 1 to 5.

3,418,221

CHROMIUM PLATING PROCESS

Roger M. Woods, Washington, D.C., and David R. Moul, Seat Pleasant, Md., assignors to Corillium Corporation, Arlington, Va., a corporation of the District of Columbia

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,626

10 Claims. (Cl. 204—51)

1. A process of producing electro-deposited iridescent chromium coatings comprising plating an object as cathode in an aqueous bath comprising about 15 to about 450 grams per liter of chromic anhydride and about 0.07 to about 2.1 grams per liter of sulfuric acid, and about 1 to 75 grams per liter of oxalic acid, said oxalic acid being supplied by an equivalent amount of a compound selected from the group consisting of oxalic acid and ferric ammonium oxalate, using a current density of about 50 to about 600 amperes per square foot and a temperature of about 60° F. to about 140° F., for a period of time sufficient to give a chromium coating of desired thickness.

3,418,222

ALUMINUM ANODIZING METHOD

Fred C. Schaedel, Compton, Calif., assignor to Murdock, Inc., Compton, Calif., a corporation of California

Filed Feb. 28, 1966, Ser. No. 530,508

6 Claims. (Cl. 204—58)

1. In a process for anodizing aluminum wherein the part to be anodized is placed in an electrolyte and an electric current is passed through the part and electrolyte, the steps of:

applying the current in pulses; and

varying the amplitude of the current pulses at a frequency about 1/60 the pulse rate.

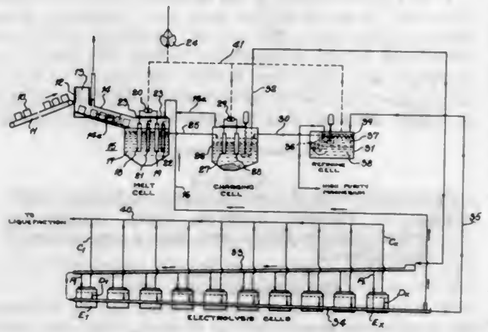
3,418,223

CONTINUOUS PROCESS FOR PRODUCING MAGNESIUM METAL FROM MAGNESIUM CHLORIDE INCLUDING FUSED BATH ELECTROLYSIS

Frank E. Love, Henderson, Nev., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed June 8, 1966, Ser. No. 556,108

7 Claims. (Cl. 204—70)



1. The method for continuous production of magnesium metal and chlorine gas from magnesium chloride, which comprises: progressively feeding substantially anhydrous magnesium chloride salt into a melt cell and fusing therein to a molten state, discharging said molten salt into a charging cell for admixture with a molten metal chloride salt containing a salt of at least one other metal, feeding the molten salt admixture from said charging cell thence into a feeder manifold and thence distributively into a series of electrolysis cells having overflow outlets for establishing and maintaining molten baths of said salt admixture therein, electrolyzing said magnesium chloride constituent therein into molten magnesium metal and chlorine gas, withdrawing said gas as formed from said cells into a collecting conduit, and separately withdrawing as overflow from said cells and into a collector manifold, said molten metal as formed together with a portion of the molten salt of each said cell, delivering the contents of said collector manifold into a refining cell and separating said molten metal from said fused salt therein, and recycling the magnesium chloride depleted molten salt from said refining cell into said charging cell for admixture with additional molten magnesium chloride salt supplied from said melt cell.

3,418,224

PREPARATION OF SULFONES BY ELECTROLYTIC OXIDATION

Clifton F. Bennett and David W. Goheen, Camas, Wash., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Jan. 8, 1965, Ser. No. 424,421

7 Claims. (Cl. 204—78)

An electrolytic oxidation process for conversion of sulfides or sulfoxides to their corresponding sulfones. A catalyst is employed to improve yield and current efficiencies. The catalyst may be tungsten, vanadium, molybdenum, selenium, chromium or their oxides, acids, alkali metal salts, alkaline earth metal salts, ammonium or amine salts. A carbon anode is employed.

3,418,225

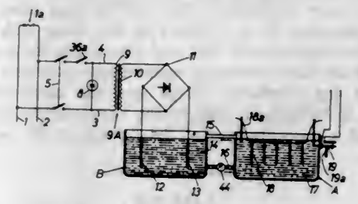
ELECTROLYTIC METHOD AND APPARATUS FOR RECLAIMING METALS FROM ELECTROLYTES

Richard Wick, Grunwald, Munich, Erwin Geyken and Hans-Dieter Frick, Munich, and Wolfgang Kwiatkowski, Unterhaching, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed June 2, 1965, Ser. No. 460,758

Claims priority, application Germany, June 6, 1964, A 46,246

20 Claims. (Cl. 204—109)



Exposed photographic films which pass through a fixing bath produce signals which are stored and used to effect recovery of silver from the bath. Each signal can effect recovery of silver for a period of predetermined length, and the recovery continues until the supply of stored signals is exhausted.

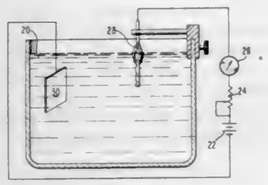
3,418,226

METHOD OF ELECTROLYTICALLY ETCHING A SEMICONDUCTOR HAVING A SINGLE IMPURITY GRADIENT

John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 18, 1965, Ser. No. 456,684
10 Claims. (Cl. 204—143)

An electrolytic etching process is described wherein the system parameters correspond to a predetermined impurity concentration in a semiconductor body of single-conductivity having an impurity gradient. Accordingly, the



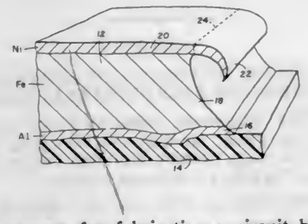
electrolytic etching process is self-limiting along the contour of the predetermined impurity concentration in the semiconductor body.

3,418,227

PROCESS FOR FABRICATING MULTIPLE LAYER CIRCUIT BOARDS

Olin B. Cecil, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 31, 1966, Ser. No. 539,133
5 Claims. (Cl. 204—143)



1. In a process for fabricating a circuit board from starting material comprised of a nonconductive base and multiple layers of metallic foils the outer layer of foil having a slower etch rate than the adjacent underlying layer of foil, the steps of selectively etching the metallic foils to leave conductor strips on the base sheet having an overhanging lip as a result of the faster etch rate of the underlying layer of foil, and immersing the conductor strips in an electrochemical etchant and passing a current between the conductor strips and the electrochemical etchant to selectively remove the overhanging lip as the result of a concentration of the current in the overhanging lip.

3,418,228

PHOTOCHEMICAL CHLORINATION OF ACETONITRILE

Philip Lee Bartlett, New Castle County, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 28, 1966, Ser. No. 523,575
7 Claims. (Cl. 204—158)

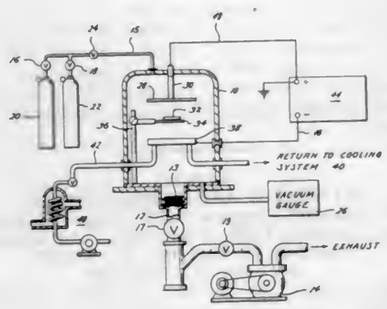
1. A process for the preparation of trichloroacetonitrile which comprises reacting acetonitrile with chlorine at 60–80° C. in the presence of (1) actinic light, (2) hydrogen chloride and (3) a catalyst selected from the group consisting of mercuric chloride, mercuric acetate, mercuric sulfate, mercuric oxide, aluminum chloride, aluminum fluoride and boron trifluoride etherate and recovering trichloroacetonitrile from the reaction mixture.

3,418,229

METHOD OF FORMING FILMS OF COMPOUNDS HAVING AT LEAST TWO ANIONS BY CATHODE SPUTTERING

Tavorath K. Lakshmanan, Matawan, and Joseph M. Mitchell, Fayson Lakes, N.J., assignors, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,270
1 Claim. (Cl. 204—192)



A method of preparing films of compounds having widely varying properties by reactively sputtering a compound in an ionized gas containing an ion which combines with the compound as a second anion. The properties are controlled by varying the percentage of the reactive gas.

3,418,230

GALVANIC ANODE AND ALUMINUM ALLOY THEREFOR

Herbert C. Rutemiller, Cleveland, Ohio, assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 5, 1961, Ser. No. 143,041
5 Claims. (Cl. 204—197)

1. A galvanic anode in the non-heat treated condition composed of an aluminum base alloy consisting essentially of aluminum, 3.5% to 9.0% by weight of zinc and 0.008% to 0.05% by weight of indium, the total of all impurities not being over 0.50%, said anode in the as-cast or as-worked condition being characterized by a higher current efficiency than the same anode without indium.

3,418,231

CUVETTE FOR SUPPORTING A SENSING CELL

Ihsan A. Haddad, Brighton, Mass., assignor to Instrumentation Laboratory, Inc., a corporation of Massachusetts

Filed Nov. 9, 1965, Ser. No. 506,971
16 Claims. (Cl. 204—195)

1. A cuvette for supporting a sensing cell for measurements in a fluid stream and for calibration in said cuvette outside and without interference with said stream comprising:

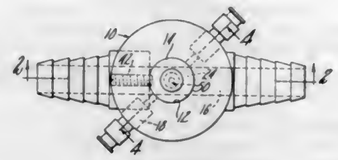
a housing;

a measurement chamber extending through said housing for connection to said stream;

a calibration chamber spaced apart from said measurement chamber and extending through said housing for connection to a source of calibration fluid;

an entrance in the wall of each of said chambers for exposing thereto a sensing cell;

a carrier in said housing adjacent said entrances having an opening therethrough receiving and holding said sensing cell, said carrier being movably positioned in said housing for selective movement of said opening and said sensing element between said chambers; and



a sealing wall on said carrier adjacent said measurement chamber entrance movable with said carrier across said measurement chamber entrance for closure thereof on movement of said opening and said sensing element toward said calibration chamber;

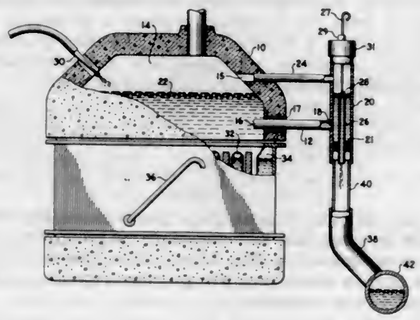
whereby selectively, measurements may be made in a fluid stream, or, without significant interference with said stream, calibrations may be made outside said stream.

3,418,232

ANOLYTE LIQUID LEVEL CONTROL FOR CHLOR-ALKALI DIAPHRAGM CELLS

Alvin T. Emery, North Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Nov. 29, 1965, Ser. No. 510,317
7 Claims. (Cl. 204—263)



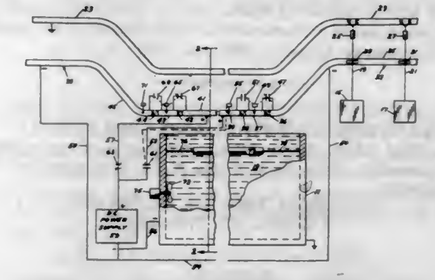
Recirculation of anolyte in a diaphragm type chlor-alkali electrolytic cell is performed in conjunction with control of the anolyte level in the anolyte compartment by anolyte withdrawal means comprising a conduit extending from the interior of the anolyte compartment of the cell to a liquid retaining vessel within which is disposed an overflow pipe which may be adjusted to raise or lower the overflow inlet and thereby raise or lower the level of the anolyte in the electrolytic cell. The liquid level control device may be equipped with means to equalize the pressure within the anolyte compartment and a sight glass for observation of liquid flow.

3,418,233

APPARATUS FOR ELECTROCOATING USING AN AUXILIARY ELECTRODE

Raymond A. Igras, Dearborn Township, Wayne County, and Gordon G. Strosberg, Oak Park, Mich., assignors to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,741
1 Claim. (Cl. 204—300)



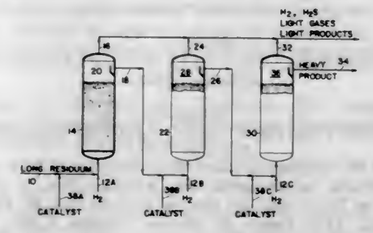
1. Apparatus for coating electrically conductive objects comprising in combination an electrically conductive coating tank adapted to retain an aqueous coating bath in which organic film-forming materials are dispersed, said tank comprising a first electrode, a second electrode of the same polarity as said first electrode extending longitudinally of said tank so as to be positioned beneath the surface of said bath when said tank is charged with said bath, transfer means for transporting said objects through said bath and under said second electrode, electrical means for providing a unidirectional flow of electrical energy between each object and said electrodes when said bath is in said tank and said object is in contact with said bath, said electrical means including a conductor in electrical connection with said object and means for imparting an electrical charge to said object through said conductor of opposite polarity with respect to said electrodes, and means associated with said conductor and adapted to be actuated by movement of said object with respect to said bath whereby said flow of electrical energy is initiated.

3,418,234

HIGH CONVERSION HYDROGENATION

Michael C. Chervenak, Pennington, and Seymour C. Schuman, Princeton, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 418,702, Dec. 16, 1964. This application Feb. 16, 1967, Ser. No. 632,851
5 Claims. (Cl. 208—59)



A multiple stage, ebullated bed hydrogenation of a residuum feed material with relatively low conversion per stage and interstage removal of reaction effluent vapors to produce a high yield of low sulfur fuel oil.

3,418,235

MOLECULAR SIEVE SEPARATION PROCESS

David W. Savage, Westfield, Maurice G. Lorenz, North Plainfield, and William J. Asher, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,089
4 Claims. (Cl. 208—310)

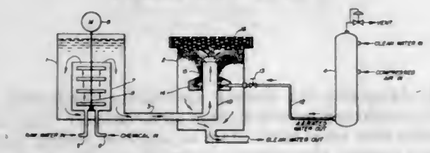
The problem of bed lifting in a cyclic molecular sieve adsorption-desorption process wherein desorption is effected with a displacing agent, such as ammonia, is solved by making use of a co-current adsorption-desorption cycle at temperatures between 700° and 800° F.

3,418,236

FLOTATION METHOD AND APPARATUS

Isaac Paul Mall, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,974
6 Claims. (Cl. 210—44)



A tank has a central flame for flowing polluted water into the tank. A source of gas bubbles is arranged to release bubbles into, and under, the polluted water to float the contaminates of the water to the surface.

3,418,237

SETTLING OF NON-ARGILLACEOUS ORE PULPS AND MINERAL SUSPENSIONS BY USE OF WATER-SOLUBLE ACRYLIC POLYMERS

Robert B. Booth and John M. Dobson, Stamford, Conn., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Dec. 22, 1953, Ser. No. 399,836
22 Claims. (Cl. 210—54)

1. A process of settling ore pulps and mineral suspensions containing finely-divided, predominantly non-argillaceous minerals which comprises treating said ore pulps and mineral suspensions having a pulp density of not more than about 50% solids with a water-soluble polymer of a compound represented by the formula

$$C{=}C{-}R$$

wherein R is selected from the group consisting of nitrile, amide, and carboxyl radicals, COOM wherein M is a lower alkyl radical of from 1 to 4 carbon atoms, and water-soluble salts thereof, said polymer being employed in an amount ranging from about 0.005 lb./ton to about 10 lb./ton by weight of suspended mineral solids, said polymer having an average molecular weight of at least 10,000, and allowing the finely-divided mineral solids to settle.

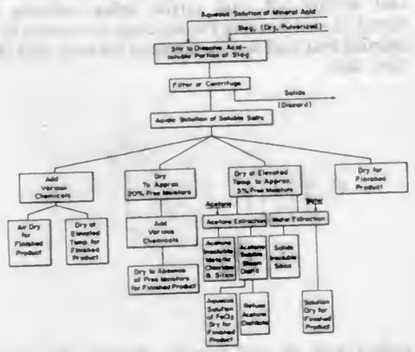
3,418,238

PROCESS FOR PREPARING ADDITIVE-MODIFIED SILICA GELS

Harold W. Wilson, El Paso, Tex., assignor of fifty percent to Wilson Laboratories, Inc., El Paso, Tex., a corporation of Texas, and ten percent each to Jack W. Flowers, Waco, Tex., James H. Maxey, Fresno, Calif., David C. Case, Wesley D. Rogers, Jr., and Vernon E. Thompson, Lubbock, Tex.

Filed Mar. 19, 1965, Ser. No. 441,009
7 Claims. (Cl. 252—1)

A process for the preparation of a modified silica gel derived from mineral acid extracts of waste slag resulting from the reverberatory refining of copper pyritic type ores which comprises treating the slag with an aqueous solution of at least one mineral acid to dissolve the acid-soluble portion of the slag under conditions whereby the temperature of the slag-acid system does not generally exceed 175° F. so that the formation of a silica gel is avoided, separating the resulting mineral acid solution



from the solid and insoluble residue, modifying the silicic acid dihydrate containing solution by the addition of chemicals to be carried by the silica and altering the hydrogen ion concentration of the silicic acid dihydrate by driving off water so as to convert the silicic acid dihydrate to silicic acid monohydrate at which point the system gels to provide a modified silica gel which acts as a carrier for the added chemicals.

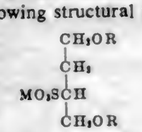
3,418,239

OIL WELL WATERFLOODING METHOD

James E. Cooper, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,321
11 Claims. (Cl. 252—8.55)

A method for the recovery of oil from an oil-containing subterranean formation by injecting flooding liquid through an injection well into the formation and producing oil from the formation through a production well wherein there is injected into the formation an aqueous solution containing a water-soluble dietherbutanesulfonate having the following structural formula:



In this formula, R is an alkyl group containing from 5 to 16 carbon atoms, inclusive; a phenyl group; or an aralkyl group containing from 7 to 16 carbon atoms, inclusive; and M is an alkali metal ion; an ammonium ion; or a substituted ammonium ion.

3,418,240

LUBRICANTS CONTAINING A TRIORGANOSILYL PHOSPHONATE AS AN EXTREME PRESSURE AGENT

Herbert Myers, Barrington, and William F. Olszewski, Cherry Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 15, 1966, Ser. No. 557,612
10 Claims. (Cl. 252—46.7)

Lubricant compositions and other industrial fluids have improved extreme pressure properties by the presence of a bis(triorganosilyl)phosphonate. These phosphonates are produced by the reaction of at least two moles of triorganosilyl halide with a dialkylphosphonate.

3,418,241

PROCESS FOR MAKING ALUMINUM-CONTAINING FERRITES

Joseph H. Weis, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,695
12 Claims. (Cl. 252—62.58)

In aluminum-containing magnetic ferrites, the aluminum is more readily introduuced in the form of boehmite when making the ferrite.

3,418,242

REFRIGERANT COMPOSITION

Bernhardt J. Elseman, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 18, 1965, Ser. No. 456,840
1 Claim. (Cl. 252—67)

Substantially azeotropic compositions consisting of 15 to 95% by weight of bromotrifluoromethane and 85% to 5% by weight of difluoromethane; useful as refrigerants and advantageous due to their high critical temperature and increased refrigeration capacity.

3,418,243

ART OF CLEANING CARPETS

Orville D. Hoxie, Grand Rapids, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,345
4 Claims. (Cl. 252—154)

The invention relates to a dry cleaning composition for carpets, composed of a finely divided inert carrier, a volatile organic solvent, a water soluble surfactant and water. The formulation is in the form of a powder which is only slightly moist to the touch but is essentially free flowing. When applied to the carpet, the inert carrier functions as a fiber scouring medium, while the solvent attacks greases and oils and the aqueous phase serves to dissolve water soluble soil. Upon evaporation of the solvent and water, the soiled particles are adsorbed on the surface of the carrier and the resulting residue can be readily removed from the carpet by sweeping or vacuuming.

3,418,244

METHOD FOR PRODUCING BORIC OXIDE

Robert V. St. Louis, Los Angeles, Joseph G. Whiten, Fullerton, and Norman T. Sprouse, Brea, Calif., assignors to United States Borax Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Mar. 28, 1966, Ser. No. 537,697
13 Claims. (Cl. 252—188.3)

Sodium borate-sulfuric acid feed mixture for conversion to boric oxide is prepared by adding up to about 25%, by weight, of water to sodium tetraborate pentahydrate prior to combining the borate with sulfuric acid. The water can be added as free water or by mixing the tetraborate pentahydrate with up to about 150% of its weight of sodium tetraborate decahydrate.

3,418,245

FUEL MATERIALS FOR NUCLEAR REACTORS

Denis William John Hazelden, Bishop's Stortford, John Jephson Norreys, Derby, and Michael John Wheeler, Garston, Watford, England, assignors to General Electric Company Limited, London, England, a British company

No Drawing. Filed May 1, 1967, Ser. No. 634,818
Claims priority, application Great Britain, May 2, 1966, 19,220/66
2 Claims. (Cl. 252—301.1)

A fuel material for a nuclear reactor is composed of uranium or plutonium, or both uranium and plutonium, together with niobium and carbon, in relative atomic proportions substantially in the range of $(51-x)$ percent M:x percent niobium:49% carbon to $(48-x)$ percent M:x percent niobium:52% carbon, wherein M consists of uranium and/or plutonium and the value of x is in the range of 0.1 to 8.0 atomic percent, the fuel material consisting wholly or mainly of a solid solution of niobium monocarbide with uranium monocarbide and/or plutonium monocarbide. Several methods of manufacturing the fuel materials are described.

3,418,246

RARE EARTH ACTIVATED YTTRIUM AND GADOLINIUM OXY-CHALCOGENIDE PHOSPHORS

Martin R. Royce, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 442,494, Mar. 24, 1965. This application Dec. 28, 1967, Ser. No. 694,079
13 Claims. (Cl. 252—301.4)

A family of cathodoluminescent phosphors which consist essentially of oxy-chalcogenides of yttrium and/or gadolinium containing, for each mol of phosphor, between 0.0002 and 0.2 mol of dysprosium, erbium, europium, holmium, neodymium, praseodymium, samarium, terbium, and thulium. Up to 25 mol percent of the yttrium and/or gadolinium may be replaced with lanthanum and/or lutetium. The phosphors may be prepared by reacting the contstituent elements as compounds thereof at temperatures between 900 and 1300° C. for 0.2 to 5.0 hours and then cooling the reaction product.

3,418,247

RARE EARTH ACTIVATED LANTHANUM AND LUTETIUM OXY-CHALCOGENIDE PHOSPHORS

Perry N. Yocom, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 442,518, Mar. 24, 1965. This application Jan. 9, 1968, Ser. No. 696,490
12 Claims. (Cl. 252—301.4)

A family of cathodoluminescent phosphors which consist essentially of oxy-chalcogenides of lanthanum and/or lutetium containing, for each mol of phosphor, between 0.0002 and 0.2 mol of dysprosium, erbium, europium, holmium, neodymium, praseodymium, samarium, terbium, or thulium. Up to 15 mol percent of the lanthanum and lutetium may be replaced with yttrium or gadolinium. The phosphors may be prepared by reacting the constituent elements as compounds thereof at temperatures between 900 and 1300° C. for 0.2 to 5.0 hours and then cooling the reaction product.

3,418,248

PREPARATION OF ELECTROLUMINESCENT PHOSPHORS

William A. Thornton, Jr., Cranford, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 16, 1965, Ser. No. 480,012
6 Claims. (Cl. 252—301.6)

A method of preparing superior zinc sulphide electroluminescent phosphor by low temperature activation of photoluminescent material. Copper acetate or copper chloride is added to the photoluminescent material in predetermined amounts and the resulting mixture is baked in an atmosphere comprising oxygen at from 350° to 700° C. for a time sufficient to render the material electroluminescent.

3,418,249
STABLE ASPHALTENE DISPERSION-ASPHALT EMULSIONS AND THEIR PREPARATION

Armin C. Pitchford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1964, Ser. No. 409,579
7 Claims. (Cl. 252—311.5)

A stable emulsion which sets down on a working surface a low-penetration, high softening point asphalt is prepared by mixing a colloidal dispersion of asphaltenes containing from about 25 to about 80 weight percent asphaltenes, the remainder being substantially water and emulsifying agent, and an asphalt emulsion containing from about 50 to about 75 weight percent asphalt, the remainder being substantially water and emulsifying agent.

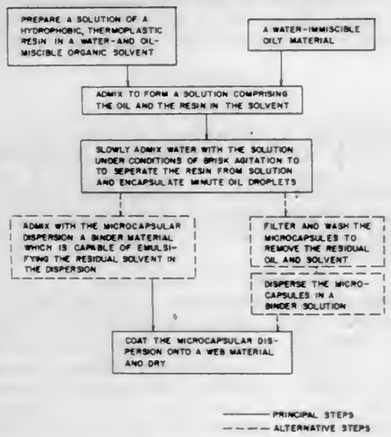
ERRATUM

For Class 252—316 see:
Patent No. 3,418,656

3,418,250
MICROCAPSULES, PROCESS FOR THEIR FORMATION AND TRANSFER SHEET RECORD MATERIAL COATED THEREWITH

Anthony E. Vassiliades, Staten Island, N.Y., assignor to U.S. Plywood-Champion Papers, Inc., a corporation of New York

Filed Oct. 23, 1965, Ser. No. 503,966
14 Claims. (Cl. 252—316)



Microcapsules containing droplets of a water-immiscible oily material are produced in the absence of coacervation by admixing a water-immiscible oily material, at least one thermoplastic resin solution and water, with the water effecting the separation of the resin from solution in solid particle form about a nucleus of said oily material upon dilution therewith as the final operation of the process.

3,418,251
GELS OF ORGANIC COMPOUNDS OF ZIRCONIUM AND PROCESS FOR FORMING SAME

James Albert Stynes, Lewiston, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

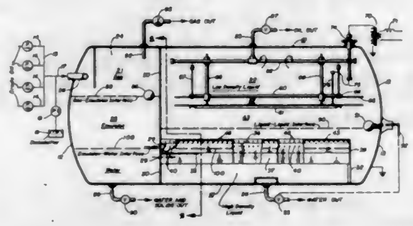
No Drawing. Original application Dec. 31, 1963, Ser. No. 334,928, now Patent No. 3,350,432, dated Oct. 31, 1967. Divided and this application Feb. 23, 1967, Ser. No. 635,278
12 Claims. (Cl. 252—316)

Gels are formed with many liquids by mixing therewith a small amount of a glyceratozirconium halide, i.e. $[Zr(OH)_x(C_3H_6O_3)_yA_z]_n$ where A is a halogen selected from the group consisting of chlorine, bromine, and iodine; y is a number in the range 0.8–8.0; z is a number in the range 0.9–1.15; x is a number equivalent to $4-(2y+z)$; and n is a variable number greater than 1; in aqueous solution.

3,418,252
EMULSION TREATMENT APPARATUS

Alex W. Francis, Jr., Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 597,158
5 Claims. (Cl. 252—360)



A vessel, horizontally extended, is shown with oil well fluids produced into the left-hand compartment and subsequently distributed at the lower portion of the right-hand compartment for upward flow into an electrostatic field for removal of water. A distributing structure in the lower portion of the right-hand compartment is shown in detail.

3,418,253
CORROSION INHIBITING AQUEOUS AMINE DISPERSION EMULSIFIED WITH AN ETHOXYLATED AMIDE

Ronald M. Silverstein, Parsippany, N.J., and Chester A. Bishof, Glenside, Pa., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,072
9 Claims. (Cl. 252—392)

The present invention concerns methods and materials for inhibiting the corrosion of metal surfaces contacted by steam or steam condensate in which an aqueous dispersion of a straight chain aliphatic hydrocarbon primary amine emulsified with an ethoxylated amide is dispersed in the steam or steam condensate. Typical of the amines and amides employed are octadecylamine and ethoxylated octadecylamide.

3,418,254
CORROSION INHIBITING WITH ETHOXYLATED AQUEOUS AMINE DISPERSIONS

Chester A. Bishof, Glenside, Pa., and Ronald M. Silverstein, Parsippany, N.J., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,065
9 Claims. (Cl. 252—392)

The invention concerns methods and compositions for inhibiting the corrosion of metal surfaces which are contacted by steam of condensate in which an aqueous emulsion of a primary aliphatic fatty amine, emulsifier by an ethoxylated alcohol, is dispersed in the steam or condensate. In a preferred embodiment octadecylamine emulsified by nonylphenoxypoly (ethyleneoxy) ethanol is employed.

3,418,255
METHOD OF PRODUCING CONCENTRATED SOLUTIONS OF MIXED AMMONIUM SALTS OF BORIC, PHOSPHORIC AND SULFURIC ACIDS

Marion L. Brown, Jr., Albert W. Green, and Elmer L. Blanton, Yazoo City, Miss., assignors to Mississippi Chemical Corporation, Yazoo City, Miss., a corporation of Mississippi

No Drawing. Continuation-in-part of application Ser. No. 588,754, Oct. 24, 1966, now Patent No. 3,317,276. This application Apr. 28, 1967, Ser. No. 634,495
8 Claims. (Cl. 252—397)

Mixture of concentrated sulfuric and phosphoric acids is converted with ammonia to their ammonium salts; boric acid is added; and additional ammonia is added to convert most or all of the phosphoric acid to diammonium phosphate.

3,418,256
CATALYST REGENERATION

James Arthur Rigney and Glen Porter Hamner, Baton Rouge, and Ralph Burgess Mason, Denham Springs, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 26, 1965, Ser. No. 459,107
12 Claims. (Cl. 252—415)

Sulfur-containing crystalline alumino-silicate zeolite catalysts are regenerated by the steps of contacting the deactivated catalyst with chlorine or a halogen containing compound at elevated temperature followed by burning with air at elevated temperature.

3,418,257
CRYSTALLINE ZEOLITE CONTAINING SINGLY CHARGED NICKEL CATIONS

Karl Robert Müller, Brussels, Belgium, Jule A. Rabo, Armonk, and Paul H. Kassai, White Plains, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,736
2 Claims. (Cl. 252—455)

Crystalline alumino-silicate zeolites of the molecular sieve type containing cationic nickel ions in the plus one valence state, and process for making them by reducing zeolite Y containing nickel ions in the plus two valence state.

3,418,258
PRODUCTION OF HIGHLY ACTIVE METALS OF THE IRON GROUP

Karl Ackermann, deceased, late of Mannheim, Germany, by Karl Siebert, representative of the heirs, Kuhbach, near Lahr, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 15, 1965, Ser. No. 453,856
Claims priority, application Germany, Feb. 18, 1964, B 75,478
8 Claims. (Cl. 252—472)

Pyrophoric metals of the iron group obtained by allowing solutions containing a salt of a weakly basic metal whose oxides are irreducible at temperatures lower than 1000° C., such as salts of zinc, chromium, and aluminum, and oxidizing anions such as nitrates, persulfates or chlorates, to act on the iron group metals, and reducing the reaction material thus formed with hydrogen.

3,418,259
CRYSTALLINE POLYBENZYLS AND PROCESS OF PRODUCING SAME

Joseph P. Kennedy, Clark, and Robert B. Isaacson, Roselle, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,896
16 Claims. (Cl. 260—2)

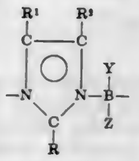
Crystalline polybenzyls are prepared by the polymerization of benzyl halides with a Friedel Crafts catalyst at a temperature of between about −50° C. and about −145° C.; amorphous copolymers of benzyl halides and C_3–C_8 α-monoolefin under the same conditions are also prepared.

3,418,260
IMIDAZOLE-BORANE POLYMERS

Swiatoslaw Trofimenko, Chatham, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,812
9 Claims. (Cl. 260—2)

Imidazole-borane polymers having a recurring unit of the formula



in which R, R^1, R^2, Y and Z represent hydrogen, halogen or a variety of alkyl, aryl and other substituents can be made by reacting an appropriate imidazole with a boron compound BXYZ or a complex thereof with an electron donor molecule in which X is hydrogen, halogen or alkyl, provided that if uncomplexed BXYZ is used, at least one substituent other than hydrogen must be present. The polymers are useful as viscosity increasing additives to oils, and in some instances for making heat resistant films.

3,418,261
POLYMERS PREPARED FROM 2,4,2',4'-TETRAAMINODIPHENYLALKANES

Albert L. Idelson, Morristown, N.J., and Morton H. Litt, Cleveland, Ohio, assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 14, 1967, Ser. No. 660,211
10 Claims. (Cl. 260—2)

This invention relates to novel polymers prepared by reacting a 1,1-bis(2,4-diaminophenyl)alkane or an acid salt thereof with a compound selected from the group consisting of N-formylated amines, formic acid and esters of formic acid.

3,418,262
PREPARATION OF MACROPOROUS ION EXCHANGE RESINS

Louis E. Wérotte and Paul D. Grammont, Chauny, France, assignors to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,886
Claims priority, application France, Apr. 28, 1966, 59,462
11 Claims. (Cl. 260—2.2)

Macroporous resins are prepared by copolymerizing an aqueous suspension of at least one mono-olefinic monomer, such as styrene, with at least one polyolefinic monomer, such as divinylbenzene, in the presence of at least one saturated aliphatic carboxylic acid which is relatively water-insoluble, e.g., caprylic acid. Ion exchange material of high porosity and having excellent resistance to attrition may then be formed from these resins by chemical treatment to either introduce or activate ion exchange groups.

3,418,263

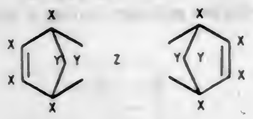
FIRE RETARDANT POLYMER COMPOSITIONS CONTAINING HALOGENATED-CYCLOPENTADIENE ADDUCTS

Raymond R. Hindersinn, Lewiston, and Harry W. Marciniak, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,966

18 Claims. (Cl. 260—23)

Discoloration resistant, fire retardant polymeric compositions are comprised of (1) a combustible polymer, (2) a fire retarding agent of the formula:



wherein X is selected from the group consisting of bromine, chlorine and fluorine; Y is selected from the group consisting of bromine, chlorine, fluorine, alkyl and alkoxy; and Z is a tetravalent cyclic hydrocarbon radical having at least 5 carbon atoms, and (3) an organo metal stabilizer.

The additive compounds do not migrate from the polymer, do not plasticize the polymer and inhibit color formation. Accordingly, the polymer compositions readily lend themselves to being processed by extrusion and molding.

3,418,264

SELF-INKING RUBBER

Frederich A. Deuter, Hilton, South Australia, Australia, assignor of one-half to John Foundas, Mile End, South Australia, Australia

Filed Nov. 9, 1966, Ser. No. 593,017

Claims priority, application Australia, Nov. 16, 1965, 66,642/65

The portion of the term of the patent subsequent to July 18, 1984, has been disclaimed

12 Claims. (Cl. 260—23.7)

A self-inking rubber comprising in weight percent:

(a) Polyisoprene	About 20 to About 50
(b) Sulphur	About 1 to About 10
(c) A release agent consisting of a glycerol or glyceride type material	About 5 to About 25
(d) A hygroscopic polymer of ethylene glycol	About 10 to About 30
(e) A dye capable of release from the rubber when atmospheric moisture is absorbed by the hygroscopic polymer	About 5 to About 20
(f) A filler including magnesium carbonate	About 5 to About 20

3,418,265

PROCESS OF PREPARING LATICES OF SUBMICRON SIZE PARTICLES OF ETHYLENE POLYMERS

Dorothee M. McClain, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 370,006, May 25, 1964. This application Dec. 20, 1966, Ser. No. 603,118

13 Claims. (Cl. 260—29.6)

Aqueous stable film-forming ethylene polymer latices containing ethylene polymer particles of submicron size are provided. The film forming latices are made up of water, ethylene polymer homogeneously dispersed therein with an emulsifier therefor in an amount within the range from about 0.5 to about 25 parts per 100 parts of polymer, and a volatile inert organic liquid that is soluble in the ethylene polymer in an amount within the range from about 10 to about 100 parts per 100 parts of polymer, sufficient to soften the polymer particles and render them film-forming upon deposition from the latex.

A process for producing the submicron high molecular weight stable film-forming aqueous ethylene polymer latices is also provided.

3,418,266

WATER REPELLENT COMPOSITIONS

John M. Nielsen, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed July 29, 1964, Ser. No. 386,076

7 Claims. (Cl. 260—33.8)

Organopolysiloxane compositions are provided which are useful for rendering fabrics water repellent, comprising an organohydrogenpolysiloxane, and an organometallic ester, such as a titanium alkoxide. The organopolysiloxane compositions can contain a glycol stabilizing agent for the organometallic ester. The organopolysiloxane compositions also can employ organohydrogenpolysiloxane having terminal diorganohydrogen siloxy units.

3,418,267

FLAME-RESISTANT POLYAMIDES AND PROCESS THEREOF

Warren F. Busse, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,463

5 Claims. (Cl. 260—33.8)

Polyamide resin is made flame retardant by incorporating therein from 5 to 20 percent by weight of an organic halide, e.g., chlorinated biphenyl, which is reactive with the resin only at its pyrolysis temperature and from 3 to 15 percent by weight of an oxide of tin, lead, copper, iron, zinc or antimony.

3,418,268

PROCESS FOR PREPARING POLYLACTAM COMPOSITIONS

Ross M. Hedrick and Paul A. Tierney, St. Louis County, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 26, 1964, Ser. No. 378,450

38 Claims. (Cl. 260—37)

1. A process for preparing polylactam compositions comprising

(a) combining under conditions incapable of causing rapid polymerization of the lactam monomer, lactam monomer, basic lactam polymerization catalyst, organic isocyanate, inorganic filler material in a quantity sufficient to provide a composition containing from about 5 to about 95% by weight of said filler material, and a polyurethane polymerization catalyst capable of catalyzing the reaction of a di- or polyisocyanate with a di- or polyol; and

(b) heating the mixture formed thereby at a temperature from about the melting point of said lactam up to about 250° C. for a time sufficient to cause polymerization of the lactam.

3,418,269

STRESS-CRACK RESISTANT POLYETHYLENE COMPOSITIONS

George L. Bata, Montreal, Quebec, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a corporation of Canada

No Drawing. Continuation of application Ser. No. 334,026, Dec. 27, 1963. This application Nov. 17, 1966, Ser. No. 595,266

10 Claims. (Cl. 260—38)

1. In a process for preparing a polyethylene composition which comprises mixing a normally solid polyethylene at a temperature of between 115° C. and, 150° C. with from 1.5 percent to 12 percent by weight of said polyethylene of a drying oil-soluble resinous condensation product of a phenol and an aliphatic aldehyde and from one percent to six percent by weight of said polyethylene of an additive consisting of at least one selected from the group consisting of carbon black and an antioxidant for polyethylene, the improvement which comprises also incorporating from 0.05 percent to 6 percent by weight of hexamethylenetetramine based on the weight of polyethylene, so as to decrease the tackiness of the resulting composition.

3,418,270

METHOD FOR DISPERSING PIGMENTS IN POLYETHYLENE

Richard K. Traub, Edgewood, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 22, 1964, Ser. No. 420,424

12 Claims. (Cl. 260—41)

There is disclosed a process for preparing pigmented polyolefin compositions containing 1–6% by weight pigment by first preparing a superconcentrate containing 20–45% by weight of the pigment in a copolymer of ethylene with an unsaturated acid, ester, or anhydride, and then extending the superconcentrate by melt-blending with the polyolefin. The ethylene copolymer contains 2–15 mole percent of units derived from the comonomer. The polyolefin used to extend the superconcentrate is either polyethylene or a copolymer of ethylene with a 1-olefin containing 3 to 12 carbon atoms. Carbon black is a preferred pigment for use in the process.

3,418,271

STABILIZATION OF ACYLATED OR ALKYLATED POLYOXYMETHYLENES

Kuno Wagner, Leverkusen, Hans Scheurlen, Burscheid, and Helmuth Kritzler, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Application June 2, 1966, Ser. No. 554,667, now Patent No. 3,376,255, dated Apr. 2, 1968, which is a division of application May 24, 1960, Ser. No. 31,259, now Patent No. 3,296,194, dated Jan. 3, 1967. Divided and this application July 12, 1967, Ser. No. 661,490

Claims priority, application Germany, June 4, 1959, F 28,611

6 Claims. (Cl. 260—45.8)

Thermal stability of polyoxymethylene obtained by the addition of groups of compounds including amines and hydrazines, salts of inorganic or organic bases and dithiocarbamic acids, aromatic and cycloaliphatic diamines alkylated in the ortho positions to the amino group, aldehydes of tertiary aromatic amines and their functional derivatives, 1,6-tetra-substituted hydrazodicarbonamides, esters of hydrazodicarboxylic acid, 1-substituted hydrazine mono-carboxylic acid esters, 1-substituted semi-carbazide and thio-semi-carbazide mono-carboxylic acid esters, 1,4-substituted semi-carbazides and thio-semi-carbazides, mono-substituted urethanes and thiourethanes, allophanic acid esters, biuret derivatives, N-substituted melamines containing NH groups, substituted guanidines, formamidines, and amidines as well as iminoethers.

3,418,272

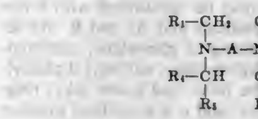
STABILIZATION OF POLYOLEFINS WITH N,N'-TETRA-SUBSTITUTED ALKYLENEDIAMINES AND OXYALKYLENEDIAMINES

Robert M. Pines, Spring Valley, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 208,600, July 9, 1962. This application Dec. 29, 1967, Ser. No. 694,754

6 Claims. (Cl. 260—45.8)

Compositions of normally solid homopolymers of polyethylene or polypropylene are improved by addition of from about 0.01 to about 5% by weight of N,N'-tetrasubstituted alkylenediamines and oxyalkylenediamines of the formula:



wherein R_1, R_2, R_3, R_4, R_5, R_6 and A are as defined in the specification and other stabilizers, particularly hindered phenolic antioxidants. Synergistic combinations of stabilizers of the above formula and phenolic antioxidants are employed in amounts of from about 0.01% to about 10%. A preferred composition exemplified is polypropylene containing 0.1% of bis(2-aminoethyl)ether N,N,N',N'-tetraacetic acid and 0.1% of 6-(4-hydroxy-3,5-di-t-butyl-anilino)-2,4-bis-(n-octylthio)-1,3,5-triazine.

3,418,273

POLYMER BLENDS AND INTERMEDIATES THERETO AND PROCESSES FOR THEIR PRODUCTION

James Economy, Buffalo, Luis C. Wohrer, Lewiston, and John H. Mason, Clarence, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,266

15 Claims. (Cl. 260—45.75)

Metal salts of alkanedioic and aromatic dibasic acids are used to improve one or more of the physical properties of certain thermoplastic and thermosetting resins, either before or after exposure to high temperatures.

3,418,274

LIQUID COATING COMPOSITION COMPRISING A VINYL CHLORIDE DISPERSION RESIN, A VINYL CHLORIDE COPOLYMER SOLUTION RESIN AND ACRYLIC RESIN IN AN ORGANIC VEHICLE AND METAL COATED THEREWITH

Richard E. Caplan, Waukegan, Robert H. Rosenthal, Highland Park, and Richard W. Clope, Zion, Ill., assignors, by mesne assignments, to The Dexter Corporation, a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 368,321, May 18, 1964. This application Dec. 15, 1965, Ser. No. 514,108

13 Claims. (Cl. 260—41)

Disclosed is a liquid coating composition, suitable for use as a baked-on metal coating, which comprises 20–70% by weight of non-volatiles containing 10–34 parts percent vinyl chloride dispersion resin, 9–34 parts of vinyl chloride copolymer solution resin, and about 2–40 parts of acrylic resin in an organic liquid vehicle.

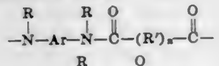
3,418,275
AROMATIC POLYAMIDES FROM N,N'-DIPHENYL DIAMINES

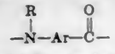
Curtis Wayne Stephens, Longwood, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Nov. 8, 1962, Ser. No. 236,393. Divided and this application July 6, 1966, Ser. No. 563,051

4 Claims. (Cl. 260—47)

1. A fiber-forming nitrogen-containing linear condensation polymer consisting essentially of recurring structural units of one of the following:

(1) 

(2) 

wherein R is phenyl which may be substituted with lower alkyl, halogen or p-phenyl radicals and Ar and R' are selected from the group consisting of phenylene, naphthylene, biphenylene, alkylene diphenylene, sulfonyl diphenylene, oxy diphenylene and the halo- and lower alkyl ring-substituted derivatives thereof; and *n* is a cordinal number not greater than 1.

3,418,276
HOMOPOLYMERIC AND COPOLYMERIC ESTERS OF CERTAIN BIS(4-CARBOXYPHENOXYALKYL) CYCLOHEXANES

Emmette F. Izard, Kenmore, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,067

9 Claims. (Cl. 260—47)

Linear polymeric polyesters derived from at least one organic diol and an organic dicarboxylic acid which is wholly or in part a bis(4-carboxyphenoxyalkyl)cyclohexane. Fibers of these polyesters exhibit high modulus and high tensile recovery.

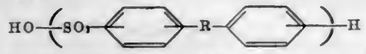
3,418,277
TWO-STAGE PROCESS FOR MAKING SULFONE POLYMERS

Saul M. Cohen, Springfield, and Raymond H. Young, Jr., East Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 18, 1966, Ser. No. 587,438

7 Claims. (Cl. 260—49)

Disclosed herein is a method for further polymerizing low molecular weight oligomers prepared from a disulphonic acid monomer having the following recurring unit in the oligomer:



which process comprises (1) devolatilizing the oligomers and (2) further polymerizing the oligomers to a high molecular weight polymer having a viscosity of at least 0.2 dl./g. (measured in dimethyl acetamide solution at 20° C.) in the presence of a catalyst-medium selected from the group consisting of polyphosphoric acid and carboxylic acid anhydrides.

3,418,278
COPOLYMERS OF TRIOXANE WITH CYCLIC FORMAL AND PROCESS FOR PREPARING SAME

Gianfranco Pregaglia, Milan, Paolo Roffia, Mantova, and Giancarlo Pozzi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,530

Claims priority, application Italy, Apr. 7, 1965, 7,661/65

15 Claims. (Cl. 260—64)

Thermally stable copolymers of trioxane and cyclic formals containing besides —OCH_2O— units, oxyalkylene units derived from opening of one or both acetalic groups comprised in the cyclic formal molecule are obtained by copolymerizing the mixed monomers in contact with Lewis acids containing fluorine or chlorine atoms. Terpolymers are contemplated.

3,418,279
NOVEL OXYMETHYLENE COPOLYMERS

Michael William Baumber, Colchester, England, assignor to Bakelite Xylonite Limited, a British corporation

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,111

Claims priority, application Great Britain, Jan. 2, 1964, 144/64

11 Claims. (Cl. 260—67)

Novel oxymethylene copolymers have been prepared by the cationic polymerization of trioxane with a methylene dioxycyclohexane. The methylene dioxycyclohexane can be unsubstituted or substituted with alkyl groups located in a position meta or para to the ring carbon atom linked to an oxygen atom. The oxymethylene copolymers thus produced can be used to provide shaped articles by well known methods such as injection molding or extrusion.

3,418,280
STABILIZATION OF OXYMETHYLENE COPOLYMERS BY ALKALINE HYDROLYSIS

Donald E. Orgen, Old Bridge, N.J., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Dec. 31, 1964, Ser. No. 422,573

2 Claims. (Cl. 260—67)

A process for the stabilization of a normally solid oxymethylene copolymer whose molecules contain a majority of relatively unstable monomeric oxymethylene units interspersed with comparatively stable, monomeric higher oxyalkylene units, e.g., —O—CH_2—CH_2— units, at least part of the terminal portions of said molecules comprising said unstable monomeric units, which involves hydrolyzing said copolymer at elevated temperature and pressure in the presence of water, or an organic hydroxy-containing alcohol, or mixtures thereof, at a pH between 9.5 and 11.0, operation within said pH range serving to impart optimum color properties to said copolymer.

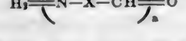
3,418,281
THERMALLY STABLE AMINO-SUBSTITUTED AROMATIC ALDEHYDE RESINS AND PROCESS OF MAKING SAME

Harry A. Smith and William K. Carrington, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,544

6 Claims. (Cl. 260—72.5)

1. A film-forming polymer resin having softening point in the range from 115° to 350° C. and the conjugated structure

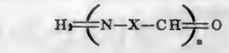


wherein *n* is a polymeric number and —X— is defined below, obtained by heating an amino-substituted aromatic aldehyde having the general formula

$$H_2N{-}X{-}CHO$$

wherein X is an aromatic nucleus selected from the group consisting of benzene, polybenzene, naphthalene and anthracene at a temperature from about 25° C. to about 250° C. in the presence of an ionic catalyst.

4. A process for producing film forming synthetic polymer resins having high softening points in the range from 115° to 350° C. and the conjugated structure



wherein *n* is a polymeric number and —X— is defined below, which comprises heating at a temperature of from about 25° to about 250° C., for at least 3 hours, and in the presence of an ionic catalyst, an amino-substituted aromatic aldehyde having the general formula

$$H_2N{-}X{-}CHO$$

wherein X is an aromatic nucleus selected from the group consisting of benzene, polybenzene, naphthalene and anthracene.

3,418,282
PHOTOSENSITIVE POLYMERS, PREPARATION AND PRODUCT THEREOF

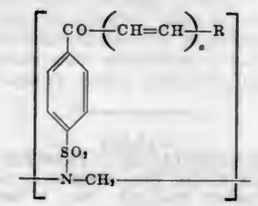
Alberto Guzzi, Ferrania, and Roberto Bosio, Pinerolo, Italy, assignors to Ferrania S.p.A., Milan, Italy

No Drawing. Filed Dec. 14, 1965, Ser. No. 513,822

Claims priority, application Italy, Feb. 12, 1965, 2,838/65

8 Claims. (Cl. 260—72)

Novel photosensitive polymers containing recurring monomer units of the formula



wherein R is a part of a photosensitive chalcone radical and is a substituted or unsubstituted phenyl radical or a furyl radical and *n* is equal to 1 or 2 are shown, together with a process for their preparation and a product containing said polymers.

3,418,283
PROCESS FOR PREPARING POLYOXYMETHYLENE INTERPOLYMERS

Calvin N. Wolf and Murray H. Reich, Princeton, N.J., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 28, 1964, Ser. No. 371,134

8 Claims. (Cl. 260—73)

A solution of polymerization process for preparing high melting, high molecular weight polyoxymethylethylene copolymers using as a catalyst (1) certain aryl diazonium hexafluorophosphates or (2) phosphorus pentafluoride, including complexes thereof, i.e., with esters, ethers, amines, and the like. The copolymers are prepared from trioxane and olefinically unsaturated comonomers, such as, norbornylene, vinyl chloride, vinylidene chloride, styrene, substituted styrene, butyl acrylate, cyclohexene, diallyl phthalate, butadiene, and the like.

3,418,284
COPOLYMERIZATION OF TRIOXANE AND NORBORNADIENE OR A MONOALKYL-SUBSTITUTED DERIVATIVE THEREOF IN THE SOLID STATE

Howard E. Everson, Mentor, Kornel D. Kiss, University Heights, Ohio, and Jerry T. Reed, Houston, Tex., assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed June 7, 1965, Ser. No. 462,088

14 Claims. (Cl. 260—73)

Thermally stable oxymethylene copolymers having an inherent viscosity of at least 1.0 are prepared by reacting trioxane and norbornadiene or a monoalkyl-substituted norbornadiene substantially in the solid state in the presence of a cationically-active polymerization catalyst. The mixture of monomers with the catalyst and optionally with up to 30%, by volume of the total reaction mixture, of an organic liquid reaction medium is maintained at 60° to 68° C. until initiation of copolymerization is effected, after which the mixture is solidified by being cooled to a temperature of 30° to 50° C., along with agitation to provide the reaction mixture in pulverulent form. While copolymerization is being completely effected, the solidified reaction mixture is gradually warmed to a maximum temperature of 68° C., and the copolymer product is recovered in granular form.

3,418,285
UNSATURATED POLYMER CROSSLINKED WITH A POLYFUNCTIONAL NITRILE IMINE

David S. Breslow, Munich, Germany, assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,887

15 Claims. (Cl. 260—75)

Unsaturated polymers can be cross-linked with polyfunctional nitrile imines. The nitrile imines are new compounds having the formula of

(I) 

(II)

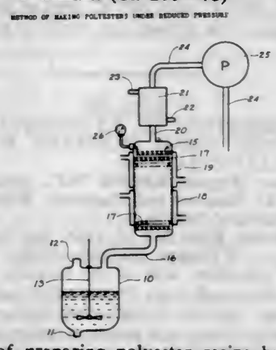
where R is alkylene, cycloalkylene, arylene, arylene-dialkylene, alkylene-diarylene, or cycloalkylene-dialkylene; R' is hydrogen, alkyl, cycloalky, ary, akaryl, or aralkyl; R'' is alkyl, cycloalkyl, aryl, alkaryl, or aralkyl; and *x* is an integer greater than 1.

3,418,286
METHOD OF MAKING POLYESTERS UNDER REDUCED PRESSURE

Karl H. Schmidt, Newark, Ohio, Arthur Weber, Wyckoff, N.J., David Rowe, South Gate, Calif., and John B. Brinker, Cincinnati, Ohio, assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

Filed Aug. 2, 1965, Ser. No. 476,288

8 Claims. (Cl. 260—75)

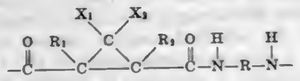


A method of preparing polyester resins by a fusion process which involves passing the water vapor contain-

ing glycol through a heated fractionating column and allowing the glycol to return to the reactor. Vacuum or reduced presure is not applied to the reacting system until the esterification reaction has gone ⅓ of the way to completion and before the reaction has gone ¾ of the way to completion. The claimed process secures the increased reaction rate of subatmospheric pressures without any attendant loss of glycol.

3,418,287
CONDENSATION POLYMERS FROM 1,2-CYCLOPROPANE DICARBOXYLIC ACID
Peter William Foster, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,167
6 Claims. (Cl. 260—78)

1. A fiber-forming linear polycarbonamide consisting essentially of recurring structural units of the formula



wherein R is selected from the group consisting of divalent aromatic, aliphatic, cycloaliphatic and mixed aliphatic-cycloaliphatic groups having at least four carbon atoms in each ring; X_1 and X_2 are selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, phenyl, cycloaliphatic radicals, and radicals with together and with adjacent carbon atom of the cyclopropane nucleus form a cycloaliphatic radical; and R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, and phenyl.

3,418,288
POLYMERIC COMPOSITIONS FROM ETHYLENEDIAMINETETRAACETIC ACID AND HEXAMETHYLENEDIAMINE
Roger F. Monroe, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,590
4 Claims. (Cl. 260—78)

This invention relates to a process for preparing a condensation polymer which is especially well suited for use as adherent coatings for electrically heated wires and the like substrates. Such process comprises the reaction of approximately equal molar amounts of (ethylenedinitrilo)tetraacetic acid and hexamethylenediamine, while dispersed in an inert liquid media, at a temperature between about 200° C. and 300° C. until at least about two moles of water are formed per mole of either of such reactants.

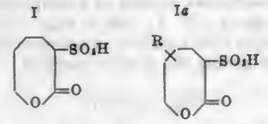
3,418,289
POLYMERIZATION OF 2,2-DIALKYL-3-PROPIOLACTONES USING TERITARY SULFONIUM SALTS AS INITIATORS
Milton Jones Hogsed, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,335
5 Claims. (Cl. 260—78.3)

Tertiary sulfonium salts of the formula $RR'R''S^{\oplus}X^{\ominus}$, wherein R,R' and R'' are hydrocarbyl radicals of 1–12 carbon atoms and $X^{\ominus}$ is an anion, preferably a halide or carboxylate anion, are excellent initiators for polymerization of 2,2-dialkyl-3-propiolactones to form fiber or film-forming polyesters such as polypivalolactone.

3,418,290
SULFONATED CAPROLACTONES AND POLYMERIZATION WITH 2,2-DIALKYL-3-PROPIOLACTONES
Adriaan Bantjes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,468
10 Claims. (Cl. 260—78.3)

2-sulfo-6-caprolactone (I) and lower alkyl derivatives thereof, (*Ia*),

I Ia



wherein R is lower alkyl, are disclosed. These compounds in the form of their metallic salts and esters are useful for preparation of copolyesters of 2,2-disubstituted propiolactones exhibiting a high degree of affinity for basic dyes.

3,418,291
POLYMERS OF UNSATURATED HETEROCYCLIC-SUBSTITUTED LACTONES AND METHOD FOR THEIR PREPARATION
Harald H. O. Chedron, Ittenbach (Rhine), Hans H. W. Ohse, Oberdollendorf (Rhine), Richard A. Palm, Niederdollendorf (Rhine), Wilfried Draber, Ippendorf, Bonn, Juergen F. Falbe, Bonn, and Friedrich W. A. G. K. Korte, Hangeler, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application July 2, 1964, Ser. No. 380,028, now Patent No. 3,373,169. Divided and this application June 26, 1967, Ser. No. 659,255
10 Claims. (Cl. 260—78.3)

Polymers of unsaturated heterocyclic-substituted propiolactones are disclosed. Also disclosed are methods of preparing the unsaturated heterocyclic-substituted propiolactones and how to polymerize them through the unsaturated linkage leaving the lactone groups intact.

3,418,292
POLYMERIZATION PROCESS
Irving E. Muskat, Miami, Fla., assignor, by mesne assignments, to Sinclair Research, Inc., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 191,276, Apr. 30, 1962. This application Jan. 3, 1967, Ser. No. 607,076
11 Claims. (Cl. 260—78.5)

There is disclosed an improved method of copolymerizing an olefinic compound, e.g., styrene, and a maleic compound, e.g., maleic anhydride, which involves simultaneously bringing the olefinic compound, the maleic compound and a free-radical initiating catalyst, e.g., a peroxide catalyst such as benzoyl peroxide, into contact with a solvent which has been pre-heated to the desired polymerization temperature, e.g., about 75 to 300° C., and in which both the reactant monomers and the copolymer product are soluble.

3,418,293
PROCESS FOR THE PREPARATION OF POLYVINYL ALCOHOL BY POLYMERISING A VINYLOXYSILANE AND ALCOHOLYSING THE POLYMER OBTAINED
Wilfred Boichert, Lyon, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,905
Claims priority, application France, Oct. 13, 1964, 991,243
2 Claims. (Cl. 260—80)

Polyvinyl alcohol is prepared by polymerising a vinyloxytrialkylsilane with an ionic catalyst at low temperature and alcoholysing the polymer obtained with an alkanol of 1 to 4 carbon atoms.

3,418,294
ALKALI AND ALKALINE EARTH METALLIC SALTS OF AZOFORMIC ACIDS AND THEIR USE AS VINYL POLYMERIZATION INITIATORS
Ronald Edward MacLeay and Chester Stephen Sheppard, Tonawanda, N.Y., assignors to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware
No Drawing. Filed Feb. 15, 1967, Ser. No. 616,164
7 Claims. (Cl. 260—80)

Alkali metal or alkaline earth metal salts

$$R—N{=}N—C(O)OM$$

where R is broadly a tertiary alkyl radical, a cyano substituted tertiary alkyl radical, or an amido group. Examples are sodium t-butylazoformate and sodium (1-cyano) cyclohexylazoformate.

The process of vinyl polymerization using as the initiator a compound $R—N{=}N—C(O)OM$. Specific vinyl are: vinyl haildes and aliphatic carboxylic acids and esters having a vinyl bond. Ethyl acrylate was polymerized to a solid at pH3 in aqueous emulsion at 10°–15° C. using incremental addition of sodium t-butylazoformate.

3,418,295
POLYMERS AND THEIR PREPARATION
Arnold Charles Schoenthaler, East Brunswick, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 27, 1965, Ser. No. 451,300
5 Claims. (Cl. 260—80.72)

An addition polymer containing one or more units of vinyl monomers and units of the formula

and a process of making such polymers by heating under conditions of reflux in an inert solvent medium in the presence of an organic tertiary amine esterification catalyst and an addition polymerization initiator (1) vinyl addition polymer having a wholly carbon chain and extra-linear glycidyl ester units constituting 10%–100% by weight of the polymer, and (2) sufficient acrylic acid to react with said ester units and recovering a polymeric ester containing extra-linear acrylic ester units.

3,418,296
COPOLYMER CONCENTRATE AND OIL COMPOSITION
Charles R. Bearden, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application Oct. 25, 1961, Ser. No. 147,489, now Patent No. 3,210,282, dated Oct. 5, 1965. Divided and this application July 1, 1965, Ser. No. 478,510
4 Claims. (Cl. 260—80.72)

Novel oil-soluble copolymers of (a) N-vinyl-3-morpholinone and (b) an alkyl acrylate or methacrylate wherein the alkyl radical contains 4–20 carbon atoms, and wherein the proportion of (a) is 3 to 30%, are useful as additives for lubricating oils.

3,418,297
POLYMERIZATION PROCESS
Lowell D. Grinninger, Harry Greenberg and Virgil L. Hansley, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,718
11 Claims. (Cl. 260—82.1)

A process is provided for control of the molecular weight of alfin polymers and copolymers by carrying out the polymerization in the presence of an alfin catalyst and an alkyl or polyalkyl ether of a dihydrobenzene or a dihydronaphthalene, or mixtures thereof, as a molecular weight modifier.

3,418,298
CATALYTIC COPOLYMERIZATION OF BUTADIENE CHLORIDES WITH DIENES
Clifford O. Eddy, Jr., Independence, Ohio, assignor to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Filed July 12, 1965, Ser. No. 471,408
7 Claims. (Cl. 260—82.1)

Copolymerization of reactive butadiene chlorides with less reactive dienes to form a copolymer containing more than 30 mole percent of the less reactive diene is accomplished by the use of catalysts which are compounds of iridium, rhodium or ruthenium. The preferred reactive butadiene chloride is 2,3-dichlorobutadiene-1,3 and preferred less reactive dienes are 1,3-butadiene and 2-chlorobutadiene-1,3. Preferred catalysts are rhodium (I) compounds.

3,418,299
PROCESS FOR THE PRODUCTION OF VULCANIZABLE COPOLYMERS
Kurt Benedikter, Karl-Otto Hagel, and Norbert Wilke, Marl, Germany, assignors to Chemische Werke Hüls Aktiengesellschaft, Marl, Germany
No Drawing. Filed Jan. 26, 1965, Ser. No. 428,234
Claims priority, application Germany, Feb. 21, 1964, C 32,219
16 Claims. (Cl. 260—85.3)

Copolymers of (a) at least one 1-olefin and (b) a Diels-Alder adduct of a triene and cyclopentadiene, prepared with a metal-organic mixed catalyst, are vulcanizable and suitable for the production of vehicle tires.

3,418,300
INHIBITION OF POLYMERIZATION
Akira Nakajima, Kenji Takeya, and Masanobu Hoten, Saidaiji, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 16, 1964, Ser. No. 418,908
Claims priority, application Japan, Jan. 16, 1964, 39/1,912; Apr. 23, 1964, 39/23,289
6 Claims. (Cl. 260—85.5)

A process for inhibiting polymerization of aqueous solutions of monomers containing ethylenically unsaturated groups which are polymerizable when in the presence of a polymerization initiator system containing a reducing sulfoxy compound as one of its components comprising adding to such solutions, in an amount sufficient to inhibit polymerization, a compound selected from the group consisting of water-soluble nitrites and nitric oxide.

3,418,301
ETHYLENE/HALOETHYL ESTER COPOLYMERS
Ben E. Spivey, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 7, 1965, Ser. No. 454,178
3 Claims. (Cl. 260—86.7)

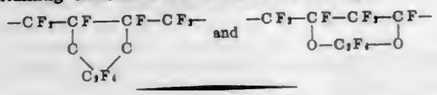
Ethylene copolymers prepared by polymerizing ethylene with halo alkyl acrylates or methacrylates. These are useful as adhesives and can be used to make laminated wood, paper or glass articles.

3,418,302
PERFLUOROCYCLIC ETHER POLYMERS

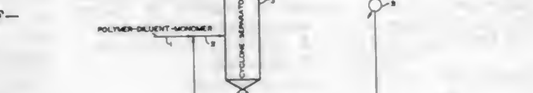
Robert Albert Darby, Vienna, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,837
5 Claims. (Cl. 260—87.5)

1. A substantially saturated solid thermoplastic polymer of perfluorodimethylene-bis(perfluorovinyl ether) containing structures of the class consisting of:



and



3,418,303
COORDINATION CATALYST SYSTEM AND POLYMERIZATION PROCESS

Arthur Livingston Barney and Robert Lee Morgan, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 16, 1964, Ser. No. 397,025
12 Claims. (Cl. 260—88.2)

A coordination catalyst system suitable for polymerization of ethylenically unsaturated hydrocarbon monomers wherein one component is an organo metallic compound of a metal selected from the group consisting of aluminum, magnesium and Group II-B metals; the improvement which consists in a second component of said catalyst being a compound represented by the structures selected from

$$[R_4N]^+[VCl_4\cdot(L)_x]^- \quad (a)$$

wherein x is 1 or 2; the R radicals are independently selected C_1 to C_{18} alkyl and aralkyl groups; and ligand L is an uncharged organic Lewis base, containing an atom selected from the group: sulfur, oxygen, nitrogen and phosphorus atoms capable of donating an unshared electron pair to said vanadium, said ligand being free from carbon-to-nitrogen multibonds and unconjugated carbon-to-carbon multibond,

$$[R'_4N]^+[VCl_4\cdot(RCN)_x]^- \quad (b)$$

and

$$[R'_4N]^+[VCl_4] \quad (c)$$

wherein the R' radicals are independently selected C_1 to C_{18} alkyl groups; R is lower alkyl; and wherein x is 1 or 2.

3,418,304
POLYMERIZATION CATALYST

Arthur W. Langer, Jr., Watchung, and John W. Harding, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

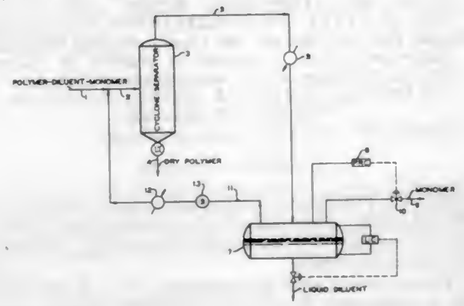
No Drawing. Filed Sept. 13, 1963, Ser. No. 308,675
15 Claims. (Cl. 260—93.7)

A polymerization catalyst of improved stereospecificity is formed by combining a reduced transition metal compound (such as $TiCl_3$) with the reaction product of a Lewis acid (such as $AlCl_3$), and an alkyl metal compound which is a weak cocatalyst and which contains nitrogen, oxygen, or sulfur. The catalyst composition is particularly suitable for the polymerization of alpha-olefins having 3 or more carbon atoms.

3,418,305
POLYMER DRYING PROCESS

William E. Payne and John Mitacek, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 413,817
7 Claims. (Cl. 260—94.9)



1. A method for separating an olefin polymer from a polymerization diluent, said method comprising feeding an effluent from a polymerization reaction wherein a monomer is polymerized to produce said polymer in the presence of said diluent into a stream of gas containing said monomer, passing said stream to a separator through a conduit wherein said diluent is vaporized, and separating said polymer from said gaseous components.

3,418,306
PROCESS FOR THERMALLY DEGRADING POLYETHYLENE

James E. Guillet and Harry W. Coover, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 192,965, May 7, 1962. This application Sept. 8, 1966, Ser. No. 578,101
7 Claims. (Cl. 260—94.9)

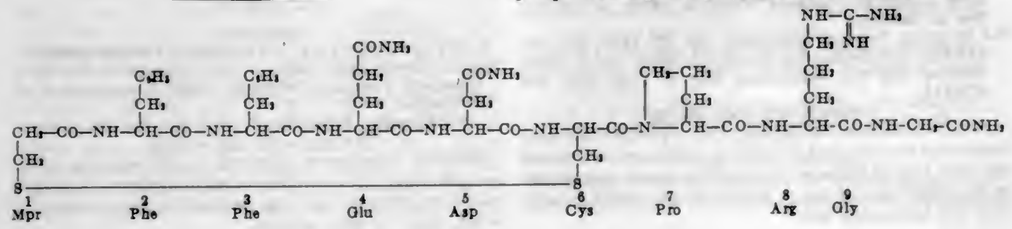
1. The improved process for producing thermally degraded polyethylene, which comprises heating high molecular weight, solid polyethylene to a temperature within the range of 250 to 450° C. in the presence of hydrogen substantially free of oxygen and in the absence of any hydrogenation catalyst to produce a polymer of decreased molecular weight, said polymer being substantially saturated, odorless and resistant to oxidation.

3,418,307
DEAMINO[1]-PHENYLALANYL[2]-ARGININE[8]-VASOPRESSIN

Roger Boissonnas, Bottmingen, and René Huguenin, Reinach, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G), Basel, Switzerland

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,006
Claims priority, application Switzerland, Apr. 15, 1965, 5,297/65
1 Claim. (Cl. 260—112.5)

The invention relates to new polypeptides from the group consisting of a polypeptide of the formula



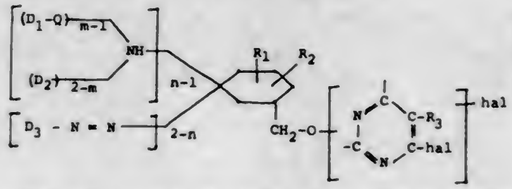
and its acid additional salts. The compounds are pharmaceutically active as exhibited by especially high antidiuretic activity and by unusual and unexpectedly high ratio of antidiuretic to pressoric activity. Pharmaceutical preparations and treatment of diabetes insipidus are also illustrated.

3,418,308
WATER-SOLUBLE PYRIMIDINE DYES

Hans Ischer and Hans Siegrist, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz AG), Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 109,009, May 10, 1961. This application Nov. 13, 1963, Ser. No. 323,272
Claims priority, application Switzerland, Apr. 27, 1961, 4,989/61
17 Claims. (Cl. 260—154)

Water-soluble pyrimidine dyes of good fastness properties on animal fibers, synthetic polyamide fibers, cellulosic fibers, etc. correspond to the formula



wherein the several variables have the meanings set forth in the disclosure proper. The characteristic and determining feature is the positioning of the —CH_2O— pyrimidine radical on the middle component.

3,418,309
BENZOTHIAZOLYL MONOAZO DYES

John I. Dale III, and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,429
8 Claims. (Cl. 260—158)

Benzothiazolyl-azo-aniline compounds containing a dicarboximidoalkylsulfonylalkyl group attached to the aniline nitrogen atom are useful as dyes for hydrophobic textile materials.

3,418,310
THIADIAZOLYL MONOAZO DYES

John I. Dale III, Max A. Weaver, and James M. Straley, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,837
9 Claims. (Cl. 260—158)

Thiadiazolyl-azo-aniline compounds containing a vinylsulfonylethyl group attached to the aniline nitrogen atom are useful as dyes for hydrophobic textile materials.

3,418,311
POLYSACCHARIDE AND THE PREPARATION THEREOF

Sumio Sakai, Junichi Sugayama and Gosaku Saito, Tokyo, Teruo Kamasuka, Kodaira-shi, Tokyo, Shoichi Takada Kawaguchi-shi, and Toslo Takano, Tokyo, Japan, assignors to Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan

Continuation-in-part of application Ser. No. 359,929, Apr. 15, 1964. This application Jan. 25, 1966, Ser. No. 522,920
Claims priority, application Japan, Apr. 24, 1963, 38/20,916; Sept. 2, 1963, 38/46,255; Dec. 9, 1963, 38/65,905
7 Claims. (Cl. 260—209)

Process for producing a polysaccharide showing activity in the treatment of cancerous tumors in mice comprising treating as the stock, molasses, raw sugars from sugar cane, or liquor extracted by hot water from the leaves and stems of plants of the family of Gramineae, the treatment comprising in any order the three steps of (1) acidifying the stock and discarding the precipitate formed; (2) salting out by saturating with ammonium sulfate and dissolving the precipitate in water; and (3) deionizing the thus formed solution by passage through strongly acidic cation exchange resin and strongly basic anion exchange resin followed by collecting the effluent and isolating the polysaccharide.

3,418,312
PROCESS FOR PRODUCING SOLUBLE TRIMETHYLSILYLATED CELLULOSE

Johann F. Klebe, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 9, 1966, Ser. No. 578,138
2 Claims. (Cl. 260—212)

Trimethylsilylated celluloses which are soluble in common organic solvents are produced by the reaction of cellulose with trimethylchlorosilane that has previously been reacted with a mono or disaccharide. These trimethylsilylated celluloses are useful as paper release agents and the like.

3,418,313
PROCESS FOR PRODUCING TRIMETHYLSILYLATED CELLULOSE

Johann F. Klebe, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 9, 1966, Ser. No. 578,161
2 Claims. (Cl. 260—212)

Trimethylsilylated cellulose containing2 to 3 trimethylsilyl units per anhydroglucose unit that are soluble in common organic solvents are produced by the reaction of cellulose with pure trimethylchlorosilane, produced by the decomposition of hexamethyldisilazane with anhydrous hydrogen chloride, in the presence of a tertiary amine. These trimethylsilylated celluloses are useful as paper release agents and the like.

3,418,314
PROCESS FOR THE PRODUCTION OF LACTAMS

Hanshelmut Schwarz, Krefeld-Bockum, Joachim Schneider and Hermann Schnell, Krefeld-Uerdingen, and Otto Immel, Krefeld-Gartenstadt, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,111
Claims priority, application Germany, Feb. 24, 1964, F 42,129
9 Claims. (Cl. 260—239.3)

This invention relates to an improved process for the production of lactams by molecular rearrangement of cycloalkanone oxime in gaseous phase in the presence of a solid aluminum containing catalyst.

3,418,315
PREPARATION OF 7-CHLORO-1,3-DIHYDRO-3-DIETHYLAMINO - 3 - METHYL - 5 - PHENYL - 2H-1,4-BENZODIAZEPIN-2-ONE

Stanley C. Bell, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 14, 1966, Ser. No. 526,974
1 Claim. (Cl. 260—239.3)

When 3-acyloxy-3-alkyl-1,3-dihydro-2H-1,4-benzodiazepin-2-ones are treated with an alkyl amine, the acyloxy

group is displaced to form the corresponding 3-amino compounds which possess psycholeptic activity.

3,418,316

NOVEL 16-ALKYLENE STEROIDS AND PROCESSES

David Taub, Metuchen, Norman L. Wendler, Summit, and Harry L. Slates, Madison, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 19, 1958, Ser. No. 722,390. Divided and this application Mar. 1, 1960, Ser. No. 11,984

1 Claim. (Cl. 260—239.5)

1. The process which comprises reacting 3α-lower alkanoyloxy-16-lower alkylenepregnane-11,20-dione with methanolic potassium hydroxide to form 16-lower alkyl-3α-hydroxy-16-pregnene-11,20-dione.

3,418,317

1H-2,3-BENZOXAZINE-4(3H)-ONE AND ITS 3- AND/OR 6-SUBSTITUTED DERIVATIVES

Giorgio Pifferi, Milan, Italy, and Emilio Testa, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Sept. 30, 1966, Ser. No. 583,430

Claims priority, application Great Britain, Oct. 12, 1965, 43,241/65

5 Claims. (Cl. 260—244)

A new class of compounds is described, 1H-2,3-benzoxazine-4(3H)-one and its 3- and/or 6-substituted derivatives. The compounds are prepared from an α-aminoxy-o-toluic acid, and have proved to be active as anti-inflammatory, cardiovascular and central nervous system depressant agents.

3,418,318

FUNGICIDALLY AND INSECTICIDALLY ACTIVE 2-TRIFLUOROMETHYL AND 2-PENTAFLUOROETHYL BENZIMIDAZOLES

Alan James Lambie, Kidderminster, Geoffrey Tattersall Newbold, Saffron Walden, and Michael Barry Purdew, Cambridge, England, assignors to Fisons Pest Control Limited, Harston, England

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,713

Claims priority, application Great Britain, Oct. 22, 1964, 43,046/64

3 Claims. (Cl. 260—247.5)

Certain novel 2-trifluoromethyl and 2-pentafluoroethyl benzimidazoles and salts thereof have physiological activity, particularly as fungicides and insecticides.

3,418,319

CERTAIN 2-METHYL-3-PHENYL-(4)3H-QUINAZOLINONES

Alex Heuser and Karl Zelle, Ingelheim am Rhine, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Continuation of aplication Ser. No. 431,166, Feb. 8, 1965. This application May 1, 1967, Ser. No. 635,263

Claims priority, application Germany, Feb. 21, 1964, B 75,539

5 Claims. (Cl. 260—256.4)

Novel 2-methyl-3-phenyl-3H-4-quinazolones and acid addition salts thereof, having sedative and anticonvulsonic properties, as well as to various methods of preparing these compounds are disclosed.

3,418,320

1-(5-NITRO-2-FURFURYL)HYDROURACIL

Leonard Doub, Bloomfield Hills, Mich, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Oct. 3, 1966, Ser. No. 583,974

1 Claim. (Cl. 260—260)

1-(5-nitro-2-furfuryl)hydrouracil. The compound has antibacterial activity and can be produced by reacting 1-furfurylhydrouracil with a lower alkanoyl nitrate followed by reacting the resulting product with a base.

3,418,321

RING CLOSURE METHOD FOR VAT DYES

John Edson Gordon, Bridgewater Township, Somerset County, and Isaiah Von, Plainfield, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 399,815, Sept. 28, 1964. This application June 20, 1966, Ser. No. 558,604

7 Claims. (Cl. 260—274)

Vat dyes are prepared by the ring-closure of dye precursors, such as anthramides and substituted benzanthrones, involving heating to a temperature of 90–160° C., 1 part bp weight of the precursor in admixture with from 0.5 to 4 parts by weight of an alkali metal hydroxide and from 0.5 to 4 parts by weight of a fluxing agent boiling above about 125° C., selected from glycols and mono-lower alkyl glycol ethers, while agitating and grinding the mixture to effect attrition of the vat dye product formed therein.

3,418,322

QUINACRIDONE DYESTUFFS

Vsevolod Tulagin, St. Paul, Robert F. Coles, North St. Paul, and Richard A. Miller, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application Apr. 18, 1960, Ser. No. 23,017, now Patent No. 3,172,827, dated Mar. 9, 1965. Divided and this application May 7, 1964, Ser. No. 370,751

2 Claims. (Cl. 260—279)

1. A dyestuff insoluble in water at a pH above 7 and soluble in water at a pH below 7 of the general structural formula

$$M—[NH(CH_2)_{n+1}]_{m-1}NR'(CH_2)_{p+1}NR''_2$$

wherein M is a chromophore having a quinacridone nucleus unsubstituted in the central benzene ring, R′ is an alkyl group having from 6 to 18 carbon atoms, R″ is an alkyl group having less than 6 carbon atoms, *m* is either 2 or 3, *p* is an integer less than 6, and *n* is an integer less than 6.

3,418,323

2-CHLORO-6-(TRICHLOROMETHYL)PYRIDINE COMPOUNDS

Howard Johnston, Walnut Creek, and Mary S. Tomita, San Rafael, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 152,624, Nov. 15, 1961. This application May 16, 1966, Ser. No. 550,129

9 Claims. (Cl. 260—290)

2-(trichloromethyl)pyridine compounds are selectively chlorinated at the alpha position at moderately elevated temperature in a homogeneous liquid state in the absence of added water and polar solvent to produce 2-chloro - 6 - (trichloromethyl)pyridine compounds. The compounds are useful as chemical intermediates and as toxic constituents of pesticidal preparations.

3,418,324

HETEROCYCLIC SECONDARY AMINES

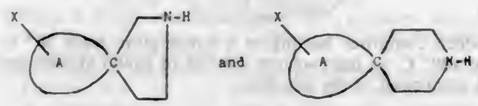
Leonard M. Rice, Minneapolis, Minn., and Charles H. Grogan, Falls Church, Va., assignors to Geschickter Fund for Medical Research, Inc., Washington, D.C., a corporation of the District of Columbia

No Drawing. Continuation-in-part of application Ser. No. 95,042, Mar. 13, 1961. This application May 25, 1964, Ser. No. 370,099

The portion of the term of the patent subsequent to Sept. 22, 1981, has been disclaimed

1 Claim. (Cl. 260—293)

1. A compound selected from the group consisting of compounds of the formula:



wherein ring A is selected from the group consisting of monocarbocyclic rings having 5 to 15 carbon atoms, hexahydrohydrindenyl and decahydronaphthyl; X is at least one substituent on ring A selected from the group consisting of alkyl of up to 12 carbon atoms, lower alkoxy, lower alkenyl, cycloalkyl of up to 6 carbon atoms, phenyl and naphthyl.

3,418,325

METHOD OF PRODUCING A PRODUCT BETWEEN MESO-INOSITOL AND NICOTINIC ACID

Bo Thuresson af Ekenstam, Molndal, and Bror Gösta Pettersson, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,744

3 Claims. (Cl. 260—295.5)

Meso-inositol pentanicotinate is prepared by the controlled hydrolysis of meso-inositol hexanicotinate in acidic aqueous solution. The new compound exhibits the same desirable pharmacological properties of the hexanicotinate with a considerable reduction in such undesirable side effects as flushing and prickliness.

3,418,326

5-ALKYL-13-POLYCARBON-GONANES

George C. Buzby, Jr., Philadelphia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,294

6 Claims. (Cl. 260—397.4)

13-polycarbon-lower alkyl 5-low alkyl gon-3-ones possessing antiandrogenic activity are prepared from 13-polycarbon-lower alkyl gon-4-enes by addition of a lower alkyl Grignard reagent at the 4,5 unsaturation.

3,418,327

5-ALKYL-13-POLYCARBON-GONENES

George C. Buzby, Jr., Philadelphia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,304

5 Claims. (Cl. 260—397.4)

Gon-4,9-dien-3-ones are converted to the corresponding 5-methylgon-9-enes, 9-methylgon-4-enes, and 3-methylgon-1,3,5(10)-trienes, which possess an anti-androgenic activity, by addition of Grignard reagent at the 4,5-unsaturation, the 9,10-unsaturation, and the 3-position, respectively. The three products are separated by chromatographic techniques.

3,418,328

DICARBAMATES OF PYRIDINE-2,6-DIMETHANOL

Peter F. Juby, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 1, 1965, Ser. No. 468,913

11 Claims. (Cl. 260—295)

Symmetrical dialkanoyl- and dibenzoyl-carbamates of various pyridine 2,6-dimenthanols are valuable agents for their anti-inflammatory properties.

3,418,329

p-AMINO-N-(3- OR 5-METHYL-2 PYRIDYL) BENZAMIDE AND THE PHARMACEUTICALLY ACCEPTABLE ACID ADDITION SALTS THEREOF

André Robert, Kalamazoo Township, Kalamazoo County, and Louis L. Skaletzky, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,009

5 Claims. (Cl. 260—295)

The novel compounds of this invention are prepared by reacting 2 - amino - 3 - methylpyridine and 2 - amino-5-methylpyridine with a p-nitrobenzoyl halide in an inert solvent to obtain the p-nitro-N-(3 - methyl - 2 - pyridyl) benzamide and p-nitro-N-(5 - methyl - 2 - pyridyl)benzamide intermediates, respectively. These nitro compounds are subsequently reduced to obtain the desired p-amino-N-(3 - methyl - 2 - pyridyl)benzamide and p-amino-N-(5 - methyl - 2 - pyridyl)benzamide, respectively. The compounds of this invention have valuable pharmacological properties, for example, they inhibit peptic ulcers in experimental animals.

3,418,330

NOVEL PYRIDYL SUBSTITUTED OXETANES AND DERIVATIVES THEREOF

Donald R. Arnold, Lincolndale, N.Y., and Anthony A. Sousa, Raleigh, N.C., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 324,183, Nov. 18, 1963. This application Mar. 23, 1966, Ser. No. 536,645

13 Claims. (Cl. 260—297)

Novel oxetanes such as 2-pyridyl-2-phenyl-3,3-dimethyl oxetane are prepared by the photocatalyzed reaction of a ketone with an olefinic compound.

3,418,331

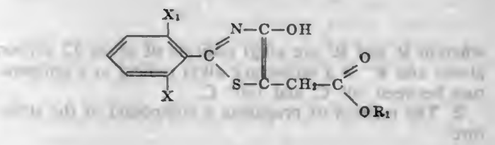
2-(2,6-DIHALOPHENYL)-4-HYDROXY-THIAZOLE-5-ACETIC ACID AND DERIVATIVES THEREOF

John Yates and Ernest Haddock, Kent, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 29, 1965, Ser. No. 517,457

7 Claims. (Cl. 260—302)

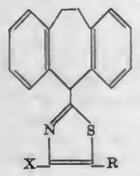
1. A compound of the formula:



wherein R_1 represents hydrogen or alkyl of 1 to 10 carbon atoms, X represents a halogen atom, and salts of such a compound.

3,418,332
DIBENZOCYCLOHEPTENE THIAZOLE DERIVATIVES
Martin A. Davis, Montreal, Quebec, and David J. Campbell, Pincourt, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 23, 1966, Ser. No. 551,938
7 Claims. (Cl. 260—302)

Compounds of the formula:



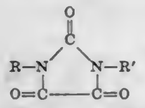
wherein X is aryl and R is hydrogen or alkyl of 1–4 carbon, are useful as larvicides, anthelmintics, bactericides, trichomonicides, and anti-ulcer agents.

3,418,333
SALTS OF IMIDAZOLES AND BENZIMIDOZOLES
Daniel Warren, East Brunswick, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Apr. 20, 1964, Ser. No. 361,224, now Patent No. 3,356,645, dated Dec. 5, 1967. Divided and this application July 20, 1967, Ser. No. 664,583
8 Claims. (Cl. 260—309)

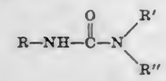
Novel heterocyclic compounds possessing in the heterocyclic ring (1) a substituted C=N—C group and (2) a secondary amino group, i.e., an =N—H group are disclosed. These imidazoles, such as the substituted imidazoles and benzimidazoles, are useful liquid epoxy curing agents.

3,418,334
PROCESS FOR THE PREPARATION OF SUBSTITUTED PARABANIC ACIDS
Paul J. Stoffel, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 25, 1963, Ser. No. 318,819
8 Claims. (Cl. 260—309.5)

1. The method of preparing a compound of the structure:

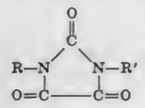


which comprises heating an inert solvent solution of oxalyl chloride and a compound of the structure:

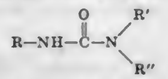


wherein R and R′ are alkyl radicals of up to 12 carbon atoms and R″ is a secondary alkyl radical at a temperature between 30° C. and 180° C.

2. The method of preparing a compound of the structure:

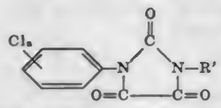


which comprises heating an inert solvent solution of oxalyl chloride and a compound of the structure:

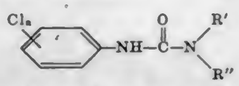


wherein R and R′ are alkenyl radicals of up to 12 carbon atoms and R″ is a secondary alkyl radical at a temperature between 30° C. and 180° C.

3. A method of preparing a compound of the structure:



which comprises heating at a temperature from 30° C. to 180° C. an inert solvent solution of oxalyl alcohol and a compound of the structure:



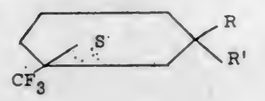
wherein *n* is an integer from zero to four; wherein R′ is an alkenyl radical of up to 12 carbon atoms; and wherein R″ is a secondary alkyl radical.

3,418,335
PROCESS FOR OBTAINING TOCOPHEROLS
Susumu Nakanishi, Hopkins, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Apr. 12, 1966, Ser. No. 541,948
9 Claims. (Cl. 260—345.6)

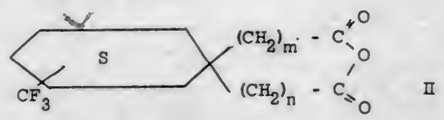
A process for obtaining substantially sterol-free, tocopherol concentrates from materials containing a mixture of tocopherols and sterols by treatment of the mixture with a hydrogen halide to form solid, insoluble sterols in one phase and a tocopherol containing phase. Upon separation of the two phases, the tocopherols may be used to provide d-α-tocopherol (vitamin E).

3,418,336
gem - CYCLOHEXANE - 1,1 - DIACETIC AND-1-CARBOXY-1-ACETIC ACIDS AND THEIR ANHYDRIDES
Charles H. Grogan, Falls Church, Va., and Leonard M. Rice, Baltimore, Md., assignors to Tri-Kem Corporation, Washington, D.C., a corporation of District of Columbia
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,259
6 Claims. (Cl. 260—345.9)

The disclosure of the present application is directed to novel gem-cyclohexane - 1,1 - diacetic and -1-carboxy-1-acetic acids and their corresponding anhydrides of the formulae:



I



II

In formula I, R and R′ can be either —CH_2COOH or —COOH, but at least one of them must be —CH_2COOH. In formula II, *m* and *n* are 0–1, with at least one of *m*

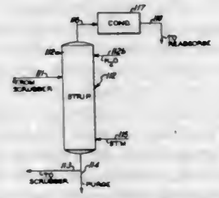
and *n* being 1. The novel compounds of the present invention are valuable synthetic intermediates in the formation of trifluoromethylazaspiranes and trifluoromethylazaspirodiones and their N-substituted derivatives. The aforesaid diones have local anesthetic, antihistaminic, sedative, central nervous stimulant and depressant and hypotensive properties. The corresponding azaspiranes, when converted to their nontoxic acid addition salts, are useful as antihistamines, growth regulatory, hormonal, antihormonal, central nervous stimulant and depressant substances.

3,418,337
HEXAFLUORO-2-PROPANOL AND ITS COMPLEX WITH TETRAHYDROFURAN
William J. Middleton, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 238,703, Nov. 19, 1962, which is a continuation-in-part of application 107,302, May 3, 1961. This application Mar. 27, 1964, Ser. No. 355,433
2 Claims. (Cl. 260—347.8)

1. 2H-hexafluoro-2-propanol.

2. A complex of the compound of claim 1 with tetrahydrofuran.

3,418,338
WATER EXTRACTIVE DISTILLATION OF AN ETHYLENE OXIDE STREAM CONTAINING FORMALDEHYDE
Harold Gilman, Jackson Heights, Theodore W. Stein, Hastings-on-Hudson, and George W. Whitten, Plandome Manor, N.Y., assignors to Halcon International, Inc., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,635
6 Claims. (Cl. 260—348)



This invention relates to the production of ethylene oxide and particularly to the production of ethylene oxide of substantially improved purity. The inventive feature resides in enhancing the separation of formaldehyde contaminant from ethylene oxide by employing water as an extractive agent either in the usual stripping operation following aqueous absorption of ethylene oxide in the reactor effluent or in the use of water as extractive agent in the usual refining operation following reabsorption or secondary scrubbing of the overhead from said usual stripping operation.

3,418,339
10,11-EPOXY-10,11-DIHYDRO-5H-DIBENZO[a,d] CYCLOHEPTENE-5-CARBOXAMIDES
Thomas A. Dobson, St. Laurent, Montreal, Quebec, and Martin A. Davis, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 4, 1966, Ser. No. 539,656
6 Claims. (Cl. 260—348)

There are disclosed herein the new compounds, 10, 11-epoxy - 10,11 - dihydro-5H-dibenzo[a,d]cycloheptene - 5-carboxamide and N-substituted derivatives thereof where-

3,418,340
PROCESS FOR PRODUCING PROPYLENE OXIDE
Joseph L. Russell, Ridgewood, N.J., assignor to Halcon International Inc., a corporation of Delaware
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,382
2 Claims. (Cl. 260—348.5)

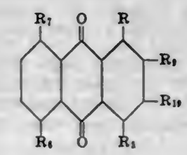
This invention relates to an improved process for the production of propylene oxide which includes the separation of oxygen from the unreacted propylene effluent prior to recycle.

3,418,341
FLUORINATED ACYL AZIDES
Raymond J. Shozda, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 14, 1964, Ser. No. 390,772
9 Claims. (Cl. 260—349)

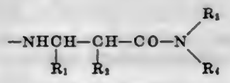
1. Compound having the structure $RCON_3$ wherein R is selected from the group consisting of —F and —NF_2.

3,418,342
ANTHRAQUINONE DYES
Paul Buecheler, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Apr. 23, 1964, Ser. No. 362,192
Claims priority, application Switzerland, Apr. 23, 1963, 5,094/63
10 Claims. (Cl. 260—377)

1. A disperse anthraquinone dye of the formula



wherein R is a radical of the formula



one of R_1 and R_2 is hydrogen and the other is a member selected from the group consisting of hydrogen and methyl;
R_3 is a member selected from the group consisting of hydrogen, alkyl having from 1 to 4 carbon atoms and, together with R_4 and the nitrogen to which both are bonded, morpholino;
R_4 is a member selected from the group consisting of hydrogen; alkyl having from 1 to 8 carbon atoms, unsubstituted or substituted, any substituents being selected from the group consisting of phenyl, hydroxy, chloro and lower alkoxy; cyclohexyl; phenyl; chlorophenyl; fluorophenyl; bromophenyl; nitrophenyl; dinitrophenyl; phenyl having one or more alkyl substituents of from

1 to 8 carbon atoms each; di-(trifluoromethyl)phenyl; alkoxyphenyl, the alkoxy of which has from 1 to 4 carbon atoms; hydroxyphenyl; methylthiophenyl; cyanophenyl; dicyanophenyl; (lower) alkoxycarbonylphenyl; phenoxyphenyl; chlorophenoxyphenyl; phenylphenyl; phenylazophenyl; (hydroxy- and methyl-substituted phenyl)azophenyl; phenylthiophenyl; ar-1-tetrahydronaphthyl; and, together with R_3 and the nitrogen to which both are bonded, morpholino;

R_5 is a member selected from the group consisting of hydrogen, bromo, primary amino, hydroxy, alkylamino having from 1 to 4 carbon atoms, cyclohexylamino, phenylamino, methoxyphenylamino and R;

each of R_6 and R_7 is, independently, a member selected from the group consisting of hydrogen, primary amino, hydroxy and R;

R_9 is a member selected from the group consisting of hydrogen; chloro; bromo; cyano; lower alkoxy; lower alkylthio; phenoxy; (lower)alkylphenoxy; phenylthio; (lower)alkylphenylthio; together with R_{10}, dicarboxylic acid imide; and, when R_{10} is hydrogen, nitro; and

R_{10} is a member selected from the group consisting of hydrogen; chloro; bromo; cyano; lower alkoxy; lower alkylthio; phenoxy; (lower)alkylphenoxy; phenylthio; (lower)alkylphenylthio; (lower)alkoxyphenyl; together with R_9, dicarboxylic acid imide; and, when R_9 is hydrogen, a member selected from the group consisting of nitro, hydroxyphenyl, (lower)alkoxyphenyl and (hydroxy- and methyl-substituted) phenyl.

3,418,343
4-ALKYL-13β-ALKYLGON-4,9-DIENES
Donald P. Strike, Philadelphia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 29, 1966, Ser. No. 561,375
5 Claims. (Cl. 260—397.5)

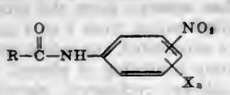
1. 4-alkyl-13β-alkylgon-4,9-dien-17-ol.

3,418,344
17α-HYDROXYALKYL-17β-METHYLGONA-4,13-DIEN-3-ONES AND INTERMEDIATES
Edward A. Brown, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 29, 1966, Ser. No. 605,542
11 Claims. (Cl. 260—397.45)

Disclosed herein are pepsin-inhibiting and anti-biotic 17α - hydroxyalkyl-17β-methylgona-4,13-dien-3-ones and processes for preparing them from (a) 3-alkoxy-17α-hydroxyalkylestra-1,3,5(10)-trien-17β - ols via intermediate 3 - alkoxy - 17α - hydroxyalkyl - 17β - methylgona-1,3,5(10),13 - tetraenes and 3-alkoxy-17α-hydroxyalkyl-17β - methylgona-2,5(10),13-trienes, (b) 17α - hydroxyalkylandrost-5-ene-3β,17β-diols via intermediate 17α-hydroxy-alkyl-10,17β-dimethylgona-5,13-dien-3β-ols, or (c) 17β - hydroxyalkylandrost-4-en-3-ones, said intermediates being anti-hypercholesterolemic and anti-biotic.

3,418,345
HALONITROANILIDES
Joseph W. Baker, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,471
2 Claims. (Cl. 260—404.5)

1. A compound of the formula



wherein R is alkyl of from 10 to 12 carbon atoms and the carbon atom of R, which is directly attached to the carbonyl group of the anilide, is a tertiary carbon atom; *n* is an integer from 1 to 2, X is halogen, and the aniline nucleus is free of ortho substituents.

3,418,346
COMPLEXES OF DECABORANE, SELECTED METALS, AND PHOSPHINES, ARSINES, OR SULFIDES
George W. Parshall, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del.
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,750
8 Claims. (Cl. 260—429)

1. Compositions represented by the formula

$$L_2M(B_{10}H_{12})$$

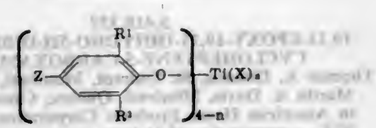
wherein $(B_{10}H_{12})$ is decaborane(12); M is a metal selected from the class consisting of platinum and palladium; and L is selected from the class consisting of R_3P, R_3As, R_2S, $R_2P—R'—PR_2$, $R_2As—R'—AsR_2$ and $RS—R'—SR$ wherein R is hydrocarbyl free of aliphatic unsaturation and is of up to 10 carbon atoms, and wherein two R groups on the same heteroatom can be covalently joined together, and wherein R' is selected from the class consisting of alkylene and phenylene of up to 6 carbon atoms.

3,418,347
TITANIUM OXIDE COMPOUNDS
Leon Levene, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,344
11 Claims. (Cl. 260—429.5)

Titanium oxide compounds are prepared having the general formula $(RO)_2—TiO$ where the R radicals are preferably the same but can be different. Typical compounds are bis(tetradecanoxy)titanium oxide, bis(p-chlorophenoxy)titanium oxide, o-methylphenoxy-p-dodecylphenoxytitanium oxide and bis(tribenzylsiloxy) titanium oxide. The mixed titanium oxides such as o-methylphenoxy-p-dodecylphenoxytitanium oxide are prepared by reacting the lower alkoxytitanium with the hydroxyl-containing compound or alcohol, distilling a mole of the lower aliphatic alcohol by-product formed, reacting the resultant compound with a second alcohol, distilling off another mole of the lower aliphatic alcohol by-product formed, and hydrolizing the product with an aqueous alcohol solution to form the mixed titanium oxide. The titanium oxides are used as coating agents for glass and other surfaces such as paper to impart lubricity and scratch resistance thereto.

3,418,348
PHENYL TITANIUM ESTERS AND PREPARATIONS THEREOF
Alvin F. Shepard and Bobby F. Dannels, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed June 1, 1964, Ser. No. 371,774
8 Claims. (Cl. 260—429.5)

1. A titanium ester of the formula



where R^1 and R^2 are selected from the group consisting of alkyl having from 3 to 19 carbons, and aralkyls having from 7 to about 24 carbons, Z is selected from the group consisting of alkyl having from 1 to about 20 carbons, aralkyl having from 7 to about 24 carbons and halogen, X is a halogen, and *n* is 0 to 1.

3,418,349
METHOD OF PREPARING DIBUTYL TIN MALEATE
Vincent Oakes, Eccleston, St. Helens, England, assignor to Pure Chemicals Limited, Liverpool, England, a British company
No Drawing. Filed Aug. 30, 1965, Ser. No. 483,815
1 Claim. (Cl. 260—429.7)

A method of producing dialkyl tin salts of dicarboxylic acid comprises grinding together a dialkyl tin oxide and an acid anhydride, the mixture if desired being heated to a temperature not exceeding 40° C.

3,418,350
FERROCENE DERIVATIVES OF PHOSPHORUS
Gilbert P. Sollott, Plymouth Meeting, and William R. Peterson, Jr., Levittown, Pa., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Aug. 18, 1966, Ser. No. 573,761
6 Claims. (Cl. 260—439)

Methods for preparing triferrocenylphosphine, diferrocenylphosphinous chloride and ferrocenylphosphonous dichloride which comprises reacting ferrocene with a phosphoramidous dichloride in the presence of aluminum chloride in n-heptane. The resulting compounds have utility as intermediate in forming a variety of phosphorus-containing compounds.

3,418,351
RECOVERY OF HYDROFORMYLATION COBALT-CARBONYL-HYDROCARBYL-TERT-PHOSPHINE CATALYST COMPLEX
Charles R. Greene, Kensington, Calif., and William A. Brown, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 17, 1965, Ser. No. 456,560
6 Claims. (Cl. 260—439)

Method of converting a polar solvent-soluble nonionic hydroformylation cobalt-carbonyl-hydrocarbyl-tert-phosphine catalyst complex of the formula $[Co(CO)_3PA]_2$, where A is hydrocarbyl, dissolved in a polar solvent to an ionic cobalt-carbonyl-hydrocarbyl-tert-phosphine complex of the formula $[(AP)_2Co(CO)_3]^+[Co(CO)_4]^-$, where A is defined as above, having a lower solubility in said polar solvent, by treating the solution of nonionic complex with carbon monoxide at a pH no greater than 8.0, thereby rendering said complex isolable from said polar solvent, and subsequently separating said complex from said polar solvent.

3,418,352
ORGANOSILICON COMPOUNDS AND PROCESS FOR THEIR PREPARATION
Gerd Rossmy, Essen-Werden, Germany, assignor to Th. Goldschmidt AG, Essen, Germany
No Drawing. Filed July 22, 1964, Ser. No. 384,525
Claims priority, application Germany, July 24, 1963, G 38,279
21 Claims. (Cl. 260—448.2)

Compounds of the formula

$$R^1O[—Si(R)_x(OR^1)_{y-2}(MOSO_2X)—O]_zR^1$$

wherein R is lower alkyl;

R^1 is selected from the group consisting of lower alkyl and tri-lower-alkylsilyl, at least fifty percent of all R^1 groups consisting of said tri-lower-alkylsilyl;

M is alkylene which bridges Si and O through at least three carbon atoms;

X is selected from the group consisting of hydrogen, a metal equivalent of hydrogen and NHR'_3, wherein R' in turn is selected from the group consisting of hydrogen, hydrocarbon and substituted hydrocarbon; and *x*, *y* and *z* are numbers defined by

$$x=0—1;$$
$$y=2—3;$$
$$z=1—10; \text{ and}$$
$$x+y=3.$$

The application also discloses an improvement in a process of preparing polysiloxanes having sulfate groups bound to silicon through carbon, and the salts thereof, wherein silanes of the general formula

$$R_xY_ySi(MOCOR)_{4-(x+y)}$$

in which R is lower alkyl;

Y is selected from the group consisting of halogen and alkoxy;

M is alkylene which bridges Si and O through at least 3 carbon atoms and *y* and *x* are numbers defined by $y=2—3$ and $x=0—1$ and $x+y=3$, are first reacted with chlorosulfonic acid and the reaction product is subsequently subjected to hydrolysis or alcoholysis and condensation. The inventive improvement resides in that the reaction product, prior to the hydrolysis or alcoholysis and condensation, is reacted with hexaalkyl disiloxane of the formula $R_3SiOSiR_3$, wherein R has the above meaning, whereby R_3SiY is formed and removing said R_3SiY by distillation.

The primary utility of the novel compounds is grounded on their very pronounced surface activity. The compounds may thus be used for distribution and spreading of lacquers and varnish on surfaces.

3,418,353
ALKYLPOLYSILOXANE FLUIDS
Edgar D. Brown, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,588
10 Claims. (Cl. 260—448.2)

This invention relates to a new class of alkylpolysiloxanes of improved release and paintability comprising a polysiloxane in which each silicon atom in the chain contains at least one silicon-bonded methyl or phenyl radicals, in which the terminal silicon atom contains three silicon-bonded methyl or phenyl radicals, and in which at least 50% of the silicon atoms contain one silicon-bonded alkyl radical of at least 12 carbon atoms, with any remaining silicon atoms being substituted with a monovalent hydrocarbon radical free of aliphatic unsaturation and containing at least two carbon atoms. The novel compounds are used as mold release agents.

3,418,354
PROCESS FOR PRODUCING GRAFT COPOLYMERS
Marshall L. Wheeler, Jr., Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 356,944, Apr. 2, 1964. This application Dec. 29, 1964, Ser. No. 422,038
13 Claims. (Cl. 260—448.2)

This invention relates to a process for producing olefin-polyoxyalkylene graft copolymers which process comprises slowly and simultaneously adding (a) an olefin and (b) a peroxide containing a peroxide group linked to a tertiary carbon atom to (c) a polyoxyalkylene compound which is maintained at a temperature sufficiently elevated to cause a graft copolymer of the olefin and the polyoxyalkylene compound to be produced. Preferred polyoxyalkylene compounds include siloxane-polyoxyalkylene copolymers. The olefin can be a vinylsilicon compound or an organic olefin such as styrene. The invention also relates to fluoro-olefin-polyoxyalkylene graft copolymers having a unique structure (only one molecule of the ole-

fin attaches to a given grafting site on the polyoxyalkylene compound).

3,418,355
DIDECYL QUATERNARY AMMONIUM COMPOUNDS
Rudolf Rüegg, Bottmingen, and Gottlieb Ryser, Basel, Switzerland, assignors to Hoffmann-LaRoche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,309
Claims priority, application Switzerland, Oct. 16, 1964, 13,487/64
12 Claims. (Cl. 260—459)

Quaternary ammonium compounds having activity against fungi, particularly against Dermatophytes, are prepared by quaternization of tertiary amines. The products are quaternary amines having two n-didecyl substituents and two lower aliphatic substituents.

3,418,356
PREPARATION OF CHLORINE SUBSTITUTED ALKYL FLUOROFORMATES
Karl O. Christe and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,182
5 Claims. (Cl. 260—463)

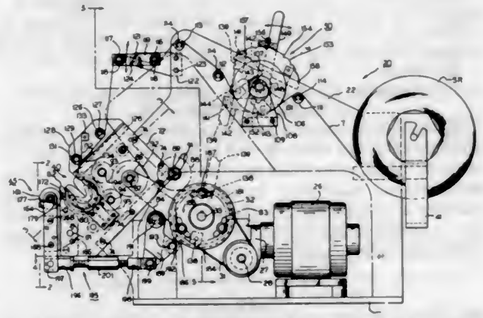
Process for the preparation of chlorine substituted alkyl fluoroformates by reacting a cyclic aliphatic ether (heterocyclic compound in which the heteroatom is oxygen and the carbon chain of the heterocyclic compound contains from 2 to 5 substituted or unsubstituted carbon atoms, the substituted groups being hydrogen, alkyl, aryl, alkenyl halogen, haloalkyl and epoxyl) with carbomyl chlorofluoride under substantially anhydrous conditions and, optionally, in the presence of a catalytic amount of a saturated tertiary amine and when the hererocyclic compound contains 4 or 5 carbon atoms, a hydrogen chloride source.

3,418,357
CATALYTIC PROCESS FOR FORMING ACRYLONITRILE
Geir Bjornson and Darrell W. Walker, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 21 1965, Ser. No. 500,227
8 Claims. (Cl. 260—465.3)

1. A process for making acrylonitrile which comprises reacting within a temperature range from about 650° to about 1000° F., a mixture of hydrogen cyanide and acetylene in the presence of a catalyst prepared by (1) forming a mixture of (a) an aqueous solution of alkali metal tetrasilicate which is at least one of sodium tetrasilicate or potassium tetrasilicate, and (b) an alkanol of 1–5 carbon atoms so as to precipitate the tetrasilicate; (2) dehydrating said precipitated tetrasilicate by gradually increasing the temperature thereof to at least 900° to about 1500° F. without melting said tetrasilicate so as to form a hard, porous catalyst; and (3) comminuting the resulting catalyst to the desired particle size for catalytic conversion.

3,418,358
APPARATUS FOR WRAPPING ELONGATE ARTICLES WITH TAPE
Henry J. Sejda, Munster, Ind., assignor to Cee-Kay Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1963, Ser. No. 270,894
13 Claims. (Cl. 156—468)

1. In apparatus for wrapping a length of pressure sensitive tape about an elongate article, a rotatable wrapping chuck including driving means therefor, said wrapping chuck having a radially extending jaw adapted to receive said elongate article for wrapping thereof with a length of tape while said article is constrained against rotation in said jaw, tape feeding means driven from said driving means for feeding a length of tape across said jaw, means for constraining the so fed tape as an initial bight thereof about said article when the same is moved with said length of tape into the jaw of said chuck, tape slack takeup means interposed between said tape feeding means and said chuck operable to feed additional tape during forming of said bight, said chuck being rotatable by said driving means while said article is held against rotation to effect further wrap of said article, said tape feeding means being operable by said driving means to feed tape about the periphery of said chuck, means cooperating



with said tape feeding means for varying the length of the tape fed thereby, a knife supporting roller having a knife thereon including means for mounting said roller for movement toward said chuck to sever the tap fed over the periphery of said chuck, said last named means including cam and follower means coacting with said driving means for moving said knife supporting roller into contact with the periphery of said chuck in timed relation therewith to sever said tape, said driving means rotating said chuck through a distance to complete a wrapping operation of the severed tape about said article, said knife roller after the severing movement holding the tape in position releasably across the jaw of said chuck.

3,418,359
ORGANO-TITANIUM COMPOUNDS AND ZINC DICARBOXYLATES AS SYNERGISTIC ESTERIFICATION CATALYST
Walter P. Barie, Jr., Pittsburgh, Norman W. Franke, Penn Hills Township, Allegheny County, and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Apr. 18, 1963, Ser. No. 273,846
12 Claims. (Cl. 260—475)

1. A process for the production of a light colored monomeric ester which comprises contacting an aromatic organic acid reactant having between 1 and 4 carboxyl groups per molecule with a saturated unsubstituted aliphatic alcohol reactant having between 4 and 37 carbon atoms per molecule, and wherein at least one of the two reactants is monofunctional under esterification conditions in the presence of a catalyst comprising at least one quadrivalent titanium-organic compound having the formula:

$$Ti(OR)_4$$

where R is selected from the group consisting of an acyclic saturated or olefinically unsaturated hydrocarbon radical having between 1 and 18 carbon atoms; cyclohexyl and phenyl; and at least one zinc dicarboxylate represented by the general formula:

where R''' is selected from the group consisting of an acyclic saturated or olefinically unsaturated hydrocarbon radical having between 1 and 18 carbon atoms; a single ring alicyclic hydrocarbon radical having between 5 and 6 carbon atoms per ring and between 5 and 18 carbon atoms per molecule; and a single ring aromatic hydrocarbon or hydroxy substituted aromatic hydrocarbon radical having between 6 and 18 carbon atoms per molecule.

3,418,360
ESTERIFICATION IN THE PRESENCE OF ALKANOIC ACID AMIDES
Johann Gustav David Schulz, Arthur C. Whitaker and Paolo Winteler, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,270
4 Claims. (Cl. 260—475)

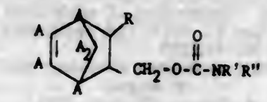
An organic ester is produced by reacting the salt of a carboxylic acid with a saturated alkyl halide having between one and 40 carbon atoms at a temperature between 110° and 160° C. in the presence of a liquid highly polar solvent free of hydroxyl groups. The preferred solvents are dimethylformamide and dimethylsulfoxide. A colorless ester is produced when dimethylformamide is employed as the solvent by the exclusion of molecular oxygen and actinic light from the reaction.

3,418,361
PREPARATION OF AROMATIC HYDROXY COMPOUNDS AND THEIR ESTERS
Warren W. Kaeding, Concord, Calif., and Guy Robert Collins, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 19, 1964, Ser. No. 376,584
17 Claims. (Cl. 260—476)

The cupric salt of an organic carboxylic acid reacts under substantially aprotic conditions at elevated temperature with a ring hydrogen substituent of a carbocyclic aromatic compound to replace that hydrogen atom with the carboxylate group, thereby forming the carboxylate ester of the corresponding hydroxy aromatic compound. Hydrolysis of the ester yields the free hydroxy aromatic compound.

3,418,362
CARBAMATES
Hilary F. Goonewardene, Moorestown, N.J., and Bernard Loev, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,773
6 Claims. (Cl. 260—482)

1. A composition of matter having the structural formula:



wherein

A is selected from the group consisting of hydrogen, chlorine and bromine, with at least four of the A's being a halogen;

R is selected from the group consisting of hydrogen, lower alkyl up to 5 carbon atoms, halogen, and



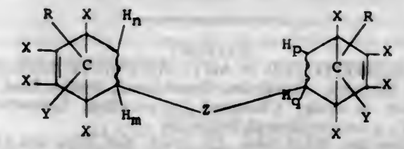
and both R' and R'' are selected from the group consisting of hydrogen, lower alkyl up to 5 carbon atoms, and phenyl.

3,418,363
PROCESS OF PREPARING ALKYL HYDROXYALKYL FUMARATES
Erhard J. Prill, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 21, 1965, Ser. No. 473,862
7 Claims. (Cl. 260—485)

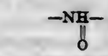
1. Process for preparing alkyl hydroxyalkyl fumarates which comprises reacting fumaric acid with an alcohol of the formula ROH wherein R is selected from the group consisting of alkyl of 1 to 8 carbon atoms and hydrocarbon substituted alkyl of 1 to 8 carbon atoms and an alkylene glycol selected from the group consisting of ethylene glycol, propylene glycol and butylene glycol, wherein said monohydric aliphatic alcohol and said alkylene glycol are each present in an amount of at least about 2 mols for each mol of fumaric acid, in the presence of acid esterification catalyst selected from the group consisting of sulfuric acid, phosphoric acid and acid cation exchange resins at a temperature from about 80° C. to 150° C. until the reaction mixture acid number remains substantially constant, removing alkyl hydroxyalkyl fumarate from the reaction mixture and recycling the reaction mixture after removal of alkyl hydroxyalkyl fumarate to the reaction vessel.

3,418,364
PESTICIDES
Victor Mark, Norristown, Pa., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 132,570, Aug. 21, 1961, and Ser. No. 44,890, July 25, 1960. This application Dec. 11, 1963, Ser. No. 329,914
20 Claims. (Cl. 260—468)

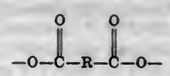
Compounds formed by the reaction of substituted cyclopentadienes and a dienophile of the formula



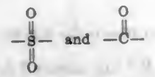
wherein R is selected from the group consisting of alkyl, alkenyl, oxaalkyl and chloroalkyl having an alpha carbon free of chlorine, each of which has up to eight carbon atoms; X is chlorine or bromine; Y is chlorine, bromine or R; ∼ is a single or double carbon-carbon bond; *n* and *p* are each integers having the values 1 or 2 and *m* and *q* are each integers having the values zero and one, the values being dependent upon whether the hydrogen is attached to a single or double bonded carbon; and Z is selected from the group consisting of phenylene,



alkylene having up to eight carbon atoms, —O—, —S—, —OC—,



wherein R is an alkylene having up to eight carbon atoms,



These compounds have insecticidal properties and low mammalian toxicity.

3,418,365
PROCESS FOR THE PRODUCTION OF BETA-CHLORO ACYL CHLORIDES
Carl G. Gustafson, Ossining, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 27, 1966, Ser. No. 560,843
8 Claims. (Cl. 260—544)

An improved process for producing appreciable yields of substantially pure beta-chloro acyl chlorides by the reaction of beta-lactones with thionyl chloride which comprises employing technical grade reactants in the absence of a catalyst at a temperature above about 100° C. In accordance with the teachings of the prior art, reaction between beta-lactones and thionyl chloride to produce relatively high yields of substantially pure beta-chloro acyl chlorides can be made to proceed only by employing (1) chemically pure reactants, or (2) technical grade reactants in conjunction with a strong acid catalyst.

3,418,366
PHOSPHONITRILE COMPOSITIONS AND METHODS
Harry H. Sisler, Gainesville, Fla., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Continuation-in-part of applications Ser. No. 154,827, Ser. No. 154,828, Nov. 24, 1961, and Ser. No. 426,680, Jan. 19, 1965. This application July 1, 1966, Ser. No. 567,798
10 Claims. (Cl. 260—551)

Organo substituted phosphonitrilic compounds are prepared by reacting a disubstituted monochlorophosphine with chloramine and ammonia or an equivalent thereof. The phosphonitrilic compounds find utility in the preparation of organic substituted phosphonitrilic polymers which possess high temperature resistant properties.

3,418,367
N'-SUBSTITUTED N-ARYLSULFONYL UREAS
Henri Dietrich, Arlesheim, Basel-Land, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,847
Claims priority, application Switzerland, Mar. 26, 1964, 3,978
11 Claims. (Cl. 260—553)

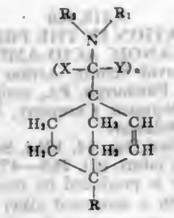
The compounds of the class of N-arylsulfonyl-N'-(tricyclo[4,3,1,$1^{3,8}$]undec-3-yl) ureas, useful as hypoglycaemic agents. An illustrative embodiment is N-(p-tolylsulfonyl)-N'-(tricyclo[4,3,1,$1^{3,8}$]undec-3-yl)urea.

3,418,368
PENTACYCLO[6.2.0.$0^{2,6}$.$0^{3,10}$.$0^{5,9}$] DECANEAMINES
George L. Dunn, Wayne, and John R. E. Hoover, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 442,475, Mar. 24, 1965. This application Jan. 6, 1966, Ser. No. 519,021
10 Claims. (Cl. 260—563)

Pentacyclo[4.2.0.$0^{2,5}$.$0^{3,8}$.$0^{4,7}$]octanes, pentacyclo[5.2.0.$0^{2,5}$.$0^{3,9}$.$0^{4,8}$]nonanes and pentacyclo[6.2.0.$0^{2,8}$.$0^{3,10}$.$0^{5,9}$]decanes, substituted with an amino or aminomethyl group, are prepared from known simpler substances. The products are antiviral agents.

3,418,369
1-AMINOBICYCLOOCT-2-ENES AND BICYCLOOCT-2-ENE-1-METHYLAMINES
James C. Kauer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,996
11 Claims. (Cl. 260—563)

1. A compound selected from the group consisting of (a) compounds of the formula



where

n is an integer of 0 to 1;
R is selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms;
X, Y, R_1 and R_2 are each selected from the group consisting of hydrogen, methyl, and ethyl; and
(b) non-toxic acid addition salts of the compounds of (a) above.

3,418,370
PROCESS FOR PREPARING NUCLEAR BROMINATED METHYLENEDIANILINES
Ebenezer A. T. Foster, Cheshire, Adnan A. R. Sayigh, North Haven, and James N. Tilley, Cheshire, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,085
7 Claims. (Cl. 260—570)

Bromination of diaminodiphenylmethane, and of mixtures of polyamines containing diaminodiphenylmethane obtained by acid condensation of aniline and formaldehyde, is effected without concomitant formation of undesirable by-products by addition of bromine in the gaseous phase (entrained in an inert gas) to the amine in non-oxidizing mineral acid solution. The brominated amines are useful as intermediates to the corresponding brominated isocyanates which, in turn, are intermediates in the synthesis of fire retardant polyurethanes.

3,418,371
PROCESS FOR PREPARING AMINO-DIPHENYL-ALKANES
Heinrich Krimm and Heinrich Ruppert, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer, Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation of application Ser. No. 377,080, June 22, 1964. This application Aug. 15, 1967, Ser. No. 668,275
Claims priority, application Germany, Mar. 4, 1963, F 40,154
8 Claims. (Cl. 260—570)

A process for preparing di-substituted diphenyl alkanes by reacting the corresponding dihydroxy-diphenyl alkane with a stoichiometric amount of an aromatic amine, inclusive of N-substituted amines, at a temperature of about 120–240° C.

3,418,372
PREPARATION OF 2,2',4,4',6,6'-HEXANITRODIPHENYLAMINE
Francis Taylor, Jr., Catonsville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 29, 1960, Ser. No. 5,574
1 Claim. (Cl. 260—576)

1. The method of preparing 2,2',4,4' - hexanitrodiphenylamine of a purity at least 99.7 mole percent which comprises the steps of mixing hexanitrodiphenylamine with acetone to form a slurry, dissolving potassium acetate in about a two to one mixture of alcohol and acetone to form a first solution, adding the first solution to the suspension, to form a second solution, adding sufficient water to the second solution to cause the mixture to become turbid, chilling the mixture, and recovering potassium 2,2',4,4', 6,6'-hexanitrodiphenylamine as a precipitate.

3,418,373
PREPARATION OF AROMATIC DIAMINE MIXTURES
Charles G. Summers, Scott Depot, and Robert L. Wright, Nitro, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Apr. 12, 1965, Ser. No. 447,543
7 Claims. (Cl. 260—576)

When the reaction of p-alkyl aminophenol with an aromatic primary amine is conducted in the presence of a catalytic amount of free iodine and powdered iron or in the presence of iron chloride, a mixture of N-alkyl-N'-aryl-p-phenylenediamine, N,N' - dialkyl - p - phenylenediamine, and N,N'-diaryl-p-phenylenediamine is formed. The process provides an economical route to a valuable mixture of antioxidants for oxidizable substances, especially natural and synthetic rubber.

3,418,374
FATTY POLYAMINES AND THEIR ALKYL AND ALKOXY DERIVATIVES
Eugene J. Miller, Jr., Wheaton, Ago Mais, La Grange Park, Donald J. Berenschot, Chicago, and Robert L. Berger, Elmhurst, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Nov. 9, 1964, Ser. No. 410,014
4 Claims. (Cl. 260—583)

Fatty polyamines and derivatives are prepared by hydrogenating the cyanonitrile precursor with H_2 and Raney Ni, and then, if desired, alkylating or alkoxylating the fatty polyamine that is formed.

3,418,375
PREPARATION OF TRIMETHYL-HEXAMETHYLENEDIAMINE
Karl Schmitt, Herne, Josef Disteldorf, Wanne-Eickel, and Werner Hübel, Herne, Germany, assignors to Scholven-Chemie Aktiengesellschaft, Gelsenkirchen-Buer, Germany
No Drawing. Filed Nov. 19, 1965, Ser. No. 508,839
Claims priority, application Germany, Nov. 26, 1964, Sch 36,168
12 Claims. (Cl. 260—583)

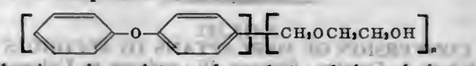
Process for hydrogenating 2,2,4- and/or 2,4,4-trimethyl adipic acid dinitrile to form the corresponding diamines comprising reacting said dinitrile with liquid ammonia and hydrogen in the presence of a nickel or cobalt catalyst supported on a carrier containing aluminum oxide at a temperature of from about 60 to 160° C. under conditions of throughput, dinitrile:ammonia ratio, quantity of hydrogen and pressure such as to produce in the first fifth of the reaction zone at least a 75% conversion of the dinitrile, and in the remainder of the reaction zone to produce only a post-hydrogenation.

3,418,376
PROCESS FOR THE DIRECT OXIDATION OF 2-ALKYL-SUBSTITUTED-1-OLEFINS TO ALDEHYDES
Henry Harry Tan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 21, 1965, Ser. No. 465,707
6 Claims. (Cl. 260—604)

A process for the direction oxidation of 2-alkyl-substituted-1-olefins to aldehydes which retain the original carbon skeleton of the olefin, which comprises treating the olefins with permaleic acid, preferably in an inert medium at a temperature below about 40° C.

3,418,377
DIPHENYL ETHER POLYOLS
Walter B. Trapp, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 238,788, Nov. 19, 1962. This application Mar. 15, 1965, Ser. No. 440,010
3 Claims. (Cl. 260—613)

1. A composition of the formula:



wherein *n* is an integer from 1–4 and the substituent hydroxyether groups are limited to the 2- and 4-positions of each phenyl group.

3,418,378
PRODUCTION OF DIPHENYLOL PROPANE
John Denison MacNaughton, St. Lambert, and Jackie Ornstein, Laval, Quebec, Canada, assignors to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Continuation-in-part of application Ser. No. 385,468, July 27, 1964. This application Oct. 31, 1967, Ser. No. 679,571
7 Claims. (Cl. 260—619)

Process for preparing diphenylol propane (para-para isomer) from condensation of acetone and phenol in liquid phenol medium and in presence of hydrogen chloride catalyst, with subsequent isomerization of the by-product ortho-para isomer to the para-para isomer to improve product purity, using restricted proportions of excess phenol and temperatures for condensation and isomerization which maintain the para-para isomer product predominantly in the solid phase during the condensation and isomerization.

3,418,379
ALKYLATION PROCESS
Edward S. Parsey and Theodore E. Majewski, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 12, 1965, Ser. No. 432,417
11 Claims. (Cl. 260—624)

1. A method of manufacturing an alkylphenol which comprises heating phenol and an olefinic hydrocarbon in the presence of a catalytic amount of an oxide of a metal with an atomic number of $(31+18n)$ wherein *n* is an integer of from 0 to 1.

3,418,380
TRANSALKYLATION OF CERTAIN POLY-TERT-BUTYLPHENOLS
Robert J. Laufer and Metro D. Kulik, Pittsburgh, Pa., assignors, by mesne assignments, to Consolidation Coal Company, a corporation of Delaware
No Drawing. Filed July 28, 1965, Ser. No. 475,587
4 Claims. (Cl. 260—624)

The transbutylation of 2,4 - di - tert - butylphenol and of 2,4,6 - tri - tert - butylphenol in the presence of un-

substituted phenol under conditions such that ortho-substitution rather than para-substitution of the unsubstituted phenol is obtained.

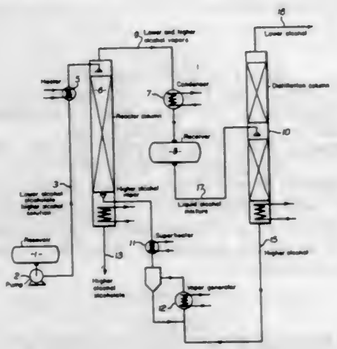
3,418,381
PROCESS FOR THE PRODUCTION OF VINYLPHENOLS
Thomas J. Jennings, Lafayette, and Paul H. Williams, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 17, 1966, Ser. No. 558,241
8 Claims. (Cl. 260—624)

1. A process of producing vinylphenols containing, besides phenolic hydroxyl, only hydrogen atoms, methyl groups and vinyl groups of 2 to 3 carbon atoms on the nuclear carbons, by contacting a mixture of the corresponding alkylphenol and from about 0.5 to about 10 mole proportion of sulfur dioxide in vapor phase at a temperature of from about 300° C. to about 700° C. with a metal phosphate catalyst comprising (1) niobium phosphate or (2) a mixed phosphate of an alkaline earth metal or aluminum and of nickel or cobalt.

3,418,382
CONVERSION OF MERCAPTANS TO ALCOHOLS
Robert A. Dombro, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 10, 1965, Ser. No. 513,124
9 Claims. (Cl. 260—632)

Conversion of a hydrocarbyl mercaptan to the corresponding alcohol by heating the mercaptan in solution with a basic compound and a mild oxidizing agent at 100°–300° C. The mercaptan is characterized in that the carbon atom of the hydrocarbyl moiety bonded to the sulfur atom of the thiol group has at least one hydrogen atom attached thereto.

3,418,383
PRODUCTION OF ALKALI METAL ALCOHOLATES
Arnold Lenz, Gerstenkamp, Otto Bleh, Bergheim, and Karl Hass, Niederkassel, Germany, assignors to Dynamit Nobel Aktiengesellschaft
Filed Nov. 8, 1966, Ser. No. 594,333
Claims priority, application Germany, Nov. 10, 1965, D 48,614
9 Claims. (Cl. 260—632)



The improved interchange reaction between a lower alcoholate of an alkali metal and a higher alcohol to produce a higher alcoholate of the alkali metal, wherein the interchange reaction is carried out in the presence of vapors of higher alcohols passing through the interchange reaction mass.

3,418,384
ADDUCTS OF BICYCLO-3,3,0-OCTENES
Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Aug. 8, 1966, Ser. No. 570,691
2 Claims. (Cl. 260—648)

Novel adducts of Δ^2-bicyclo[3,3,0]-octenes and hexahalogenated cyclopentadiene have been prepared. Said adducts are useful as flame retardants for thermoplastic materials such as polyolefins and at least one of which is an insecticide.

3,418,385
PROCESS FOR PREPARING 1-LITHIUM-1-ALKYNES
David L. Skinner, Arlington Heights, Ill., and Donald J. Peterson, Springfield Township, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 27, 1966, Ser. No. 582,249
4 Claims. (Cl. 260—665)

1. A process for preparing 1-lithium-1-alkynes of the formula

$$RC{\equiv}CLi$$

wherein R is an alkyl group containing from about 2 to about 10 carbon atoms comprising reacting (1) a 1-alkene compound having from about 4 to about 12 carbon atoms, and (2) finely divided lithium at a temperature of from about 20° C. to about 175° C.

3,418,386
HYDROGENATION OF CYCLOOCTADIENES TO CYCLOOCTENES
William K. Hayes, Trenton, N.J., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 5, 1966, Ser. No. 562,517
10 Claims. (Cl. 260—666)

A method is provided for selectively hydrogenating cyclooctadiene or substituted cyclooctadienes to the corresponding cyclooctene in which the material is overhydrogenated, beyond the point of maximum selectively for cyclooctene to such an extent that troublesome cyclooctadiene isomers such as 1,3-cyclooctadiene are substantially eliminated from the product, whereby purification procedures are greatly simplified.

3,418,387
PROCESS FOR THE PRODUCTION OF ADAMANTANE
Slavoj Hala, Stanislav Landa, and Zdenek Weidenhoffer, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia
No Drawing. Filed Dec. 28, 1966, Ser. No. 605,232
Claims priority, application Czechoslovakia, Dec. 28, 1965, 7,790/65
8 Claims. (Cl. 260—666)

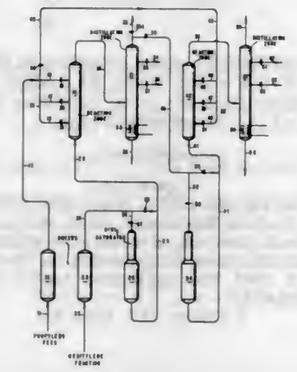
Process for the production of adamantane by dealkylation of mono- or polyalkyladamantanes at elevated temperatures in the presence of hydrogen and catalysts.

3,418,388
CHLORINATION OF NORMAL PARAFFINS IN THE PRESENCE OF BENZENE AND ALKYLATION OF THE BENZENE
Daniel J. Hurley, Oakmont, Robert W. Rosenthal, Pittsburgh, and Roger C. Williamson, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 329,232, Dec. 9, 1963. This application July 16, 1964, Ser. No. 383,234
5 Claims. (Cl. 260—671)

1. A process which comprises passing gaseous chlorine through a mixture containing benzene and at least one

normal paraffin selected from the group consisting of normal paraffins having from 10 to 16 carbon atoms, two to 20 mols of benzene being used per mol of normal paraffin, in the presence of light, at a temperature of 10° to 78° C. and thereafter alkylating the same benzene with the normal alkyl chlorides so produced in the presence of an alkylation catalyst.

3,418,389
PURIFICATION OF MESITYLENE
Emanuel M. Amir, Baytown, Tex., assignor to Esso Research and Engineering Company
Filed Apr. 18, 1966, Ser. No. 543,380
12 Claims. (Cl. 260—674)



1. A process for recovering 1,3,5-trimethylbenzene from an impurities-containing aromatic hydrocarbon fraction containing 1,3,5-trimethylbenzene and boiling within the range from about 80° to about 180° C. which comprises:

selectively alkylating said impurities with an organic alkylation agent containing more than two carbon atoms and no tertiary carbon atoms;

in the presence of an acid catalyst;

to form an alkylate containing purified 1,3,5-trimethylbenzene and alkylated impurities; and

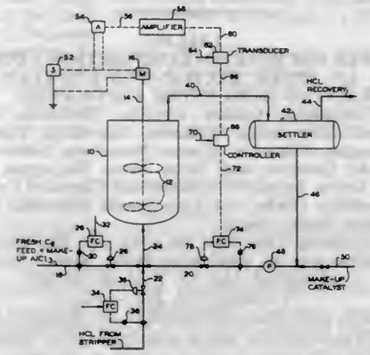
recovering said purified 1,3,5-trimethylbenzene.

3,418,390
CONVERSION OF OLEFINS
Louis F. Heckelsberg, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,692
7 Claims. (Cl. 260—683)

Olefin hydrocarbons are disproportionated by contact with a catalyst comprising a magnesia-titania base promoted with molybdenum oxide, tungsten oxide, molybdenum sulfide, tungsten sulfide, molybdenum hexacarbonyl, tungsten hexacarbonyl and combinations thereof.

3,418,391
CONTROLLING AN ISOMERIZATION OR ALKYLATION REACTION
John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,630
7 Claims. (Cl. 260—683.57)

A catalytic reaction in liquid phase in a reactor using a liquid catalyst of substantially different viscosity than the reactant and reaction mixture is controlled by stirring the reaction mixture with a stirrer operated by an electric motor, sensing the power required by said motor to effect the stirring, and regulating the rate of feeding said catalyst to the reactor in response to the sensed power



while maintaining feeding rates of other feeds to the reactor substantially constant, thus maintaining a substantially constant ratio of catalyst to reactant.

3,418,392
CROSSLINKING COMPOSITIONS COMPRISING A POLYCYCLOALIPHATIC POLYEPOXIDE AND A HEXAALKYLOXYMETHYLAMINO-TRIAZINE FOR ACRYLIC INTERPOLYMERS
George J. Leitner, Peekskill, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 21, 1964, Ser. No. 405,572
18 Claims. (Cl. 260—834)

A crosslinking agent for a thermosetting interpolymer which interpolymer has at least one reactive monomer such as acrylic present therein, comprising a mixture of a polycycloaliphatic polyepoxide and a 2,4,6-tris[di(lower-alkoxymethyl)amino]-1,3,5-triazine. A preferred combination is hexamethoxymethylmelamine and 3,4-epoxy-6-methylcyclohexylmethyl 3,4 - epoxy-6-methylcyclohexanecarboxylate.

3,418,393
BLOCK COPOLYMERS OF POLYPIVALOLACTONE AND CARBOXYL GROUP CONTAINING POLYMERS
Charles King, Sherwood Park, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 19, 1966, Ser. No. 551,225
6 Claims. (Cl. 260—857)

The use of specified carboxyl group-containing polymers or salts thereof as inititators or chain-transfer agents in the polymerization of pivaloactone and the resultant dye-receptive block copolymers are disclosed. One such preparation utilizes the tetrabutyl salt of 0.4 g. of poly-(4-vinylpyridine/acrylic acid) in tetrahydrofuran to polymerize 20 g. of pivalolactone and to form the block copolymer of polypivalolactone and poly(4-vinylpyridine/acrylic acid).

3,418,394
PROCESS FOR MAKING BLOCK COPOLYMERS OF CONJUGATED DIENES AND VINYL-SUBSTITUTED AROMATICS
Clinton F. Wofford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 7, 1966, Ser. No. 519,304
7 Claims. (Cl. 260—880)

Block copolymers of improved green tensile strength are prepared by conducting the polymerization with an

organomonolithium initiator in the presence of tetramethylurea. The block copolymers are derived from conjugated dienes and vinyl-substituted aromatic compounds.

3,418,395
DYEABLE POLYOLEFIN COMPOSITION CONTAINING AN ESTER EXCHANGED ETHYLENE/UNSATURATED ACID ESTER COPOLYMER
Isoji Taniguchi, Osaka, Kenichi Maemoto, Ibaraki, Takeshi Shimamura, Niihama, Tomohide Yasumura, Shiga-gun, Shiga-ken, Yasuro Samejima, Nishinomiya, Kosaku Onodera and Teruo Oono, Shiga-gun, Shiga-ken, Japan, assignors to Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, and Toyo Boseki Kabushiki Kaisha, Kita-ku, Osaka, Japan
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,400
Claims priority, application Japan, Mar. 5, 1965, 40/12,915; Oct. 13, 1965, 40/62,767
7 Claims. (Cl. 260—895)

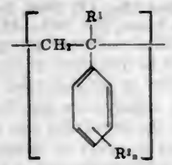
Dyeable polyolefin compositions are prepared from a blend of a polyolefin and a copolymer of ethylene with an acrylic acid ester or maleic acid ester, characterized by treating said copolymer with an amino alcohol or with an alcohol having a nitrogen containing heterocyclic group before or after blending with the polyolefin.

3,418,396
POLYPROPYLENE-POLYETHYLENE COMPOSITIONS FOR EXTRUSION COATING
Ray Edwards and Gerald E. Butler, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 6, 1966, Ser. No. 519,142
12 Claims. (Cl. 260—897)

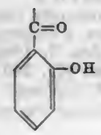
A polyolefin composition for extrusion, coating and molding various articles, comprising a predominant portion of a mixture of from about 40% to 99% by weight of a polypropylene having a flow rate of from about 12 dg./min. to 120 dg./min. and about 1% to 60% of a polyethylene having a melt index of from about 1 dg./min. to 15 dg./min., a density greater than about 0.912 g./cc., and a melt index recovery of greater than 50%.

3,418,397
ULTRA-VIOLET LIGHT STABILIZED POLYMERS
Stanley Tocker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,638
6 Claims. (Cl. 260—900)

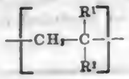
1. A photostable polymer comprising: a polymeric compound having recurring structural units of the formula:



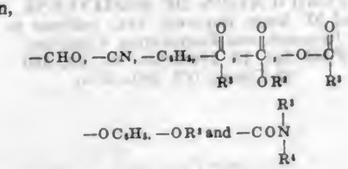
wherein R^1 is selected from the group consisting of hydrogen, halogen and alkyl, R^2 is selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy and alkyl and n is a positive integer of from 1 to 3 inclusive, wherein at least 10% of said units of said polymeric compound have attached to the benzene ring a radical of the formula:



5. A photostable polymeric composition comprising: a blend of (1) a polymeric compound selected from the group consisting of alpha-olefins and a polymer having the general formula:

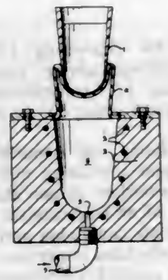


wherein R^1 is selected from the group consisting of halogen,



R^2 is selected from the group consisting of R^1, hydrogen and alkyl of 1–4 carbon atoms, R^3 is alkyl and R^3 and R^4 are selected from the group consisting of hydrogen and alkyl and (2) the polymer of claim 1.

3,418,398
METHOD OF HEATING PARISON PREFORMS
Charles L. Seefluth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 437,175, Mar. 4, 1965. This application Aug. 7, 1967, Ser. No. 658,685
6 Claims. (Cl. 263—52)

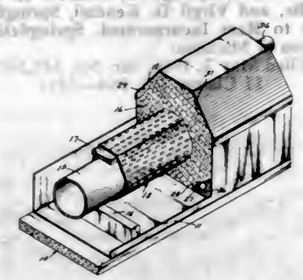


A hollow parison used for blow molding hollow articles is heated by placing the parison into a high heat conductivity mold having a flexible, low heat conductivity liner, heating the mold to a temperature sufficient to heat the parison to a temperature below the crystalline melt point of the parison, and removing the parison from the mold. In a preferred embodiment, fluid pressure is applied between the mold and the liner after the parison reaches the desired temperature, the liner then pushing the parison from the mold so that the liner is peeled from the parison.

3,418,399
METHOD OF MAKING AN INSULATED PIPE STRUCTURE
George E. Ziegler, Evanston, Ill., assignor to Concrete Thermal Casings, Inc., Seattle, Wash., a corporation of Washington
Continuation-in-part of application Ser. No. 205,023, June 25, 1962. This application Sept. 13, 1965, Ser. No. 487,004
5 Claims. (Cl. 264—35)

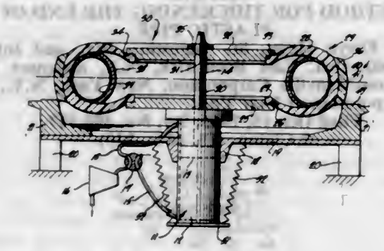
A method of making an insulated pipe structure, wherein thermoplastic structures are positioned around

the pipe and melted out to form a plenum chamber about the pipe, preferably in combination with a preformed,



rigid foam having a duct therealong for venting moisture vapor from said structure.

3,418,400
METHOD AND APPARATUS FOR ELIMINATING TIRE DROOP
Maurice Clapp, 1709 Rossmont, Redlands, Calif. 92373
Continuation-in-part of application Ser. No. 544,180, Apr. 21, 1966. This application July 17, 1967, Ser. No. 660,549
19 Claims. (Cl. 264—36)



A tire retreading apparatus employs a counterbalance to carry the weight of the ram assembly used to draw the tire's beads together during the insertion of the tire into a lower mold matrix. Before the beads are drawn together, the tire is supported around its periphery along the parting surface of the lower mold matrix. As the beads are being drawn together, the counterbalance floats its carried weight and by a shift of load from the parting surface to the ram assembly allows the tire to seat in the lower matrix.

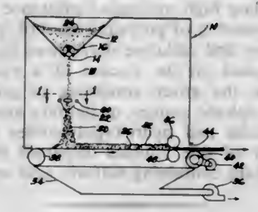
3,418,401
METHOD OF SLIP CASTING BASIC REFRACTORY MATERIALS
George R. Henry, Bethel Park, and Eldon D. Miller, Jr., Bridgeville, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
No Drawing. Filed May 2, 1966, Ser. No. 546,498
5 Claims. (Cl. 264—56)

A method of slip casting basic refractory shapes from basic refractory materials comprising, adding from 0.2 to 5%, by weight, finely divided flowers of sulfur and about 0.1 to 1% ethylene-diamine to the size-graded batch.

3,418,402
PROCESS OF MAKING A COMPACTED STRUCTURAL ELEMENT IN A MOIST ATMOSPHERE
Robert R. Grissom, Colonia, Edward K. Matthews, Westfield, and Werner Kurzbuch, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 26, 1965, Ser. No. 435,682
4 Claims. (Cl. 264—65)

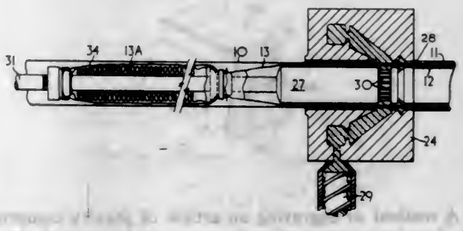
Process for producing a strong structural element comprising a bituminous binder and an aggregate by heat curing the same in an initial stage and thereafter contacting the cured product with moist air such as steam.

3,418,403
METHOD OF FABRICATING PANELS OF EXPANDED PERLITE
Anthony L. Garnero, Wheaton, Ill., assignor, by mesne assignments, to Central Manufacturing District, Chicago, Ill., a trust of Massachusetts
Continuation-in-part of application Ser. No. 381,145, July 8, 1964. This application Feb. 21, 1966, Ser. No. 528,972
10 Claims. (Cl. 264—91)



A method of producing panels of self bonded expanded perlite particles in which perlite particles are introduced into a heated zone with angularly directed flames through which the particles pass, are heated and expanded to a pyroplastic and adhesive state. Rapid deposition of the expanded particles onto a moving foraminous belt permits the particles to adhere in a manner to form a unified coherent layer which is then formed into the desired panels.

3,418,404
MANUFACTURE OF HOSE PIPES
Desmond Hird, Bentham, near Lancaster, England, assignor to George Angus & Company Limited, Newcastle-upon-Tyne, England, an English company
Filed Jan. 20, 1966, Ser. No. 521,899
Claims priority, application Great Britain, Feb. 3, 1965, 4,758/65
4 Claims. (Cl. 264—173)



A reinforced fire hose and a method of making it is disclosed. In accordance with the method, a textile jacket

and a tubular thin reinforcing cloth contained therein are drawn through an extrusion heat which simultaneously extrudes rubber or synthetic plastic material through the jacket and tube to form an impervious lining which bonds the jacket and tube together. By maintaining the tubular reinforcing cloth in frictional contact with the inner wall of the jacket as it is drawn through the extrusion head, the reinforcing cloth is not subjected to the high forces imposed upon the jacket.

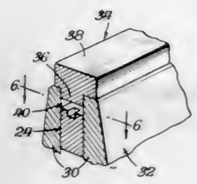
3,418,405
METHOD OF MANUFACTURING FLAT VISCOSE FIBERS
Yoichi Kajitani, Saijo, Japan, assignor to Kurashiki Rayon Company Limited, Sakazu, Kurashiki, Japan, a corporation of Japan
No Drawing. Filed Sept. 4, 1963, Ser. No. 306,626
The portion of the term of the patent subsequent to May 9, 1984, has been disclaimed
Claims priority, application Japan, Sept. 10, 1962, 37/38,878
3 Claims. (Cl. 264—190)

1. A method of manufacturing tubular flat viscose fiber which comprises extruding the viscose containing 2 to 50% by weight based on the cellulose in the viscose of a water swelling high molecular substance selected from the group consisting of polyvinyl alcohol, polyvinyl alcohol derivatives and cellulose derivatives and 0.05 to 2% by weight based on the viscose of a viscose modifier selected from the group consisting of polyoxyalkylene derivatives, aliphatic amines, quaternary ammonium salts, dithiocarbamates and hydroxypolyamines and having a large number of fine bubbles dispersed therein, into a coagulation bath containing sulfuric acid and sulfate.

3,418,406
PROCESS FOR PREPARING BIAXIALLY ORIENTED ACRYLONITRILE POLYMER FILM
Lawrence E. Ball, Akron, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,612
5 Claims. (Cl. 264—206)

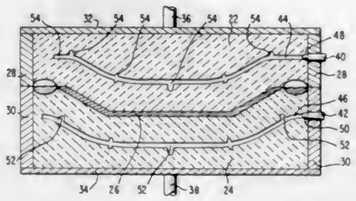
Biaxially oriented film of an acrylonitrile polymer is prepared by solvent casting of film and subsequent two-way stretching and heat setting of the solvent-containing cast film.

3,418,407
METHOD OF ENGRAVING AN ARTICLE OF JEWELRY
Jerry Eilers, Elmwood Park, Ill.
(5 N. Wabash, Chicago, Ill. 60602)
Filed June 13, 1966, Ser. No. 556,926
10 Claims. (Cl. 264—219)



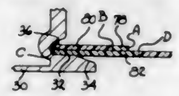
A method of engraving an article of jewelry comprising forming a group of mats into a predetermined array to form an inscription, forming a mold cavity shaped correspondingly to the shape of said array and casting the article inside said cavity and removing the final article from the mold.

3,418,408
METHOD FOR MAKING WARE PRODUCING MOLD MEMBERS
Donald R. Emmel, Springfield, Andrew R. Blackburn, Westerville, and Virgil D. Kendall, Springfield, Ohio, assignors to Ram Incorporated, Springfield, Ohio, a corporation of Michigan
Filed May 3, 1966, Ser. No. 547,347
11 Claims. (Cl. 264—221)



A method for making a ware producing mold member incorporating a network of passages for fluid release of the molded article comprising shaping a mass of molding material to obtain a portion having a face contoured in accordance with a portion of the ware to be produced, embedding a pattern of burn out material within said mass, approximating the structure of said contoured face of said mass, and uniformly spaced from said face portion and firing said mass into a porous mold member containing a network of passages within said mold member, formed as a result of the elimination of the burn out material during said firing.

3,418,409
METHOD FOR THICKENING THE END OF PLASTIC PIPE
Jack Elwyn Hesse, St. Augustine, Fla., and John Ostapovich, East Brunswick, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Oct. 15, 1965, Ser. No. 496,327
2 Claims. (Cl. 264—230)

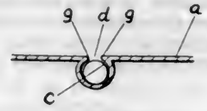


A method for making a thickened end portion on an elastic memory plastic pipe by heating the end portion of the pipe and turning it back upon itself. Shrinkage of the folded section applies compressive forces on the remaining section of the pipe.

3,418,410
METHOD OF PRODUCING A BASE PLATE HAVING A GROOVE WITH A COIL SPRING MOUNTED THEREIN
Alfred Einfalt, Nurnberg, Germany, assignor to Gebruder Einfalt Blechspielwarenfabrik, Nurnberg, Germany, a German firm
Filed Aug. 3, 1966, Ser. No. 569,860
Claims priority, application Germany, Feb. 14, 1966, E 31,043
3 Claims. (Cl. 264—242)

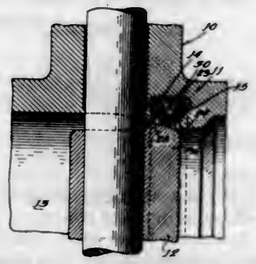
There is disclosed a base plate having in one side a groove constituting a track for toy vehicles. A coil spring rotatably fitted into the groove and engageable by the catch member or driver depending from a toy vehicle drives the engaged vehicle along the track when the spring is rotated by some suitable driving device such as a small electric motor. The cross-sectional peripheral outline of the track groove is such that the width of the mouth of the groove is narrower than the maximal

diameter of the spring so that the same is safely held



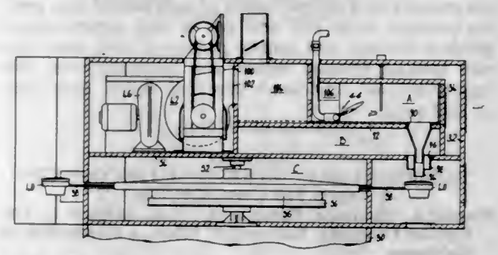
captive in the groove. There is also disclosed a method of producing the track groove in an economic fashion.

3,418,411
METHOD OF FORMING A VALVE SEAT STRUCTURE
Donald G. Fawkes, Aurora, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Continuation-in-part of application Ser. No. 269,527, Apr. 1, 1963. This application Jan. 3, 1967, Ser. No. 606,649
9 Claims. (Cl. 264—262)



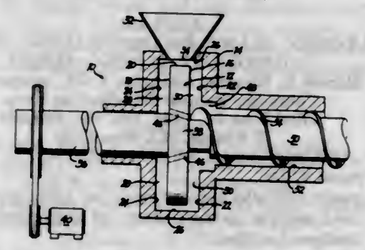
A method of forming a valve seat structure including the steps of providing on a valve member an annular channel having side walls, an outer opening, and a bottom surface, providing a seal formed of resilient distortable material and having an inner portion and an outer portion, disposing the inner portion of the seal in the channel in contact with the side walls, disposing a cooperating second valve member in confronting relationship to the channel, flowing a mass of settable plastic material into the channel between the inner portion of the seal and the bottom surface of the channel under sufficient pressure to expel substantially all air from therebetween and urge the seal outwardly relative to the channel to have the outer portion thereof contact the confronting surface of the second valve member notwithstanding a variation in the spacing between the valve members at different points along the length of the channel, causing the pressure of the plastic material to squeeze the seal against the confronting surface of the second valve member to have uniform sealing engagement therewith at each point along the channel, and setting the plastic mass while maintaining the pressure against the seal whereby the set plastic mass maintains the seal in the adjusted arrangement for providing a substantially uniform compressional stress therein when the second valve member is disposed in the channel confronting position. The plastic material may comprise an epoxy resin and may have an effective amount of retardant mixed therewith for delaying the setting of the material sufficiently to permit the adjustment in squeezing of the seal prior to the setting of the material. The plastic may be pumped into the channel and may be delivered thereinto at a plurality of positions spaced longitudinally of the channel. The channel may widen inwardly toward the bottom surface and the inner portion of the seal squeezed transversely to the longitudinal extent thereof to pass inwardly through the outer opening of the channel. The seal is movable within the channel prior to the flowing step to permit free adjustment thereof. The plastic material is flowed to between spaced inner portions of the seal to urge the spaced portions against the side walls of the channel. Further disclosed is a valve seat which is adjusted by means of a body of plastic material set in situ in the channel between the seal and the bottom surface of the channel exerting pressure against the seal to bias the seat portion of the seal outwardly with the outer portion of the seal engaging the side walls of the channel. The plastic material further defines mechanical interlocking means interlocking with interlocking means on the seal member to retain the seal member in association with the valve member.

3,418,412
MANUFACTURE OF POTTERY WARE
Frank William Meadows and Dennis Podmore, Stoke-on-Trent, England, assignors to Service (Engineers) Limited, Cobridge, Stoke-on-Trent, England, a British company
Continuation of application Ser. No. 469,548, July 6, 1965. This application Feb. 14, 1967, Ser. No. 616,129
Claims priority, application Great Britain, July 9, 1964, 28,282/64
19 Claims. (Cl. 264—319)



1. A pottery ware drying apparatus comprising a mold support, a nozzle mounted above and in close proximity with the mold support and arranged to direct hot air centrally on to a generally upwardly facing surface of an article of pottery ware supported from below, in a mold, by the mold support, a member mounted above the mold support and provided with an aperture of greater cross section than the cross section of the nozzle, the nozzle projecting through the aperture provided in the member, an air heater arrangement, and means whereby air is impelled past the air heater arrangement and thereafter through the nozzle, is caused to impinge on the surface of the article and is then drawn off through the aperture provided in the member.

3,418,413
DUAL GAP CENTRIPETAL EXTRUDER AND METHOD OF EXTRUDING
James E. Henry, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 2, 1966, Ser. No. 524,571
9 Claims. (Cl. 264—349)



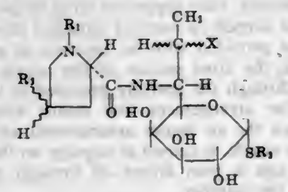
1. An extruder comprising a disc having opposite faces, means defining surfaces closely spaced from said disc faces and defining therewith first and second shearing gaps on opposite sides, respectively, of said disc, means

to feed unplasticized thermoplastic material to said shearing gaps, drive means for relatively rotating said disc and said surfaces to subject said material in said gaps, respectively, to shearing stress, the material being impelled spirally inward through said gaps toward the central portion of said disc, said central portion having channels extending transversely through said disc for flow of material from said first gap through said disc to the other side thereof, and means at said other side of said disc for advancing material away from both of said gaps.

6. A method of extruding plastic material employing a rotor having opposite faces, and means having surfaces closely spaced from said faces defining therewith first and second searing gaps extending respectively along said faces on opposite sides of said rotor, said method comprising the steps of supplying unplasticized material to said shearing gaps peripherally of said rotor, rotating said rotor to advance the material inwardly of said rotor through said shearing gaps while subjecting the material to shearing stress in said gaps to plasticize the material at a predetermined pressure, reducing the pressure at a central region of said second gap, passing material from said first gap at said predetermined pressure through said central portion of said rotor into said reduced pressure region, and removing from said region material introduced into said region from both of said gaps.

3,418,414
TRIMETHYLSILYL ETHERS OF LINCOMYCIN AND ITS COMPOUNDS
Ronald L. Houtman, Parchment, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Aug. 31, 1966, Ser. No. 576,238
15 Claims. (Cl. 424—181)

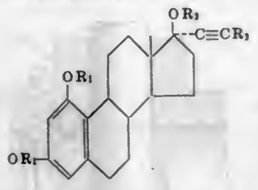
Trimethylsilyl ethers of free base and acid addition salt forms of compounds of the formula



wherein R_1 is selected from the group consisting of hydrogen and alkyl containing 1 to 8 carbon atoms, inclusive; R_2 is alkyl containing 3 to 12 carbon atoms, inclusive; R_3 is selected from the group consisting of methyl and ethyl; and X is selected from the group consisting of chlorine, bromine and hydroxyl. The trimethylsilyl ethers show anti-infective activities and have uses among others in antimicrobial pharmaceutical preparations and methods, especially in aqueous and oily vehicles.

3,418,415
ESTROGENIC STEROIDAL COMPOSITIONS COMPRISING 1-HYDROXY-ESTRADIOL AND DERIVATIVES THEREOF
Klaus Prezewowsky and Friedmund Neumann, Berlin, and Rudolf Wiechert, Berlin-Wannsee, Germany, assignors to A. G. Schering, Berlin, and Bergkamen, Germany
No Drawing. Filed May 10, 1966, Ser. No. 548,830
Claims priority, application Germany, May 19, 1965, Sch 37,082
24 Claims. (Cl. 424—238)

Compounds of the formula:



have been found to have strong estrogenic and ovulation-preventing effects in oral and parenteral application if R_1 and R_2 are hydrogen, lower alkyl, tetrahydropyranyl, or acyl radicals of a physiologically tolerated carboxylic acid, and R_3 is hydrogen, chlorine, lower alkyl, or lower alkynyl. Various methods of preparing the compounds are being described.

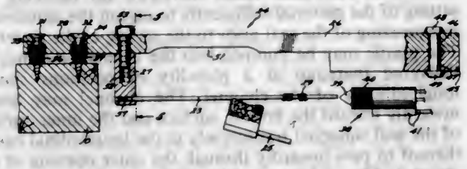
3,418,416
THERAPEUTIC COMPOSITION CONTAINING A NEW PYRIDOXINE DERIVATIVE
Jean Pierre Fourneau, Paris, France, assignor to Laboratoires Houde, Paris, France, a corporation of France
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,633
Claims priority, application France, Jan. 3, 1966, 44,607; Dec. 13, 1966, 87,172
11 Claims. (Cl. 424—263)

Therapeutic composition containing, as active principle, a nucleophilic adduct of pyridoxine on the aldehydic carbonyl grouping of glyoxylic acid, of empirical formula $C_{10}H_{13}NO_6$; the invention also comprises a process for the treatment of arterial and veinous circulatory disorders by means of said adduct.

ELECTRICAL

3,418,417
ELECTRIC PIANO INCORPORATING MULTI-COMPONENT TUNING FORKS
Harold B. Rhodes, Anaheim, Calif., assignor to Columbia Records Distribution Corp.
Filed June 24, 1965, Ser. No. 466,534
7 Claims. (Cl. 84—1.15)

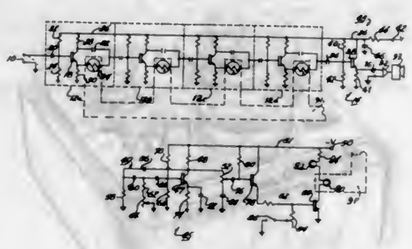
1. An electric piano, which comprises:
a piano action,
a mechanical-electrical transducer adapted to be utilized relative to the delivery of musical signals to a loudspeaker, and
a vibratory assembly comprising:
an elongated high-mass leg formed of metal,
an elongated flexible metal low-mass leg,
means to mount said high-mass leg on a support in cantilevered relationship therefrom,
a rigid metal connector element separate from said high-mass leg and having a transverse bore adjacent one end thereof,



said connector element being formed of metal which has been case hardened to make the surface region thereof hard in the vicinity of said transverse bore,

one end of said low-mass leg being inserted in press-fit relationship into said transverse bore whereby to cause said low-mass leg to be closely adjacent said case-hardened surface region of said connector element,
said low-mass leg having a hardness greater than the hardness of said rigid metal connector element,
means to connect said case-hardened connector element to said high-mass leg in acoustically integral relationship and in such manner that said low-mass leg is generally co-planar with said high-mass leg,
said low-mass leg being adjacent said transducer whereby vibrations of said low-mass leg in the common plane of said high-mass and low-mass legs will generate a signal in said transducer,
said low-mass leg being disposed to be struck by the hammer portion of said piano action in the plane of said high-mass and low-mass legs whereby to vibrate in said plane.

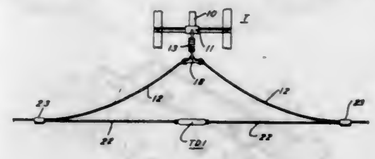
3,418,418
PHASE SHIFT VIBRATO CIRCUIT USING LIGHT DEPENDENT RESISTORS AND AN INDICATING LAMP
Dallas Richard Wilder, 6731 N. Ionia, Chicago, Ill. 60646
Filed May 25, 1964, Ser. No. 369,749
4 Claims. (Cl. 84—1.25)



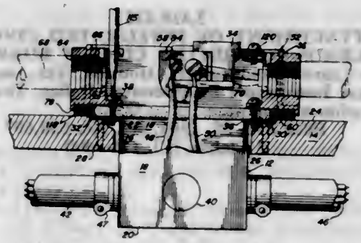
The present application discloses a vibrato circuit in which the phase of a low level input is shifted by a plurality of cascaded phase shifting circuits. Each of the phase shifting circuits incorporates a light dependent resistor (LDR) as a variable impedance element, and the LDR of each of the circuits is mounted in a light-tight chamber with a lamp. The lamp is excited by an oscillator which produces a signal at the vibrato frequency. The output of the cascaded phase shift circuit is connected through a power amplifier to a utilization device such as a loudspeaker.

3,418,419
WAVE DAMPERS FOR OVERHEAD TRANSMISSION CONDUCTORS
Allan H. Kidder, 118 Owen Ave., Lansdowne, Pa. 19050, Richard A. Mulford, 1231 Wisteria Drive, Malvern, Pa. 19355, and Frank Kahn, 1865 Edmund Road, Abington, Pa. 19001
Continuation-in-part of application Ser. No. 487,830, Sept. 16, 1965. This application Nov. 22, 1967, Ser. No. 685,181
11 Claims. (Cl. 174—42)

An overhead transmission line provided with wave dampers in which resilient members actuated by conductor oscillations prevent build up of such oscillations to excessive magnitudes by respectively absorbing and dissipating an increment of energy from a conductor by hysteresis effect during each cycle of oscillation.



3,418,420
JUNCTION BOX EXTENSION DEVICE
Paul J. Zerwes, Chicago, Ill., assignor to Bell Electric Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 11, 1966, Ser. No. 541,757
16 Claims. (Cl. 174—53)

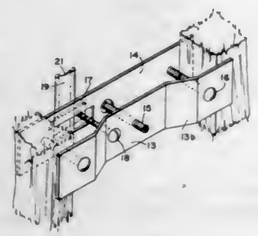


An electrical junction box extension device adapted to be fastened to an underlying, pre-existing junction box or the like and formed as a unitary metal frame member having an integral outwardly extending flange formation for overlying the ordinarily rough bordered wall opening for the underlying junction box, the flange formation including a depending portion defining a rectangular seat and having a resilient gasket seated therein retained against lateral outward extrusion as the frame is secured upon the junction box whereby to permit compression of the gasket to seal a direct junction established between the building wall carrying said underlying junction box and the frame; strap means being provided for the securement of an electrical appliance in said extension and swinging clip means formed as a part of said strap means which clip means can be moved aside selectively to permit free access to the underlying junction box for securement of the frame thereto and said clip means carrying tapped openings of standard dimensions required for attachment of the electrical appliance and adapted to be returned to its blocking condition for such attachment.

3,418,421
WALL PLATE ASSEMBLY HAVING IMPROVED ATTACHING MEANS
Paul W. Goebel, Westlake, Ohio
(1095 Chatham Place, Rocky River, Ohio 44116)
Filed Dec. 22, 1965, Ser. No. 515,565
3 Claims. (Cl. 174—57)

A wall plate assembly for making an electrical connection between a conductor and a device to be energized thereby, including a plate member, having electrical terminal means to effect the electrical connection,

adapted to be mounted about an opening in a wall or the like having opposed sides. At least one pair of cooperating strips is used to secure the plate member with respect to the wall, one strip of each pair being secured

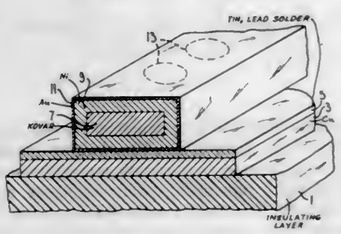


to the plate member and making an adjustable connection with its companion strip. One of the strips has attaching means to receive a conductor and fix it relatively to the plate member.

3,418,422
ATTACHMENT OF INTEGRATED CIRCUIT LEADS TO PRINTED CIRCUIT BOARDS

Allen Craven Bradham III, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,607
3 Claims. (Cl. 174—94)



Disclosed are (1) a method of attaching integrated circuits to printed circuit boards with Kovar leads covered with an alloy of electroless nickel and electroless gold and (2) the resulting junctions between integrated circuit leads in the printed circuit boards.

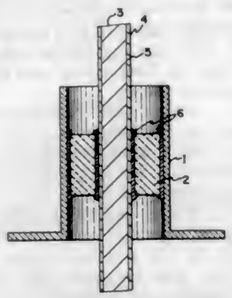
3,418,423
FLUORINE-RESISTANT ELECTRICAL TERMINAL

Robert L. Bronnes, Irvington, Richard C. Sweet, North Tarrytown, and Ray C. Hughes, Ossining, N.Y., assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 23, 1966, Ser. No. 604,387
6 Claims. (Cl. 174—152)

An electrically insulated terminal to introduce conductive leads into closed systems containing liquid and gaseous fluorine.

The terminal comprises an outer tubular corrosion-resistant metallic member such as stainless steel, an inserted metallized alumina ceramic member, and a central conductor consisting of a core of relatively plastic corrosion-resistant metal such as copper surrounded by a sleeve of more rigid corrosion-resistant metal such as stainless steel. The metallized portions of the ceramic member consist of successive layers of titanium, platinum

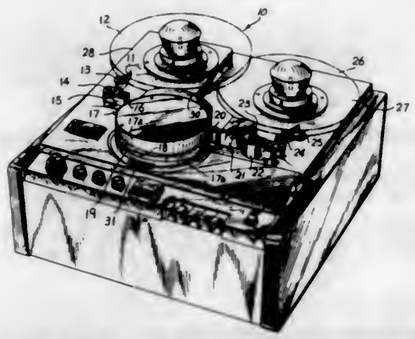


and steel. Copper braze hermetically joins the metallized steel layers to the outer tubular member and to the sleeve.

3,418,424
MAGNETIC RECORDING AND REPRODUCTION OF TELEVISION SIGNALS

Kenjiro Takayanagi, Tokyo, and Suguru Takayanagi, Yokohama, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan

Continuation of application Ser. No. 57,168, Sept. 20, 1960. This application Aug. 30, 1965, Ser. No. 483,678
Claims priority, application Japan, Oct. 9, 1959, 34/32,027
11 Claims. (Cl. 178—6.6)



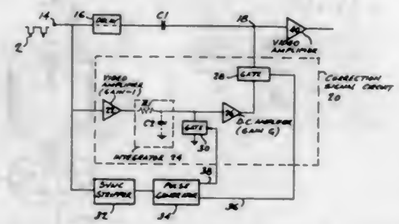
A machine for magnetically recording and reproducing television signals utilizes a guide drum having a magnetic tape partially wrapped around the drum. A pair of magnetic recording heads alternately scan tracks running diagonally across the tape. In order to cause the tape to run smoothly and without jitter, flutter, ripple, and other mechanical distortions, a pair of guide poles are arranged to lead the tape entering and leaving the wrap around the drum. The guide poles are perpendicular to the magnetic tape at their point of contact with the tape—which means that they are not perpendicular to either the drum or the general magnetic recorder surfaces.

3,418,425
SYSTEM FOR REDUCING LOW FREQUENCY VARIATIONS IN THE AVERAGE VALUE OF A SIGNAL

Gordon B. Thompson, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Jan. 3, 1966, Ser. No. 518,337
6 Claims. (Cl. 178—7.1)

A circuit, having particular utility with respect to the transmission of video signals, is described. Such signals would typically contain recurring reference pulses which are clamped to a specific potential. Upon subsequent passage through amplifiers, low frequency distortion or ringing is introduced whenever there is a substantial change in the information content of the signal. To avoid such distortion, the circuitry disclosed "unclamps" the signal

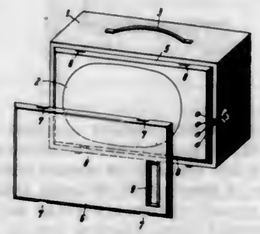


prior to transmission. Thus the signal transmitted will have a constant average value, or a value in correspondence with the average value, regardless of information content. Accordingly, low frequency variations normally introduced on passage through subsequent amplifiers, do not appear.

3,418,426
REMOVABLE PROTECTIVE COVER FOR TELEVISION HAVING A TINTED PORTION IN THE SCREEN AREA

Herbert Schlegel, Havelse, Hannover, and Paul Kümmel, Hannover, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm, (Danube), Germany

Filed Dec. 9, 1963, Ser. No. 328,794
Claims priority, application Germany, Dec. 7, 1962, T 23,155; Oct. 26, 1963, T 24,958
10 Claims. (Cl. 178—7.82)

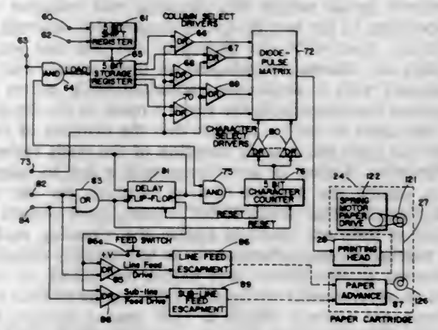


1. In a portable television receiver device having controls and a tinted picture screen arranged for optimum contrast at normal local environmental brightness and including a protective hood having means for cooperating with the receiver housing for attaching the hood to the front of the receiver housing and serving as protection during transport, the improvement wherein said protective hood covers the front of the housing to protect it and has its protective portion disposed outside the confines of such housing, and is transparent in the portion thereof corresponding to the picture screen and includes a tinted portion so that the attached hood changes the total tinting observed by a viewer and an improvement in contrast is provided when there is a change from the normal local environmental brightness such as when operating the set in daylight with sunlight impinging on the screen.

3,418,427
TELEGRAPHIC POINT PRINTER HAVING PIEZOELECTRIC STYLUS DRIVE

Franklin M. Jones, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Nov. 24, 1964, Ser. No. 413,409
7 Claims. (Cl. 178—30)

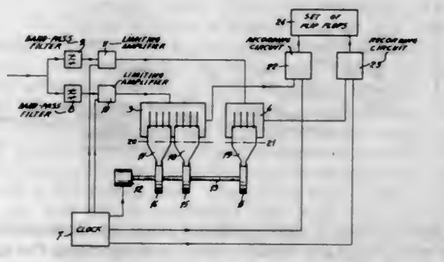


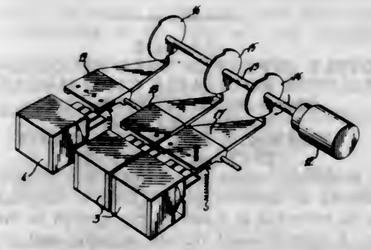
A plurality of styli are driven by a plurality of piezoelectric crystals attached thereto to form characters on pressure sensitive recording paper. Each of the piezoelectric crystals is operated in the bender bimorph mode.

3,418,428
MULTIFREQUENCY TELEGRAPH RECEIVER WITH DAMPING MEANS FOR RESONANT REED DETECTORS

Jean-Jacques Cuvelier, Mont-sur-Marchienne, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium

Filed Oct. 18, 1965, Ser. No. 497,333
Claims priority, application Belgium, Oct. 20, 1964, 654,576
7 Claims. (Cl. 178—48)

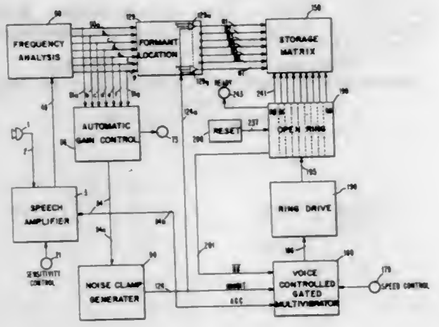




Apparatus for the synchronized transmission by teleprinter in which each sign or letter is represented by the

successive transmission of two signals at different frequencies in accordance with a two-unit code having twelve frequencies distributed into two groups, corresponding to the two units, one of eight frequencies and the other of four frequencies. The spacing between adjacent frequencies in the groups has an identical value and the duration of the units is equal to the reciprocal of this spacing. The received signals act on two vibrating reed selectors corresponding to the two groups of frequencies, wherein the selectors reactive to the signals of the first and second groups are alternately switched on these signals and are equipped with a device that simultaneously moves the contacts associated with the various reeds in the direction of the latter in such a manner that the distance of these contacts from the axis of vibration of the reeds varies as a function of time, in accordance with a law so selected that, during the interval of time reserved for the unit affecting the other selector, the contacts move toward the reeds at sufficient speed to enable the vibrating reed to be touched at each vibration so as to gradually damp the vibration of the reed to zero before the end of the unit, and on reappearance of the unit affecting the selector concerned, the contacts return to their spaced position at a speed which is greater than the speed at which the reeds rise to their maximum amplitude.

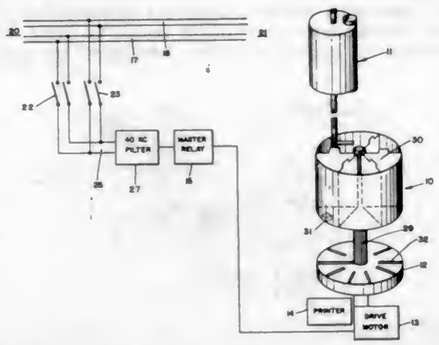
3,418,429
SPEECH ANALYSIS SYSTEM
Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 13, 1965, Ser. No. 495,427
7 Claims. (Cl. 179—1)



Speech data is stored without noise by distinguishing the noise from the speech signals and operating the storage matrix by a timing signal which is generated only in the absence of noise.

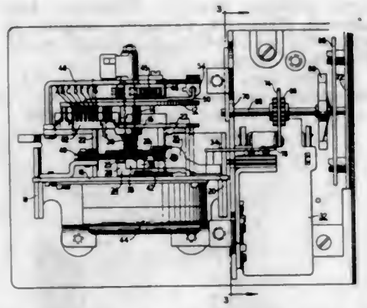
3,418,430
REMOTELY OPERATED DATA RECORDING SYSTEM WITH ROTATABLE CARD MAGAZINE
Morris Staller, 807 Pontiac Ave., Cranston, R.I. 02910
Filed Sept. 7, 1965, Ser. No. 485,419
20 Claims. (Cl. 179—2)

The invention resides in a device which permits data to be gathered in different places, such as hospital rooms, and to be recorded at a central place, such as the nurse's station. A conventional remote portable unit is plugged into the audio wiring of the patient's room and the information is sent out by a standard typing device, an encoder, a tone shift oscillator and a 40 kc. generator. The signal is received and recorded on a unit consisting of a motor driven card holder or drum, an integral scanner



device mounted thereon, a card transfer mechanism, a printer, and the associated electronic circuitry.

3,418,431
CODE TRANSMITTER
Harold J. Hershey, Chester W. McGee, and Merville L. Warnock, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 28, 1965, Ser. No. 459,861
3 Claims. (Cl. 179—90)

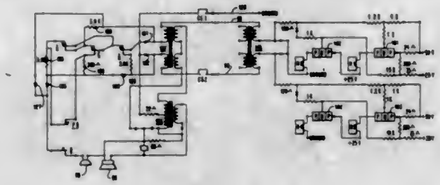


A code transmitter includes a spring loaded printed circuit disc that is coupled by a clutch to a motor for rotation past a first plurality of spaced contacts to provide a first group of sequentially actuated switches. A second plurality of spaced contacts are linked to a relay for rotation past a printed circuit board to provide a second group of sequentially actuated switches that are interconnected with the first group in a switching matrix. The completion of the path through the switching matrix by the sequential actuation of the first group of switches results in the energization of the relay to actuate the next second switch in the sequence and to decouple the printed circuit disc from the motor and permit the spring to return the disc to a home position to reinitiate the sequential actuation of the first switches.

3,418,432
REMOTE CONTROL MATRIX DICTATING SYSTEM
Raymond R. Boggs, Jr., Henry C. Locklar, and L. Elwood West, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 29, 1964, Ser. No. 421,928
2 Claims. (Cl. 179—100.1)

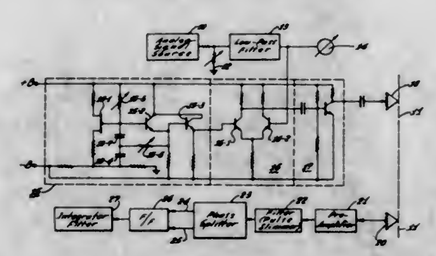
A dictating system has at least one central recorder that is available for interconnection with at least one

remote dictating and control station. Once the central recorder and remote station have been connected, a large number of functional controls based on a matrix arrangement is made possible with a minimum number of interconnecting lines that also accommodate audio signals.



The principle of control is $C=N^x$ wherein C represents the control conditions possible, N represents the number of active circuit conditions (number of states possible on each line with the transistor-relay combinations provided), and x represents the number of interconnecting active lines, not including the ground line.

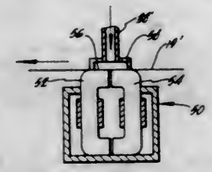
3,418,433
METHOD AND SYSTEM FOR PROCESSING ANALOG INFORMATION
Frederick J. Hodge, Camarillo, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,885
8 Claims. (Cl. 179—100.2)



A system for processing analog information, particularly cardiac information, is disclosed in which the analog signal is compared in a differential amplifier with sawtooth oscillations of alternating linear slope and sharp drop at a constant rate. The output pulses of the amplifier commences at each drop of the sawtooth wave and end in accordance with the analog signal value. The resulting pulse sequence is recorded on magnetic tape in form of correspondingly alternating magnetizations. Upon reproduction an alternating sequence of sharply defined pulses are produced to coincide with reversals of magnetization on the tape. These latter pulses are used, e.g., to reconstruct a replica of the differential amplifier output. Integration of this replica pulse train reconstructs the analog signal and eliminates tape flutter and wow.

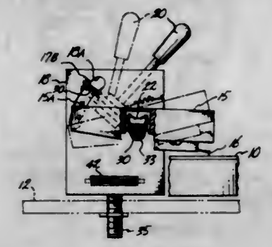
3,418,434
PNEUMATIC MEANS FOR MAINTAINING TAPE IN CONTACT WITH TRANSDUCER
Johannes B. Groenewegen, San Dimas, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Feb. 12, 1965, Ser. No. 432,167
1 Claim. (Cl. 179—100.2)

There is described apparatus for maintaining magnetic tape in intimate contact with a magnetic transducer head at high tape velocities. Pneumatic pressure, either in the form of positive pressure applied to the surface of the tape at the point of contact with the magnetic gap, or by



vacuum applied immediately adjacent the gap in the magnetic head, is utilized.

3,418,435
RADIAL PHONOGRAPH ARM AND FLEXIBLY POSITIONED PICKUP ASSEMBLY
Elwood G. Norris, 7039 38th NE., Seattle, Wash. 98105
Continuation-in-part of application Ser. No. 389,838, Aug. 17, 1964. This application Nov. 15, 1966, Ser. No. 600,338
23 Claims. (Cl. 179—100.4)

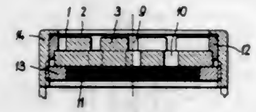


The present invention relates to sound recording and reproducing devices such as phonographs and more particularly to an improved phonograph arm and improved phonograph pickup assembly associated therewith. The system includes a conductive tone arm which remains stationary during record play with the head or pickup assembly moving along the arm and in a radial path across the record. A radio frequency receiver or a high frequency oscillator is coupled with the tone arm in a manner such that the receiver receives modulated R–F energy or the output of the oscillator is modulated in accordance with changes induced in a resonant circuit contained in the pickup head. The pickup head merely rides on the arm and is removable therefrom, and includes an R–F transmitter or an inductor which is so positioned that R–F signals or changes in the resonant circuit of which the inductance is a part causes signals to be coupled via the arm to the receiver or to the oscillator. Details of the mechanical nature of the arm itself which permits selective positioning of the head are also described.

3,418,436
UNIDIRECTIONAL CONDENSER MICROPHONE
Georg Neumann, Winklerstrasse 8a, Berlin-Grunewald, Germany
Filed July 16, 1965, Ser. No. 472,419
Claims priority, application Germany, July 21, 1964, N 25,279
8 Claims. (Cl. 179—111)

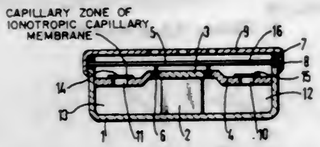
A unidirectional condenser microphone which improves the polar diagram in the frequency region between approximately 6 and approximately 12 kc.p.s., comprising a back plate of the microphone formed with holes extending from the surface of the plate in front of the

diaphragm into an acoustical impedance and from this impedance to an opening at the rear of the microphone, and the back plate formed with grooved distributed on



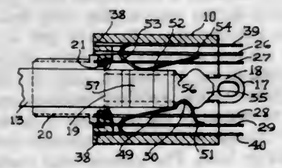
its surface in front of the diaphragm, the holes terminating in the grooves, preferably in the crossing points of the grooves.

3,418,437
ELECTRO-ACOUSTIC TRANSDUCER HAVING A RESONATOR CAVITY DAMPED
Helmut Hoffmann Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed July 12, 1965, Ser. No. 471,367
Claims priority, application Germany, July 29, 1964, S 92,323, S 92,326
4 Claims. (Cl. 179—115.5)



Electro-acoustic transducer having at least one resonator chamber with at least one opening provided with a damping cover, said cover comprising the capillary zone of an ionotropic membrane.

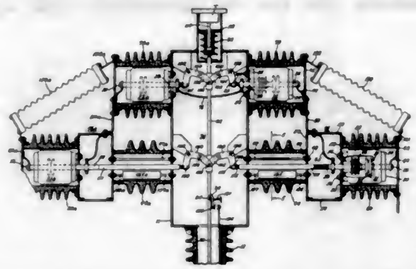
3,418,438
JACK PLUG CONNECTOR
Joseph Nevin Barrett, 5146 Hutchinson, Chicago, Ill. 60641
Filed Feb. 13, 1967, Ser. No. 615,576
7 Claims. (Cl. 200—51.1)



A jack plug connector having a plurality of terminals in spaced parallel relation to each other and on opposite sides of a center axially extending plug-receiving chamber with certain of the terminals including yieldable spring contact members engageable by portions of the plug for movement into and out of circuit registration between the other of the terminals.

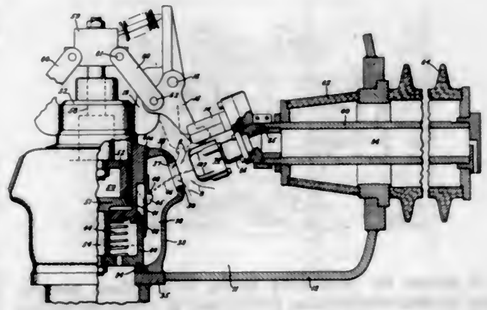
3,418,439
HIGH-VOLTAGE ELECTRIC CIRCUIT BREAKER
Edward J. Casey, Media, and Milton L. Heintz, Newtown Square, Pa., assignors to General Electric Company, a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,205
10 Claims. (Cl. 200—144)

Vacuum-type circuit breaker comprising a high voltage metal housing mounted on a vertically-extending insulating support. First and second vacuum interrupters are mounted at one side of the housing and third and fourth interrupters at the opposite side. First and second horizontally-extending hollow insulators on opposite sides of the housing respectively mount the first and fourth interrupters, whereas the second and third interrupters are



mounted directly on the housing in offset, laterally-spaced relationship to the first and second insulators, respectively. The interrupters are electrically connected in such a manner that current flows successively through the first, second, third and fourth interrupters.

3,418,440
GAS-BLAST CIRCUIT BREAKER
John W. Beatty, Newtown Square, and George McNeir, Lansdowne, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 14, 1965, Ser. No. 487,206
10 Claims. (Cl. 200—148)

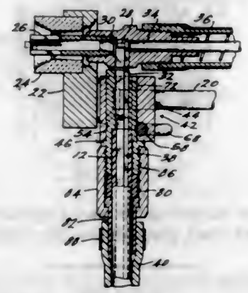


Gas-blast circuit breaker in which the electrodes of the breaker are normally spaced-apart by a relatively large amount to provide a high dielectric strength, but during high current interruptions the electrode spacing is reduced to provide for higher interrupting capacity than is available with the normal large electrode-spacing. Immediately after interruption, the normal large electrode-spacing is restored. The above reduction in electrode-spacing is produced by an electromagnet in series with the electrodes, which also produces a radial field for arc rotation and force for opening an auxiliary blast valve.

3,418,441
STUD-WELDING TOOL
Howard N. Wieland, Amherst, and Don E. Ehrlich, Huron, Ohio, assignors to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed Sept. 10, 1965, Ser. No. 486,296
8 Claims. (Cl. 219—98)

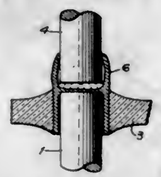
1. In combination, a welding tool having a chuck with a stud-receiving chamber immediately therebehind, a spark shield, and means to support said spark shield

around said chuck; a connecting body supported by said spark shield supporting means and having a passage in general alignment with an inlet of said chamber, said body having locking means, a spring engageable with said locking means and urging said locking means to a position in which a portion of said locking means is in said passage, and handle means connected with said locking means and extending from said body to enable said



locking means to be moved against the force of the spring to enable said locking means portion to clear said passage; and a rigid fitting extending into said passage, said body and said fitting having non-circular cooperating means for orienting said fitting relative to said body, said fitting having recess means cooperating with said locking means when connected with said body to hold said fitting in said body.

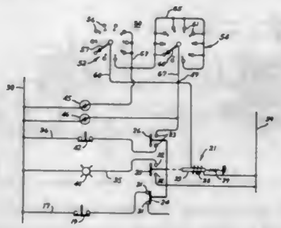
3,418,442
METHOD FOR MAKING HERMETIC SEALS
James W. Roy, Morristown, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Nov. 16, 1964, Ser. No. 411,343
7 Claims. (Cl. 219—100)



This is a method of obtaining an improved hermetic seal for a tantalum electrolytic capacitor by fusing together the internal wire of the device, an external terminal wire and a metallic envelope which surrounds these wires. This is accomplished by applying a high frequency electric field between the external and internal wires and the envelope while moving the external wire towards the internal wire causing the internal wire and envelope to start to melt. The advancing external wire is then butted to the internal wire and a high energy pulse is simultaneously discharged welding the internal and external wires together, thereby causing a ring of metal to be extruded from the butt area which alloys with the envelope, thus providing for a good hermetic seal.

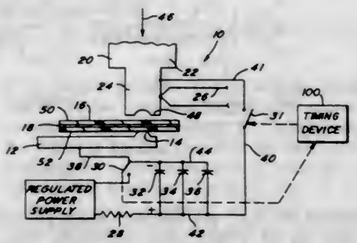
3,418,443
MAGNETICALLY RESPONSIVE CONTROL APPARATUS
Richard W. Bozeman, Bloomington, Ill., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1965, Ser. No. 434,082
10 Claims. (Cl. 219—110)

Welding control apparatus for monitoring current flow in a conductor and for terminating the current flow if the current magnitude exceeds a predetermined value. As the welding current flows through the current conductors and electrodes, a magnetic field is created. Reed switches, responsive to this magnetic field, will be triggered when the current flow becomes excessive. Upon such triggering,



the relay circuit is closed and the relay moves the normally closed contacts to an open position thus terminating the flow of welding current. The reed switches are mounted to permit adjustment of the trip point at which they will close the circuit.

3,418,444
METHOD AND APPARATUS FOR BONDING THROUGH INSULATING MATERIAL
Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 317,617, Oct. 21, 1963. This application Aug. 25, 1967, Ser. No. 663,444
15 Claims. (Cl. 219—113)

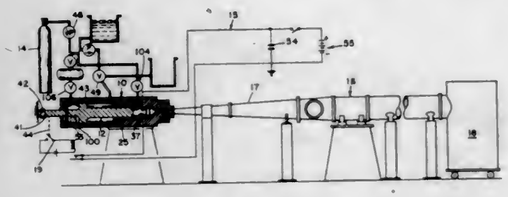


1. A process for welding together a pair of electrical conductors separated by an insulting material comprising:
(a) applying a preselected pressure for a preselected interval of time to said pair of conductors to urge said conductors toward each other whereby at least one of said conductors penetrates said insulating material to contact the other of said conductors to thereby form a metallic junction;
(b) detecting the end of said preselected interval of time; and
(c) sending an electrical charge through said junction in response to the detection of the end of said preselected interval of time to achieve welding of said pair of conductors in the region of said metallic junction.

3,418,445
APPARATUS FOR SUPPLYING HIGH ENERGY GAS STREAMS TO A WIND TUNNEL
Charles J. Stalmach, Jr., Grand Prairie, and Gene P. Schell, Irving, Tex., assignors to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,190
18 Claims. (Cl. 219—121)

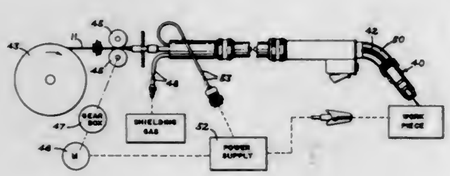
An apparatus is provided for supplying a heated and pressurized gas to a wind tunnel. The apparatus includes

an arc chamber positioned adjacent to the wind tunnel nozzle and having a pair of diametrically spaced electrodes extending into the chamber. A slidable piston element is positioned in a bore connecting the arc chamber to an



activating chamber such that upon discharge of a predetermined amount of electrical energy across the electrodes, the activating chamber releases the piston which in turn discharges the pressurized gas through the nozzle.

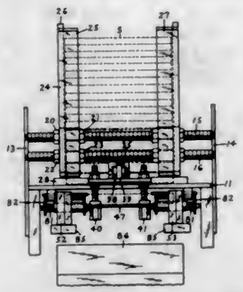
3,418,446
ELECTRIC ARC WELDING ELECTRODES AND PROCESS
Gerard E. Claussen, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio
Filed Mar. 25, 1966, Ser. No. 537,502
9 Claims. (Cl. 219—130)



A method of inert gas shielded open arc welding includes the use of a flux cored electrode. The electrode sheath contains 0.08% carbon, 0.45% manganese, 0.02% phosphorous, 0.02% sulphur, and 0.01% silicon. The flux core includes by weight proportion of the total flux: 55% rutile; 14% ferrosilicon; 16% hydrogen reduced manganese containing by chemical analysis, 99% manganese, a maximum of 0.0007% hydrogen, a maximum of 0.016% sulfide, and a maximum of 0.005% sulfate; and 15% magnetite. Alternatively, the manganese constituent is obtained from ferromanganese. Where it is desired to increase the viscosity of the weld metal, silica sand is included in the core.

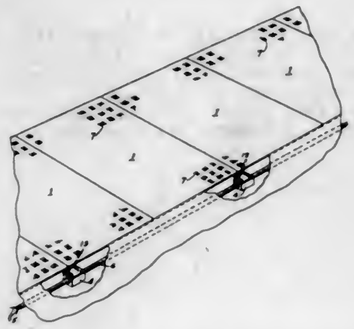
3,418,447
RESISTANCE METAL HEATER
Alfred T. Rizzolo, Newark, and Warren F. Hicks, Wayne, N.J., assignors to Cheston Company, Kearny, N.J., a corporation of New Jersey
Filed Sept. 1, 1965, Ser. No. 484,194
9 Claims. (Cl. 219—156)

An electrical resistance heater has a channel shaped storage member into which like pieces of rod stock are loaded and from which they are fed sequentially by gravity and moved to a clamping position between spaced pairs of electrodes. The electrodes in each pair are movable towards one another to grip the opposite ends of a piece to be heated, and away from one another to release the heated piece. The pairs of electrodes are yieldingly mounted for movement away from one another so as to



enable them to accommodate any longitudinal expansion of the clamped stock piece during the heating operation.

3,418,448
ELECTRICALLY HEATABLE PANELS
Fernando Pradenas, San Anselmo, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California
Original application Mar 20, 1963, Ser. No. 266,570. Divided and this application Jan. 5, 1967, Ser. No. 607,566
6 Claims. (Cl. 219—213)

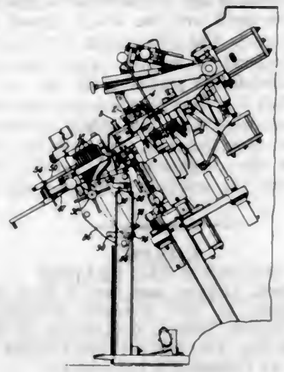


A heating panel made of layers of fiberglass into which is embedded a sinusoidal shaped heating wire, integrated together by polyester resin in a mold, the ends of the wire projecting from an end of the panel, one face of said panel having an integral wearing surface formed out of polyester gel coat of special formulation containing a hardening agent such as calcium carbonate filler for wear and strength and weathering and shaped to form non-skid projections on the wearing surface.

3,418,449
ADHESIVE ACTIVATING APPARATUS
Gerald W. Cleversey, Topsfield, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 7, 1966, Ser. No. 555,723
10 Claims. (Cl. 219—215)

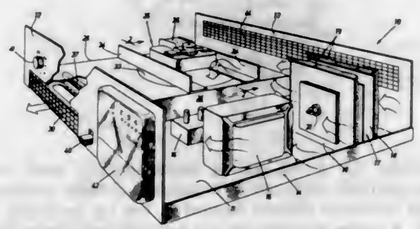
1. In a machine for lasting shoes of the type having thermoplastic adhesive precoated on the bottom of an insole for securing the margin of a lasted shoe upper, mechanism for heat activating said adhesive including a plurality of adjacent heated members, and means mounting each member for independent movement heightwise

of the shoe into engagement with the precoated bottom of the insole, said members being arranged in rows at



opposite sides of the shoe following the heightwise contour of the shoe bottom.

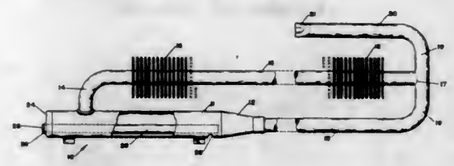
3,418,450
COMBINATION CAR HEATER AND BATTERY CHARGER
Norman Schott, Malton, Ontario, Canada, assignor to Rotor Electric Co. Ltd., Rexdale, Ontario, Canada
Filed June 20, 1966, Ser. No. 558,995
Claims priority, application Canada, Mar. 23, 1966, 955,645
7 Claims. (Cl. 219—279)



1. For use with a vehicle which utilizes a storage battery, an accessory comprising: an enclosure, an open-ended conduit within said enclosure having one end communicating with the interior of said enclosure and the other end opening out through a wall of the enclosure, fan means for promoting flow of air from the interior of said enclosure into the conduit at said one end to emerge at said other end, a heating element located within said conduit for heating air passing therealong, battery-charging apparatus mounted in said enclosure and including a rectifier which generates heat during rectification, at least one air-intake opening through at least one wall of the enclosure, the opening being so located that air passing through the interior of the enclosure from said opening to said one end of the conduit under the urging of the fan means flows past said rectifier and exerts a cooling effect thereon.

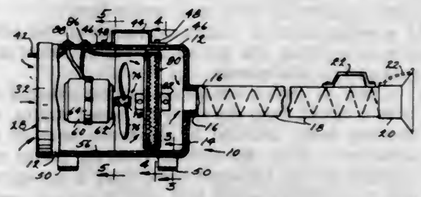
3,418,451
ELECTRIC HOT WATER UNIT HEATER UTILIZING REPLACEABLE CARTRIDGE
Jean Y. Barbier, St. Louis, Mo., assignor to International Oil Burner Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 22, 1966, Ser. No. 544,466
1 Claim. (Cl. 219—341)

A self-contained hot-water baseboard unit heater includes a tubular water heating chamber and a closed water-flow circulating passage extending in thermosyphonic flow relation to the chamber. A portion of the circulating passage is provided with heat exchange fins. The water heating chamber is provided with a sealed



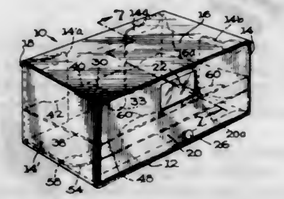
tubular well in which is slidably removably fitted a replaceable electric resistance heating unit. The well is located below the horizontal center line of the heating chamber so as to enhance the circulation of water through the chamber and circulating passage.

3,418,452
ELECTRICALLY HEATED BATH DRYING DEVICE
Floyd V. Grabner, 517 W. 24th St., Pueblo, Colo. 81003
Filed Oct. 27, 1965, Ser. No. 505,353
1 Claim. (Cl. 219—370)



A dryer for drying persons' bodies with warm air after bathing has a tubular housing enclosing a motor driven fan and an electric heating element for heating air drawn through the housing by the fan. The air inlet end of the housing is closed by a screen secured to radially inwardly directed tabs on the housing. The other end of the housing necks down to form a tubular air outlet to which one end of a flexible hose having a nozzle at its other end is connected. A handle is provided on or immediately adjacent the nozzle to aid in directing the nozzle.

3,418,453
ELECTRICALLY HEATED DOUGH RAISING OVEN
Ned T. Sparks, 1613 N. Springwood Drive, Silver Spring, Md. 20910
Filed June 13, 1966, Ser. No. 556,986
9 Claims. (Cl. 219—400)

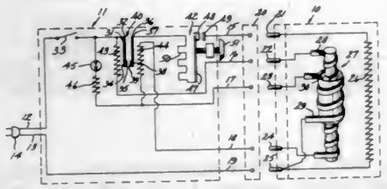


A portable dough raising oven having a housing erectable from a one-piece blank of scored insulative material, and an electric light bulb and receptable means carried by one wall of said housing. A combined dough supporting tray and heat directing baffle removably mounted within the housing.

3,418,454
ELECTRIC BEDCOVER OVERTEMPERATURE CONTROL SYSTEM

William D. Ryckman, Jr., Asheboro, N.C., assignor to General Electric Company, a corporation of New York

Filed Dec. 30, 1965, Ser. No. 517,598
6 Claims. (Cl. 219—504)



1. An overtemperature control system for an electrically heated bedcover or the like adapted to be connected to a source of power comprising:

(a) a temperature sensor having a pair of electrical conductors separated by a layer of material which is essentially an insulator at normal operating temperatures and a conductor of significant current at an elevated temperature;

(b) first and second actuators;

(c) a parallel circuit including said second actuator in electrical parallel with said sensor layer;

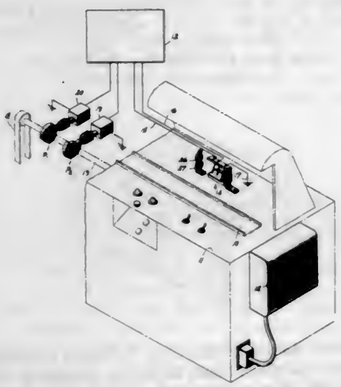
(d) a series electrical circuit connected to the power source including said first actuator in electrical series with said parallel circuit;

(e) a pair of switch contacts arranged to open and close a circuit from the electrical power source, said contacts being actuated by respective ones of said actuators to close said contacts from the energy ratio supplied to said actuators when there is no appreciable conduction through said layer at normal operating temperatures and to open said contacts when there is appreciable conduction through said layer.

3,418,455
MATCHED MAILING DETECTION SYSTEM

Leroy J. Rackliffe, Cheshire, and Rodney G. Rau, North Branford, Conn., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Mar. 5, 1964, Ser. No. 349,584
6 Claims. (Cl. 235—61.7)

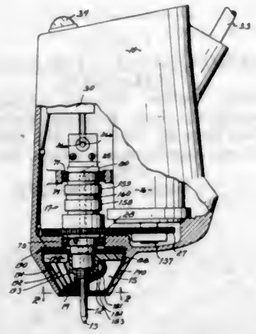


Two different types of indicia carrying inserts, which are to be paired and inserted into an envelope, are successively withdrawn from respective stacks of inserts and directed to pass separate sensing stations. Information indicative of the indicia on successive inserts in one stack is stored alternately in one or another of a pair of storage circuits and compared with the indicia sensed on inserts from the other stack. The information which is stored and compared corresponds to an insert which was withdrawn on the cycle immediately preceding the one on which the insert with which it is directly compared was withdrawn. If the stored information and the indicia on the compared insert are found to be identical, the inserts are stuffed into an envelope. If the comparison indicates that the indicia are not identical, the machine is stopped and an alarm is sounded.

3,418,456
ENCODED TAG READER

Paul H. Hamisch, Dayton, and Jack I. Kern, Kettering, Ohio, assignors to The Monarch Marking System Company, Dayton, Ohio, a corporation of Ohio

Filed Dec. 14, 1966, Ser. No. 601,688
20 Claims. (Cl. 235—61.11)



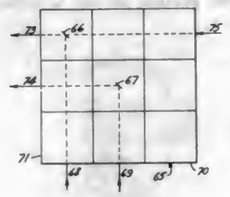
A reader for a tag having photo-sensible mark receiving positions arranged in concentric circular patterns centered about an aligned formed in the tag including a support, a probe mounted on the support and engageable with the aligner for properly positioning a tag in a read position, a scanning head mounted to the support for rotation coaxial with the probe, a light source fixed to the scanning head, a plurality of illuminating light conductors mounted for movement with the scanning head and each having first ends adjacent the light source and second ends overlying the circular patterns of a tag positioned at the read station for illuminating successive photo-sensible mark receiving positions as the scanning head rotates, and a plurality of sensing light conductors mounted for movement with the scanning head and each having an end adjacent one of the illuminating ends of the illuminating light conductors and another end cooperating with a photo-transducer for collecting light reflected from the tag and independently transmitting it to its associated photo-transducer.

3,418,457
CRAZABLE TRANSLUCENT RECORD MEMBER

Raymond W. Shrewsbury, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 2, 1964, Ser. No. 379,828
10 Claims. (Cl. 235—61.12)

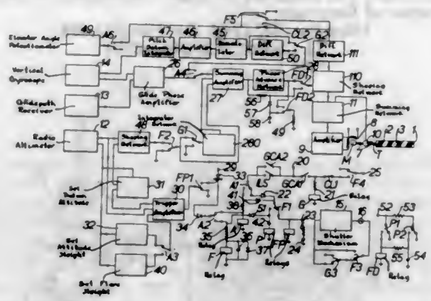
An information storage and retrieval media including a translucent sheet-like member having edge portions of predetermined shape characteristics and an optical discontinuity formed in said material causing light entering said material at a first location along the edge portions to be deflected by said optical discontinuity and emitted from a second location along said edge portions, and the method of sorting ones of said members bearing an optical discontinuity in a predetermined location from members bearing an optical discontinuity in a different location.



3,418,458
VISUAL INDICATING DEVICES FOR AIRCRAFT

Alastair Michael Adair Majendie, Cookham Dean, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company

Filed May 21, 1963, Ser. No. 282,099
Claims priority, application Great Britain, May 22, 1962, 19,599/62
18 Claims. (Cl. 235—151.22)

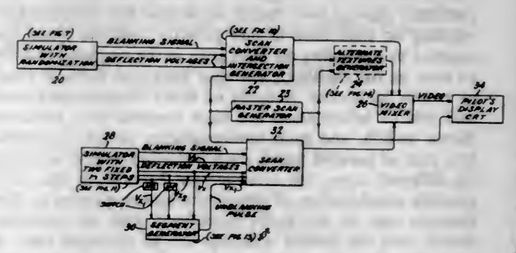


1. A visual indicating system for use in an aircraft, comprising an indicator arrangement responsive to any demand signal supplied thereto to provide a moving optical stimulus the rate and sense of movement of which is dependent upon the magnitude and sense of the demand represented by the demand signal; means for deriving an altitude signal varying with variations in the height of said aircraft, switching means switchable from one to another of three states and responsive to said altitude signal to be switched from a first to a second of said three states when, as represented by said signal, the aircraft has descended to a first predetermined height, and to be switched from the second state to the third state when, as represented by said signal, the aircraft has descended further to a second predetermined height; means for monitoring the position of said aircraft relative to a radio-defined glide path; means for monitoring the pitch attitude of said aircraft; and computing means which has three modes of operation and is responsive to the state of said switching means to adopt a first of the three modes of operation when the switching means is in its first state, to adopt a second of the three modes when the switching means is in its second state, and to adopt the third mode of operation when the switching means is in its third state; said monitoring means being coupled to said computing means for supplying input signals to said computing means related to the parameters being monitored; said computing means in its first mode of operation being responsive to an input signal dependent upon deviation of the aircraft from said radio-defined glidepath to supply to said indicator arrangement as said demand signal a signal which demands change in aircraft pitch attitude required for flight along the glidepath, the computing means in its second mode being responsive to an input signal representative of a mean value of pitch attitude applicable to flight along the glidepath to supply to said indicator arrangement as said demand signal a signal which demands change in aircraft pitch attitude required for flight along an extension of the glidepath, and said computing means in its third mode being responsive to input signals dependent respectively upon the aircraft height h relative to a predetermined level and of the aircraft pitch attitude θ, to supply to said indicator arrangement as said demand signal a signal which has at least two components and which demands change in pitch attitude required for flight of the aircraft in accordance with a predetermined path during the flare phase of landing, a first of said two components being representative of a predetermined function of $(1+KD)h$, where K is a constant and D is the operator representative of differentiation with respect to time, and the second component being representative of a predetermined function of the pitch attitude θ; means for supplying a signal dependent upon the angular position of the aircraft elevators relative to the aircraft, and means responsive to said elevator angular position signal to supply, at least as a third component of the demand signal supplied during said third mode of operation, a signal which is representative of a predetermined function of said angular position.

3,418,459
GRAPHIC CONSTRUCTION DISPLAY GENERATOR

William C. Purdy and Charles G. Schnorr, Ithaca, N.Y., assignors to General Electric Company, a corporation of New York

Continuation of application Ser. No. 855,435, Nov. 25, 1959. This application June 16, 1967, Ser. No. 646,740
11 Claims. (Cl. 235—150.2)



1. An electronic system for generating a simulated three-dimensional display on a two-dimensional utilization device to produce a perspective view illustrating the posture of an observer with respect to a reference surface comprising:

means for producing a display of randomly-spaced display members providing an illusion of the perspective picture of said reference surface moving with respect to said observer;

said means comprising means for generating a set of x and y deflection voltages responsive to postural data and producing a first and second plurality of lines, the lines in each said plurality forming a perspective representation of randomly-spaced coplanar parallel lines having a common vanishing point, with

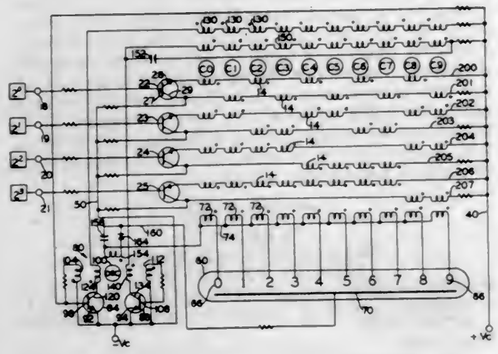
the lines in said first plurality appearing orthogonal to the lines in said second plurality and coplanar therewith;

means for applying said set of x and y deflection voltages to a display device such that said respective pluralities of lines are displayed;

electronic means responsive to said display for providing a video signal combining said first and second plurality of lines in perspective representation of said reference surface; and

means for applying said video signal to said utilization device.

3,418,460
DECODER CIRCUIT USING MAGNETIC CORE ELEMENTS AND OPERATING A DISPLAY DEVICE
Daniel M. Clemson, Wayzata, Minn., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 3, 1965, Ser. No. 430,071
4 Claims. (Cl. 235—155)



A binary-coded decimal to decimal decoder circuit which includes ten magnetic cores and a magnetic core oscillator having two output lines, one line coupled to a winding on each core in one polarity, and the other line coupled to a winding on each core in the opposite polarity so that, as the oscillator switches back and forth, it tends to switch each core. Sources of input binary-coded decimal bits of information are each coupled to a semiconductor switch, and each semiconductor switch is coupled to a pair of parallel paths, each including inhibit windings on different cores, the arrangement being such that each possible combination of signal bits causes current to flow through one of the paths associated with its switching device, and the inhibit windings are so arranged that, in each case, only one core is uninhibited and can be switched by the oscillator. Each of the cores is coupled by a winding to a display device, and, in each decoding operation, the uninhibited core causes its associated display device to operate and display the decimal equivalent of the binary-coded decimal input information.

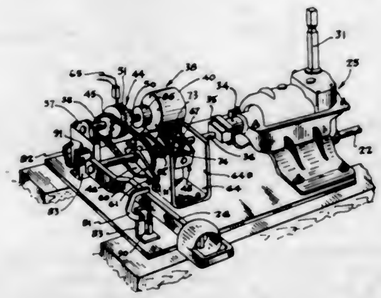
3,418,461
FLASHLIGHT WITH SUPPORTING CLAMP
Stephen P. Sedlock, 1212 Philadelphia Ave., Barnesboro, Pa. 15714
Filed Oct. 10, 1966, Ser. No. 585,472
4 Claims. (Cl. 240—52.5)

A C-type clamp is conformably but detachably and adjustably connectible with the capped end of the barrel of a conventional-type flashlight. An invertible L-shaped dual purpose support bracket has one leg fixed to a median part of the clamp. The other leg is provided with a rubber sleeve fashioned into a conveniently grippable comfortably shaped mouthpiece. A spring jaw clip is fixed to an end portion of the C-clamp. The clip can



be clipped to a shirt pocket, windshield visor or elsewhere for support. With the C-clamp facing up the capped end can be caused to rest against the user's forehead. Facing down and clamped the flashlight can be located beneath the user's chin.

3,418,462
SWITCHING APPARATUS
Rosser L. Wilson, Mahwah, N.J., and Paul E. Redelman, Chicago, Ill., assignors to Abex Corporation, a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 523,688
11 Claims. (Cl. 246—393)

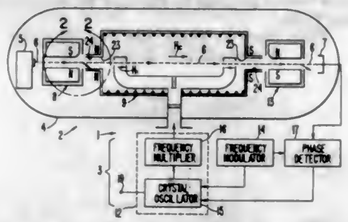


In the event the switch points of a railroad switch encounter an obstruction in the course of movement between limit positions, a torque limiting clutch, of appropriate construction, actuates a switch incidental to conditioning the drive motor for a reverse operation, returning the switch points to their original position.

3,418,463
ATOMIC BEAM TUBE HAVING MULTIPOLE STATE SELECTING MAGNET MEANS WITH SHAPED POLES TO INHIBIT MAJORANA TRANSITIONS
Richard F. Lacey, Salem, Mass., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 10, 1966, Ser. No. 571,453
5 Claims. (Cl. 250—41.3)

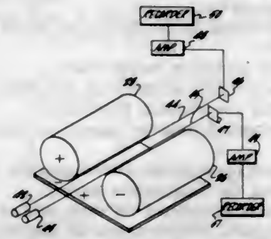
An atomic beam tube having multipole state selecting magnets configured to prevent an abrupt field reversal between the state selecting magnets and the adjacent C-field region, and thus to prevent undesirable Majorana transitions in the atoms of a beam. The poles of each

state selecting magnet which have the same polarity as the adjacent C-field are rectangular in cross section, and



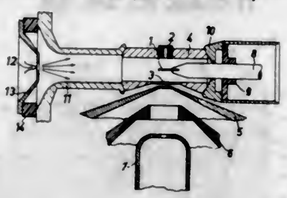
the other poles which have a polarity opposite to that of the adjacent C-field are tapered in cross section.

3,418,464
DUOPOLE MASS FILTER
Wilson M. Brubaker, Arcadia, and Frank B. Wiens, Altadena, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed July 27, 1966, Ser. No. 568,264
7 Claims. (Cl. 250—41.9)



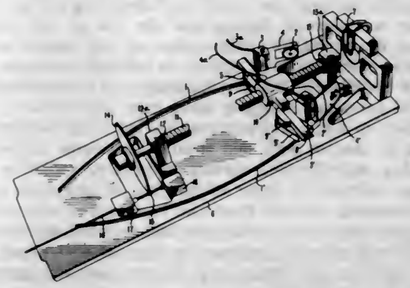
A non-magnetic mass analyzer utilizing only two field electrodes and a single planar reference electrode to define an analyzing field therebetween. One or more sources of charged particles are located at the entrance end of the filter and a planar collector electrode is located at the opposite end of the filter. AC and DC voltages of a predetermined polarity are connected to the field electrodes and a reference voltage is connected to the planar reference electrode resulting in the creation of a mass analyzing electric field between the field electrodes and the reference electrode.

3,418,465
RADIATION SOURCE FOR REDUCING SPECIMEN CONTAMINATION IN ELECTRON MICROSCOPES
Eberhard Hahn and Wolfgang Hoch, Jena, Germany, assignors to VEB Carl Zeiss Jena, Jena, Germany
Filed Aug. 17, 1965, Ser. No. 482,322
6 Claims. (Cl. 250—49.5)



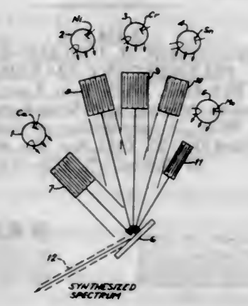
An electron microscope is provided with a device for reducing specimen contamination. The reduction is achieved by the exploitation of the contamination effect itself. The specimen is for this purpose located in a chamber, and the chamber walls near the specimen are exposed to electronic, ionic or short-wave electromagnetic radiation. These walls accordingly produce an adsorbing effect that decreases the hydrocarbon pressure in the vicinity of the specimen.

3,418,466
X-RAY SPECTROGRAPH APPARATUS USING LOW ANGLE X-RAY REFLECTING UNITS AND MEANS TO VARY THE X-RAY INCIDENCE ANGLE
Heribert Karl Josef Herglotz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,057
6 Claims. (Cl. 250—49.5)



An X-ray spectrograph apparatus comprising an improved reflecting unit with a different critical angle of total reflection for low angle of incidence soft X-ray radiations of elements from beryllium to fluorine in atomic number, the unit comprising a sharply defined exterior reflecting surface formed on a solid member with an essentially pure composition selected from the class consisting of paraffins, polyethylenes, polypropylenes, polystyrenes, and boranes.

3,418,467
METHOD OF GENERATING AN X-RAY BEAM COMPOSED OF A PLURALITY OF WAVELENGTHS
Nathan Spielberg, Hartsdale, and Joshua Ladell, Monsey, N.Y., assignors to North American Philips Company, Inc.
Filed Feb. 17, 1965, Ser. No. 433,282
7 Claims. (Cl. 250—51.5)



A method of forming a polychromatic beam of X-radiation containing only selected wave-lengths at desired intensity in which a plurality of X-ray sources are oriented toward a common diffracting crystal which is so positioned that it diffracts only characteristic wave-lengths of each of the sources in a common direction and by adjusting the intensity of each source, a composite beam of desired spectral composition is obtained.

3,418,468
PROCESS FOR THE PRODUCTION OF PROJECTION TRANSPARENCIES

Walter S. Marx, Jr., and Charles P. Collier, Santa Barbara, Calif., assignors to Printing Arts Research Laboratories, Inc., Santa Barbara, Calif., a corporation of Delaware

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,323
18 Claims. (Cl. 250—65)

1. A process for the production of projection transparencies and the like from a graphic subject having a surface containing infrared absorbent image areas and background areas having relatively non-infrared absorbent properties, the steps comprising applying a substantially uniform stratum of a substantially colorless sublimeable material onto said surface by utilizing a charging sheet, said charging sheet having on one side thereof a coating of a sublimeable material and an infrared absorbing surface on the other side thereof, placing said one side of said charging sheet in contact with said surface of said subject, and exposing said sheet and subject to infrared radiation for a time sufficient to cause sublimation of sublimeable material from said charging sheet onto said surface of said subject to form said stratum, placing a light-transmitting film in contact with said stratum-containing surface, exposing said film and surface to infrared radiation for a time sufficient to cause sublimation of quantities of said sublimeable material from said image areas onto said film without substantial melting of said material, whereby said sublimed material becomes an integral part of said film to duplicate said image areas thereon, and separating said film from said subject.

3,418,469
DIAZO REPRODUCTION

Robert M. Gold, Brooklyn, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,704
10 Claims. (Cl. 250—65)

A method is provided for image formation on diazotype material and includes the use of developable diazotype composition having an outer coating of a layer of discrete solid particles of a thermoplastic polymeric material which is ordinarily permeable to diazotype developing fluids, but when heated will form a coalesced impermeable film. Imagewise heating such material to form a film pattern of coalesced fluid impermeable polymer and application of a developer fluid, such as ammonia vapors or an alkaline solution of azo dye coupler, results in selective development of azo dye images in accordance with the film pattern.

3,418,470
RECORDING MEDIUM UTILIZING GRAIN-FREE FLUORESCENT MATERIAL

Stephen P. Birkeland, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 27, 1964, Ser. No. 406,678
28 Claims. (Cl. 250—71)

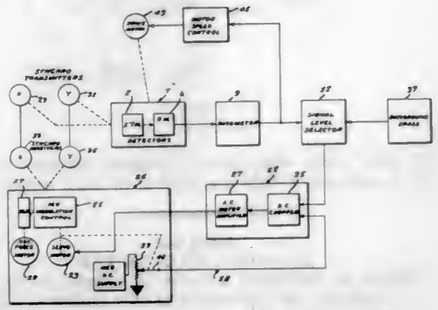


This invention relates to sheet-like recording media which employ grain-free imaging materials and grain-free fluorescent materials. Such media are adapted for recording differential actinic radiation and are capable of being readout thereof by electron bombardment so as to produce differential photon energy emission therefrom.

3,418,471
VISUALIZING INTERNAL STRUCTURE

Frederick Robert Gydesen, Colorado Springs, Colo., assignor of twelve percent to Richard W. Hanes, Colorado Springs, Colo.

Filed Nov. 7, 1963, Ser. No. 322,233
4 Claims. (Cl. 250—71.5)

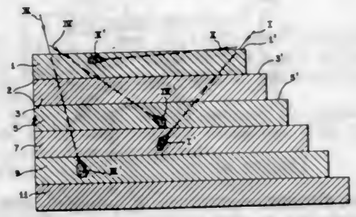


2. In an oscillographic recorder the combination of display apparatus comprising;
- a recording stylus;
- pivotally mounted fixture means on which the stylus is mounted;
- a first motor having an output shaft;
- a cam eccentrically mounted on the shaft of the said first motor for rotation therewith;
- pivotally mounted follower means in contact with the cam;
- a flexible linkage operably interconnecting the follower means and the said fixture means;
- control means positioned on each side of the pivotal fixture means and arranged to provide a variable interspace therebetween;
- a servo mechanism including a second motor having an output shaft and gear means connected to the control means for causing movement thereof, said servo mechanism also comprising;
  - an amplifier having an output electrically connected to the second motor; and
  - a position potentiometer having a variably positioned wiper arm mechanically coupled to the control means and movable therewith and electrically connected to the input of the amplifier.

3,418,472
PROCESS AND DETECTOR FOR INDICATING THE TRACKS OF ALPHA PARTICLES USING STACKED LAYERS OF MATERIAL

Robley D. Evans, 15 Hickory Lane, Belmont, Mass. 02178

Filed Apr. 4, 1966, Ser. No. 539,684
11 Claims. (Cl. 250—83)

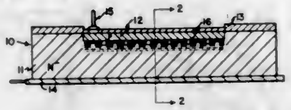


This disclosure deals with a plurality of stacked layers of material that is damaged by α-particle radiation and of thickness comparable with the effective etching depth of the material.

3,418,473
SOLID STATE JUNCTION DEVICE FOR ULTRAVIOLET DETECTION

Marts D. Blue, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Aug. 12, 1965, Ser. No. 479,090
5 Claims. (Cl. 250—83.3)

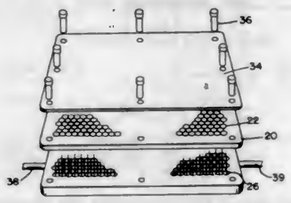


A light sensitive semiconductor device which has a retrograded P-N junction parallel to the surface; the retrograded junction serving to amplify the number of carriers created by impingement of photons.

3,418,474
PANORAMIC RADIATION DETECTOR HAVING A MULTIPLICITY OF ISOLATED GAS CHAMBERS

Philip Spergel, Lexington, James V. Di Rocco, Winchester, and Raymond P. Grenier, Wilmington, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 9, 1965, Ser. No. 507,005
15 Claims. (Cl. 250—83.6)

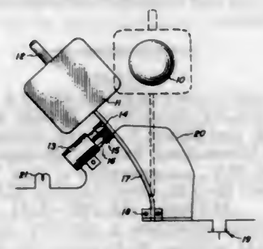


A radiation detector array is provided with a multiplicity of identical, substantially isolated, minute chambers, each having an electrically conducting wall and an electrically conducting pin, the chambers communicating with each other through ports and containing an ionizable gas, a readout matrix being associated with the pins to indicate any pin of the plurality which conducts as a result of radiation incident to its chamber.

3,418,475
LEAF SPRING-MOUNTED SHUTTER DEVICE ACTIVATED BY THE INTERRUPTION OF ELECTRICAL POWER

Claude R. Hudgens, 610 Skyview Drive, West Carrollton, Ohio 45449

Filed Aug. 19, 1965, Ser. No. 481,147
1 Claim. (Cl. 250—105)

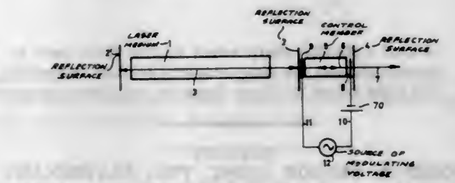


A safety device for shielding against radiation emitting sources comprising a spring loaded and normally closed shutter, means for opening said shutter, and electrical means for securing said shutter in the open position as long as electrical power is maintained thereto.

3,418,476
DEVICE FOR INTERNAL MODULATION OF LASER RADIATION

Rudolf Müller, Strasslach, near Munich, and Karl Gürs, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Apr. 8, 1964, Ser. No. 358,303
Claims priority, application Germany, Apr. 11, 1963, S 84,739; Apr. 16, 1963, S 84,715; May 22, 1963, S 85,344
5 Claims. (Cl. 250—199)



1. The method of emitting from a laser resonator having a radiation path amplitude-modulated radiation with a low distortion noise factor, comprising the steps of
- modulating and coupling radiation generated internally of said resonator;
- maintaining a minimum modulation frequency which is higher than the minimum frequency of a determined range of high frequencies having a cycle period which is small in comparison with the build-up and decay periods of laser oscillation resulting in the resonator from a resonator quality change causer by modulation of the laser radiation;
- excluding from the modulation frequencies the forbidden frequencies of the resonator which are signals corresponding to the travel time of the laser radiation in the resonator and integral multiples thereof;
- partitioning a limited minor portion of the internally generated radiation of said resonator; and
- coupling said minor portion out of said resonator to maintain the internal radiation intensity substantially constant and thereby coupling out of said resonator distortion-free radiation.

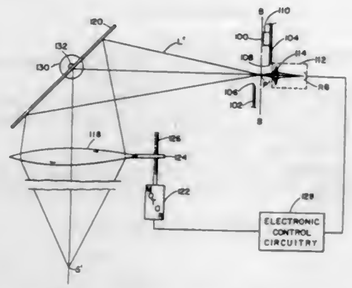
3,418,477
APPARATUS FOR DETERMINING THE FOCAL POINT OF A LIGHT BEAM

Thorleif Knutrud, Sudbury, and Glenn H. Wise, Dover, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 28, 1966, Ser. No. 582,615
9 Claims. (Cl. 250—201)

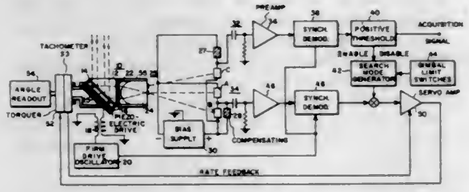
1. Apparatus for locating the focal point of a converging beam of light comprising
- a first opaque member having a first optically sharp edge,
- a second opaque member having a second optically sharp edge,
- the first and second opaque members being arranged so that the first and second optically sharp edges define a slit,
- scanning means for causing the converging beam of light to scan across the slit,
- the first optically sharp edge being located a first distance from the second optically sharp edge along the axis of the light beam and a second distance from the second optically sharp edge in the direction of scan of the scanning light beam, and

detecting means for detecting the time required for the intensity of the light passing between the first and



second optically sharp edges to rise from zero to a maximum and the time required for the intensity of the light beam to decay from its maximum to zero.

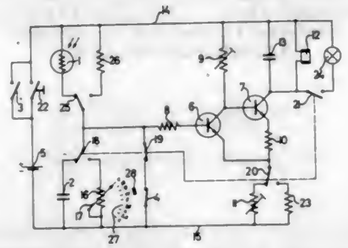
3,418,478
HORIZON SENSOR USING TWO STATIONARY FIELDS OF VIEW SEPARATED BY A FIXED ELEVATION ANGLE WHICH ARE ALTERNATELY SAMPLED
Gerald Falbel, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 390,334, Aug. 18, 1964. This application Aug. 29, 1966, Ser. No. 582,784
7 Claims. (Cl. 250—202)



A horizon sensor is provided which includes infrared detector means having two separate stationary fields of view separated by a fixed angle in elevation with the upper field positioned on outer space and the lower field riding on the horizon. The fields of view are alternately sampled optically or electronically by the detector means to generate correction signals for maintaining the desired positioning.

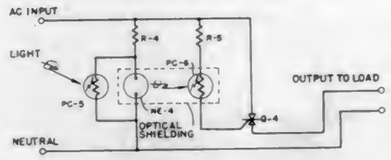
3,418,479
EXPOSURE INDICATION CIRCUIT FOR ELECTRONIC SHUTTER DEVICES
Helmut Schmitt, Hausen, Bavaria, Germany, assignor to P. Gossen & Co. G.m.b.H., Erlangen, Bavaria, Germany
Filed Oct. 7, 1965, Ser. No. 493,846
Claims priority, application Germany, Mar. 26, 1965, G 43,185
5 Claims. (Cl. 250—206)

In an automatic shutter control circuit having a voltage source, a photoresistor-capacitor circuit and a Schmitt trigger circuit coupled to the latter circuit to control a shutter setting device, there are provided a potentiometer, switching means mechanically coupled to the slider arm of the potentiometer and a signalling device. When the slider arm is displaced from its starting position, the switching means selectively connects the potentiometer to the photoresistor and, at the same time, the signalling device is also connected to the output of the Schmitt trigger. The signalling device gives a signal when the position of said slider arm, which is calibrated in exposure values de-



fines a threshold voltage dependent on the light condition existing on the photoresistor.

3,418,480
LIGHTING CONTROL CIRCUIT EMPLOYING PHOTOCELLS AND GAS DIODES TO OPERATE SEMICONDUCTOR SWITCHES
Kenneth H. Miller, 1607 Westmoore, Austin, Tex. 78723
Filed Oct. 19, 1965, Ser. No. 497,994
18 Claims. (Cl. 250—208)

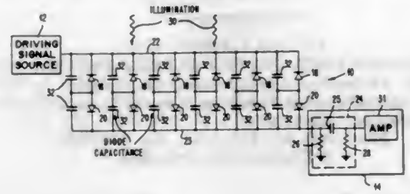


1. A control circuit for controlling the electrical power supplied to a load from a source of AC voltage, comprising:
(a) optical radiation source means for being connected across said source of AC voltage activated responsive to a minimum threshold voltage applied thereacross,
(b) switch means having conduction electrodes for being connected in series with said source of AC voltage and said load,
(c) first optical radiation sensitive means optically coupled to said optical radiation source means and connected to said switch means for causing said switch means to conduct responsive to optical radiation incident thereon from said optical radiation source means, and
(d) second optical radiation sensitive means connected in electrical shunting relation with said optical radiation source means for controlling the voltage applied across said optical source means from said source of AC voltage as a function of the optical radiation incident thereon.

3,418,481
ILLUMINATION DETECTOR USING A PLURALITY OF LIGHT SENSITIVE DIODE PAIRS
Herbert Dym and Robert V. Mazza, Mahopac, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,460
19 Claims. (Cl. 250—211)

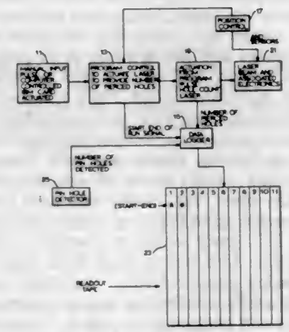
The disclosure describes a plurality of back-to-back connected light sensitive diode pairs. The diode pairs are arranged along a line or in a plane. One end of each of the diode pairs are connected in common to a signal source such as a ramp voltage generator. The other end

of each of the diode pairs are connected in common to an output detector circuit such as a differentiator and amplifier. When one or more of the diode pairs are exposed to light, an output signal is produced. The time of



occurrence of the output signal is an indication of the intensity of the light, and the amplitude of the output signal at a given time is an indication of the number of diodes receiving a particular light intensity.

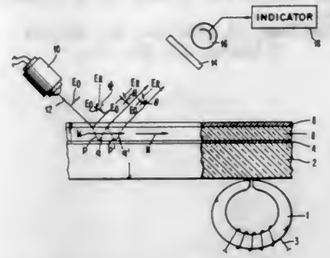
3,418,482
PINHOLE DETECTOR TESTING MEANS AND METHOD
Frederick Y. Masson, West Orange, N.J., assignor to General Precision Systems Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 356,784, Apr. 2, 1964. This application Dec. 31, 1964, Ser. No. 422,594
10 Claims. (Cl. 250—219)



A method and means for checking the operating effectiveness, during normal operation of a pinhole detector unit by intentionally making a predetermined number of holes in the material to be inspected and determining whether these holes are properly detected by the apparatus. The invention may be utilized in connection with either the inspection of essentially flat material or material which is formed from flat stock into a longitudinally sealed tube, as in the manufacture of metal cans.

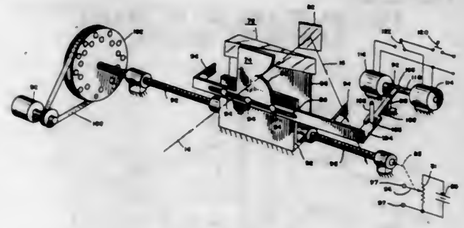
3,418,483
ENHANCED FARADAY ROTATION STRUCTURE
George J. Fan, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 8, 1966, Ser. No. 541,341
11 Claims. (Cl. 250—225)

The disclosure is for a device for enhancing the Faraday effect. When a transparent isotropic medium is in a strong magnetic field, there is a rotation of the plane of vibration of polarized light which is transmitted through the medium in the direction of the field. The angle of rotation is a function of the length of the path traversed in a magnetic field of a given strength and of the material through which the polarized light passes. Such Faraday effect is enhanced by depositing a transparent



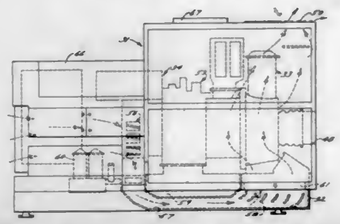
ferro-magnetic layer, for example, europium oxide, on a dichroic mirror and then depositing a dielectric layer onto the transparent magnetic layer.

3,418,484
OPTICAL ATTENUATOR AND OPTICAL WEDGE ADJUSTERS COUPLED TOGETHER TO PREVENT OVERRIDING
Duane D. Harmon, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Feb. 24, 1966, Ser. No. 529,852
15 Claims. (Cl. 250—237)



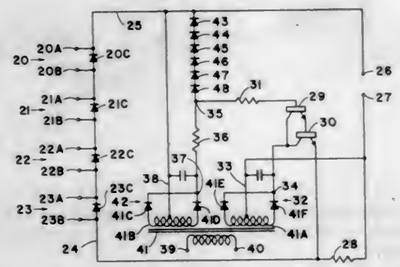
1. Apparatus for controlling the amount of radiation received by an element from a source of radiation comprising:
first control means movably mounted for movement along a path intermediate said source of radiation and said element to control the amount of radiation received by said element as a function of the position of said first control means;
second control means movably mounted for movement along a path intermediate said source of radiation and said element to control the amount of radiation received by said element as a function of the position of said second control means;
means for controlling the movement of said first control means along said path;
coupling means coupling said first control means to said second control means for controlling the movement of said second control means as a function of the movement of said first control means, said coupling means providing a predetermined range of movement for said first control means to the exclusion of said second control means and for joint movement of said first and second control means when the movement of said first control means exceeds said range whereby said first and second control means cooperate to control the amount of radiation received by said element.

3,418,485
ENCLOSURE FOR GAS TURBINE ENGINE ELECTRIC GENERATOR SET
Howard R. Anderson, Marquette Heights, Philip E. Lambdin and William A. Mitchener, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 13, 1965, Ser. No. 486,818
3 Claims. (Cl. 290—1)



A housing for a gas turbine engine in which the engine cooling system, which embodies passages for moving air across a lube oil sump and through a lubricant cooling heat exchanger, is fixed in relation to the engine during manufacture thereof, thereby producing the cooling efficiency designed by the manufacturer, rather than the possibly inadequate efficiency provided by an installer.

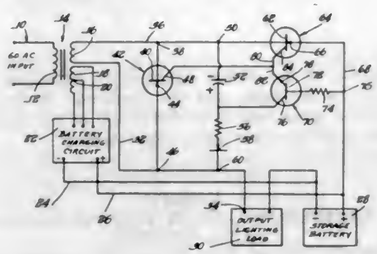
3,418,486
CURRENT SELECTION AND LIMITING CIRCUITS
Francis G. Shinskey, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 27, 1966, Ser. No. 590,077
9 Claims. (Cl. 307—62)



1. Regulating means for use with electrical apparatus for discriminating among a plurality of electrical current sources on the basis of the relative magnitude of the currents from said electrical current sources so that current is supplied from said plurality of electrical current sources to output terminals of said apparatus in accordance with the discrimination performed by said apparatus comprising,

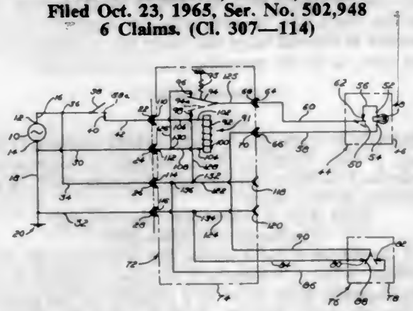
an electrical component disposed serially between a plurality of electrical current sources and output terminals, and amplifying means responsive to an operating potential derived from the individual potentials associated with each of said electrical current sources and said amplifying means having a regulating current output having a magnitude related to the deviation of said operating potential from a predetermined desired potential and said current output being supplied to said electrical component in a direction making the polarity across said electrical component oppose the polarity appearing at said output terminals so that the difference therebetween appears across said electrical current sources and causes said operating potential to approach said predetermined desired potential whereby the individual potential associated with each of said plurality of electrical current sources are maintained at values appropriate for proper operation of said apparatus.

3,418,487
EMERGENCY POWER SUPPLY SYSTEM
John D. Livingston, Crystal Lake, Ill., assignor to U-C-Lite Manufacturing Company, Crystal Lake, Ill., a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,935
6 Claims. (Cl. 307—66)



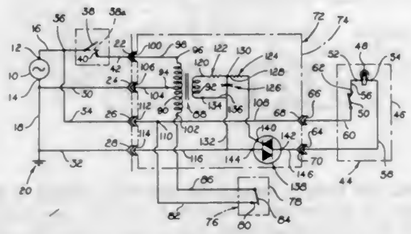
1. An emergency power supply system for connection to an A.C. input circuit, an output load and battery means, comprising A.C. input means for connection to an A.C. input circuit, a solid state controlled rectifier device connected on one side to said A.C. input means, battery connecting means connected to the other side of said rectifier device and adapted for connection to one terminal of said battery means, means for connecting the other terminal of said battery means and one terminal of an output load, means connected to said A.C. input means and adapted to be connected to said output load, there thereby being a series circuit comprising said solid state controlled rectifier device, said battery means, said output load and said A.C. input means, and biasing means normally biasing said solid state controlled rectifier means off whereby said series circuit is normally open, but biasing said solid state controlled rectifier means upon failure of supply of alternating current to said A.C. input means to complete said series circuit and energize said output load from said battery means, said biasing means further including capacitor means and unilaterally conducting means interconnected with one another and connected to said A.C. input means and further connected to said solid state controlled rectifier device.

3,418,488
SWITCHING CIRCUIT
George E. Platzer, Jr., Southfield, Mich., assignor to Lon H. Romanski, Detroit, Mich.
Filed Oct. 23, 1965, Ser. No. 502,948
6 Claims. (Cl. 307—114)



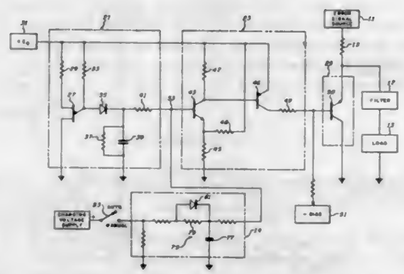
Typically, a circuit adapter provides additional switching members which when employed with, for example, a switched electrical wall outlet enables the energization of a load, remotely situated from said outlet, with either one of the additional switching members or the switch controlling the switched wall outlet.

3,418,489
SWITCHING CIRCUIT
George E. Platzer, Jr., Southfield, Mich., assignor to Lon H. Romanski, Detroit, Mich.
Continuation-in-part of application Ser. No. 502,948, Oct. 23, 1965. This application Aug. 9, 1967, Ser. No. 659,441
13 Claims. (Cl. 307—114)



A switching circuit having a switching element in series circuit with both a remotely situated lamp or other electrical load and a source of electrical potential such as, for example, an electric wall outlet. A control arrangement for the switching element is activated by circuitry leading from, for example, a "switched" electrical wall outlet.

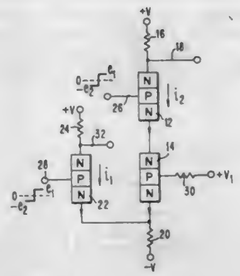
3,418,490
EASY ENGAGE SWITCHING CIRCUIT USING SIGNAL CHOPPING
Henry E. Hofferber, Phoenix, Ariz., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,830
13 Claims. (Cl. 307—202)



An "easy engage" switching circuit in which the input signal is repetitively interrupted and first applied to the load in short pulses. The duration of these pulses is gradually increased until the entire uninterrupted input signal is finally applied to the load.

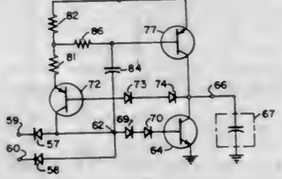
3,418,491
UTILIZING IDENTICAL SIGNAL LEVELS FOR LOGIC AND INHIBIT FUNCTIONS
David H. Chung, Dallas, Tex., and James L. Walsh, Hyde Park, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,195
4 Claims. (Cl. 307—214)

A cascode amplifier circuit comprises two transistors, one transistor adapted to receive an input signal, and provide an output; the other transistor being adapted for constant voltage operation. An inhibit transistor, connected to the other transistor, is adapted to receive an input signal and provide an output. Identical signal levels operate the inhibit and one transistor. Operation of the one transistor



renders the amplifier conductive. Simultaneous operation of the inhibit and one transistor terminates conduction through the amplifier. When the inhibit signal is dropped, no delay occurs at the amplifier output since no charge storage problems occur in the other transistor.

3,418,492
LOGIC GATES
Hung Chang Lin, Silver Spring, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1965, Ser. No. 478,273
6 Claims. (Cl. 307—214)

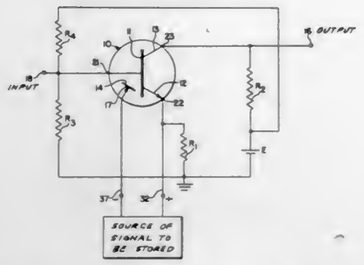


1. A logic circuit comprising:
(A) a circuit point;
(B) input means connected to said circuit point for simultaneously receiving a plurality of binary input signals;
(C) output transistor means of one conductivity type and including a base, emitter and collector electrode and operable in an on and off condition depending upon the combination of said binary input signals;
(D) output terminal means connected to said output transistor means for providing an output signal;
(E) first transistor means of conductivity type opposite said output transistor and connected to said output transistor means for providing said output transistor with base and collector current;
(F) second transistor means responsive to a predetermined change in voltage level at said circuit point, as opposed to the level after it changes, for providing a surge of current to said output terminal means when said output transistor means switches from an on to an off condition.

3,418,493
SEMICONDUCTOR MEMORY DEVICE

Vasil Uzunoglu, Hanover, and Phillip R. Koenig, Jr., Laurel, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 5, 1964, Ser. No. 401,602
5 Claims. (Cl. 307—238)

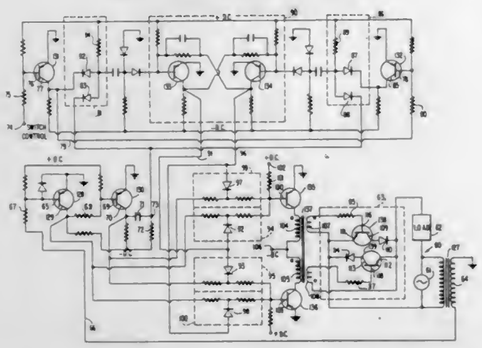


A surface potential controlled transistor is operated as a memory element by application of a signal to be stored to an electrode over an oxide layer covering a PN junction termination. Stored charge modifies the gain of the transistor for a period after the signal is applied.

3,418,494
ALTERNATING CURRENT GATE

John N. Reid, Almonte, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Aug. 24, 1964, Ser. No. 391,419
11 Claims. (Cl. 307—239)



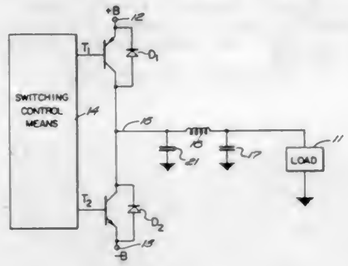
A solid state switching circuit for cyclically switching alternating current voltages to and from a load, wherein the alternating current voltage applied to the load is connected or disconnected in response to a direct current control voltage but where the actual switch function occurs only when the alternating current voltage next crosses the zero voltage axis to minimize power dissipation within the solid state switch.

3,418,495
SWITCHING

Amar G. Bose, Chestnut Hill, Mass., assignor to Bose Corporation, Natick, Mass., a corporation of Massachusetts

Filed Oct. 23, 1965, Ser. No. 503,965
7 Claims. (Cl. 307—239)

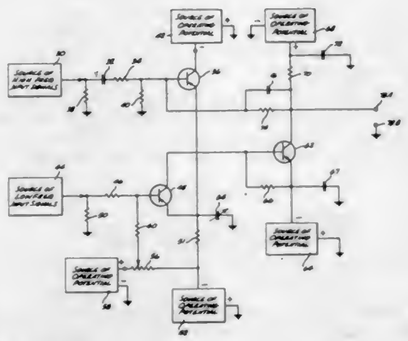
In a two-state modulation system in which a switched terminal is coupled to a load by an inductor and the load is shunted by a capacitor, a capacitor is connected between the switched terminal and ground. Alternately conducting PNP and NPN transistors are also connected to the switched terminal to perform the switching function. The last-mentioned capacitor is of value sufficiently large to prevent the voltage across a transistor from being significant until the current through that transistor is small and sufficiently small so that the potential on the switched terminal can rapidly assume the potential coupled to that terminal by the transistor switched from the nonconductive to the conductive state immediately after the other transistor was switched from the conducting to the nonconducting state so that the operating path followed by the transistors when switching from the conducting to the nonconducting state is along a path close to the *i–v* axes of the graphical representation of the transistor operating characteristics.



3,418,496
PHASE COMPARATOR CIRCUIT

Charles F. Bancroft, Sherman Oaks, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed June 3, 1966, Ser. No. 555,110
6 Claims. (Cl. 307—232)

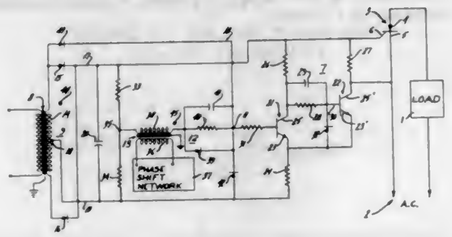


1. A phase comparator circuit comprising: first, second and third transistors each having an emitter electrode, a base electrode, and a collector electrode; said first and second transistors being of the same conductivity type and said third transistor being of a conductivity type complementary to that of said first and second transistors; the emitter electrodes of said first and second transistors being connected together and the collector electrode of said second transistor being connected to the base electrode of said third transistor; means for applying a first alternating signal to the base electrode of said first transistor; means for applying a second alternating signal the phase of which is to be compared with that of said first alternating signal to the base electrode of said second transistor; means for applying operating potentials between the collector and the emitter electrodes of said first and third transistors, means for applying a bias signal to the base electrode of said second transistor; a feedback resistor connected between the collector electrode of said third transistor and the base electrode of said first transistor; and means for obtaining from the collector electrode of said third transistor an output signal having a magnitude indicative of the phase difference between said first and second alternating signals.

3,418,497
CURRENT CONTROL CIRCUIT INCLUDING PHASE SHIFT MEANS FOR SELECTIVE FIRING OF A PHASE CONTROLLED SWITCH MEANS

John D. Sauter, Lyndhurst, and Kenneth L. Daggs, East Cleveland, Ohio, assignors to The Clark Controller Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 23, 1965, Ser. No. 503,394
8 Claims. (Cl. 307—252)

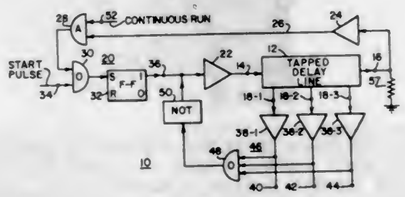


This disclosure relates to generating a variable width flat top pulse having a steep overshooting leading edge for a silicon controlled rectifier. A modified Schmitt trigger circuit includes a normally conducting output transistor and a nonconducting input transistor. A full wave rectifier in series with a phase shift transformer is connected to the input transistor. A diode also connects the input transistor to an A.C. signal to bias the input transistor on for at least one half cycle of the power cycle and thereby turn off the output transistor. The phase shift signal from the transformer is in phase with the turn off signal and selectively shifted into the portion of the cycle which would normally turn on the silicon controlled rectifier to provide an overriding control.

3,418,498
DELAY LINE TIMING CIRCUIT FOR USE WITH COMPUTER OR OTHER TIMED OPERATION DEVICES

Earl T. Farley, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 29, 1965, Ser. No. 505,690
7 Claims. (Cl. 307—293)

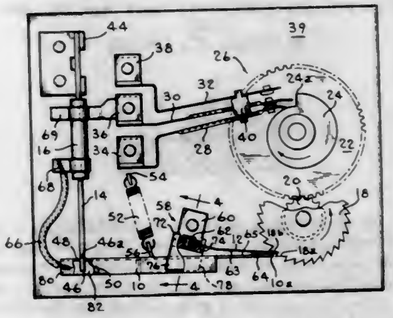


A flip-flop circuit initiates entry of a logic one signal to a tapped delay line. Feedback coupling from the delay line tap points clamps the flip-flop output at logic zero value after the leading edge of the delay line signal reaches the first delay line tap point. A delay line pulse of predetermined time span is thereby produced. The delay line output is coupled to the flip-flop set terminal to provide iterative delay line operation.

3,418,499
BIMETAL MOTOR STEP DRIVE

John Joseph Lester, Brookfield, Wis., assignor, by mesne assignments, to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,266
11 Claims. (Cl. 310—4)

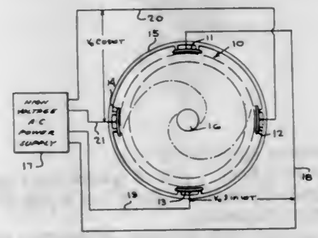


A heat motor operated step drive is disclosed wherein a bimetal operated drive pawl and a latch pawl step a toothed wheel in response to energization of a heater associated with the bimetal. The drive pawl slides on the latch pawl during the drive step and the heater circuit is intermittently made through the drive and latch pawls as they are alternately engaged and disengaged, a contact button providing the medium of engagement between the latch and drive pawls. The latch pawl includes a guide for maintaining relative alignment of the latch pawl, drive pawl and toothed wheel, and the drive pawl has an articulated connection with the bimetal with the drive pawl being biased into engagement with the latch pawl and bimetal. In another aspect, the drive metal is supported by an ambient temperature compensating bimetal.

3,418,500
ROTATING FIELD ELECTROSTATIC APPARATUS

William R. Davis, Raleigh, N.C., assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina

Filed May 18, 1965, Ser. No. 456,690
3 Claims. (Cl. 310—5)



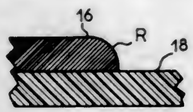
Apparatus for producing relative angular motion about an axis between the apparatus and a fluid medium, which includes a plurality of spaced electrodes disposed about the axis, for example arranged in quadrature relation in a

circular path concentric with the axis, together with an ion source in the zone of the electrodes, the electrodes being supplied with two-phase alternating electrical potential to produce a rotating electric field in the zone inducing flow of the ions along curved paths about the axis to produce through ion collision with the fluid medium substantially tangential to the mean circular path of the ions.

3,418,501
HIGH VOLTAGE ELECTROSTATIC MACHINERY

Noel J. Felici and Elie Gartner, Grenoble, France, assignors to Centre National de la Recherche Scientific, Paris, France, an agency of the French government

Filed Apr. 26, 1966, Ser. No. 545,417
Claims priority, application France, Apr. 28, 1965, 4,800
16 Claims. (Cl. 310—6)

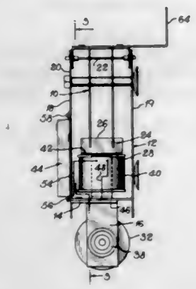


1. In an electrostatic machine, in combination, a voltage-distributing member of high uniform resistivity, voltage means including at least one electrode overlying said voltage-distributing member, said electrode having a surface in immediate proximity with said voltage-distributing member and being of a configuration such that any point on the contour of said surface projects outwardly at least as far as any corresponding point on the periphery of said electrode, said voltage means including resistive means having a resistivity of at least 1000 ohm-centimeters adjacent at least a portion of periphery of said electrode, and means for mounting said voltage means on said voltage-distributing member.

3,418,502
OSCILLATORY MOTOR

John Dunay, New Milford, N.J., assignor of fifty percent to Leonard C. Nachtman, Woodside, N.Y.

Filed May 17, 1966, Ser. No. 550,855
6 Claims. (Cl. 310—32)

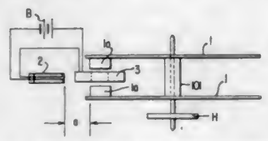


1. An oscillatory motor comprising:
a frame having a floor, a pair of spaced-apart legs projecting upwardly from the floor, and a pair of polarized electrical terminals;
an electromagnetic coil mounted on the floor between the spaced-apart legs;
an arcuate yoke pivotably mounted adjacent the upper portion of the spaced-apart legs such that in its rest position the center of its arc is closest to the electromagnetic coil;
a magnet mounted at the center of the arc of the arcuate yoke;
a source of D-C voltage inserted between the pair of polarized electrical terminals;
a magnetic switch mounted on one of the legs and connected to the source of D-C voltage and the electromagnetic coil such that when the magnet is in close proximity with the magnetic switch, the magnetic switch is closed and power from the source of D-C voltage is applied to the coil;
the polarity of the magnet being such that the magnet is repelled by the electromagnetic coil when power is applied thereto to thereby cause the pivotable, arcuate yoke to oscillate back and forth with respect to the electromagnetic coil.

3,418,503
OSCILLATING MOTOR FOR ELECTRIC CLOCK

Roland Siefert and Eberhard Schafer, Bad Durrheim, Germany, assignors to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany

Filed Sept. 7, 1965, Ser. No. 485,474
2 Claims. (Cl. 310—39)

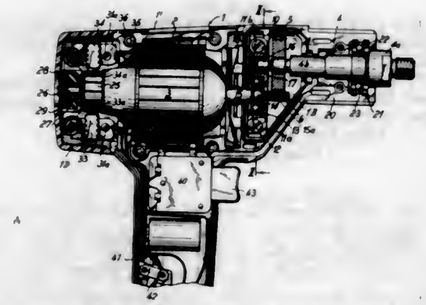


An electrically driven oscillator for a timepiece wherein a driven oscillatory magnet actuates a control leaf switch for a coil cooperating with the magnet. The switch is biased to open position but has detaining means to keep the contacts close together.

3,418,504
PORTABLE ELECTRIC MOTOR DRIVEN POWER TOOL WITH SEPARABLE PLASTIC HOUSING

Kurt Paule, Stuttgart-Oberturkheim, Gerhard Armbruster, Stuttgart-Plieningen, and Manfred Kirn, Stuttgart-Mohringen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed June 13, 1966, Ser. No. 557,144
Claims priority, application Germany, Aug. 20, 1965, B 83,436
10 Claims. (Cl. 310—50)

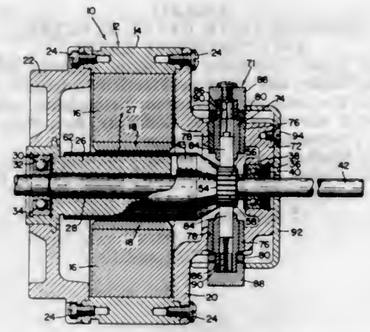


1. In an electric power tool, a housing comprising two similar shells together defining a chamber and having abutting marginal portions; a metallic bearing member provided in said chamber and having two parallel bores; fastener means securing said bearing member to one of said shells; a tool spindle having a rear portion extending into one of said bores, an intermediate portion and a front portion; an electric motor including an output shaft extending through the other of said bores and having a front portion adjacent to the intermediate portion of said spindle; and a transmisson including a gear train providing a motion transmitting connection between the front portion of said output shaft and the intermediate portion of said spindle, the other shell being separable from said one shell to afford access to said motor, to said transmission and to said spindle.

3,418,505
DIRECT CURRENT MOTOR HAVING A SELF-SUPPORTING SHELL ROTOR

Emil S. Mihalko, Harleysville, Pa., and Daniel G. Taylor, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Sept. 23, 1965, Ser. No. 489,493
8 Claims. (Cl. 310—266)

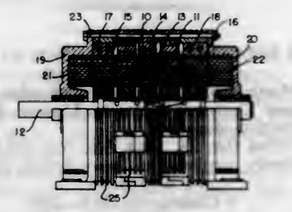


A direct current motor is shown having a permanent magnet stator and flux return member arranged about a central axis through which a shaft is rotatively mounted. A plurality of individual coils are constructed from a single layer of wire. The coils are laminated into a tubular self-supporting shell with no greater than two thicknesses of coil wire at any point on the perimeter. The shell is then connected to a commutator on the shaft for forming a self-supporting shell rotor between the stator and flux return member.

3,418,506
AXIAL AIRGAP MOTORS AND GENERATORS

Louis W. Parker, 2309 N. Dixie Highway, Wilton Manors, Fla. 33305

Filed Mar. 29, 1965, Ser. No. 443,258
10 Claims. (Cl. 310—268)

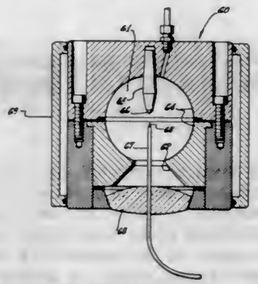


An axial airgap machine is provided with at least three stator sections and at least two rotor sections surrounding the main axis of the machine and spaced from one another in the axial direction. The stator sections comprise wound and unwound stators disposed alternately relative to one another, and relative to said rotor sections, along the axis of the machine. The rotor sections are interposed respectively between said wound and unwound stator sections so that each rotor section has a wound stator section on one side thereof, and an unwound stator section on the other side thereof.

3,418,507
GASEOUS, ARC-RADIATION SOURCE WITH ELECTRODES, RADIATION WINDOW, AND SPECULAR FOCUS ALIGNED ON THE SAME AXIS

Larry L. Young, P.O. Box 308, Dana Point, Calif. 92629

Filed Jan. 20, 1966, Ser. No. 521,874
8 Claims. (Cl. 313—18)

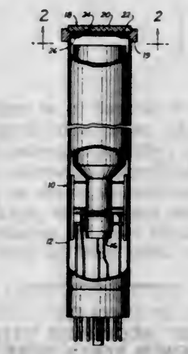


The invention concerns a gaseous arc-projector, means to produce a high pressure gaseous arc, and integral radiation reflecting means, wherein self irradiation features spectrally and spacially modify and increase radiance of the intrinsic arc, and reflecting and refracting menas operative in such manner that radiation from the arc is transferred to produce spacially controlled and spectrally modified irradiation of an external conjugate surface.

3,418,508
PHOTOCONDUCTIVE LAYER SEPARATED FROM REACTIVE OPAQUE PATTERN BY TRANSPARENT CONDUCTIVE LAYER

Stanley A. Bynum, Dallas, Tex., assignor to General Electrodynamics Corporation, Garland, Tex., a corporation of Texas

Continuation-in-part of application Ser. No. 459,778, May 28, 1965. This application Aug. 23, 1967, Ser. No. 662,715
10 Claims. (Cl. 313—65)

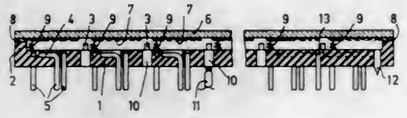


A dark current reference mask or a reticle pattern formed on the faceplate of a vidicon television camera tube with a material which is normally reactive with a photoconductor such as selenium or antimony trisulfide, having a conductive coating covering the mask or reticle pattern which coating is made of a material which does not react with the photoconductor, and a photoconductor such as selenium or antimony trisulfide on the conductive coating.

3,418,509
ELECTRICAL DISCHARGE CHARACTER INDICATOR TUBE

Simon Mari Frouws, George Kerr, and Adrianus Anthonius Maria Hendriks, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,128
Claims priority, application Netherlands, July 3, 1965, 6508596
10 Claims. (Cl. 313—109.5)

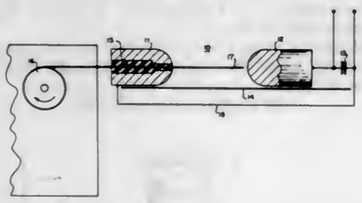


A gas-filled character-indicator tube employing a plurality of electrodes forming at least two matrix groups in which combinations of electrodes, when energized, produce luminous effects which form legible signs. The electrodes are arranged on the bottom of a box-shaped envelope in matrix groups which are arranged side-by-side and are separated by partitions. A separation sign formed by a cylinder of transparent material extends hermetically through the bottom wall of the envelope beneath which a light source can be disposed.

3,418,510
TRIGGERED SPARK GAP ELECTRIC ARCING DEVICE

Leonard J. Melhart, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 30, 1965, Ser. No. 510,713
2 Claims. (Cl. 313—146)



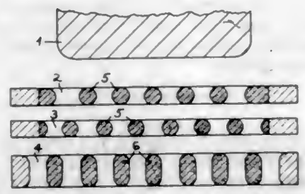
This disclosure is directed to an exploding wire spark gap arrangement for under water forming, plasma propulsion and other switching purposes. The arrangement includes oppositely disposed electrodes, one of which has an aperture therein through which an exploding wire is fed. One conductor parallels the gap between the electrodes to magnetically blow the metallic ions formed by the exploding wire away from the ends of the electrode.

3,418,511
MERCURY ARC RECTIFIER WITH MULTIPLE GRID STRUCTURE

Max Josef Schonhuber, Zurich, Switzerland, and Karl Werner Kanngiesser, Viernheim, Hesse, Germany, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed May 19, 1966, Ser. No. 551,403
Claims priority, application Switzerland, May 28, 1965, 7,474/65
6 Claims. (Cl. 313—167)

A mercury arc rectifier is provided with a plurality of superposed identical grids arranged in such manner that the parallel bars of one grid are located in the spaces between the parallel bars of an adjacent grid. The spacing between adjacent bars of a grid does not exceed the width

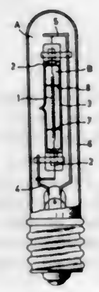


of the bars so that the anode will not be directly exposed to the cathode.

3,418,512
REGENERATIVE CYCLE ELECTRIC INCANDESCENT LAMP

Germain Remi T'Jampens, Riksterus Auguste Johannes Maria Meijer, and Martinus Henricus Adrianus van de Weijer, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,482
Claims priority, application Netherlands, July 1, 1964, 6407446; July 16, 1964, 6408084
5 Claims. (Cl. 313—185)



An incandescent lamp having a tungsten filament surrounded by a light pervious envelope which utilizes certain of the hydrogen halides or chlorinated or brominated hydrocarbons to maintain a transport cycle between the tungsten filament and the inner wall of the envelope.

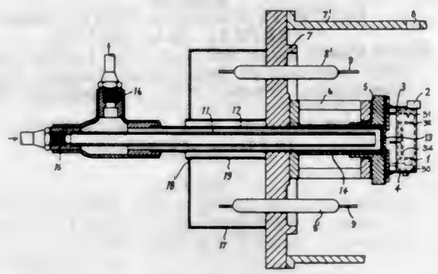
3,418,513
MASS SPECTROMETER ION SOURCE WITH COOLING MEANS

Richard Martin Elliott, Altrincham, England, assignor to Associated Electrical Industries Limited, London, England, a British company

Filed Oct. 26, 1964, Ser. No. 406,607
Claims priority, application Great Britain, Oct. 31, 1963, 43,063/63
9 Claims. (Cl. 313—230)

1. A mass spectrometer ion source including
a metal housing defining a chamber,
entry means for admission of vaporized sample material to the chamber,
an electron beam generator in the chamber for ionizing molecules of vaporized sample material therein, said generator tending in use to cause heating of the housing to a temperature above the vaporization temperature of said sample material,
said housing also having at least one exit for ions generated therein, and

means for preventing thermal change in the molecules due to collision with a heated internal surface of the housing prior to ionization, said means comprising means for cooling the metal housing to a temperature

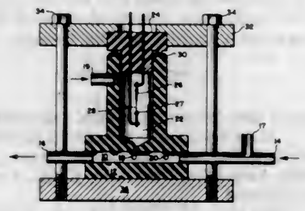


sufficiently low as compared with the vaporization temperature of said sample material to prevent such thermal change from occurring but insufficiently low to cause condensation of all of the molecules thereon.

3,418,514
ELECTRICAL DISCHARGE DETECTORS FOR GAS CHROMATOGRAPHY

James C. Sternberg, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed May 31, 1966, Ser. No. 553,897
8 Claims. (Cl. 313—231)



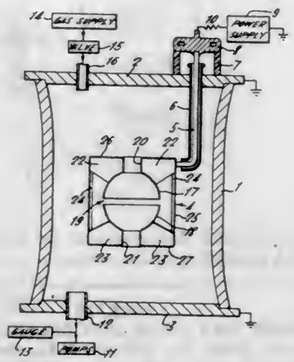
A detector for gas chromatography having a straight, minimum volume, flow through detection chamber and a discharge chamber at an angle thereto which may alternatively be fitted with a pair of electrodes for generating electrons positioned away from and axially aligned with the junction of the discharge and detection chambers or a pair of electrodes for generating photons positioned near and at an angle to the axis of the junction. A restriction is provided at the junction to prevent backflow into the detector discharge chamber.

3,418,515
NON-THERMIONIC GLOW DISCHARGE DEVICE HAVING A HOLLOW ELECTRODE ASSEMBLY

Clifford William Alfred Maskell, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed July 14, 1966, Ser. No. 565,123
Claims priority, application Great Britain, July 16, 1965, 30,440/65
12 Claims. (Cl. 313—231)

A non-thermionic glow discharge device comprising an enclosure, means to maintain the enclosure at a low gas pressure, an anode mounted with at least one surface thereof within the enclosure, and a hollow electrode assembly, including a cathode and a further electrode are mounted within the enclosure with the ends of the cathode and the further electrode facing each other to define therebetween a generally circular gap. Means are provided to apply suitable operating potentials to the anode, cathode and further electrode, the arrangement being such that during operation a glow discharge occurs and streams

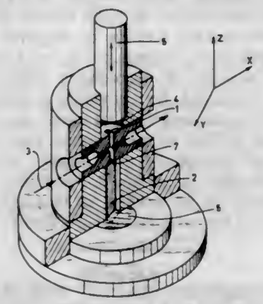


of electrons pass through the gap and converge on the axis of said electrode assembly within a space generally defined by said electrode assembly.

3,418,516
ARRANGEMENTS FOR PRODUCING ELECTRIC OSCILLATIONS OF VERY HIGH FREQUENCY

Bernardus Bastiaan van Iperen and Wilhelmus Kuypers, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 17, 1966, Ser. No. 520,970
Claims priority, application Netherlands, Feb. 11, 1965, 6501676
4 Claims. (Cl. 315—5.53)



A sum-millimeter R-F generator including a resonant cavity which is excited in the $TE_{0_{mn}}$ mode, one end of which is provided with a tuning device and the other end being coupled to a waveguide which is angularly displaced with respect to the resonant cavity.

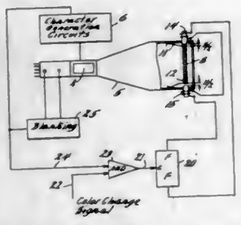
3,418,517
SYSTEM FOR GENERATION OF CHARACTERS WITH A CATHODE RAY TUBE IN DIFFERENT COLORS

Charles R. Corpew, La Mesa, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed May 9, 1966, Ser. No. 548,528
2 Claims. (Cl. 315—21)

A system for displaying characters on a cathode ray tube provides for presentation in different colors by an electromechanically moved screen placed adjacent the cathode ray tube screen to reside in at least two stable positions against stops while a character display is being generated on the screen. Thus, different colors are moved

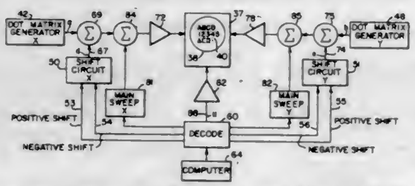
by means of electronic control signals into registration with the portion of a CRT screen where a line of characters is reproduced. Movement of the screen is synchronized with generation of characters.



3,418,518
CATHODE RAY TUBE DOT MATRIX SHIFTING

Edward G. Reese, Jr., Milford, N.H., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 31, 1967, Ser. No. 642,470
5 Claims. (Cl. 315—22)

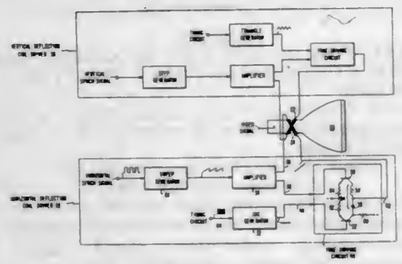


First and second deflection generators position the cathode ray beam of a cathode ray tube at a plurality of dot positions forming an $n \times m$ matrix array with each dot position located at a normal row and column coordinate of the matrix. A shift circuit is provided and adds a predetermined positive or negative voltage to the deflection generator voltage to cause a shifting of the normal dot position, in accordance with a specific character to be displayed. By providing a shifting circuit for both the horizontal and vertical sweep a normal dot position may be shifted to eight other positions depending upon the combination of shift signals. The cathode ray beam is unblanked at certain dot positions in accordance with a character to be written, so that the character may be displayed on the cathode ray tube face.

3,418,519
YOKE DRIVING CIRCUIT FOR CATHODE RAY TUBE DISPLAY

Herman A. Ferrier, Jr., and Paul V. McEnroe, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 14, 1965, Ser. No. 425,451
7 Claims. (Cl. 315—27)

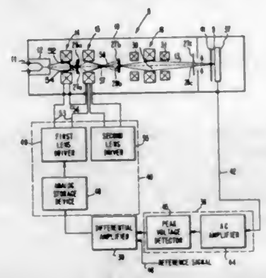


A cathode ray tube deflection signal generating system wherein high and low pulse repetition signals are fed through isolation filters to a single deflection coil for controlling the beam deflection.

3,418,520
INTENSITY CONTROL SYSTEM FOR A PARTICLE BEAM DEVICE

Robert Russell Barber and Karl Heinz Loeffler, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 21, 1966, Ser. No. 603,556
10 Claims. (Cl. 315—31)

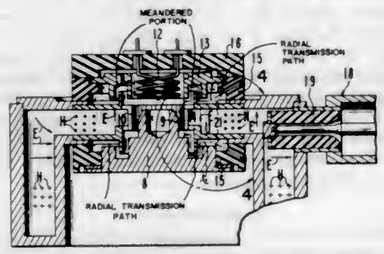


A control system for regulating the intensity of a beam spot of a particle beam device such as an electron beam column wherein the magnification of a variable magnification lens is adjusted responsive to the measured beam current to regulate the beam spot size at an aperture plate thereby to regulate the current density of the beam and thereby the beam current passing through the aperture.

3,418,521
END SPACE RADIATION INHIBITING MEANS FOR θ MAGNETRONS

Edward J. Cook, South Hamilton, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Dec. 27, 1965, Ser. No. 516,471
8 Claims. (Cl. 315—39.63)



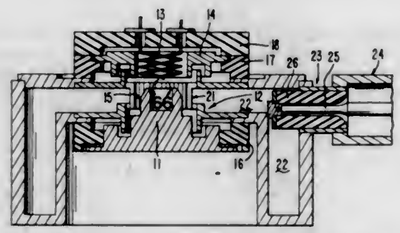
A voltage tunable magnetron is disclosed. Magnetron includes a centrally diposed cold cathode sole electrode surrounded by an interdigital anode circuit coupled to a surrounding cavity resonator. A filamentary emitter is disposed at one end of the tube. An injector electrode structure surrounds the filamentary emitter for forming and projecting an annular stream of electrons into the magnetron interaction region between the anode and the cathode sole electrodes. The injector, anode circuit, and cold cathode electrodes are axially spaced apart in insulative relation to permit independent potentials to be applied to the electrodes. The axial gaps between the injector electrode and the anode circuit, at one end, and the cold cathode electrode in the anode circuit at the other end, form a pair of radial transmission lines communicating between the magnetron interaction region and the

outside of the tube. Axially coextensive structure portions are formed in the adjacent electrode structures at opposite ends of the anode circuit to define meandered portions of the radial transmission lines. These axially coextensive regions are provided at a radius substantially less than the radius which would define the low frequency cut-off for the $TM_{1,1,0}$ mode in the radial transmission lines at the signal frequency to elongate that portion of the radial transmission line which is operating below cut-off for the signal energy to inhibit radiation of wave energy through the transmission lines.

3,418,522
MODE CONTROL FOR θ MODE MAGNETRONS

Edward J. Cook, South Hamilton, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 7, 1966, Ser. No. 525,454
8 Claims. (Cl. 315—39.63)



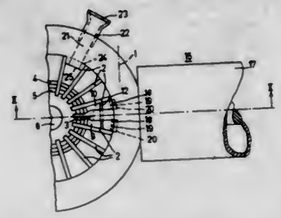
A voltage tunable magnetron is disclosed. The magnetron includes a non-electron emissive cathode sole electrode surrounded by a reentrant periodic anode slow wave circuit to define an annular magnetron interaction region therebetween. A thermionic electron emitter is axially spaced from the sole electrode for axially injecting a stream of electrons into the interaction region for cumulative interaction with wave energy on the periodic circuit to produce an output signal. The periodic circuit is coupled to a surrounding cavity resonator and a coupling loop is provided in the resonator for coupling the composite interaction circuit to a load. The coupling to the load is sufficiently high such that the interaction circuit is heavily loaded to provide a loaded interaction circuit Q less than 50. The composite interaction circuit, as coupled to the load, is capable of supporting an interfering mode of oscillation at the signal frequency. A wave energy perturbing means, such as a conductive element or lossy element, is provided on the loaded interaction circuit at a position of relatively low amplitude of the desired mode and relatively high amplitude of the undesired mode for perturbing the undesired mode and removing it from substantial interference with the desired mode. Such perturbing means is located at only a single location as taken around the circumference of the anode circuit to prevent dividing the circuit into two or more resonant sections which could interfere with transfer of energy around the circuit.

3,418,523
MAGNETRON HAVING DIVERSE SIZE RESONATORS

Wolfgang Schmidt, Hamburg-Othmarschen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 21, 1965, Ser. No. 515,433
Claims priority, application Germany, Dec. 23, 1964, P 35,741
4 Claims. (Cl. 315—39.65)

A magnetron having a plurality of resonant cavities surrounding a central cathode and separated by radial partitions, at least one of the partitions or the rear wall of one of the cavities having an aperture therein for receiving an electrical conductor, and the wall surrounding

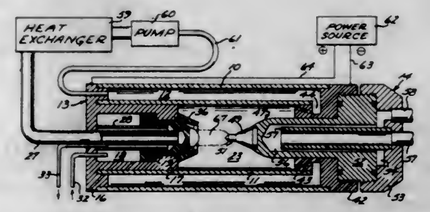


the aperture being deformed so that the electrical and thermal characteristics of the cavity are substantially the same as those of the other cavities.

3,418,524
APPARATUS AND METHOD FOR GENERATING HIGH-INTENSITY LIGHT

Fred Walter, Newport Beach, Calif., and Boris Podolsky, Cincinnati, Ohio, assignors to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware

Filed Nov. 29, 1965, Ser. No. 510,292
23 Claims. (Cl. 315—111)

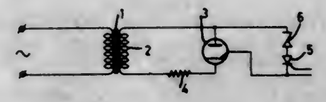


A vortex-stabilized radiation source in which a shroud is provided coaxially around at least one of the opposed electrodes between which the electrical discharge is effected. In accordance with one embodiment, vortically-flowing gas from the vicinity of the arc is drained through the shroud. In accordance with another embodiment, vortically-flowing gas is introduced through the shroud into the discharge chamber.

3,418,525
CONTROL CIRCUIT FOR AN IGNITRON UTILIZING A SILICON CONTROLLED RECTIFIER AND A ZENER DIODE IN SERIES

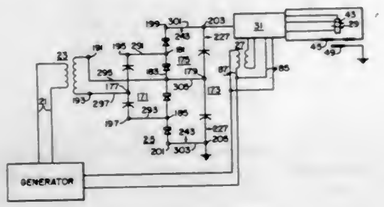
Henri Jean Gerard Marie van Daelen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 10, 1964, Ser. No. 395,384
Claims priority, application Netherlands, Sept. 12, 1965, 297,856
5 Claims. (Cl. 315—168)



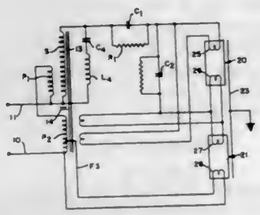
An ignitron ignition circuit includes a Zener diode and silicon controlled rectifier connected in series across the anode and ignitor electrodes of the ignitron. The Zener diode is arranged to automatically extinguish the ignitron priming arc between ignitor and cathode once the main discharge arc between the anode and cathode occurs.

3,418,526
COMPACT HIGH VOLTAGE SUPPLY
Harold C. Simon and Bernard V. Gerber, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 13, 1966, Ser. No. 549,863
8 Claims. (Cl. 315—205)



A high voltage electrical supply comprising a plurality of split annular rings mounted concentrically about an axis and encased in a container filled with a gaseous dielectric material to permit a reduction in the gap between the high voltage terminal; each of the split rings comprising a plurality of series connected electrical elements arranged with the end terminals of the series connected elements adjacent the gap formed in the ring by the split thereof whereby the voltage gradients in the various split rings are a maximum across the gap thereof and a minimum along the surface thereof; one of the split rings being located concentrically within another of the split rings.

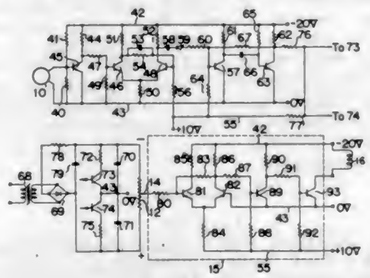
3,418,527
BALLAST APPARATUS USING LEAKAGE REACTANCE OF SPLIT PRIMARY WINDING
Imrich M. Miller, Passaic, N.J., assignor to Universal Manufacturing Corporation, Paterson, N.J., a corporation of New Jersey
Filed Mar. 3, 1967, Ser. No. 620,334
12 Claims. (Cl. 315—244)



Ballast transformers for fluorescent lamps in which a circuit is used in shunt with a secondary winding of the transformer to resonate with it and increase the open circuit starting voltage. The primary winding of the transformer is split and the shunt circuit is discharged through the split primary to damp the discharge.

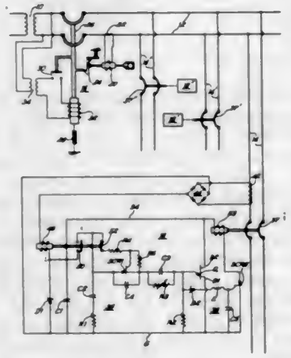
3,418,528
APPARATUS FOR DETECTING ROTATING SPEED
Junichi Watanabe and Mitsuo Matsumoto, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed May 19, 1965, Ser. No. 457,077
5 Claims. (Cl. 317—5)

An A.C. voltage synchronized with a rotary speed is converted to pulses having a constant width and occurring at each alternation of the voltage; a tapped resistor has a potential applied thereacross so that the tap point will have a predetermined potential with respect to an end of the resistor at quiescent state; and parallel branches including a pair of condensers and switching elements are connected across the condenser to shift the relative



voltage at said tap, independently of the voltage applied across the resistance.

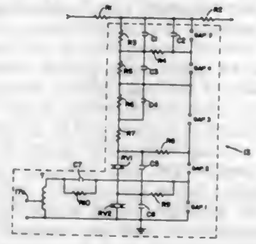
3,418,529
CONTROL CIRCUIT FOR PROTECTIVE DEVICE
Oliver G. Attewell, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,316
11 Claims. (Cl. 317—11)



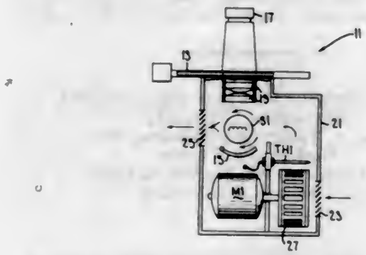
A control circuit for an automatic sectionalizing switch having a relay which follows the energy condition of the line in which the switch is connected. When the relay is energized, its contacts are connected to allow charging of an energy storage means. When the relay is deenergized its contacts allow the energy storage means to actuate a switching circuit means. The switching circuit means then conducts charge from the energy storage means to a memory means and continues to do so until the charge on the energy storage and memory means is equal, regardless of bounce of the contacts. This operation is repeated during successive operations of the relay until the memory means accumulates a predetermined charge at which time the potential due to the charge on the storage means acts to initiate opening of the sectionalizing switch.

3,418,530
ELECTRONIC CROWBAR
William H. Cheever, Pennsauken, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 7, 1966, Ser. No. 578,424
1 Claim. (Cl. 317—16)

A plurality of spark gaps are provided between a high voltage source and ground. Each of the gaps has a resistor-capacitor combination thereacross. Varistors are connected across the gaps nearest ground to prevent discharges of the crowbar from gradual changes in the source voltage. A trigger means, in response to an abnormal condition, initiates a spark in the gap nearest ground. Successive gaps toward the source spark, until a low impedance path to ground is established from the source, through the gaps, to ground.



3,418,531
PROTECTIVE APPARATUS FOR A FORCED AIR COOLING SYSTEM
Richard W. Strachan, Providence, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,601
8 Claims. (Cl. 317—41)



Protective apparatus for a forced air cooling system is disclosed in which a self-heating NTC thermistor is mounted in the air flow to be cooled thereby. A relay controls the energization of a load being cooled by the air flow and the operating winding of the relay is connected in series with the thermistor across an electric power source providing a predetermined voltage. The thermal and electrical dissipation characteristics of the thermistor are chosen in relation to the source voltage and the load impedance presented by the relay winding to cause the thermistor to heat regeneratively when the cooling air flow is attenuated. Upon such regenerative heating the increased resistance of the thermistor deenergizes the relay and the load controlled thereby.

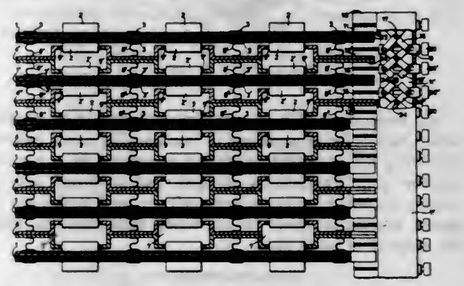
3,418,532
EXCESS CURRENT LIMITER FOR COUPLED POWER SYSTEMS
Hans Becker, Darmstadt, Germany, assignor to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 25, 1966, Ser. No. 544,777
Claims priority, application Germany, Apr. 28, 1965, B 81,637
12 Claims. (Cl. 317—53)

An excess current limiter for coupled power system composed of a two-terminal network connected in series between two elements of the system and composed of an A.C. bridge having a plurality of inductive and capacitive reactances interconnected to form at least one series resonant circuit which is tuned substantially to the frequency of the system, and at least one series arrangement of a switching member and a current-limiting resistance connected between two terminals of the bridge for



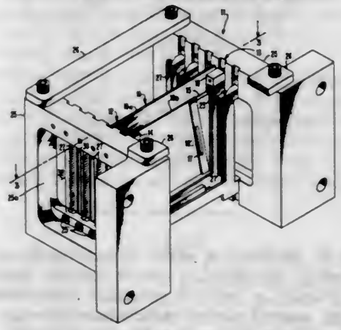
creating a large impedance between the two elements of the system when the current through the bridge exceeds a predetermined value.

3,418,533
MODULAR STRUCTURE FOR ELECTRONIC INTEGRATED CIRCUITS
Pier Giorgio Perotto, Turin, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Dec. 19, 1966, Ser. No. 602,778
Claims priority, application Italy, Dec. 24, 1965 29,057/65
5 Claims. (Cl. 317—100)



In a modular structure for electronic integrated circuit a set of parallelly disposed and detachable main boards, carrying interconnected active and/or passive electronic components, are electrically interconnected through connection boards interposed therebetween and contacting superficial contact elements carried by said main boards and distributed on the whole surface of each face thereof.

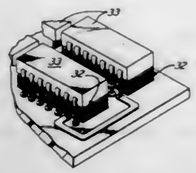
3,418,534
LATCHING DEVICES
John P. Koons, Apalachin, and Walter M. Young and Charles R. Yungkurth, Endicott, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 15, 1966, Ser. No. 565,496
10 Claims. (Cl. 317—101)



The latching assembly is comprised of a flat member and receiving means having at least two groove forming

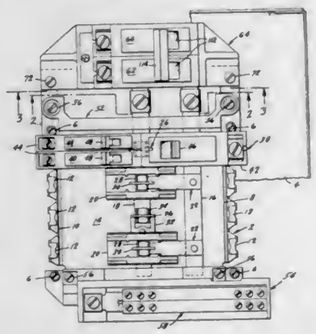
members. Two movable wedge-like means are insertable in the grooves of the receiving means. The wedge members are locked in their lowermost positions. The wedge members place portions of the periphery of the flat member in close spatial relationship with the receiving means in proximity of the particular groove-forming member with which it is associated.

3,418,535
INTERCONNECTION MATRIX FOR DUAL-IN-LINE PACKAGES
John M. Martinell, Delaware County, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 611,104
8 Claims. (Cl. 317—101)



An interconnection matrix for a dual-in-line package which has its leads arranged in two parallel rows, includes overlying flat, conductive ribbon separated by a nonconductive strip. Projections, integral and coplanar with the ribbon extend transversely therefrom and terminate adjacent particular leads in apertured tabs through which the respective leads pass.

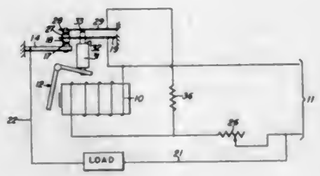
3,418,536
MAIN CIRCUIT BREAKER ASSEMBLY FOR ELECTRICAL CIRCUIT CONTROL DEVICE PANELBOARDS AND ADAPTER BASE THEREFOR
Lewis W. Jacobs, Garden City, N.Y., and Robert J. Sabatella, Southington, Conn., assignors to General Electric Company, a corporation of New York
Filed June 23, 1967, Ser. No. 648,452
16 Claims. (Cl. 317—119)



There is disclosed a main circuit breaker assembly for mounting on electrical circuit control device panelboards utilizing a pair of generally conventional electric circuit control devices which have contact jaws adjacent the lower front edge thereof extending parallel to the longitudinal axis of the housing which is also provided with a shoulder on the rear surface thereof. An insulating support has a pair of conductor elements mounted thereon which are adapted to be electrically engaged with a pair of conductors in the panelboard. The conductor elements have upstanding parallel contact blade portions clampingly engaged by the contact jaws of the pair of control devices and one of the blade portions has an upper edge portion extending laterally from the plane of the body portion thereof to provide a shoulder. The cooperating control device has its contact jaws dimensioned and configured to permit sliding movement along its longitudinal axis about the contact blade upper edge portion and into clamping engagement with the body portion below the shoulder. However, the contact jaws are prevented from expansion sufficiently to permit disengagement from the shoulder by pivoting of the front ends of the control device upwardly about its rear edge. Retaining means are provided on the insulating support which are engaged with the shoulders on the rear surface of the control devices to prevent substantially sliding movement thereof away from the contact blade portion thereby to maintain the elements in assembly.

To prevent inadvertent contact with the contact blade portions and the contact jaws of the control devices, the insulating support is provided with an upstanding wall portion extending across the front surfaces of the control devices and providing a barrier therefor. In a preferred assembly, the conductor elements have terminal portions extending outwardly from the insulating support which are clampingly engaged with a pair of conductors of the panelboard and means are provided for mounting the insulating support to the base of the panelboard.

3,418,537
RELAY WITH CHATTER PREVENTING SHUNTING CIRCUIT
Michael A. Tabet, 1336 Ballentine Blvd., Norfolk, Va. 23504
Filed Mar. 9, 1966, Ser. No. 533,072
2 Claims. (Cl. 317—123)

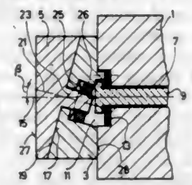


An energy-absorbing element in parallel circuit relationship with a relay. The energy-absorbing element is taken out of the circuit by a first set of contacts actuated upon initial energization of the relay. Upon the elimination of the shunting energy-absorbing element in the circuit a load set of contacts are actuated.

3,418,538
DEVICE HAVING TWO PARTS WHICH CAN BE ORIENTED IN PREDETERMINED POSITIONS
Theodore Roman, Neuenhof, Switzerland, assignor to Oerlikon Engineering Company, a Swiss corporation
Filed Apr. 26, 1966, Ser. No. 545,421
Claims priority, application Switzerland, May 11, 1965, 6,540/65
7 Claims. (Cl. 317—123)

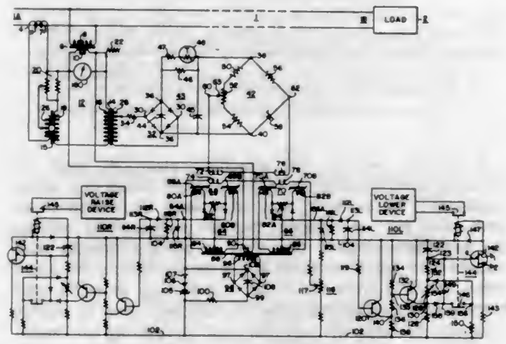
Adjustable magnet having two spaced pole members defining gap between them. At least one pole member includes wedge-shaped rotatable support and a wedge-shaped pole piece rotatable with respect to the support. Axes of rotation of support and pole piece arranged at

an angle to each other. Support and pole piece may be rotated by worm gear and worm, or by coaxial shafts.



Automatic rotary adjustment of support and pole piece may be provided.

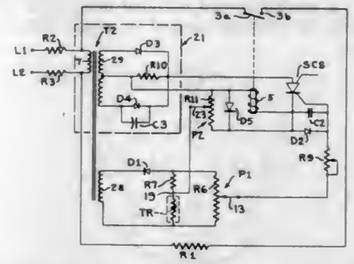
3,418,539
VOLTAGE REGULATING RELAY
Robert J. Sullivan, Wayne, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1966, Ser. No. 575,396
7 Claims. (Cl. 317—142)



1. In a relaying apparatus, a relay having a current consuming control element and circuit controlling means, a pair of electrical energy input terminals, a pair of buses, a plurality of impedance elements, a Zener diode, first circuit means connecting said Zener diode between said buses, second circuit means including a first of said impedance elements connecting said buses to said input terminals, an energy storage element, a unijunction transistor having first and second bases and an emitter, third circuit means connecting said bases between said buses, fourth circuit means connecting said storage element in series with a second of said impedance elements between said buses, fifth circuit means connecting said emitter to said fourth circuit means at a location intermediate said storage element and said second impedance element, a switching means, sixth circuit means connecting said switching means in shunt with said storage element and said second impedance element, and a seventh circuit means connecting said emitter to one of said buses and including said circuit controlling means.

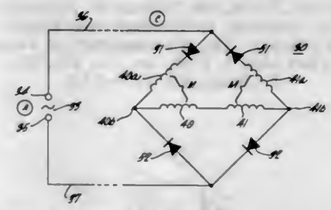
3,418,540
CONDITION RESPONSIVE CONTROL CIRCUIT WITH ADJUSTABLE PROPORTIONING BAND
Ireneusz Siwko, Marlboro, Mass., assignor to Fenwal Incorporated, Ashland, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 448,218, Apr. 14, 1965. This application Apr. 11, 1966, Ser. No. 541,672
13 Claims. (Cl. 317—153)

A relay control circuit including a gate controlled electronic switch connected to supply current to the relay when gated on; a gate control circuit for the switch including a measuring bridge, an impedance connected across the relay winding, and a variable impedance; and



a diode coupling the relay energizing circuit to the bridge through the variable resistor to supply heating current to the bridge.

3,418,541
RELAY DRIVE CIRCUIT
Andrew O. Adams, Inglewood, Calif., assignor to Leach Corporation, San Marino, Calif., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,022
9 Claims. (Cl. 317—156)

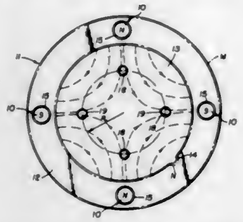


7. A relay drive circuit comprising:
(a) a current conductive coil winding for controlling contact closures in a relay,
(b) a supply source of opposite polarity alternating current signals,
(c) first and second semiconductive switch means, each emitting electrical noise transients when changing from conductive to non-conductive conditions in accordance with the polarity of signals applied thereto,
(d) a first continuation winding of said coil winding connected in a first tandem circuit therewith,
(e) a second continuation winding of said coil winding connected in a second tandem circuit therewith,
(f) first means connecting said first switch means and said first tandem circuit in a first series circuit with said supply source, said first continuation winding being operative in said first series circuit for isolating said source from said noise transients emitted by said first switch means, and
(g) second means connecting said second switch means and said second tandem circuit in a second series circuit with said supply source, said second continuation winding being operative in said second series circuit for also isolating said source from said noise transients emitted by said second switch means.

3,418,542
METHOD AND APPARATUS FOR DEMAGNETIZATION OF MULTIPOLE MAGNETIC DEVICES
Donald J. Renner, Columbus, Ohio, assignor to F. W. Bell, Inc., Columbus, Ohio, a corporation of Ohio
Filed Apr. 18, 1966, Ser. No. 543,212
9 Claims. (Cl. 317—157.5)

1. The method of decreasing the magnetic flux density of a multi-pole magnetic device consisting of subjecting

each pole to a respective, independently controllable, relatively negative magnetic field intensity which is applied until the magnetic flux density of the specific pole is reduced to a predetermined nominal magnitude which is greater than an ultimate desired magnetic flux density,



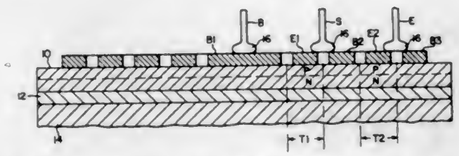
and again subjecting each pole to a respective, independently controllable, relatively negative magnetic field intensity after the magnetic flux density of all poles has been reduced to the predetermined nominal value to reduce the magnetic flux density of each of the poles to substantially the ultimate desired value.

3,418,543
SEMICONDUCTOR DEVICE CONTACT STRUCTURE
Joseph Marino, Irwin, and William R. Schaefer, Greensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1965, Ser. No. 436,725
5 Claims. (Cl. 317—234)



1. A semiconductor device comprising a wafer of semiconductor material of a first type conductivity having first and second parallel major surfaces; said wafer forming a first semiconductor element; a second semiconductor element comprising a zone of a second type conductivity material disposed upon the first major surface of said wafer; a third semiconductor element comprising a plurality of spaced zones of second type conductivity material disposed upon the second major surface of said semiconductor wafer; the interfaces between said second and first elements and between said third and first elements forming rectifying junctions; a mounting member having a substantially flat surface thereon; said wafer of semiconductor material being disposed upon the substantially flat surface of said mounting member, with said second element being in contact therewith; first and second contact members each having a plurality of spaced projections thereon; said first and second contact members being disposed upon the second major surface of said semiconductor wafer, with the spaced projections of said first contact member being in contact with at least a portion of the spaced zones of said third semiconductor element, and the spaced projections of said second contact member being in contact with said first semiconductor element; and means applying pressure to said first and second contact members to form pressure bonded joints between said first contact member and said third semiconductor element, between said second contact member and said first semiconductor element, and between said mounting member and said second semiconductor element.

3,418,544
ATTACHMENT OF LEADS TO SEMICONDUCTOR DEVICES
Robert W. France, Penn Township, Pittsburgh, and Ronald P. Nandor, Belle Vernon, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1966, Ser. No. 567,920
10 Claims. (Cl. 317—234)

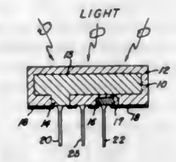


1. In the method for attaching electrical leads to closely-spaced metallic electrode regions fused to a semiconductive wafer such that each lead is connected to both of a pair of adjacent metallic regions and bridges the gap therebetween; the steps of placing straight wire members in holes provided in a locating fixture, the wires being formed from electrical conducting material and having lower head portions of sufficient area to bridge said gaps between the metallic regions, locating said semiconductive wafer such that it is beneath said fixture with the spaced metallic electrode regions on the upper surface of the wafer, positioning said fixture over the wafer such that said holes and the wires carried therein are directly over the gaps between adjacent metallic electrode regions on the wafer with the lower head portions on the wires bridging said gaps, and heating the thus assembled parts to braze the head portions to the spaced metallic electrode regions.

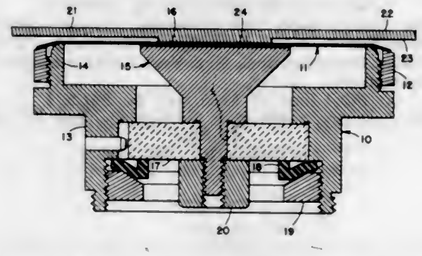
8. A semiconductor assembly comprising a wafer of silicon having fused to one face thereof concentric gold foil rings, alternate ones of said rings being doped with an impurity of one conductivity type and the remaining alternate rings being doped with an impurity of the other conductivity type, and lead wires of generally circular cross section having enlarged cross-sectional lower ends electrically bonded to adjacent ones of said gold foil rings such that the enlarged cross-sectional lower ends bridge the gaps between said adjacent rings, as is produced by maintaining said lower ends of the wires in engagement with adjacent rings and heating the assembly to a temperature slightly above the melting point of the gold-silicon eutectic composition of the rings formed when they are fused to the silicon.

3,418,545
PHOTOSENSITIVE DEVICES HAVING LARGE AREA LIGHT ABSORBING JUNCTIONS
Jearld L. Hutson, 907 Newberry, Richardson, Tex. 75080
Filed Aug. 23, 1965, Ser. No. 481,814
11 Claims. (Cl. 317—235)

A photosensitive semiconductor device in which all of the terminals are connected to the rear surface of the device opposite the light absorbing surface is described. The device comprises two rectifying junctions to provide a photosensitive transistor function, and in one embodiment, employs another transistor sharing a common collector with the photosensitive device to amplify the output of the latter. In a yet further embodiment, two or more photosensitive devices are connected in the equivalent of a parallel configuration the outputs of which are amplified by another transistor, all of which are incorporated in a single wafer and using a common collector.



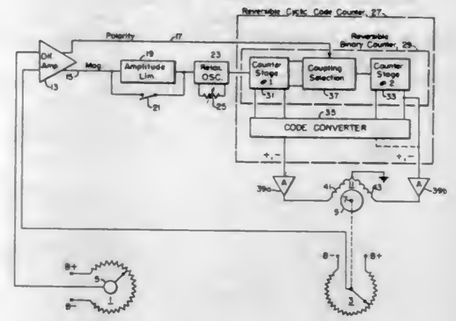
3,418,546
MOMENTUM TRANSDUCER
Bobby R. Beavers, Garden Grove, and Norman J. Meyer, Costa Mesa, Calif., assignors, by mesne assignments, to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,036
8 Claims. (Cl. 317—246)



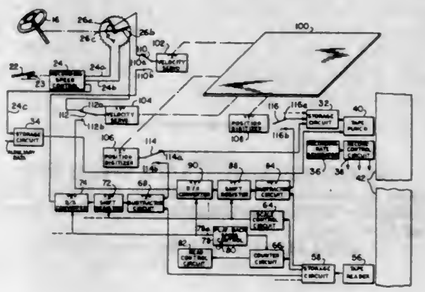
A capacitive momentum transducer is provided with a rigid plate supported resiliently from a central portion thereof and adjacent a conductive backplate. A conductive portion of the plate is adjacent but electrically isolated from the backplate such that capacitance is formed therebetween. Particles which impinge upon the plate cause a displacement of the plate toward the backplate such that a detectable variation of capacitance between the backplate and conductive portion occurs, the variation being proportional to the momentum of the particle regardless of its point of impingement.

3,418,547
STEP-SERVOCONTROLLER
Hans A. Dudler, Wellesley Hills, Mass., assignor to General Signal Corporation, a corporation of New Jersey
Filed Mar. 22, 1965, Ser. No. 441,473
12 Claims. (Cl. 318—18)

Apparatus for driving a stepper motor from a pulse train and utilizing a closed loop system incorporating the driving apparatus and the stepper motor. The stepper motor drive includes a conventional binary counter which is reversible in its direction of count and a converter for converting the output of the binary counter to a so-called cyclic code. Appropriate output signals from the counter are supplied to the two orthogonally disposed windings of the stepper motor to cause its output shaft to step in one direction or the other in accordance with the signals supplied from the counter. In the closed loop system described the rate of pulses supplied to the motor is varied in accordance with the difference between a command signal indicating desired motor shaft position and a feedback signal indicating actual motor shaft position.



3,418,548
CONTOUR TRACING AND TRACKING SYSTEM
Martin Raphael, Garden City, N.Y., assignor, by mesne assignments, to United Aircraft Corporation, Windsor Locks, Conn., a corporation of Delaware
Filed Apr. 5, 1966, Ser. No. 540,276
15 Claims. (Cl. 318—18)

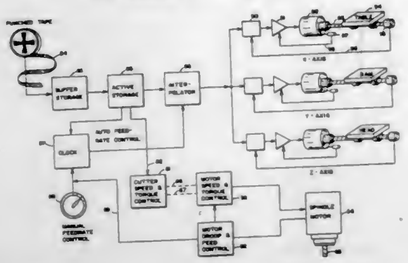


1. A contour tracing and tracking system comprising:
means for tracing and tracking a desired contour;
means for controlling the speed and direction of movement of said tracing and tracking means to trace said contour and for developing tracing speed signals representative of the tracing speed of said tracing and tracking means as said contour is being traced;
sensing means for sensing the position of said tracing and tracking means and for developing tracing position signals representative of the position of said tracing and tracking means as said contour is being traced and tracking position signals representative of the position of said tracing and tracking means as said contour is being tracked;
means responsive to said tracing position signals and said tracking position signals for developing drive signals dependent upon the difference between said tracing position signals and said tracking position signals;
and means responsive to said tracing speed signals for scaling said drive signals in accordance with said tracing speed signals and for coupling said scaled drive signals to said tracing and tracking means to control the movement of said tracing and tracking means to track said contour.

3,418,549
COMBINED NUMERICAL AND TORQUE CONTROL FOR A WORK AND FEED MACHINE TOOL

Herff C. Emerson, Chula Vista, Richard F. Rieger, National City, Robert W. Kitchin, San Diego, and Verne E. Vawter, National City, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Mar. 19, 1962, Ser. No. 180,762
15 Claims. (Cl. 318—39)

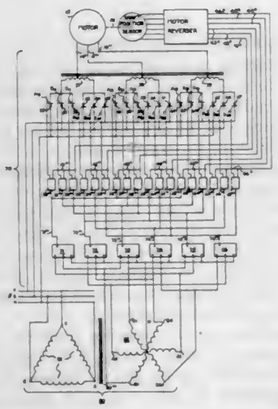


1. In an energy-torque controlled machining system, the combination of a cutting tool, a drive motor for said tool having a family of speed-torque droop characteristic curves, means for adjusting the operating parameters of said motor to provide speed and torque requirements in relation to said curves and compatible with the material yield characteristics of a workpiece to be machined and thereby further to render the energy supplied by the machine system compatible with the energy required for said machining of the workpiece, and means for adjusting the slope of said droop characteristic curves thereby to render the speed sensitivity of the motor to variations in the motor torque compatible with the full range of changes in the loading of the workpiece on the cutting tool.

3,418,550
BRUSHLESS ADJUSTABLE SPEED DRIVE

Edwin E. Kolatorowicz and William R. Miller, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed June 14, 1966, Ser. No. 557,395
11 Claims. (Cl. 318—138)



1. In a variable-speed drive system for supplying power from a multi-phase AC power line to a motor including fixed armature windings and a field rotatable with the motor shaft, the system including plural semiconductor controlled rectifier devices each having a control electrode to trigger it into conduction and said controlled rectifier devices being connected from each of the phases of the power line to each of the armature-windings in two groups having opposite polarity directions, and the system further including shaft-position sensing means delivering sequential outputs during rotation of the shaft, improved means for selectively triggering the controlled rectifier devices to pass power-line current through the windings to maintain armature flux rotating at a rate independent of the power line frequency, comprising:

(a) plural normally disabled firing circuit means each connected to the control electrode of at least one rectifier device and, when enabled, delivering a train of triggering signals thereto at a rate which is high as compared with the power line frequency;

(b) gate means connected to each firing circuit means for enabling the latter when a first and second input to the gate means are both energized;

(c) circuit means connecting each shaft-position sensing means output to the first inputs of all of the gate means which are associated with the same group of controlled rectifier devices;

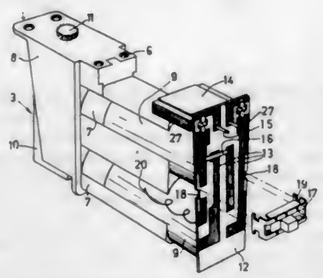
(d) phase-sensing means connected to the power line phases and including means for delivering separate outputs representing each phase whenever it has a predetermined polarity and amplitude; and

(e) circuit means connecting the second input of each gate means to one of said phase sensing outputs.

3,418,551
ASSEMBLY OF A DRY-SHAVING APPARATUS WITH BUILT-IN POWER SUPPLY

Johan Konijnenberg and Bernardus Martinus Sparado, Drachten, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 29, 1966, Ser. No. 561,634
Claims priority, application Netherlands, July 17, 1965, 6509286
3 Claims. (Cl. 320—2)



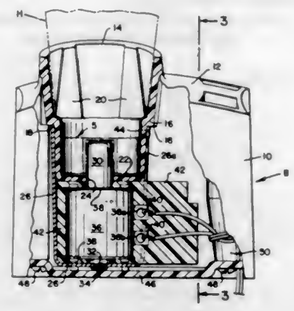
A dry shaver including an electric motor and a built-in power supply using rechargeable batteries has a unitary frame assembly on which are mounted the motor, batteries, printed circuit and associated components. A housing having an outer surface to be gripped by a user, has an elongated interior chamber into which the frame assembly and components thereon are inserted and secured. Power supply components on the frame assembly are readily accessible for testing when outside the housing.

3,418,552
SEPARABLE TRANSFORMER BATTERY CHARGER

Robert G. Holmes, Westboro, Mass., assignor to General Electric Company, a corporation of New York

Filed June 8, 1965, Ser. No. 462,175
6 Claims. (Cl. 320—2)

1. A battery charger comprising: a substantially hollow base including side walls and a top wall, said top wall defining an opening therein; a thin-walled cup of nonmagnetic material extending downwardly into said base from said opening, forming a well in said top wall, the bottom of said cup defining a substantially central opening therethrough; a cup-shaped receptacle of magnetic material mounted within said base with its open end encircling said cup, the side wall of said receptacle defining a slot therethrough, and the bottom wall of said receptacle being spaced from the bottom of said cup; a stud of magnetic material having a first end secured to the bottom

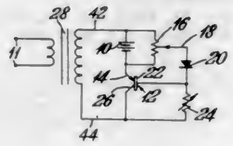


wall of said receptacle and a second end disposed within said cup, said stud extending through said central opening; an encapsulated transformer primary winding encircling said stud and removably positioned within said receptacle between the bottom wall of said receptacle and the bottom of said cup; and conductor means extending through said slot and connected to said primary winding to supply electrical power thereto, and a device including a battery to be recharged and having a transformer secondary coil removably positioned within said cup.

3,418,553
VOLTAGE CONTROLLED BATTERY CHARGER

Norman M. Potter, Hendersonville, N.C., assignor to Union Carbide Corporation, a corporation of New York

Filed June 18, 1965, Ser. No. 464,944
3 Claims. (Cl. 320—24)

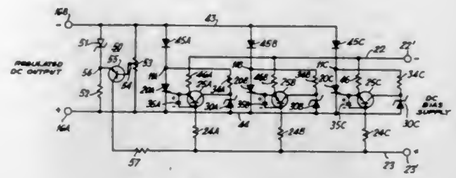


A voltage controlled battery charger comprising a transistor for controlling the charging current to the battery a resistance voltage divider connected across the battery and having a tap so as to provide a sample voltage proportional to the voltage of the battery as it is being charged, and a semi-conductor diode connected between the voltage divider tap and the base of the transistor, the diode having a minimum operating level such that when the sample voltage across the resistance voltage divider reaches a value proportional to a predetermined battery voltage below the fully charged voltage of the battery, the diode is forward biased to conduct current to the base of the transistor proportionally to the increase in battery voltage as the battery is being charged. As the battery approaches the fully charged condition, the charging current supplied through the transistor to the battery is gradually decreased or tapered towards zero.

3,418,554
TRANSISTORIZED GATING CIRCUIT FOR HIGH VOLTAGE CONTROLLED RECTIFIERS

Raymond H. Legatti, Moultrie, Ga., assignor to Electromagnetic Industries, Inc., Sayville, N.Y.

Filed Oct. 23, 1965, Ser. No. 503,174
13 Claims. (Cl. 321—5)

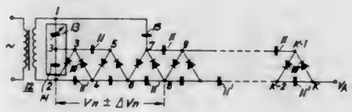


A transistorized gating circuit for a high voltage SCR includes a low voltage transistor having its emitter-collector circuit connected between the gate and the anode of the SCR. The transistor, when not conducting, is thus subjected to the full potential across the SCR, and this potential is greatly in excess of the maximum potential which the transistor can withstand. A Zener diode is connected between the anode and the cathode of the SCR and has a break down potential substantially less than the maximum potential which the transistor can withstand. The Zener diode thus acts as a closed switch when the SCR is not conducting. A capacitor is connected across the input circuit of the transistor and controls the time, during each half cycle, at which the SCR becomes conductive. The SCR and the Zener diode are poled oppositely.

3,418,555
VOLTAGE MULTIPLYING RECTIFIER CIRCUIT

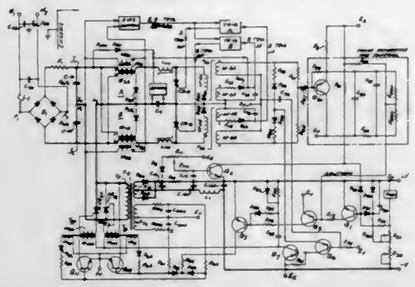
Günther Jöckel, Wedel, Holstein, Germany, assignor to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany

Filed May 18, 1967, Ser. No. 639,557
2 Claims. (Cl. 321—15)



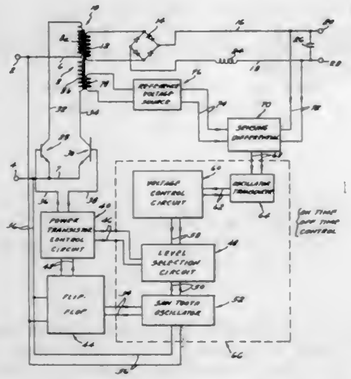
A plurality of rectifier stages are coupled together in series to form a combined D.C. output voltage which is equal to the sum of the voltages of the individual rectifier stages. Each of the rectifier stages contains an input capacitor, an output capacitor, and a rectifier circuit connected between the input and output capacitors for rectifying an A.C. voltage applied to the input capacitor and applying the rectified voltage to the output capacitor. The output capacitors are connected together in series, and a capacitance voltage divider is connected to the input of selected ones of the rectifier stages for varying the A.C. voltage applied thereto. The input capacitors of the other rectifier stages are connected in parallel with the capacitance voltage divider so that their A.C. input voltage is not affected by variations of the capacitance voltage divider.

3,418,556
ELECTRONIC POWER SUPPLIES WITH RMS CURRENT LIMITING CIRCUIT
Sol Greenberg, Roslyn, and George Gautherin, Woodside, N.Y., assignors to Lambda Electronics Corporation, Huntington, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 503,119, Oct. 23, 1965. This application May 2, 1966, Ser. No. 547,054
15 Claims. (Cl. 321—16)



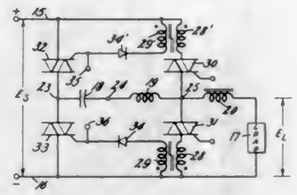
Switching type electronic power supplies are disclosed which utilize controlled switches such as controlled rectifiers. The switch circuits are arranged to prevent the build-up of unused power and to limit the RMS current.

3,418,557
VOLTAGE CONTROL SYSTEM INVOLVING TIMED ENERGIZATION OF A PAIR OF POWER HANDLING TRANSISTORS
Johannes M. Schaefer, Wilton, Conn., assignor to Technipower Incorporated, Norwalk, Conn., a corporation of Connecticut
Filed Mar. 2, 1966, Ser. No. 531,286
8 Claims. (Cl. 321—18)



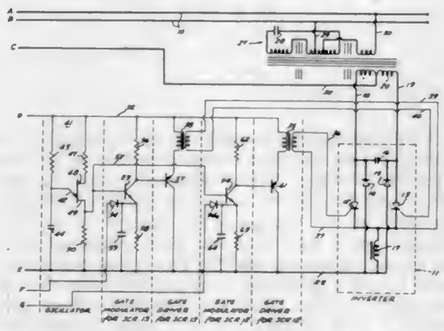
A voltage control circuit in which a sawtooth voltage is generated at a predetermined frequency that voltage acting on a flip-flop circuit to render one or the other of a pair of power handling transistors potentially conductive, said sawtooth voltage being compared with a signal derived from an output parameter so as to produce a switching signal at a point in each cycle of the sawtooth voltage determined by that output parameter, the switching signal being ineffective on that one of the power handling transistors which is not potentially conductive and being effective on that one of the power handling transistors which is potentially conductive so as to cause that power handling transistor to become actually conductive, that power handling transistor remaining conductive only for so long as the flip-flop circuit continues to render it potentially conductive.

3,418,558
SINGLE AND BIDIRECTIONAL POWER FLOW SOLID STATE ELECTRIC POWER CIRCUITS AND COMMUTATION CIRCUIT THEREFOR
Raymond E. Morgan and William McMurray, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 3, 1964, Ser. No. 386,859
26 Claims. (Cl. 321—43)



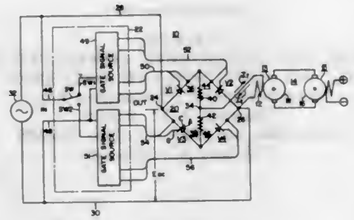
A family of improved power circuits using turn-on, nongate turn-off controlled conducting devices. The load current carrying part of the circuit includes a pair of controlled conducting devices connected in series circuit relationship across a pair of power supply terminals which are adapted to be connected across a source of relatively constant electric potential. A commutation circuit for turning off the load current carrying devices comprises an inductor, capacitor, and turn-on, nongate turn-off controlled conducting device connected in series circuit relationship across at least one of the load current carrying devices. Upon rendering the load current carrying devices conductive during selected time intervals, a desired value electric current is supplied to a load circuit connected across one of this pair of devices.

3,418,559
APPARATUS AND METHOD FOR GATING THE SCR'S IN AN INVERTER, AND STANDBY POWER-SUPPLY AND BATTERY-CHARGING SYSTEM INCORPORATING THE SAME
Paul E. Rolfes, Costa Mesa, Calif., assignor, by mesne assignments, to Lorain Products Corporation, Lorain, Ohio, a corporation of Ohio
Filed Mar. 11, 1964, Ser. No. 351,045
13 Claims. (Cl. 321—45)



This disclosure relates to a gate-driver circuit (and method) for the gates of an SCR inverter wherein a reactive current is flowing. The circuit effects triggering of each SCR once during each half-cycle of inverter operation, but prevents triggering of an SCR a second time during any half-cycle of inverter operation. The inverter and gate-driver circuits are incorporated in a standby power-supply system for an A.C. power line, such system having means to shift the phase of the inverter voltage wave relative to the line voltage wave in order to charge the battery from the line without disconnecting the inverter therefrom.

3,418,560
SYSTEM FOR SUPPLYING REVERSIBLE ELECTRIC POWER TO REACTIVE LOADS
Joseph G. Petersen, Buffalo, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1966, Ser. No. 572,017
18 Claims. (Cl. 321—47)



An A.C. energized reversible power supply for a reactive D.C. load. The power supply requires only a relatively small number of controlled switching elements. It has for each direction of current flow a controlled switch in series with the A.C. supply and the load, and a controlled switch across the load to discharge inductive power stored in the load. The two switches for a given power direction are sequentially fired during successive half cycles of A.C. at selected instants to provide average D.C. volts across the load to drive power into the load.

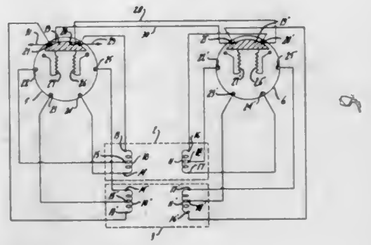
3,418,561
SOLID-STATE FILTER CIRCUIT
Nathan W. Feldman, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 6, 1967, Ser. No. 607,863
4 Claims. (Cl. 323—22)



This invention relates to alternating current, choke circuits and particularly to noninductive, alternating current, choke circuits. More particularly this invention relates to a circuit that presents a high resistance to alternating current and a low resistance to direct current to use as an electrical closure for telephone circuitry.

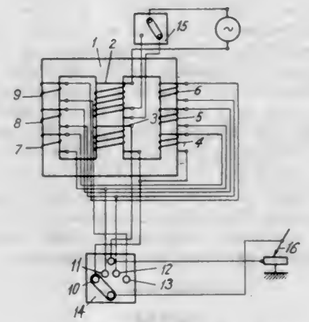
This invention is achieved by connecting a transistor across the terminals of a two terminal network in such a manner that the transistor appears as a common emitter circuit to the D-C potential across the two terminal network and as a common base connection to the A-C potentials across the two terminal network. Resistive loads are provided between the collector electrode and one terminal; between the base electrode and the one terminal; and between the emitter electrode and the other terminal of the two terminal network. A capacitor and a diode in series are connected between the base electrode and the other terminal of the two terminal network.

3,418,562
TAP CHANGING OF PARALLELED TRANSFORMER WINDINGS
William N. Bovenizer, Zanesville, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,643
7 Claims. (Cl. 323—43.5)



The present invention relates to an autotransformer having a pair of paralleled matched windings. A separate tap switch is connected in series with each winding. The circuit forces an essentially equal division of the current through the paralleled switches such that the combined capacity is equal to the sum total of the individual capacities of the two switches.

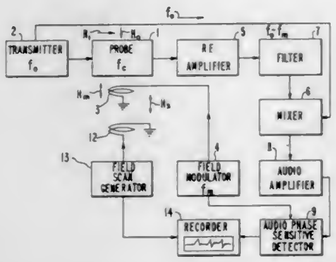
3,418,563
SINGLE-PHASE TRANSFORMER FOR ELECTRIC ARC WELDING
Stefan Grosu, cal. Bucuresti, bloc 1, Craiova, Rumania
Filed Mar. 9, 1966, Ser. No. 533,032
4 Claims. (Cl. 323—48)



A single-phase transformer of the shell type especially adapted for electric arc welding which is simple in construction and economical to operate. The transformer comprises a rectangular laminated core, constructed of paramagnetic material, which has three parallel leg portions. A primary winding and a secondary winding are arranged on the central leg of the magnetic core. At least one pair of opposite windings for adjusting the output current is respectively arranged on opposite outer legs and the windings of this pair are connected in series to each other and to the secondary winding on the central

leg. A switch having appropriate contacts is provided for selectively connecting the secondary winding and preselected pairs of adjusting windings to the outlet circuit of the transformer.

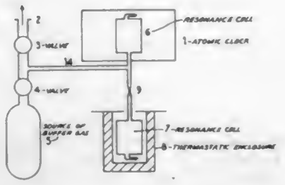
3,418,564
FIELD MODULATED GYROMAGNETIC RESONANCE SPECTROMETER DETECTING ONLY THE FM CARRIER RESONANCE COMPONENT
Forrest A. Nelson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Apr. 11, 1966, Ser. No. 541,564
10 Claims. (Cl. 324—.5)



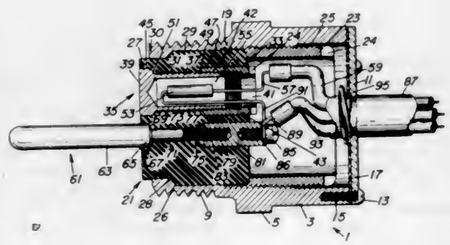
A gyromagnetic resonance spectrometer is disclosed. The spectrometer includes a probe structure for immersing a gyromagnetic resonance sample to be analyzed into an alternating magnetic AC field and a direct DC magnetic field, which latter field is directed at a substantial angle to the direction of the alternating magnetic field. A modulator is provided for modulating either the frequency of the AC magnetic field or the intensity of the DC magnetic field at a certain modulation frequency corresponding to the difference frequency between the gyromagnetic resonance frequency and the frequency of the AC magnetic field to excite gyromagnetic resonance of the sample under analysis. The excited gyromagnetic resonance is a frequency modulated resonance spectrum which contains a carrier frequency component and FM sideband components having Bessel function amplitudes. The resonance information is contained in the carrier component and is duplicated in the sidebands. The FM resonance signal is picked up in a receiver. The receiver contains any one of a number of various different electronic circuits for detecting the carrier frequency component and eliminating therefrom all FM sideband components as well as the noise bandwidth associated therewith to produce an output signal having enhanced signal-to-noise ratio. The various electronic circuits for eliminating the sideband components include filters, stages of phase sensitive detection, and combinations of both.

3,418,565
OPTICAL RESONANCE CELLS
Georges Broussaud and Leon Malnar, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 12, 1966, Ser. No. 564,572
Claims priority, application France, July 22, 1965, 25,643
6 Claims. (Cl. 324—.5)

1. A system for controlling the filling pressure of a first optical resonance cell comprising inside a glass vessel an alkali vapour and a buffer gas, said system comprising: means for feeding said buffer gas to said first cell; a second optical resonance cell containing an alkali vapor and a buffer gas; pressure transmitting means interconnecting said cells for equalizing the pressure in said cells; means for producing resonance in said second cell and for measuring the resonance frequency of said second cell to thereby obtain a measure of the equalized buffer gas pressures in said interconnected cells; and thermostatic means for maintaining said first mentioned cell at its working temperature.



3,418,566
PROBE FOR MEASURING CONDUCTIVITY OF AN ELECTROLYTE SOLUTION
Maxwell Ingram, 15 Hamilton Ave., Dumont, N.J. 07628
Filed Mar. 10, 1966, Ser. No. 533,195
7 Claims. (Cl. 324—30)

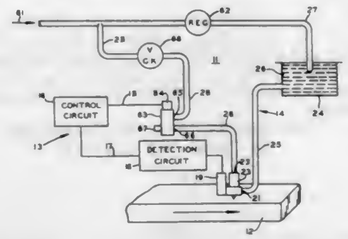


A probe for measuring conductivity of an electrolyte solution. A housing, an electric and thermal insulating core mounted therein. Electrodes mounted in and extending from the core, an automatic temperature compensator mounted entirely within the core in spaced relation to the electrodes and an automatic temperature compensator mounted therein, the elements of the probe being independently removable from the probe.

3,418,567
MAGNETIC FLOW DETECTOR SYSTEM WITH MARKING FLUID APPLICATOR OPERABLE BY VARIABLE PRESSURE OF A CONTROL FLUID
Joseph M. Mandula, Cleveland, Tyler W. Judd, Chardon, and George J. Skipper, Cleveland, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed June 14, 1963, Ser. No. 287,987
5 Claims. (Cl. 324—37)

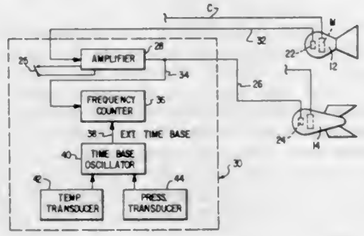
1. A flaw marking system for marking flaws detected in a longitudinally moving workpiece, the system comprising:
(a) a marking fluid applicator connected to receive a marking fluid and a regulating fluid and release said marking fluid onto said workpiece in response to variation in pressure of said regulating fluid provided to said applicator;
(b) a solenoid for controlling said pressure of said regulating fluid provided to said applicator;

(c) a transistor having base, emitter, and collector elements, the solenoid and a power source being connected in series with the emitter and collector elements;
(d) a resistance connected in series with said solenoid;
(e) initiating circuit means normally biasing the emitter-base circuit of said transistor to render said transistor in a normally-unsaturated state, said initiating circuit means being responsive to a control pulse to cause said transistor to saturate and effectively close its emitter-collector circuit;



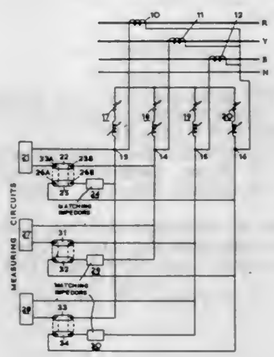
(f) a multivibrator circuit having an input terminal and having an output terminal, the latter terminal being connected to said initiating circuit means, said output terminal producing a control pulse of preselected duration for each defect signal received at said input terminal;
(g) a flaw detector mounted adjacent the path of workpiece travel; and
(h) said flaw detector having an output terminal connected to the input terminal of the multivibrator and producing a defect signal at its output terminal in response to a flaw in the workpiece.

3,418,568
GEOPHYSICAL GRADIOMETER INCLUDING MEANS FOR DETERMINING DISTANCE BETWEEN AIRBORNE BODIES
Daniel P. Hearn, Tulsa, Okla., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 532,915
7 Claims. (Cl. 324—43)



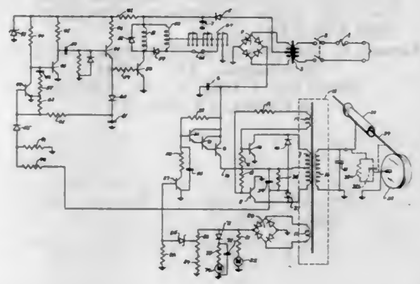
An apparatus for the measurement of a magnetic gradient in the earth's magnetic field for assisting in electromagnetic geophysical prospecting with aircraft. An airplane tows two aerodynamic bodies at different heights with respect to the earth's surface. Each towed body contains a magnetometer. The distance between the aerodynamic bodies is determined by means of a sonic transmitter and receiver so that distance variations between said bodies may be corrected to provide magnetic gradient measurements accurately representing the earth's magnetic field.

3,418,569
PROTECTIVE RELAYS FOR POLYPHASE ELECTRICAL SYSTEMS
Eric Paddison, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed July 29, 1965, Ser. No. 475,702
Claims priority, application Great Britain, Aug. 5, 1964, 31,872/64
3 Claims. (Cl. 324—52)



This invention relates to a protective relay for a polyphase electrical system, in particular a distance relay, in which the usual measuring circuits are, in this case, associated with matching impedors through change-over switches, the circuit relationship between these elements and a replica impedance of the system being such that by actuation of the change-over switches the measuring circuits may measure either line (phase-to-phase) values or phase (phase-to-neutral) values of current or voltage, e.g., for detecting phase faults or earth faults, respectively, without affecting the relay calibration, whereas hitherto the detection of these two different classes of faults has either necessitated recalibration of the relay or has involved a sacrifice in accuracy.

3,418,570
ELECTRICAL DEVICE FOR TESTING FOR AND COUNTING FLAWS IN THE INSULATION OF AN ELECTRICAL CONDUCTOR PASSING THROUGH AN ELECTRODE
Henry H. Clinton, Ridgewood, Clinton, Conn. 06413
Filed Aug. 26, 1966, Ser. No. 575,315
14 Claims. (Cl. 324—54)



A device for testing for and counting flaws in the insulation of an electrical conductor passed in a continuous fashion through an electrode includes a high frequency

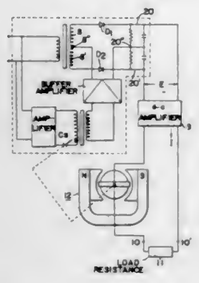
oscillator coupled with the electrode through a step-up transformer for producing a high voltage applied across the insulation. A regulating circuit varies the current supplied to the oscillator in accordance with the load impedance to maintain the test voltage at a relatively constant value when no flaws appear at the electrode. A fault counting or detecting circuit is also controlled by a load impedance related signal so as to register a fault when such signal falls from a normal value to a low value indicative of a fault, and a time delay in such circuit prevents the registration of another fault for a given period thereafter.

3,418,571

AUTOMATIC SELF-BALANCING REMOTE MEASURING SYSTEM OF AN IMPEDANCE RESPONSIVE PROCESS VARIABLE

Kenichi Isoda, Kitatama-gun, Tokyo-to, and Naoya Ono, Kodaira-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company

Continuation of application Ser. No. 344,459, Feb. 12, 1964. This application May 11, 1967, Ser. No. 637,856
Claims priority, application Japan, Feb. 13, 1963, 38/5,938
3 Claims. (Cl. 324—61)



A self-balancing remote measuring system of a process variable wherein a capacitor as a tuning element of a frequency discriminating circuit is mechanically coupled with a self-balancing means driven by an output signal of the frequency discriminating circuit so that the capacitance of the capacitor is caused to vary linearly in the direction such as to cause the output signal to decrease in response to the output signal.

3,418,572

APPARATUS INCLUDING VARIABLE FREQUENCY INDICATING MEANS FOR LOCATING AND TRACING CONDUCTIVE STRUCTURES

Thomas G. Humphreys, Jr., 2245 Pine Crest Drive, Birmingham, Ala. 35216

Filed Feb. 11, 1966, Ser. No. 526,735
8 Claims. (Cl. 324—67)



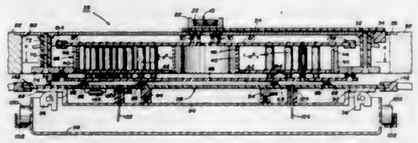
Apparatus for locating concealed conductive structures utilizing a pure unmodulated radio signal radiated by the structure to be located to activate and control a signaling device which produces a sound tone signal having a frequency proportional to the strength of the radio signal received by the signaling device. When the detector unit is close to the structure to be located the tone produced is pitched lower than when the detector is further away from the structure, the tone being of substantially the same intensity at all times.

3,418,573

UNIVERSAL ELECTRONIC TEST SYSTEM FOR AUTOMATICALLY MAKING STATIC AND DYNAMIC TESTS ON AN ELECTRONIC DEVICE

John H. Alford, Harold A. Armand, William E. Bray, Edward E. Hamilton, Leslie L. Jasper, Robert L. Renker and Richard M. Ryon, Jr., Houston, and Samuel D. Moore, Bellaire, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 25, 1965, Ser. No. 482,449
28 Claims. (Cl. 324—73)



A system for automatically making substantially any static or dynamic test on a multilead integrated circuit. The system includes a test station having a plurality of D.C. bias supplies, a plurality of pulse generators for producing repetitive pulse waveforms, a socket for receiving the integrated circuit, switch means for selectively connecting any D.C. bias supply and/or any pulse generator to any lead or leads of the integrated circuit, and sensing means for selectively connecting any lead of the integrated circuit to either a static measuring unit or a dynamic measuring unit. The dynamic measuring unit makes either time or amplitude measurements on the signal at any lead of the integrated circuit and produces a pulse train and a count data signal which are collectively representative of the magnitude of the time or amplitude measurement. The static measuring unit makes either static voltage or current measurements on the signal at any selected lead of the integrated circuit and produces a pulse train signal the frequency of which is representative of the magnitude of the measurement. A data readout system counts the pulses either from the dynamic measuring unit during the count data signal, or the pulses from the static measuring unit during a predetermined reference time period to indicate the results of the measurement. A programmable control means automatically operates the total system to make substantially any selected amplitude, time, voltage or current measurement on the signal occurring at or between substantially any lead or leads of the integrated circuit.

3,418,574

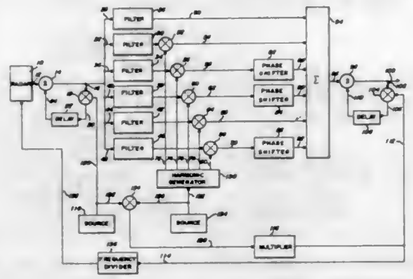
SPECTRUM ANALYZER USING LIMITED OPERATING FREQUENCY BANDWIDTH

Robert L. Wyckoff, Marlboro, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Jan. 28, 1966, Ser. No. 523,628
5 Claims. (Cl. 324—77)

A spectrum analyzer using a limited operating frequency bandwidth by virtue of increasing the processing time. For any given successive input signals narrow frequency samples are taken. A first coherent memory filter

responsive to the successive applied input signals recirculates the signals and produces a plurality of frequency shifted signals corresponding to the number of recirculations. The shifted signals are distributed upon corresponding transmission paths in which they are reshifted to their



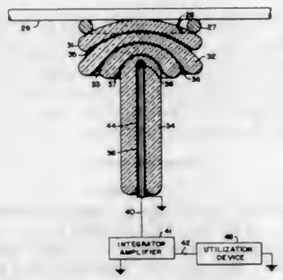
original frequency and further made to establish a predetermined phase relation on the different paths. The reshifted signals are then summed and applied to a second coherent memory filter for producing an output spectrum analysis.

3,418,575

HIGH VOLTAGE CURRENT MEASURING DEVICE EMPLOYING MEANS RESPONSIVE TO THE ELECTROMAGNETIC FIELD GENERATED BY THE CURRENT

Harvey E. Spindle, Wilkins Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1963, Ser. No. 261,788
17 Claims. (Cl. 324—117)



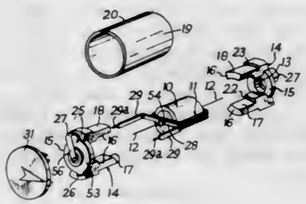
1. High voltage current measuring apparatus comprising, in combination, an insulator structure adapted to be secured to a high voltage line, and a pickup device mounted in the insulator structure in position for having a signal induced therein by magnetic lines of force caused by current flowing in the line, the insulator structure being composed of a plurality of discrete layers of insulating material and a plurality of semiconductive joints securing the layers of insulating material together, the layers of insulating material being smooth on both sides thereof, said semiconductive joints serving as electrostatic shields while permitting the passage of the magnetic lines of force therethrough, said semiconductive joints providing a potential field which has a substantially uniform gradient to provide efficient use of the insulation, said semiconductive joints substantially evenly distributing the potential stress around the periphery of the joints and over the outsides of the insulator layers thereby to provide maximum flashover.

3,418,576

METER ASSEMBLY WITH EXPANDABLE CLAMPING RING

Derek John Dean, Pottersbar, Middlesex, England, assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed July 1, 1964, Ser. No. 379,534
Claims priority, application Great Britain, July 11, 1963, 27,574/63
13 Claims. (Cl. 324—151)



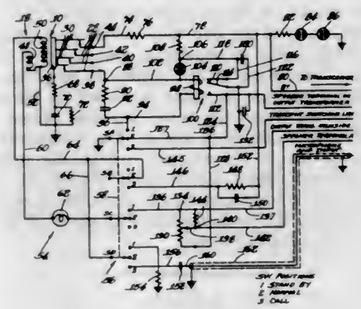
A semaphore type meter assembly with a magnetized core and a moving coil extending around the core. Separate support members mount the opposite ends of the coil for pivotal movement of the coil. The support members each have limbs that extend axially of and engage around the core. An expandable magnetic material ring radially presses the limbs against the core to secure the assembly together, the ring forming a portion of the magnetic circuit of the meter. Indicator supporting arms extend beyond and support the indicator at a location beyond the end of one of the supports.

3,418,577

ENCODER-DECODER DEVICE FOR SELECTIVE CALLING

Alfred N. Fischer, North Tonawanda, N.Y., assignor, by mesne assignments, to Perry Laboratories, Inc., a corporation of New York

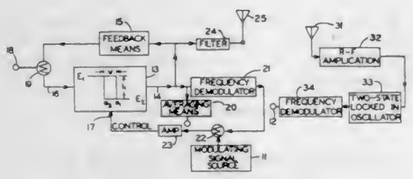
Filed Nov. 7, 1963, Ser. No. 322,197
4 Claims. (Cl. 325—18)



1. An encoder-decoder unit for use in combination with two-way radio apparatus, said unit comprising tuned vibratory reed means having at least two reeds of different natural frequencies of vibration and a coil simultaneously in inductive relation to both of said reeds, said reeds being electrically connected together, at least two fixed contacts respectively engageable by said reeds upon vibration thereof, a source of electric potential connected to one of said fixed contacts and not to the other, relay means connected to the other of said fixed contacts, said reeds upon vibration being electrically in series between said potential source and said relay means, connection

means for connection to such two-way radio apparatus, switch means, means selectively interconnecting said switch means and said connection means with said switch means in one position for rendering said radio apparatus operative in its normal fashion, means selectively interconnecting said switch means, said coil and said connection means with said switch means in another position to transmit a coded signal by said radio apparatus upon substantially simultaneous vibration of both of said reeds, means for substantially simultaneously vibrating both of said reeds to induce a signal code in said coil, and means interconnecting said connection means, said switch means, said coil and both of said reeds in a further position of said switch means with the loudspeaker of said radio apparatus rendered inoperative to effect substantially simultaneous vibration of both of said reeds in response to receipt by said radio apparatus of a coded signal, and means including said relay means effective upon such vibration to render the loudspeaker of said radio apparatus operative.

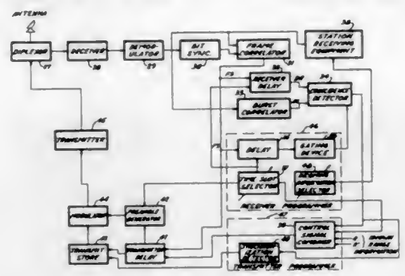
3,418,578
FREQUENCY MODULATION ELECTRICAL COMMUNICATION SYSTEM
Amar G. Bose, Chestnut Hill, Mass., assignor to Bose Corporation, a corporation of Massachusetts
Filed Mar. 11, 1966, Ser. No. 533,693
12 Claims. (Cl. 325—45)



A frequency modulation system includes a transmitter and a receiver incorporating two-state modulation. In the transmitter the two-state device is characterized by hysteresis and a feedback path that carries a signal of frequency corresponding to the switching frequency of the two-state device. A signal representative of the instantaneous frequency of the two-state device is combined with a modulating signal to provide a control signal that controls one of the areas of the hysteresis loop, the gain in the feedback path or the delay furnished by the feedback path so that the frequency of the two-state device is determined by the modulating signal. The frequency of the two-state device in the receiver tracks the modulation on the received signal. Means are provided for adjusting the free-running frequency of the two-state device so that it tracks closely the instantaneous frequency of the modulation on the received signal.

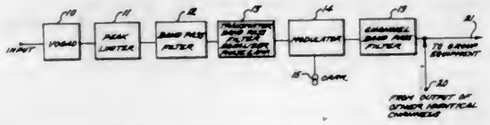
3,418,579
SATELLITE COMMUNICATION SYNCHRONIZING SYSTEM
Richard M. Hultberg, Falls Church, Va., assignor, by mesne assignments, to Communications and Systems, Incorporated, a corporation of Nevada
Filed Sept. 8, 1964, Ser. No. 394,776
20 Claims. (Cl. 325—52)

A satellite communication synchronizing system wherein a plurality of independent stations utilizes a common satellite repeater as in time division multiplex mode of operation. Synchronization is accomplished by selecting one station as a master station to transmit a master synchronization signal. The other stations generate station synchronization signals which are adjusted in time relative to received master synchronization signals. A closed loop system via the satellite is utilized for fine adjustment of each station's synchronizing signal to cause the station synchronizing burst to be transmitted near or about the beginning of the assigned or selected time slot



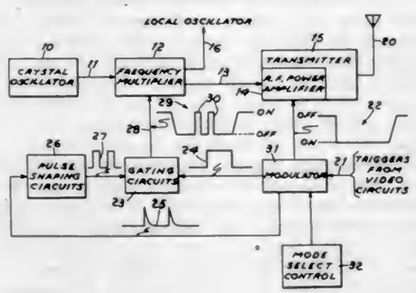
so that the complete station transmission may be properly contained within its slot, a guard interval between slate permitting minor timing variations. Consult the specification for other details and features of the invention.

3,418,580
VOICE SIGNAL PROCESSING AND PHASE EQUALIZING FOR SSB SYSTEM
Fred A. Brooks, Lexington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 4, 1964, Ser. No. 409,035
4 Claims. (Cl. 325—137)



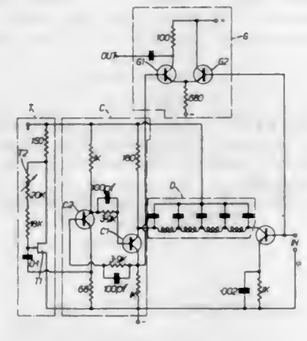
A system for voice signal processing to obtain improved carrier transmission performance by obtaining a reduced peak to RMS ratio from a voice signal and maintaining that ratio. The signal with a reduced peak ratio permits operating the signal at increased volume to obtain an improved signal to noise performance.

3,418,581
SHARP RISE-TIME HIGH-POWER PULSE TRANSMITTER
John B. Kennedy, Montville, and Mark Mandel, West Orange, N.J., assignors to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,044
6 Claims. (Cl. 325—141)



RF power for the amplifier of the transmitter is derived from a frequency multiplier fed by a crystal oscillator. In response to triggering signals from video circuits, a modulator turns on the RF amplifier for a given period and simultaneously applies one signal via a gating circuit to said frequency multiplier to turn it off while, during the same period, also applying pulses via a pulse shaping circuit and the gating circuit to the frequency multiplier to produce the transmitted short, sharp rise-time RF pulses.

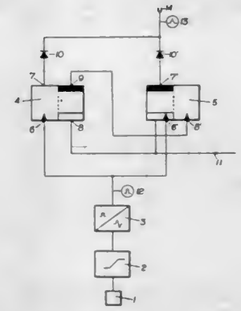
3,418,582
PULSE CIRCUIT ARRANGEMENTS FOR DERIVING A LOWER NUMBER OF PULSES PER UNIT TIME FROM A GREATER NUMBER OF PULSES PER UNIT TIME
Eric Davies, Danbury, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Feb. 2, 1966, Ser. No. 524,549
Claims priority, application Great Britain, Feb. 18, 1965, 7,085/65
7 Claims. (Cl. 328—39)



A pulse circuit arrangement for providing, from input pulses occurring at a given number of pulses per unit of time, a desired lower number of unit pulses in said unit of time and including a source of signals occurring at said lower number per unit of time and circuit means for producing an output pulse in response only to an input pulse next following a signal occurring at said lower number per unit of time.

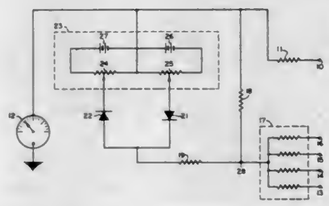
3,418,583
DEVICE FOR THE TWICE-REPEATED TRIGGERING OF CATHODE-RAY OSCILLOSCOPES
Reimar Germann, Graz, Austria, assignor to Hans List, Graz, Austria
Filed Oct. 22, 1965, Ser. No. 501,789
Claims priority, application Austria, Oct. 27, 1964, A 9,107/64
1 Claim. (Cl. 328—48)

1. A device for the twice-repeated triggering of a cathode-ray oscilloscope by means of successive signals of an impulse generator, particularly for the indication of internal combustion engines and compressors with an impulse sequence at intervals of 180° crank angle each for two-stroke engines and 360° crank angle for four-stroke engines, for the joint recording of the compression and of the charge variance diagrams in an oscillogram, comprising an electromagnetic pick-up producing the said signals, a limiting stage following the said impulse pick-up, a pulse shaper stage following the said limiting stage and transforming the said signals into square wave impulses, two bistable switch stages, their inputs being connected to the output of the said pulse shaper stage, two diodes, each being connected with the output of one of the bistable stages, the outputs of both diodes being connected with the trigger input of the said cathode-ray oscilloscope, an impulse line for the initiation of a common reset pulse for the said bistable switch stage, the said impulse line being connected to the inverse input of the first bistable



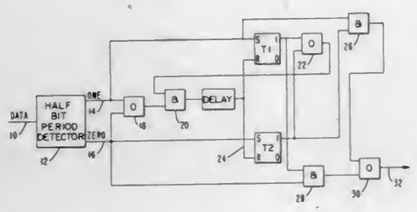
switch stage and to the input of the second bistable switch stage, a connecting line connecting the inverse output of the first bistable stage with the inverse input of the second bistable stage.

3,418,584
CONTROL CIRCUIT FOR AN INDICATING DEVICE
Henry P. Birmingham, Washington, D.C.
(1311 Gatewood Drive, Alexandria, Va. 22307)
Original application June 6, 1957, Ser. No. 664,144, now Patent No. 3,125,976, dated Mar. 24, 1964. Divided and this application Aug. 31, 1959, Ser. No. 837.293
4 Claims. (Cl. 328—143)



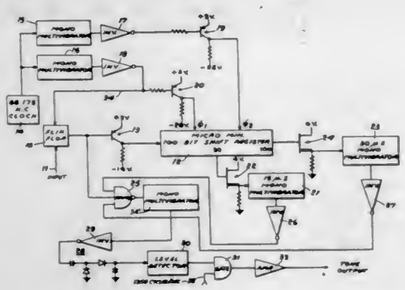
4. In a signal control circuit for use in navigating a mobile craft, an indicator device having a first and second terminal, means for connecting said terminal to ground, a voltage limiter including a first and second direct current potential source, a first and second potentiometer element, and a third terminal connected in series in such a manner that the first and second direct current potential sources are in the same polarity and said third terminal is located between said first and second potentiometers, a fourth terminal, first and second unilateral impedance devices, means for connecting said first unilateral impedance device between said first potentiometer and said fourth terminal and said second unilateral impedance device between said second potentiometer and said fourth terminal so that said first and second unilateral impedance devices are in inverse polarity, means for connecting said third terminal to the first terminal of said indicating device, a source of signals representative of navigation functions of the craft, means for connecting the output of said source of signals to said fourth terminal and means for applying other signals of said source of signals directly to the first terminal of said indicating device.

3,418,585
CIRCUIT FOR DETECTING THE PRESENCE OF A SPECIAL CHARACTER IN PHASE-ENCODED BINARY DATA
William T. Harnett, Pleasant Valley, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 517,020
4 Claims. (Cl. 328—134)



A detection circuit for distinguishing a special character from valid data in a phase-encoded data recording system. The special character is recorded by omitting a regularly occurring data shaft at mid-bit period. The detection circuit detects the absence of a data signal shift at mid-bit period.

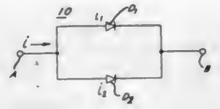
3,418,586
DIGITAL PULSE TRAIN DETECTION SYSTEM
Ralph L. Asher, Hackensack, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,774
10 Claims. (Cl. 329—104)



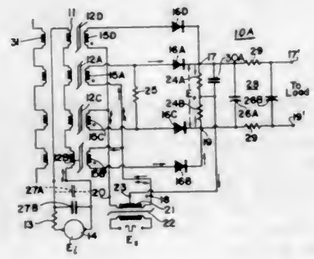
Pulses having a predetermined spacing in a pulse train which also includes random pulses are detected in a coincidence detecting arrangement. The train is applied to a shift register via a flip-flop and circulated. The shift register and the flip-flop are driven by an oscillator clock. Two output taps on the shift register are separately coupled to a NAND circuit, which has an input from the flip-flop to determine coincidence. The NAND circuit output is coupled to a gate, which receives a 1350 cycle per second signal, to provide a tone indicating receipt of the desired signal.

3,418,587
HIGH SENSITIVITY AND POWER SIGNAL DETECTING DEVICE
Leon Riebman, Huntingdon Valley, and Frank E. McDonnell, Lansdale, Pa., assignors to American Electronic Laboratories, Inc., Colmar, Pa., a corporation of Pennsylvania
Filed June 4, 1965, Ser. No. 461,441
17 Claims. (Cl. 329—205)

The device comprises a plurality of semiconductor diodes connected in parallel, a first diode having a signal sensitivity greater than that of a second diode, while the second diode has a power handling capacity greater than that of the first diode. The first diode has a spreading resistance greater than that of the second diode while the second diode has a contact potential greater than the contact potential of said first diode, said combination of diodes providing a nonlinear voltage current characteristic, whereby the first diode handles a greater portion of the signal power than the second diode when the device receives signals at a first power level, while the second diode handles a greater portion of signal power when said device receives signals at a second power level greater than said first power level and without exceeding the power handling capability of the first diode of the device.



3,418,588
LINEARIZED MAGNETIC AMPLIFIERS
Ernst W. Voorhoeve, Maple Glen, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 3, 1965, Ser. No. 452,485
4 Claims. (Cl. 330—8)

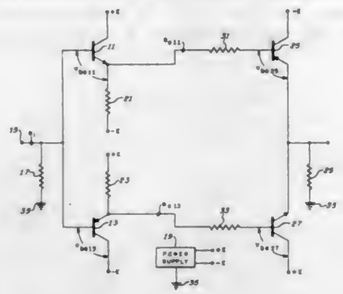


There are disclosed magnetic amplifiers of self-saturating, push-pull type whose core-resetting circuitry is similar to that of Cockrell Patent 3,271,690 with addition of means for compensating for non-linearities of the input/output characteristic at low input levels. The compensating means is capacitive-reactance means connected across one of the mixing resistors in the amplifier output circuit, or across two output windings whose pair of cores is alternatively reset by current through a reset resistor from a center-tapped AC source, or across another two output windings whose pair of cores is alternatively reset by current induced in a common signal-input winding of the amplifier upon setting of said first pair of cores.

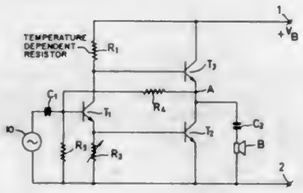
3,418,589
COMPLEMENTARY EMITTER FOLLOWER AMPLIFIER BIASED FOR CLASS A OPERATION
Seening Yee, Whitestone, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,384
4 Claims. (Cl. 330—13)

An amplifier includes input and output stages, each containing a pair of complementary transistors arranged in

emitter follower configurations. The input stage is biased to operate in the Class A mode and the base-to-emitter voltage of this stage is used as the emitter-to-base bias for the output stage.



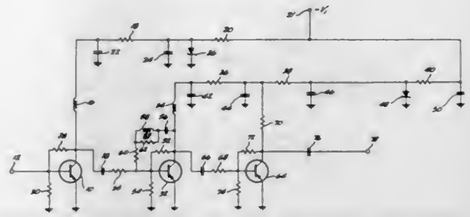
3,418,590
SINGLE ENDED PUSH-PULL CLASS B AMPLIFIER WITH FEEDBACK
Jacobus Johannes Rongen and Alphonsus Maria Peters, Nijmegen, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,760
Claims priority, application Netherlands, July 11, 1964, 6407942
7 Claims. (Cl. 330—14)



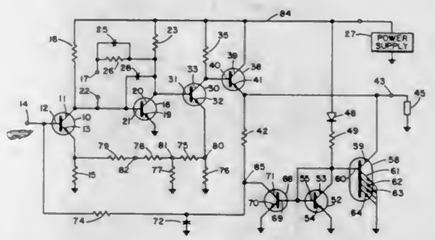
A single ended push-pull amplifier with a phase inverting stage, in which the voltage at the junction of the output transistors is maintained by means of a negative feedback resistor between the junction and the base of the inverter, and in which the quiescent current in the output stage is maintained constant by means of a positive temperature coefficient resistor in the collector circuit of the inverter.

3,418,591
LOW NOISE AMPLIFIER WITH MINIMUM CROSS MODULATION DISTORTION
Gaythor D. Fisher, Woodland Hills, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of California
Filed June 13, 1966, Ser. No. 557,302
4 Claims. (Cl. 330—21)

1. An amplifier circuit comprising: first, second, and third transistors each having an emitter electrode, a base electrode, and a collector electrode; the emitter electrodes of each of said transistors being coupled together; means for applying a signal to be amplified between the base and emitter electrodes of said first transistor; first circuit means intercoupling the collector electrode of said first transistor with the base electrode of said second transistor; second circuit means intercoupling the collector electrode of said second transistor with the base electrode of said third transistor; a first inductor having one terminal coupled to the collector electrode of said first transistor; a second inductor having one terminal coupled to the collector electrode of said second transistor; means for applying operating potentials to the other terminal of each of said first and second inductors, to the collector electrode of said third transistor, and to the emitter electrode of said first, second, and third transistors; a capacitor, a third inductor, and a first resistor coupled in series between the collector and base electrodes of said second transistor; a second resistor coupled in parallel with said third inductor; and means for obtaining an amplified output signal between the collector and emitter electrodes of said third transistor.



3,418,592
DIRECT COUPLED AMPLIFIER WITH TEMPERATURE COMPENSATING MEANS
James E. Solomon, Phoenix, and George R. Wilson, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 14, 1966, Ser. No. 520,577
3 Claims. (Cl. 330—23)

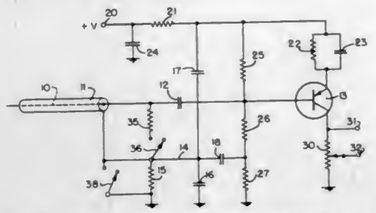


DC temperature compensation is provided in a direct coupled amplifier having a single power supply from a current source deriving current from the power supply supplying an offset voltage in a DC feedback circuit connecting the output circuit to the input circuit. The current source has a temperature-current characteristic compensating the temperature-current characteristics of the input circuit. Current from the source is also supplied through the output circuit means active element, such as a transistor.

3,418,593
AMPLIFIER CIRCUIT WITH SEMICONDUCTOR DEVICE
Paul J. Carlson, River Grove, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 25, 1966, Ser. No. 544,941
8 Claims. (Cl. 330—40)

1. An amplifier for amplifying signals appearing between first and second conductors of a transmission line and wherein the potential of both conductors varies substantially the same with respect to a reference potential, said amplifier including in combination, a transistor having base, emitter and collector electrodes, a load impedance connecting said collector electrode to said reference

potential, bias circuit means having a first portion connected to said emitter electrode and applying direct current thereto and a second voltage divider portion connected to said base electrode for applying a direct current bias potential thereto, first alternating current coupling means connecting the first conductor to said base electrode, and second alternating current coupling means in-



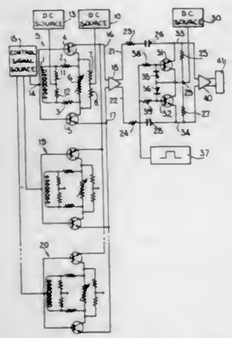
cluding first and second portions for coupling the second conductor to said first and second portions of said bias circuit means for applying the potential on said second conductor to said emitter and base electrodes of said transistor, so that the signal between the first and second conductors controls the conduction of said transistor and thereby controls the signal developed in said load impedance.

3,418,594

SWITCHING DEVICE FOR SELECTIVELY CONNECTING INPUT DEVICES TO A COMMON LOAD

Sidney William Payne, Cheshunt, England, assignor to International Computers and Tabulators Limited, London, England, a British company

Filed Dec. 15, 1966, Ser. No. 601,999
Claims priority, application Great Britain, Jan. 15, 1966, 2,002/66
7 Claims. (Cl. 330—147)



In a switching circuit using semiconductor switches for connecting input devices selectively to a common load through stages of an amplification circuit, a variable time constant circuit which is included between the stages has a given time constant whilst any input device is connected to the load and a shorter time constant during a switching operation of any of the switches, thereby limiting transient signals generated during the switching operation.

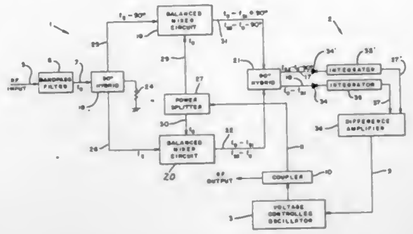
3,418,595

AUTOMATIC FREQUENCY CONTROL SYSTEM

Walter Loewenstern, Jr., Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 28, 1967, Ser. No. 656,724
3 Claims. (Cl. 331—9)

This automatic frequency control system comprises a voltage controlled oscillator that is responsive to a bias voltage, which is proportional to the difference in the power in an input pulse having frequencies greater than and less than the oscillator frequency, for causing the oscillator frequency to be equal to the centroid frequency of the pulse. The bias voltage is produced by the input pulse and the oscillator output in an image outphasing



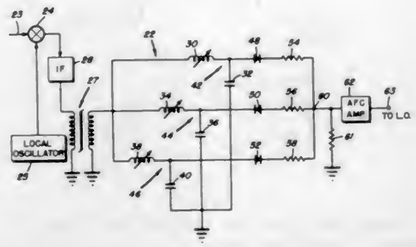
circuit to produce first and second output signals containing the energy in the input pulse at frequencies greater than and less than the oscillator frequency, respectively. These output signals are detected, integrated, and combined in a difference amplifier to produce the bias voltage.

3,418,596

AUTOMATIC FREQUENCY CONTROL SYSTEM

Joseph F. Gulick, Jr., Clarksville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 6, 1967, Ser. No. 644,464
9 Claims. (Cl. 331—33)



The present invention pertains to an AFC system comprising a mixer, a local oscillator, an intermediate frequency amplifier and a discriminator, said system having a stable automatic frequency control loop when the oscillator is tuned both below and above the frequency of an incoming signal.

The particularly disclosed discriminator includes three tuned LC circuits resonant below, at and above, respectively, the desired center frequency of the discriminator, wherein each of the three LC circuits is associated with one of three appropriately oriented diodes. The input to the discriminator is either a transformer whose primary winding receives a signal from the IF amplifier and whose secondary winding feeds said signal to the three LC circuits simultaneously; or three transformers having three secondary windings and a single primary winding common to each of said secondary windings, wherein the input signal to said primary winding is from the collector of a transistor whose base receives said signal from the IF amplifier. The output from the discriminator is used as a control signal in an AFC loop.

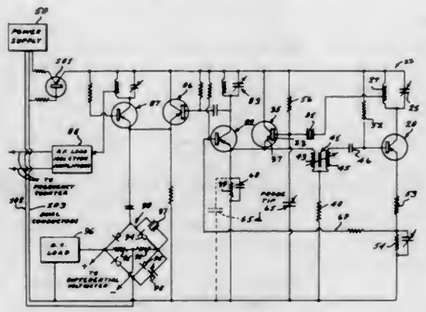
The present invention further pertains to a circuit which can be employed as a fast rise-time narrow-band filter and simultaneously as a discriminator in an AFC system. Such a circuit has two outputs, the first for extracting signals which are utilized in an AFC loop, and the second for extracting signals which are utilized in a circuit for indicating the presence of an incoming signal.

3,418,597

CAPACITIVE MEASURING PROBE AND CIRCUIT THEREFOR

Shelby R. Smith, 7105 S. Sherman, Littleton, Colo. 80120

Filed July 13, 1964, Ser. No. 382,061
15 Claims. (Cl. 331—65)



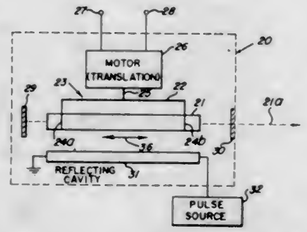
The present invention is an oscillator circuit having a regenerative feedback loop including in series a piezoelectric crystal, an emitter follower having an output resistor, an amplifier, and an inductance coupling means. Means in the form of a variable capacitance is connected across the input of the emitter follower to vary the frequency of the oscillator output.

3,418,598

STANDING WAVE SINGLE MODE LASER

Roy A. Paananen, Concord, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Jan. 24, 1964, Ser. No. 339,931
5 Claims. (Cl. 331—94.5)



A solid state laser wherein spatial vibrations in the inverted states are eliminated by longitudinally moving the laser element or by utilizing a pair of matched phase shifters one at each end of the laser element whereby the element "sees" a varying phase of the electromagnetic wave but the total phase shift in the optical cavity remains constant.

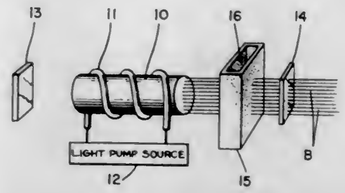
3,418,599

Q-SWITCHING DYE SOLUTION FOR LIGHT CONTROL OF GIANT PULSE LASERS

Bernard H. Soffer, Northridge, Calif., assignor to Union Carbide Corporation, a corporation of New York

Filed May 1, 1964, Ser. No. 364,169
2 Claims. (Cl. 331—94.5)

A Q-switching device in the form of a reversibly bleachable organic dye constituting a solution of kryptocyanine is provided in the optical cavity of a giant pulse laser system. This solution is automatically responsive to an initial stimulated emission of radiation from the laser to change from a substantially opaque condition to a substantially transparent condition to thereby release a high peak



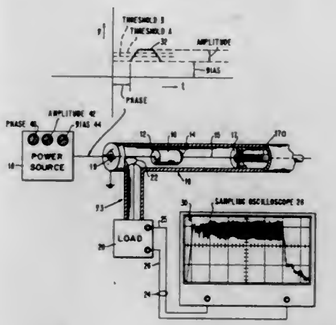
power pulse of radiation, and thereafter back to a substantially opaque condition upon cessation of such peak power pulse. Q-switching is thus accomplished automatically as opposed to the normal means as by a Kerr or Pockel cell.

3,418,600

ELECTRICAL SHOCK WAVE MICROWAVE OSCILLATOR AND CONTROL THEREOF

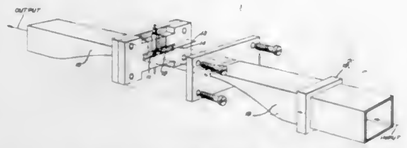
Sol Triebwasser, Peekskill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 17, 1965, Ser. No. 514,517
12 Claims. (Cl. 331—97)



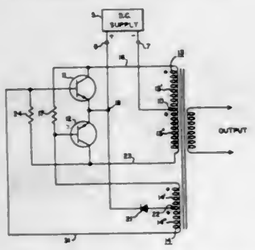
This invention provides a microwave oscillator having an electrical shock wave device coupled to a microwave resonant cavity. The oscillator is operated in a pulse-driven mode for which there is phase coherence of the current waves produced by the electrical shock wave device. There is coordination of the periods of both the input triggering pulse train and the output current waves so that the microwave oscillations in the cavity are energized at constant phase. This is accomplished by establishing the repetition rate f_p of the input pulse train and the frequency of the microwave oscillation f_m so that the ratio of the period T_p of the input pulse train to the period of the output microwave oscillation T_m is an integer. In the practice of this invention the electrical shock wave device is coupled to a high Q microwave resonant cavity to provide coherent continuous wave microwave oscillation output. Phase control of the continuous wave oscillation is provided in features of this invention by especially controlling the phase of the triggering pulse train, the triggering pulse amplitude, and the level of a bias voltage.

3,418,601
WAVEGUIDE PHASE-LOCKED OSCILLATORS
Paul L. Clouser, Stamford, Conn., and James E. Goell, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed July 27, 1967, Ser. No. 656,532
6 Claims. (Cl. 331—107)



This application concerns solid state microwave oscillators, employing negative resistance elements, that are free of oscillations below the cutoff frequency of the wavepath. In particular, the below-cutoff oscillation state, frequently encountered when negative resistance elements are placed in waveguide structures, is suppressed by placing a small shunt inductance near the negative resistance element, thus permitting the construction of a transmission-type phase-locked oscillator, and a more flexible single frequency reflection-type oscillator.

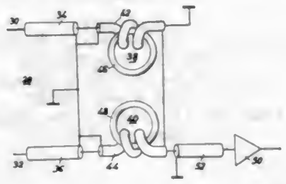
3,418,602
DIRECT-COUPLED REGENERATIVE FEEDBACK STARTING CIRCUITS FOR COMMON-EMITTER POWER OSCILLATORS
Charles A. Lauter, Jr., Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 25, 1967, Ser. No. 642,668
6 Claims. (Cl. 331—113)



A starting circuit for a transistor inverter using direct coupled feedback to start the oscillations and transformer feedback to maintain the oscillations once started. A unidirectional current device in the transformer feedback circuit prevents the waste of starting power in the circuit. The direct coupled feedback provides for reliable starting in a more efficient manner at low temperatures and at low voltages relative to the normal operating voltage of the oscillator.

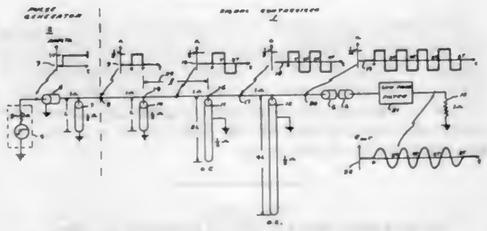
3,418,603
DIFFERENTIAL CIRCUIT, ESPECIALLY FOR READING MAGNETIC-LAYER STORAGE SYSTEMS
Bernard Alexandre, Grenoble, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Jan. 26, 1965, Ser. No. 428,079
Claims priority, application France, Jan. 30, 1964, 962,094
1 Claim. (Cl. 333—9)

Two pulse signals of equal and opposite value are combined with supression of background noise by transmitting each signal by a coaxial line to one of two distributed constant transformers. Each transformer is a coaxially line wound on a magnetic torus. The outer conductors of the coaxial lines of the transformers are connected in parallel and their inputs are connected to the



output of the inner conductor of the coaxial line of the first transformer. The voltage at the outputs of the inner conductors of the coaxial lines of the transformers is supplied to an amplifier.

3,418,604
HIGH FREQUENCY PHASE-SYNCHRONIZED SIGNAL SYNTHESIZER
Gerald F. Ross, Lexington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 30, 1965, Ser. No. 510,718
2 Claims. (Cl. 333—20)

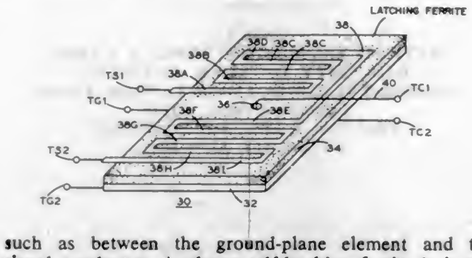


A full wave pulse of energy is generated in a transmission line, terminated in its characteristic impedance, from a half-wave pulse of energy propagating in the transmission line by connecting to the line a reflective stub element having one-half the characteristic impedance of the line and a length such that the transit time of the energy in the stub element is equal to the time width of the original half-cycle pulse. Additional successive doublings of the number of cycles of energy present on the transmission line is obtained by connecting to it in sequence reflective stub lines having one-half the impedance of the line and having lengths such that the transit times in the stubs are equal to the time width of the total number of cycles on the line at the respective point at which the stub is to be connected. At the doubling of the half-wave to a full wave and at each of the successive doubling of the number of waves, propagating the transmission line toward the load, the voltage magnitudes of the wave pulses on the line are necessarily reduced to one-half that of their former voltage values.

3,418,605
NONRECIPROCAL MICROSTRIP FERRITE PHASE SHIFTER HAVING REGIONS OF CIRCULAR POLARIZATION
Hugh A. Hair, Liverpool, Gerald T. Roome, Syracuse, Carl W. Gerst, North Syracuse, and Edgar E. Desjardins and Edward J. Domick, Syracuse, N.Y., assignors to Research Corporation, New York, N.Y., a corporation of New York
Filed June 30, 1966, Ser. No. 561,792
12 Claims. (Cl. 333—24.1)

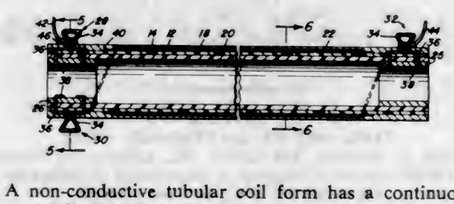
A nonreciprocal phase-shifting device comprises at least one planar ground-plane element and a signal conductor

which cooperate to form a guide-microwave-energy path. The signal conductor is so contoured, such as having a meandering path, to establish a circularly polarized radio frequency-magnetic field component in a given region



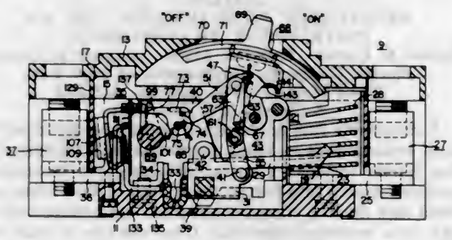
such as between the ground-plane element and the signal conductor. A planar self-latching ferrite is in the given region. Magnetization-switching means selectively switch the remanent magnetization in the ferrite element.

3,418,606
DELAY LINE REACTANCE DEVICE
Stanley A. Adams, South Haven, Mich., assignor to Adams Electronics, Inc., a corporation of Michigan
Filed Apr. 20, 1965, Ser. No. 449,559
10 Claims. (Cl. 333—31)



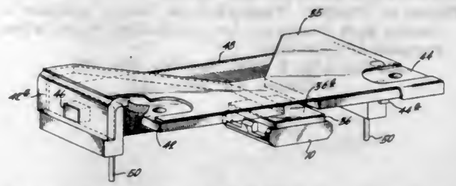
A non-conductive tubular coil form has a continuous copper foil ribbon wound thereon covered by a dielectric layer over which a fine wire is tightly wound. Terminals anchored to end portions of the coil form are electrically connected to the copper foil and wire winding which form capacitive plates and present inductive reactance to electrical signals transmitted therethrough.

3,418,607
CIRCUIT BREAKER WITH IMPROVED TRIP MEANS
Eugene J. Walker, Beaver, and John Majcher, Beaver Falls, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1966, Ser. No. 527,675
6 Claims. (Cl. 335—41)



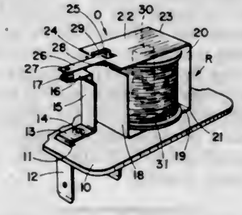
An improved circuit breaker comprises a tripping electromagnet comprising a stationary magnetic member and a movable magnetic member with spring means biasing the movable magnetic member toward the front of the breaker to pivotally support the movable magnetic member on the stationary magnetic member.

3,418,608
MAGNETICALLY ACTUATED MINIATURE RELAY
Henry R. Angel, Trumbull, and A. Henry Morgan, Norwalk, Conn., assignors to Electronic Controls, Inc., Wilton, Conn., a corporation of Maryland
Filed Mar. 20, 1967, Ser. No. 624,497
19 Claims. (Cl. 335—131)



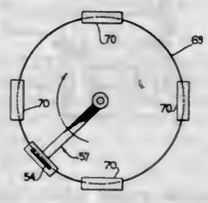
A magnetically actuated miniature relay having switch contacts and current carrying support elements supported by a support structure, preferably a housing, and movable by an actuator including a magnetic element which is part of a magnetic circuit energized by flux generating means arranged side-by-side with the support structure such that, when energized, the magnetic circuit attracts the magnetic element to reduce the air gap between it and the magnetic circuit, thereby changing switch contact condition.

3,418,609
SQUARE OBTURATOR
Rodney Hayden, Stoney Creek, Ontario, Canada, assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,527
Claims priority, application Canada, Feb. 28, 1967, 983,944
6 Claims. (Cl. 335—203)



A square obturator primarily for use in an electric relay formed from a continuous strip of low carbon steel having a projecting tongue which carries a contact, and so constructed that it can be easily adjusted accurately and then set to hold this adjustment after the manufacture of the relay.

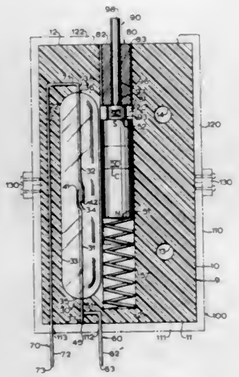
3,418,610
MAGNETIC REED SWITCH
John S. Hammond, 34 Lincoln Ave., Greenwich, Conn. 06830
Filed Aug. 26, 1966, Ser. No. 575,382
4 Claims. (Cl. 335—205)



A self contained magnetically operated reed switch in which the magnet for operating the switch and a vane

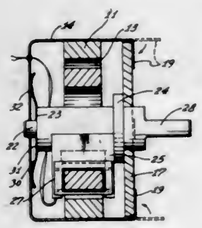
for shunting the magnetic flux so as to prevent operation of the switch are mounted for rotary motion in the same housing as the reed switch and adjacent to it.

3,418,611
MAGNETICALLY ACTUATABLE SWITCH HAVING NON-LINEAR CONTACTS EMBEDDED WITHIN RESINOUS SWITCH HOUSING
Walter R. Pounds, Wagners Lake, Nebr., assignor to George Risk Industries, Inc., Columbus, Nebr., a corporation of Colorado
Filed Aug. 1, 1966, Ser. No. 569,398
4 Claims. (Cl. 335—205)



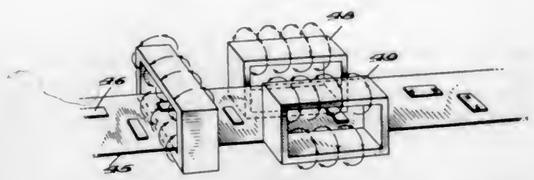
A magnetically actuatable reed switch having an unusually high degree of resistance to shock, vibration, and to atmospheric chemicals such as oxygen and water vapor, said switch being amenable to economical manufacture without detracting from the switch quality and reliability. The switch comprises a resinous matrix housing and sever-l internal components disposed within said housing at a specified spacial relationship including non-linear portions of the switch contacts being rigidly embedded into the resinous matrix housing.

3,418,612
LIMITED MOTION MOTOR
John R. Beckwith, Pacific Palisades, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 1, 1966, Ser. No. 569,220
9 Claims. (Cl. 335—222)



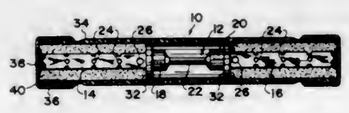
A limited motion motor which includes a pair of magnetizable rings having radially aligned air gaps, a permanent magnet disposed in the air gap so that one of the rings constitutes a north pole and the other ring constitutes a south pole and a coil disposed on one of the rings. When current flows through the coil, the magnetic field becomes misaligned to produce a movement of the coil annularly on the one ring.

3,418,613
METHOD OF MAGNETIZING A LARGE QUANTITY OF BULK ARTICLES
Emmanuel M. Trikilis, Lincoln Le Veque Tower, Columbus, Ohio 43215
Filed Mar. 2, 1966, Ser. No. 531,253
1 Claim. (Cl. 335—284)



A method of magnetizing a large quantity of bulk articles for use in a pilferage prevention system comprising the passing of the articles through at least two magnetic fields having their polarity arranged in different directions. An article to be protected from pilferage by means of a magnetic-detecting system, said article carrying a polarity of magnetic fields wherein at least two of said fields are disposed in opposite directions.

3,418,614
TIME DELAY CARTRIDGE FUSE
David J. Krueger, Elk Grove, Ill., assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed July 18, 1967, Ser. No. 654,126
4 Claims. (Cl. 337—164)

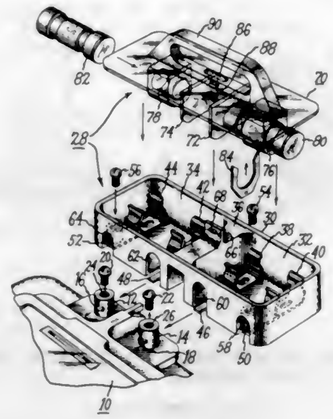


A cartridge fuse that is relatively free of mounting position sensitivity and which includes a time delay mass and offset conductive portions connected thereto to insure breaking of the circuit when the time delay melts.

3,418,615
REMOVABLE FUSE HOLDER FOR AN INSTRUMENT TRANSFORMER
Robert S. Canney, Berwick, Maine, assignor to General Electric Company, a corporation of New York
Filed Mar. 22, 1967, Ser. No. 625,203
5 Claims. (Cl. 337—190)

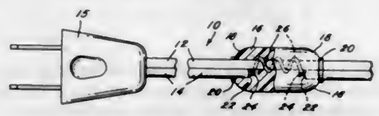
A removable fuse holder for converting unfused instrument transformers to fused instrument transformers. The fuse holder includes a container which is a rectangular member divided into two sections, each section being provided with the fuse clips to make electrical contact with the ends of a cartridge type fuse. One fuse clip in each section is provided with a bar member which may be inserted and electrically and mechanically secured to a primary terminal of an instrument transformer. The other fuse clip in each section is provided with a terminal member which becomes the primary terminal of the transformer when the fuse holder is in place. A cover is provided for the fuse holder, the cover carrying a pair of fuses which

makes electrical contact with the fuse clips when the cover is in place. Sealing means are provided for receiving util-



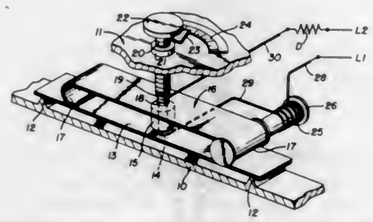
ity sealing devices to seal the cover to the container of fuse holder.

3,418,616
INTEGRATED FUSE AND WIRE
Abraham Grober, Providence, R.I., assignor to Victor Electric Wire & Cable Corp., Coventry, R.I., a corporation of Rhode Island
Original application Mar. 15, 1965, Ser. No. 439,680, now Patent No. 3,322,919, dated May 30, 1967. Divided and this application Mar. 31, 1967, Ser. No. 655,253
3 Claims. (Cl. 337—290)



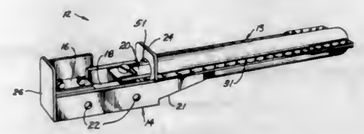
An electric cable comprising one or more conductors with a fuse built into said cable and forming an integral part thereof, said fuse being embedded within said cable whereby the cable is of the throw-away variety once the fuse has been destroyed.

3,418,617
SNAP-ACTING, CYCLING, THERMOSTATIC SWITCH
George W. Crise, P.O. Box 367, Danville, Ohio 43014
Filed Mar. 21, 1966, Ser. No. 535,993
8 Claims. (Cl. 337—368)



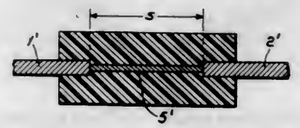
A snap-acting thermostat in which the normal gradual thermal flexing movement of a bimetal or other thermally responsive member is yieldably resisted by a friction-inducing member arranged to apply a substantial static frictional force to the thermally responsive member in all positions of thermal movement of the latter, thereby to cause the thermally responsive member to move with snap action from any one position to another.

3,418,618
THERMORESPONSIVE DEVICE
Harry A. Mudd, Clayton, Mo., assignor to McQuay-Norris Manufacturing Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 1, 1966, Ser. No. 576,671
7 Claims. (Cl. 337—387)



Thermosensitive switch operator wherein a tubular probe is composed of longitudinally complete semitubes connected together by a joint which has poor heat conductivity, and a straight stiff blade is anchored to the tubular probe at one end, but free to move radially relative to the tubular probe at the other end in response to one semitube being at a higher temperature than the other semitube; and such radial movement operates an electrical switch.

3,418,619
SATURABLE SOLID STATE NONRECTIFYING SWITCHING DEVICE
Paul E. Lighty, Lafayette, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Mar. 24, 1966, Ser. No. 537,187
9 Claims. (Cl. 338—20)

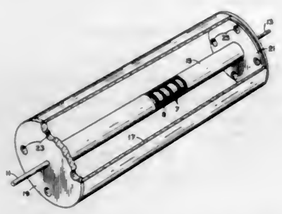


This is a solid state switching device that is free of barrier layers and PN junctions and is capable of operating in at least two stable physical states. The device comprises a mass of glass having a resistivity within the range of 10^2 to 10^8 ohm-cm., the shape of a filament and electrodes attached to the ends of the filament. The filament has a diameter of the order of 10^{-3} to 10^{-2} inches and a length of the order of 10 to 100 times the magnitude of the diameter. When the proper control signal is applied to the electrodes, the glass filament will switch from one state to another, and since the filament is shaped so thin that only one conductive channel can exist therein, substantially all of the material in the filament will switch to the selected state.

3,418,620
HIGH VOLTAGE LOW TEMPERATURE RESISTANCE DEVICE
Michael Ohanian, Methuen, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 19, 1966, Ser. No. 551,864
2 Claims. (Cl. 338—57)

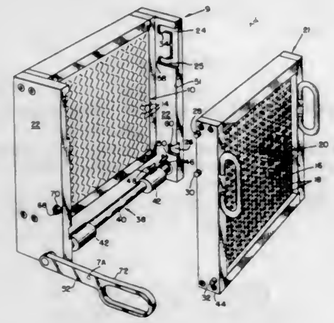
A compact high voltage, high wattage and low temperature coefficient resistor that is made by depositing a metallic film or "smoke" on a piece of glass tubing. The

tubing is surrounded by a dielectric and is centrally positioned inside an epoxy glass tube by two end caps that



have a series of holes for passing a high heat transfer and high dielectric strength fluid.

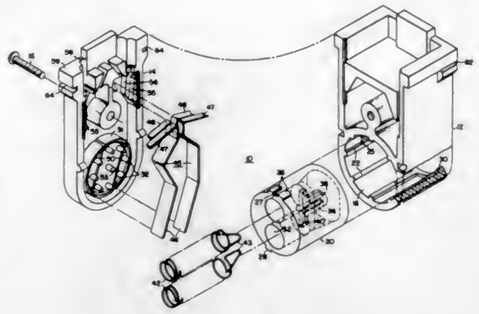
3,418,621
PLUGBOARD ASSEMBLY
Clayton E. Campbell, Jr., Greensboro, N.C., assignor to Cam Corporation, Greensboro, N.C., a corporation of North Carolina
Filed Apr. 20, 1966, Ser. No. 543,902
12 Claims. (Cl. 339—18)



A patchcord system which is utilized in connection with electrical accounting machines, computers and the like, having front and rear bays carrying plugwires and mating contact springs, the bays pivotally connected for cooperative electrical connection between the plugwires and springs. A cam is employed to insure reliable electrical conductivity between the plugwires and the springs, and the system may be shielded alternatively by a novel shielding means if desired.

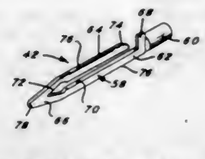
3,418,622
LAMPHOLDER WITH MULTIPLE ARRANGEMENT OF COMPONENTS
Emmett J. McLaughlin, Fairfield, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 12, 1967, Ser. No. 608,852
4 Claims. (Cl. 339—56)

The present invention concerns a fluorescent tube lampholding device in which a single lampholding unit can be assembled to provide either an axially movable plunger type holder or a fixed type holder while simultaneously providing for the angular displacement of the lampholder terminals so that the fluorescent tube lamp to be supported between two of the novel holders can assume any one of a plurality of angular, light directing positions. This is accomplished by using identical parts for both types of holders which include a plunger structure containing the terminals, and a cylindrical shaped opening extending through a housing adapted to



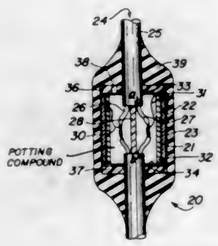
receive and mutually engage the plunger in any of a plurality of angular positions.

3,418,623
CYLINDRICAL CONNECTOR CONTACT
Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania.
Filed Oct. 22, 1965, Ser. No. 501,407
9 Claims. (Cl. 339—94)



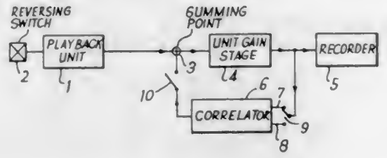
A male contact which is adapted to be inserted into a cylindrical socket of a female contact has a mating section comprised of a pair of spaced, longitudinal, flat legs which lie in a common plane. The legs are interconnected at their forward longitudinal ends by a nose portion which is adapted to first enter the cylindrical socket of the female contact when the mating section is inserted therein.

3,418,624
COAXIALLY MOUNTED LINE HYDROPHONE
Frank Massa, Cohasset, Mass., assignor to Massa Division, Dynamics Corporation of America, Hingham, Mass.
Filed Mar. 27, 1967, Ser. No. 626,149
4 Claims. (Cl. 340—9)



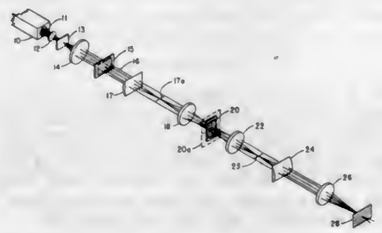
A plurality of hydrophone elements are molded directly to a cable which passes coaxially through them. The elements are distributed as "beads" along the length of the cable so that they may be lowered under the surface of the water. In such a position, they are used as transducers for under water sound transmission or detection. Among other things the coaxial construction eliminates shadow zones and prevents entanglement of the hydrophone elements.

3,418,625
METHODS AND APPARATUS FOR ATTENUATING THE EFFECTS OF MULTIPLE SEISMIC REFLECTIONS
Nigel Allister Anstey, Orpington, Kent, England, assignor to Seismograph Service Corporation, Tulsa, Okla.
Filed Nov. 15, 1965, Ser. No. 507,953
Claims priority, application Great Britain, Nov. 13, 1964, 46,449/64
20 Claims. (Cl. 340—15.5)



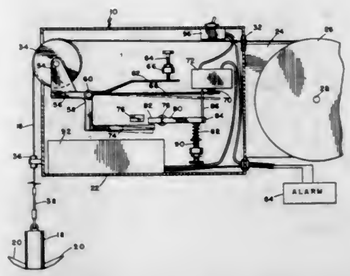
An echo ranging system and method wherein multiple reflections are attenuated by passing a received signal including the multiple reflections through a given stage and then to a feedback loop extending around the stage. The latter loop includes a correlator having a pattern representing at least a portion of the received signal reversed in time for correlation with the received signal to produce a feedback signal or correlation output which is applied to the input of the stage. The resulting output from the stage represents the received signal with the multiple reflections attenuated.

3,418,626
OPTICAL DECONVOLUTION OF SEISMIC RECORDS
John B. Farr and Harold M. Lang, Tulsa, Okla., and Moses G. Widess, Fort Worth, Tex., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 27, 1967, Ser. No. 693,879
16 Claims. (Cl. 340—15.5)



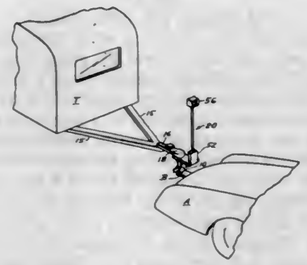
In an optical method of processing seismic data in the form of a variable-density multi-trace record or cross-section transparency, deconvolution of all traces is done simultaneously in a one-dimensional Fourier transform (frequency) plane by a photographic or photochromic film that selectively has or acquires opacity at the particular frequencies that predominate in each trace. The deconvolution is thus an amplitude "spectrum-flattening" operation that discriminates against reverberations, multiple reflections, and like waves, which are a kind of "resonant interference" that often obscures primary reflections.

3,418,627
DRIFT INDICATOR FOR ANCHORED BOATS
Jim Lyons, 5104 N. Harbor Drive, San Diego, Calif. 92106
Filed June 20, 1966, Ser. No. 558,915
7 Claims. (Cl. 340—29)



1. A drift indicator for an anchored boat, comprising:
a sensing unit adapted for mounting on a boat;
a flexible line connected to said sensing unit and having a weight thereon for suspension in the water below the boat;
means to extend and retract said line to position said weight at a predetermined minimum depth in the water;
switch means in said sensing unit;
an alarm connected to said switch means;
switch actuating mechanism coupled to said switch means;
said line being attached to said actuating mechanism;
said actuating mechanism being biased to a neutral position under static load of said weight and line and being operable by a change in load to actuate said switch means and operate said alarm.

3,418,628
ALIGNMENT DEVICE FOR TRAILER
George Donaldson Fenner, 210 Gorton Lake Blvd., Warwick, R.I. 02886
Filed Aug. 23, 1965, Ser. No. 481,824
5 Claims. (Cl. 340—52)

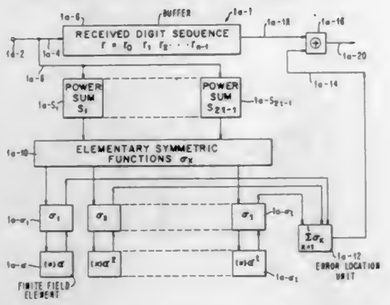


Alignment device for a trailer hitch having a plurality of pivotally mounted electrical switches actuated by a ball on the motor vehicle hitch to indicate the relative position of the ball and socket portions of a coupling member.

3,418,629
DECODERS FOR CYCLIC ERROR-CORRECTING CODES

Robert T. Chien, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 10, 1964, Ser. No. 358,893
42 Claims. (Cl. 340—146.1)



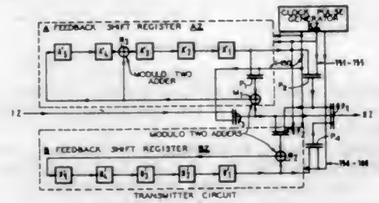
The algebraic structure and cyclic property of a Bose-Chaudhuri-Hocquenghem error-correcting code are utilized to correct a multiple independent error pattern in a received digit sequence which was originally established in the format of a codeword of the code. Generally, the algebraic structure and the cyclic property are utilized to transform cyclically paramount algebraic parameters in the finite field which characterizes the BCH code. After each transformation of these parameters, a function of the parameters is evaluated. When the function is equal to unity, an error position is detected in the high order position of a received sequence corresponding to the equivalent codeword cyclically shifted. More particularly, a plurality of power sums is derived from the received sequence to indicate the presence of an error pattern therein. Finally, the power sums are operated on in the finite field which defines the code to obtain an indication of the error positions in cyclic relation to the received sequence.

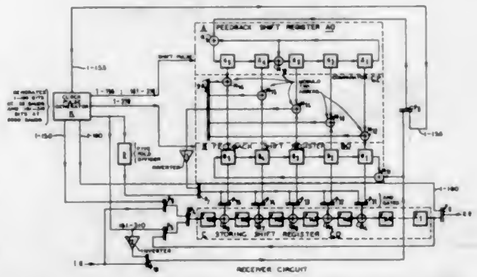
3,418,630
DOUBLE CHECK SIGNAL TEST SELF-CORRECTING COMMUNICATION SYSTEM

Hendrik Cornelis Anthony van Duuren, Wassenaar, Netherlands, assignor to De Staat der Nederlanden ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Oct. 14, 1964, Ser. No. 403,745
Claims priority, application Netherlands, Oct. 15, 1963, 299,277
10 Claims. (Cl. 340—146.1)

A system for self-correcting even transpositions in a balanced code character signal by generating two parity check signals in a different manner from a group or block of such multi-element binary code character signals at both a transmitting station and at a receiving station, and comparing the received first parity check signal with the regenerated one at the receiving station to determine if an error in the block has occurred, and if it has, determining which character signals of the block is in error. Thus the regenerated second check signal is used for locating which element or elements in the erroneous character signal is or are in error and correcting it or them. The first check signals are generated in end and center coupled feedback five stage shift registers and the second check signals are generated in only end coupled feedback five stage shift registers, all of which registers are fed via modulo two adders or counters. The receiving station has a storing shift register for each bit or element of all the character signals in the group or block, in which storing register the correction is made by quickly cycling it around to the located erroneous character, and correcting that character from a comparator circuit through modulo two adders. Clock pulse generators at each station and a five element divider at the receiving station control, through AND and OR gates, the check signal generators and the correction of the storing shift register by the comparator.

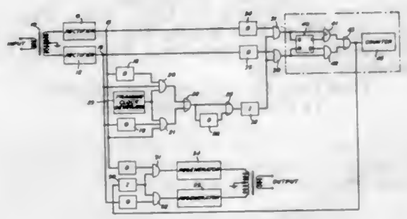




3,418,631
ERROR DETECTION IN PAIRED SELECTED TERNARY CODE TRAINS

Jack M. Sipress, Summit, and Egils Zarins, East Orange, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 4, 1965, Ser. No. 461,381
3 Claims. (Cl. 340—146.1)



1. In a pulse communication system wherein a train of unipolar marks and spaces is converted into three state signals of positive marks, negative marks, and spaces so that the number of consecutive spaces is not more than two by first dividing the unipolar pulse signals into two bit binary words and then encoding these binary words in accordance with the following code

Binary word	Code No. 1	Code No. 2
1, 1	+1, −1	+1, −1
1, 0	+1, 0	−1, 0
0, 1	0, +1	0, −1
0, 0	−1, +1	−1, +1

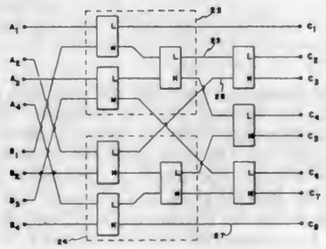
said encoding being done in accordance with code number 1 until a three state signal the algebraic sum of the amplitude of whose bits is +1 is generated whereupon said encoding is accomplished in accordance with code number 2 until three state signal the algebraic sum of the amplitude of whose bits is −1 is generated whereupon said conversion is again accomplished in accordance with

code number 1, apparatus for receiving an input signal of positive marks, negative marks, and spaces encoded in accordance with said code for detecting errors and removing violations therein comprising, means to remove the words +1, −1 and −1, +1 from said received input signal, means to detect bipolar violations in the signal remaining after removal of said words +1, −1 and −1, +1 from said received input signal, regenerator means connected to receive said input signal, and means connected to said regenerator means to inhibit said regenerator means when a bipolar violation is detected so that said received signal is regenerated with the bipolar violations removed.

3,418,632
MEANS FOR MERGING SEQUENCES OF DATA

Kenneth E. Batcher, Akron, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed Aug. 26, 1965, Ser. No. 482,695
3 Claims. (Cl. 340—146.2)



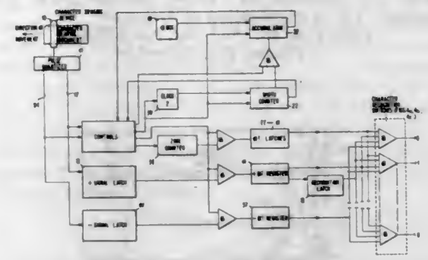
The invention provides a merging means which utilizes basic merging components in substantially equally divided subdivisions to effect a merge of two sequences of data each arranged in ascending order phere the number of data in each sequence may vary without limits, but the fundamental combinations of the merging means will be broken down into easily determined basic sub-units dependent upon the number of data to be merged. Several overall total merges into the arranged components will take place dependent upon the number of data to be arranged. Once the elements are properly arranged, it is simply a matter of providing the input information in arranged sequences and the resultant output is automatically integrated into a single arranged sequence. The elements can also receive data inputs of equal magnitude without any change in the operation of the system.

3,418,633
PULSE TIME INTERVAL MEASURING SYSTEM

Philip D. Jones, Vestal, N.Y., and Billy G. Wood, Phoenix, Ariz., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Jan. 14, 1965, Ser. No. 425,478
10 Claims. (Cl. 340—146.3)

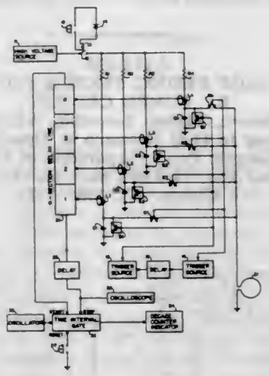
A pulse time interval measuring system for determining the sequence and time separation of character-representing pulses in a character recognition system in which the characters are recorded with magnetic ink. The data can be read by passing each character successively under a magnetic reading head. The output of the reading head produces a resultant wave shape which is uniquely characteristic for each different character. The output of the reading head is passed through a quantizer with output bit signals therefrom occurring at different times with respect to a reference starting time. The bit signals serve to gate the output of pulse generating circuitry for application to pulse width analyzing circuitry for determining the presence or absence of bit signals at predetermined times, and with an output therefrom being insertable into multi-level shift registers. The bit signals also serve to controllably gate the input to shift registers. The outputs of the shift registers are representative of a character stored therein and are applied to a coincident circuit arrangement for encoding and transmission to automatic data processing equipment.



3,418,634
DELAY LINE SWITCH PREFIRE AND FAILURE INDICATING SYSTEM

Marvin P. Young, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 18, 1965, Ser. No. 456,871
9 Claims. (Cl. 340—147)



1. A system for detecting a change in current in one of *n* parallel networks and for specifically indicating the particular network in which the change in current first occurred, comprising:

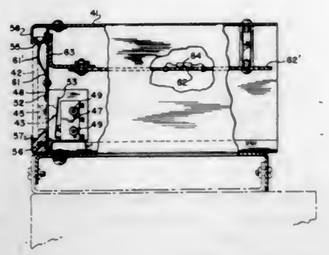
sensing means coupled to each of said *n* networks for producing a signal indicative of a change in current,

an *n*-section delay line having a first output at the first section and a second output at the *n*th section, together with an input at each of the *n* sections coupled to receive the signal from said sensing means, each of the *n* sections having an equal delay, and each section coupled to a respective sensing means, so that a received pulse is propagated in both directions to produce an output pulse at said first and second delay line outputs; and

means coupled to said first and second delay line outputs for receiving said delay line output pulses for

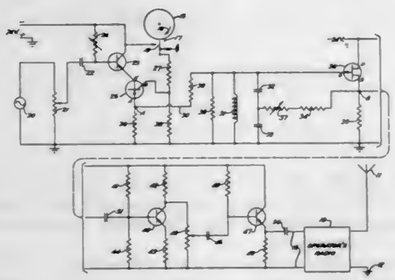
indicating the particular delay line section initially activated by the signal from said sensing means.

3,418,635
QUOTATION BOARD SYSTEM
Anthony J. Sabulsky, Stratford, and Robert H. Pote, Pitman, N.J., assignors to Ultronic Systems Corp., Pennsauken, N.J., a corporation of Delaware
Filed Feb. 10, 1967, Ser. No. 615,147
5 Claims. (Cl. 340—154)



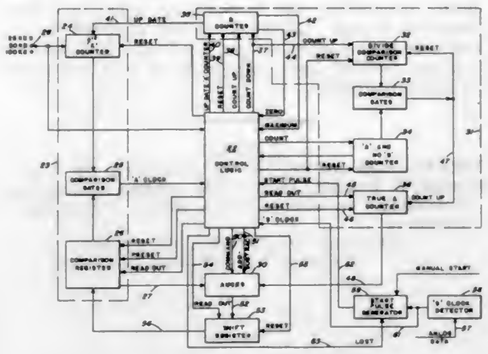
A system for receiving updating messages having coded stock identification and price sections, determining coincidence of this identification with a coded combination at each stock display section and thereupon updating the associated price section, in which removable inserts bear stock identification characters in display position thereon and corresponding coded means (e.g. projections) which cooperate with similar sets of means (e.g. sets of switches) at each stock character location to produce coded combinations corresponding to the characters displayed by the inserts.

3,418,636
SEISMIC SHOT FIRING SYSTEM CONTROLLED BY TUNED CIRCUIT
Donald A. Brown, Indiana Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 482,122
7 Claims. (Cl. 340—171)



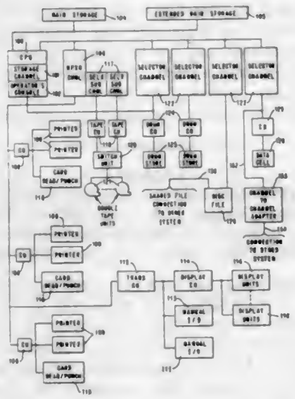
A system for initiating a current at a remote location within an accurately controlled time, about one-half millisecond, after actuation of a switch at an operator's location over a radio communication channel. A resonant circuit at the operator's location produces a characteristic weighting function, the amplitude of which will exceed the threshold of current triggering means at the remote location within the time accuracy required. The invention is particularly useful in the seismic exploration work.

3,418,637
DIGITAL PHASE LOCK CLOCK
Marvin E. Humphrey, Alamogordo, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 27, 1966, Ser. No. 554,643
8 Claims. (Cl. 340—172.5)



A digital phase lock clock for use with data processing equipment. An internal clock is compared, both as to phase and frequency, with an external clock which is used as a standard. The logic contained in the system will detect the different conditions of frequency and phase present in the internal clock and will make the necessary corrections so that the internal clock will remain locked in frequency and phase with the external clock or standard.

3,418,638
INSTRUCTION PROCESSING UNIT FOR PROGRAM BRANCHES
David W. Anderson, Carl J. Conti, and Francis J. Sparacio, Poughkeepsie, and Robert M. Tomasulo, Staatsburg, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 21, 1966, Ser. No. 580,910
12 Claims. (Cl. 340—172.5)



1. In a data processing system of the class described having a main data storage unit, an instruction unit and an execution unit, said instruction unit including a plurality of devices each settable in turn from said main data storage unit in accordance with the data of a corresponding instruction of a data processing program in said storage unit to each provide a buffer for an instruction to be decoded and a decoding unit to inspect and decode each buffered instruction in turn, to transmit said instruction to said execution unit for subsequent execution, and to control said main storage unit to cause transmission of required operands to said execution unit, the improvement comprising:

means in said instruction unit to indicate that an instruction being decoded may require a departure from the normal sequence of instructions;

means responsive to said indicating means to thereupon determine the identification within said storage unit of the first instruction of the sequence to be decoded and processed if a departure from the normal sequence is required;

means connected to said decoding unit to further decode said instruction being decoded to select the conditions to be tested to determine if the further instructions to be processed are in the normal sequence or the departure sequence;

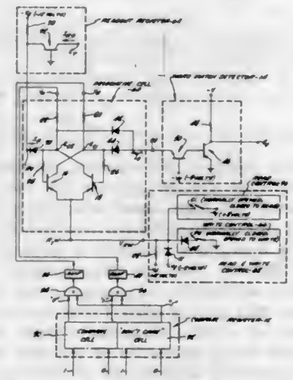
indicators of said conditions settable by said execution unit as a result of the execution of a previously decoded instruction;

at least one additional device settable in accordance with the data of any fetched instruction word;

means to interrupt the processing of instructions of the normal sequence;

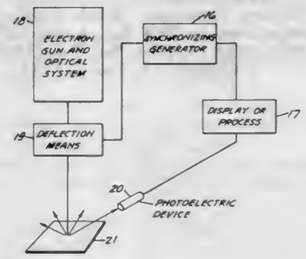
and control means responsive to said decoding means and to said condition indicating means to activate said interrupt means and to then instruct the main data storage unit to transfer the identified first instruction of said departure sequence to said additional settable device for immediate use if the departure sequence is to be decoded.

3,418,639
ASSOCIATIVE MEMORY EMPLOYING NONDESTRUCTIVE READOUT OF BINARY ELEMENTS
Edwin S. Lee III, Altadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 6, 1963, Ser. No. 278,021
24 Claims. (Cl. 340—173)



21. An associative memory cell comprising first and second switching devices having input, output and control circuits, a first output terminal, the input circuits of said switching devices being coupled in common to said first output terminal for receiving read control signals, second and third output terminals, individual impedance means for coupling the output circuit of each of the switching devices to a different one of said second and third output terminals, impedance means for regeneratively cross coupling the output and control circuits to cause the switching devices to alternately conduct for defining two stable states, a fourth output terminal, an asymmetrically conductive device coupled between said fourth terminal and an output circuit for forming a predetermined output signal indicative of a state of the switching devices in response to a read control signal applied to said first output terminal, a fifth output terminal, a pair of asymmetrical conductive elements connected between the output circuits of the switching devices and the fifth output terminal for forming a unique output signal indicative of a predetermined relationship between the storage state of the switching devices and the state represented by such individual potential sources.

3,418,640
METHOD FOR STORING AND RETRIEVING INFORMATION ONTO AND FROM AN ELECTROPLATABLE RECORDING MEDIUM
Thomas J. Werner, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,724
7 Claims. (Cl. 340—173)

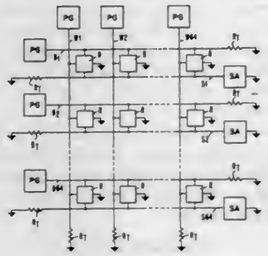


A method for storing and retrieving information onto and from a sheet-like recording medium having a facial layer of a composition which is both fluorescent and differentially conductive is shown wherein the recording of information is accomplished by exposing the facial layer with actinic radiation to effect localized selective imagewise changes in electron conductivity normally through the layer forming a pattern representing the information being stored and by subsequently contacting the resulting image with an electrically conductive solution having a developer material which electroplates the developer material on the one surface of the layer to form a developed image. The stored information in the form of a plated image is reproduced by exposing the facial layer having the developed image to a uniform scanning electron beam to produce differential photon emission which is simultaneously photoelectrically detected to produce an electrical signal output representing stored information.

3,418,641
ELECTRICAL DISTRIBUTION SYSTEM
Thomas A. Fyfe, South Plainfield, N.J., and Paul E. Stuckert, Katonah, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 29, 1964, Ser. No. 407,457
20 Claims. (Cl. 340—173)

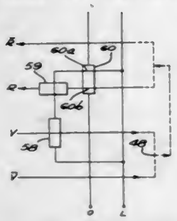
A system is described for distributing broadband electrical signals from a single source to a plurality of load devices, arranged either in series or shunt, with minimal

distortion. Such system comprises a transmission line structure which is electrically tapered such that the characteristic impedances of the line sections interconnecting successive load devices vary monotomically as a function of distance from the signal source and each is terminated



in a matched impedance. More particularly, each line section is terminated in a matched impedance by the electrical combination of the driven load and the input impedance of the next successive line section, which is properly matched.

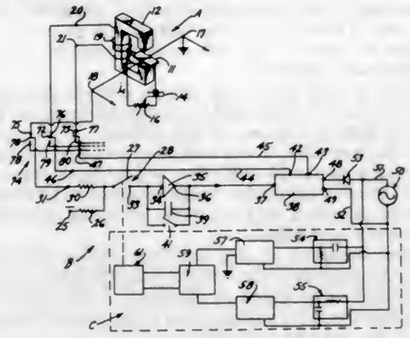
3,418,642
DUAL CONTROL MEMORY MODULES FOR SELF-SEARCHING MEMORY
Paul M. Davies, Manhattan Beach, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed May 15, 1961, Ser. No. 109,924
2 Claims. (Cl. 340—173.1)



2. In combination, a memory module having a plurality of individual bit handling segments, each bit handling segment having a single input line for writing information and a single output line for reading information, a persistor circuit connected to said input line for storing information in the form of a circulating current, said persistor circuit being responsive to interrogating signals for generating a zero current in a portion of said persistor loop in the presence of a true comparison between said circulating current and said interrogating signal, a dual control superconductive device responsive to said zero current for indicating a true comparison, and a superconducting device located in said output line responsive to said detecting line and current in said persistor circuit for reading information into said output line.

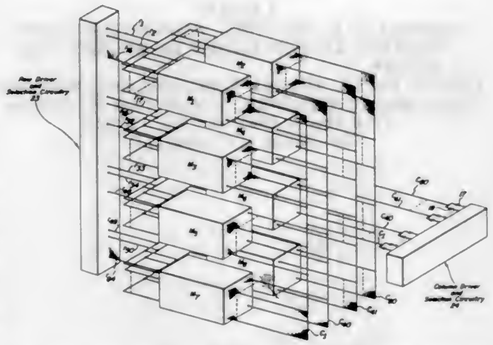
3,418,643
MEMORY DEVICE IN CONJUNCTION WITH A MAGNETICALLY VARIABLE ELECTRIC SIGNAL GENERATOR
Frank R. Bradley, Jr., 9 Dash Place, Riverdale, N.Y. 10471
Filed Apr. 9, 1964, Ser. No. 358,502
2 Claims. (Cl. 340—174)

An electrical signal generator having an output varied in response to variations in a magnetic field applied thereto, a variable magnetic field generator operatively associated with the signal generator, circuitry for deriving a difference signal by opposing the output of the signal generator and the input signal, a storage device for receiving and storing the difference signal, an intermittently energized pulse generator amplifier for receiving the sig-



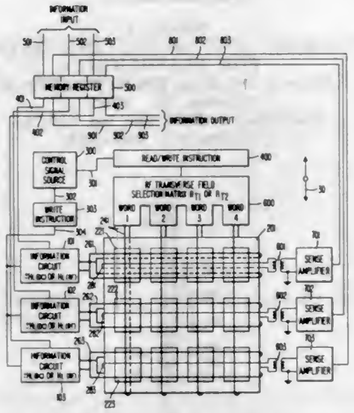
nal of said storage device and intermittently applying pulses to said magnetic field generator when in the energized condition, and a driver unit for disconnecting said difference signal from said storage means when said amplifier pulse generator is energized.

3,418,644
THIN FILM MEMORY
Paul Higashi, Gardena, and Robert O. Gunderson, Torrance, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed June 10, 1964, Ser. No. 373,980
15 Claims. (Cl. 340—174)



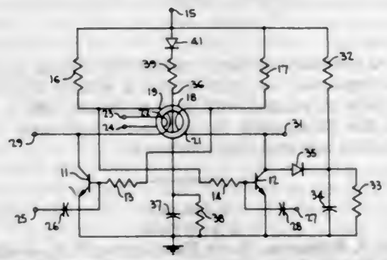
A thin film memory arrangement providing internal main memory data storage capacity for data processing systems wherein the high speed switching properties of the thin film storage elements are retained during memory accessing operations required in processing of the data stored therein. The thin film memory is formed from a number of modules or matrices, each matrix having insufficent data storage capacity for use as an internal main memory of a data processing system. In order to retain the high speed properties of the thin film storage elements, the memory arrangement provides an improved multi-word, word line organization for reading and writing while maintaining the capability for selectively accessing any individual word location. Accordingly, a sense-digit line arrangement is operative only in the matrix or group of matrices in which the word storage access is being made while individual access to any selected work storage location is retained for separate access to each word of data for reading or writing operations in the memory.

3,418,645
MAGNETIC DATA STORE WITH RADIO-FREQUENCY NONDESTRUCTIVE READ-OUT
Richard L. Fussell, Chester Springs, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,263
10 Claims. (Cl. 340—174)



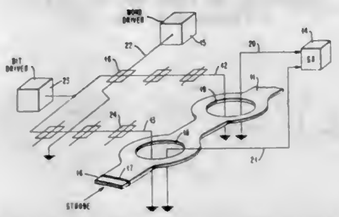
The present disclosure describes a thin magnetic film data store in which the interrogation of the magnetic elements is accomplished by the application thereto of a single radio-frequency drive field. The output sense signals generated during interrogaton are at a frequency which is twice the interrogating drive field frequency, and convey the information stored in the elements as the relative phase, zero or 180 degrees, of the generated signals. Write-in or storage of information in the magnetic elements is accomplished either by applying to the elements a pair of radio-frequency fields in at least partial coincidence and oriented respectively transverse and parallel to the preferred axes of the elements, or by substituting for the dual radio-frequency fields, a transverse radio-frequency field and a parallel pulse field.

3,418,646
TRANSISTOR BISTABLE DEVICES WITH NON-VOLATILE MEMORY
Ira R. Marcus, Wheaton, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 27, 1964, Ser. No. 392,667
4 Claims. (Cl. 340—174)



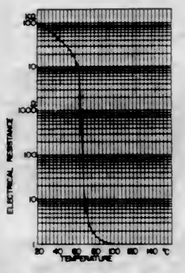
A transistor bistable device having a non-volatile memory which may be set to one of two stable states without a supply voltage being applied and which will assume the set state upon application of a supply voltage. While in operation with a supply voltage applied, the device will return to the state it was in just prior to an interruption in the supply voltage upon reapplication of the supply voltage.

3,418,647
MEMORY SENSE GATING SYSTEM
William Joseph Taren, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 21, 1965, Ser. No. 465,337
4 Claims. (Cl. 340—174)



1. A circuit for coupling a memory sense conductor to a sense amplifier, comprised of:
(a) a controllable transformer, having a primary winding, a secondary winding and a control input;
(b) means connecting the sense conductor to said primary winding;
(c) means connecting the secondary winding to said sense amplifier;
(d) a source of strobe timing pulses;
(e) a source of data read pulses arranged to develop a data signal on the sense conductor;
(f) a source of strobe pulses timed so that each strobe pulse coincides in time with the occurrence of maximum amplitude of data signal; and
(g) means connecting said source of strobe timing pulses to the control input of said controllabe transformer;
whereby said controllable transformer serves as a strobe gate intermediate between the source of signal and the sense amplifier.

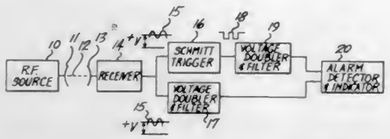
3,418,648
TEMPERATURE DETECTOR
Hisao Futaki, Musashino-shi, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Continuation-in-part of application Ser. No. 355,250, Mar. 27, 1964. This application Mar. 9, 1967, Ser. No. 621,848
17 Claims. (Cl. 340—228)



Temperature detector using as its sensor a critical temperature resistor fabricated by oxide semiconductor comprising fine grains of VO_2 (or V_2O_4) crystal. The resistor has a low resistance-temperature coefficient within a range below a certain definite temperature and an extremely large negative resistance-temperature coefficient to appear when the temperature exceeds the abovementioned definite temperature. A highly stable and sensitive

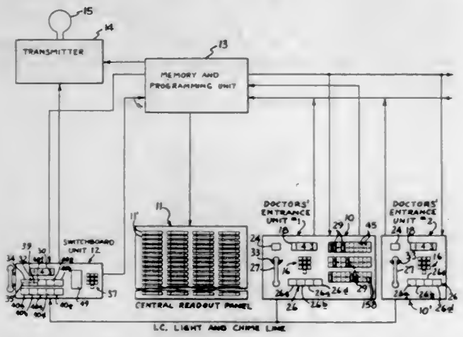
detector is obtainable by using such critical temperature resistor as its sensor, for the definite temperature is equal to or near the desired detecting temperature or set operation temperature.

3,418,649
INTRUDER DETECTION SYSTEM
James A. Williamson, Corvallis, Oreg., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,654
9 Claims. (Cl. 340—258)



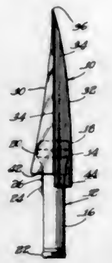
1. An alarm network for an intruder detection system comprising: radio frequency receiver means; a trigger circuit coupled with said receiver means and having a hysteresis characteristic; a first A.C.–D.C. converter coupled with said trigger circuit providing a first signal in response to alternating signals of opposite polarity from said trigger circuit; a second A.C.–D.C. converter coupled with said receiver means and providing a second signal when the amplitude of the output signals from said receiver are greater than a predetermined threshold value; and alarm means coupled with each of said converters and responsive to the presence of said second signal or the absence of said first signal to provide an alarm.

3,418,650
IN AND OUT REGISTER AND PAGER SYSTEM HAVING INDICATORS AT REMOTE AND CENTRAL STATIONS
Anthony J. Rich, 833 S. Harvard, Villa Park, Ill. 60181, and Algimantus K. Stankevicius, 117 N. 16th Ave., Melrose Park, Ill. 60160
Filed Apr. 26, 1965, Ser. No. 450,625
16 Claims. (Cl. 340—311)



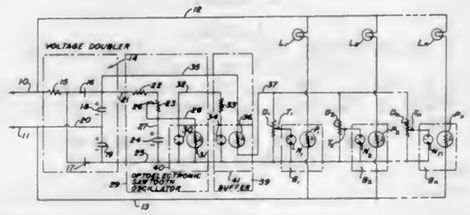
A wireless pager system including a multi-channel transmitter capable of transmitting different signals, individual pager receiver units each adopted to receive a different one of the transmitter signals, user check-out identifying means at a pager check-out station and operable by the user for identifying himself, a memory circuit associated with each pager receiver unit, means for storing in each memory circuit information identifying the person who has checked the associated pager receiver out as indicated by the operation of the user check-out identifying means, an operator station including user identifying means which are set by the operator to identify the person to whom a signal is to be transmitted, and means at the operator station for operating the transmitter to generate the signal to be received to the pager receiver unit assigned to the person identified by the operation of the user identifying means at the operator station in accordance with the information stored in said memory circuits.

3,418,651
PACKAGE AND SIGNALLING DEVICE FOR FLASHLIGHT
Aaron S. Jacobson, 534 Stratford Place, Chicago, Ill. 60657
Filed Mar. 6, 1967, Ser. No. 620,785
5 Claims. (Cl. 340—321)



A colored plastic package for holding a flashlight during non-use is disclosed. In cooperation with the flashlight, the package can serve as a portable, wand-like warning or signalling device.

3,418,652
PROGRAMMING DEVICE AND SAWTOOTH GENERATOR THEREFOR
William Brooks, 1042 Inverness, Sunnyvale, Calif. 94087
Filed Sept. 13, 1965, Ser. No. 486,637
10 Claims. (Cl. 340—324)

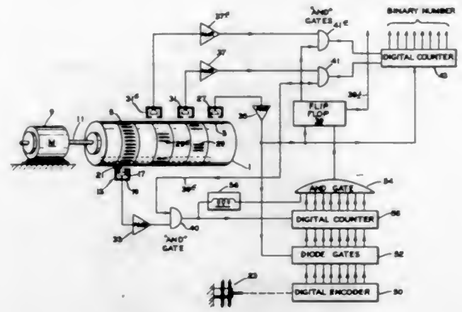


9. A sawtooth oscillator comprising a large resistance and a condenser in series across a source of power, a neon bulb in parallel with said condenser, and a photoconductor illuminated by said neon bulb and in parallel with it and with said condenser.

3,418,653
ENCODER
Arthur S. Robinson, South Huntington, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Original application Apr. 15, 1959, Ser. No. 806,625, now Patent No. 3,165,730, dated Jan. 12, 1965. Divided and this application May 13, 1964, Ser. No. 366,976
18 Claims. (Cl. 340—347)

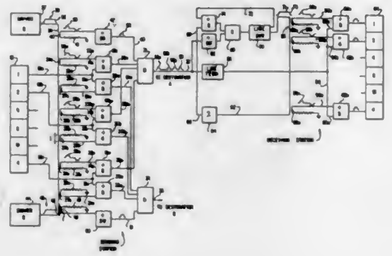
A function encoder has a member with intelligence therein in the form of lines and the member is scanned

by pick-up means and provides pulses which are counted by a counter during a preselected interval to provide a



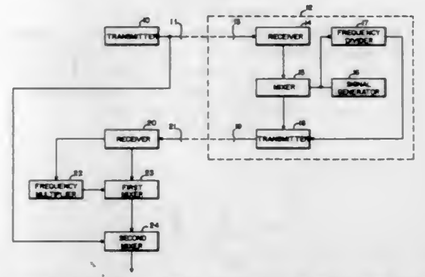
count corresponding to a condition according to a preselected function.

3,418,654
PULSE CONVERTER USING STRIP LINE DIRECTIONAL COUPLERS
Ronald G. Short, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 19, 1965, Ser. No. 426,494
3 Claims. (Cl. 340—347)



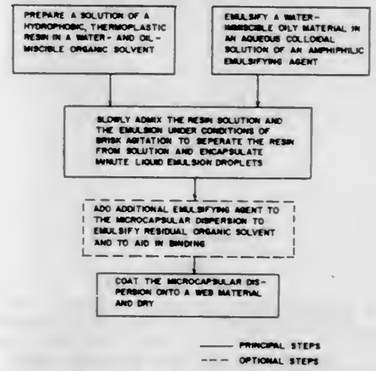
A parallel to serial pulse code converter at a sending station consists of a plurality of oppositely oriented strip line directional couplers spaced along the length of a strip delay line. The couplers oriented in one direction are coupled to a first set of gating circuits. The couplers oriented in the other direction are connected to a second set of gating circuit. Information signals are applied in parallel to both sets of gating circuits. A timing pulse applied to one end of the delay line will sequentially open the gates in the first set to convert the parallel signals to series signals and direct them to a first receiving station. A timing signal applied to the other end of the delay line will sequentially gate the second set of gating circuits to convert the parallel signals to series signals and direct them to a second receiving station. Each receiving station contains a series to parallel code converter comprising a strip delay line coupled by strip line directional couplers to a plurality of gating circuits. A timing pulse derived from the series pulses sequentially opens the gating circuits so that the pulses appear in parallel on the outputs of the gating circuits.

3,418,655
PSEUDO-COHERENT RANGE RATE SYSTEM
John Thomas Baylor, San Diego, Calif., assignor to Cubic Corporation, San Diego, Calif., a corporation of California
Filed Sept. 12, 1966, Ser. No. 578,531
9 Claims. (Cl. 343—6.5)



A range rate system for determining the radial range of a moving object with respect to the point of origin of transmitted radio signals wherein a transponder transmits to a receiving station a signal comprising a received transmitted signal mixed with a second frequency that is modulated by a third frequency that is the second frequency divided by a given integral number other than 1. The receiver station detects the modulating frequency and thus detects the second frequency of the transponder by multiplying the modulating frequency by the given integral number. The transponder transmitted signal is mixed with the detected second frequency at the receiver station and this signal is then mixed with the detected second frequency at the receiver station and this signal is then mixed with the transmitted frequency to obtain the Doppler information.

3,418,656
MICROCAPSULES, PROCESS FOR THEIR FORMATION AND TRANSFER SHEET RECORD MATERIAL COATED THEREWITH
Anthony E. Vassiliades, Staten Island, N.Y., assignor to U.S. Plywood-Champion Papers Inc., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,391
38 Claims. (Cl. 252—316)



Microcapsules containing oil-in-water emulsion droplets are produced in the absence of coacervation by admixing a water-immiscible oily material, an amphiphilic emulsifying agent, at least one polymeric resin solution and water, with the water effecting the separation of the resin from solution in solid particle form about a nucleus of oil in water upon dilution therewith as the final operation of the process.

DESIGNS

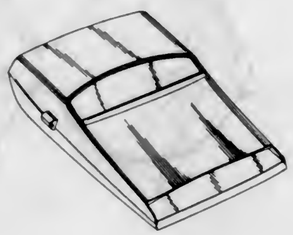
DECEMBER 24, 1968

213,001
FOOTLET
Harold E. Clayton, Jr., 2 Fairbanks Road, Chelmsford, Mass. 01824
Filed Nov. 6, 1967, Ser. No. 9,271
Term of patent 14 years
(Cl. D2—329)



213,002
WHEEL AND TIRE COMBINATION
Irwin R. Barr, Lutherville, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed May 3, 1967, Ser. No. 6,931
Term of patent 14 years
(Cl. D14—30)

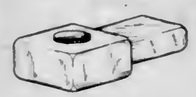
213,003
EDUCATIONAL DEVICE
Jack Sellers, 12361 Emrys Ave., Garden Grove, Calif. 92640
Filed Mar. 21, 1968, Ser. No. 11,078
Term of patent 14 years
(Cl. D25—1)



213,004
HEARING AID
Ronald R. Giller, Danbury, Conn., assignor to Distograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,211
Term of patent 14 years
(Cl. D26—14)



213,005
HEARING AID
Ronald R. Giller, Danbury, Conn., assignor to Distograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,210
Term of patent 14 years
(Cl. D26—14)



213,006
HEARING AID
Ronald R. Giller, Danbury, Conn., assignor to Distograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,214
Term of patent 14 years
(Cl. D26—14)



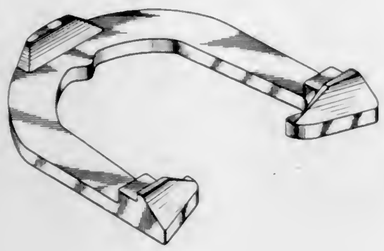
213,007
HEARING AID
Ronald R. Giller, Danbury, Conn., assignor to Distograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,215
Term of patent 14 years
(Cl. D26—14)



213,008
HEARING AID
Ronald R. Giller, Danbury, Conn., assignor to Distograph Products Inc., Danbury, Conn., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,216
Term of patent 14 years
(Cl. D26—14)



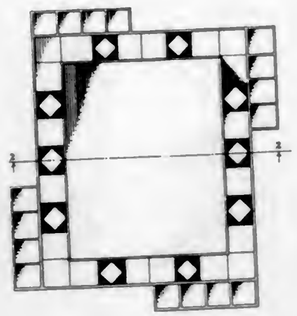
213,009
PITCHING HORSESHOE
Clyde W. Martz, 3233 Arapahoe Road, Pittsburgh, Pa. 15234
Filed Jan. 31, 1967, Ser. No. 5,638
Term of patent 14 years
(Cl. D34—5)



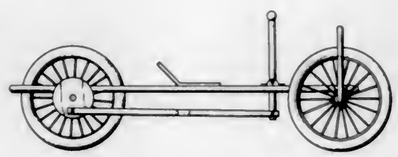
213,010
GOLF CLUB BAG
Toney Penna, % Toney Penna Company, Jupiter, Fla. 33458
Filed Jan. 17, 1968, Ser. No. 10,194
Term of patent 14 years
(Cl. D34—5)



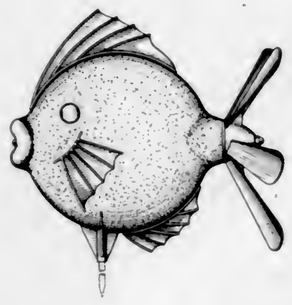
213,011
GAME BOARD
James P. Flaherty, 280 O'Farrell St., San Francisco, Calif. 94102
Filed Mar. 25, 1968, Ser. No. 11,113
Term of patent 14 years
(Cl. D34—5)



213,012
CHILD'S HAND PROPELLED VEHICLE
Leonard R. Stillson, Jr., 6838 Silverthorne Circle, Sacramento, Calif.
Filed Sept. 29, 1967, Ser. No. 8,798
Term of patent 14 years
(Cl. D34—15)



213,013
LAWN ORNAMENT
Arthur F. Klingberg, 3923 W. Main St., McHenry, Ill. 60050
Filed Apr. 3, 1968, Ser. No. 11,295
Term of patent 3½ years
(Cl. D35—1)



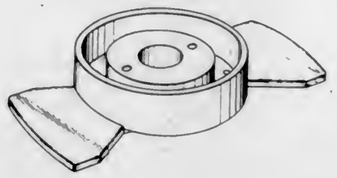
213,014
GARDEN TROWEL
William Peter Kimbell, Feltham, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed Dec. 6, 1967, Ser. No. 9,656
Claims priority, application Great Britain June 22, 1967
Term of patent 14 years
(Cl. D35—2)



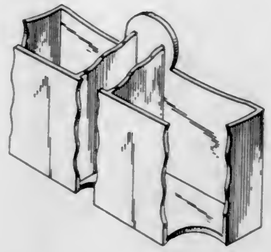
213,015
GARDEN TROWEL
William Peter Kimbell, Feltham, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed Dec. 6, 1967, Ser. No. 9,657
Claims priority, application Great Britain June 22, 1967
Term of patent 14 years
(Cl. D35—2)



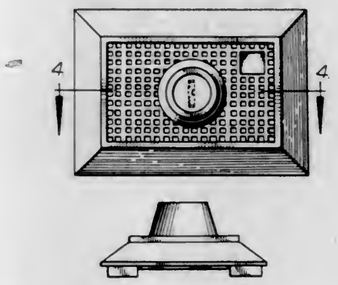
213,016
SURFACE TREATING MACHINE DRIVE BLOCK
Robert H. Kleemeier, Arden Hills, and Ronald O. Zemke, Saint Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 11,031
Term of patent 14 years
(Cl. D37—3)



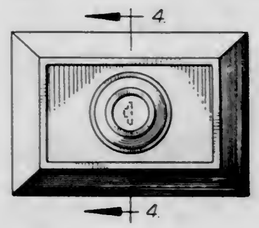
213,017
COMBINED KEY RACK AND HOLDER FOR CIGARETTES AND MATCHES
William Passero, 1212 Irving Ave., Berkeley, Ill. 61257
Filed Sept. 5, 1967, Ser. No. 8,485
Term of patent 14 years
(Cl. D48—28)



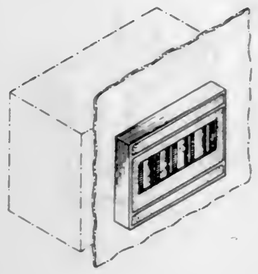
213,018
COIN BOX DOOR FRONT FOR VENDING MACHINES OR THE LIKE
Robert K. Unter, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Oct. 17, 1967, Ser. No. 9,032
Term of Patent 14 years
(Cl. D52—3)



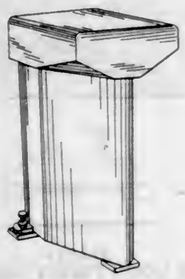
213,019
COIN BOX DOOR FRONT FOR VENDING MACHINES OR THE LIKE
Robert K. Unter, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 11,232
Term of patent 14 years
(Cl. D52—3)



213,020
DIGITAL PANEL METER
Wolfgang Merel, Cedar Grove, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 9,161
Term of patent 7 years
(Cl. D52—6)



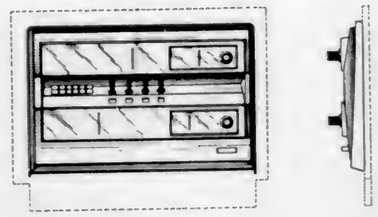
213,021
PEDESTAL SUPPORT FOR A BALANCE OR SIMILAR ARTICLE
Thomas S. Watson, Whittier, Calif., assignor to Watson Bros., Los Angeles, Calif., a partnership composed of James W. Watson and Thomas S. Watson
Filed Oct. 18, 1967, Ser. No. 9,059
Term of patent 14 years
(Cl. D52—10)



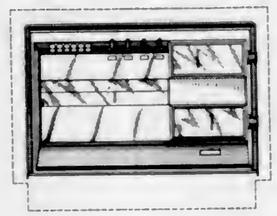
213,022
GUITAR
Roger R. Rossmeisl, Fullerton, Calif., assignor to Columbia Broadcasting System Inc., New York, N.Y., a corporation of New York
Filed Feb. 2, 1967, Ser. No. 5,665
Term of patent 14 years
(Cl. D56—1)



213,023
CONTROL PANEL FOR A COMBINED RADIO AND PHONOGRAPH OR SIMILAR ARTICLE
Herbert J. Zeller, Dundee, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Original design application Nov. 1, 1965, Ser. No. 87,970, now Patent No. 210,100, dated Feb. 6, 1968. Divided and this application Sept. 28, 1967, Ser. No. 9,703
Term of patent 14 years
(Cl. D56—4)



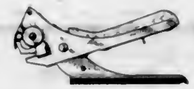
213,024
CONTROL PANEL FOR A COMBINED RADIO AND PHONOGRAPH OR SIMILAR ARTICLE
Herbert J. Zeller, Dundee, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Design application Sept. 28, 1967, Ser. No. 9,703, which is a division of application Ser. No. 87,970, dated Nov. 1, 1965, now Patent No. 210,100, dated Feb. 6, 1968. Divided and this application Apr. 11, 1968, Ser. No. 11,410
Term of patent 14 years
(Cl. D56—4)



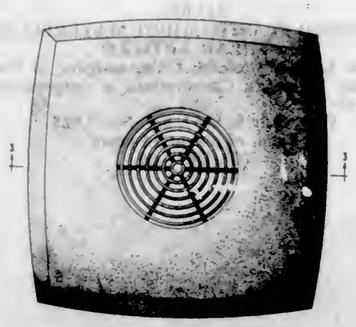
213,025
EXPOSURE METER
Toshihiko Sakow, Fort Lee, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Feb. 5, 1968, Ser. No. 10,425
Term of patent 14 years
(Cl. D61—1)

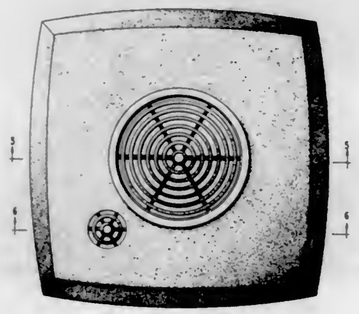


213,026
TAG MARKING DEVICE
Frederick N. Stephens, Leawood, Kans., assignor to Stephens Industries, Inc., Kansas City, Mo., a corporation of Missouri
Filed Oct. 11, 1967, Ser. No. 8,948
Term of patent 14 years
(Cl. D64—10)

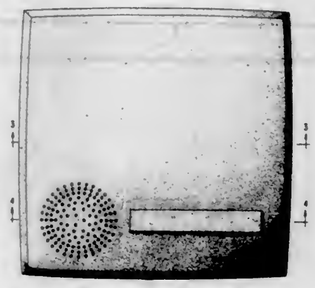


213,027
COVER FOR FIRE ALARM OR SIMILAR ARTICLE
David K. Walz, Stone Mountain, Ga., assignor to Orkin Exterminating Company, Inc., Atlanta, Ga., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 10,897
Term of patent 14 years
(Cl. D72—1)





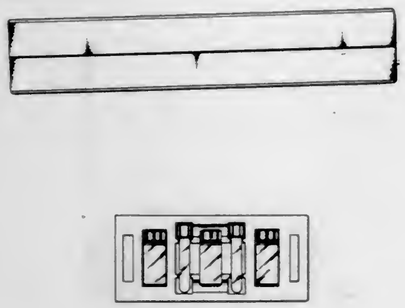
213,028
COVER FOR FIRE ALARM OR SIMILAR ARTICLE
David K. Walz, Stone Mountain, Ga., assignor to Orkin Exterminating Company, Inc., Atlanta, Ga., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 10,898
Term of patent 14 years
(Cl. D72—1)



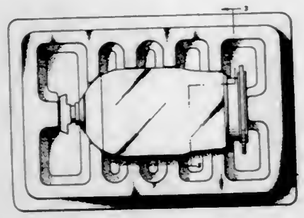
213,029
COMBINED LETTER OPENER AND KNIFE OR SIMILAR ARTICLE
Leo F. Wildgen, Minneapolis, Minn., assignor to Arthur Salm Inc., Chicago, Ill., a corporation of Illinois
Continuation of design application Ser. No. 2,084, May 2, 1966. This application Dec. 11, 1967, Ser. No. 9,746
Term of patent 14 years
(Cl. D74—10)



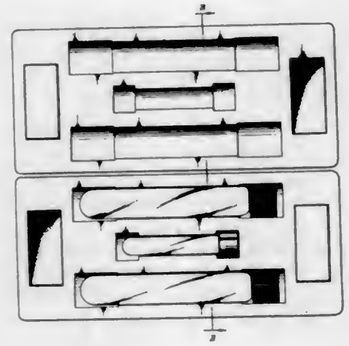
213,030
COMBINATION MAILING CASE AND MYCOLOGY KIT
Raymond S. Michel, Portland, Oreg., assignor to United Medical Laboratories, Inc., Portland, Oreg., a corporation of Oregon
Filed June 12, 1967, Ser. No. 7,465
Term of patent 14 years
(Cl. D83—1)



213,031
COMBINED MAILING CASE AND REFRIGERATED CONTAINER FOR FROZEN BIOLOGICAL SPECIMENS
Raymond S. Michel, Portland, Oreg., assignor to United Medical Laboratories, Inc., Portland, Oreg., a corporation of Oregon
Filed June 12, 1967, Ser. No. 7,466
Term of patent 14 years
(Cl. D83—1)



213,032
MYCOLOGY KIT
Raymond S. Michel, Portland, Oreg., assignor to United Medical Laboratories, Inc., Portland, Oreg., a corporation of Oregon
Filed Nov. 8, 1967, Ser. No. 9,325
Term of patent 14 years
(Cl. D83—1)



213,033
EMBOSSED PLASTIC SHEET MATERIAL OR SIMILAR ARTICLE
James M. Long, Pataskala, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 9, 1967, Ser. No. 7,025
Term of patent 14 years
(Cl. D87—3)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Amling-DeVor Nurseries, Inc.: *See*—
Poulsen, Niels D. 2,850.
Boerner, Eugene S., deceased (by Lincoln Rochester Trust Co. and R. L. Boerner, executors), to Jackson & Perkins Co. Rose plant. 2,850, 12–24–68, Cl. 26.
Boerner, Roger L.: *See*—
Boerner, Eugene S. 2,851.
Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,851.
Zombory, William and S. B. 2,852.
Boerner, Eugene S. 2,851.
Poulsen, Niels D., to Amling-DeVor Nurseries, Inc. Rose plant. 2,850, 12–24–68, Cl. 28.
Zombory, Sophia B.: *See*—
Zombory, William and S. B. 2,852.
Zombory, William and S. B., to Jackson & Perkins Co. Dianthus plant. 2,852, 12–24–68, Cl. 70.
Lincoln Rochester Trust Co.: *See*—

LIST OF DESIGN PATENTEES

AAI Corp.: *See*—
Barr, Irwin R. 213,002.
Barr, Irwin R., to AAI Corp. Wheel and tire combination. 213,002, 12–24–68, Cl. D14—30.
Clayton, Harold E., Jr. Footlet, 213,001, 12–24–68, Cl. D2—329.
Columbia Broadcasting System Inc.: *See*—
Rossmeisl, Roger R. 213,022.
Distograph Products Inc.: *See*—
Giller, Ronald R. 213,004.
Giller, Ronald R. 213,005.
Giller, Ronald R. 213,006.
Giller, Ronald R. 213,007.
Giller, Ronald R. 213,008.
Flaherty, James P. Game board. 213,011, 12–24–68, Cl. D34—5.
Giller, Ronald R., to Distograph Products Inc. Hearing aid. 213,004, 12–24–68, Cl. D26—14.
Giller, Ronald R., to Distograph Products Inc. Hearing aid. 213,005, 12–24–68, Cl. D26—14.
Giller, Ronald R., to Distograph Products Inc. Hearing aid. 213,006, 12–24–68, Cl. D26—14.
Giller, Ronald R., to Distograph Products Inc. Hearing aid. 213,007, 12–24–68, Cl. D26—14.
Giller, Ronald R., to Distograph Products Inc. Hearing aid. 213,008, 12–24–68, Cl. D26—14.
Kimbell, William P., to Wilkinson Sword Ltd. Garden trowel. 213,014, 12–24–68, Cl. D35—2.
Kimbell, William P., to Wilkinson Sword Ltd. Garden trowel. 213,015, 12–24–68, Cl. D35—2.
Kleemeier, Robert H., and R. O. Zemke, to Minnesota Mining and Mfg. Co. Surface treating machine drive block. 213,016, 12–24–68, Cl. D37—3.
Klingberg, Arthur F. Lawn ornament. 213,013, 12–24–68, Cl. D35—1.
Long, James M., to Owens-Corning Fiberglas Corp. Embossed plastic sheet material or similar article. 213,033, 12–24–68, Cl. D87—3.
Martz, Clyde W. Pitching horseshoe. 213,009, 12–24–68, Cl. D34—5.
Merel, Wolfgang, to Weston Instruments, Inc. Digital panel meter. 213,020, 12–24–68, Cl. D52—6.
Michel, Raymond S., to United Medical Laboratories, Inc. Combination mailing case and mycology kit. 213,030, 12–24–68, Cl. D83—1.
Michel, Raymond S., to United Medical Laboratories, Inc. Combined mailing case and refrigerated container for frozen biological specimens. 213,031, 12–24–68, Cl. D83—1.
Michel, Raymond S., to United Medical Laboratories, Inc. Mycology kit. 213,032, 12–24–68, Cl. D83—1.
Minnesota Mining and Mfg. Co.: *See*—
Kleemeier, Robert H., and Zemke. 213,016.
Motorola, Inc.: *See*—
Zeller, Herbert J. 213,023.
Zeller, Herbert J. 213,024.
National Lock Co.: *See*—
Unter, Robert K. 213,018.
Orkin Exterminating Co., Inc.: *See*—
Walz, David K. 213,027.
Walz, David K. 213,028.
Owens-Corning Fiberglas Corp.: *See*—
Long, James M. 213,033.
Passero, William. Combined key rack and holder for cigarettes and matches. 213,017, 12–24–68, Cl. D48—28.
Penna, Toney. Golf club bag. 213,010, 12–24–68, Cl. D34—5.
Rossmeisl, Roger R., to Columbia Broadcasting System Inc. Guitar. 213,022, 12–24–68, Cl. D56—1.
Sakow, Toshihiko, to Weston Instruments, Inc. Exposure meter. 213,025, 12–24–68, Cl. D61—1.
Salem, Arthur, Inc.: *See*—
Wildgen, Leo F. 213,029.
Sellers, Jack. Educational device. 213,003, 12–24–68, Cl. D25—1.
Stephens, Frederick N., to Stephens Industries, Inc. Tag marking device. 213,026, 12–24–68, Cl. D64—10.
Stephens Industries, Inc.: *See*—
Stephens, Frederick N. 213,026.
Stillson, Leonard R., Jr. Child's hand propelled vehicle. 213,012, 12–24–68, Cl. D34—15.
United Medical Laboratories, Inc.: *See*—
Michel, Raymond S. 213,030.
Michel, Raymond S. 213,031.
Michel, Raymond S. 213,032.
Unter, Robert K., to National Lock Co. Coin box door front for vending machines or the like. 213,018, 12–24–68, Cl. D52—3.
Unter, Robert K. Coin box door front for vending machines or the like. 213,019, 12–24–68, Cl. D52—3.
Walz, David K., to Orkin Exterminating Co., Inc. Cover for fire alarm or similar article. 213,027, 12–24–68, Cl. D72—1.
Walz, David K., to Orkin Exterminating Co., Inc. Cover for fire alarm or similar article. 213,028, 12–24–68, Cl. D72—1.
Watson Bros.: *See*—
Watson, Thomas S. 213,021.
Watson, Thomas S., to Watson Bros. Pedestal support for a balance or similar article. 213,021, 12–24–68, Cl. D52—10.
Weston Instruments, Inc.: *See*—
Merel, Wolfgang. 213,020.
Sakow, Toshihiko. 213,025.
Wildgen, Leo F., to Arthur Salem, Inc. Combined letter opener and knife or similar article. 213,029, 12–24–68, Cl. D74—10.
Wilkinson Sword Ltd.: *See*—
Kimbell, William P. 213,014.
Kimbell, William P. 213,015.
Zeller, Herbert J., to Motorola, Inc. Control panel for a combined radio and phonograph or similar article. 213,023, 12–24–68, Cl. D56—4.
Zeller, Herbert J., to Motorola, Inc. Control panel for a combined radio and phonograph or similar article. 213,024, 12–24–68, Cl. D56—4.
Zemke, Ronald O.: *See*—
Kleemeier, Robert H., and Zemke. 213,016.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 24TH DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Tetra Pak : *See*—
Abrahamson, Hans A. G. 3,417,674.
Ljungberg, Per-Allan. 3,417,545.

ACF Industries, Inc. : *See*—
Pulcrano, Frank C., O'Leary, and Zambruski. 3,417,712.

AMP, Inc. : *See*—
Burns, William C. 3,417,599.

Aaronson Bros. Ltd. : *See*—
Allan, Morris. 3,418,195.

Abashian, Steven, to E. I. du Pont de Nemours and Co. Process for coating polyester fibers with a mixture of lanolin and an olly silicone. 3,418,160, 12–24–68, Cl. 117—138.8.

Abex Corp. : *See*—
Wilson, Rosser L., and Redelman. 3,418,462.

Abrahamson, Hans A. G., to AB Tetra Pak. Method and apparatus for forming parallelepipedic packages having folded up end flaps from a continuous tubular material and for effecting a two-stage advance of the material to ensure proper registration for indicia on the package. 3,417,674, 12–24–68, Cl. 93—8.

Acheson, Willard P., and M. A. Torcaso, to Gulf Research & Development Co. Conical jet bits. 3,417,829, 12–24–68. Cl. 175—67.

Ackermann, Karl, deceased, by K. Siebert, representative of the heirs, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of highly active metals of the iron group. 3,418,258, 12–24–68, Cl. 252—472.

Acme Highway Products Corp. : *See*—
Crone, Alfred F., and Bryan. 3,417,680.

Adachi, Nobuyuki, to The Shin-etsu Chemical Industry Co., Ltd. Composition of waterproof agent and process for manufacture of waterproof cloth using the same. 3,418,162, 12–24–68, Cl. 117—161.

Adams, Andrew O., to Leach Corp. Relay drive circuit. 3,418,541, 12–24–68, Cl. 317—156.

Adams Electronics, Inc. : *See*—
Adams, Stanley A. 3,418,606.

Adams, Floyd C., and R. N. Jones, to Cabot Corp. Apparatus for producing channel black. 3,418,085, 12–24–68, Cl. 23—259.6.

Adams, Stanley A., to Adams Electronics, Inc. Delay line reactance device. 3,418,606, 12–24–68, Cl. 333—31.

Addressograph-Multigraph Corp. : *See*—
Lee, Richard G., and Groom. 3,418,047.

Agfa Aktiengesellschaft : *See*—
Kiper, Gerd. 3,417,683.
Wick, Richard, Geyken, Frick, and Kwiatkowski. 3,418,-225.

Agfa-Gevaert Aktiengesellschaft : *See*—
Landbrecht, Franz. 3,417,682.
Menold, Richard, Heyl, and Simm. 3,418,115.

Aghnides, Elie P. Aerator with variable proportioning. 3,417,924, 12–24–68, Cl. 239—428.5.

Ajax-Newark, Inc. : *See*—
Brumagin, Thomas H., and Brown. 3,417,930.

Ajem Laboratories, Inc. : *See*—
Arnold, Orlan M. 3,417,871.

Akermanis, Andrey O. Auxiliary steering device for an outboard motor boat. 3,417,723, 12–24–68, Cl. 114—144.

Akermans Verkstad AB : *See*—
Norlin, Knut B., and Borg. 3,417,524.

Aktiebolaget Bofors : *See*—
Ekenstam, Bo T. A., and Pettersson. 3,418,325.

Aktiebolaget Melka : *See*—
Andersson, Lars M. 3,417,718.

Aktiengesellschaft Brown, Boveri & Cie : *See*—
Plust, Heinz-Gunther, and Telschow. 3,418,167.
Schonhuber, Max J., and Kanngiesser. 3,418,511.

Albert, John R., and M. J. Grebowiec, to Brockway Glass Co., Inc. Apparatus for extruding composite blow molding parisons. 3,417,432, 12–24–68, Cl. 18—14.

Alexandre, Bernard, ot Commissariat a l'Energie Atomique. Differential circuit, especially for reading magnetic-layer storage systems. 3,418,603, 12–24–68, Cl. 333—9.

Alford, John H., H. A. Armand, W. E. Bray, E. E. Hamilton, L. L. Jasper, R. L. Renker, R. M. Ryon, Jr., and S. D. Moore, to Texas Instruments Inc. Universal electronic test system for automatically making static and dynamic tests on an electronic device. 3,418,573, 12–24–68, Cl. 324—73.

Alkaline Batteries Ltd. : *See*—
Carter, Herbert D. 3,418,166.

Allan Mfg. Co. : *See*—
Fulop, Jules E. 3,417,501.

Allan, Morris, to Aaronson Bros. Ltd. Fabricated sheets of wood veneer. 3,418,195, 12–24–68, Cl. 161—37.

Allied Chemical Corp. : *See*—
Idelson, Albert L., and Litt. 3,418,261.

Allina, Stanley F., to The Perfection Mfg. Co. Garden cart and liner bag assembly. 3,418,005, 12–24–68, Cl. 280—47.26.

Allington, John R., to Instrumentation Specialties Co. Rectangular fraction collector. 3,418,084, 12–24–68, Cl. 23—259.

Allis-Chalmers Mfg. Co. : *See*—
Nowotny, Lloyd A. 3,417,477.
Patterson, Warren R. 3,417,932.

All-Steel Equipment Inc. : *See*—
Ericson, John P. 3,418,026.

Allwood, Ronald A. : *See*—
Jones, Samuel H., Allwood, and Bundza. 3,418,150.

Allyn, Harold D. Receiver and housing assembly for a firearm. 3,417,499, 12–24–68, Cl. 42—75.

Aloi, Alfred. Garment sleeve spreader. 3,417,905, 12–24–68, Cl. 223—74.

Aluminum Co. of America : *See*—
Rutemiller, Herbert C. 3,418,230.

Ambrose, Walter R., to Bausch & Lomb Inc. Dual viewing stereoscope. 3,418,034, 12–24–68, Cl. 350—138.

American Aluminum Window Corp. : *See*—
Levine, Sidney. 3,418,016.

American Cyanamid Co. : *See*—
Booth, Robert B., and Dobson. 3,418,237.
Gordon, John E., and Von Isaiah. 3,418,321.
Nakajima, Akira, Takeyo, and Hoten. 3,418,300.

American Electronic Laboratories, Inc. : *See*—
Riebman, Leon, and McDonnell. 3,418,587.

American Gage & Machine Co. : *See*—
Vlasaty, Frank J. 3,417,475.

American Home Products Corp. : *See*—
Bell, Stanley C. 3,418,315.
Buzby, George C., Jr., and Smith. 3,418,326.
Buzby, George C., Jr., and Smith. 3,418,327.
Davis, Martin A., and Campbell. 3,418,332.
Dobson, Thomas A., and Davis. 3,418,339.
Strike, Donald P., and Smith. 3,418,343.

American Machine & Foundry Co. : *See*—
Williamson, William R. 3,418,213.

American Telephone and Telegraph Co. : *See*—
Rackliffe, Leroy J., and Rau. 3,418,455.

Ametek, Inc. : *See*—
Sindlinger, Norman E. 3,417,984.

Amir, Emanuel M., to Esso Research and Engineering Co. Purification of mesitylene. 3,418,389, 12–24–68, Cl. 260—674.

Ampex Corp. : *See*—
Markakis, Michael J., and Ferguson. 3,417,938.

Amsterdam, Michael F., M. S. Shaikh, and K. S. Tarneja, to United States of America, Air Force. Solar cell panels from nonuniform dendrites. 3,418,170, 12–24–68, Cl. 136—89.

Anaconda Co., The : *See*—
Crocker, Bunting S., Fulmor, Holderreed, Lucy, and Mahoney. 3,417,927.

Ancar A.G. : *See*—
Barz, Günter. 3,418,148.

Anderson, Clarence V. Trap. 3,417,504, 12–24–68, Cl. 43—85.

Anderson, David W., C. J. Conti, F. J. Sparacio, and R. M. Tomasulo, to International Business Machines Corp. Instruction processing unit for program branches. 3,418,638, 12–24–68, Cl. 340—172.5.

Anderson, Howard R., P. E. Lambdin, and W. A. Mitchener, to Caterpillar Tractor Co. Enclosure for gas turbine engine electric generator set. 3,418,485, 12–24–68, Cl. 290—1.

Anderson, Olof V., to Anson, Inc. Adjustable clasp. 3,417,578, 12–24–68, Cl. 63—5.

Anderson, Wright (South Africa) Ltd. : *See*—
Henderson, Herbert V. 3,417,568.

Andersson, Lars M., to Aktiebolaget Melka. System for automatic guiding the work in a sewing machine. 3,417,718, 12–24–68, Cl. 112—203.

Andress, Harry J., Jr., and P. Y. C. Gee, to Mobil Oil Corp. Inhibited distillate fuel oils. 3,418,092, 12–24–68, Cl. 44—71.

Andrasko, Leslie M. Fluid sampler. 3,417,623, 12–24–68, Cl. 73—422.

Andrews, Robert J., to United States of America, Navy. Folding stretcher. 3,417,412, 12–24–68, Cl. 5—82.

Andrews, Thomas L., to Seefore Corp. Pipe support. 3,417,-785, 12–24–68, Cl. 138—108.

Angel, Henry R., and A. H. Morgan, to Electronic Controls, Inc. Magnetically actuated miniature relay. 3,418,608, 12–24–68, Cl. 335—131.

Angus, George, & Co. Ltd. : *See*—
Hird, Desmond. 3,418,404.

Anson, Inc. : *See*—
Anderson, Olof V. 3,417,578.

Anspach, Ralph : *See*—
Killen, Duncan C., and Anspach. 3,417,757.

Anstey, Nigel A., to Seismograph Service Corp. Methods and apparatus for attenuating the effects of multiple seismic reflections. 3,418,625, 12–24–68, Cl. 340—15.5.

Anthes, Clifford C., to Union Carbide Corp. Fuel gas mixture and process for use thereof. 3,418,176, 12–24–68, Cl. 148—9.

Anthony, Joseph. Mobile display drive mechanism. 3,417,498, 12–24–68, Cl. 40—30.

Anthony, Luther C. Material handling machine. 3,417,889, 12–24–68, Cl. 214—505.

Anton, Anthony, and E. J. Volcheck, Jr., to E. I. du Pont de Nemours and Co. Crimpable bicomponent nylon filament. 3,418,199, 12–24–68, Cl. 161—175.

Archinal, William F., and H. M. Brazener, to Panelfab Products, Inc. Drive cleat connector. 3,417,529, 12–24–68, Cl. 52—468.

Ariga, Ken-ichi, S. Watanabe, and R. Godai, to Konishiroku Photo Industry Co., Ltd. Photographic film with magnetic recording stripes. 3,418,126, 12–24–68, Cl. 96—79.

Armand, Harold A. : *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.

Armbruster, Gerhard : *See*—
Paule, Kurt, Armbruster, and Kirn. 3,418,504.

Armour and Co. : *See*—
Miller, Eugene J., Jr., Mais, Berenschot, and Berger. 3,418,374.

Armstrong Cork Co. : *See*—
Robinson, James E. 3,417,633.

Arnold, Donald R., and A. A. Sousa, to Union Carbide Corp. Novel pyridyl substituted oxetanes and derivatives thereof. 3,418,330, 12–24–68, Cl. 260—297.

Arnold, Orlan M., to Ajem Laboratories, Inc. Centrifugal concentrator. 3,417,871, 12–24–68, Cl. 210—512.

Art Metal-Knoll Corp. : *See*—
Helms, Charles R. 3,417,956.

Asahi Kasei Kogyo Kabushiki Kaisha : *See*—
Tsuzihashi, Kazuo, Matsumoto, Ueno, Okamoto, Nagaoka, and Ono. 3,417,654.

Aschenbrenner, William E. : *See*—
Haselow, William J., and Aschenbrenner. 3,417,989.

Ashdown Bros. & Co. (Engineers) Ltd. : *See*—
Jones, Samuel H., Allwood, and Bundza. 3,418,150.

Asher, Ralph L., to International Telephone and Telegraph Corp. Digital pulse train detection system. 3,418,586, 12–24–68, Cl. 329—104.

Asher, William J. : *See*—
Savage, David W., Lorenz, and Asher. 3,418,235.

Ashland Oil and Refining Co. : *See*—
Graver, Richard B., and Farel. 3,418,081.

Asmanes, Charles, to United States of America, Atomic Energy Commission. Rotary table. 3,418,027, 12–24–68, Cl. 308—70.

Associated Electrical Industries Ltd. : *See*—
Elliott, Richard M. 3,418,513.

Asunmaa, Saara K., to Owens-Illinois, Inc. Process of forming water-laid products of cellulosic fibers and glass fiber containing lignos-sulfonic acid and sodium silicate and products thereof. 3,418,203, 12–24–68, Cl. 162—145.

Ateliers de Constructions Electriques de Charleroi (ACEC) : *See*—
Cuvelier, Jean-Jacques. 3,418,428.

Atomic Energy of Canada Ltd. : *See*—
Watson, Robert D., Long, and Hacking. 3,418,028.

Attenhofer, A., A.G. : *See*—
Welker, Arthur. 3,418,004.

Attewell, Oliver G., to McGraw-Edison Co. Control circuit for protective device. 3,418,529, 12–24–68, Cl. 317—11.

Ausnit, Steven. Method of making a plastic bag and a magnetic sliderless fastener therefor. 3,417,675, 12–24–68, Cl. 93—35.

Automation Industries, Inc. : *See*—
Graham, Robert L. 3,417,609.
Nance, Roy A., and Shull. 3,417,610.

Autoset (Production) Ltd. : *See*—
Dale, Samuel B. 3,417,422.

Axtell, Clive S. : *See*—
Balamuth, Lewis, Grimes, Evans, Axtell, Robertson, and Higgins. 3,418,185.

Babbitt, Charles A., to Torrance Specialty Fixtures, Inc., d.b.a. Torrance Machinery and Engineering, Inc. 3,417,591, 12–24–68, Cl. 72—181.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft : *See*—
Ackermann, Karl. 3,418,258.

Bahnson Co., The : *See*—
Davis, William R. 3,418,500.

Bailey, Irene R. Surgical bandage. 3,417,749, 12–24–68, Cl. 128—171.

Baird-Atomic, Inc. : *See*—
Spergel, Philip, Di Rocco, and Grenier. 3,418,474.

Bakelite Xylonite Ltd. : *See*—
Baumber, Michael W. 3,418,279.

Baker, Joseph W., to Monsanto Co. Halonitroanilides. 3,418,-345, 12–24–68, Cl. 260—404.5.

Balamuth, Lewis, D. D. Grimes, C. A. Evans, C. S. Axtell, C. A. Robertson, and C. T. Higgins, Said Balabuth, Evans, and Robertson assors to Cavitron Corp. 3,418,185, 12–24–68, Cl. 156—73.

Ball, Lawrence E., to The Standard Oil Co. Process for preparing biaxially oriented acrylonitrile polymer film. 3,418,-406, 12–24–68, Cl. 264—206.

Bancroft, Charles F., to Hughes Aircraft Co. Phase comparator circuit. 3,418,496, 12–24–68, Cl. 307—232.

Bancroft, Joseph, & Sons, Co. : *See*—
Trifunovic, Alexander L., and Zeis. 3,417,447.

Bantjes, Adrian, to E. I. du Pont de Nemours and Co. Sulfonated caprolactones and polymerization with 2,2-dialkyl-3-propiolactones. 3,418,290, 12–24–68, Cl. 260—78.3.

Barber, Robert R., and K. H. Loetner, to International Business Machines Corp. Intensity control system for a particle beam device. 3,418,520, 12–24–68, Cl. 315—31.

Barber-Colman Co. : *See*—
Stark, Ernest H. 3,417,575.

Barbier, Jean Y., to International Oil Burner Co. Electric hot water unit heater utilizing replaceable cartridge. 3,418,-451, 12–24–68, Cl. 219—341.

Bard, C. R., Inc. : *See*—
Carson, Ralph. 3,417,750.

Barle, Walter P., Jr., N. W. Franke, and A. C. Whitaker, to Gulf Research & Development Co. Organo-titanium compounds and zinc dicarboxylates as synergistic esterification catalyst. 3,418,359, 12–24–68, Cl. 260—475.

Barigant, Pierre, to l'Electronique Appliques. Device for determining the modulus of Young of visco-elastic materials. 3,417,608, 12–24–68, Cl. 73—67.1.

Barker, Stanley G. Convenience rack storable as a decorative hanging. 3,417,875, 12–24–68, Cl. 211—126.

Barlow, Gordon A., and N. T. McFarland, to Marvin Glass & Associates. Pendulum indicator device. 3,417,997, 12–24–68, Cl. 273—161.

Barnes Engineering Co. : *See*—
Falbel, Gerald. 3,418,478.

Barney, Arthur L., and R. L. Morgan, to E. I. du Pont de Nemours and Co. Coordination catalyst system and polymerization process. 3,418,303, 12–24–68, Cl. 260—88.2.

Barnstorf, Ingo, to VDO Tachometer Werke Adolf Schindling G.m.b.H. Immersed tube level indicator in automotive vehicles. 3,417,613, 12–24–68, Cl. 73—319.

Barras, Herbert. Terracing, grading and leveling device. 3,417,-495, 12–24–68, Cl. 37—93.

Barrett, Joseph N. Jack plug connector. 3,418,438, 12–24–68, Cl. 200—51.1.

Bartlett, Philip L., to E. I. du Pont de Nemours and Co. Photochemical chlorination of acetonitrile. 3,418,228, 12–24–68, Cl. 204—158.

Barton, Frank L., Jr., and L. F. Kaiser, to Libbey-Owens-Ford Glass Co. Method and apparatus for bedding glass plates for grinding and polishing. 3,418,190, 12–24–68, Cl. 156—295.

Barusch, Maurice R., W. L. Richardson, G. J. Kautsky, and D. R. Olson, to Chevron Research Co. Tetramethyllead and arylphosphate gasoline composition. 3,418,091, 12–24–68, Cl. 44—69.

Barz, Gunter, to Ancar A.G. Dye layer for carbon paper, copying paper, hectographic paper, and the like, and method of making same. 3,418,148, 12–24–68, Cl. 117—36.1.

Basiletti, John C., and W. F. Isley, to Continental Aviation and Engineering. Compression ratio piston including oil filtering means. 3,417,738, 12–24–68, Cl. 123—78.

Bata, George L., to Union Carbide Canada Ltd. Stress-crack resistant polyethylene compositions. 3,418,269, 12–24–68, Cl. 260—38.

Batcher, Kenneth E., to Goodyear Aerospace Corp. Means for merging sequences of data. 3,418,632, 12–24–68, Cl. 340—146.2.

Bathellier, Louis R. M., to Compagnie de Saint-Gobain. Operational safety mold cam bypass. 3,418,096, 12–24–68, Cl. 65—29.

Bausch & Lomb Inc. : *See*—
Ambrose, Walter R. 3,418,034.
Buchroeder, Richard A., and Ziegler. 3,418,038.
Harmon, Duane D. 3,418,484.
Martens, Alexander E. 3,417,476.
Welham, Brian H. 3,418,037.

Baylor, John T., to Cubic Corp. Pseudo-coherent range rate system. 3,418,655, 12–24–68, Cl. 343—6.5.

Bayne, Peter D., to Jos. Schlitz Brewing Co. Light-insensitive malt beverage and process of producing the same. 3,418,135, 12–24–68, Cl. 99—31.

Bayne, Peter D., and J. A. Kozulis, to Jos. Schlitz Brewing Co. Method of sterilizing a malt beverage. 3,418,136, 12–24–68, Cl. 99—48.

Bauer, Herbert, to Radio Corp. of America. Process for preparing a magnetic recording element. 3,418,161, 12–24–68, Cl. 117—161.

Baumann, Hans D. Pneumatic temperature transmitters. 3,417,919, 12–24–68, Cl. 236—87.

Baumber, Michael W., to Bakelite Xylonite Ltd. Novel oxymethylene copolymers. 3,418,279, 12–24–68, Cl. 260—67.

Bean, Cecil M., and R. H. Oliver, to United Kingdom Atomic Energy Authority. Methods and apparatus for differential thermal analysis. 3,417,604, 12–24–68, Cl. 73—15.

Bearden, Charles R., to The Dow Chemical Co. Copolymer concentrate and oil composition. 3,418,296, 12–24–68, Cl. 260—80.72.

Beasley, George A., to Univis, Inc. Method of blocking lenses. 3,417,454, 12–24–68, Cl. 29—468.

Beatty, John W., and G. McNeir, to General Electric Co. Gas-blast circuit breaker. 3,418,440, 12–24–68, Cl. 200—148.

Beavers, Bobby R., and N. J. Meyer, to Ling-Temco-Vought, Inc. Momentum transducer. 3,418,546, 12–24–68, Cl. 317—246.

Beck, Roland D., and H. W. Rice, to Robertshaw Controls Co. Pneumatic programming means and the like. 3,417,663, 12–24–68, Cl. 91—36.

Becker, Hans, to Licentia Patent-Verwaltungs G.m.b.H. Excess current limiter for coupled power systems. 3,418,532, 12–24–68, Cl. 317—53.

Becker, Richard W., to Eastman Kodak Co. Multicolor dye developer image transfer systems. 3,418,117, 12-24-68, Cl. 96—3.

Becker, Winfried, S. Finzi, E. R. Jorzik, and E. Ohlmer, to European Atomic Energy Community (Euratom). System for functional supervision of heat-insulating layers in nuclear reactor channels. 3,418,207, 12-24-68, Cl. 176—19.

Beckman Instruments, Inc.: *See*—
Rochte, Jerry E., and Martin. 3,418,080.
Sternberg, James C. 3,418,514.

Beckwith, John R., to Packard-Bell Electronics Corp. Limited motion motor. 3,418,612, 12-24-68, Cl. 335—222.

Beger, Hilde. Device for the production of pressure waves in liquids. 3,417,747, 12-24-68, Cl. 128—66.

Behm, William F., to Houdaille Industries, Inc. Constant stroke variable displacement pump. 3,417,702, 12-24-68, Cl. 103—37.

Bell Aerospace Corp.: *See*—
Gilday, John F., and Rodriguez. 3,417,729.

Bell Electric Co.: *See*—
Zerwes, Paul J. 3,418,420.

Bell, F. W., Inc.: *See*—
Renner, Donald J. 3,418,542.

Bell & Howell Co.: *See*—
Brubaker, Wilson M., and Wiens. 3,418,464.

Bell, Stanley C., to American Home Products Corp. Preparation of 7-chloro-1,3-dihydro-3-diethylamino-3-methyl-5-phenyl-2H-1,4-benzodiazepin-2-one. 3,418,315, 12-24-68, Cl. 260—239.3.

Bell Telephone Laboratories, Inc.: *See*—
Clouser, Paul L., and Goell. 3,418,601.
Flanagan, James L. 3,417,837.
Hershey, Harold J., McGee, and Warnock. 3,418,431.
Loiacono, Gabriel M., and Nassau. 3,418,086.
Sipress, Jack M., and Zarins. 3,418,631.

Bemex: *See*—
Berberian, Vartan. 3,417,801.

Bencur, Robert M.: *See*—
Shinn, Ernest R. 3,417,641.

Bendix Corp., The: *See*—
Reynolds, Gibson, and Doniger. 3,417,945.
Robinson, Arthur S. 3,418,653.

Benedikter, Kurt, K.-O. Hagel, and N. Wilke, to Chemische Werke Hüls Aktiengesellschaft. Process for the production of vulcanizable copolymers. 3,418,299, 12-24-68, Cl. 260—85.3.

Bennett, Clifton F., and D. W. Gobeen, to Crown Zellerbach Corp. Preparation of sulfones by electrolytic oxidation. 3,418,224, 12-24-68, Cl. 204—78.

Bennett, Edward D. Punching apparatus. 3,417,643, 12-24-68, Cl. 83—146.

Berberian, Vartan, to Bemex. Self-locking nut against vibrations. 3,417,801, 12-24-68, Cl. 151—21.

Berenschot, Donald, Jr.: *See*—
Miller, Eugene J., Jr., Mais, Berenschot, and Berger. 3,418,374.

Berg, Quentin. Assembly for transistor manufacture. 3,418,089, 12-24-68, Cl. 29—193.5.

Berger, Robert L.: *See*—
Miller, Eugene J., Jr., Mais, Berenschot, and Berger. 3,418,374.

Bertin & Cie: *See*—
Bertin, Jean H., Feve, and Guienne. 3,417,709.

Bertin, Jean H., M. L. B. Feve, and P. F. Guienne, to Bertin & Cie. Air-cushion sustained vehicles. 3,417,709, 12-24-68, Cl. 104—23.

Betz Laboratories, Inc.: *See*—
Bishof, Chester A., and Silverstein. 3,418,254.
Silverstein, Ronald M., and Bishof. 3,418,253.

Betzold, Edward R., and C. T. Johnson, to United States of America, Navy. Empty case ejector mechanism. 3,417,658, 12-24-68, Cl. 89—33.

Bidwell, Robert E.: *See*—
Mishkin, Sidney, and Bidwell. 3,417,744.

Bieschke, Hillard J., to Knox Mfg. Co. Tripod lock for movie screen stand. 3,417,952, 12-24-68, Cl. 248—171.

Bigelow, John H., to E. I. du Pont de Nemours and Co. Method of stabilizing the background in light developable silver halide emulsions using thiazole containing compounds. 3,418,131, 12-24-68, Cl. 96—109.

Bildat, Benno: *See*—
Schmidt, Karl H., and Bildat. 3,417,640.

Billarant, Jean, to Velcro S.A. Hook and loop fastener. 3,417,440, 12-24-68, Cl. 24—204.

Bilocq, Georges A., to Torano Limitee. System for electromechanically feeding wood logs into shafts. 3,417,854, 12-24-68, Cl. 198—24.

Bimler, Rudolf. Jointed splint for the treatment of fractures especially leg fractures. 3,417,748, 12-24-68, Cl. 128—85.

Binder, Fritz: *See*—
Hucks, Helmut, Binder, and Ludwigs. 3,418,025.

Binnall, Thomas J., and W. E. Surko, Jr., to Embart Corp. Spring wire hose clamp and form post for making said clamp. 3,417,437, 12-24-68, Cl. 24—27.

Birkeland, Stephen P., to Minnesota Mining and Mfg. Co. Recording medium utilizing grain-free fluorescent material. 3,418,470, 12-24-68, Cl. 250—71.

Birmingham, Henry P. Control circuit for an indicating device. 3,418,584, 12-24-68, Cl. 328—143.

Bishof, Chester A.: *See*—
Silverstein, Ronald M., and Bishof. 3,418,253.

Bishof, Chester A., and R. M. Silverstein, to Betz Laboratories, Inc. Corrosion inhibiting with ethoxylated aqueous amine dispersions. 3,418,254, 12-24-68, Cl. 252—392.

Bishop, Walter F.: *See*—
Dieckmann, James R., and Bishop. 3,418,191.

Blasell Inc.: *See*—
Hoxie, Orville D. 3,418,243.

Bjornsen, Bjorn G., T. J. Lechner, Jr., and P. H. Sorenson, to Johnson Service Co. Pure fluid operational amplifier. 3,417,769, 12-24-68, Cl. 137—81.5.

Bjornson, Geir, and D. W. Walker, to Phillips Petroleum Co. Catalytic process for forming acrylonitrile. 3,418,357, 12-24-68, Cl. 260—465.3.

Black Clawson Co., The: *See*—
Buck, John A., and Taylor. 3,417,933.

Black and Decker Mfg. Co., The: *See*—
Brucker, William S. 3,417,664.

Blackburn, Andrew R.: *See*—
Emmel, Donald R., Blackburn, and Kendall. 3,418,408.

Blank, Robert J., and D. E. Snyder. Mixing and ejection tool. 3,417,971, 12-24-68, Cl. 259—37.

Blanton, Elmer L.: *See*—
Brown, Marion L., Jr., Green, and Blanton. 3,418,255.

Blaw-Knox Co.: *See*—
Saxon, Arthur F. 3,417,485.

Bleh, Otto: *See*—
Lenz, Arnold, Bleh, and Hass. 3,418,383.

Bloom Engineering Co., Inc.: *See*—
Hovis, James E., and Hoffman. 3,418,062.

Bloom, Meyer. Cam mechanism. 3,417,629, 12-24-68, Cl. 74—56.

Blount, Charles, Jr., to The United Piece Dye Works. Method for high temperature dyeing. 3,418,065, 12-24-68, Cl. 8—55.

Blue, Marts D., to Honeywell Inc. Solid state junction device for ultraviolet detection. 3,418,473, 12-24-68, Cl. 250—83.3.

Blum, Louis, and W. J. Horgan, Jr., to Blumcraft of Pittsburgh. Barrier structure. 3,417,532, 12-24-68, Cl. 52—584.

Blumcraft of Pittsburgh: *See*—
Blum, Louis, and Horgan. 3,417,532.

Blumenthal, Warren B., to National Lead Co. Production of ammonium zirconyl carbonate. 3,418,073, 12-24-68, Cl. 23—23.

Bobrick Corp., The: *See*—
Cowan, Arnold A. 3,417,784.

Bobrowsky, Alfred, to Pressure Technology Corp. of America. Process and apparatus for working metals under high fluid pressure. 3,417,589, 12-24-68, Cl. 72—60.

Bodinaux, Gaston J. C., to Les Forges de Zeebrugge S.A. Detonating fuse for bombs and the like. 3,417,701, 12-24-68, Cl. 102—75.

Bodine, Albert G. Adjustment of orbiting mass oscillator driving resonant sonic vibration system for optimum system stability. 3,417,966, 12-24-68, Cl. 259—1.

Bodine, Charles M.: *See*—
Suverkropp, Claus P. J., and Bodine. 3,417,865.

Boehringer, C. F., & Soehne G.m.b.H.: *See*—
Rey, Hans-Georg, and Rieckmann. 3,418,079.
Rey, Hans-Georg, and Rieckmann. 3,418,083.

Boehringer Ingelheim G.m.b.H.: *See*—
Heusner, Alex, and Zelle. 3,418,319.

Boeing Co., The: *See*—
Hall, Richard B., and Consoli. 3,418,206.
Williamson, James A. 3,418,649.

Boggs, Raymond R., Jr., H. C. Locklar, and L. E. West, to International Business Machines Corp. Remote control matrix dictating system. 3,418,432, 12-24-68, Cl. 179—100.1.

Boissonnas, Roger, and R. Huguenin, to Sandoz Ltd. (d/b/a Sandoz A.G.). Deamino^1-phenylalanyl^2-arginine^8-vasopressin. 3,418,307, 12-24-68, Cl. 260—112.5.

Boker, William E., to Boker's, Inc. Material working process and apparatus. 3,417,584, 12-24-68, Cl. 72—7.

Boker's Inc.: *See*—
Boker, William E. 3,417,584.

Bolchert, Wilfred, to Rhone-Poulenc S.A. Process for the preparation of polyvinyl alcohol by polymerising a vinyloxysilane and alcoholysing the polymer obtained. 3,418,293, 12-24-68, Cl. 260—80.

Boman, Donald and E. Fruit and nut gatherer. 3,417,559, 12-24-68, Cl. 56—329.

Boman, Elmer: *See*—
Boman, Donald and E. 3,417,559.

Bonnel, Arthur J., to Ford Motor Co. Air filter. 3,417,551, 12-24-68, Cl. 55—498.

Booth, Robert B., and J. M. Dobson, to American Cyanamid Co. Settling of non-argillaceous ore pulps and mineral suspensions by use of water-soluble acrylic polymers. 3,418,237, 12-24-68, Cl. 210—54.

Borg, Sven B.: *See*—
Norlin, Knut B., and Borg. 3,417,524.

Borg-Warner Corp.: *See*—
Zeidler, Reinhold C. 3,417,844.

Bosch, Robert, Elektronik und Photokino G.m.b.H.: *See*—
Paape, Klaus. 3,417,936.

Bosch, Robert, G.m.b.H.: *See*—
Eckert, Konrad, and Eheim. 3,417,703.
Paule, Kurt, Armbruster, and Kirn. 3,418,504.

Bose, Amar G., to Bose Corp. Switching. 3,418,495. 12-24-68, Cl. 307—239.

Bose, Amar G., to Bose Corp. Frequency modulation electrical communication system. 3,418,578, 12-24-68, Cl. 325—45.

Bose Corp.: *See*—
Bose, Amar G. 3,418,495.
Bose, Amar G. 3,418,578.

Boslo, Roberto: *See*—
Guzzi, Alberto, and Boslo. 3,418,282.

Bottom, Theodore J. Strip-feeding and shearing mechanism. 3,417,644, 12-24-68, Cl. 83—230.

Boucher, Joseph H.: *See*—
Williams, Gerald I., Boucher, Duffy, and Olson. 3,418,043.

Bouladon, Gabriel: *See*—
Schonfelder, Max, Zuppiger, and Bouladon. 3,417,878.

Bovenizer, William N., to McGraw-Edison Co. Tap changing of paralleled transformer windings. 3,418,562, 12-24-68, Cl. 323—43.5.

Bowater-Scott Corp. Ltd.: *See*—
Murdoch, Ian L. 3,417,751.

Bowerman, Hulie E., deceased (by Z. M. Bowerman, executrix), to Oil States Rubber Co. Swab cup. 3,417,673, 12-24-68, Cl. 92—241.

Bowerman, Zora M.: *See*—
Bowerman, Hulie E. 3,417,673.

Bowman, John M., to E. I. du Pont de Nemours and Co. Polychloroprene-fluoroelastomer composite articles. 3,418,201, 12-24-68, Cl. 161—184.

Bowles, Romald E., and B. M. Horton. Vortex rate sensor. 3,417,624, 12-24-68, Cl. 73—432.

Boyer, Didier: *See*—
De Balsac, Raymond H., and Boyer. 3,341,777.

Bozek, John S., and J. S. Song, to Continental Can Co., Inc. Dual wall can end. 3,417,898, 12-24-68, Cl. 220—66.

Bozeman, Richard W., to General Electric Co. Magnetically responsive control apparatus. 3,418,443, 12-24-68, Cl. 219—110.

Bradham, Allen C., III, to Texas Instruments Inc. Attachment of integrated circuit leads to printed circuit boards. 3,418,422, 12-24-68, Cl. 174—94.

Bradley, Frank R., Jr. Memory device in conjunction with a magnetically variable electric signal generator. 3,418,643, 12-24-68, Cl. 340—174.

Brass Craft Mfg. Co.: *See*—
Zell, Robert M. 3,417,450.

Bray, Donald T., to Gulf General Atomic Inc. Reverse osmosis purification apparatus. 3,417,870, 12-24-68, Cl. 210—321.

Bray, William E.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.

Brazener, Harry M.: *See*—
Archinal, William F., and Brazener. 3,417,529.

Brede, Ernst H.: *See*—
Schulze, Reinhard F. K., Brede, and Thebis. 3,417,621.

Breslow, David S., to Hercules Inc. Unsaturated polymer crosslinked with a polyfunctional nitrile imine. 3,418,285, 12-24-68, Cl. 260—75.

Brethen, Chester A. Label imprinter. 3,417,689, 12-24-68, Cl. 101—69.

Brevets Aero-Mecaniques S.A.: *See*—
Maillard, Bernard, and Hug. 3,417,657.

Brevets et Applications Textiles Brevatex: *See*—
Masurel, Michel. 3,417,436.

Brewer, Willie F., to FMC Corp. Cutting assembly for flail type mower. 3,417,557, 12-24-68, Cl. 56—294.

Brinker, John B.: *See*—
Schmidt, Karl H., Weber, Rowe, and Brinker. 3,418,286.

Bristol Aeroplane Plastics Ltd.: *See*—
Richens, Raymond H., White, and Richardson. 3,417,967.

Bristol-Myers Co: *See*—
Juby, Peter F. 3,418,328.

British Aircraft Corp. (Operating) Limited: *See*—
Page, Frederick W., Creasey, and Froud. 3,417,943.

Broberg, Leonard E., to A. O. Smith Harvestore Products, Inc. Unloading mechanism for a storage structure. 3,417,880, 12-24-68, Cl. 214—17.

Brock, John D., 50% to Richard A. Burnette. Apparatus for sensing and cutting along the edge of a thickened portion of a traveling web. 3,417,645, 12-24-68, Cl. 83—368.

Brockel, Gerhard R., R. J. Hug, and K. Rutschi, to Sulzer Brothers Ltd. Method and apparatus for recording weaving data. 3,417,916, 12-24-68, Cl. 234—1.

Brockway Glass Co., Inc.: *See*—
Albert, John R., and Grebowiec. 3,417,432.
Brubaker, John G. 3,418,020.

Brodie, George R., to John C. Motter Printing Press Co. Double ductor. 3,417,692, 12-24-68, Cl. 101—350.

Bronnes, Robert L., R. C. Sweet, and R. C. Hughes, to North American Philips Co., Inc. Fluorine-resistant electrical terminal, 3,418,423, 12-24-68, Cl. 174—152.

Brooks, Fred A., to United States of America, Air Force. Voice signal processing and phase equalizing for SSB system. 3,418,580, 12-24-68, Cl. 325—137.

Brooks, Warren B.: *See*—
Dean, James T., Gravley, Randerson, and Brooks. 3,417,611.

Brooks, William. Programming device and sawtooth generator therefor. 3,418,652, 12-24-68, Cl. 340—324.

Bross, Charles F.: *See*—
Merrill, Leland H., and Bross. 3,417,542.

Brotzmann, Karl: *See*—
Knuppel, Helmut, and Brotzmann. 3,417,463.

Broussaud, Georges, and L. Malnar, to CSF-Compagnie Generale de Telegraphie Sans Fil. Optical resonance cells. 3,418,565, 12-24-68, Cl. 324—.5.

Brown, Donald A., to Gulf Research & Development Co. Seismic shot firing system controlled by tuned circuit. 3,418,636, 12-24-68, Cl. 340—171.

Brown, Edgar D., Jr., to General Electric Co. Alkylpolysiloxane fluids, 3,418,353, 12-24-68, Cl. 260—448.2.

Brown, Edward A., to G. D. Searle & Co. 17α-hydroxyalkyl-17β-methylgona-4,13-dien-3-ones and intermediates. 3,418,344, 12-24-68, Cl. 260—397.45.

Brown, Frank E., to Unette Corp. Tube closure. 3,417,899, 12-24-68, Cl. 220—67.

Brown, G. A., Inc.: *See*—
Hertig, Max, and Meier. 3,417,582.

Brown, Marion L., Jr., A. W. Green, and E. L. Blanton, to Mississippi Chemical Corp. Method of producing concentrated solutions of mixed ammonium salts of boric, phosphoric and sulfuric acids. 3,418,255, 12-24-68, Cl. 252—397.

Brown, Stanley H.: *See*—
Brumagin, Thomas H., and Brown. 3,417,930.

Brown, William A.: *See*—
Greene, Charles R., and Brown. 3,418,351.

Brownhill, Frank D.: *See*—
Colley, Ronwn H., and Brownhill. 3,417,730.

Brubaker, John G., to Brockway Glass Co., Inc. Wareholder. 3,418,020, 12-24-68, Cl. 294—93.

Brubaker, Wilson M., and F. B. Wiens, to Bell & Howell Co. Duopole mass filter. 3,418,464, 12-24-68, Cl. 250—41.9.

Brucher, Hans: *See*—
Gemeinhardt, Hermann, Schatz, and Brucher. 3,417,445.

Brucker, William S., to The Black and Decker Mfg. Co. Vane construction for pneumatic motor. 3,417,664, 12-24-68, Cl. 91—119.

Bruderlein, Johannes, to Fried. Krupp Gesellschaft mit beschrankter Haftung. Vibratory apparatus. 3,417,630, 12-24-68, Cl. 74—61.

Brumagin, Thomas H., and S. H. Brown, to Ajax-Newark, Inc. Apparatus for treating aluminum dross. 3,417,930, 12-24-68, Cl. 241—64.

Brunson, Marion O., and K. W. Hyche, to Eastman Kodak Co. Hot melt adhesive composition. 3,418,202, 12-24-68, Cl. 161—192.

Brunswick Corp.: *See*—
Klekhaefer, Elmer C. 3,417,522.
Klekhaefer, Elmer C. 3,417,527.

Bryan, Freel F.: *See*—
Crone, Alfred F., and Bryan. 3,417,680.

Bryant, Billy V. Extendible clothing rack. 3,417,874, 12-24-68, Cl. 211—100.

Bryant, George R.: *See*—
Slater, Raymond W., G. R. and L. Bryant. 3,417,765.

Bryant, Lewis: *See*—
Slater, Raymond W., G. R. and L. Bryant. 3,417,765.

Buchholz, Bernard, and I. C. Popoff, to Pennsalt Chemicals Corp. Process for plant desiccation. 3,418,101, 12-24-68, Cl. 71—72.

Buchroeder, Richard A., and G. F. Ziegler, to Bausch & Lomb Inc. Four-component symmetrical projection objective. 3,418,038, 12-24-68, Cl. 350—209.

Buck, John A., and F. D. Taylor, to The Black Clawson Co. Pulper. 3,417,933, 12-24-68, Cl. 241—280.

Buckner, Wilbur G., to The Deutsch Co. Metal Components Division. Attaching device. 3,418,010, 12-24-68, Cl. 285—92.

Buecheler, Paul, to Sandoz Ltd. (also known as Sandoz A.G.). Process for the dyeing, padding and printing of textile materials with anthraquinone dyes. 3,418,064, 12-24-68, Cl. 8—39.

Buecheler, Paul, to Sandoz Ltd. (also known as Sandoz A.G.). Anthraquinone dyes. 3,418,342, 12-24-68, Cl. 260—377.

Bundza, Gunas: *See*—
Jones, Samuel H., Allwood, and Bundza. 3,418,150.

Bunting, Leslie J., to Eastman Kodak Co. Spindle for supporting reels or spools for rotation. 3,417,939, 12-24-68, Cl. 242—68.3.

Burch Plow Works Inc.: *See*—
Jackson, Oscar D. 3,417,826.

Burke, Clarence J., and K. J. Miller, to Caterpillar Tractor Co. Welding method and apparatus. 3,417,457, 12-24-68, Cl. 29—470.3.

Burnette, Richard A.: *See*—
Brock, John D. 3,417,645.

Burns, William C., to AMP, Inc. Compressing tool. 3,417,599, 12-24-68, Cl. 72—410.

Burroughs Corp.: *See*—
Clemson, Daniel M. 3,418,460.
Fussell, Richard L. 3,418,645.
Lee, Edwin S., III. 3,418,639.
Sergienko, Alexander. 3,418,143.

Busse, Warren F., to E. I. du Pont de Nemours and Co. Flame resistant polyamides and process thereof. 3,418,267, 12-24-68, Cl. 260—33.8.

Butler, Byron C. Magnetic clamp closing device for use with surgical instruments. 3,417,752, 12-24-68, Cl. 128—322.

Butler, Gerald E.: *See*—
Edwards, Ray, and Butler. 3,418,396.

Buzby, George C., Jr., and H. Smith, to American Home Products Corp. 5-alkyl-13-polycarbon-gonanes. 3,418,326, 12-24-68, Cl. 260—397.4.

Buzby, George C., Jr., and H. Smith, to American Home Products Corp. 5-alkyl-13-polycarbon-gonenes. 3,418,327, 12-24-68, Cl. 260—397.4.

Buzzards Corp., The: *See*—
Francis, Samuel A. 3,417,619.

Bynum, Stanley A., to General Electrodynamics Corp. Photoconductive layer separated from reactive opaque pattern by transparent conductive layer. 3,418,508, 12-24-68, Cl. 313—65.

CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Broussaud, Georges, and Malnar. 3,418,565.

Cabbage, John T., to Phillips Petroleum Co. Controlling an isomerization or alkylation reaction. 3,418,391, 12-24-68, Cl. 260—683.57.

Cable, Harold E. and H. E., to Weld Tooling Corp. Welding or cutting machine with removable template. 3,417,979, 12-24-68, Cl. 266—23.

Cable, Herbert E.: *See*—
Cable, Harold E. and H. E. 3,417,979.

Cabot Corp.: *See*—
Adams, Floyd C., and Jones. 3,418,085.

Caggiano, John J. Disposable footwear of readily alterable form. 3,417,408, 12–24–68, Cl. 2—239.
Caldwell, John R., and C. C. Dannelly, to Eastman Kodak Co. Surface oxidation and treatment of polymers. 3,418,066, 12–24–68, Cl. 8—115.5.
Caldwell, Melvin R.: *See*—
Moore, William C., and Caldwell. 3,417,746.
Call, John G. Jet engine with relatively rotatable combustion means, intake manifold and exhaust manifold. 3,417,564, 12–24–68, Cl. 60—39.34.
Callen, Robert H., to Market Forge Co. Ice dispensing apparatus. 3,417,903, 12–24–68, Cl. 222—238.
Cam Corp.: *See*—
Campbell, Clayton E., Jr. 3,418,621.
Campbell, Clayton E., Jr., to Cam Corp. Plugboard assembly. 3,418,621, 12–24–68, Cl. 339—18.
Campbell, David J.: *See*—
Davis, Martin A., and Campbell. 3,418,332.
Campbell, George L., to Garland Steel Co. Spiral pipe machine. 3,417,587, 12–24–68, Cl. 72—50.
Campbell, William B., to Lexington Laboratories Inc. Method for controlling the feed of nuclei in the production of crystals by vapor deposition. 3,418,076, 12–24–68, Cl. 23—142.
Campolong, Joseph F.: *See*—
Pall, David B., and Campolong. 3,417,704.
Canadian Ingersoll-Rand Co. Ltd.: *See*—
Trollope, William G. A. 3,417,843.
Cane, Domenick, to Westinghouse Electric Corp. Integral make-up deaerator for flash evaporator. 3,418,214, 12–24–68, Cl. 202—176.
Canney, Robert S., to General Electric Co. Removable fuse holder for an instrument transformer. 3,418,615, 12–24–68, Cl. 337—190.
Capellaro, Natale, to Ing. C. & C. Olivetti, S.p.A. High speed set up device for a ten key adding or like machine. 3,417,917, 12–24–68, Cl. 235—60.
Caplan, Richard E., R. H. Rosenthal, and R. W. Clope, to The Dexter Corp. Liquid coating composition comprising a vinyl chloride dispersion resin, a vinyl chloride copolymer solution resin and acrylic resin in an organic vehicle and metal coated therewith. 3,418,274, 12–24–68, Cl. 260—41.
Carabasse, Andre. Multipurpose fishing rod. 3,417,500, 12–24–68, Cl. 43—18.
Carborundum Co., The: *See*—
Economy, James, Wohrer, and Mason. 3,418,273.
Carlson, Melvin J., to United States of America, Army. Method for pulse forming. 3,417,456, 12–24–68, Cl. 29—470.1.
Carlson, Ronald E. Spray gun for applying a two component mixture. 3,417,923, 12–24–68, Cl. 239—112.
Carlson, Paul J., to Motorola, Inc. Amplifier circuit with semiconductor device. 3,418,593, 12–24–68, Cl. 330—40.
Carr, James W., Jr., F. X. Mayer, and J. F. Moser, Jr., to Esso Research and Engineering Co. Production of iron from ores of low particle release size. 3,418,107, 12–24–68, Cl. 75—26.
Carrera, Rafael. Training and diagnostic apparatus. 3,417,743, 12–24–68, Cl. 128—2.
Carrington, William K.: *See*—
Smith, Harry A., and Carrington. 3,418,281.
Carson, Ralph, to C. R. Bard, Inc. Aspirating means and one-way valve. 3,417,750, 12–24–68, Cl. 128—278.
Carter, Herbert D., to Alkaline Batteries Ltd. Alkaline storage cell having silicate dissolve in the electrolyte. 3,418,166, 12–24–68, Cl. 136—24.
Carter, Jack, M. Cuniberti, and J. E. Scott, to Owens-Illinois, Inc. Apparatus for supporting and glazing glass articles. 3,418,099, 12–24–68, Cl. 65—284.
Carter, Paul R., and L. E. Helwig, to United States Steel Corp. Method of making galvannealed ferrous metal of improved solderability. 3,418,174, 12–24–68, Cl. 148—6.35.
Casey, David C.: *See*—
Wilson, Harold W. 3,418,238.
Casey, Edward J., and M. L. Heintz, to General Electric Co. High-voltage electric circuit breaker. 3,418,439, 12–24–68, Cl. 200—144.
Caterpillar Tractor Co.: *See*—
Anderson, Howard R., Lambdin, and Mitchener. 3,418,485.
Burke, Clarence J., and Miller. 3,417,457.
Day, Ralph R., Faberé, and Mogk. 3,417,635.
Hanson, Edwin E., and Newman. 3,417,565.
Cavitron Corp.: *See*—
Balamuth, Lewis, Grimes, Evans, Axtell, Robertson, and Higgins. 3,418,185.
Cecil, Olin B., to Texas Instruments Inc. Process for fabricating multiple layer circuit boards. 3,418,227, 12–24–68, Cl. 204—143.
Cedel, Richard A., to A. O. Smith Corp. Calibrating dial mounting for flow meters. 3,417,612, 12–24–68, Cl. 73—272.
Cee-Kay Industries, Inc.: *See*—
Sejda, Henry J. 3,418,358.
Celanese Corp.: *See*—
Orgen, Donald E. 3,418,280.
Watson, George A. 3,417,560.
Centour, Inc.: *See*—
Stucky, Elmer F. 3,417,576.
Central Mfg. District: *See*—
Garnero, Anthony L. 3,418,403.
Centre National de La Recherche Scientific: *See*—
Felici, Noel J., and Gartner. 3,418,501.
Ceskoslovenska Akademie Ved: *See*—
Hala, Slavoj, Landa, and Weidenhoffer. 3,418,387.
Chace, W. M., Co.: *See*—
Perry, Charles C. 3,417,813.
Chamberlain, Harold F., to Jarvis Corp. Poultry processing apparatus. 3,417,424, 12–24–68, Cl. 17—11.
Champion Papers Inc.: *See*—
Vassiliades, Anthony E. 3,418,656.
Checkland, Peter B.: *See*—
Fairclough, Rodney J., and Checkland. 3,417,446.
Chedron, Harald H. O., H. H. W. Ohse, R. A. Palm, W. Draber, J. F. Falbe, and F. W. A. G. K. Korte, to Shell Oil Co. Polymers of unsaturated heterocyclic-substituted lactones and method for their preparation. 3,418,291, 12–24–68, Cl. 260—78.3.
Cheever, William H., to United States of America, Army. Electronic crowbar. 3,418,530, 12–24–68, Cl. 317—16.
Chellife Corp.: *See*—
Middleton, William J., Jr. 3,417,655.
Chemirad Corp.: *See*—
Goldstein, Albert, and Hobbs. 3,418,204.
Chemische Werke Hüls Aktiengesellschaft: *See*—
Benedikter, Kurt, Hagel, and Wilke. 3,418,299.
Chervenak, Michael C., and S. C. Schuman, to Hydrocarbon Research, Inc. High conversion hydrogenation. 3,418,234, 12–24–68, Cl. 208—59.
Cheston Co.: *See*—
Rizzolo, Alfred T., and Hicks. 3,418,447.
Chevron Research Co.: *See*—
Barusch, Maurice R., Richardson, Kautsky, and Olson. 3,418,091.
Dyson, Charles C. 3,417,818.
Ludwig, Milton. 3,417,776.
Pryor, Arthur W. 3,417,572.
Chicago Bridge and Iron Co.: *See*—
Chirico, Anthony N. 3,417,804.
Chien, Robert T., to International Business Machines Corp. Decoders for cyclic error-correcting codes. 3,418,629, 12–24–68, Cl. 340—146.1.
Chirico, Anthony N., to Chicago Bridge and Iron Co. Method and apparatus for simultaneously washing and working an evaporator effect. 3,417,804, 12–24–68, Cl. 159—20.
Chivas, Norman J.: *See*—
Mojden, Wallace W., and Chivas. 3,417,853.
Christe, Karl O., and A. E. Pavlath, to Stauffer Chemical Co. Preparation of chlorine substituted alkyl fluoroformates. 3,418,336, 12–24–68, Cl. 260—463.
Christensen, La Verne C.: *See*—
Fjermestad, Arnold R., and Christensen. 3,417,763.
Christoffersen, Christen, and K.-O. Sorensen, to Vedex Dansk Skovindustri A/S. Method for fire-proofing wood. 3,418,159, 12–24–68, Cl. 117—137.
Chrysler Corp.: *See*—
Levy, Gert G. 3,418,218.
Chung, David H., and J. L. Walsh, to International Business Machines Corp. Utilizing identical signal levels for logic and inhibit functions. 3,418,491, 12–24–68, Cl. 307—214.
Chuy, Daniel T.: *See*—
Chuy, Ruth G. and D. T. 3,417,490.
Chuy, Ruth G. and D. T. Flash card apparatus. 3,417,490, 12–24–68, Cl. 35—9.
Ciba Ltd.: *See*—
Ulrich, Paul, and Schaub. 3,418,063.
Claff, Clarence L. Insole. 3,417,494, 12–24–68, Cl. 36—44.
Claiborne, Jefferson L., to Dixie Yarns, Inc. Method and apparatus for adding chemical and dyestuffs to a dyeing machine. 3,417,414, 12–24–68, Cl. 8—158.
Clapp, Maurice. Method and apparatus for eliminating tire droop. 3,418,400, 12–24–68, Cl. 264—36.
Clapper, Genung L., to International Business Machines Corp. Speech analysis system. 3,418,429, 12–24–68, Cl. 179—1.
Clark, Clayton H., and D. J. Stefanik, to SCM Corp. Rolling contact printer hammer and hammer carriage. 3,417,690, 12–24–68, Cl. 101—93.
Clark Controller Co., The: *See*—
Sauter, John D., and Daggs. 3,418,497.
Clark, Frances H., to The Comstock Co. Method of producing a metal sheet by slip casting. 3,418,114, 12–24–68, Cl. 75—214.
Clark, Kenneth S. Mechanical tuning peg for stringed instruments. 3,417,647, 12–24–68, Cl. 84—305.
Clarke, John F., to Texas Instruments, Inc. Coating of tubing. 3,417,453, 12–24–68, Cl. 29—460.
Claussen, Gerard E., to Hobart Bros. Co. Electric arc welding electrodes and process. 3,418,446, 12–24–68, Cl. 219—130.
Clemente, Salvatore O. Material handling apparatus. 3,417,859, 12–24–68, Cl. 198—122.
Clemson, Daniel M., to Burroughs Corp. Decoder circuit using magnetic core elements and operating a display device. 3,418,460, 12–24–68, Cl. 235—155.
Cleversey, Gerald W., to United Shoe Machinery Corp. Adhesive activating apparatus. 3,418,449, 12–24–68, Cl. 219—215.
Clinton, Henry H. Electrical device for testing for and counting flaws in the insulation of an electrical conductor passing through an electrode. 3,418,570, 12–24–68, Cl. 324—54.
Clope, Richard W.: *See*—
Caplan, Richard E., Rosenthal, and Clope. 3,418,274.
Close, Garth, to United Steel and Wire Co. Display rack. 3,417,872, 12–24–68, Cl. 211—59.
Clouser, Paul L., and J. E. Goell, to Bell Telephone Laboratories, Inc. Waveguide phase-locked oscillators. 3,418,601, 12–24–68, Cl. 331—107.
Coburn Mfg. Co., Inc.: *See*—
Gray, Dolph L. 3,417,514.

Cohen, Saul M., and R. H. Young, Jr., to Monsanto Co. Two-stage process for making sulfone polymers. 3,418,277, 12–24–68, Cl. 260—49.
Coles, Robert F.: *See*—
Tulagin, Vsevolod, Coles, and Miller. 3,418,322.
Colley, Rowan H., and F. D. Brownhill, to Rolls-Royce Ltd. Sight gauges. 3,417,730, 12–24–68, Cl. 116—118.
Collier, Charles P.: *See*—
Marx, Walter S., Jr., and Collier. 3,418,468.
Collins, Guy R.: *See*—
Kaeding, Warren W., and Collins. 3,418,361.
Colt, Ralph S., to Eastman Kodak Co. Photodevelopment of silver halide printout material. 3,418,122, 12–24–68, Cl. 96—63.
Columbia Records Distribution Corp.: *See*—
Rhodes, Harold B. 3,418,417.
Columbia Ribbon and Carbon Mfg. Co., Inc.: *See*—
Newman, Douglas A. 3,418,149.
Columbian Carbon Co.: *See*—
Hayes, William K. 3,418,386.
Colvin, Alex D., and A. H. Turner, to Ford Motor Co. Electron discharge control. 3,418,155, 12–24–68, Cl. 117—93.31.
Combustion Engineering, Inc.: *See*—
Mail, Isaac P. 3,418,236.
Francis, Alex W., Jr. 3,418,252.
Commissariat a l'Energie Atomique: *See*—
Alexandre, Bernard. 3,418,603.
Communications and Systems, Inc.: *See*—
Huitberg, Richard M. 3,418,579.
Compagnie de Saint-Gobain: *See*—
Bathellier, Louis R. M. 3,418,096.
Comstock Co., The: *See*—
Clark, Frances H. 3,418,114.
Concrete Thermal Casings, Inc.: *See*—
Ziegler, George E. 3,418,399.
Consoli, Terenzio: *See*—
Hall, Richard B., and Consoli. 3,418,206.
Consolidated Electrodynamics Corp.: *See*—
Groenewegen, Johannes B. 3,418,434.
Consolidated Paper, Inc.: *See*—
Haselow, William J., and Aschenbrenner. 3,417,989.
Consolidation Coal Co.: *See*—
Laufer, Robert J., and Kulik. 3,418,380.
Conti, Carl J.: *See*—
Anderson, David W., Conti, Sparacio, and Tomasulo. 3,418,638.
Continent Egg Corp.: *See*—
Shelton, Leonard. 3,417,798.
Continental Aviation and Engineering Corp.: *See*—
Basiletti, John C., and Isley. 3,417,738.
Fryer, Ross L. 3,417,739.
Continental Can Co., Inc.: *See*—
Bozek, John S., and Song. 3,417,898.
Continental Elektroindustrie A.G. Askania-Werke: *See*—
Schulze, Reinhard F. K., Brede, and Thebis. 3,417,621.
Continental Gummi-Werke Aktiengesellschaft: *See*—
Nidler, Heinrich. 3,418,192.
Control Data Corp.: *See*—
Williams, Gerald I., Boucher, Duffy, and Olson. 3,418,043.
Controls Company of America: *See*—
Wallace, Elmer E. 3,417,918.
Lester, John J. 3,418,499.
Cook, Edward J., to Varian Associates. End space radiation inhibiting means for magnetrons. 3,418,521, 12–24–68, Cl. 315—39.63.
Cook, Edward J., to Varian Associates. Mode control for mode magnetrons. 3,418,522, 12–24–68, Cl. 315—39.63.
Cook, Louis J.: *See*—
Sherron, Charles E. 3,417,509.
Cook, Ronald A., to Ford Motor Co. Clutch and disc spring with stiff levers. 3,417,846, 12–24–68, Cl. 192—89.
Cookerly, Jack C., and G. R. Hall. Neck construction for a stringed musical instrument. 3,417,646, 12–24–68, Cl. 84—293.
Cooley, Albert M. Method of manufacturing a particulate ammonium humate fertilizer. 3,418,100, 12–24–68, Cl. 71—24.
Cooper, James E., to Mobil Oil Corp. Oil well waterflooding method. 3,418,239, 12–24–68, Cl. 252—8.55.
Coover, Harry W., Jr.: *See*—
Guillet, James E., and Coover. 3,418,306.
Coppedge, John B., to Sophie Mae Candy Corp. of Georgia. Method of manufacturing candy. 3,417,714, 12–24–68, Cl. 107—54.
Copping, Bruce G., W. D. Hardee, and R. W. McGill, to Geo. J. Meyer Mfg. Co. Apparatus for forming packages of articles by banding in a heat shrunk plastic film. 3,417,540, 12–24–68, Cl. 53—48.
Cordes Corp.: *See*—
Ushakoff, Alexis E. 3,418,209.
Corillium Corp.: *See*—
Woods, Roger M., and Moul. 3,418,221.
Corley, Gale C. Portable hoist. 3,417,877, 12–24–68, Cl. 214—1.
Corpew, Charles R., to Stromberg-Carlson Corp. System for generation of characters with a cathode ray tube in different colors. 3,418,517, 12–24–68, Cl. 315—21.
Coty, Vernon F., to Mobil Oil Corp. Growing increased yields of micro-organisms. 3,418,208, 12–24–68, Cl. 195—1.
Courtaulds Ltd.: *See*—
Reeder, Frank, and Dziuba. 3,418,187.
Courtney, Gerald. Spectacle hinge pin for detachable temple pieces. 3,418,041, 12–24–68, Cl. 351—153.
Cousins, Otto J., F. J. Ritter, and I. Supel, to Sunbeam Corp. Electric knife. 3,417,469, 12–24–68, Cl. 30—272.
Covell, Otis D., Jr. Balancing apparatus. 3,417,720, 12–24–68, Cl. 114—39.
Cowan, Arnold A., to The Bobrick Corp. Shutoff and drain valve. 3,417,784, 12–24–68, Cl. 137—625.65.
Cox, William H.: *See*—
O'Brien, John C., and Cox. 3,417,856.
Craig, Douglas R. Fruit package with integral stand support. 3,418,139, 12–24–68, Cl. 99—171.
Crawford Fitting Co.: *See*—
Zahuranec, Emery J., and Szohatzky. 3,417,594.
Crayton, Charles A. Road surfacing machine. 3,417,679, 12–24–68, Cl. 94—46.
Creasey, Raymond F.: *See*—
Page, Frederick W., Creasey, and Froud. 3,417,943.
Creely, Robert J. Chance controlled electrical racing game apparatus. 3,417,995, 12–24–68, Cl. 273—134.
Crise, George W. Snap-acting, cycling, thermostatic switch. 3,418,617, 12–24–68, Cl. 337—368.
Crocker, Bunting S., T. G. Fulmor, F. L. Holderreed, W. Lucy, and J. F. Mahoney, to The Anaconda Co. Ore grinding control. 3,417,927, 12–24–68, Cl. 241—24.
Crompton & Knowles Corp.: *See*—
Gurney Gordon T. 3,417,792.
Crone, Alfred F., and F. F. Bryan, to Acme Highway Products Corp. Positioning highway joint supports and shear plates in paving material. 3,417,680, 12–24–68, Cl. 94—51.
Croninger, Arthur G. Foldable bookholder. 3,417,954, 12–24–68, Cl. 248—462.
Crown Zellerbach Corp.: *See*—
Bennett, Clifton F., and Goheen. 3,418,224.
Cubic Corp.: *See*—
Baylor, John T. 3,418,655.
Culp, John D., T. C. Grimm, T. H. Fitzpatrick, and R. D. Patterson, to McDonnell Douglas Corp. Refractory metal coating. 3,418,144, 12–24–68, Cl. 106—14.
Cummings-Landau Laundry Machinery Co., Inc.: *See*—
Hutterer, Martin. 3,417,583.
Cuniberti, Mario: *See*—
Carter, Jack, Cuniberti, and Scott. 3,418,099.
Cunningham, Hugh, to PPG Industries, Inc. Spring box support for rotary hearth furnace and the like. 3,417,976, 12–24–68, Cl. 263—7.
Curran, John V., to The Warner & Swasey Co. Gill box with adjustable delivery rolls. 3,417,435, 12–24–68, Cl. 19—129.
Curry, John. Golf practice device. 3,417,620, 12–24–68, Cl. 73—379.
Curtiss-Wright Corp.: *See*—
Loprete, Joseph F. 3,417,563.
Cuvelier, Jean-Jacques, to Ateliers de Constructions Electriques de Charleroi (ACEC). Multifrequency telegraph receiver with damping means for resonant reed detectors. 3,418,428, 12–24–68, Cl. 178—48.
Czarnecki, Adolph, to Standard Alliance Industries, Inc. Automatic frame stack transfer device. 3,417,885, 12–24–68, Cl. 214—95.
Dade Reagents, Inc.: *See*—
Schultz, Eugene L. 3,418,061.
Daggs, Kenneth L.: *See*—
Sauter, John D., and Daggs. 3,418,497.
Dale, John I., III, and M. A. Weaver, to Eastman Kodak Co. Benzothiazolyl monoazo dyes. 3,418,309, 12–24–68, Cl. 260—158.
Dale, John I., III, M. A. Weaver, and J. M. Straley, to Eastman Kodak Co. Thiadiazolyl monoazo dyes. 3,418,310, 12–24–68, Cl. 260—158.
Dale, Samuel B., to Autoset (Production) Ltd. Ball casters. 3,417,422, 12–24–68, Cl. 16—26.
Damon, Leon B. Hedge trimmer. 3,417,470, 12–24–68, Cl. 30—276.
Dancsik, Joseph J. Three dimensional milling machine with pantograph control. 3,417,661, 12–24–68, Cl. 90—13.1.
Dangauthier, Marcel, to La Publicite Francaise. Control device for an automobile gear-box. 3,417,634, 12–24–68, Cl. 74—473.
Dannelly, Clarence C.: *See*—
Caldwell, John R., and Dannelly. 3,418,066.
Dannels, Bobby F.: *See*—
Shepard, Alvin F., and Dannels. 3,418,348.
Darby, Robert A., to E. I. du Pont de Nemours and Co. Perfluorocyclic ether polymers. 3,418,302, 12–24–68, Cl. 260—87.5.
Dargier de Saint Vaulry, Jean, to Paulstra. Devices for fixing railroad rails to their sleepers. 3,417,922, 12–24–68, Cl. 238—292.
Dashio, John C., 33⅓% to W. B. Jaspest. Ground supports for building structures and the like. 3,417,525, 12–24–68, Cl. 52—160.
Davies, Eric, to The Marconi Co. Ltd. Pulse circuit arrangements for deriving a lower number of pulses per unit time from a greater number of pulses per unit time. 3,418,582, 12–24–68, Cl. 328—39.
Davies, Paul M., to TRW Inc. Dual control memory modules for self searching memory. 3,418,642, 12–24–68, Cl. 340—173.1.
Davies, Phineas, to Imperial Chemical Industries Ltd. Steam reforming of hydrocarbons. 3,418,093, 12–24–68, Cl. 48—214.
Davis, Martin A., and D. J. Campbell, to American Home Products Corp. Dibenzocycloheptene thiazole derivatives. 3,418,332, 12–24–68, Cl. 260—302.
Davis, Martin A.: *See*—
Dobson, Thomas A., and Davis. 3,418,339.
Davis, William R., to The Bahnson Co. Rotating field electrostatic apparatus. 3,418,500, 12–24–68, Cl. 310—5.

Day, Ralph R., R. W. Faberé, and K. J. Mogk, to Caterpillar Tractor Co. Transmission control mechanism. 3,417,635, 12–24–68, Cl. 74—484.

Dean, Calvin B. Kiln liner block supporting structure. 3,417,538, 12–24–68, Cl. 52—749.

Dean, Derek J., to Weston Instruments, Inc. Meter assembly with expandable clamping ring. 3,418,576, 12–24–68, Cl. 324—151.

Dean, James T., W. Gravley, L. W. Randerson, and W. B. Brooks, to Mobil Oil Corp. System for determining drill-pipe torque. 3,417,611, 12–24–68, Cl. 73—136.

De Balsac, Raymond H., and D. Boyer. Valve. 3,417,777, 12–24–68, Cl. 137—525.

Decupper, Jean J. E. A., to Detec S.A. Ultra-violet ray aterilizers. 3,418,069, 12–24–68, Cl. 21—74.

Deere & Co.: *See*—
Hubbard, Arthur L. 3,417,553.
Jones, Frank D., Shriver, and Harrington. 3,417,556.
Nelson, Edward G. 3,417,887.

Deering Milliken Research Corp.: *See*—
Mauldin, William L., and Gale. 3,418,067.

Denison, Mathew R., to Electro-Optical Systems, Inc. Fluid amplifier system. 3,417,770, 12–24–68, Cl. 137—81.5.

Dennis, John M., and M. Rossnan. Apparatus for and methods of treating bivalves. 3,418,138, 12–24–68, Cl. 99—158.

Derbins, William H., to The Parker Pen Co. Wick type writing instrument. 3,418,056, 12–24–68, Cl. 401—199.

Des-Jardins, Edgar E.: *See*—
Hair, Hugh A., Roome, Gerst, Des-Jardins, and Domick. 3,418,605.

De Smedt, Felix F., and V. A. Marinus, to Gevaert-Agfa, N.V. Screw adjustment mechanism. 3,417,430, 12–24–68, Cl. 18—12.

De Staat der Nederlanden ten Deze Vertezenwoordigd Door de Directeur-Generaal der Posterijen Telegrafie en Telefonie: *See*—
Van Duuren, Hendrik C. A. 3,418,630.

Detec S.A.: *See*—
Decupper, Jean J. E. A. 3,418,069.

Deuter, Frederich A., ½ to J. Foundas. Self-inking rubber. 3,418,264, 12–24–68, Cl. 260—23.7.

Deutsch Co. Metal Components Division, The: *See*—
Buckner, Wilbur G. 3,418,010.

De Vlieg, Charles B. and C. R., and R. A. Jerue, to De Vlieg Machine Co. Positioning mechanism for machine tools. 3,417,662, 12–24–68, Cl. 90—16.

De Vlieg, Charles R.: *See*—
De Vlieg, Charles B. and C. R., and Jerue. 3,417,662.

De Vlieg Machine Co.: *See*—
De Vlieg, Charles B. and C. R., and Jerue. 3,417,662.

De Vorak, Dwight F. Spreader chain and fan drive assembly. 3,417,926, 12–24–68, Cl. 239—673.

Dexter Corp., The: *See*—
Caplan, Richard E., Rosenthal, and Clope. 3,418,274.

Diamond International Corp.: *See*—
Waterhouse, Frederick T. 3,417,666.

Diamond Shamrock Corp.: *See*—
Everson, Howard E., Kiss, and Reed. 3,418,284.
Werotte, Louis E., and Grammont. 3,418,262.

Dieckmann, James R., and W. F. Bishop, to The Firestone Tire & Rubber Co. Apparatus for applying elastomeric material to a vehicle tire carcass. 3,418,191, 12–24–68, Cl. 156—397.

Dietrich, Henri, to Geigy Chemical Corp. N'-substituted N-arylaulfonyl ureas. 3,418,367, 12–24–68, Cl. 260—553.

Dietrich, Henry E.: *See*—
Lynch, Thomas G., and Dietrich. 3,417,794.

Dietzgen, Eugene, Co.: *See*—
Huett, Georg C. 3,418,128.

Di Rocco, James V.: *See*—
Spergel, Philip, Di Rocco, and Grenier. 3,418,474.

Disteldorf, Josef: *See*—
Schmitt, Karl, Disteldorf, and Hubel. 3,418,375.

Divine, Rene L. Cap construction. 3,417,407, 12–24–68, Cl. 2—180.

Dixie Yarns, Inc.: *See*—
Claiborne, Jefferson L. 3,417,414.

Dobson, John M.: *See*—
Booth, Robert B., and Bobson. 3,418,237.

Dobson, Thomas A., and M. A. Davis, to American Home Products Corp. 10,11-epoxy-10,11-dihydro-5H-dibenzo[a,d] cycloheptene-5-carboxamides. 3,418,339, 12–24–68, Cl. 260—348.

Docekal, Jaroslav, and M. Losert, to Elitex, Zavody Textiniho Strojirenstvia Reditelstvi. Apparatus for tensioning a fabric during knitting. 3,417,581, 12–24–68, Cl. 66—147.

Dole Valve Co., The: *See*—
Fuerst, William R. 3,417,962.

Dombro, Robert A., to Universal Oil Products Co. Conversion of mercaptans to alcohols. 3,418,382, 12–24–68, Cl. 260—632.

Domick, Edward J.: *See*—
Hair, Hugh A., Roome, Gerst, Des-Jardins, and Domick. 3,418,605.

Donelson, Harlan J., Jr. Grain cleaner. 3,417,868, 12–24–68, Cl. 209—28.

Doniger, Jerry: *See*—
Reynolds, Gibson, and Doniger. 3,417,945.

Dorsey, John J.: *See*—
Pomerantz, Daniel I., Wallis, and Dorsey. 3,417,459.

Dotzer, Richard, to Siemens Aktiengesellschaft. Organometallic electrolyte for galvanic deposition of zinc, aluminum, gallium and indium. 3,418,216, 12–24–68, Cl. 204—14.

Doub, Leonard, to Parke, Davis & Co. 1-(5-nitro-2-furfuryl) hydrouracil. 3,418,320, 12–24–68, Cl. 260—260.

Doughloy Industries, Inc.: *See*—
Grevich, John J. 3,417,544.

Douglas, Arthur J., and S. Scheckner, to Le Page's, Inc. Tape dispenser. 3,417,935, 12–24–68, Cl. 242—55.2.

Douglas, Bobby L., and S. M. Fotiades, to Dresser Industries, Inc. Retrievable gas lift valve assembly. 3,417,775, 12–24–68. Cl. 137—155.

Dow Chemical Co., The: *See*—
Bearden, Charles R. 3,418,296.
Johnston, Howard, and Tomita. 3,418,323.
Kaeding, Warren W., and Collins. 3,418,361.
Katzer, Melvin F. 3,418,157.
Monroe, Roger F. 3,418,288.
Parsey, Edward S., and Majewski. 3,418,379.
Smith, Harry A., and Carrington. 3,418,281.
Spivey, Ben E. 3,418,301.
Trapp, Walter B. 3,418,377.
Wright Donald R. 3,417,429.

Draber, Wilfrid: *See*—
Chedron, Harald H. O., Ohse, Palm, Draber, Falbe, and Korte. 3,418,291.

Dralsey, Darwin D.: *See*—
Wetl, Gerald F., and Dralsey. 3,417,541.

Drake, Ralph W. Twin spout mink watering cup. 3,417,735, 12–24–68, Cl. 119—18.

Dresser Industries, Inc.: *See*—
Douglas, Bobby L., and Fotiades. 3,417,775.
Henry, George R., and Miller. 3,418,401.

Drew, Bruce A., to The Pillsbury Co. Device for representing mathematical functions in three dimensions. 3,417,493, 12–24–68, Cl. 35—30.

Drummond, Edward L. and M. E., to Drummond Scientific Co. Microhematoerit tube sealer. 3,418,097, 12–24–68, Cl. 65—269.

Drummond, Michael E.: *See*—
Drummond, Edward L. and M. E. 3,418,097.

Drummond Scientific Co.: *See*—
Drummond, Edward L. and M. E. 3,418,097.

Dudek, Edmond C., to G. W. Murphy Industries, Inc. Belt sander. 3,417,511, 12–24–68, Cl. 51—135.

Dudler, Hans A., to General Signal Corp. Step-servocontroller. 3,418,547, 12–24–68. Cl. 318—18.

Duffin, George F.: *See*—
Stevens, John, and Duffin. 3,418,130.

Duffy, John M.: *See*—
Williams, Gerald I., Boucher, Duffy, and Olson. 3,418,043.

Dunay, John, 50% to L. C. Nachtman. Oscillatory motor. 3,418,502, 12–24–68, Cl. 310—32.

Dunn, George L., and J. R. E. Hoover, to Smith Kline & French Laboratories. Pentacyclo[6.2.0.0^{2,6}.0^{3,10}.0^{5,9}]decanemines. 3,418,368, 12–24–68, Cl. 260—563.

Dünnebier, Kurt: *See*—
Winkler, Richard, and Dünnebier. 3,417,694.

Dunlop Rubber Co. Ltd.: *See*—
Hogg, Wilfrid H., and Ford. 3,418,188.

Du Pont de Nemours, E. I., and Co.: *See*—
Abashian, Steven. 3,418,160.
Anton, Anthony, and Volcheck. 3,418,199.
Bantjes, Adrian. 3,418,290.
Barnev, Arthur L., and Morgan. 3,418,303.
Bartlett, Philip L. 3,418,228.
Bigelow, John H. 3,418,131.
Bowman, John M. 3,418,201.
Busse, Warren F. 3,418,267.
Darby, Robert A. 3,418,302.
Einstman, Robert V. 3,418,198.
Eiseman, Bernhardt J., Jr. 3,418,242.
Fields, David P. 3,418,147.
Foster, Peter W. 3,418,287.
Gage, Thomas B. 3,417,413.
Haugh, Eugene F. 3,418,123.
Herglotz, Heribert K. J. 3,418,466.
Hogsed, Milton J. 3,418,289.
Hunt, Heman D. 3,418,124.
Izard, Emmette F. 3,418,276.
Kauer, James C. 3,418,369.
King, Charles. 3,418,393.
Krikorian, Garo. 3,417,925.
Majoch, Ludvik. 3,417,431.
Middleton, William J. 3,418,337.
Parshall, George W. 3,418,346.
Sargeant, Herb G. 3,418,074.
Schoenthaler, Arnold C. 3,418,295.
Shozda, Raymond J. 3,418,088.
Shozda, Raymond J. 3 418,341.
Smith, Robert D. 3,417,812.
Stephens, Curtis W. 3,418,275.
Tan, Henry H. 3,418,376.
Tanner, David. 3,418,200.
Thommes, Glen A., and Walker. 3,418,118.
Tocker, Stanley. 3,418,397.
Traub. Richard K. 3,418,270.
Trofimenko, Swiatoslaw. 3,148,260.

Durbin, Votaw S. Load binders. 3,418,008, 12–24–68, Cl. 280—179.

Duyster, Holte C., S. Noyon, and J. W. Jansz, to Hollandse Beton Maatschappij N.V. Method for driving piles and similar objects. 3,417,828, 12–24–68, Cl. 175—19.

Dyer, Richard F., and J. M. Wininger, Jr., to Eastman Kodak Co. Filter element made of polymeric film. 3,417,552, 12–24–68, Cl. 55—528.

Dym, Herbert, and R. V. Mazza, to International Business Machines Corp. Illumination detector using a plurality of light sensitive diode pairs. 3,418,481, 12–24–68, Cl. 250—211.

Dynamit Nobel Aktiengesellschaft: *See*—
Lenz, Arnold, Bleh, and Hass. 3,418,383.

Dyson, Charles C., to Chevron Research Co. Method for initiating underground combustion. 3,417,818, 12–24–68, Cl. 166—39.

Dziuba, Wladyslaw A.: *See*—
Reeder, Frank, and Dziuba. 3,418,187.

Dzus Fastener Co., Inc.: *See*—
Smith, Howard J. L. 3,417,441.
Smith, Howard J. L. 3,417,442.

Eastman Kodak Co.: *See*—
Becker, Richard W. 3,418,117.
Brunson, Marion O., and Hyche. 3,418,202.
Bunting, Leslie J. 3,417,939.
Caldwell, John R., and Dannelly. 3,418,066.
Colt, Ralph S. 3,418,122.
Dale, John I., III, Weaver, and Straley. 3,418,310.
Dale, John I., III, and Weaver. 3,418,309.
Dyer, Richard F., and Wininger. 3,417,552.
Edwards, Ray, and Butler. 3,418,396.
Guillet, James E., and Coover. 3,418,306.
Kingslake, Rudolf. 3,418,039.
Kitze Theodore J., Jr. 3,418,132.
Millikan, Allan G. 3,418,127.
Perry, Edmond S., and Staudenmayer. 3,418,158.
Sigl, Paul F. 3,418,042.
Sloan, Cephas H., and Sublett. 3,417,758.
Staudenmayer, William J., and Perry. 3,418,152.
Sutherns, Edward A. 3,418,125.
Touey, George P., and Mumpower. 3,417,759.

Eaton Yale & Towne, Inc.: *See*—
McClelland, Howard U. 3,417,462.

Eby, Richard R.: *See*—
Nolt, Edwin B., and Eby. 3,418,014.

Eckert, Konrad, and F. Eheim, Robert Bosch, G.m.b.H. Fuel injection pump. 3,417,703, 12–24–68, Cl. 103—41.

Eclipse Fuel Engineering Co.: *See*—
Spielman, Lyle S., and Moore. 3,418,060.

Economy, James L. C. Wohrer, and J. H. Mason, to The Carborundum Co. Polymer blends and intermediates thereto and processes for their production. 3,418,273, 12–24–68, Cl. 260—45.75.

Eddy, Clifford O., Jr., to PPG Industries, Inc. Catalytic copolymerization of butadiene chlorides with dienes. 3,418,-298, 12–24–68, Cl. 260—82.1.

Edman, Clarence E., J. R. Kelly, W. J. Murphy, and L. T. Skoids, to Harris Calorific Sales Co. Control system for a flame cutting machine. 3,417,981, 12–24–68, Cl. 266—23.

Edwards, Clarence M. Combination agricultural implement. 3,417 884, 12–24–68, Cl. 214—83.1.

Edwards, Theodoric B., deceased (by H. M. Edwards, executrix, to United States of America, Army. Vibratory sea anchor driver. 3,417,724, 12–24–68, Cl. 114—206.

Edwards, Ray, and G. E. Butler, to Eastman Kodak Co. Polypropylene-polyethylene compositions for extrusion coating. 3,418,396, 12–24–68, Cl. 260—897.

Eheim, Franz: *See*—
Eckert, Konrad, and Eheim. 3,417,703.

Ehrlich, Don E.: *See*—
Wieland Howard N., and Ehrlich. 3,418,441.

Eickman, Karl. Slots containing bodies in fluid handling devices. 3,417,706, 12–24–68, Cl. 103—136.

Eilers, Jerry. Method of engraving an article of jewelry. 3,418,407, 12–24–68, Cl. 264—219.

Einfalt, Alfred, to Gebruder Einfalt Blechspielwarenfabrik. Method of producing a base plate having a grooves with a coil spring mounted therein. 3,418,410, 12–24–68, Cl. 264—242.

Einstman, Robert V., to E. I. du Pont de Nemours and Co. Non-roughening microporous laminate and process for producing the same. 3,418,198, 12–24–68, Cl. 161—84.

Eiseman, Bernhardt J., Jr., to E. I. du Pont de Nemours and Co. Refrigerant composition. 3,418,242, 12–24–68, Cl. 252—67.

Eisenwerke-Gesellschaft Maximilianshutte m.b.H.: *See*—
Knuppel, Helmut, and Brotzmann. 3,417,463.

Ekenstam, Bo T. A., and B. G. Pettersson, to Aktiebolaget Bofors. Method of producing a product between mesoinositol and nicotinic acid. 3,418,325, 12–24–68, Cl. 260—295.5.

Elco Corp.: *See*—
Martinell, John M. 3,418,535.
Ruehlemann, Herbert E. 3,418,444.
Ruehlemann, Herbert E. 3,418,623.

Electra Associates: *See*—
Sherwood, Henry A. 3,418,000.

Electric Storage Battery Co., The: *See*—
Fletcher, Robert W. 3,418,172.

Electro-Optical Systems, Inc.: *See*—
Denison, Mathew R. 3,417,770.

Electromagnetic Industries, Inc.: *See*—
Legatti, Raymond H. 3,418,554.

Electronic Controls, Inc.: *See*—
Angel, Henry R., and Morgan. 3,418,608.

Elitex, Zavody Textiniho Strojirenstvia Reditelstvi: *See*—
Docekal, Jaroslav, and Losert. 3,417,581.

Elliott, Richard M., to Associated Electrical Industries Ltd. Mass spectrometer ion source with cooling means. 3,418,-513, 12–24–68, Cl. 313—230.

Emerson, Herff C., R. F. Rieger, R. W. Kitchin, and V. E. Vawter, to Rohr Corp. Combined numerical and torque control for a work and feed machine tool. 3,418,549, 12–24–68, Cl. 318—39.

Emery, Alvin T., to Hooker Chemical Corp. Anolyte liquid level control for chlor-alkali diaphragm cells. 3,418,232, 12–24–68, Cl. 204—263.

Emhart Corp.: *See*—
Binnall, Thomas J., and Surko. 3,417,437.
Gerlach, John R. 3,418,017.

Emmel, Donald R., A. R. Blackburn, and V. D. Kendall, to Ram Inc. Method for making ware producing mold members. 3,418,408, 12–24–68, Cl. 264—221.

Englander, Robert A., to Simplimatic Engineering Co. Temperature modifying apparatus for containers with shiftable contents. 3,417,978, 12–24–68, Cl. 259—54.

English Electric Co. Ltd., The: *See*—
Paddison, Eric. 3,418,569.

English Steel Corp. Ltd.: *See*—
Fielding, Ronald. 3,417,592.

Ensley, Glover C. Conduit bending apparatus. 3,417,590, 12–24–68, Cl. 72—157.

Epler, Walter N., and W. T. Malone, to Halliburton Co. Well treating with aqueous gelled salt solutions. 3,417,820, 12–24–68, Cl. 166—42.

Ericson, John P., to All-Steel Equipment Inc. Ball bearing roller arrangement for file cabinet drawers. 3,418,026, 12–24–68, Cl. 308—6.

Ernst, Hans. Flow control apparatus for fluent magnetic materials. 3,417,771, 12–24–68, Cl. 137—81.5.

Esso Research and Engineering Co.: *See*—
Amir, Emanuel M. 3,418,389.
Carr, James W., Jr., Mayer, and Moser. 3,418,107.
Grissom, Robert R., Matthews, and Kurzbuch. 3,418,402.
Kennedy, Joseph P., and Isaacson. 3,418,259.
Langer, Arthur W., Jr., and Harding. 3,418,304.
Matsen, John M., and Levine. 3,418,109.
Rigney, James A., Hamner, and Mason. 3,418,256.
Savage, David W., Lorenz, and Asher. 3,418,235.

Ethyl Corp.: *See*—
Schwindy, Robert C. 3,417,970.
Wolf, Calvin N., and Reich. 3,418,283.

European Atomic Energy Community (Euratom): *See*—
Becker, Winfried, Finzi, Jorzik, and Ohlmer. 3,418,207.

Evans, Cary A.: *See*—
Balamuth, Lewis, Grimes, Evans, Axtell, Robertson, and Higgins. 3,418,185.

Evans, John L., and H. E. Riordan, to General Precision Systems, Inc. Gyrocompass. 3,417,474, 12–24–68, Cl. 33—72.

Evans, Robert G., Co.: *See*—
Haase, Victor H., and Harclerode. 3,417,638.

Evans, Robley D. Process and detector for indicating the tracks of alpha particles using stacked layers of material. 3,418,472, 12–24–68, Cl. 250—83.

Everson, Howard E., K. D. Kiss, and J. T. Reed, to Diamond Shamrock Corp. Copolymerization of trioxane and norbornadiene or a monoalkyl-substituted derivative thereof in the solid state. 3,418,284, 12–24–68, Cl. 260—73.

Ewers, Johannes W., to Shell Oil Co. Bituminous resinous compositions for construction purposes. 3,417,678, 12–24–68, Cl. 94—23.

FMC Corp.: *See*—
Brewer, Willie F. 3,417,557.

Faber, A. W.-Castell: *See*—
Gossel, Edgar H. 3,418,058.

Fabere, Raymond W.: *See*—
Day, Ralph R., Fabere, and Mogk. 3,417,635.

Fadler, Walter, to Wiener Schwachstromwerke Gesellschaft m.b.H. Charging device for a metallurgical furnace. 3,418,019, 12–24–68, Cl. 294—71.

Fahlbusch, William A., to Martin-Marietta Corp. Coloring anodized aluminum. 3,418,219, 12–24–68, Cl. 204—38.

Fairclough, Rodney J., and P. B. Checkland, to Imperial Chemical Industries, Ltd. Method and apparatus of gear crimp. 3,417,446, 12–24–68, Cl. 28—1.

Falbe, Juergen F.: *See*—
Chedron, Harald H. O., Ohse, Palm, Draber, Falbe, and Korte. 3,418,291.

Falbel, Gerald, to Barnes Engineering Co. Horizon sensor using two stationary fields of view separated by a fixed elevation angle which are alternately sampled. 3,418,478, 12–24–68, Cl. 250—202.

Falkenberg, Douglass R. Adapter for drapery support. 3,417,807, 12–24–68, Cl. 160—348.

Fan, George J., to International Business Machines Corp. Enhanced Faraday rotation structure. 3,418,483, 12–24–68, Cl. 250—225.

Fang, Frank F., E. J. Walker, and H. N. Yu, to International Business Machines Corp. Method for fabricating insulated-gate field-effect transistors. 3,417,404, 12–24–68, Cl. 29—571.

Fansteel Inc.: *See*—
Pierret, James A. 3,418,106.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Krimm, Heinrich, Ruppert, and Schnell. 3,418,371.
Meskat, Walter. 3,417,969.
Schwarz, Hanshelmut, Schneider, Schnell, and Immel. 3,418,314.
Simm, Walter, Koch, and Taterra. 3,417,734.
Wagner, Kuno, Scheurlen, and Kritzler. 3,418,271.

Farel, Newton D.: *See*—
Graver, Richard B., and Farel. 3,418,081.

Faris, Sam R., to Mobil Oil Corp. Well treating process using electroosmosis. 3,417,823, 12–24–68, Cl. 166—45.

Farley, Earl T., to Westinghouse Electric Corp. Delay line timing circuit for use with computer or other timed operation devices. 3,418,498, 12–24–68, Cl. 307—293.

Farnsworth, Walter L., Jr. Safety device. 3,417,840, 12–24–68, Cl. 182—8.

Farr, John B., H. M. Lang, and M. G. Widess, to Pan American Petroleum Corp. Optical deconvolution of seismic records. 3,418,626, 12–24–68, Cl. 340—15.5.

Fawkes, Donald G., to Henry Pratt Co. Method of forming a valve seat structure. 3,418,411, 12–24–68, Cl. 264—262.
Federal Pacific Electric Co.: *See*—
Krueger, David J. 3,418,614.
Fedtro, Inc.: *See*—
Kahn, Robert D. 3,417,867.
Feldman, Nathan W., to United States of America, Army. Solid-state filter circuit. 3,418,561, 12–24–68, Cl. 323—22.
Felici, Noel J., and E. Gartner, to Centre National de La Recherche Scientific. High voltage electrostatic machinery. 3,418,501, 12–24–68, Cl. 310—6.
Felts, Wallace M., to Fruehauf Trailer Co. Transfer station for handling refuse. 3,417,883, 12–24–68, Cl. 214—41.
Fenner, George D. Alignment device for trailer. 3,418,628, 12–24–68, Cl. 340—52.
Fenwal Inc.: *See*—
Morrisette, Milton J. 3,417,618.
Siwko, Ireneusz. 3,418,540.
Ferguson, Sammy J.: *See*—
Markakis, Michael J., and Ferguson. 3,417,938.
Ferrania S.p.A.: *See*—
Guzzi, Alberto, and Bosio. 3,418,282.
Ferrier, Herman A., Jr., and P. V. McEnroe, to International Business Machines Corp. Yoke driving circuit for cathode ray tube display. 3,418,519, 12–24–68, Cl. 315—27.
Fesco, John J., to Studley Paper Co. Disposable vacuum cleaner filter bag. 3,417,550, Cl. 55—376.
Feve, Marcel L. B.: *See*—
Bertin, Jean H., Feve, and Guienne. 3,417,709.
Fielding, Ronald, to English Steel Corp. Ltd. Taper-rolling of metals. 3,417,592, 12–24–68, Cl. 72—199.
Fields, David P., to E. I. du Pont de Nemours and Co. Surface treating pigments with hydrous metal oxides. 3,418,147, 12–24–68, Cl. 106—308.
Fink, Albert A., to General Conveyor, Inc. Dome structure and method of fabrication and erection. 3,417,520, 12–24–68, Cl. 52—80.
Finzi, Sergio: *See*—
Becker, Winfried, Finzi, Jorzik, and Ohlmer. 3,418,207.
Firestone Tire & Rubber Co., The: *See*—
Dieckmann, James R. and Bishop. 3,418,191.
Fischer, Alfred N., to Perry Laboratories, Inc. Encoder-decoder device for selective calling. 3,418,577, 12–24–68, Cl. 325—18.
Fischer & Porter Co.: *See*—
McLay, Joseph F. 3,417,904.
Fisher, Frank F. Boat drag. 3,417,725, 12–24–68, Cl. 114—209.
Fisher, Gaythor D., to Hughes Aircraft Co. Low noise amplifier with minimum cross modulation distortion. 3,418,591, 12–24–68, Cl. 330—21.
Fisher, Harland S., to United States Envelope Co. Method of manufacturing cups. 3,418,140, 12–24–68, Cl. 99—171.
Fisher, James G., to NVF Co. Floating platform lock-down mechanism for spooler troughs and doff trucks and the like. 3,418,031, 12–24–68, Cl. 312—319.
Fisons Fertilizers Ltd.: *See*—
Robinson, Norman. 3,418,077.
Fisons Pest Control Ltd.: *See*—
Lamble, Alan J., Newbold, and Purdew. 3,418,318.
Fister, Louis P.: *See*—
Scheublein, William A., Jr., and Fister. 3,418,011.
Fitzgibbons, William O., to The Standard Oil Co. Indicator composition for microorganisms and test method embodying same. 3,418,212, 12–24–68, Cl. 195—103.5.
Fitzpatrick, Thomas H.: *See*—
Culp, John D., Grimm, Fitzpatrick, and Patterson. 3,418,144.
Fjermestad, Arnold R., and L. C. Christensen, to Universal Milking Machine Division, National Cooperatives, Inc. Milk line washing system. 3,417,763, 12–24–68, Cl. 134—58.
Flanagan, James L., to Bell Telephone Laboratories, Inc. Signal processor for multipath signals. 3,417,837, 12–24–68, Cl. 181—.5.
Fleetwood Systems, Inc.: *See*—
Mojden, Wallace W., and Chivas. 3,417,853.
Fleischer, Manfred, and F. Galaske, to International Standard Electric Corp. Printing mechanism having a rim of rotating type levers. 3,417,847, 12–24–68, Cl. 197—18.
Fletcher, Robert W., to The Electric Storage Battery Co. Method of manufacturing a small, button-type alkaline cell having a loose, powdered zinc anode. 3,418,172, 12–24–68, Cl. 136—111.
Flowers, Jack W.: *See*—
Wilson, Harold W. 3,418,238.
Fong, Gim P., to Sweetheart Plastics, Inc. Confectionary container. 3,417,862, 12–24–68, Cl. 206—56.
Ford Motor Co.: *See*—
Bonell, Arthur J. 3,417,551.
Colvin, Alex D., and Turner. 3,418,155.
Cook, Ronald A. 3,417,846.
Fuke, William A. 3,417,986.
Igras, Raymond A., and Strosberg. 3,418,233.
Kelly, Francis J. 3,418,013.
Tenniswood, David M. 3,417,835.
Ford, Peter: *See*—
Hogg, Wilfrid H., and Ford. 3,418,188.
Formica Corp.: *See*—
Grosheim, Gene E. 3,418,189.
Forrest, Richard A., to Westinghouse Electric Corp. High concentration doping of silicon using ammonium phosphate. 3,418,182, 12–24–68, Cl. 148—188.
Forschungsinstitut fur Textil-Technologie: *See*—
Scholtis, Walter E., Ploch, and Zschunke. 3,417,580.
Foster, Ebenezer A. T., A. A. R. Sayigh, and J. N. Tilley, to The Upjohn Co. Process for preparing nuclear brominated methylene-dianilines. 3,418,370, 12–24–68, Cl. 260—570.
Foster, Peter W., to E. I. du Pont de Nemours and Co. Condensation polymers from 1,2-cyclopropane dicarboxylic acid. 3,418,287, 12–24–68, Cl. 260—78.
Fotiades, Stephen M.: *See*—
Douglas, Bobby L., and Fotiades. 3,417,775.
Foundas, John: *See*—
Deuter, Frederich A. 3,418,264.
Fourneau, Jean P., to Laboratoires Houde. Therapeutic composition containing a new pyridoxine derivative. 3,418,416, 12–24–68, Cl. 424—263.
Foxboro Co., The: *See*—
Hatch, Richard W., Jr., and Murphy. 3,417,773.
Kinner, Hans-Dieter. 3,417,728.
Shinskey, Francis G. 3,418,486.
Shinskey, Francis G., and Louis. 3,417,737.
France, Robert W., and R. P. Nandor, to Westinghouse Electric Corp. Attachment of leads to semiconductor devices. 3,418,544, 12–24–68, Cl. 317—234.
Francis, Alex W., Jr., to Combustion Engineering, Inc. Emulsion treatment apparatus. 3,418,252, 12–24–68, Cl. 252—360.
Francis, Samuel A., to The Buzzards Corp. Single wire measuring device for bathythermograph system. 3,417,619, 12–24–68, Cl. 73—362.
Franke, Norman W.: *See*—
Barie, Walter P., Jr., Franke, and Whitaker. 3,418,359.
Freier, Gerald H., to V-M Corp. Phonograph tone arm. 3,417,999, 12–24–68, Cl. 274—23.
Freihofer, Alexis, to Ruti Machinery Works Ltd. Weaving loom. 3,417,793, 12–24–68, Cl. 139—126.
Frick, Hans-Dieter: *See*—
Wick, Richard, Geyken, Frick, and Kwiatkowski. 3,418,225.
Fried Krupp Gesellschaft mit beschrankter Haftung: *See*—
Bruderlein, Johannes. 3,417,630.
Fritzlen, Thomas L., to Reynolds Metal Co. Composite aluminum article. 3,418,090, 12–24–68, Cl. 29—197.5.
Froud, Joseph T.: *See*—
Page, Frederick W., Creasey, and Froud. 3,417,943.
Frouws, Simon M., G. Kerr, and A. A. M. Hendriks, to North American Philips Co., Inc. Electrical discharge character indicator tube. 3,418,509, 12–24–68, Cl. 313—109.5.
Fruehauf Trailer Co.: *See*—
Felts, Wallace M. 3,417,883.
Fryer, Ross L., to Continental Aviation and Engineering Corp. Variable compression ratio piston valve construction. 3,417,739, 12–24–68, Cl. 123—78.
Fuerst, William R., to The Dole Valve Co. Liquid dispensing valve. 3,417,962, 12–24–68, Cl. 251—262.
Fuji Shashin Film Kabushiki Kaisha: *See*—
Kimura, Shiro, Yoshida, and Sano. 3,418,129.
Makino, Katsuo. 3,417,733.
Yoshida, Makoto, and Okumura. 3,418,121.
Fujitsu Ltd.: *See*—
Ikebe, Yo and J., and Inaba. 3,417,667.
Fuke, William A., to Ford Motor Co. Variable rate suspension. 3,417,986, 12–24–68, Cl. 267—33.
Fulmor, Theodore G.: *See*—
Crocker, Bunting S., Fulmor, Holderreed, Lucy, and Mahoney. 3,417,927.
Fulop, Jules E., to Allan Mfg. Co. Guide for a fishing line. 3,417,501, 12–24–68, Cl. 43—24.
Furlani, John J., to United States of America, Army. Fuze arming system. 3,417,700, 12–24–68, Cl. 102—70.2.
Fussell, Richard L., to Burroughs Corp. Magnetic data store with radio-frequency nondestructive read-out. 3,418,645, 12–24–68, Cl. 340—174.
Futaki, Hisao, to Kabushiki Kaisha Hitachi Seisakusho. Temperature detector. 3,418,648, 12–24–68, Cl. 340—228.
Fyfe, Thomas A., and P. E. Stuckert, to International Business Machines Corp. Electrical distribution system. 3,418,641, 12–24–68, Cl. 340—173.
GCA Corp.: *See*—
Kreisman, Wallace S. 3,417,913.
Gage, Thomas B., to E. I. du Pont de Nemours and Co. Pillow with fiber-on-end pile covering aiding prevention of facial acne aggravation. 3,417,413, 12–24–68, Cl. 5—338.
Galaske, Folker: *See*—
Fleischer, Manfred, and Galaske. 3,417,847.
Gale, Donald J.: *See*—
Mauldin, William L., and Gale. 3,418,067.
Gallant, Reginald R., to Olivetti Underwood Corp. Repeat spacing mechanism for typewriters. 3,417,848, 12–24–68, Cl. 197—82.
Galmiche, Philippe, to Office National d'Etudes et de Recherches Aerospatiales (par abbreviation: O.N.E.R.A.). Methods of brazing. 3,417,460, 12–24–68, Cl. 29—473.1.
Gansser, Robert E.: *See*—
Otrhalek, Joseph V., and Gansser. 3,418,151.
Garland Steel Co.: *See*—
Campbell, George L. 3,417,587.
Garnero, Anthony L., to Central Mfg. District. Method of fabricating panels of expanded perlite. 3,418,403, 12–24–68, Cl. 264—91.
Gartner, Elie: *See*—
Felici, Noel J., and Gartner. 3,418,501.
Gattiker, Ernst, to Adolph Saurer Ltd. Warp beam take-off drive. 3,417,791, 12–24–68, Cl. 139—109.
Gautherin, George: *See*—
Greenberg, Sol, and Gautherin. 3,418,556.
Gebruder Einfalt Blechspielwarenfabrik: *See*—
Einfalt, Alfred. 3,418,410.
Gee, Paul Y. C.: *See*—
Andress, Harry J., Jr., and Gee. 3,418,092.

Geigy Chemical Corp.: *See*—
Dietrich, Henri. 3,418,367.
Leitner, George J. 3,418,392.
Pines, Robert M. 3,418,272.
Gemeinnardt, Hermann, G. Schatz, and H. Brucher, to Vereinigte Glanzstoff-Fabriken A.G. Method and apparatus for producing a voluminous yarn with uniformly spaced bindings. 3,417,445, 12–24–68, Cl. 28—1.
General Conveyor, Inc.: *See*—
Fink, Albert A. 3,417,520.
General Dynamic Corp.: *See*—
Glynn, Emmett P. 3,417,974.
General Electric Co.: *See*—
Beatty, John W., and McNeir. 3,418,440.
Bozeman, Richard W. 3,418,443.
Brown, Edgar D., Jr. 3,418,353.
Canney, Robert S. 3,418,615.
Casey, Edward J., and Heintz. 3,418,439.
Holmes, Robert G. 3,418,552.
Jacobs, Lewis W., and Sabatella. 3,418,536.
Klebe, Johann F. 3,418,312.
Klebe, Johann F. 3,418,313.
Kolatorowicz, Edwin E., and Miller. 3,418,550.
Morgan, Raymond E., and McMurray. 3,418,558.
Nielsen, John M. 3,418,266.
Omer, Kenner S. 3,417,866.
Purdy, William C., and Schnorr. 3,418,459.
Ryckman, William D., Jr. 3,418,454.
Wels, Joseph H. 3,418,241.
Hazelden, Denis W. J., Norreys, and Wheeler. 3,418,245.
General Electrodynamics Corp.: *See*—
Bynum, Stanley A. 3,418,508.
General-Erie Corp.: *See*—
Rapp, Vincent Q. 3,417,547.
General Mills, Inc.: *See*—
Nakanishi, Susumu. 3,418,335.
General Precision, Inc.: *See*—
Parker, Bernard, and Weisbord. 3,417,627.
Riordan, Hugh E. 3,417,626.
General Precision Systems, Inc.: *See*—
Evans, John L., and Riordan. 3,417,474.
Gould, Donald M. 3,417,566.
Lucy, Carl F., and Woods. 3,417,697.
Masson, Frederick Y. 3,418,482.
General Signal Corp.: *See*—
Dudler, Hans A. 3,418,547.
General Steel Industries, Inc.: *See*—
Lich, Richard L. 3,417,711.
Gentilucci, Nancy. Curtain training clip. 3,417,443, 12–24–68, Cl. 24—252.
Gerber, Bernard V.: *See*—
Simon, Harold C., and Gerber. 3,418,526.
Gerlach, John R., to Emhart Corp. Cylinder spring latch lockset. 3,418,017, 12–24–68, Cl. 292—169.
Germann, Reimar, to H. List. Device for the twice-repeated triggering of cathode-ray oscilloscopes. 3,418,583, 12–24–68, Cl. 328—48.
Gerst, Carl W.: *See*—
Hair, Hugh A., Roome, Gerst, Des-Jardins, and Domick. 3,418,605.
Geschickter Fund for Medical Research, Inc.: *See*—
Rice, Leonard M., and Grogan. 3,418,324.
Getchell, Ransom N., and R. J. Trickel, to Milani Foods, Inc. Shelf-stable dumpling mix. 3,418,137, 12–24–68, Cl. 99—94.
Gevaert-Agfa, N.V.: *See*—
De Smedt, Felix F., and Marinus. 3,417,430.
Geyken, Erwin: *See*—
Wick, Richard, Geyken, Frick, and Kwiatkowski. 3,418,225.
Giannini Scientific Corp.: *See*—
Walter, Fred, and Podolsky. 3,418,524.
Gibson-Thomsen Co., Inc.: *See*—
Maier, Eberhard. 3,417,516.
Giddings & Lewis Inc.: *See*—
Johnson, Earl E., and McCann. 3,417,639.
Gilbertson, Lynn A., to Honeywell Inc. Control apparatus for air treating systems. 3,418,068, 12–24–68, Cl. 21—74.
Gilday, John F., and G. L. Rodriguez, to Bell Aerospace Corp. Rotor blade strike indicator. 3,417,729, 12–24–68, Cl. 116—114.
Gilman, Harold, T. W. Stein, and G. W. Whitten, to Halcon International, Inc. Water extractive distillation of an ethylene oxide stream containing formaldehyde. 3,418,338, 12–24–68, Cl. 260—348.
Gilmont, Roger, to Roger Gilmont Instruments, Inc. Pressure gauge. 3,417,622, 12–24–68, Cl. 73—400.
Gilmont, Roger, Instruments, Inc.: *See*—
Gilmont, Roger. 3,417,622.
Girling Ltd.: *See*—
Lawson, Thomas G. 3,417,668.
Gismatullin, Ravil I.: *See*—
Shlyakhter, Isaak A., Krupin, and Gismatullin. 3,417,838.
Gittler, Allan, to Mastereel Industries, Inc. Container. 3,417,894, 12–24–68, Cl. 220—4.
Glass, Marvin & Associates: *See*—
Janiszewski, Anthony T. 3,417,996.
Barlow, Gordon A., and McFarland. 3,417,997.
Glass, Robert, to Minnesota Mining and Mfg. Co. Method of making laminated magnetic head. 3,417,465, 12–24–68, Cl. 29—603.
Glynn, Emmett P., to General Dynamic Corp. Gas dispersion device. 3,417,974, 12–24–68, Cl. 261—28.
Goda, Susumu, I. Kimura, and H. Masumoto. Hardenable steel material containing aluminum. 3,418,110, 12–24–68, Cl. 75—124.
Godai, Rikiji: *See*—
Ariga, Ken-ichi, Watanabe, and Godai. 3,418,126.
Goebel, Paul W. Wall plate assembly having improved attaching means. 3,418,421, 12–24–68, Cl. 174—57.
Goell, James E.: *See*—
Clouser, Paul L., and Goell. 3,418,601.
Goheen, David W.: *See*—
Bennett, Clifton F., and Goheen. 3,418,224.
Golay, Marcel, to Perkin-Elmer Corp. Selectable concentration gas mixing apparatus. 3,417,779, 12–24–68, Cl. 137—604.
Gold, Robert M., to Keuffel & Esser Co. Diazo reproduction. 3,418,469, 12–24–68, Cl. 250—65.
Golde, H. T., G.m.b.H.: *See*—
Werner, Johannes. 3,417,601.
Golden, Seymour W., to Robert John Co. Reinforced construction unit. 3,418,030, 12–24–68, Cl. 312—194.
Goldschmidt, Th., AG.: *See*—
Rossmy, Gerd. 3,418,352.
Goldstein, Albert, and D. R. Hobbs, to Chemirad Corp. Polyalkylene imine partially cross-linked with formaldehyde and pigment retention in paper-making therewith. 3,418,204, 12–24–68, Cl. 162—164.
Gonski, Joseph, and G. A. Marberg, to Westinghouse Air Brake Co. Loading head. 3,417,851, 12–24–68, Cl. 198—9.
Goodyear Aerospace Corp.: *See*—
Batcher, Kenneth E. 3,418,632.
Hampshire, William J. 3,418,197.
Goonewardene, Hilary F., and B. Loev, to Smith Kline & French Laboratories. Carbamates. 3,418,362, 12–24–68, Cl. 260—482.
Gordon, John E., and I. Von, to American Cyanamid Co. Ring closure method for vat dyes. 3,418,321, 12–24–68, Cl. 260—274.
Gossel, Edgar H., to A. W. Faber-Castell. Fountain pen with siphon-pen insert. 3,418,058, 12–24–68, Cl. 401—259.
Gossen, P., & Co., G.m.b.H.: *See*—
Schmitt, Helmut. 3,418,479.
Gough, B. A., Equipment Ltd.: *See*—
Gough, Bernard A. 3,417,879.
Gough, Bernard A., to B. A. Gough Equipment Ltd. Transporting systems. 3,417,879, 12–24–68, Cl. 214—16.
Gould, Donald M., to General Precision Systems, Inc. Underwater power source. 3,417,566, 12–24–68, Cl. 60—95.
Grabner, Floyd V. Electrically heated bath drying device. 3,418,452, 12–24–68, Cl. 219—370.
Grace, W. R., & Co.: *See*—
Sisler, Harry H. 3,418,366.
Wentworth, Ralph L. 3,418,168.
Graf, Martin, to Grob & Co. Aktiengesellschaft. Heddle. 3,417,789, 12–24–68, Cl. 139—96.
Graham, Robert L., to Automation Industries, Inc. Ultrasonic inspection transducer. 3,417,609, 12–24–68, Cl. 73—71.5.
Grain Belt Breweries, Inc.: *See*—
Wedl, Gerald F., and Draisey. 3,417,541.
Grammont, Paul D.: *See*—
Werotte, Louis E. and Grammont. 3,418,262.
Granberg, Albert J. Rotary blower and timing adjustment mechanism. 3,417,915, 12–24–68, Cl. 230—150.
Granger, Charles C. Tree fruit harvester. 3,417,558, 12–24–68, Cl. 56—328.
Graver, Richard B., and N. D. Farel, to Ashland Oil and Refining Co. Reactor with fluid level controller. 3,418,081, 12–24–68, Cl. 23—285.
Gravley, Wilton: *See*—
Dean, James T., Gravley, Randerson, and Brooks. 3,417,611.
Gray, Dolph L., to Coburn Mfg. Co., Inc. Pressure means for lens lapping machine. 3,417,514, 12–24–68, Cl. 51—216.
Gray, James H. Vehicle guard rail. 3,417,965, 12–24–68, Cl. 256—13.1.
Grebowiec, Michael J.: *See*—
Albert, John R., and Grebowiec. 3,417,432.
Green, Albert W.: *See*—
Brown, Marion L., Jr., Green and Blanton. 3,418,255.
Greenberg, Sol, and G. Gautherin, to Lambda Electronics Corp. Electronic power supplies with RMS current limiting circuit. 3,418,556, 12–24–68, Cl. 321—16.
Greenberg, Harry: *See*—
Grinninger, Lowell D., Greenberg and Hansley. 3,418,297.
Greene, Charles R., and W. A. Brown, to Shell Oil Co. Recovery of hydroformylation cobalt-carbonyl-hydrocarbyl-tert-phosphine catalyst complex. 3,418,351, 12–24–68, Cl. 260—439.
Greene, William D. Pipe elbow bevel cutter construction. 3,417,980, 12–24–68, Cl. 266—23.
Greenwood, Philip R. Toilet seat lifting mechanism. 3,417,411, 12–24–68, Cl. 4—251.
Gregg, Eric, to Stile-Craft Manufacturers, Inc. Quick-connect-disconnect coupling. 3,417,781, 12–24–68, Cl. 137—614.04.
Gregory Industries, Inc.: *See*—
Wieland, Howard N., and Ehrlich. 3,418,441.
Grenier, Raymond P.: *See*—
Spergel, Philip, Di Rocco, and Grenier. 3,418,474.
Grevich, John J., to Doughboy Industries, Inc. Former for wrapping web material around an article. 3,417,544, 12–24–68, Cl. 53—180.
Grimes, David D.: *See*—
Balamuth, Lewis, Grimes, Evans, Axtell, Robertson, and Higgins. 3,418,185.
Grimm, Thaddeus C.: *See*—
Culp, John D., Grimm, Fitzpatrick, and Patterson. 3,418,144.
Grinninger, Lowell D., H. Greenberg, and V. L. Hansley, to National Distillers and Chemical Corp. Polymerization process. 3,418,297, 12–24–68, Cl. 260—82.1.

Grissom, Robert R., E. K. Matthews, and W. Kurzbuch, to Esso Research and Engineering Co. Process for making a compacted structural element in a moist atmosphere. 3,418,402, 12–24–68, Cl. 264—65.

Grob & Co. Aktiengesellschaft: *See*—
Graf, Martin. 3,417,789.

Grober, Abraham, to Victor Electric Wire & Cable Corp. Integrated fuse and wire. 3,418,616, 12–24–68, Cl. 337—290.

Groenewegen, Johannes B., to Consolidated Electrodynamics Corp. Pneumatic means for maintaining tape in contact with transducer. 3,418,434, 12–24–68, Cl. 179—100.2.

Grogan, Charles H.: *See*—
Rice, Leonard M., and Grogan. 3,418,324.

Grogan, Charles H., and L. M. Rice, to Tri-Kem Corp. Gem-cyclohexane-1,1-diacetic and 1-carboxy-1-acetic acids and their anhydrides. 3,418,336, 12–24–68, Cl. 260—345.9.

Grogan, Patrick M., ¼ each to L. V. and L. N. Martin. Hand saw guard. 3,417,797, 12–24–68, Cl. 145—35.

Groom, James S.: *See*—
Lee, Richard G., and Groom. 3,418,047.

Groshelm, Gene E., to Formica Corp. Process for making decorative laminates. 3,418,189, 12–24–68, Cl. 156—277.

Grosu, Stefan. Single-phase transformer for electric arc welding. 3,418,563, 12–24–68, Cl. 323—48.

Guienne, Paul F.: *See*—
Bertin, Jean H., Feve, and Guienne. 3,417,709.

Guillet, James E., and H. W. Coover, Jr., to Eastman Kodak Co. Process for thermally degrading polyethylene. 3,418,306, 12–24–68, Cl. 260—94.9.

Gulf General Atomic Inc.: *See*—
Bray, Donald T. 3,417,870.

Gulf Research & Development Co.: *See*—
Acheson, Willard P., and Torcaso. 3,417,829.
Barle, Walter P., Jr., Franke, and Whitaker. 3,418,359.
Brown, Donald A. 3,418,636.
Hurley, Daniel J., Rosenthal, and Williamson. 3,418,388.
Morris, Richard A., and Teplitz. 3,417,816.
Schulz, Johann G. D., Whitaker, and Winteler. 3,418,360.
Smith, Francis M., and Terwilliger. 3,417,827.
Wyllie, Malcolm R. J. 3,417,819.

Gulick, Joseph F., Jr., to United States of America, Navy. Automatic frequency control system. 3,418,596, 12–24–68, Cl. 331—33.

Gunderson, Robert O.: *See*—
Higashi, Paul, and Gunderson. 3,418,644.

Gundlach, T. J., Co.: *See*—
Gundlach, Theodore F. 3,417,928.

Gundlach, Theodore F., to T. J. Gundlach Co. Gas-hydraulic system for crushers. 3,417,928, 12–24–68, Cl. 241—32.

Gunter, Addison Y., and T. E. Owen, to Hudson Engineering Corp. Process and apparatus for producing finned tubing. 3,417,451, 12–24–68, Cl. 29—157.3.

Gurney, Gordon T., to Crompton & Knowles Corp. Shuttle. 3,417,792, 12–24–68, Cl. 139—125.

Gurs, Karl: *See*—
Muller, Rudolf, and Gurs. 3,418 476.

Gustafson, Carl G., to Union Carbide Corp. Process for the production of beta chloro acyl chlorides. 3,418,365, 12–24–68, Cl. 260—544.

Guzzi, Alberto, and R. Bosio, to Ferrania S.p.A. Photosensitive polymers, preparation and product thereof. 3,418,282, 12–24–68, Cl. 260—72.

Gydesen, Frederick R., ½% to R. W. Hanes. Visualizing internal structure. 3,418,471, 12–24–68, Cl. 250—71.5.

Haase, Victor H., and J. R. Harclerode, to Robert G. Evans Co. Road speed drive mechanism for self-propelled concrete saws and the like. 3,417,638, 12–24–68, Cl. 74—720.

Hacking, Robert V.: *See*—
Watson, Robert D., Long, and Hacking. 3,418,028.

Haddad, Ihsan A., to Instrumentation Laboratory, Inc. Cuvette for supporting a sensing cell. 3,418,231, 12–24–68, Cl. 204—195.

Haddock, Ernest: *See*—
Yates, John, and Haddock. 3,418,331.

Hafner, Theodore. Groove forming tool for pipes. 3,417,434, 12–24–68, Cl. 18—45.

Hagel, Karl-Otto: *See*—
Benedikter, Kurt, Hagel, and Wilke. 3,418,299.

Haglund, Elmer A.: *See*—
Marburger, Ivan L., Haglund, and Howell. 3,418,018.

Hann, Eberhard, and W. Hoch, to VEB Carl Zeiss Jena. Radiation source for reducing specimen contamination in electron microscopes. 3,418,463. 12–24–68, Cl. 250—49.5.

Hahn, William C., to Phillips Petroleum Co. Valve sampling system for taking gaseous samples at about atmospheric pressure. 3,417,605, 12–24–68, Cl. 73—23.

Hair, Hugh A., G. T. Roome, C. W. Gerst, E. E. Des-Jardins, and E. J. Domick, to Research Corp. Nonreciprocal microstrip ferrite phase shifter having regions of circular polarization. 3,418,605, 12–24–68, Cl. 333—24.1.

Hala, Slavoj, S. Landa, and Z. Weidenhoffer, to Ceskoslovenska Akademie Ved. Process for the production of adamantane. 3,418,387, 12–24–68, Cl. 260—666.

Halcon International, Inc.: *See*—
Gilman, Harold, Stein, and Whitten. 3,418,338.

Halcon International, Inc.: *See*—
Nirenberg, Lester. 3,418,215.
Russell, Joseph L. 3,418,340.

Hall, George R.: *See*—
Cookerly, Jack C., and Hall. 3,417,646.

Hall, Michael J. Toothbrush. 3,417,762, 12–24–68, Cl. 132—84.

Hall, Richmard B., and T. Consoli, to The Boeing Co. Particle accelerator. 3,418,206, 12–24–68, Cl. 176—2.

Halliburton Co.: *See*—
Epler, Walter N., and Malone. 3,417,820.
Tinsley, John M., and Malone. 3,417,821.

Hallock, Edward C. Expansion joint covers. 3,417,528, 12–24–68, Cl. 52—367.

Hallowell, Fulton W., Jr., to R. E. Hartung Co., Inc. Heat-sealing head. 3,418,193, 12–24–68, Cl. 156—583.

Halmstads Jarnverks AB: *See*—
Hommerberg, Claes. 3,418,175.

Halperin, Bernard I., and J. O. Thompson, to International Business Machines Corp. Method for developing one component diazotype materials. 3,418,120, 12–24–68, Cl. 96—49.

Hamilton, Edward E.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.

Hamilton, George A.: *See*—
Murray, Stephen F., and Hamilton. 3,417,631.

Hamisch, Paul H., J. I. Kern, to The Monarch Marking Systems Co. Encoded tag reader. 3,418,456, 12–24–68, Cl. 235—61.11.

Hammond, John S. Magnetic reed switch. 3,418,610, 12–24–68, Cl. 335—205.

Hamner, Glen P.: *See*—
Rigney, James A., Hamner, and Mason. 3,418,256.

Hampshire, William J., to Goodyear Aerospace Corp. Fiber reenforced bonding tape. 3,418,197, 12–24–68, Cl. 161—58.

Hanes, Richard W.: *See*—
Gydesen, Frederick R. 3,418,471.

Hannan, Jerry M. Automatic antisway mechanism for vehicles. 3,417,985, 12–24–68, Cl. 267—11.

Hannon, Charles N.: *See*—
Hannon, Warren W. and C. N. 3,417,987.

Hannon, Donald F., to Laminex Industries, Inc. Identification card. 3,417,497, 12–24–68, Cl. 40—2.2.

Hannon, Warren W. and C. N.; said C. N. Hannon, assor., to said W. W. Hannon. Double-acting finger mechanism for primary folding station of newspaper folding and wrapping machine. 3,417,987, 12–24–68, Cl. 270—61.

Hansen, Ib S. Apparatus for throwing a disc-shaped target. 3,417,741, 12–24–68, Cl. 124—8.

Hansen, Richard C. and J. O. Wilson, to Xerox Corp. Signal storage device. 3,418,046, 12–24–68, Cl. 355—13.

Hansley, Virgil L.: *See*—
Grinninger, Lowell D. Greenberg, and Hansley. 3,418,297.

Hanson, Edwin E., and H. B. Newman, to Caterpillar Tractor Co. Fluid coupling. 3,417,565, 12–24–68, Cl. 60—54.

Harbrecht, Karl, to Rheinmetall G.m.b.H. Firma. Shock absorber for an automatic firearm. 3,417,660, 12–24–68, Cl. 89—198.

Harclerode, John R.: *See*—
Haase, Victor H., and Harclerode. 3,417,638.

Hardee, Walter D.: *See*—
Copping, Bruce G., Hardee, and McGill. 3,417,540.

Harding, John W.: *See*—
Langer, Arthur W., Jr., and Harding. 3,418,304.

Hardt, David R. to Zerand Corp. Web dryer of the high velocity multiple nozzle, slotted orifice type. 3,417,489, 12–24–68, Cl. 34—160.

Harmon, Duane D., to Bausch & Lomb Inc. Optical attenuator and optical wedge adjusters coupled together to prevent overriding. 3,418,484, 12–24–68, Cl. 250—237.

Harnett, William T., to International Business Machines Corp. Circuit fordetecting the presence of a special character in phase-encoded binary data. 3,418,585, 12–24–68, Cl. 328—134.

Harrington, Roy E.: *See*—
Jones, Frank D., Shriver, and Harrington. 3,417,556.

Harris Calorific Sales Co.: *See*—
Edman, Clarence E., Kelly, Murphy, and Skolds, 3,417,981.

Harris, Harold D., to Harris and Thrush Mfg. Co. Drier. 3,417,487, 12–24–68, Cl. 34—233.

Harris and Thrush Mfg. Co.: *See*—
Harris, Harold D. 3,417,487.

Harrison, John W.: *See*—
Lowry, Robert D., and Harrison. 3,417,839.

Hartka, Theodore J., to The Ward-Turner Machinery Co. Device for reducing turbulence in printing press fountains. 3,417,693, 12–24–68, Cl. 101—364.

Hartley, William L., to Lockheed Aircraft Corp. T-tail construction for aircraft. 3,417,946, 12–24–68, Cl. 244—87.

Hartung, R. E., Co., Inc.: *See*—
Hallowell, Fulton W., Jr. 3,418,193.

Hasegaea, Hiroshi: *See*—
Kato, Jinichi, Hasegaea, and Miyadera. 3,417,685.

Haselow, William J., and W. E. Aschenbrenner, to Consolidated Paper, Inc. Sheet inspecting and sorting apparatus. 3,417,989, 12–24–68, Cl. 271—64.

Hass, Karl: *See*—
Lenz, Arnold, Bleh, and Hass. 3,418,383.

Hatch, Richard W., Jr., and L. W. Murphy, to The Foxboro Co. Pneumatic repeater. 3,417,773, 12–24–68, Cl. 137—85.

Hatcher, Harry R., to SCM Corp. Producing pulverulent iron for powder metallurgy by compacting feed stocks. 3,418,104, 12–24–68, Cl. 75—.5.

Hatcher, Harry R., and W. Holtzman, to SCM Corp. Iron powder for forming sintered articles of improved strength. 3,418,105, 12–24–68, Cl. 75—.5.

Haugh, Eugene F., to E. I. du Pont de Nemours and Co. Intensification process utilizing superposed silver halide layered structure. 3,418,123, 12–24–68, Cl. 96—63.

Hawkins, Willard S., to Sonoco Products Co. Textile carrier. 3,417,940, 12–24–68, Cl. 242—125.1.

Hayden, Rodney, to United-Carr Inc. Square obturator. 3,418,609, 12–24–68, Cl. 335—203.

Hayes, William K., to Columbian Carbon Co. Hydrogenation of cyclooctadienes to cyclooctenes. 3,418,386, 12–24–68, Cl. 260—666.

Hazelden, Denis W. J., J. J. Norreys, and M. J. Wheeler, to General Electric Co. Ltd. Fuel materials for nuclear reactors. 3,418,245, 12–24–68, Cl. 252—301.1.

Heald Machine Co., The: *See*—
Robillard, Edward G., Kuniholm, and Humes. 3,417,512.

Heard, Harold R., to Salem-Brosius, Inc. Conveyor apparatus. 3,417,858, 12–24–68, Cl. 198—110.

Hearn, Daniel P., to Sinclair Research, Inc. Geophysical gradiometer including means for determining distance between airborne bodies. 3,418,568, 12–24–68, Cl. 324—43.

Heckelsberg, Louis F., to Phillips Petroleum Co. Conversion of olefins. 3,418,390, 12–24–68, Cl. 260—683.

Hedrick, Ross M., and P. A. Tierney, to Monsanto Co. Process for preparing polylactam compositions. 3,418,268, 12–24–68, Cl. 260—37.

Heintz, Milton L.: *See*—
Casey, Edward J., and Heintz. 3,418,439.

Helms, Charles R., to Art Metal-Knoll Corp. Chair control. 3,417,956, 12–24–68, Cl. 248—379.

Helwig, Lawrence E.: *See*—
Carter, Paul R., and Helwig. 3,418,174.

Hemenway, Earl M. Knock-down awning device and package. 3,417,764, 12–24–68, Cl. 135—5.

Henderson, Herbert V., to Anderson, Wright (South Africa) Ltd. Mine shaft bratticing. 3,417,568, 12–24–68, Cl. 61—40.

Hendriks, Adrianus A. M.: *See*—
Frouws, Simon M., Kerr, and Hendriks. 3,418,509.

Hennells, Ransom J., to W. E. Hennells Co., Inc. Seal ring construction. 3,418,002, 12–24–68, Cl. 277—188.

Hennells, W. E., Co., Inc.: *See*—
Hennells, Ransom J. 3,418,002.

Hennessey, Russell J., to Hoerner-Waldorf Corp. Carrier carton. 3,417,911, 12–24–68, Cl. 229—37.

Henry, George R., and E. D. Miller, Jr., to Dresser Industries, Inc. Method of slip casting basic refractory materials. 3,418,401, 12–24–68, Cl. 264—56.

Henry, James E., to Owens-Illinois, Inc. Dual gap centripetal extruder and method of extruding. 3,418,413, 12–24–68, Cl. 264—349.

Herchenroeder, Robert B., to Union Carbide Corp. Cobalt base alloy. 3,418,111, 12–24–68, Cl. 75—171.

Hercules Inc.: *See*—
Breslow, David S. 3,418,285.

Herglotz, Heribert K. J., to E. I. du Pont de Nemours and Co. X-ray spectrograph apparatus using low angle X-ray reflecting units and means to vary the X-ray incidence angle. 3,418,466, 12–24–68, Cl. 250—49.5.

Heroif, Kjell O. G., S. A. Johnsson, and P.-G. Mellgren, to Soderhamns Verkstader Aktiebolag. Branch conveyor. 3,417,860, 12–24–68, Cl. 198—197.

Hershey, Harold J., C. W. McGee, and M. L. Warnock, to Bell Telephone Laboratories, Inc. Code transmitter. 3,418,431, 12–24–68, Cl. 179—90.

Hertig, Max, and P. J. Meier, to G. A. Brown, Inc. Combination washing-extracting machine. 3,417,582, 12–24–68, Cl. 08—24.

Hesse, Holger. Pressure relief valve. 3,417,795, 12–24–68, Cl. 137—514.

Hesse, Jack E., and J. Ostapovich, to Johns-Manville Corp. Method for thickening the end of plastic pipe. 3,418,409, 12–24–68, Cl. 264—230.

Heusner, Alex, and K. Zelle, to Boehringer Ingelheim G.m.b.H. Certain 2-methyl-3-phenyl-(4)3H-quinazolones. 3,418,319, 12–24–68, Cl. 260—256.4.

Hewlett-Packard Co.: *See*—
Lacey, Richard F. 3,418,463.

Heyer Inc.: *See*—
Springer, Edward M. 3,417,988.

Heyl, Gerhard: *See*—
Menold, Richard, Heyl, and Simm. 3,418,115.

Hickey, William M., to Lapham-Hickey Steel Corp. Material handling apparatus and method. 3,417,857, 12–24–68, Cl. 198—39.

Hicks, Warren F.: *See*—
Rizzolo, Alfred T., and Hicks. 3,418,447.

Higashi, Paul, and R. O. Gunderson, to The National Cash Register Co. Thin film memory. 3,418,644, 12–24–68, Cl. 340—174.

Higashimura, Einosuke, M. Ishii, and Y. Ishikawa, to Mitsubishi Rayon Co., Ltd. Soil stabilization. 3,417,567, 12–24–68, Cl. 61—36.

Higgins, Charles T.: *See*—
Balamuth, Lewis, Grimes, Evans, Axtell, Robertson, and Higgins. 3,418,185.

Hildebrand, Jack O., R. B. Mulvany, and P. F. Smith, to International Business Machines Corp. Variable volume high pressure ammonia development device. 3,417,686, 12–24–68, Cl. 95—89.

Hillquist, Paul A.: *See*—
Hillquist, Warren K. and P. A. 3,417,953.

Hillquist, Warren K. and P. A., to Instrumentation Laboratory, Inc. Mechanical support assemblies. 3,417,953, 12–24–68, Cl. 248—280.

Hills, Thomas H. Automatic film processing apparatus. 3,417,687, 12–24–68, Cl. 95—93.

Hindersinn, Raymond R., and H. W. Marciniak, to Hooker Chemical Corp. Fire retardant polymer compositions containing halogenated cyclopentadiene adducts. 3,418,263, 12–24–68, Cl. 260—23.

Hirakis, Emanuel C.: *See*—
Yenawine, David L., and Hirakis. 3,418,145.

Hird, Desmond, to George Angus & Co. Ltd. Manufacture of hose pipes. 3,418,404, 12–24–68, Cl. 264—173.

Hirmann, Georg, to Polyprodukte AG. Apparatus for controlling the geometry of the chassis of motor vehicles. 3,417,479, 12–24–68, Cl. 33—203.17.

Hirohama, Juji. Method of forming a container closure. 3,417,539, 12–24–68, Cl. 53—42.

Hitachi Seisakusho Kabushiki Kaisha: *See*—
Futaki, Hisao. 3,418,648.
Isoda, Kenichi, and Ono. 3,418,571.

Hitter, Joseph S. Sheet panel structure. 3,417,519, 12–24–68, Cl. 52—11.

Hobart Bros. Co.: *See*—
Claussen, Gerard E. 3,418,446.

Hobbs, Donald R.: *See*—
Goldstein, Albert, and Hobbs. 3,418,204.

Hoch, Wolfgang: *See*—
Hahn, Eberhard, and Hoch. 3,418,465.

Hodge, Frederick J., to Minnesota Mining and Mfg. Co. Method and system for processing analog information. 3,418,433, 12–24–68, Cl. 179—100.2.

Hoerner-Waldorf Corp.: *See*—
Hennessey, Russell J. 3,417,911.
Johnson, Ronald V. 3,417,910.

Hofferber, Henry E., to Sperry Rand Corp. Easy engage switching circuit using signal chopping. 3,418,490, 12–24–68, Cl. 307—202.

Hoffman, Rolland L.: *See*—
Hovis, James E., and Hoffman. 3,418,062.

Hoffmann, Helmut, to Siemens Aktiengesellschaft. Electroacoustic transducer having a resonator cavity damped. 3,418,437, 12–24–68, Cl. 179—115.5.

Hoffmann, Thomas A., to Westinghouse Electric Corp. Apparatus for aligning a reflector and a light source. 3,418,052, 12–24–68 Cl. 356—123.

Hoffmann-La Roche Inc.: *See*—
Rüegg, Rudolf, and Ryser. 3,418,355.

Hogg, Wilfrid H., and P. Ford, to Dunlop Rubber Co. Ltd. Method for producing patent leather. 3,418,188, 12–24–68, Cl. 156—246.

Hogsed, Milton J., to E. I. du Pont de Nemours and Co. Polymerization of 2,2-dialkyl-3-propiolactones using tertiary sulfonium salts as initiators. 3,418,289, 12–24–68, Cl. 260—78.3.

Holderreed, Francis L.: *See*—
Crocker, Bunting S., Fulmor, Holderreed, Lucy, and Mahoney. 3,417,927.

Hollandse Beton Maatschappij N.V.: *See*—
Duyster, Hoite C., Noyon, and Jansz. 3,417,828.

Holly, James A., to Hollymatic Corp. Molding apparatus for plastic material. 3,417,425, 12–24–68, Cl. 17—32.

Hollymatic Corp.: *See*—
Holly, James A. 3,417,425.

Holmes, Robert G., to General Electric Co. Separable transformer battery charger. 3,418,532, 12–24–68, Cl. 320—2.

Holtzberg, Frederic, S. I. Methfessel, and J. C. Suits, to International Business Machines Corp. Magneto-optical rotation device with europium chalcozenide magneto-optical elements. 3,418,036, 12–24–68, Cl. 350—151.

Holtzman, William: *See*—
Hatcher, Harry R., and Holtzman. 3,418,105.

Hommerberg, Claes, to Halmstads Jarnverks AB. Method for producing a rough corrosion resistant surface on reinforcing material of iron adapted for casting into concrete. 3,418,175. 12–24–68, Cl. 148—6.35.

Honeywell Inc.: *See*—
Blue, Marts D. 3,418,473.
Gilbertson, Lynn A. 3,418,068.
Mihalko Emil S., and Taylor. 3,418,505.
Whitehead, Robert C., Jr. 3,417,625.

Honig, Arnold Matrix keyboard piano instrument. 3,417,648, 12–24–68, Cl. 84—423.

Hooker Chemical Corp.: *See*—
Emery, Alvin T. 3,418,232.
Hindersinn, Raymond R., and Marciniak. 3,418,263.
Shepard, Alvin F., and Dannels. 3,418,348.

Hoormann, Aloysius H. Parachute stowage tool. 3,417,948, 12–24–68, Cl. 244—148.

Hoover Ball and Bearing Co.: *See*—
Rupert, Samuel J. 3,417,428.

Hoover Co., The: *See*—
Vincent, Conway. 3,417,972.

Hoover, John R. E.: *See*—
Dunn, George L., and Hoover. 3,418,368.

Hope, Donald S. Three dimensional viewer. 3,418,033, 12–24–68, Cl. 350—138.

Hopper, Andrew L., to United States of America, Army. Electro-optical device. 3,417,698, 12–24–68, Cl. 102—70.2.

Horgan, William J., Jr.: *See*—
Blum, Louis, and Horgan. 3,417,532.

Horton, Billy M.: *See*—
Bowles, Romald E., and Horton. 3,417,624.

Horzick, Joseph, to Motorola, Inc. Vertical record player. 3,417,998 12–24–68, Cl. 274—10.

Hoten, Masanobu: *See*—
Nakajima, Akira, Takeya, and Hoten. 3,418,300.

Houdaille Industries, Inc.: *See*—
Behm, William F. 3,417,702.
Rumsey, Rollin D. 3,417,665.
Rumsey, Rollin D. 3,417,669.
Rumsey, Rollin D. 3,417,806.

Houtman, Ronald L., to The Upjohn Co. Trimethylsilyl ethers of lincomycin and its compounds. 3,418,414, 12–24–68, Cl. 424—181.

Hovis, James E., and R. L. Hoffman, to Bloom Engineering Co., Inc. Burner structures. 3,418,062, 12–24–68, Cl. 431—350.

Howard, Jack E., and L. A. Kaplan, to United Cellular Products Corp. Breast pads and method of making the same. 3,417,755, 12–24–68, Cl. 128—516.

Howell, Donald W.: *See*—
Marburger, Ivan L., Haglund, and Howell. 3,418,018.

Howell, Robert B. Dynamic balancing device. 3,417,506, 12–24–68, Cl. 46—131.

Howell, Thomas D., to Tri-State Oil Tool Industries, Inc. Fishing method and apparatus. 3,417,822, 12–24–68, Cl. 166—43.

Hoxie, Orville D., to Bissell Inc. Art of cleaning carpets. 3,418,243, 12–24–68, Cl. 252—154.

Hubbard, Arthur L., to Deere & Co. Cotton harvester. 3,417,553, 12–24–68, Cl. 56—11.

Hubel, Werner: *See*—
Schmitt, Karl, Disteldorf, and Hubel. 3,418,375.

Hucks, Helmut, F. Binder, and H. Ludwigs, to Maschinenfabrik Froriep G.m.b.H. Hydrostatic guiding arrangement for supporting beams, especially tool holding means on machine tools. 3,418,025, 12–24–68, Cl. 308—5.

Hudgens, Claude R. Leaf spring-mounted shutter device activated by the interruption of electrical power. 3,418,475, 12–24–68, Cl. 250—105.

Hudson Engineering Corp.: *See*—
Gunter, Addison Y., and Owen. 3,417,451.

Hudson Machine & Tool Corp.: *See*—
Richter, Walter. 3,417,596.

Huett, Georg C., to Eugene Dietzgen Co. Photosensitive compositions comprising acid addition salts of substituted lencocyanide triphenylmethane dyes and metal perchlorates. 3,418,128, 12–24–68, Cl. 96—90.

Hug, Paul: *See*—
Maillard, Bernard, and Hug. 3,417,657.

Hug, Ronald J.: *See*—
Brockel, Gerhard R., Hug, and Rutschi. 3,417,916.

Hughes Aircraft Co.: *See*—
Bancroft, Charles F. 3,418,496.
Fisher, Gaythor D. 3,418,591.

Hughes, Aubrey H. Combination leveler-bender. 3,417,586, 12–24–68, Cl. 72—32.

Hughes, Ray C.: *See*—
Brounes, Robert L., Sweet, and Hughes. 3,418,423.

Huguenin, René: *See*—
Boissonnas, Roger, and Huguenin. 3,418,307.

Hulse, Robert E.: *See*—
Ryan, John W., Meggs, and Hulse. 3,417,507.

Hultberg, Richard M., to Communications and Systems, Inc. Satellite communication synchronizing system. 3,418,579, 12–24–68, Cl. 325—52.

Humes, Norman S.: *See*—
Robillard, Edward G., Kuniholm, and Humes. 3,417,512.

Humphrey, Marvin E., to United States of America, Navy. Digital phase lock clock. 3,418,637, 12–24–68, Cl. 340—172.5.

Humphreys, Thomas G., Jr. Apparatus including variable frequency indicating means for locating and tracing conductive structures. 3,418,572, 12–24–68, Cl. 324—67.

Hunt, Heman D., to E. I. du Pont de Nemours and Co. High contrast direct positive by using active cations in silver halide solvent. 3,418,124, 12–24–68, Cl. 96—64.

Hurley, Daniel J., R. W. Rosenthal, and R. C. Williamson, to Gulf Research & Development Co. Chlorination of normal paraffins in the presence of benzene and alkylation of the benzene. 3,418,388, 12–24–68, Cl. 260—671.

Hutson, Jearld L. Photosensitive devices having large area light absorbing junctions. 3,418,545, 12–24–68, Cl. 317—235.

Hutterer, Martin, to Cummings-Landau Laundry Machinery Co., Inc. Automatic unloading washing machine. 3,417,583, 12–24–68, Cl. 68—210.

Hyche, Kenneth W.: *See*—
Brunson, Marion O., and Hyche. 3,418,202.

Hydro-Air Engineering, Inc.: *See*—
Moehlenpah, Walter G. 3,417,651.

Hydrocarbon Research, Inc.: *See*—
Chervenak, Michael C., and Schuman. 3,418,234.

Iacobovici, Theodor, to Von Roll AG. Method for the combustion of waste materials, particularly refuse. 3,417,716, 12–24–68, Cl. 110—7.

Iacobovici, Theodor, to Von Roll AG. Furnace for the combustion of waste materials, particularly refuse. 3,417,717, 12–24–68, Cl. 110—7.

Idelson, Albert L., and M. H. Litt, to Allied Chemical Corp. Polymers prepared from 2,4,2'4'-tetraaminodiphenylalkanes. 3,418,261, 12–24–68, Cl. 260—2.

Igras, Raymond A., and G. G. Strosberg, to The Ford Motor Co. Apparatus for electrocoating using an auxiliary electrode. 3,418,233, 12–24–68, Cl. 204—300.

Ikebe, Jun: *See*—
Ikebe, Yo and J., and Inaba. 3,417,667.

Ikebe, Yo and J., and S. Inaba, to Fujitsu Ltd. Oil pressure torque amplifier. 3,417,667, 12–24–68, Cl. 91—375.

Illinois Tool Works, Inc.: *See*—
Ryder, Francis E. 3,417,614.
Ryder, Francis E. 3,417,615.
Wronke, Louis J., and Swick. 3,417,731.

Immel, Otto: *See*—
Schwarz, Hanshelmut, Schneider, Schnell, and Immel. 3,418,314.

Imperial Chemical Industries Ltd.: *See*—
Davies, Phineas. 3,418,093.
Fairclough, Rodney J., and Checkland. 3,417,446.

Inaba, Seiuemon: *See*—
Ikebe, Yo and Jun, and Inaba. 3,417,667.

Inami, Akira, and K. Morimoto, to Matsushita Electric Industrial Co., Ltd. Electrophotographic materials comprising polymeric intramolecular charge transfer complexes. 3,418,116, 12–24–68, Cl. 96—1.5.

Industrial Science Corp.: *See*—
Von Stroh, Gerald F. H. 3,418,108.

Ingersoll-Rand Co.: *See*—
Peterson, Carl R. 3,418,022.

Ingram, Maxwell. Probe for measuring conductivity of an electrolyte solution. 3,418,566, 12–24–68, Cl. 324—30.

Instrumentation Laboratory, Inc.: *See*—
Haddad, Ihsan A. 3,418,231.
Hilliquist, Warren K. and P. A. 3,417,953.

Instrumentation Specialties Co.: *See*—
Allington, John R. 3,418,084.

Interchemical Corp.: *See*—
Schmidt, Karl H., Weber, Rowe, and Brinker. 3,418,286.

International Business Machines Corp.: *See*—
Anderson, David W., Conti, Sparacio, and Tomasulo. 3,418,638.
Barber, Robert R., and Loeffler. 3,418,520.
Boggs, Raymond R., Jr., Locklar, and West. 3,418,432.
Chien, Robert T. 3,418,629.
Chung, David H., and Walsh. 3,418,491.
Clapper, Genung L. 3,418,429.
Dym, Herbert, and Mazza. 3,418,481.
Fan, George J. 3,418,483.
Fang, Frank F., Walker, and Yu. 3,417,464.
Ferrier, Herman A., Jr., and McEnroe. 3,418,519.
Fyfe, Thomas A., and Stuckert. 3,418,641.
Halperin, Bernard I., and Thompson. 3,418,120.
Harnett, William T. 3,418,585.
Hildebrand, Jack O., Mulvany, and Smith. 3,417,686.
Holtzberg, Frederic, Methfessel, and Suits. 3,418,036.
Jones, Philip D., and Wood. 3,418,633.
Koons, John P., Young, and Yungkurth. 3,418,534.
Marinace, John C. 3,418,226.
Mix, Arthur L., Jr., and West. 3,417,850.
Oktay, Sevgin. 3,417,814.
Short, Ronald G. 3,418,654.
Taren, William J. 3,418,647.
Triebwasser, Sol. 3,418,600.

International Computers and Tabulators Ltd.: *See*—
Payne, Sidney W. 3,418,594.

International Harvester Co.: *See*—
McMillin, Russell G. 3,418,006.
Smelcer, Glen E. 3,417,891.

International Oil Burner Co.: *See*—
Barbier, Jean Y. 3,418,451.

International Research & Development Co. Ltd.: *See*—
Smart, Desmond. 3,417,754.

International Standard Electric Corp.: *See*—
Fleischer, Manfred, and Galaske. 3,417,847.

International Telephone and Telegraph Corp.: *See*—
Asher, Ralph L. 3,418,586.
Kennedy, John B., and Mandel. 3,418,581.
Lighty, Paul E. 3,418,619.
Roy, James W. 3,418,442.
Varrin, Andre J. 3,417,650.

Irving Air Chute Co., Inc.: *See*—
Wells, John A. 3,417,656.

Irwin, Jere F. Bread bagger. 3,417,546, 12–24–68, Cl. 53—190.

Isaac, Edward: *See*—
Kulnis, Robert, and Isaac. 3,417,761.

Isaacson, Calvin, and N. A. Ouellette, to United Shoe Machinery Corp. Apparatus for assembling insoles on lasts. 3,417,416, 12–24–68, Cl. 12—1.

Isaacson, Robert B.: *See*—
Kennedy, Joseph P., and Isaacson. 3,418,259.

Ischer, Hans, and H. Siegrist, to Sandoz Ltd. (also known as Sandoz AG). Water-soluble pyrimidine dyes. 3,418,308, 12–24–68, Cl. 260—154.

Ishii, Masao: *See*—
Higashimura, Einosuke, Ishii, and Ishikawa. 3,417,567.

Ishikawa, Yoshio: *See*—
Higashimura, Einosuke, Ishii, and Ishikawa. 3,417,567.

Ishikawajima-Harima Jukogyo Kabushiki Kaisha: *See*—
Tsutsumi, Teruo, Yamada, Nagai, and Wada. 3,417,982.

Isley, Walter F.: *See*—
Basiletti, John C., and Isley. 3,417,738.

Isoda, Kenichi, and N. Ono, to Kabushiki Kaisha Hitachi Seisakusho. Automatic self-balancing remote measuring system of an impedance responsive process variable. 3,418,571, 12–24–68, Cl. 324—61.

Itek Corp.: *See*—
McCarthy, Joseph V. 3,417,484.

Izard, Emmette F., to E. I. du Pont de Nemours and Co. Homopolymeric and copolymeric esters of certain bis(4-carboxyphenoxyalkyl) cyclohexanes. 3,418,276, 12–24–68, Cl. 260—47.

Jackson, Oscar D., to Burch Plow Works Inc. Adjusting and locking structure. 3,417,826, 12–24–68, Cl. 172—591.

Jacobs, Lewis W., and R. J. Sabatella, to General Electric Co. Main circuit breaker assembly for electrical circuit control device panelboards and adapter base therefor. 3,418,536, 12–24–68, Cl. 317—119.

Jacobson, Aaron S. Package and signalling device for flashlight. 3,418,651, 12–24–68, Cl. 340—321.

Jaffe, John C., to Stagecraft Corp. Foldable trailerized shell. 3,417,518, 12–24–68, Cl. 52—7.

Jakeway, Gerald V., to Keeler Brass Co. Attachable metal object and method for making the same. 3,417,536, 12–24–68, Cl. 52—673.

Janiszewski, Anthony T., to Marvin Glass & Associates. Jigsaw puzzle with rotatable pieces. 3,417,996, 12–24–68, Cl. 273—157.

Jansz, Joost W.: *See*—
Duyster, Holte C., Noyon, and Jansz. 3,417,828.

Jantzen, George, to M. Steinthal & Co., Inc. Combination shoulder harness and seat belt buckle system. 3,418,007, 12–24–68, Cl. 280—150.

Jarvis Corp.: *See*—
Chamberlain, Harold F. 3,417,424.

Jasper, Leslie L.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.

Jaspest, William B.: *See*—
Dashio, John C. 3,417,525.
Ziccardi, John J. 3,417,832.

Jeanneret, Jules L. Method of and apparatus for simultaneously adjusting the depth and length of cut in a workpiece on a lathe. 3,417,478, 12–24–68, Cl. 33—185.

Jeffee, Saul, and J. J. Kowalak, to Movielab, Inc. Apparatus for printing multiple images on photographic raw stock and related fader. 3,418,050, 12–24–68, Cl. 355—90.

Jennings, Thomas J., and P. H. Williams, to Shell Oil Co. Process for the production of vinylphenols. 3,418,381, 12–24–68, Cl. 260—624.

Jerue, Richard A.: *See*—
De Vlieg, Charles B. and C. R., and Jerue. 3,417,662.

Jockel, Gunther, to Licentia Patent-Verwaltungs-G.m.b.H. Voltage multiplying rectifier circuit. 3,418,555, 12–24–68, Cl. 321—15.

John, Robert, Co.: *See*—
Golden, Seymour W. 3,418,030.

Johns-Manville Corp.: *See*—
Hesse, Jack E., and Ostapovich. 3,418,409.

Johnson, Carl T.: *See*—
Betzold, Edward R., and Johnson. 3,417,658.

Johnson, Charles L., to The Procter & Gamble Co. Hinged overcap. 3,417,897, 12–24–68, Cl. 220—60.

Johnson, Christopher L., to Rolls-Royce Ltd. Apparatus for controlling the position of a member in accordance with the density of a gas. 3,417,607, 12–24–68, Cl. 73—30.

Johnson, Earl E., and W. L. McCann, to Giddings & Lewis Inc. Planetary speed change transmission for machine tool feed drives. 3,417,639, 12–24–68, Cl. 74—758.

Johnson, Kenneth W. Vibration isolator. 3,417,950, 12–24–68, Cl. 248—24.

Johnson, Ronald V., to Hoerner-Waldorf Corp. Carrier carton. 3,417,910, 12–24–68, Cl. 229—19.

Johnson Service Co.: *See*—
Bjornsen, Bjorn G., Lechner, and Sorenson. 3,417,769.

Johnsson, Stig A.: *See*—
Herolf, Kjell O. G., Johnsson, and Mellgren. 3,417,860.

Johnston, Howard, and M. S. Tomita, to The Dow Chemical Co. 2-chloro-6-(trichloromethyl) pyridine compounds. 3,418,323, 12–24–68, Cl. 260—290.

Jones, Benjamin B., Jr., to Savannah Sugar Refining Corp. Bag closing machine. 3,417,543, 12–24–68, Cl. 53—126.

Jones, Frank D., G. H. Shriver, and R. E. Harrington, to Deere & Co. Tobacco harvester. 3,417,556, 12–24–68, Cl. 56—27.5.

Jones, Franklin M., to Motorola, Inc. Telegraphic point printer having piezoelectric stylus drive. 3,418,427, 12–24–68, Cl. 178—30.

Jones, Philip D., and B. G. Wood, to International Business Machines Corp. Pulse time interval measuring system. 3,418,633, 12–24–68, Cl. 340—146.3.

Jones, Robert B. Aluminum and vinyl sidings. 3,417,531, 12–24–68, Cl. 52—520.

Jones, Roy N.: *See*—
Adams, Floyd C., and Jones. 3,418,085.

Jones, Samuel H., R. A. Allwood, and G. Bundza, to Ashdown Brothers & Co. (Engineers) Ltd. Method and apparatus for preheating, masking and coating an article. 3,418,150, 12–24–68, Cl. 117—38.

Jorzik, Ernst R.: *See*—
Becker, Winfried, Finzl, Jorzik, and Ohlmer. 3,418,207.

Juby, Peter F., to Bristol-Myers Co. Bicarbamates of pyridine-2,6-dimethanol. 3,418,328, 12–24–68, Cl. 260—295.

Judd, Tyler W.: *See*—
Mandula, Joseph M., Judd, and Skipper. 3,418,567.

Kaeding, Warren W., and G. R. Collins, to The Dow Chemical Co. Preparation of aromatic hydroxy compounds and their esters. 3,418,361, 12–24–68, Cl. 260—476.

Kahn, Frank: *See*—
Kidder, Allan H., Mulford, and Kahn. 3,418,419.

Kahn, Robert D., to Fedtro, Inc. Hose mounting bracket. 3,417,867, 12–24–68, Cl. 206—80.

Kaiser Industries Corp.: *See*—
Stone, Joseph K. 3,418,109.

Kaiser, Leonard F.: *See*—
Barton, Frank L., Jr., and Kaiser. 3,418,190.

Kajiro, Kaku. Varifocal lens binocular. 3,418,032, 12–24–68, Cl. 350—35.

Kajitani, Yoichi, to Kurashiki Rayon Co. Ltd. Method of manufacturing flat viscose fibers. 3,418,405, 12–24–68, Cl. 264—190.

Kaken Kagaku Kabushiki Kaisha: *See*—
Sakai, Sumio, Sugayama, Saito, Kamasuka, Takada, and Takano. 3,418,311.

Kalish, David: *See*—
Kulin, Saul A., and Kalish. 3,418,178.

Kamasuka, Teruo: *See*—
Sakai, Sumio, Sugayama, Saito, Kamasuka, Takada, and Takano. 3,418,311.

Kanngiesser, Karl W.: *See*—
Schonhuber, Max J., and Kanngiesser. 3,418,511.

Kanoo, Hisashi: *See*—
Suzukawa, Yuichi, Kanoo, Miyazaki, and Saito. 3,417,978.

Kaplan, Lewis A.: *See*—
Howard, Jack E., and Kaplan. 3,417,755.

Kaprelian, Edward K.: *See*—
Schwartz, Morris, and Kaprelian. 3,418,119.

Kasai, Paul H.: *See*—
Muller, Karl R., Rabo, and Kasai. 3,418,257.

Kato, Jinichi, H. Hasegaea, and M. Miyadera, to Nippon Kogaku K.K. Stereoscopic photographing device and photographing direction indicator for such device. 3,417,685, 12–24–68, Cl. 95—12.

Katzer, Melvin F., to The Dow Chemical Co. Lubricating surfaces. 3,418,157, 12–24–68, Cl. 117—132.

Kauer, James C., to E. I. du Pont de Nemours and Co. 1-aminobicyclooct-2-enes and bicyclooct-2-ene - 1 - methylamines. 3,418,369, 12–24–68, Cl. 260—563.

Kaufman, David: *See*—
Kaufman, Stanley and D. 3,417,805.

Kaufman, Stanley and D. Emergency opening protective gate. 3,417,805, 12–24–68, Cl. 160—152.

Kaufmann, Frank H., to Steel Heddle Mfg. Co. Loom harness. 3,417,787, 12–24–68, Cl. 139—91.

Kautsky, George J.: *See*—
Barusch, Maurice R., Richardson, Kautsky, and Olson. 3,418,091.

Keeler Brass Co.: *See*—
Jakeway, Gerald V. 3,417,536.

Kelley, Gilbert A., to Midland-Ross Corp. Method and means for providing high humidity, low temperature air to a space. 3,417,574, 12–24–68, Cl. 62—93.

Kelley, Leon O. Dual tractor mounted, articulated cable laying device. 3,417,571, 12–24–68, Cl. 61—72.6.

Kelley, Ray H., to Ray H. Kelley & Associates. Method of moulding electron tubes around removable mandrels carrying the tube electrodes. 3,417,448, 12–24–68, Cl. 29—25.13.

Kelley, Ray H., & Associates: *See*—
Kelley, Ray H. 3,417,448.

Kelly, Francis J., to Ford Motor Co. Nonspinning threaded fastener. 3,418,013, 12–24–68, Cl. 287—189.36.

Kelly, John R.: *See*—
Edman, Clarence E., Kelly, Murphy and Skolds. 3,417,981.

Kelsey-Hayes Co.: *See*—
Stelzer, William. 3,418,024.

Kempenaers, Louis, to North American Philips Co. Inc. Method of dividing a body comprising a number of electric circuit elements into parts. 3,417,642, 12–24–68, Cl. 83—13.

Kendall, Virgil D.: *See*—
Emmel, Donald R., Blackburn, and Kendall. 3,418,408.

Kennedy, Cornelius B.: *See*—
Madland, Thorvald, and Kennedy. 3,417,515.

Kennedy, John B., and M. Mandel, to International Telephone and Telegraph Corp. Sharp rise-time high-power pulse transmitter. 3,418,581, 12–24–68, Cl. 325—141.

Kennedy, Joseph F., and R. B. Isaacson, to Esso Research and Engineering Co. Crystalline polybenzyls and process of producing same. 3,418,259, 12–24–68, Cl. 260—2.

Kepkay, Leslie L.: *See*—
Watkins, Wilfred L., and Kepkay. 3,417,555.

Kern, Jack I.: *See*—
Hamisch, Paul H., and Kern. 3,418,456.

Kerr, George: *See*—
Frouws, Simon M., Kerr, and Hendriks. 3,418,509.

Keuffel & Esser Co.: *See*—
Gold, Robert M. 3,418,469.

Keystone Chemurgic Corp.: *See*—
Schenck, Remsen T. E. 3,418,087.

Kidd, Walter L., to F. Jos. Lamb Co. Inc. Dual bar transfer device. 3,417,852, 12–24–68, Cl. 198—19.

Kidder, Allan H., R. A. Mulford, and F. Kahn. Wave dampers for overhead transmission conductors. 3,418,419, 12–24–68, Cl. 174—42.

Kief, Harry: *See*—
Manoogian, Alex, and Kief. 3,417,783.

Kiekhaefer, Elmer C., to Brunswick Corp. Skylight frame construction. 3,417,522, 12–24–68, Cl. 52—97.

Kiekhaefer, Elmer C., to Brunswick Corp. Skylight dome. 3,417,527, 12–24–68, Cl. 52—200.

Kienzle Uhrenfabriken G.m.b.H.: *See*—
Siefert, Roland. 3,417,632.
Siefert, Roland, and Schafer. 3,418,503.

Killen, Duncan C., and R. Anspach. Smoking pipes. 3,417,737, 12–24–68, Cl. 131—171.

Kimura, Isao: *See*—
Goda, Susumu, Kimura, and Masumoto. 3,418,110.

Kimura, Shiro, M. Yoshida, and K. Sano, to Fuji Shoshin Film Kabushiki Kaisha. Color photographic silver halide emulsion. 3,418,129, 12–24–68, Cl. 96—100.

King, Charles, to E. I. du Pont de Nemours and Co. Block copolymers of polybivalolactone and carboxyl group containing polymers. 3,418,393, 12–24–68, Cl. 260—857.

Kingslake, Rudolf, to Eastman Kodak Co. Triplet covering a wide field. 3,418,039, 12–24–68, Cl. 350—226.

Kinner, Hans-Dieter, to The Foxboro Co. Fluid-activated indicator. 3,417,728, 12–24–68, Cl. 116—70.

Kiper, Gerd, to Agfa Aktiengesellschaft. Exposure controlling structure for photographic cameras. 3,417,683, 12–24–68, Cl. 95—10.

Kirch, Paul W. Applicatory-liquid feeding and applying apparatus. 3,418,054, 12–24–68, Cl. 401—188.

Kirkman, William, to Libbey-Owens-Ford Glass Co. Apparatus for press bending glass sheets. 3,418,098, 12–24–68, Cl. 65—273.

Kirn, Manfred: *See*—
Paule, Kurt, Armbruster, and Kirn. 3,418,504.

Kishimoto, Akio, and K. Ohtawa, to Mitsubishi Jukogyo Kabushiki Kaisha. Method of supporting the shell section of a blast furnace. 3,417,955, 12–24–68, Cl. 248—351.

Kiss, Kornel D.: *See*—
Everson, Howard E., Kiss, and Reed. 3,418,284.

Kitchin, Robert W.: *See*—
Emerson, Herff C., Rieger, Kitchin, and Vawter. 3,418,-549.

Kitze, Theodore J., Jr., to Eastman Kodak Co. Aldehyde gelatin hardening composition with carbocyclic diones. 3,418,-132, 12–24–68, Cl. 96—111.

Klebe, Johann F., to General Electric Co. Process for producing soluble trimethylsilylated cellulose. 3,418,312, 12–24–68, Cl. 260—212.

Klebe, Johann F., to General Electric Co. Process for producing trimethylsilylated cellulose. 3,418,313, 12–24–68, Cl. 260—212.

Kleist, Dale, to Owens-Corning Fiberglas Corp. Method and apparatus for producing fibers. 3,418,095, 12–24–68, Cl. 65—5.

Knox Mfg. Co.: *See*—
Bieschke, Hillard J. 3,417,952.

Knuppel, Helmut, and K. Brotzmann, to Eisenwerke-Gesellschaft Maximilianshutte m.b.H. Method of producing steel for sheets to be enamelled by the single-coat method. 3,417,-463, 12–24–68, Cl. 29—528.

Knutrud, Thorleif, and G. H. Wise, to Sylvania Electric Products Inc. Apparatus for determining the focal point of a light beam. 3,418,477, 12–24–68, Cl. 250—201.

Kobler, Paul. Shearhead assemblies on electrical and mechanical shavers. 3,417,467, 12–24–68, Cl. 30—34.2.

Koch, H., & Sons: *See*—
Pradenas, Fernando. 3,418,448.

Koch, Otto: *See*—
Simin, Walter, Koch, and Taterra. 3,417,734.

Koch, Werner, and F. Preuss, to Roland Offsetmaschinenfabrik Faber & Schleicher AG. Grippers with adjustable gripper pads for sheet printing. 3,417,696, 12–24–68, Cl. 101—409.

Koenig, Phillip R., Jr.: *See*—
Uzunoglu, Vasil, and Koenig. 3,418,493.

Kokes, Steven. Conveyor apparatus. 3,417,710, 12–24–68, Cl. 104—173.

Kolatorowicz, Edwin E., and W. R. Miller, to General Electric Co. Brushless adjustable speed drive. 3,418,550, 12–24–68, Cl. 318—138.

Konijnenberg, Johan, and B. M. Sparado, to North American Philips Co., Inc. Assembly of a dry-shaving apparatus with built-in power supply. 3,418,551, 12–24–68, Cl. 320—2.

Konishiroku Photo Industry Co., Ltd.: *See*—
Ariga, Ken-ichi, Watanabe, and Godai. 3,418,126.

Koons, John P., W. M. Young, and C. R. Yungkurth, to International Business Machines Corp. Latching devices. 3,418,-534, 12–24–68, Cl. 317—101.

Korte, Friedrich W. A. G. K.: *See*—
Chedron, Harald H. O., Ohse, Palm, Draber, Falbe, and Korte. 3,418,291.

Kowalak, John J.: *See*—
Jeffee, Saul, and Kowalak. 3,418,050.

Kozak, John. Beach shoe and hand paddle. 3,417,415, 12–24–68, Cl. 9—309.

Kozulls, Joseph A.: *See*—
Bayne, Peter D., and Kozulls. 3,418,136.

Kramer, Charles F., to Steel Heddle Mfg. Co. Loom harness. 3,417,788, 12–24–68, Cl. 139—92.

Krebs, Jacob. Twin lens reflex camera with built-in spot photometer. 3,417,684, 12–24–68, Cl. 95—10.

Kreisman, Wallace S., to GCA Corp. Mercury diffusion pump. 3,417,913, 12–24–68, Cl. 230—101.

Krieger, George A.: *See*—
Krieger, Joseph P., and G. A. 3,417,715.

Krieger, Joseph P., and G. A. Lockable key-holding receptacle. 3,417,715, 12–24–68, Cl. 109—50.

Krikorian, Garo, to E. I. du Pont de Nemours and Co. Diffusion apparatus. 3,417,925, 12–24–68, Cl. 239—504.

Krimm, Heinrich, H. Ruppert, and H. Schnell, to Farbenfabriken Bayer Aktiengesellschaft. Process for preparing aminodiphenyl-alkanes. 3,418,371, 12–24–68, Cl. 260—570.

Kritzler, Helmuth: *See*—
Wagner, Kuno, Scheurlen, and Kritzler. 3,418,271.

Kruger, David J., to Federal Pacific Electric Co. Time delay cartridge fuse. 3,418,614, 12–24–68, Cl. 337—164.

Krupin, Boris N.: *See*—
Shiyakhter, Isaak A., Krupin, and Gismatullin. 3,417,838.

Ku, Han Y., to The National Cash Register Co. p-n Junction formation by thermal oxydation. 3,418,180, 12–24–68, Cl. 148—187.

Kubovy, Joseph V., to Pitney-Bowes, Inc. Roller platen pressure adjusting means in hand-operated printing machine. 3,417,691, 12–24–68, Cl. 101—269.

Kulik, Metro D.: *See*—
Laufer, Robert J., and Kulik. 3,418,380.

Kulin, Saul A., and D. Kalish, to Man Labs, Inc. Bainitic steel of the 94X X type possessing high strength and fracture toughness. 3,418,178, 12–24–68, Cl. 148—12.4.

Kull, Francis R., to Standard Pressed Steel Co. Indexing and dispensing mechanism. 3,417,427, 12–24–68, Cl. 18—1.

Kuinis, Robert, and E. Isaac. Hair clip. 3,417,761, 12–24–68, Cl. 132—46.

Kummel, Paul: *See*—
Schlegel, Herbert, and Kummel. 3,418,426.

Kuntholm, Martin L.: *See*—
Robillard, Edward G., Kuntholm, and Humes. 3,417,512.

Kunstzijdespinnerij Nyma N.V.: *See*—
Nijhoff, Gerard J. J. 3,418,133.

Kurashiki Rayon Co. Ltd.: *See*—
Kajitani, Yoichi. 3,418,405.

Kurzbush, Werner: *See*—
Grissom, Robert R., Matthews, and Kurzbuch. 3,418,402.

Kuypers, Wilhelmus: *See*—
van Iperen, Bernardus B., and Kuypers. 3,418,516.

Kuzara, James H., and O. J. Martin, to The Reliance Electric and Engineering Co. Elevator controls. 3,417,842, 12–24–68, Cl. 187—29.

Kwiatkowski, Wolfgang: *See*—
Wick, Richard, Geyken, Frick, and Kwiatkowski. 3,418,-225.

LTV Aerosace Corp.: *See*—
Stalmach, Charles J., Jr., and Schell. 3,418,445.

Laboratories for Electronics, Inc.: *See*—
Pall, David B., and Campolong. 3,417,704.

Laboratoires Houde: *See*—
Fourneau, Jean P. 3,418,416.

Lacey, Richard F., to Hewlett-Packard Co. Atomic beam tube having multipole state selecting magnet means with shaped poles to inhibit Majorana transitions. 3,418,463, 12–24–68, Cl. 250—41.3.

Ladell, Joshua: *See*—
Spielberg, Nathan, and Ladell. 3,418,467.

Lagerquist, Roger E.: *See*—
Rutland, David F., Schloser, and Lagerquist. 3,417,492.

Lake Park Machinery, Inc.: *See*—
Schwebel, Irving. 3,417,713.

Lake, Samuel H., Jr. Hand truck with power lift. 3,417,831, 12–24–68, Cl. 180—8.

Lakshmanan, Tavorath K., and J. M. Mitchell, to Weston Instruments, Inc. Method of forming films of compounds having at least two anions by cathode sputtering. 3,418,229, 12–24–68, Cl. 204—192.

Lamb, F. Jos., Co. Inc.: *See*—
Kidd, Walter L. 3,417,852.

Lambda Electronics Corp.: *See*—
Greenberg, Sol, and Gautherin. 3,418,556.

Lambdin, Philip E.: *See*—
Anderson, Howard R., Lambdin, and Mitchener. 3,418,-485.

Lamble, Alan J., G. T. Newbold, and M. B. Purdew, to Fisons Pest Control Ltd. Fungicidally and insecticidally active 2-trifluoromethyl and 2-pentafluoro-ethyl benzimidazoles. 3,418,318, 12–24–68, Cl. 260—247.5.

Laminex Industries, Inc.: *See*—
Hannon, Donald F. 3,417,497.

Landa, Stanislav: *See*—
Hala, Slavoj, Landa, and Weldenhoffer. 3,418,387.

Landbouwwerktuigen Machinefabriek H. Vissers N.V.: *See*—
Vissers, Herbert. 3,417,579.

Landbrecht, Franz, to Agfa-Gavaert Aktiengesellschaft. Exposure control for photographic cameras having stationary support for indicator needle. 3,417,682, 12–24–68, Cl. 95—10.

Landphair, Donald R., to A. O. Smith Harvestore Products, Inc. Automatic pressure compensating access system for filling sealed storage structure. 3,417,900, 12–24–68, Cl. 220—86.

Lang, Harold M.: *See*—
Farr, John B., Lang, and Wildess. 3,418,626.

Langer, Arthur W., Jr., and J. W. Harding, to Esso Research and Engineering Co. Polymerization catalyst. 3,418,304, 12–24–68, Cl. 260—93.7.

Lapham-Hickey Steel Corp.: *See*—
Hickey, William M. 3,417,857.

La Publicite Francaise: *See*—
Dangauthier, Marcel. 3,417,634.

Lasdon, Lloyd I., to P. R. Mallory & Co., Inc. Process for making tungsten and molybdenum alloys. 3,418,103, 12–24–68, Cl. 75—5.

La Torre, Jack. 33⅓% to T. P. Mahoney. Fastener for prestressing objects connected thereby. 3,418,012, 12–24–68, Cl. 287—189.36.

Laufer, Robert J., and M. D. Kulik, to Consolidation Coal Co. Transalkylation of certain poly-tert-butylphenols. 3,418,-380, 12–24–68, Cl. 260—624.

Laughlin, William N. Protective coating and method. 3,417,-569, 12–24–68, Cl. 61—46.

Lauter, Charles A., Jr., to United States of America, Navy. Direct-coupled regenerative feedback starting circuit for common-emitter power oscillators. 3,418,602, 12–24–68, Cl. 331—113.

Lawson, J. Wyburn. Sub-divided parcel of building land. 3,417,526, 12–24–68, Cl. 52—169.

Lawson, Thomas G., to Girling Ltd. Fluid flow control valves. 3,417,668, 12–24–68, Cl. 91—376.

Leach Corp.: *See*—
Adams, Andrew O. 3,418,541.

Lebre, Charles J. P. Individual safety elevator. 3,417,841, 12–24–68, Cl. 187—1.

Lechner, Thomas J., Jr.: *See*—
Bjornsen, Bjorn G., Lechner, and Sorenson. 3,417,769.

Lee, Edwin S., III, to Burroughs Corp. Associative memory employing non-destructive readout of binary elements. 3,418,639, 12–24–68, Cl. 340—173.

Lee, Richard G., and J. S. Groom, to Addressograph-Multigraph Corp. Copy making apparatus. 3,418,047, 12–24–68, Cl. 355—28.

Leeds & Northrup Co.: *See*—
Voorhoeve, Ernst W. 3,418,588.

Legatti, Raymond H., to Electromagnetic Industries, Inc. Transistorized gating circuit for high voltage controlled rectifiers. 3,418,554, 12–24–68, Cl. 321—5.

Leider, Daniel K., and R. E. O'Brien, to Manitowoc Shipbuilding, Inc. Debarking apparatus. 3,417,796, 12–24–68, Cl. 144—208.

Leitner, George J., to Geigy Chemical Corp. Crosslinking compositions comprising a polycycloaliphatic polyepoxide and a hexaalkyloxymethylaminotriazine for acrylic interpolymers. 3,418,392, 12–24–68, Cl. 260—834.

L'Electronique Appliques: *See*—
Barigant, Pierre. 3,417,608.

Lemelson, Jerome H. Apparatus for transducing and recording information. 3,417,681, 12–24–68, Cl. 95—1.1.

Lenoble, Raymond. Reflecting products in cement conglomerate and the process for their manufacture. 3,417,676, 12–24–68, Cl. 94—1.5.

Lenz, Arnold. O. Bleh, and K. Hass, to Dynamit Nobel Aktiengesellschaft. Production of alkali metal alcoholates. 3,418,-383, 12–24–68, Cl. 260—632.

Leosis, Blanche E. Exhaust filter device. 3,417,549, 12–24–68, Cl. 55—316.

Le Page's, Inc.: *See*—
Douglas, Arthur J., and Scheckner. 3,417,935.

Lepetit S.p.A.: *See*—
Pifferi, Giorgio, and Testa. 3,418,317.

Leptrone, Samuel. Food dispensing rack. 3,417,873, 12–24–68, Cl. 211—77.

Les Forges de Zeebrugge S.A.: *See*—
Bodinaux, Gaston J. O. 3,417,701.

Lester, John J., to Controls Co. of America. Bimetal motor step drive. 3,418,499, 12–24–68, Cl. 310—4.

Levene, Leon, to Owens-Illinois, Inc. Method of imparting abrasion and scratch resistance to glass surfaces and glass articles produced thereby. 3,418,153, 12–24–68, Cl. 117—72.

Levene, Leon, to Owens-Illinois, Inc. Titanium oxide compounds. 3,418,347, 12–24–68, Cl. 260—429.5.

Leventhal, Muriel. Combination panty girdle and slip. 3,417,-756, 12–24–68, Cl. 128—519.

Levine, Duane G.: *See*—
Matsen, John M., and Levine. 3,418,169.

Levine, Sidney, to American Aluminum Window Corp. Sill lock for stationary panel of sliding glass door units. 3,418,-016, 12–24–68, Cl. 292—96.

Levitan, Maurice D.: *See*—
Staats, Henry N., and Levitan. 3,417,653.

Levy, Gert G., to Chrysler Corp. Sealing of aluminum surfaces. 3,418,218, 12–24–68. Cl. 204—35.

Levy, Milton. Display container. 3,417,861, 12–24–68, Cl. 206—45.28.

Lexington Laboratories Inc.: *See*—
Campbell, William B. 3,418,076.

Lewis, Gerald F., to Jim Robbins Seat Belt Co. Belt retracting device with collet locking means. 3,418,021, 12–24–68, Cl. 297—388.

Lewis, Thomas E., to Reynolds Metals Co. Method and apparatus for forming square or rectangular wire. 3,417,593, 12–24–68, Cl. 72—211.

Libbey-Owens-Ford Glass Co.: *See*—
Barton, Frank L., Jr., and Kaiser. 3,418,190.
Kirkman, William, 3,418,098.

Licentia Patent-Verwaltungs G.m.b.H.: *See*—
Becker, Hans. 3,418,532.
Jockel, Gunther. 3,418,555.

Lich, Richard L., to General Steel Industries, Inc. Multi-interconnected truck rail vehicle. 3,417,711, 12–24–68, Cl. 105—157.

Lieberman, Helman G. Container closure. 3,417,893, 12–24–68, Cl. 215—9.

Liedtke, Kurt, to Molins Machine Co. Ltd. Device for turning oblong articles, particularly filter tip cigarettes. 3,417,-855, 12–24–68, Cl. 198—32.

Lien Chemical Co.: *See*—
Tietema, Casper J., and Rodak. 3,417,410.

Lienard, Leonce. Branching device for fluid distribution. 3,417,780, 12–24–68, Cl. 137—608.

Lighty, Paul E., to International Telephone and Telegraph Corp. Saturable solid state nonrectifying switching device. 3,418,619, 12–24–68, Cl. 338—20.

Lin, Hung C., to Westinghouse Electric Corp. Logic gates. 3,418,492, 12–24–68, Cl. 307—214.

Ling-Temco-Vought, Inc.: *See*—
Beavers, Bobby R., and Meyer. 3,418,546.

List, Hans: *See*—
Germann, Reimar. 3,418,583.

Litt, Morton H.: *See*—
Idelson, Albert L., and Litt. 3,418,261.

Livingston, John D., to U-C-Lite Mfg. Co. Emergency power supply system. 3,418,487, 12–24–68, Cl. 307—66.

Ljungberg, Per-Allan, to AB Tetra Pak. Apparatus for detaching filled and sealed packages from a package blank. 3,417,545, 12–24–68, Cl. 53—182.

Lob, Udo, and H. Martin, to Siemens Aktiengesellschaft. Production of electrical semiconductor device. 3,417,458, 12–24–68, Cl. 29—471.9.

Lockheed Aircraft Corp.: *See*—
Hartley, William L. 3,417,946.

Locklar, Henry C.: *See*—
Boggs, Raymond R., Jr., Locklar, and West. 3,418,432.

Lockwood, Robert A., to North American Rockwell Corp. Thermoelectric generator with liquid hydrocarbon fuel combustion heater. 3,418,173, 12–24–68, Cl. 136—208.

Lode, Tenny D.: *See*—
Werner, Frank D., and Lode. 3,417,606.

Loeffler, Karl H.: *See*—
Barber, Robert R., and Loeffler. 3,418,520.

Loev, Bernard: *See*—
Goonewardene, Hilary F., and Loev. 3,418,362.

Loew, Fredrick A. Electrical connector straightener. 3,417,-603, 12–24–68, Cl. 72—479.

Loewenstern, Walter, Jr., to Sylvania Electric Products Inc. Automatic frequency control system. 3,418,595, 12–24–68, Cl. 331—9.

Loftice, Lester C. Decorative flower and flower holder. 3,418,-194, 12–24–68, Cl. 161—27.

Loiacono, Gabriel M., and K. Nassau, to Bell Telephone Laboratories, Inc. Lithium meta-niobate crystalline growth from melt containing magnesium oxide. 3,418,086, 12–24–68, Cl. 23—301.

Long, James H. C.: *See*—
Watson, Robert D., Long, and Hacking. 3,418,028.

Long, James M., to Owens-Corning Fiberglas Corp. Suspended ceiling system. 3,417,530, 12–24–68, Cl. 52—496.

Loprete, Joseph F., to Curtiss-Wright Corp. Isothermal gas generator. 3,417,563, 12–24–68, Cl. 60—39.27.

Lorain Products Corp.: *See*—
Rolfes, Paul E. 3,418,559.

Lorenz, Maurice G.: *See*—
Savage, David W., Lorenz, and Asher. 3,418,235.

Losert, Miloslav: *See*—
Docekal, Jaroslav, and Losert. 3,417,581.

Louis, John R.: *See*—
Shinskey, Francis G., and Louis. 3,417,737.

Love, Frank E., to National Lead Co. Continuous process for producing magnesium metal from magnesium chloride including fused bath electrolysis. 3,418,223, 12–24–68, Cl. 204—70.

Loveless, Marion W. Canning retort. 3,417,881, 12–24–68, Cl. 214—17.

Loveless, Marion W. Lid for canning retort. 3,417,896, 12–24–68, Cl. 220—41.

Lowry Development Corp.: *See*—
Lowry, Robert D., and Harrison. 3,417,839.

Lowry, Robert D., and J. W. Harrison, to Lowry Development Corp. Air ventilator sound control assembly. 3,417,-839. 12–24–68, Cl. 181—50.

Luc, Jane. Method of sealing materials together by a rubbing treatment and articles produced thereby. 3,418,196, 12–24–68, Cl. 161—38.

Lucas, Joseph, (Industries) Ltd.: *See*—
Skinner, Robert T. J. 3,417,705.

Lucy, Carl F., and H. J. Woods, to General Precision Systems Inc. Projectile. 3,417,697, 12–24–68, Cl. 102—41.

Lucy, William: *See*—
Crocker, Bunting S., Fulmor, Holderreed, Lucy, and Mahoney. 3,417,927.

Ludwigs, Heinz: *See*—
Hucks, Helmut, Binder, and Ludwigs. 3,418,025.

Ludwig, Milton, to Chevron Research Co. Relief valve system for vessels undergoing intermittent explosions. 3,417,776, 12–24–68, Cl. 137—512.5.

Lynch, Thomas G., and H. E. Dietrich, to J. P. Stevens & Co., Inc. Shade screening. 3,417,794, 12–24–68, Cl. 139—420.

Lyons, Jim. Drift indicator for anchored boats. 3,418,627, 12–24–68, Cl. 340—29.

MacLeay, Ronald E., and C. S. Sheppard, to Wallace & Tiernan Inc. Alkali and alkaline earth metallic salts of azoformic acids and their use as vinyl polymerization initiators. 3,418,294, 12–24–68, Cl. 260—80.

MacNaughton, John D., and J. Ornstein, to Shawinigan Chemicals Ltd. Production of diphenylol propane. 3,418,378, 12–24–68, Cl. 260—619.

Madland, Rolf A., to Parker-Hannifin Corp. Hydraulic ram. 3,417,670, 12–24–68. Cl. 92—52.

Madland, Thorvald, and C. B. Kennedy, to The Youngstown Steel Door Co. Operating mechanism for a railroad car door. 3,417,515, 12–24–68, Cl. 49—220.

Maemoto, Kenichi: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Oono. 3,418,395.

Magnaflux Corp.: *See*—
Mlot-Fijalkowski, Adolf, and Strosnik. 3,418,078.

Mahoney, John F.: *See*—
Crocker, Bunting S., Fulmor, Holderreed, Lucy, and Mahoney. 3,417,927.

Mahoney, Thomas P.: *See*—
La Torre, Jack. 3,418,012.

Maier, Eberhard, to Gibson-Thomsen Co., Inc. Method for forming the bristles of a brush. 3,417,516, 12–24–68, Cl. 51—281.

Mall, Isaac P., to Combustion Engineering, Inc. Flotation method and apparatus. 3,418,236, 12–24–68, Cl. 210—44.

Maillard, Bernard, and P. Hug, to Brevets Aero-Mecaniques S.A. Toothed rotor mechanisms for automatic guns fed from two cartridge belts. 3,417,657, 12–24–68, Cl. 89—33.

Mais Ago: *See*—
Miller, Eugene J., Jr., Mais, Berenschot, and Berger. 3,418,374.

Majcher, John: *See*—
Walker, Eugene J., and Majcher. 3,418,607.

Majendie, Alastair M. A., to S. Smith & Sons (England) Ltd. Visual indicating devices for aircraft. 3,418,458, 12–24–68, Cl. 235—150.22.

Majewski, Theodore E.: *See*—
Parsey, Edward S., and Majewski. 3,418,379.

Majoch, Ludvik, to E. I. du Pont de Nemours and Co. Adjustable extrusion die. 3,417,431, 12–24–68, Cl. 18—12.

Makino, Katsuo, to Fuji Shashin Film Kabushiki Kaisha. Apparatus for vacuum coating. 3,417,733, 12–24–68, Cl. 118—49.

Mallory, P. R., & Co., Inc.: *See*—
Lasdon, Lloyd I. 3,418,103.
Murray, Stephen F., and Hamilton. 3,417,631.
Pomerantz, Daniel I., Wallis, and Dorsey. 3,417,459.
Rao, Marur L. B. 3,418,113.

Malnar, Leon: *See*—
Broussaud, Georges, and Malnar. 3,418,565.

Malone, William T.: *See*—
Epler, Walter N., and Malone. 3,417,820.
Tinsley, John M., and Malone. 3,417,821.

Mammoth Industries, Inc.: *See*—
Nelson, Charles E. 3,417,977.

Man Labs, Inc.: *See*—
Kulin, Saul A., and Kalish. 3,418,178.

Manco Mfg. Co.: *See*—
Valente, Raymond L. 3,417,598.

Mandel, Mark: *See*—
Kennedy, John B., and Mandel. 3,418,581.

Mandula, Joseph M., T. W. Judd, and G. J. Skipper, to Republic Steel Corp. Magnetic flaw detector system with marking fluid applicator operable by variable pressure of a control fluid. 3,418,567, 12–24–68, Cl. 324—37.

Manitowoc Shipbuilding, Inc.: *See*—
Leider, Daniel K., and O'Brien. 3,417,796.

Manoogian, Alex, and H. Kief, to J. E. Meagher. Mixing valve. 3,417,783, 12–24–68, Cl. 137—625.41.

Marasco, Vincent. Child's toy. 3,417,990, 12–24–68, Cl. 272—30.

Marathon Oil Co.: *See*—
Van Poollen, Hendrik K. 3,417,824.

Marberg, Gustaf A.: *See*—
Gonski, Joseph, and Marberg. 3,417,851.

Marburger, Ivan L., E. A. Haglund, and D. W. Howell. Magnetic latch. 3,418,018, 12–24–68, Cl. 292—251.5.

Marciniak, Harry W.: *See*—
Hindersinn, Raymond R., and Marciniak. 3,418,263.

Marconi Co. Ltd., The: *See*—
Davies, Eric. 3,418,582.

Marcus, Ira R., to United States of America, Army. Transistor bistable devices with non-volatile memory. 3,418,646, 12–24–68, Cl. 340—174.

Marinace, John C., to International Business Machines Corp. Method of electrolytically etching a semiconductor having a single impurity gradient. 3,418,226, 12–24–68, Cl. 204—143.

Marino, Joseph, and W. R. Schaefer, to Westinghouse Electric Corp. Semiconductor device contact structure. 3,418,543, 12–24–68, Cl. 317—234.

Marino, Leon J. Water-ski towing apparatus. 3,417,726, 12–24–68, Cl. 114—235.

Marinus, Victor A.: *See*—
De Smedt, Felix F., and Marinus. 3,417,430.

Mark Systems, Inc.: *See*—
Palm, George U. 3,417,934.

Mark, Victor, to Monsanto Co. Pesticides. 3,418,364, 12–24–68, Cl. 260—468.

Markakis, Michael J., and S. J. Ferguson, to Ampex Corp. Tape transport. 3,417,938, 12–24–68, Cl. 242—55.13.

Market Forge Co.: *See*—
Callen, Robert H. 3,417,903.

Marks, Joseph. Educational workbook. 3,417,491, 12–24–68, Cl. 35—9.

Markwell Mfg. Co., Inc.: *See*—
Treatman, Eli. 3,417,908.

Maromatic Co., Inc.: *See*—
Roland, Max G. 3,417,452.

Marsden, James G., and S. Sterman, to Union Carbide Corp. Anti-static agents for glass fiber materials. 3,418,094, 12–24–68, Cl. 65—3.

Martens, Alexander E., to Bausch & Lomb, Inc. Digital measuring apparatus. 3,417,476, 12–24–68, Cl. 33—174.

Martin, Donald N.: *See*—
Rochte, Jerry E., and Martin. 3,418,080.

Martin, Heinz: *See*—
Lob, Udo, and Martin. 3,417,458.

Martin, Lawrence V.: *See*—
Grogan, Patrick M. 3,417,797.

Martin, Lillian N.: *See*—
Grogan, Patrick M. 3,417,797.

Martin, Orval J.: *See*—
Kuzara, James H., and Martin. 3,417,842.

Martinell, John M., to Elco Corp. Interconnection matrix for dual-in-line packages. 3,418,535, 12–24–68, Cl. 317—101.

Martin-Marietta Corp.: *See*—
Fahlbusch, William A. 3,418,219.

Marx, Walter S., Jr., and C. P. Collier, to Printing Arts Research Laboratories, Inc. Process for the production of projection transparencies. 3,418,468, 12–24–68, Cl. 250—65.

Maschinenfabrik Froriep G.m.b.H.: *See*—
Hucks, Helmut, Binder, and Ludwigs. 3,418,025.

Masi, Anthony. Matchplate support assembly. 3,417,811, 12–24–68, Cl. 164—240.

Maskell, Clifford W. A., to United Kingdom Atomic Energy Authority. Non-thermionic glow discharge device having a hollow electrode assembly. 3,418,515, 12–24–68, Cl. 313—231.

Mason, John H.: *See*—
Economy, James, Wohrer, and Mason. 3,418,273.

Mason, Ralph B.: *See*—
Rigney, James A., Hamner, and Mason. 3,418,256.

Massa Division, Dynamics Corp. of America: *See*—
Massa, Frank. 3,418,624.

Massa, Frank, to Massa Division, Dynamics Corp. of America. Coaxially mounted line hydrophone. 3,418,624. 12–24–68, Cl. 340—9.

Massey-Ferguson Service N.V.: *See*—
Watkins, Wilfred L., and Kepkay. 3,417,555.

Masson, Frederick Y., to General Precision Systems Inc. Pinhole detector testing means and method. 3,418,482, 12–24–68, Cl. 250—219.

Mastereel Industries, Inc.: *See*—
Gittler, Allan. 3,417,894.

Masumoto, Hiroki: *See*—
Goda, Susumu, Kimura, and Masumoto. 3,418,110.

Masurel, Michel, to Brevets et Applications Textiles Brevatex. Dispensing device for textile fibres. 3,417,436, 12–24–68, Cl. 19—258.

Matisa Materiel Industriel S.A.: *See*—
Sauterel, Gerard. 3,417,708.

Matsen, John M., and D. G. Levine, to Esso Research and Engineering Co. Direct feed fuel cell with porous hydrophobic diffuser. 3,418,169, 12–24–68, Cl. 136—86.

Matson, William U., to United States of America, Navy. Folding antenna mount. 3,417,323, 12–24–68, Cl. 52—110.

Matsumoto, Katsushige: *See*—
Tsuzihashi, Kazuo, Matsumoto, Ueno, Okamoto, Nagaoka, and Ono. 3,417,654.

Matsumoto, Mitsuo: *See*—
Watanabe, Junichi, and Matsumoto. 3,418,528.

Matsushita Electric Industrial Co., Ltd.: *See*—
Inami, Akira, and Morimoto. 3,418,116.

Mattel, Inc.: *See*—
Ryan, John W., Meggs, and Hulse. 3,417,507.

Matthews, Edward K.: *See*—
Grissom, Robert R., Matthews, and Kurzbuch. 3,418,402.

Mattler, Martin. Disposable catheter and method for forming same. 3,417,753, 12–24–68, Cl. 128—349.

Mauldin, William L., and D. J. Gale, to Deering Milliken Research Corp. Modification of cellulosic textiles with combination of a divinyl sulfone monoester and an aminoplast resin or with a reaction product of said monoester and said resin. 3,418,067, 12–24–68, Cl. 8—116.2.

Maverna, Emilio. Automatic slack takeup device for tools rotated at high speed and mounted on ball bearings. 3,417,963, 12–24–68, Cl. 253—2.

Maxey, James H.: *See*—
Wilson, Harold W. 3,418,238.

Mayer, Francis X.: *See*—
Carr, James W., Jr., Mayer, and Moser. 3,418,107.

Maynier, Louis X. H. Railway track. 3,417,921, 12–24–68, Cl. 238—264.

Mazza, Robert V.: *See*—
Dym, Herbert, and Mazza. 3,418,481.

McCann, Walter L.: *See*—
Johnson, Earl E., and McCann. 3,417,639.

McCarthy, Joseph V., to Itek Corp. Web drying apparatus. 3,417,484, 12–24–68, Cl. 34—156.

McClain, Dorothee M., to National Distillers and Chemical Corp. Process of preparing latices of submicron size particles of ethylene polymers. 3,418,265, 12–24–68, Cl. 260—29.6.

McClelland, Howard U., to Eaton Yale & Towne, Inc. Method of casting. 3,417,462, 12–24–68, Cl. 29—526.2.

McConnell, Charles D., to Westinghouse Air Brake Co. Shaker loader. 3,417,882, 12–24–68, Cl. 214—18.

McCoy, Lyle E. Conveyor for gas contact apparatus. 3,417,488, 12–24–68, Cl. 34—236.

McCreary, John. Selvage removing assembly for high speed tenter machines. 3,417,444, 12–24–68, Cl. 26—57.

McDermott, John F., to United States Steel Corp. Structural metal panel. 3,417,534, 12–24–68, Cl. 52—624.

McDonnell Douglas Corp.: *See*—
Culp, John D., Grimm, Fitzpatrick, and Patterson. 3,418,144.

McDonnell, Frank E.: *See*—
Riebman, Leon, and McDonnell. 3,418,587.

McEnroe, Paul V.: *See*—
Ferrier, Herman A., Jr., and McEnroe. 3,418,519.

McFarland, Norman T.: *See*—
Barlow, Gordan A., and McFarland. 3,417,997.

McGee, Chester W.: *See*—
Hershey, Harold J., McGee, and Warnock. 3,418,431.

McGill, Robert W.: *See*—
Copping, Bruce G., Hardee and McGill. 3,417,540.

McGraw-Edison Co.: *See*—
Attewell, Oliver G. 3,418,529.
Bovenizer, William N. 3,418,562.

McLaughlin, Emmett J., to Westinghouse Electric Corp. Lampholder with multiple arrangement of components. 3,418,622, 12–24–68, Cl. 339—56.

McLay, Joseph F., to Fischer & Porter Co. Syringe and method of making same. 3,417,904, 12–24–68, Cl. 222—386.

McMaster, Clarence O., to Minnesota Mining and Mfg. Co. Electrolytic image formation. 3,418,217, 12–24–68, Cl. 204—18.

McMillen, Russell G., to International Harvester Co. Steering mechanism. 3,418,006, 12–24–68, Cl. 280—96.

McMurray, William: *See*—
Morgan, Raymond E., and McMurray. 3,418,558.

McNeir, George: *See*—
Beatty, John W., and McNeir. 3,418,440.

McRae, Thomas J. Apparatus for pushing vehicles. 3,417,933, 12–24–68, Cl. 180—19.

McQuay-Norris Mfg. Co.: *See*—
Mudd, Harry A. 3,418,618.

Meadows, Frank W., and D. Podmore, to Service (Engineers) Ltd. Manufacture of pottery ware. 3,418,412, 12–24–68, Cl. 264—319.

Meagher, James E.: *See*—
Manoogian, Alex, and Kief. 3,417,783.

Mearl Corp., The: *See*—
Rieger, Carl J., and Quinn. 3,418,146.

Medert, Warren C., and R. W. Petticrew, to Owens-Illinois, Inc. Art of decorating glass-ceramic substrates. 3,418,156, 12–24–68, Cl. 117—124.

Meggs, Daniel H.: *See*—
Ryan, John W., Meggs, and Hulse. 3,417,507.

Meier, Peter J.: *See*—
Hertig, Max, and Meier. 3,417,582.

Meijer, Riksterus A. J. M.: *See*—
T'Jampens, Germain R., Meijer, and Van De Weijer. 3,418,512.

Melhart, Leonard J., to United States of America. Triggered spark gap electric arcing device. 3,418,510, 12–24–68, Cl. 313—146.

Mellgren, Per-Gustaf: *See*—
Herolf, Kjell O. G., Johnsson and Mellgren. 3,417,860.

Menge, Donald C., to Troy Steel Corp. Reinforcing gusset plate. 3,417,652, 12–24–68, Cl. 85—13.

Menold, Richard, G. Heyl, and W. Simm, to AGFA-Gevaert Aktiengesellschaft. Bleaching out electrophotographic sensitizers by simultaneous exposure to light and corona discharge. 3,418,115, 12–24–68, Cl. 96—1.

Mentnech, Adelbert, 33⅓% to Albert C. Nolte, Jr. Valve control. 3,417,782, 12–24–68, Cl. 137—624.11.

Merck & Co., Inc.: *See*—
Taub, David, and N. L. Wendler. 3,418,316.

Merrill, Leland H., and C. F. Bross, to Merrill Machinery Co. Desiccant capsule feeding machine. 3,417,542, 12–24–68, Cl. 53—78.

Merrill Machinery Co.: *See*—
Merrill, Leland H., and Bross. 3,417,542.

Meskat, Walter, to Farbenfabriken Bayer Aktiengesellschaft. Apparatus for feeding and mixing free-flowing materials. 3,417,969, 12–24–68, Cl. 259—7.

Metal Edge Industries: *See*—
Stern, Peter. 3,417,909.

Methfessel, Siegfried I.: *See*—
Holtzberg, Frederic, Methfessel, and Suits. 3,418,036.

Meulnart, Andre. Spinner for fishing by the bait-casting method. 3,417,503, 12–24–68, Cl. 43—42.08.

Meyer, Geo. J., Mfg. Co.: *See*—
Copping, Bruce G., Hardee, and McGill. 3,417,540.

Meyer, Lorenz. Means for processing scallops for the market. 3,417,423, 12–24–68, Cl. 17—2.

Meyer, Norman J.: *See*—
Beavers, Bobby R., and Meyer. 3,418,546.

Middleton, William J., to E. I. du Pont de Nemours and Co. Hexafluoro-2-propanol and its complex with tetrahydrofuran. 3,418,337, 12–24–68, Cl. 260—347.8.

Middleton, William J., Jr., to Chellife Corp. Method for loading shotgun shells. 3,417,655, 12–24–68. Cl. 86—25.

Midland-Ross Corp.: *See*—
Kelley, Gilbert A. 3,417,574.

Mihalko, Emil S., and D. G. Taylor, to Honeywell Inc. Direct current motor having a self-supporting shell rotor. 3,418,505, 12–24–68, Cl. 310—266.

Mikus, Ernie B.: *See*—
Wells, Robert R., and Mikus. 3,417,461.

Milani Foods, Inc.: *See*—
Getchell, Ransom N., and Trickel. 3,418,137.

Miller, Eldon D., Jr.: *See*—
Henry, George R., and Miller. 3,418,401.

Miller, Eugene J., Jr., A. Mais, D. Berenschot, Jr., and R. L. Berger, to Armour and Co. Fatty polyamines and their alkyl and alkoxy derivatives. 3,418,374, 12–24–68, Cl. 260—583.

Miller, Imrich M., to Universal Mfg. Corp. Ballast apparatus using leakage reactance of split primary winding. 3,418,527, 12–24–68, Cl. 315—244.

Miller, Kenneth H. Lighting control circuit employing photocells and gas diodes to operate semiconductor switches. 3,418,480, 12–24–68, Cl. 250—208.

Miller, Kenneth J.: *See*—
Burke, Clarence J., and Miller. 3,417,457.

Miller, Richard A.: *See*—
Tulagin, Vsevolod, Coles, and Miller. 3,418,322.

Miller, William R.: *See*—
Kolatorowicz, Edwin E., and Miller. 3,418,550.

Millikan, Allan G., to Eastman Kodak Co. Method of making fluorescent coating for photographic elements. 3,418,127, 12–24–68, Cl. 96—82.

Minnesota Mining and Mfg. Co.: *See*—
Birkeland, Stephen P. 3,418,470.
Glass, Robert. 3,417,465.
Hodge, Frederick J. 3,418,433.
McMaster, Clarence O. 3,418,217.
Schultz, Thomas E. 3,417,959.
Shrewsbury, Raymond W. 3,418,457.
Stevens, John, and Duffin. 3,418,130.
Tulagin, Vsevolod, Coles, and Miller. 3,418,322.
Werner, Thomas J. 3,418,640.

Minnesota Rubber Co.: *See*—
Rentschler, John J., and Urbashich. 3,418,001.

Mirka, Steve. Dispenser for viscous materials. 3,417,902, 12–24–68, Cl. 222—96.

Mishkin, Sidney, and R. E. Bidwell. Catheter for selective bronchography. 3,417,744, 12–24–68, Cl. 128—2.

Mississippi Chemical Corp.: *See*—
Brown, Marion L., Jr., Green, and Blanton. 3,418,255.

Mitacek, John: *See*—
Payne, William E., and Mitacek. 3,418,305.

Mitchell, James L. Dental parallelometer and method of using same. 3,417,471, 12–24–68, Cl. 32—67.

Mitchell, Joseph M.: *See*—
Lakshmanan, Tavorath K., and Mitchell. 3,418,229.

Mitchener, William A.: *See*—
Anderson, Howard R., Lambdin, and Mitchener. 3,418,485.

Mitron Research & Development Corp.: *See*—
Rosenberg, Robert A. 3,417,808.

Mitsubishi Jukogyo Kabushiki Kaisha: *See*—
Kishimoto, Akio, and Ohtawa. 3,417,955.

Mitsubishi Rayon Co., Ltd.: *See*—
Higashimura, Einosuke, Ishii, and Ishikawa. 3,417,567.

Mix, Arthur L., Jr., and D. L. West, to International Business Machines Corp. Pneumatic incremental tape actuator. 3,417,850, 12–24–68, Cl. 197—133.

Miyadera, Mitsutska: *See*—
Kato, Jinichi, Hasegaea, and Miyadera. 3,417,685.

Miyauchi, Hideo. Razor. 3,417,468, 12–24–68, Cl. 30—41.

Miyazaki, Haruhiko: *See*—
Suzukawa, Yuichi, Kanoo, Miyazaki, and Saito. 3,417,978.

Mlot-Fijalkowski, Adolf, and J. A. Strosnik, to Magnaflux Corp. Method of detecting flaws. 3,418,078, 12–24–68, Cl. 23—230.

Mobil Oil Corp.: *See*—
Andress, Harry J., Jr., and Gee. 3,418,092.
Cooper, James E. 3,418,239.
Coty, Vernon F. 3,418,208.
Dean, James T., Gravley, Randerson, and Brooks. 3,417,611.
Faris, Sam R. 3,417,823.
Myers, Herbert, and Olszewski. 3,418,240.
Nichols, Dean P. 3,417,830.

Moehlenpah, Walter G., to Hydro-Air Engineering, Inc. Connector plates. 3,417,651, 12–24–68, Cl. 85—13.

Mogk, Karl J.: *See*—
Day, Ralph R., Fabere, and Mogk. 3,417,635.

Mojden, Wallace W., and N. J. Chivas, to Fleetwood Systems, Inc. Conveyor assembly. 3,417,853, 12–24–68, Cl. 198—22.

Molins Machine Co. Ltd.: *See*—
Liedtke, Kurt. 3,417,855.

Monarch Marking Systems Co., The: *See*—
Hamisch, Paul H., and Kern. 3,418,456.

Monroe, Roger F., to The Dow Chemical Co. Polymeric compositions from ethylenediamine-tetraacetic acid and hexamethylenediamine. 3,418,288, 12–24–68, Cl. 260—78.

Monsanto Co.: *See*—
Baker, Joseph W. 3,418,345.
Cohen, Saul M., and Young. 3,418,277.
Hedrick, Ross M., and Tierney. 3,418,268.
Mark, Victor. 3,418,364.
Prill, Erhard J. 3,418,363.
Roth, James F. 3,418,070.
Stoffel, Paul J. 3,418,334.
Summers, Charles G., and Wright. 3,418,373.

Montecatini Edison S.p.A.: *See*—
Pregaglia, Gianfranco, Roffia, and Pozzi. 3,418,278.

Moog Industries, Inc.: *See*—
Scheublein, William A., Jr., and Fister. 3,418,011.

Moore, Edward E.: *See*—
Spleiman, Lyle S., and Moore. 3,418,060.

Moore, John P., to Shell Oil Co. Stimulation using dry acid slurry. 3,417,817, 12–24–68, Cl. 166—30.

Moore, Samuel D.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.

Moore, William C., and M. R. Caldwell, to Welch Allyn, Inc. Illuminating endoscope with disposable elements. 3,417,746, 12–24–68, Cl. 128—6.

Morgan, A. Henry: *See*—
Angel, Henry R., and Morgan. 3,418,608.

Morgan, Raymond E., and W. McMurray, to General Electric Co. Single and bidirectional power flow solid state electric power circuits and commutation circuit therefor. 3,418,558, 12–24–68, Cl. 321—43.

Morgan, Robert L.: *See*—
Barney, Arthur L., and Morgan. 3,418,303.

Morimoto, Kazuhisa: *See*—
Inami, Akira, and Morimoto. 3,418,116.

Morris, Charles W. Self-lubricating air sealed bearing apparatus. 3,417,562, 12–24–68, Cl. 60—30.

Morris, Richard A., and A. J. Teplitz, to Gulf Research & Development Co. Method of cementing well casing. 3,417,816, 12–24–68, Cl. 166—24.

Morrisette, Milton J., to Fenwal Inc. Thermocouple probe assembly and temperature sensing circuits comprising the same. 3,417,618, 12–24–68, Cl. 73—359.

Moser, Erwin, and J. Schmitt, to Swiss Aluminium Ltd. Method of brightening bituminous street surfaces and-bituminous street surfaces so brightened. 3,417,677, 12–24–68, Cl. 94—22.

Moser, John F., Jr.: *See*—
Carr, James W., Jr., Mayer, and Moser. 3,418,107.

Mosler Safe Co., The: *See*—
Stieber, Wolfgang R. 3,417,941.

Motorola, Inc.: *See*—
Carlson, Paul J. 3,418,593.
Horrick, Joseph. 3,417,998.
Jones, Franklin M. 3,418,427.
Robinson, Peter T. 3,418,181.
Solomon, James E., and Wilson. 3,418,592.

Motter, John C., Printing Press Co.: *See*—
Brodie, George R. 3,417,692.

Moul, David R.: *See*—
Woods, Roger M., and Moul. 3,418,221.

Movielab, Inc.: *See*—
Jeffee, Saul, and Kowalak. 3,418,050.

Mudd, Harry A., to McQuay-Norris Mfg. Co. Thermoresponsive device. 3,418,618, 12–24–68, Cl. 337—387.

Mulford, Richard A.: *See*—
Kidder, Allan H., Mulford, and Kahn. 3,418,419.

Muller, Karl R., J. A. Rabo, and P. H. Kasai, to Union Carbide Corp. Crystalline zeolite containing singly charged nickel cations. 3,418,237, 12–24–68, Cl. 252—455.

Muller, Rudolf, and K. Gurs, to Siemens Aktiengesellschaft. Device for internal modulation of laser radiation. 3,418-476, 12–24–68, Cl. 250—199.

Mulvany, Richard B.: *See*—
Hildebrand, Jack O., Mulvany, and Smith. 3,417,686.

Mumpower, Robert C., II: *See*—
Touey, George P., and Mumpower. 3,417,759.

Murakami, Yoshio: *See*—
Okamoto, Hiroaki, and Murakami. 3,417,914.

Murdoch, Ian L., to Bowater-Scott Corp. Ltd. Babies' pants. 3,417,751, 12–24–68, Cl. 128—287.

Murdock, Inc.: *See*—
Schaedel, Fred C. 3,418,222.
Murphy, G. W., Industries, Inc.: *See*—
Dudek, Edmond C. 3,417,511.
Murphy, Lawrence W.: *See*—
Hatch, Richard W., Jr., and Murphy. 3,417,773.
Murphy, William J.: *See*—
Edman, Clarence E., Kelly, Murphy, and Skolds. 3,417,-981.
Murray, Stephen F., and G. A. Hamilton, to P. R. Mallory & Co., Inc. Intermittent drive mechanism and a timer utilizing same. 3,417,631, 12–24–68, Cl. 74—125.
Muskat, Irving E., to Sinclair Research, Inc. Polymerization process. 3,418,292, 12–24–68, Cl. 260—78.5.
Myers, Herbert, and W. F. Olszewski, to Mobil Oil Corp. Lubricants containing a triorganosilyl phosphonate as an extreme pressure agent. 3,418,240, 12–24–68, Cl. 252—46.7.
NVF Co.: *See*—
Fisher, James G. 3,418,031.
Naab, Jakob. Dump-type lifting device for emptying containers. 3,417,888, 12–24–68, Cl. 214—303.
Nachtman, Leonard C.: *See*—
Dunay, John. 3,418,502.
Nadler, Heinrich, to Continental Gummi-Werke Aktiengesellschaft. Tire building drum. 3,418,192, 12–24–68, Cl. 156—401.
Nagai, Tadahiro: *See*—
Tsutsumi, Teruo, Yamada, Nagai, and Wada. 3,417,982.
Nagaoka, Kesatoshi: *See*—
Tsuzihashi, Kazuo, Matsumoto, Ueno, Okamoto, Nagaoka, and Ono. 3,417,654.
Nakajima, Akira, K. Takeya, and M. Hoten, to American Cyanamid Co. Inhibition of polymerization. 3,418,300, 12–24–68, Cl. 260—85.5.
Nakanishi, Susumu, to General Mills, Inc. Process for obtaining tocopherols. 3,418,335, 12–24–68, Cl. 260—345.6.
Nance, Roy A., and J. W. Shull, to Automation Industries, Inc. Automatic ultrasonic railroad wheel inspection system. 3,417,610, 12–24–68, Cl. 73—67.7.
Nandor, Ronald P.: *See*—
France, Robert W., and Nandor. 3,418,544.
Napoli, Francis S. Weld stud. 3,417,597, 12–24–68, Cl. 72—377.
Nassau, Kurt: *See*—
Loiacono, Gabriel M., and Nassau. 3,418,086.
National Cash Register Co., The: *See*—
Higashi, Paul, and Gunderson. 3,418,644.
Ku, Han Y. 3,418,180.
National Distillers and Chemical Corp.: *See*—
Grinninger, Lowell D., Greenberg, and Hansley. 3,418,297.
McClain, Dorothee M. 3,418,265.
National Lead Co.: *See*—
Blumenthal, Warren B. 3,418,073.
Love, Frank E. 3,418,223.
Stynes, James A. 3,418,251.
National Research Development Corp.: *See*—
Sanders, Frank K. 3,418,210.
National Steel Corp.: *See*—
Saunders, William T. 3,417,595.
Nelson, Charles E., to Mammoth Industries, Inc. Air control system for heating unit. 3,417,977, 12–24–68, Cl. 263—19.
Nelson, Edward G., to Deere & Co. Chokerless skidder. 3,417,-887, 12–24–68, Cl. 214—147.
Nelson, Forrest A., to Varian Associates. Field modulated gyromagnetic resonance spectrometer detecting only the FM carrier resonance component. 3,418,564, 12–24–68, Cl. 324—.5.
Nelson, Robert F. Etching method. 3,417,472, 12–24–68, Cl. 33—24.
Nemes, Laszlo. Pressure responsive signal and indicator. 3,417,727, 12–24–68, Cl. 116—70.
Neumann, Friedmund: *See*—
Prezewowsky, Klaus, Neumann, and Wiechert. 3,418,415.
Neumann, Georg. Unidirectional condenser microphone. 3,418,-436, 12–24–68, Cl. 179—111.
Newbold, Geoffrey T.: *See*—
Lamble, Alan J., Newbold, and Purdew. 3,418,318.
Newcomb, Charles E.: *See*—
Pegan, John R., and Newcomb. 3,417,570.
Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Thermographic copy process. 3,418,149, 12–24–68, Cl. 117—37.
Newman, Harry B.: *See*—
Hanson, Edwin E., and Newman. 3,417,565.
Nibco Inc.: *See*—
Raynes, Bertram C., and Pescatrice. 3,418,179.
Nichols, Dean P., to Mobil Oil Corp. Apparatus for drilling a borehole with a gaseous circulation medium. 3,417,830, 12–24–68, Cl. 175—209.
Nielsen, John W., to General Electric Co. Water repellant compositions. 3,418,266, 12–24–68, Cl. 260—33.8.
Nijhoff, Gerard J. J., to Kunstzijdespinnerij Nyma N.V. Edible spreads of unctuous consistency and low calorie value. 3,418,133, 12–24–68, Cl. 99—1.
Nippon Kogabu K.K.: *See*—
Kato, Jinichi, Hasegaea, and Miyadera. 3,417,685.
Nirenberg, Lester, to Halcon International, Inc. Distillation of propylene dimerization reaction effluent using compressed propylene as stripping vapor. 3,418,215, 12–24–68, Cl. 203—49.
Nitenson, Edward. Adapter means for an underwater projectile. 3,417,719, 12–24–68, Cl. 114—20.
Nolt, Edwin B., to Sperry Rand Corp. Twine clamping means and cutter for baler. 3,418,015, 12–24–68, Cl. 289—13.
Nolt, Edwin B., and R. R. Eby, to Sperry Rand Corp. Knotter clamp means for baler. 3,418,014, 12–24–68, Cl. 289—13.
Nolte, Albert C., Jr.: *See*—
Mentnech, Adelbert. 3,417,782.
Norlin, Knut B., and S. B. I. Borg, to Akermans Verkstad AB. Devices for operating the hammer leads in pile driving attachments. 3,417,524, 12–24–68, Cl. 52—115.
Norreys, John J.: *See*—
Hazelden, Denis W. J., Norreys, and Wheeler. 3,418,245.
Norris, Elwood G. Radial phonograph arm and flexibly positioned pickup assembly. 3,418,435, 12–24–68, Cl. 179—100.4.
North American Philips Co., Inc.: *See*—
Bronnes, Robert L., Sweet, and Hughes. 3,418,423.
Frouws, Simon M., Kerr, and Hendriks. 3,418,509.
Kempenaers, Louis. 3,417,642.
Konijnenberg, Johan, and Sparado. 3,418,551.
Provisor, Henri. 3,418,164.
Rongen, Jacobus J., and Peters. 3,418,590.
Schmidt, Siegfried. 3,417,588.
Schmidt, Wolfgang. 3,418,523.
Spielberg, Nathan, and Ladell. 3,418,467.
T'Jampens, Germain R., Meijer, and Van De Weijer. 3,418,512.
Van Daelen, Henri J. G. M. 3,418,525.
Van Den Honert, Alexander. 3,417,815.
Van Iperen, Bernardus B., and Kuypers. 3,418,516.
Van Slageren, Nanno. 3,417,937.
North American Rockwell Corp.: *See*—
Lockwood, Robert A. 3,418,173.
Young, Louis C. 3,417,767.
Van Alstyne, Earl M. 3,417,942.
Northern Electric Co. Ltd.: *See*—
Reid, John N. 3,418,494.
Thompson, Gordon B. 3,418,425.
Northrop Corp.: *See*—
Wells, Robert R., and Mikus. 3,417,461.
Norton, Fred L. W.: *See*—
Seidel, Martin P., Norton, and Wentz. 3,417,466.
Novak, Milos J. Merry-go-round having track supported vehicles with selective brake systems for controlling their speed. 3,417,991, 12–24–68, Cl. 272—35.
Nowotny, Lloyd A., to Allis-Chalmers Mfg. Co. Template for the gas cutting of holes. 3,417,477, 12–24–68, Cl. 33—174.
Noyon, Sybrand: *See*—
Duyster, Holte C., Noyon, and Jansz. 3,417,828.
Oakes, Vincent, to Pure Chemicals Ltd. Method of preparing dibutyltin maleate. 3,418,349, 12–24–68, Cl. 260—429.7.
Oberg, Paul E., and C. H. Tolman, to Sperry Rand Corp. Magnetoresistive magnetostriction monitoring. 3,418,163, 12–24–68, Cl. 117—201.
O'Brien, John C., and W. H. Cox. Method of and apparatus for orienting small articles. 3,417,856, 12–24–68, Cl. 198—33.
O'Brien, Richard E.: *See*—
Leider, Daniel K., and O'Brien. 3,417,796.
Oerlikon Engineering Co.: *See*—
Roman, Theodore. 3,418,538.
Office National d'Etudes et de Recherches Aerospatiales (par abreviation: O.N.E.R.A.): *See*—
Galmiche, Philippe. 3,417,460.
Ohanian, Michael, to United States of America, Army. High voltage low temperature resistance device. 3,418,620, 12–24–68, Cl. 338—57.
Ohlmer, Eggert: *See*—
Becker, Winfried, Finzl, Jorzik, and Ohlmer. 3,418,207.
Ohse, Hans H. W.: *See*—
Chedron, Harald H. O., Ohse, Palm, Draber, Falbe, and Korte. 3,418,291.
Ohtawa, Kimiaki: *See*—
Kishimoto, Akio, and Ohtawa. 3,417,955.
Oil States Rubber Co.: *See*—
Bowerman, Hulie R. 3,417,673.
Okamoto, Hiroaki, and Y. Murakami, to Tokyo Shibaura Electric Co., Ltd. Top nozzle of multistage diffusion pump. 3,417,914, 12–24–68, Cl. 230—101.
Okamoto, Toshiaki: *See*—
Tsuzihashi, Kazuo, Matsumoto, Ueno, Okamoto, Nagaoka, and Ono. 3,417,654.
Oktay, Sevgin, to International Business Machines Corp. Air cooled multiliquid heat transfer unit. 3,417,814, 12–24–68, Cl. 165—105.
Okumura, Akio: *See*—
Yoshida, Makoto, and Okumura. 3,418,121.
Oldenkott, Carl O. Captive lock washer assembly. 3,417,802, 12–24–68, Cl. 151—37.
O'Leary, Walter E.: *See*—
Pulcrano, Frank C., O'Leary, and Zambruski. 3,417,712.
Olin Mathieson Chemical Corp.: *See*—
Pryor, Michael J. 3,418,177.
Oliver, Robert H.: *See*—
Bean, Cecil M., and Oliver. 3,417,604.
Olivetti, Ing. C., & C., S.p.A.: *See*—
Capellaro, Natale. 3,417,917.
Terenzani, Fedele. 3,417,849.
Perotto, Pier G. 3,418,533.
Olivetti Underwood Corp.: *See*—
Gallant, Reginald R. 3,417,848.
Olson, Donel R.: *See*—
Barusch, Maurice R., Richardson, Kautsky, and Olson. 3,418,091.
Olson, Wayne L.: *See*—
Williams, Gerald I., Boucher, Duffy, and Olson, 3,418,043.
Olszewski, William F.: *See*—
Myers, Herbert, and Olszewski. 3,418,240.

Omer, Kenner S., to General Electric Co. Reed switch folder pack. 3,417,866, 12–24–68, Cl. 206—65.
O'Neill, William C., to United States of America, Navy. Hydraulic suspension and control system for hydrofoil craft. 3,417,722, 12–24–68, Cl. 114—66.5.
Ono, Naoya: *See*—
Isoda, Kenichi, and Ono. 3,418,571.
Ono, Yasuhiro: *See*—
Tsuzihashi, Kazuo, Matsumoto, Ueno, Okamoto, Nagaoka, and Ono. 3,417,654.
Onodera, Kosaku: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Oono. 3,418,395.
Oono, Teruo: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Oono. 3,418,395.
Orgen, Donald E., to Celanese Corp. Stabilization of oxymethylene copolymers by alkaline hydrolysis. 3,418,280, 12–24–68, Cl. 260—67.
Orlando, Thomas W., to The Procter & Gamble Co. Package including dish and cover. 3,418,141, 12–24–68, Cl. 99—179.
Ornstein, Jackie: *See*—
MacNaughton, John D., and Ornstein. 3,418,378.
Ortolano, Ralph J., to Westinghouse Electric Corp. Shrouded blade arrangement. 3,417,964, 12–24–68, Cl. 253—77.
Ostapovich, John: *See*—
Hesse, Jack E., and Ostapovich. 3,418,409.
Otrhalek, Joseph V., and R. E. Gansser, to Wyandotte Chemicals Corp. Treated soil adjuvant plant-growing product. 3,418,151, 12–24–68, Cl. 117—62.1.
Ouellette, Norman A.: *See*—
Isaacson, Calvin, and Ouellette. 3,417,416.
Owen, Thomas E.: *See*—
Gunter, Addison Y., and Owen. 3,417,451.
Owens-Corning Fiberglas Corp.: *See*—
Kleist, Dale. 3,418,095.
Long, James M. 3,417,530.
Owens-Illinois, Inc.: *See*—
Asunmaa, Saara K. 3,418,203.
Carter, Jack, Cuniberti, and Scott. 3,418,099.
Henry, James E. 3,418,413.
Levene, Leon. 3,418,153.
Levene, Leon. 3,418,347.
Medert, Warren C., and Petticrew. 3,418,156.
Rawski, David P. 3,418,154.
PPG Industries, Inc.: *See*—
Cunningham, Hugh. 3,417,976.
Eddy, Clifford O., Jr. 3,418,298.
Paananen, Roy A., to Raytheon Co. Standing wave single mode laser. 3,418,598, 12–24–68, Cl. 331—94.5.
Paape, Klaus, to Robert Bosch Elektronik und Photokino GmbH. Drive arrangement for a tape recorder. 3,417,936, 12–24–68, Cl. 242—55.12.
Packard-Bell Electronics Corp.: *See*—
Beckwith, John R. 3,418,612.
Paddison, Eric, to The English Electric Co. Ltd. Protective relays for polyphase electrical systems. 3,418,569, 12–24–68, Cl. 324—52.
Page, Frederick W., R. F. Creasey, and J. T. Froud, to British Aircraft Corporation (Operating) Ltd. Air jet thrust supported craft. 3,417,943, 12–24–68, Cl. 244—23.
Pall, David B., and J. F. Campolong, to Laboratories for Electronics, Inc. Centrifugal pump having an impeller shaft mounted on a rotating bearing. 3,417,704, 12–24–68, Cl. 103—87.
Palm, George U., to Mark Systems, Inc. Mat processing registration device. 3,417,934, 12–24–68, Cl. 242—55.
Palm, Richard A.: *See*—
Chedron, Harald H. O., Ohse, Palm, Draber, Falbe, and Korte. 3,418,291.
Pan American Petroleum Corp.: *See*—
Farr, Jonn B., Lang, and Widess. 3,418,626.
Panelfab Products, Inc.: *See*—
Archinal, William F., and Brazener. 3,417,529.
Parke, Davis & Co.: *See*—
Doub, Leonard. 3,418,320.
Parker, Bernard, and L. Weisbord, to General Precision, Inc. Free-rotor gyro. 3,417,627, 12–24–68, Cl. 74—5.6.
Parker, Louis W. Axial airgap motors and generators. 3,418,506, 12–24–68, Cl. 310—268.
Parker Pen Co., The: *See*—
Derbins, William H. 3,418,056.
Parker-Hannifin Corp.: *See*—
Madland, Rolf A. 3,417,670.
Parsey, Edward S., and T. E. Majewski, to The Dow Chemical Co. Alkylation process. 3,418,379, 12–24–68, Cl. 260—624.
Parshall, George W., to E. I. du Pont de Nemours and Co. Complexes of decaborane, selected metals, and phosphines, arsines, or sulfides. 3,418,346, 12–24–68, Cl. 260—429.
Patentverwertungs- und Finanzierungsgesellschaft Serania A.G.: *See*—
Schmid, August. 3,417,992.
Patterson, Ralph D.: *See*—
Culp, John D., Grimm, Fitzpatrick, and Patterson. 3,418,144.
Patterson, Warren R., to Allis-Chalmers Mfg. Co. Gyratory crusher. 3,417,932, 12–24–68, Cl. 241—208.
Paul, Herman L., Jr. Motion converting mechanism. 3,417,-628, 12–24–68, Cl. 74—48.
Paule, Kurt, G. Armbruster, and M. Kirn, to Robert Bosch G.m.b.H. Portable electric motor driven power tool with separable plastic housing. 3,418,504, 12–24–68, Cl. 310—50.
Paulstra: *See*—
Dargier de Saint Vaulry, Jean. 3,417,922.
Pavlath, Attila E.: *See*—
Christe, Karl O., and Pavlath. 3,418,356.
Paxton, Jerre H. Flexible plastic bag stack, individual bags of which are provided with respectively echeloned filamentary closure facilities. 3,417,863, 12–24–68, Cl. 206—57.
Paxton, Jerre H. Flexible plastic bag stack, individual bags of which are provided with respectively echeloned sheet plastic closure facilities. 3,417,864, 12–24–68, Cl. 206—57.
Paxton, Jerre H. Plastic bag with integral closing facility. 3,417,912, 12–24–68, Cl. 229—62.
Payne, Sidney W., to International Computers and Tabulators Ltd. Switching device for selectively connecting input devices to a common load. 3,418,594, 12–24–68, Cl. 330—147.
Payne, William E., and J. Mitacek, to Phillips Petroleum Co. Polymer drying process. 3,418,305, 12–24–68, Cl. 260—94.9.
Pearson, John, to United States of America, Navy. Explosive welding. 3,417,455, 12–24–68, Cl. 29—470.1.
Peet, Gene W. Boot and shoe dryer. 3,417,482, 12–24–68, Cl. 34—104.
Pegan, John R., and C. E. Newcomb, to Vi Vox, Inc. Rainwater disposal systems. 3,417,570, 12–24–68, Cl. 61—15.
Pelavin, Milton H., to Technicon Instruments Corp. Colorimeter flow cell. 3,418,053, 12–24–68, Cl. 356—181.
Pennsalt Chemicals Corp.: *See*—
Buchholz, Bernard, and Popoff. 3,418,101.
Penton, Edgar W. Auxiliary container. 3,417,895, 12–24–68, Cl. 220—23.
Perfection Mfg. Co., The: *See*—
Allina, Stanley F. 3,418,005.
Perkin-Elmer Corp.: *See*—
Golay, Marcel. 3,417,779.
Staunton, John J. 3,418,051.
Perl, Richard L., to The Tappan Co. Domestic oven. 3,417,-742, 12–24–68, Cl. 126—21.
Perlewitz, Robert E., to Tecumseh Products Co. Automatic compression release for internal combustion engine. 3,417,-740, 12–24–68, Cl. 123—182.
Perotto, Pier G., to Ing. C. Olivetti & C., S.p.A. Modular structure for electronic integrated circuits. 3,418,533, 12–24–68, Cl. 317—100.
Perry, Charles C., to W. M. Chace Co. Fluidic thermostat. 3,417,813, 12–24–68, Cl. 165—35.
Perry, Edmond S.: *See*—
Staudenmayer, William J., and Perry. 3,418,152.
Perry, Edmond S., and W. J. Staudenmayer, to Eastman Kodak Co. Chromatographic sheets. 3,418,158, 12–24–68, Cl. 117—132.
Perry Laboratories, Inc.: *See*—
Fischer, Alfred N. 3,418,577.
Pescatrice, Michael: *See*—
Raynes, Bertram C., and Pescatrice. 3,418,179.
Peters, Alec. Card positioning means in reciprocating bed and platen printing press. 3,417,695, 12–24–68, Cl. 101—407.
Peters, Alphonsus M.: *See*—
Rongen, Jacobus J., and Peters. 3,418,590.
Petersen, Joseph G., to Westinghouse Electric Corp. System for supplying reversible electric power to reactive loads. 3,418,560, 12–24–68, Cl. 321—47.
Peterson, Carl R., to Ingersoll-Rand Co. Tunnel boring apparatus. 3,418,022, 12–24–68, Cl. 299—31.
Peterson, Donald J.: *See*—
Skinner, David L., and Peterson. 3,418,385.
Peterson, William R., Jr.: *See*—
Sollott, Gilbert P., and Peterson. 3,418,350.
Petro-Tex Chemical Corp.: *See*—
Rice, Billy D. 3,417,426.
Pettersson, Bror G.: *See*—
Ekenstam, Bo T. A., and Pettersson. 3,418,325.
Petticrew, Richard W.: *See*—
Medert, Warren C., and Petticrew. 3,418,156.
Pfarrwaller, Erwin, to Sulzer Brothers Ltd. Heddle frames. 3,417,790, 12–24–68, Cl. 139—91.
Phelan, Charles S.: *See*—
Rohe, Frederick W., and Phelan. 3,417,803.
Phillips Petroleum Co.: *See*—
Bjornson, Geir, and Walker. 3,418,357.
Cabbage, John T. 3,418,391.
Hahn, William C. 3,417,605.
Heckelsberg, Louis F. 3,418,390.
Payne, William E., and Mitacek. 3,418,305.
Pitchford, Armin C. 3,418,249.
Seefluth, Charles L. 3,418,398.
Stapp, Paul R. 3,418,384.
Wofford, Clinton F. 3,418,394.
Pierret, James A., to Fansteel Inc. Refractory metal powder. 3,418,106, 12–24–68, Cl. 75—.5.
Pifferi, Giorgio, and E. Testa, to Lepetit S.p.A. 1H-2,3-benzoazine-4(3H)-one and its 3- and/or 6-substituted derivatives. 3,418,317, 12–24–68, Cl. 260—244.
Pillsbury Co., The: *See*—
Drew, Bruce A. 3,417,493.
Pines, Robert M., to Geigy Chemical Corp. Stabilization of polyolefins with N,N'-tetra-substituted alkylenediamines and oxyalkyleneidamines. 3,418,272, 12–24–68, Cl. 260—45.8.
Piper, William M., J. Rabinow, and R. B. Rizer, to United States of America, Army. Contact fuze. 3,417,699, 12–24–68, Cl. 102—70.2.
Piret, Jean, to Societe d'Etudes de Recherches et d'Applications pour l'Industrie S.E.R.A.I. Process for producing ion exchangers. 3,418,072, 12–24–68, Cl. 23—23.
Piret, Jean M. Preparation of titanium phosphate. 3,418,075, 12–24–68, Cl. 23—105.
Pitchford, Armin C., to Phillips Petroleum Co. Stable asphaltene dispersion-asphalt emulsions and their preparation. 3,418,249, 12–24–68, Cl. 252—311.5.

Pitney-Bowes, Inc.: *See*—
Kubovy, Joseph V. 3,417,691.
Platt, Leland H., Jr. Flag display and housing pole. 3,417,732, 12–24–68, Cl. 116—173.
Platzer, George E., Jr., to L. H. Romanski. Switching circuit. 3,418,488, 12–24–68, Cl. 307—114.
Platzer, George E., Jr., to L. H. Romanski. Switching circuit. 3,418,489, 12–24–68, Cl. 307—114.
Ploch, Siegfried: *See*—
Scholtis, Walter E., Ploch, and Zschunke. 3,417,580.
Plust, Heinz-Gunther, and C. G. Telschow, to Aktiengesellschaft Brown, Boveri & Cie. System for the operation of a fuel cell with gas diffusion electrodes. 3,418,167, 12–24–68, Cl. 136—86.
Podmore, Dennis: *See*—
Meadows, Frank W., and Podmore. 3,418,412.
Podolsky, Boris: *See*—
Walter, Fred, and Podolsky. 3,418,524.
Pollia, Andrew A., to Raphael T. Pollia. Flanged pipe joint. 3,418,009, 12–24–68, Cl. 285—39.
Pollia, Raphael T.: *See*—
Pollia, Andrew A. 3,418,009.
Polyprodukte AG: *See*—
Hirmann, Georg. 3,417,479.
Pomerantz, Daniel I., G. Wallis, and J. J. Dorsey, to P. R. Mallory & Co., Inc. Bonding electrically conductive metals to insulators. 3,417,459, 12–24–68, Cl. 29—472.9.
Popat, Pranjivan V., to Texas Instruments, Inc. Electrochemical power supply systems. 3,418,171, 12–24–68, Cl. 136—100.
Popoff, Ivan C.: *See*—
Buchholz, Bernard, and Popoff. 3,418,101.
Poppe, Ewald, to Rheinstabl Henschel A.G. Vehicular support for a mortar. 3,417,659, 12–24–68, Cl. 89—40.
Post, James E. Suction press roll and method for manufacturing same. 3,418,205, 12–24–68, Cl. 162—372.
Pote, Robert H.: *See*—
Sabulsky, Anthony J., and Pote. 3,418,635.
Potter, Norman M., to Union Carbide Corp. Voltage controlled battery charger. 3,418,353, 12–24–68, Cl. 320—24.
Pounds, Walter R., to George Risk Industries, Inc. Magnetically actuatable switch having non-linear contacts embedded within resinous switch housing. 3,418,611, 12–24–68, Cl. 335—205.
Pozzi, Giancarlo: *See*—
Pregaglia, Gianfranco, Roffia, and Pozzi. 3,418,278.
Pradenas, Fernando, to H. Koch & Sons. Electrically heatable panels. 3,418,448, 12–24–68, Cl. 219—213.
Prahl, Jan, to W. J. Teufel. Cam operated hydraulic knee joint for an artificial leg. 3,417,409, 12–24–68, Cl. 3—1.2.
Pratt, Henry Co.: *See*—
Fawkes, Donald G. 3,418,411.
Pregaglia, Gianfrano, P. Roffia, and G. Pozzi, to Montecatini Edison S.p.A. Copolyemers of trioxane with cyclic formal and process for preparing same. 3,418,278, 12–24–68, Cl. 260—64.
Pressure Technology Corp. of America: *See*—
Bobrowsky, Alfred. 3,417,589.
Preuss, Friedrich: *See*—
Koch, Werner, and Preuss. 3,417,696.
Prezewowsky, Klaus, F. Neumann, and R. Wiechert, to A. B. Schering. Estrogenic steroidal compositions comprising 1-hydroxy-estradiol and derivatives thereof. 3,418,415, 12–24–68, Cl. 424—238.
Prill, Erhard J., to Monsanto Co. Process of preparing alkyl hydroxyalkyl fumarates. 3,418,363, 12–24–68, Cl. 260—485.
Printing Arts Research Laboratories, Inc.: *See*—
Marx, Walter S., Jr., and Collier. 3,418,468.
Procter & Gamble Co., The: *See*—
Johnson, Charles L. 3,417,897.
Orlando, Thomas W. 3,418,141.
Skinner, David L., and Peterson. 3,418,385.
Provisor, Henri, to North American Philips Co., Inc. Filament wire for use in the cathode of a thermionic valve. 3,418,-164, 12–24–68, Cl. 117—215.
Pryor, Arthur W., to Chevron Research Co. Separation of hydrogen sulfide from carbon dioxide by distillation. 3,417,-572, 12–24–68, Cl. 62—17.
Pryor, Michael J., to Olin Mathieson Chemical Corp. Process for preparing aluminum base alloys. 3,418,177, 12–24–68, Cl. 148—11.5.
Pulcrano, Frank C., W. E. O'Leary, and E. A. Zambruski, to ACF Industries, Inc. Railway flat car for the transport of containers or trailers. 3,417,712, 12–24–68, Cl. 105—368.
Pullman Inc.: *See*—
Stretch, Arnold L., and Shaver. 3,417,876.
Purdew, Michael B.: *See*—
Lamble, Alan J., Newbold, and Purdew. 3,418,318.
Purdy, William C., and C. G. Schnorr, to General Electric Co. Graphic construction display generator. 3,418,459, 12–24–68, Cl. 235—150.2.
Pure Chemicals Ltd.: *See*—
Oakes, Vincent. 3,418,349.
Purtell, Rufus J., to Tri-Matic, Inc. Automatic alignment of irrigation system. 3,417,766, 12–24–68, Cl. 137—1.
Quinn, Charles A.: *See*—
Rieger, Carl J., and Quinn. 3,418,146.
Rabe, Arnold E. Process for the clarification of sugar juices and the like. 3,418,165, 12–24–68, Cl. 127—48.
Rabinow, Jacob: *See*—
Piper, William M., Rabinow, and Rizer. 3,417,699.
Rabo, Jule A.: *See*—
Muller, Karl R., Rabo, and Kasal. 3,418,257.
Rackliffe, Leroy J., and R. G. Rau, to American Telephone and Telegraph Co. Matched mailing detection system. 3,418,-455, 12–24–68, Cl. 235—61.7.
Radio Corp. of America: *See*—
Bauer, Robert. 3,418,161.
Royce, Martin R. 3,418,246.
Yocom, Perry N. 3,418,247.
Rall, Dieter. Fluid stream temperature sensor system. 3,417,-617, 12–24–68, Cl. 73—341.
Ram Inc.: *See*—
Emmel, Donald R., Blackburn, and Kendall. 3,418,408.
Ramme, Maurice L. Helicopter rotor and turbine assembly. 3,417,823, 12–24–68, Cl. 170—135.28.
Randerson, Luther W.: *See*—
Dean, James T., Gravley, Randerson, and Brooks. 3,417,-611.
Randolph Mfg. Co.: *See*—
Randolph, Troy D. 3,417,636.
Randolph, Troy D., to Randolph Mfg. Co. Heat transfer apparatus. 3,417,636, 12–24–68, Cl. 74—606.
Rao, Mlarur L. B., to P. R. Mallory & Co., Inc. Addition agents for sintering processes. 3,418,113, 12–24–68, Cl. 75—214.
Raphael, Martin, to United Aircraft Corp. Contour tracing and tracking system. 3,418,548, 12–24–86, Cl. 318—18.
Rapp, Vincent Q., to General-Erie Corp. Method for drying compressed air. 3,417,547, 12–24–68, Cl. 55—27.
Ratelband, Johannes B. Check valve with resilient seat means. 3,417,778, 12–24–68, Cl. 137—543.23.
Rau, Ben W. Adjustable multi-power stereoscope with collapsible support. 3,418,035, 12–24–68, Cl. 350—139.
Rau, Rodney G.: *See*—
Rackliffe, Leroy J., and Rau. 3,418,455.
Rawski, David P., to Owens-Illinois, Inc. Method of rendering glass surfaces abrasion-resistant and glass article produced thereby. 3,418,154, 12–24–68, Cl. 117—88.
Rayne, Bertram C., and M. Pescatrice, to Nibco Inc. Materials for producing soft solder joints. 3,418,179, 12–24–68, Cl. 148—24.
Raytheon Co.: *See*—
Paananen, Roy A. 3,418,598.
Wyckoff, Robert L. 3,418,574.
Rebentisch, Hugo E., Jr., to Unistrnt Corp. Pipe support. 3,417,951, 12–24–68, Cl. 248—62.
Redelman, Paul E.: *See*—
Wilson, Rosser L., and Redelman. 3,418,462.
Redfern, Ronald, to John F. Renshaw & Co., Ltd. Plant for processing semi-liquid substances or granular substances in a liquid carrier. 3,417,931, 12–24–68, Cl. 241—161.
Reed, Jerry T.: *See*—
Everson, Howard E., Kiss, and Reed. 3,418,284.
Reeder, Frank, and W. A. Dziuba, to Courtaulds Ltd. Filter elements. 3,418,187, 12–24–68, Cl. 156—180.
Reese, Edward G., Jr., to Westinghouse Electric Corp. Cathode ray tube dot matrix shifting. 3,418,518, 12–24–68, Cl. 315—22.
Reich, Murray H.: *See*—
Wolf Calvin N., and Reich. 3,418,283.
Reid, John N., to Northern Electric Co. Ltd. Alternating current gate. 3,418,494, 12–24–68, Cl. 307—239.
Reliance Electric and Engineering Co., The: *See*—
Kuzara, James H., and Martin. 3,417,842.
Renker, Robert L.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.
Renner, Donald J., to F. W. Bell, Inc. Method and apparatus for demagnetization of multipole magnetic devices. 3,418,-542, 12–24–68, Cl. 317—157.5.
Renshaw, John F., & Co., Ltd.: *See*—
Redfern, Ronald. 3,417,931.
Rentschler, John J., and L. J. Urbashich, to Minnesota Rubber Co. Fluid seal. 3,418,001, 12–24–68, Cl. 277—165.
Republic Steel Corp.: *See*—
Mandula, Joseph M., Judd, and Skipper. 3,418,567.
Research Corp.: *See*—
Hair, Hugh A., Roome, Gerst, Des-Jardins, and Domick. 3,418,605.
Retke, Dale O. Windshield wiper attachment. 3,417,421, 12–24–68, Cl. 15—250.41.
Rey, Hans-Georg, and P. Rieckmann, to C. F. Boehringer & Soehne G.m.b.H. Test paper for the determination of protein in biological fluids. 3,418,079, 12–24–68, Cl. 23—253.
Rey, Hans-Georg, and P. Rieckmann, to C. F. Boehringer & Soehne G.m.b.H. Hydrophobic test strip for analyzing whole blood. 3,418,083, 12–24–68, Cl. 23—253.
Reynolds, Gibson, and J. Doniger, to The Bendix Corp. Aircraft control system for lateral runway alignment. 3,417,-945, 12–24–68, Cl. 244—77.
Reynolds Metal Co.: *See*—
Fritzlen, Thomas L. 3,418,090.
Lewis, Thomas E. 3,417,593.
Rheinmetall G.m.b.H., Firma: *See*—
Harbrecht, Karl. 3,417,660.
Rheinstahl Henschel A.G.: *See*—
Poppe, Ewald. 3,417,639.
Rhodes, Harold B., to Columbia Records Distribution Corp. Electric piano incorporating multi-component tuning forks. 3,418,417, 12–24–68, Cl. 84—1.15.
Rhodes, Louise K. Scrubbing implement. 3,417,417, 12–24–68, Cl. 15—93.
Rhone-Poulenc S.A.: *See*—
Bolchert, Wilfred. 3,418,293.
Riboud, Pierre-Jean, to Societe Anonyme dite: Lincrusta. Adhesive-coated cleaning roller. 3,417,418, 12–24–68, Cl. 15—104.
Rice, Billy D., to Petro-Tex Chemical Corp. Apparatus for separating a polymer from a solvent. 3,417,426, 12–24–68, Cl. 18—1.

Rice, Harold W.: *See*—
Beck, Roland D., and Rice. 3,417,663.
Rice, Howard E., to Thiokol Chemical Corp. Propellant comprising hydrazine nitroform stabilized with dicarboxylic acid anhydride. 3,418,183, 12–24–68, Cl. 149—6.
Rice, Leonard M.: *See*—
Grogan, Charles H., and Rice. 3,418,336.
Rice, Leonard M., and C. H. Grogan, to Geschickter Fund for Medical Research, Inc. Heterocyclic secondary amines. 3,418,324, 12–24–68, Cl. 260—293.
Rich, Anthony J., and A. K. Stankevicius. In and out register and pager system having indicators at remote and central stations. 3,418,650, 12–24–68, Cl. 340—311.
Richardson, Wallace L.: *See*—
Barusch, Maurice R., Richardson, Kautsky, and Olson. 3,418,091.
Richardson, William F. C.: *See*—
Richens, Raymond H., White, and Richardson. 3,417,967.
Richens, Raymond H., W. J. White, and W. F. C. Richardson, to Bristol Aeroplane Plastics Ltd. Fluid mixing devices. 3,417,967, 12–24–68, Cl. 259—4.
Richter, Sidney B., to Velsicol Chemical Corp. Herbicidal compositions. 3,418,102, 12–24–68, Cl. 71—113.
Richter, Walter, to Hudson Machine & Tool Corp. Draw dies and pull through feeder system therefor. 3,417,596, 12–24–68, Cl. 72—361.
Riebman, Leon, and F. E. McDonnell, to American Electronic Laboratories, Inc. High sensitivity and power signal detecting device. 3,418,587, 12–24–68, Cl. 329—205.
Rieckmann, Peter: *See*—
Rey, Hans-Georg, and Rieckmann. 3,418,079.
Rey, Hans-Georg, and Rieckmann. 3,418,083.
Rieger, Carl J., and C. A. Quinn, to The Mearl Corp. Process for producing stabilized titanium dioxide pigments. 3,418,-146 12–24–68 Cl. 106—300.
Rieger, Richard F.: *See*—
Emerson, Herff C., Rieger, Kitchin, and Vawter. 3,418,549.
Rigney, James A., G. P. Hamner, and R. B. Mason, to Esso Research and Engineering Co. Catalyst regeneration. 3,418,-256, 12–24–68, Cl. 252—415.
Riordan, Hugh E.: *See*—
Evans, John L., and Riordan. 3,417,474.
Riordan, Hugh E., to General Precision, Inc. Single-axis accelerometer. 3,417,626, 12–24–68, Cl. 73—516.
Risk, George, Industries, Inc.: *See*—
Pounds, Walter R. 3,418,611.
Ritter Engineering Co.: *See*—
Ritter, Wayne G. 3,417,585.
Ritter, Frederick J.: *See*—
Cousins, Otto J., Ritter, and Supel. 3,417,469.
Ritter, Wayne G., to Ritter Engineering Co. Strip loop tension control means. 3,417,585, 12–24–68, Cl. 72—8.
Rizer, Ralph B.: *See*—
Piper, William M., Rabinow, and Rizer. 3,417,699.
Rizzolo, Alfred T., and W. F. Hicks, to Cheston Co. Resistance metal heater. 3,418,447, 12–24–68, Cl. 219—156.
Robbins, Jim, Seat Belt Co.: *See*—
Lewis, Gerald F. 3,418,021.
Robe, Harlan K. Dispenser package for flowable materials and method of forming same. 3,418,059, 12–24–68, Cl. 401—266.
Roberge, Paul. Platform construction for bowling alleys. 3,417,993 12–24–68, Cl. 273—51.
Robert, Andre, and L. L. Skaletzky, to The Upjohn Co. *p*-Amino-N-(3 or 5-methyl-2 pyridyl) benzamide and the pharmaceutically acceptable acid addition salts thereof. 3,418,329, 12–24–68, Cl. 260—295.
Robertshaw Controls Co.: *See*—
Beck, Roland D., and Rice. 3,417,663.
Robertson, Clifford A.: *See*—
Balamuth, Lewis, Grimes, Evans, Axtell, Robertson, and Higgins. 3,418,185.
Robillard, Edward C., M. L. Kuniholm, and N. S. Humes, to The Heald Machine Co. Grinding machine. 3,417,512, 12–24–68, Cl. 51—165.
Robinson, Arthur S., to The Bendix Corp. Encoder. 3,418,653, 12–24–68, Cl. 340—347.
Robinson, James E., to Armstrong Cork Co. Drafting apron having improved frictional qualities. 3,417,633, 12–24–68, Cl. 74—232.
Robinson, Norman, to Fisons Fertilizers Ltd. Phosphoric acid. 3,418,077. 12–24–68, Cl. 23—165.
Robinson, Peter T., to Motorola, Inc. Method of forming a semiconductor by masking and diffusing. 3,418,181, 12–24–68, Cl. 148—187.
Rochte, Jerry E., and D. N. Martin, to Beckman Instruments, Inc. Sample transport system. 3,418,080, 12–24–68, Cl. 23—259.
Rock, Albin S. Buff of fabric material. 3,417,420, 12–24–68, Cl. 15—230.16.
Rodak, Donald M.: *See*—
Tietema, Casper J., and Rodak. 3,417,410.
Rodriguez, George L.: *See*—
Gilday, John F., and Rodriguez. 3,417,729.
Roffia, Paolo: *See*—
Pregaglia, Gianfranco, Roffia, and Pozzi. 3,418,278.
Rogers, Wesley D., Jr.: *See*—
Wilson, Harold W. 3,418,238.
Roggendorf, Wilhelm. Electrodeposition of chromium and duplex microcrack chromium coatings. 3,418,220, 12–24–68, Cl. 204—41.
Rohe, Frederick W., and C. S. Phelan, to Shur-Lok Corp. Moldable insert having positioning means for installation in sandwich panel. 3,417,803, 12–24–68, Cl. 151—41.73.
Rohr Corp.: *See*—
Emerson, Herff C., Rieger, Kitchin, and Vawter. 3,418,-549.
Rohrbaugh, George W., Jr. Arrow with integral trailing device. 3,417,994, 12–24–68, Cl. 273—106.5.
Roland, Max G., to Maromatic Co., Inc. Tumbler lock blind hole pin assembly apparatus. 3,417,452, 12–24–68, Cl. 29—208.
Roland Offsetmaschinenfabrik Faber & Schleicher AG: *See*—
Koch, Werner, and Preuss. 3,417,696.
Rolfes, Paul E., to Lorain Products Corp. Apparatus and method for gating the SCR's in an inverter, and standby power-supply and battery-charging system incorporating the same. 3,418,559, 12–24–68, Cl. 321—45.
Rolls-Royce Ltd.: *See*—
Colley, Rowan H., and Brownhill. 3,417,730.
Johnson, Christopher L. 3,417,607.
Ruffles, Philip C., and Taylor. 3,417,944.
Roman, Theodore, to Oerlikon Engineering Co. Device having two parts which can be oriented in predetermined positions. 3,418,538, 12–24–68, Cl. 317—123.
Romanski, Lon H.: *See*—
Platzer, George E., Jr. 3,418,488.
Platzer, George E., Jr. 3,418,489.
Rongen, Jacobus J., and A. M. Peters, to North American Philips Co. Inc. Single ended push-pull class B amplifier with feedback. 3,418,590, 12–24–68, Cl. 330—14.
Rooker, William A. Aromatizing food concentrates. 3,418,134, 12–24–68, Cl. 99—23.
Roome, Gerard T.: *See*—
Hair, Hugh A., Roome, Gerst, Des-Jardins, and Domick. 3,418,605.
Rosaen, Borje O.: *See*—
Rosaen, Nils O., B. O., and O. E. 3,417,869.
Rosaen Filter Co., The: *See*—
Rosaen, Nils O., B. O., and O. E. 3,417,869.
Rosaen, Nils O., B. O., and O. E., to The Rosaen Filter Co Filter devices. 3,417,869, 12–24–68, Cl. 210—90.
Rosaen, Oscar E.: *See*—
Rosaen, Nils O B. O., and O. E. 3,417,869.
Rose, Howard E. Grinding apparatus. 3,417,517, 12–24–68, Cl. 51—356.
Rosemount Engineering Co.: *See*—
Werner, Frank D., and Lode. 3,417,606.
Rosenbaum, Donald A. Pressure sealing closure. 3,417,406, 12–24–68, Cl. 2—2.1.
Rosenberg, Robert A., to Mitron Research & Development Corp. Melting and casting of titanium. 3,417,808, 12–24–68, Cl. 164—68.
Rosenthal, Robert H.: *See*—
Caplan, Richard E., Rosenthal, and Clope. 3,418,274.
Rosenthal, Robert W.: *See*—
Hurley, Daniel J., Rosenthal, and Williamson. 3,418,388.
Ross, Gerald F., to United States of America, Air Force. High frequency phase-synchronized signal synthesizer. 3,418,604, 12–24–68, Cl. 333—20.
Rossmy, Gerd, to Th. Goldschmidt AG. Organosilicon compounds and process for their preparation. 3,418,352, 12–24–68, Cl. 260—448.2.
Rossnan, Michael: *See*—
Dennis, John M., and Rossnan. 3,418,138.
Roth, James F., to Monsanto Chemical Co. Compositions and processes for treating exhaust. 3,418,070, 12–24–68, Cl. 23—2.
Rotor Electric Co., Ltd.: *See*—
Schott, Norman. 3,418,450.
Rovsek, Edward J. Intermittently operated movie film projector for projecting still pictures. 3,418,045, 12–24–68, Cl. 353—122.
Rowe, David: *See*—
Schmidt, Karl H., Weber, Rowe, and Brinker. 3,418,286.
Roy, James W., to International Telephone and Telegraph Corp. Method for making hermetic seals. 3,418,442, 12–24–68, Cl. 219—100
Royal Industries, Inc.: *See*—
Stevenson, Billy E., and Rumsey. 3,417,671.
Royce, Martin R., to Radio Corp. of America. Rare earth activated yttrium and gadolinium oxy-chalcogenide phosphors. 3,418,246, 12–24–68, Cl. 252—301.4.
Rubery Owen & Co., Ltd.: *See*—
Shorrock, Christopher. 3,417,961.
Rüegg, Rudolf, and G. Ryser, to Hoffmann-La Roche Inc. Didecyl quaternary ammonium compounds. 3,418,355, 12–24–68, Cl 260—459.
Ruehlemann, Herbert E., to Elco Corp. Method and apparatus for bonding through insulating material. 3,418,444, 12–24–68, Cl. 219—113.
Ruehlemann, Herbert E., to Elco Corp. Cylindrical connector contact. 3,418,623. 12–24–68, Cl. 339—94.
Ruffles, Philip C., and P. A. Taylor, to Rolls-Royce Ltd. Vertical take-off aircraft. 3,417,944, 12–24–68, Cl. 244—54.
Rugger, Warren E. Concrete form securing means. 3,417,958, 12–24–68, Cl. 249—40.
Rumsey, Joseph F., Jr. Attachment for dryers or the like. 3,417,481, 12–24–68. Cl. 34—72.
Rumsey, Rollin D., to Houdaille Industries, Inc. Rotary actuator assemblies for restricted diameter uses. 3,417,665, 12–24–68, Cl. 91—177.
Rumsey, Rollin D., to Houdaille Industries, Inc. Rotary actuator control circuit means. 3,417,669, 12–24–68, Cl. 91—421.
Rumsey, Rollin D., to Houdaille Industries, Inc. Rotary actuator assemblies for restricted diameter uses. 3,417,806, 12–24–68, Cl. 160—188.
Rumsey, Thomas R.: *See*—
Stevenson, Billy E., and Rumsey. 3,417,671.

Rupert, Samuel J., to Hoover Ball and Bearing Co. Apparatus for trim finishing blow molded containers. 3,417,428, 12–24–68, Cl. 18—5.

Ruppert, Heinrich: *See*—
Krimm, Heinrich, Ruppert, and Schnell. 3,418,371.

Russell, Joseph L., to Halcon International Inc. Process for producing propiyene oxide. 3,418,340, 12–24–68, Cl. 260—348.5.

Rutemiller, Herbert C., to Aluminum Co. of America. Galvanic anode and aluminum alloy therefor. 3,418,230, 12–24–68, Cl. 204—197.

Rutt Machinery Works Ltd.: *See*—
Freihofer, Alexis. 3,417,793.

Rutland, David F., M. S. Schlosser, and R. E. Lagerquist, to Spatial Data Systems, Inc. Three-dimensional wire plotter. 3,417,492, 12–24–68, Cl. 35—24.

Rutschi, Kurt: *See*—
Brockel, Gerhard R., Hug, and Rutschi. 3,417,916.

Ryan, John W., D. H. Meggs, and R. E. Hulse, to Mattel, Inc. Projectile-firing toy. 3,417,507, 12–24–68, Cl. 46—202.

Ryckman, William D., Jr., to General Electric Co. Electric bedcover overtemperature control system. 3,418,454, 12–24–68, Cl. 219—504.

Ryder, Francis E., to Illinois Tool Works, Inc. Liquid level indicator. 3,417,614, 12–24–68, Cl. 73—327.

Ryder, Francis E., to Illinois Tool Works, Inc. Liquid level indicator. 3,417,615, 12–24–68, Cl. 73—327.

Ryon, Richard M., Jr.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.

Ryser, Gottlieb: *See*—
Rüegg, Rudolf, and Ryser. 3,418,355.

SCM Corp.: *See*—
Clark, Clayton H., and Stefanik. 3,417,690.
Hatcher, Harry R. 3,418.104.
Hatcher, Harry R., and Holtzman. 3,418,105.

S-P Mfg. Corp., The: *See*—
Sampson, Merritt B. 3,417,672.

Sabatella, Robert J.: *See*—
Jacobs, Lewis W., and Sabatella. 3,418,536.

Sabulsky, Anthony J., and R. H. Pote, to Ultronic Systems Corp. Quotation board system. 3,418,635, 12–24–68, Cl. 340—154.

Sakai, Sumio, J. Sugayama, G. Saito, T. Kamasuka, S. Takada, and T. Takano, to Kaken Kagaku Kabushiki Kaisha. Polysaccharide and the preparation thereof. 3,418,311, 12–24–68, Cl. 260—209.

St. Louis, Robert V., J. G. Whiten, and N. T. Sprouse, to United States Borax Chemical Corp. Method for producing boric oxide. 3,418,244, 12–24–68, Cl. 252—188.3.

Saito, Gosaku: *See*—
Sakai, Sumio, Sugayama, Saito, Kamasuka, Takada, and Takano. 3,418,311.

Saito, Muneki: *See*—
Suzukawa, Yuichi, Kanoo, Miyazaki, and Saito. 3,417,978.

Salem-Brosius, Inc.: *See*—
Heard, Harold R. 3,417,858.

Samejima, Yasuro: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Oono. 3,418,395.

Sampson, Merritt B., to The S-P Mfg. Corp. Rotary hydraulic cylinder. 3,417,672, 12–24–68, Cl. 92—106.

Sanders, Frank K., to National Research Development Corp. Hamster ascites tumor cell line BHK 21/C.13/T.6/ascites useful in submerged serum-free agar cultures to support virus growth. 3,418,210, 12–24–68, Cl. 195—1.8.

Sandoz Ltd.: *See*—
Boissonnas, Roger, and Huguenin. 3,418,307.
Buecheler, Paul. 3,418,064.
Buecheler, Paul. 3,418,342.
Ischer, Hans, and Siegrist. 3,418,308.

Sanford, William W. Method of manufacturing piezoelectric crystal assemblies. 3,417,449, 12–24–68, Cl. 29—25.35.

Sandmore, Donald K., and G. O. Stegner, to Western Electric Co., Inc. Wire heading mechanism. 3,417,600, 12–24–68, Cl. 72—437.

Sands, Charles L. Reusable pressurized dispensing device. 3,417,901, 12–24–68, Cl. 222—95.

Sano, Kazuya: *See*—
Kimura, Shiro, Yoshida, and Sano. 3,418,129.

Sargeant, Herb G., to E. I. du Pont de Nemours and Co. Process for chlorinating titaniferous ores. 3,418,074, 12–24–68, Cl. 23—87.

Saunders, William T., to National Steel Corp. Formation of wrap-around-edge tab handle. 3,417,595, 12–24–68, Cl. 72—354.

Saurer, Adolph, Ltd.: *See*—
Gattiker, Ernst. 3,417,791.

Sauter, John D., and K. L. Daggs, to The Clark Controller Co. Current control circuit including phase shift means for selective firing of a phase controlled switch means. 3,418,497, 12–24–68, Cl. 307—252.

Sauterel, Gerard, to Matisa Materiel Industriel S.A. Apparatus for lining a railroad track. 3,417,708, 12–24–68, Cl. 104—8.

Savage, David W., M. G. Lorenz, and W. J. Asher, to Esso Research and Engineering Co. Molecular sieve separation process. 3,418,235, 12–24–68, Cl. 208—310.

Savannah Sugar Refining Corp.: *See*—
Jones, Benjamin B., Jr. 3,417,543.

Saxon, Arthur F., to Blaw-Knox Co. Desolventizer including a stationary vessel and rotating agitator-conveyer. 3,417,485, 12–24–68, Cl. 34—182.

Sayigh, Adnan A. R.: *See*—
Foster, Ebenezer A. T., Sayigh, and Tilley. 3,418,370.

Schaedel, Fred C., to Murdock, Inc. Aluminum anodizing method. 3,418,222, 12–24–68, Cl. 204—58.

Schaefer, Johannes M., to Technipower Inc. Voltage control system involving timed energization of a pair of power handling transistors. 3,418,557, 12–24–68, Cl. 321—18.

Schaefer, William R.: *See*—
Marino, Joseph, and Schaefer. 3,418,543.

Schaeffer, John I., to Thiokol Chemical Corp. Rocket motor propellant injection system. 3,417,772, 12–24–68, Cl. 137—81.5.

Schafer, Eberhard: *See*—
Siefert, Roland, and Schafer. 3,418,503.

Schatz, Gunther: *See*—
Gemeinhardt, Hermann, Schatz, and Brucher. 3,417,445.

Schaub, Heinz P.: *See*—
Ulrich, Paul, and Schaub. 3,418,063.

Scheckner, Seymour: *See*—
Douglas, Arthur J., and Scheckner. 3,417,935.

Schell, Gene P.: *See*—
Stalmach, Charles J., Jr., and Schell. 3,418,445.

Schenck, Remsen T. E., to Keystone Chemurgic Corp. Hydrated magnesium aluminate containing bound sulfate and processes for preparing same. 3,418,087, 12–24–68, Cl. 23—315.

Schering, A. B.: *See*—
Prezewowsky, Klaus, Neumann, and Wiechert. 3,418,415.

Scheublein, William A., Jr., and L. P. Fister, to Moog Industries, Inc. Wear-compensating ball joints. 3,418,011, 12–24–68, Cl. 287—87.

Scheurlen, Hans: *See*—
Wagner, Kuno, Scheurlen, and Kritzler. 3,418,271.

Schlecht, Karl. Mixing and dellvering apparatus. 3,417,968, 12–24–68, Cl. 259—7.

Schlegel, Herbert, and P. Kummel, to Telefunken Patentverwertungsgesellschaft m.b.H. Removable protective cover for television having a tinted portion in the screen area. 3,418,426, 12–24–68, Cl. 178—7.82.

Schlitz, Jos. Brewing Co.: *See*—
Bayne, Peter D. 3,418,135.
Bayne, Peter D., and Kozulls. 3,418,136.

Schlosser, Miles S.: *See*—
Rutland, David F., Schlosser, and Lagerquist. 3,417,492.

Schmid, August, to Patentverwertungs- und Finanzierungsgesellschaft Serania A.G. Aligning and transorting mechanism for cableless bowling pin setting machines. 3,417,992, 12–24–68, Cl. 273—43.

Schmidt, Karl H., A. Weber, D. Rowe, and J. B. Brinker, to Interchemical Corp. Method of making polyesters under reduced pressure. 3,418,286, 12–24–68, Cl. 260—75.

Schmidt, Karl H., and B. Bildat; said Bildat assor. to said Schmidt. Electric control means for synchronized gear shifting in motor vehicle variable speed gear boxes. 3,417,640, 12–24–68, Cl. 74—866.

Schmidt, Siegfried, to North American Philips Co. Device for obtaining mechanical material deformations by means of compression waves. 3,417,588, 12–24–68, Cl. 72—56.

Schmidt, Wolfgang, to North American Philips Co., Inc. Magnetron having diverse size resonators. 3,418,523, 12–24–68, Cl. 315—39.65.

Schmitt, Helmut, to P. Gossen & Co. G.m.b.H. Exposure indication circuit for electronic shutter devices. 3,418,479, 12–24–68, Cl. 250—206.

Schmitt, Johannes: *See*—
Moser, Erwin, and Schmitt. 3,417,677.

Schmitt, John G. Tube bending mandrel. 3,417,602, 12–24–68, Cl. 72—466.

Schmitt, Karl, J. Disteldorf, and W. Hubel, to Scholven-Chemie Aktiengesellschaft. Preparation of trimethylhexamethylenediamine. 3,418,375, 12–24–68, Cl. 260—583.

Schnabel, Ernst. Assembly of tubes of different coefficients of thermal expansion. 3,417,786, 12–24–68, Cl. 138—140.

Schneider, Joachim: *See*—
Schwarz, Hanshelmut, Schneider, Schnell, and Immel. 3,418,314.

Schnell, Hermann: *See*—
Krimm, Heinrich, Ruppert, and Schnell. 3,418,371.
Schwarz, Hanshelmut, Schneider, Schnell, and Immel. 3,418,314.

Schnorr, Charles G.: *See*—
Purdy, William C., and Schnorr. 3,418,459.

Schoenthaler, Arnold C., to E. I. du Pont de Nemours and Co. Polymers and their reparation. 3,418,295, 12–24–68, Cl. 260—80.72.

Scholtis, Walter E., S. Ploch, and H. W. Zschunke, to Forschungsinstitut fur Textil-Technologie. Method of making textile fabric on sewing-knitting machines. 3,417,580, 12–24–68, Cl. 66—120.

Scholven-Chemie Aktiengesellschaft: *See*—
Schmitt, Karl, Disteldorf, and Hubel. 3,418,375.

Schonfelder, Max, P. Zuppiger, and G. Bouladon, to Spencer (Melksham) Ltd. Valve for neumatic floating means. 3,417,878, 12–24–68, Cl. 214—1.

Schoenhuber, Max J., and K. W. Kanngiesser, to Aktiengesellschaft Brown, Boveri & Cie. Mercury arc rectifier with multile grid structure. 3,418,511, 12–24–68, Cl. 313—167.

Schott, Norman, to Rotor Electric Co., Ltd. Combination car heater and battery charger. 3,418,450, 12–24–68, Cl. 219—279.

Schultz, Darald R. Space panels. 3,417,505, 12–24–68, Cl. 46—16.

Schultz, Eugene L., to Dade Reagents, Inc. Flow cell construction with delivery nad discharge means. 3,418,061, 12–24–68, Cl. 356—246.

Schultz, Thomas E., to Minnesota Mining and Mfg. Co. Die for forming retro-reflective article. 3,417,959, 12–24–68, Cl. 249—117.

Schulz, Johann G. D., A. C. Whitaker, and P. Winteler, to Gulf Research & Development Co. Esterification in the presence of alkanoic acid amides. 3,418,360, 12–24–68, Cl. 260—475.

Schulze, Reinhard F. K., E. H. Brede, and E. Thebis, to Continental Elektroindustrie A.G. Askania-werke. Method and apparatus for gravity measurements. 3,417,621, 12–24–68, Cl. 73—382.

Schuman, Seymour C.: *See*—
Chervenak, Michael C., and Schuman. 3,418,234.

Schuplin, Jerome T., to Tinnerman Products, Inc. Deformable polymeric fastening device. 3,417,438, 12–24–68, Cl. 24—73.

Schwartz, Morris, and E. K. Karelian. Method of cumulatively recording intelligence on a record cord. 3,418,119, 12–24–68, Cl. 96—27.

Schwartzman, Gilbert. Pressure operated applicator and cap construction. 3,418,055, 12–24–68, Cl. 401—206.

Schwarz, Hanshelmut, J. Schneider, H. Schnell, and O. Immel, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of lactams. 3,418,314, 12–24–68, Cl. 260—239.3.

Schwebel, Irving, to Lake Park Machinery, Inc. Forming device for bun making machine. 3,417,713, 12–24–68, Cl. 107—4.

Schweiger, Josef, to Shell Oil Co. Containers with squeezed bottom seam. 3,417,892, 12–24–68, Cl. 215—1.

Schwindy, Robert C., to Ethyl Corp. Method and apparatus for interfusing thermoplastic material. 3,417,970, 12–24–68, Cl. 259—7.

Scott, John E.: *See*—
Carter, Jack, Cuniberti, and Scott. 3,418,099.

Searle, G. D., & Co.: *See*—
Brown, Edward A. 3,418,344.

Secrest Mfg. Co.: *See*—
Secrest, Ralph T. 3,417,929.

Secrest, Ralph T., to Secrest Mfg. Co. Comminuting pumps. 3,417,929, 12–24–68, Cl. 241—46.04.

Seckerson, Clifford A., to United-Carr Inc. Fastener for securing moulding to a stud on a support. 3,417,439, 12–24–68, Cl. 24—73.

Sedlock, Stephen P. Flashlight with supporting clamp. 3,418,461, 12–24–68, Cl. 240—52.5.

Seefluth, Charles L., to Phillips Petroleum Co. Method of heating parison preforms. 3,418,398, 12–24–68 Cl. 263—52.

Seefore Corp.: *See*—
Andrews Thomas I. 3,417,765.

Sildel, Martin P., F. L. W. Norton, and E. C. Wentz, to Westinghouse Electric Corp. Method of making a winding for an electrical inductive apparatus. 3,417,466, 12–24–68, Cl. 29—605.

Seismograph Service Corp.: *See*—
Anstey, Nigel A. 3,418,625.

Seitz, Russell. Method for producing yttrium aluminate crystals. 3,418,071, 12–24–68, Cl. 23—22.

Sejda, Henry J., to Cee-Kay Industries, Inc. Apparatus for wrapping elongate articles with tape. 3,418,358, 12–24–68, Cl. 156—468.

Sergienko, Alexander, to Burroughs Corp. Bath for the electroless deposition of palladium. 3,418,143, 12–24–68, Cl. 106—1.

Service (Engineers) Ltd.: *See*—
Meadows, Frank W., and Podmore. 3,418,412.

Shaikh, Mohammed S.: *See*—
Amsterdam, Michael F., Shaikh, and Tarneja. 3,418,170.

Shakely, Howard W., deceased (by C. E. Shakely, executrix), to The Stanley Works. Coil tightening apparatus. 3,417,688, 12–24–68, Cl. 100—8.

Shaver, William R.: *See*—
Stretch, Arnold, and Shaver. 3,417,876.

Shawinigan Chemicals Ltd.: *See*—
MacNaughton, John D., and Ornstein. 3,418,378.

Shea, John H. Writing instrument with convertible cartridge. 3,418,057, 12–24–68, Cl. 401—209.

Sheldon, Edward E. Fiber endoscope provided with focusing means and electroluminescent means. 3,417,745, 12–24–68, Cl. 128—6.

Sheldon, Stewart L. Photographic system for three-dimensional projection. 3,418,044, 12–24–68, Cl. 353—81.

Shell Oil Co.: *See*—
Chedron, Harald H. O., Obse, Palm, Draber, Falbe, and Korte. 3,418,291.
Ewers, Johannes W. 3,417,678.
Greene, Charles R., and Brown. 3,418,351.
Jennings, Thomas J., and Williams. 3,418,381.
Moore, John P. 3,417,817.
Schweiger, Josef. 3,417,892.
Ter Haar, Leonard W. 3,418,082.
Thompson, Donald W. 3,417,548.
Warren, Daniel. 3,418,333.
Yates, John, and Haddock. 3,418,331.

Shelton, Leonard, to Continent Egg Corp. Egg breaking and separating apparatus. 3,417,798, 12–24–68, Cl. 146—2.

Shepard, Alvin F., and B. F. Dannels, to Hooker Chemical Corp. Phenyl titanium esters and preparations thereof. 3,418,348, 12–24–68, Cl. 260—429.5.

Sheppard, Chester S.: *See*—
MacLeay, Ronald E., and Sheppard. 3,418,294.

Sherron, Charles E., ¼ to L. J. Cook. Slidable closure panel construction for walled structures. 3,417,509, 12–24–68, Cl. 49—130.

Sherwood, Henry A., to Electra Associates. Turntable for phonograph records. 3,418,000, 12–24–68, Cl. 274—39.

Shimamura, Takeshi: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Oono. 3,418,395.

Shin-etsu Chemical Industry Co., Ltd., The: *See*—
Adachi, Nobuyuki. 3,418,162.
Teraoka, Shoichi. 3,417,433.

Shinn, Ernest R., ½ to R. M. Bencur. Power wrench for tightening studs in engine blocks and the like. 3,417,641, 12–24–68, Cl. 81—53.

Shinskey, Francis G., and J. R. Louis, to The Foxboro Co. Once-through boiler control system. 3,417,737, 12–24–68, Cl. 122—448.

Shinskey, Francis G., to The Foxboro Co. Current selection and limiting circuits. 3,418,486, 12–24–68, Cl. 307—62.

Shiyakhter, Isaak A., B. N. Krupin, and R. I. Gismatullin. Funnel of flexible stethoscope for mediate auscultation. 3,417,838, 12–24–68, Cl. 181—24.

Shorrock, Christopher, to Rubery Owen & Co., Ltd. Throttle valves. 3,417,961, 12–24–68, Cl. 251—212.

Short, Ronald G., to International Business Machines Corp. Pulse converter using strip line directional couplers. 3,418,654, 12–24–68, Cl. 340—347.

Shozda, Raymond J., to E. I. du Pont de Nemours and Co. Sulfuryl halides and process. 3,418,088, 12–24–68, Cl. 23—357.

Shozda, Raymond J., to E. I. du Pont de Nemours and Co. Fluorinated acyl azides. 3,418,341, 12–24–68, Cl. 260—349.

Shrewsbury, Raymond W., to Minnesota Mining and Mfg. Co. Crazable translucent record member. 3,418,457, 12–24–68, Cl. 235—61.12.

Shriver, George H.: *See*—
Jones, Frank D., Shriver, and Harrington. 3,417,556.

Shull, John W.: *See*—
Nance, Roy A., and Shull. 3,417,610.

Shur-Lok Corp.: *See*—
Rohe, Frederick W., and Phelan. 3,417,803.

Siebert, Karl: *See*—
Ackermann, Karl. 3,418,258.

Siefert, Roland, to Kienzle Uhrenfabriken G.m.b.H. Schwenningen am Neckar. Device for converting tuning fork vibration to rotary motion. 3,417,632, 12–24–68, Cl. 74—142.

Siefert, Roland, and E. Schafer, to Kienzle Uhrenfabriken G.m.b.H. Oscillating motor for electric clock. 3,418,503, 12–24–68, Cl. 310—39.

Siegrist, Hans: *See*—
Ischer, Hans, and Siegrist. 3,418,308.

Siemens Aktiengesellschaft: *See*—
Dotzer, Richard. 3,418,216.
Hoffmann, Helmut. 3,418,437.
Lob, Udo, and Martin. 3,417,458.
Muller, Rudolf, and Gurs. 3,418,476.

Sigl, Paul F., to Eastman Kodak Co. Means for holding and periodically advancing a strip of film or the like. 3,418,042, 12–24–68, Cl. 353—18.

Signetics Corp.: *See*—
Suverkropp, Claus P. J., and Bodine. 3,417,865.

Silver, Amy S. Hair curling device. 3,417,700, 12–24–68, Cl. 132—40.

Silverstein, Ronald M., and C. A. Bishof, to Betz Laboratories, Inc. Corrosion inhibiting aqueous amino dispersion emulsified with an ethoxylated amide. 3,418,253, 12–24–68, Cl. 252—392.

Silverstein, Ronald M.: *See*—
Bishof, Chester A., and Silverstein. 3,418,254.

Simm, Walter, O. Koch, and G. Taterra, to Farbenfabriken Bayer Aktiengesellschaft. Apparatus for developing a latent electrostatic image with a liquid aerosol. 3,417,734, 12–24–68, Cl. 118—637.

Simm, Walter: *See*—
Menold, Richard, Heyl, and Simm. 3,418,115.

Simon, Harold C., and B. V. Gerber, to Westinghouse Electric Corp. Compact high voltage supply. 3,418,526, 12–24–68, Cl. 315—205.

Simplimatic Engineering Co.: *See*—
Englander, Robert A. 3,417,973.

Sinclair Research, Inc.: *See*—
Hearn, Daniel P. 3,418,568.
Muskat, Irving E. 3,418,292.

Sindlinger, Norman E., to Ametek, Inc. Bearing. 3,417,984, 12–24–68, Cl. 267—1.

Sink, Larry W., to United Aircraft Corp. Method of casting directionally solidified articles. 3,417,809, 12–24–68, Cl. 104—127.

Sipress, Jack M., and E. Zarins, to Bell Telephone Laboratories, Inc. Error detection in paired selected ternary code trains. 3,418,631, 12–24–68, Cl. 340—146.1.

Sisler, Harry H., to W. R. Grace & Co. Phosphonitrile compositions and methods. 3,418,366, 12–24–68, Cl. 260—551.

Siwko, Ireneusz, to Fenwal Inc. Condition responsive control circuit with adjustable proportioning band. 3,418,540, 12–24–68, Cl. 317—153.

Skaletzky, Louis L.: *See*—
Robert, Andre, and Skaletzky. 3,418,329.

Skinner, David L., and D. J. Peterson, to The Procter & Gamble Co. Process for preparing 1-lithium-1-alkynes. 3,418,385, 12–24–68, Cl. 260—665.

Skinner, Robert T. J., to Joseph Lucas (Industries) Ltd. Liquid displacement pumps. 3,417,705, 12–24–68, Cl. 103—97.

Skipper, George J.: *See*—
Mandula, Joseph M., Judd and Skipper. 3,418,567.

Skolds, Lawrence T.: *See*—
Edman, Clarence E., Kelly, Murphy, and Skolds. 3,417,981.

Slater, Raymond W., and G. R. and L. Bryant. Telescoping and longitudinally adjustable crutch. 3,417,765, 12–24–68, Cl. 135—50.

Sloan, Cephas H., and B. J. Sublett, to Eastman Kodak Co. Filter elements and additives therefor. 3,417,758, 12–24–68, Cl. 131—266.

Smart, Desmond, to International Research & Development Co. Ltd. Ophthalmoscopes. 3,417,754, 12–24–68, Cl. 128—395.

Smelcer, Glen E., to International Harvester Co. Loader linkage. 3,417,891, 12–24–68, Cl. 214—778.

Smith, A. O., Harvestore Products, Inc.: *See*—
Broberg, Leonard E. 3,417,880.
Landphair, Donald R. 3,417,900.

Smith, A. O., Corp.: *See*—
Cedel, Richard A. 3,417,612.
Wasson, Loerwood C. 3,417,768.

Smith, Ernest D. Telescoping motorscooter. 3,417,834, 12–24–68, Cl. 180—33.

Smith, Francis M., and P. L. Terwilliger, to Gulf Research & Development Co. Well completion tool. 3,417,827, 12–24–68, Cl. 175—4.52.

Smith, Harry A., and W. K. Carrington, to The Dow Chemical Co. Thermally stable amino-substituted aromatic aldehyde resins and process of making same. 3,418,281, 12–24–68, Cl. 260—72.5.

Smith, Herchel: *See*—
Buzby, George C., Jr., and Smith. 3,418,326.
Buzby, George C., Jr., and Smith. 3,418,327.

Smith, Herchel
Strike, Donald P., and Smith. 3,418,343.

Smith, Howard J. L., to Dzus Fastener Co., Inc. Quick release fasteners. 3,417,441, 12–24–68, Cl. 24—221.

Smith, Howard J. L., to Dzus Fastener Co., Inc. Quick release fasteners. 3,417,442, 12–24–68, Cl. 24—221.

Smith Kline & French Laboratories: *See*—
Dunn, George L., and Hoover. 3,418,368.
Goonewardene, Hilary F., and Loev. 3,418,362.

Smith, Merritt B.: *See*—
Van Lanen, James M., and Smith. 3,418,211.

Smith, Perrin F.: *See*—
Hildebrand, Jack O., Mulvany and Smith. 3,417,680.

Smith, Robert D., to E. I. du Pont de Nemours and Co. Heat exchanger apparatus with a novel by-passing arrangement for shellside flow. 3,417,812, 12–24–68, Cl. 165—1 .

Smith, S., & Sons (England) Ltd.: *See*—
Majendie, Alastair M. A. 3,418,458.

Smith, Shelby R. Capacitive measuring probe and circuit therefor. 3,418,597, 12–24–68, Cl. 331—65.

Smith, William A. Device for measuring degree days and B.t.u.'s. 3,417,616, 12–24–68, Cl. 73—339.

Snyder, David E.: *See*—
Blank, Robert J., and Snyder. 3,417,971.

Societe Anonyme dite: Lincrusta: *See*—
Riboud, Pierre-Jean. 3,417,418.

Societe d'Etudes, de Recherches et d'Applications pour l'Industrie S.E.R.A.I.: *See*—
Piret, Jean. 3,418,072.

Soderhamns Verkstader Aktiebolag: *See*—
Heroif, Kjell O. G., Johnsson, and Mellgren. 3,417,860.

Soffer, Bernard H., to Union Carbide Corp. Q-switching dye solution for light control of giant pulse lasers. 3,418,599, 12–24–68, Cl. 331—94.5.

Soliott, Gilbert P., and W. R. Peterson, Jr., to United States of America, Army. Ferrocene derivatives of phosphorus. 3,418,350, 12–24–68, Cl. 260—439.

Solomon, James E., and G. R. Wilson, to Motorola, Inc. Direct coupled amplifier with temperature compensating means. 3,418,592, 12–24–68, Cl. 330—23.

Song, John S.: *See*—
Bozek, John S., and Song. 3,417,898.

Sonoco Products Co.: *See*—
Hawkins, Willard S. 3,417,940.

Sophie Mae Candy Corp. of Georgia: *See*—
Coppedge, John B. 3,417,714.

Sorensen, Karl-Otto: *See*—
Christoffersen, Christen, and Sorensen. 3,418,159.

Sorenson, Paul H.: *See*—
Bjornsen, Bjorn G., Lechner, and Sorenson. 3,417,769.

Soriente, Alfonse J., to Union Tank Car Co. Deaerating heater. 3,417,736, 12–24–68, Cl. 122—406.

Sousa, Anthony A.: *See*—
Arnold, Donald R., and Sousa. 3,418,330.

Sparacio, Francis J.: *See*—
Anderson, David W., Conti, Sparacio, and Tomasulo. 3,418,638.

Sparado, Bernardus M.: *See*—
Konijnenberg, Johan, and Sparado. 3,418,551.

Sparks, Ned T. Electrically heated dough raising oven. 3,418,453, 12–24–68, Cl. 219—400.

Sparling, Jack. Diagonally reinforced hollow building block. 3,417,533, 12–24–68, Cl. 52—589.

Spatial Data Systems, Inc.: *See*—
Rutland, David F., Schlosser, and Lagerquist. 3,417,492.

Spencer (Melksham) Ltd.: *See*—
Schonfelder, Max, Zuppiger, and Bouladon. 3,417,878.

Spergel, Philip, J. V. Di Rocco, and R. P. Grenier, to Baird-Atomic, Inc. Panoramic radiation detector having a multiplicity of isolated gas chambers. 3,418,474, 12–24–68, Cl. 250—83.6.

Sperry Rand Corp.: *See*—
Hofferber, Henry E. 3,418,490.
Nolt, Edwin B. 3,418 015.
Nolt, Edwin B., and Eby. 3,418,014.
Oberg, Paul E., and Tolman. 3,418,168.
Yee, Seening. 3,418,589.

Spielberg, Nathan, and J. Ladell, to North American Philips Co., Inc. Method of generating an X-ray beam composed of a plurality of wavelengths. 3,418,467, 12–24–68, Cl. 250—51.5.

Spielman, Lyle S., and E. E. Moore, to Eclipse Fuel Engineering Co. Nozzle mixing gas burner. 3,418,060, 12–24–68, Cl. 431—158.

Spindle, Harvey E., to Westinghouse Electric Corp. High voltage current measuring device employing means responsive to the electromagnetic field generated by the current. 3,418,573, 12–24–68, Cl. 324—117.

Spivey, Ben E., to The Dow Chemical Co. Ethylene haloethyl ester copolymers. 3,418,301, 12–24–68, Cl. 260—86.7.

Springer, Edward M., to Heyer Inc. Sheet guiding mechanism. 3,417,988, 12–24–68, Cl. 271—19.

Sprouse, Norman T.: *See*—
St. Louis, Robert V., Whiten, and Sprouse. 3,418,244.

Sprung, Abraham. Parking space barrier. 3,417,508, 12–24–68, Cl. 49—35.

Staats, Henry N., and M. D. Levitan. Spin fastened anchor. 3,417,653, 12–24–68, Cl. 85—63.

Stagecraft Corp.: *See*—
Jaffe, John C. 3,417,518.

Staller, Morris. Remotely operated data recording system with rotatable card magazine. 3,418,430, 12–24–68, Cl. 179—2.

Stalmach, Charles J., Jr., and G. P. Schell, to LTV Aerospace Corp. Apparatus for supplying high energy gas streams to a wind tunnel. 3,418,445, 12–24–68, Cl. 219—121.

Standard Alliance Industries, Inc.: *See*—
Czarnecki, Adolph. 3,417,885.

Standard Oil Co., The: *See*—
Ball, Lawrence E. 3,418,406.
Fitzgibbons, William O. 3,418,212.

Standard Pressed Steel Co.: *See*—
Kull, Francis R. 3,417,427.

Stankevicius, Algimantus K.: *See*—
Rich, Anthony J., and Stankevicius. 3,418,650.

Stanley Aviation Corp.: *See*—
Valentine, Gordon A. 3,417,947.

Stanley Works, The: *See*—
Shakely, Howard W. 3,417,688.

Stapp, Paul R., to Phillips Petroleum Co. Adducts of bicyclo-3,3,0-octenes. 3,418,384, 12–24–68, Cl. 260—648.

Stark, Ernest H., to Barber-Colman Co. Method of and means for cooling semiconductor devices. 3,417,575, 12–24–68, Cl. 62—119.

Staudenmayer, William J.: *See*—
Perry, Edmond S., and Staudenmayer. 3,418,158.

Staudenmayer, William J., and E. S. Perry, to Eastman Kodak Co. Method of making a chromatographic element containing a resinous binder and product produced thereby. 3,418,152, 12–24–68, Cl. 117—63.

Stauffer Chemical Co.: *See*—
Christe, Karl O., and Pavlath. 3,418,356.

Staunton, John J. J., to The Perkin-Elmer Corp. Monochromator system with selective diffraction grating system. 3,418,051, 12–24–68, Cl. 356—101.

Steel Heddle Mfg. Co.: *See*—
Kaufmann, Frank H. 3,417,787.
Kramer, Charles F. 3,417,788.

Stefanik, Donald J.: *See*—
Clark, Clayton H., and Stefanik. 3,417,690.

Stegner, Gustav O.: *See*—
Sandmore, Donald K., and Stegner. 3,417,600.

Stehlin, Theodore A. Piston and manual operated reciprocating valve. 3,417,960, 12–24–68, Cl. 251—14.

Stein, Theodore W.: *See*—
Gilman, Harold, Stein, and Whitten. 3,418,338.

Steinthal, M., & Co. Inc.: *See*—
Jantzen, George. 3,418,007.

Stelzer, William, to Kelsey-Hayes Co. Pressure metering valve. 3,418,024, 12–24–68, Cl. 303—6.

Stephens, Curtis W., to E. I. du Pont de Nemours and Co. Aromatic polyamides from N,N'-diphenyl diamines. 3,418,275, 12–24–68, Cl. 260—47.

Sterman, Samuel: *See*—
Marsden, James G., and Sterman. 3,418,094.

Stern, Peter, to Metal Edge Industries. Box construction. 3,417,909, 12–24–68, Cl. 229—15.

Sternberg, James C., to Beckman Instruments, Inc. Electrical discharge detectors for gas chromatography. 3,418,514, 12–24–68, Cl. 313—231.

Stevens, J. P., & Co., Inc.: *See*—
Lynch, Thomas G., and Dietrich. 3,417,794.

Stevens, John, and G. F. Duffin, to Minnesota Mining and Mfg. Co. Nonsensitizing triazolonyrimidine antifoggants for silver halide emulsions. 3,418,130, 12–24–68, Cl. 96—109.

Stevenson, Billy E., and T. R. Rumsey, to Royal Industries, Inc. Motor vehicle braking apparatus. 3,417,671, 12–24–68, Cl. 92—62.

Stieber, Wolfgang R., to The Mosler Safe Co. Lockable receiver for pneumatic tube conveying systems. 3,417,941, 12–24–68, Cl. 243—16.

Stile-Craft Manufacturers, Inc.: *See*—
Gregg, Eric. 3,417,781.

Stoffel, Paul J., to Monsanto Co. Process for the preparation of substituted parabanic acids. 3,418,334, 12–24–68, Cl. 260—309.5.

Stone, Joseph K., to Kaiser Industries Corp. Method for producing steel by an oxygen lance. 3,418,109, 12–24–68, Cl. 75—60.

Strachan, Richard W., to Texas Instruments Inc. Protective apparatus for a forced air cooling system. 3,418,531, 12–24–68, Cl. 317—41.

Straley, James M.: *See*—
Dale, John I., Weaver, and Straley. 3,418,310.

Stretch, Arnold L., and W. R. Shaver, to Pullman Inc. Coupler carrier. 3,417,876, 12–24–68, Cl. 213—60.

Strike, Donald P., and H. Smith, to American Home Products Corp. 4-alkyl-13β-alkylgon-4,9-dienes. 3,418,343, 12–24–68, Cl. 260—397.5.

Stromberg-Carlson Corp.: *See*—
Corpew, Charles R. 3,418,517.

Strosberg, Gordon G.: *See*—
Igras, Raymond A., and Strosberg. 3,418,233.

Strosnik, Joseph A.: *See*—
Mlot-Fijalkowski, Adolf, and Strosnik. 3,418,078.

Stuart, Clifton F. Implement hitch for tractors and loaders. 3,417,886, 12–24–68, Cl. 214—145.

Stuckert, Paul E.: *See*—
Fyfe, Thomas A., and Stuckert. 3,418,641.

Stucky, Elmer F., to Centour, Inc. Air conditioner. 3,417,576, 12–24–68, Cl. 62—244.

Studley Paper Co.: *See*—
Fesco, John J. 3,417,550.

Stynes, James A., to National Lead Co. Gels of organic compounds of irconium and process for forming same. 3,418,251, 12–24–68, Cl. 252—316.

Sublett, Bobby J.: *See*—
Sloan, Cephas H., and Sublett. 3,417,758.

Sudhoff, Otto E. Power rake for removing dead grass in lawns. 3,417,554, 12–24–68, Cl. 56—27.

Sugayama, Junichi: *See*—
Sakai, Sumio, Sugayama, Saito, Kamasuka, Takada, and Takano. 3,418,311.

Suits, James C.: *See*—
Holtzberg, Frederic, Methfessel, and Suits. 3,418,036.

Sullivan, Robert J., to Westinghouse Electric Corp. Voltage regulating relay. 3,418,539, 12–24–68, Cl. 317—142.

Sulzer Brothers Ltd.: *See*—
Brockel, Gerhard R., Hug, and Rutschi. 3,417,916.
Pfarrwaller, Erwin. 3,417,790.

Sumitome Chemical Co. Ltd.: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Ono. 3,418,395.

Summers, Charles G., and R. L. Wright, to Monsanto Co. Preparation of aromatic diamine mixtures. 3,418,373, 12–24–68, Cl. 260—576.

Sunbeam Corp.: *See*—
Cousina, Otto J., Ritter, and Supel. 3,417,469.

Supel, Ignacy: *See*—
Cousina, Otto J., Ritter, and Supel. 3,417,469.

Surko, Walter E., Jr.: *See*—
Binnali, Thomas J., and Surko. 3,417,437.

Sutherns, Edward A., to Eastman Kodak Co. Process for preparing direct-positive images with photodevelopable direct-print silver halide compositons. 3,418,125, 12–24–68, Cl. 96—04.

Suverkropp, Claus P. J., and C. M. Bodine, to Signetics Corp. Flat package carrier block and assembly. 3,417,865, 12–24–68, Cl. 206—46.

Suzukawa, Yuichi, H. Kanoo, H. Miyazaki, and M. Saito, to Ube Industries, Ltd. Method and apparatus for the gasification and combustion of liquid fuel in a fluidized bed. 3,417 978, 12–24–68, Cl. 263—21.

Swanson, James P., to Twin Disc Clutch Co. Actuating system for multi-ratio transmission. 3,417,845, 12–24–68, Cl. 192—87.19.

Swanson, Wilford A. Kitchen sink rotary appliance. 3,417,799, 12–24–68, Cl. 146—50.

Sweet, Richard C.: *See*—
Bronnes, Robert L., Sweet, and Hughes. 3,418,423.

Sweetheart Plastics, Inc.: *See*—
Fong, Gim P. 3,417,862.

Swick, Edwin G.: *See*—
Wronke, Louis J., and Swick. 3,417,731.

Swiss Aluminum Ltd.: *See*—
Moser, Erwin, and Schmitt. 3,417,677.

Sylvania Electric Products Inc.: *See*—
Knutrud, Thorleif, and Wise. 3,418,477.
Loewenstern, Walter, Jr. 3,418,595.

Szohatzky, Zoltan: *See*—
Zahuranec, Emery J., and Szohatzky. 3,417,594.

TRW Inc.: *See*—
Davies, Paul M. 3,418,642.

Tabet, Michael A. Relay with chatter preventing shunting circuit. 3,418,537, 12–24–68, Cl. 317—123.

Takada, Shoichi: *See*—
Sakai, Sumio, Sugayama, Saito, Kamasuka, Takada, and Takano. 3,418,311.

Takano, Toslo: *See*—
Sakai, Sumio, Sugayama, Saito, Kamasuka, Takada, and Takano. 3,418,311.

Takayanagi, Kenjiro, and S., to Victor Co. of Japan, Ltd. Magnetic recording and reproduction of television signals. 3,418,424, 12–24–68, Cl. 178—6.6.

Takayanagi, Suguru: *See*—
Takayanagi, Kenjiro and S. 3,418,424.

Takeya, Kenji: *See*—
Nakajima, Akira, Takeya, and Hoten. 3,418,300.

Tan, Henry H., to E. I. du Pont de Nemours and Co. Process for the direct oxidation of 2-alkyl-substituted-1-olefins to aldehydes. 3,418,376, 12–24–68, Cl. 260—604.

Taniguchi, Isoji, K. Maemoto, T. Shimamura, T. Yasumura, Y. Samejima, K. Onodera, and T. Ono, to Sumitome Chemical Co. Ltd. and Toyo Boseki Kabushiki Kaisha. Dyeable polyolefin composition containing an ester exchanged ethylene/unsaturated acid ester copolymer. 3,418,395, 12–24–68, Cl. 260—895.

Tanner, David, to E. I. du Pont de Nemours and Co. Splittable composite filament. 3,418,200, 12–24–68, Cl. 161—177.

Tappan Co., The: *See*—
Perl, Richard L. 3,417,742.

Taren, William J., to International Business Machines Corp. Memory sense gating system. 3,418,647, 12–24–68, Cl. 340—174.

Tareja, Krishan S.: *See*—
Amsterdam, Michael F., Shaikh, and Tarneja. 3,418,170.

Tate, John. Power unit mounting. 3,418,003, 12–24–68, Cl. 280—5.

Taterra, Gottfried: *See*—
Simm, Walter, Koch, and Taterra. 3,417,734.

Taub, David, and N. L. Wendler, to Merck & Co., Inc. Novel 16-alkylene steroids and processes. 3,418,316, 12–24–68, Cl. 260—239.5.

Taylor, Daniel G.: *See*—
Mihalko, Emil S., and Taylor. 3,418,505.

Taylor, David L. Spring skirt hanger. 3,417,906, 12–24–68, Cl. 223—95.

Taylor, Francis, Jr., to United States of America, Navy. Preparation of 2,2',4,4',6,6' hexanitrodiphenylamine. 3,418,372, 12–24–68, Cl. 260—576.

Taylor, Frank D.: *See*—
Buck, John A., and Taylor. 3,417,933.

Taylor, Paul A.: *See*—
Ruffles, Philip C., and Taylor. 3,417,944.

Technicon Instruments Corp.: *See*—
Pelavin, Milton H. 3,418,053.

Technipower Inc.: *See*—
Schaefer, Johannes M. 3,418,557.

Tecumseh Products Co.: *See*—
Perlewitz, Robert E. 3,417,740.

Telefunken Patentverwertungsgesellschaft m.b.H.: *See*—
Schlegel, Herbert, and Kummel. 3,418,426.

Telschow, Carl G.: *See*—
Plust, Heinz-Gunther, and Telschow. 3,418,107.

Tenniswood, David M., to Ford Motors Co. Wheel toe control for independent rear suspension. 3,417,835, 12–24–68, Cl. 180—73.

Teplitz, Abraham J.: *See*—
Morris, Richard A., and Teplitz. 3,417,816.

Teraoka, Shoichi, 50% to Shin-Etsu Chemical Industry Co., Inc. Plural nozzles, plural molds, injection molding machine. 3,417,433, 12–24–68, Cl. 18—30.

Terenzani, Fedele, to Ing. C. Olivetti and C., S.p.A. Backspacing device for a proportionally spacing typewriter. 3,417,849, 12–24–68, Cl. 197—91.

Ter Haar, Leonard W., to Shell Oil Co. Process for the preparation of a hydrogen-containing gas mixture. 3,418,082, 12–24–68, Cl. 23—213.

Terwilliger, Paul L.: *See*—
Smith, Francis M., and Terwilliger. 3,417,827.

Testa, Emilio: *See*—
Pifferi, Giorgio, and Testa. 3,418,317.

Teufel, Wilhelm J.: *See*—
Prahl, Jan. 3,417,409.

Texas Instruments Inc.: *See*—
Alford, John H., Armand, Bray, Hamilton, Jasper, Renker, Ryon, and Moore. 3,418,573.
Bradham, Allen C., III. 3,418,422.
Cecil, Olin B. 3,418,227.
Clarke, John F. 3,417,453.
Popat, Pranjivan V. 3,418,171.
Strachan, Richard W. 3,418,531.

Thebis, Eberhard: *See*—
Schulze, Reinhard F. K., Brede, and Thebis. 3,417,621.

Thiokol Chemical Corp.: *See*—
Rice, Howard E. 3,418,183.
Schaeffer, John I. 3,417,772.

Thomas, Gerald I. Heavy load fishing device. 3,417,502, 12–24–68, Cl. 43—27.4.

Thommes, Glen A., and P. Walker, to E. I. du Pont de Nemours and Co. Photographic processes and products. 3,418,118, 12–24–68, Cl. 96—11.

Thompson, Donald W., to Shell Oil Co. Apparatus and method for performing a continuous chromatographic analysis. 3,417,548, 12–24–68, Cl. 55—67.

Thompson, Gordon B., to Northern Electric Co. Ltd. System for reducing low frequency variations in the average value of a signal. 3,418,425, 12–24–68, Cl. 178—7.1.

Thompson, James O.: *See*—
Halperin, Bernard I., and Thompson. 3,418,120.

Thompson, Vernon E.: *See*—
Wilson, Harold W. 3,418,238.

Thorner, Robert H. Vehicle throttle control mechanism. 3,417,836, 12–24–68, Cl. 180—109.

Thornton, William A., Jr., to Westinghouse Electric Corp. Preparation of electroluminescent phosphors. 3,418,248, 12–24–68, Cl. 252—301.6.

Thunander, Hans T., to Westinghouse Electric Corp. Domestic appliance with control means. 3,417,480, 12–24–68, Cl. 34—45.

Tierney, Paul A.: *See*—
Hedrick, Ross M., and Tierney. 3,418,268.

Tietema, Casper J., and D. M. Rodak, to Lien Chemical Co. Chemical dispenser. 3,417,410, 12–24–68, Cl. 4—225.

Tilley, James N.: *See*—
Foster, Ebenezer A. T., Sayigh, and Tilley. 3,418,370.

Tinnerman Products, Inc.: *See*—
Schuplin, Jerome T. 3,417,438.

Tinsley, John M., and W. T. Malone, to Halliburton Co. Fluid loss control. 3,417,821, 12–24–68, Cl. 166—42.

Tipton, Larry M. Grinding apparatus. 3,417,800, 12–24–68, Cl. 146—186.

Tiskus, John R., and R. A. Vey, to United States Steel Corp. System for progressive shutdown of cooling water sprays. 3,417,810, 12–24–68, Cl. 164—150.

T'Jampens, Germain R., R. A. J. M. Meijer, and M. H. A. Van De Weijer, to North American Philips Co., Inc. Regenerative cycle electric incandescent lamp. 3,418,512, 12–24–68, Cl. 313—185.

Tocker, Stanley, to E. I. du Pont de Nemours and Co. Ultraviolet light stabilized polymers. 3,418,397, 12–24–68, Cl. 260—900.

Tokyo Shibaura Electric Co., Ltd.: *See*—
Okamoto, Hiroaki, and Murakami. 3,417,914.
Watanabe, Junichi, and Matsumoto. 3,418,528.

Tolman, Charles H.: *See*—
Oberg, Paul E., and Tolman. 3,418,163.
Tomasulo, Robert M.: *See*—
Anderson, David W., Conti, Sparacio, and Tomasulo. 3,418,638.
Tomita, Mary S.: *See*—
Johnston, Howard, and Tomita. 3,418,323.
Torano Limitee: *See*—
Bilocq, Georges A. 3,417,854.
Torcaso, Michael A.: *See*—
Acheson, Willard P., and Torcaso. 3,417,829.
Torrance Machinery and Engineering, Inc.: *See*—
Babbitt, Charles A. 3,417,591.
Torrance Specialty Fixtures, Inc.: *See*—
Babbitt, Charles A. 3,417,591.
Touey, George P., and R. C. Mumpower II, to Eastman Kodak Co. Filter element for selectively removing nicotine from tobacco smoke. 3,417,759, 12–24–68, Cl. 131—267.
Toyo Boseki Kabushiki Kaisha, Kita-Ku: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera, and Oono. 3,418,395.
Trapp, Walter B., to The Dow Chemical Co. Diphenyl ether polyols. 3,418,377, 12–24–68, Cl. 260—613.
Traub, Richard K., to E. I. du Pont de Nemours and Co. Method for dispersing pigments in polyethylene. 3,418,270, 12–24–68, Cl. 260—41.
Treatman, Eli, to Markwell Mfg. Co., Inc. Tacker with attachment for outward clinch. 3,417,908, 12–24–68, Cl. 227—83.
Trickel, Ralph J.: *See*—
Getchell, Ransom N., and Trickel. 3,418,137.
Triebwasser, Sol, to International Business Machines Corp. Electrical shock wave microwave oscillator and control thereof. 3,418,600, 12–24–68, Cl. 331—97.
Trifunovic, Alexander L., and S. E. Zeis, to Joseph Bancroft & Sons. Co. Method and apparatus for treating crimped yarn. 3,417,447, 12–24–68, Cl. 28—71.3.
Trikilis, Emmanuel M. Method of magnetizing a large quantity of bulk articles. 3,418,613, 12–24–68, Cl. 335—284.
Tri-Kem Corp.: *See*—
Grogan, Charles H., and Rice. 3,418,336.
Tri-Matic, Inc.: *See*—
Purtell, Rufus J. 3,417,766.
Tri-State Oil Tool Industries, Inc.: *See*—
Howell, Thomas D. 3,417,822.
Trofimenko, Swiatoslaw, to E. I. du Pont de Nemours and Co. Imidazole-borane polymers. 3,418,260, 12–24–68, Cl. 260—2.
Trollope, William G. A., to Canadian Ingersoll-Rand Co. Ltd. Disc brake for mine hoists. 3,417,843, 12–24–68, Cl. 188—170.
Troseth, Ralph. Universal sundial. 3,417,473, 12–24–68, Cl. 33—62.
Troy Steel Corp.: *See*—
Menge, Donald C. 3,417,652.
Tsutsumi, Teruo, T. Yamada, T. Nagai, and T. Wada, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Furnace top charging equipment. 3,417,982, 12–24–68, Cl. 266—27.
Tsuzihashi, Kazuo, K. Matsumoto, Y. Ueno, T. Okamoto, K. Nagaoka, and Y. Ono, to Asahi Kasei Kogyo Kabushiki Kaisha. Automatic continuous apparatus for producing dynamite. 3,417,654, 12–24–68, Cl. 86—1.
Tulagin, Vsevolod, R. F. Coles, and R. A. Miller, to Minnesota Mining and Mfg. Co. Quinacridone dyestuffs. 3,418,322, 12–24–68, Cl. 260—279.
Turner, Allen H.: *See*—
Colvin, Alex D., and Turner. 3,418,155.
Twin Disc Clutch Co.: *See*—
Swanson, James P. 3,417,845.
Tyson, Donald F. Auxiliary heating apparatus. 3,417,920, 12–24–68, Cl. 237—12.3.
U-C-Lite Mfg. Co.: *See*—
Livingston, John D. 3,418,487.
Ube Industries, Ltd.: *See*—
Suzukawt, Yuichi, Kanoo, Miyazaki, and Saito. 3,417,978.
Ueno, Yoshichika: *See*—
Tsuzihashi, Kazuo, Matsumoto, Ueno, Okamoto, Nagaoka, and Ono. 3,417,654.
Ulrich, Paul, and H. P. Schaub, to Ciba Ltd. Process for dyeing and printing cellulose fibers. 3,418,063, 12–24–68, Cl. 8—21.
Ultronic Systems Corp.: *See*—
Sabulsky, Anthony J., and Pote. 3,418,635.
United Aircraft Corp.: *See*—
Raphael, Martin. 3,418,548.
Sink, Larry W. 3,417,809.
Vanderbilt, John H. 3,417,637.
Yenawine, David L., and Hirakis. 3,418,145.
Zoran, William A. 3,418,112.
Unette Corp.: *See*—
Brown, Frank E. 3,417,899.
Union Carbide Canada Ltd.: *See*—
Bata, George L. 3,418,269.
Union Carbide Corp.: *See*—
Anthes, Clifford C. 3,418,176.
Arnold, Donald R., and Sousa. 3,418,330.
Gustafson, Carl G. 3,418,365.
Herchenroeder, Robert B. 3,418,111.
Marsden, James G., and Sterman. 3,418,094.
Muller, Karl R., Rabo, and Kasai. 3,418,257.
Potter, Norman M. 3,418,553.
Soffer, Bernard H. 3,418,599.
Wheeler, Marshall L., Jr. 3,418,354.
Union Tank Car Co.: *See*—
Soriente, Alfonse J. 3,417,736.
Uniroyal, Inc.: *See*—
Wetzel, Robert E. 3,418,186.
Unistrut Corp.: *See*—
Rebentisch, Hugo E., Jr. 3,417,951.
United-Carr Inc.: *See*—
Hayden, Rodney. 3,418,609.
Seckerson, Clifford A. 3,417,439.
United Cellular Products Corp.: *See*—
Howard, Jack E., and Kaplan. 3,417,755.
United Kingdom Atomic Energy Authority: *See*—
Bean, Cecil M., and Oliver. 3,417,604.
Maskell, Clifford W. A. 3,418,515.
United Piece Dye Works, The: *See*—
Blount, Charles, Jr. 3,418,065.
United Shoe Machinery Corp.: *See*—
Cleversey, Gerald W. 3,418,449.
Isaacson, Calvin, and Ouellette. 3,417,416.
United States of America: *See*—
Melhart, Leonard J. 3,418,510.
United States of America
Air Force: *See*—
Amsterdam, Michael F., Shaikh, and Tarneja. 3,418,170.
Brooks, Fred A. 3,418,580.
Ross, Gerald F. 3,418,604.
Army: *See*—
Carlson, Melvin J. 3,417,456.
Cheever, William H. 3,418,530.
Edwards, Theodoric B. 3,417,724.
Feldman, Nathan W. 3,418,561.
Furlani, John J. 3,417,700.
Hopper, Andrew L. 3,417,698.
Marcus, Ira R. 3,418,646.
Ohanian, Michael. 3,418,620.
Piper, William M., Rabinow, and Rizer. 3,417,699.
Sollott, Gilbert P., and Peterson. 3,418,350.
Atomic Energy Commission: *See*—
Asmanes, Charles. 3,418,027.
Navy: *See*—
Andrews, Robert J. 3,417,412.
Betzold, Edward R., and Johnson. 3,417,658.
Gulick, Joseph F., Jr. 3,418,596.
Humphrey, Marvin E. 3,418,637.
Lauter, Charles A., Jr. 3,418,602.
Matson, William U. 3,417,523.
O'Neill, William C. 3,417,722.
Pearson, John. 3,417,455.
Taylor, Francis, Jr. 3,418,372.
Vetter, Ronald F. 3,418,184.
Young, Marvin P. 3,418,634.
U.S. Plywood-Champion Papers, Inc.: *See*—
Vassiliades, Anthony E. 3,418,250.
United States Borax Chemical Corp.: *See*—
St. Louis, Robert V., Whiten, and Sprouse. 3,418,244.
United States Envelope Co.: *See*—
Fisher, Harland S. 3,418,140.
United States Steel Corp.: *See*—
Carter, Paul R., and Helwig. 3,418,174.
McDermott, John F. 3,417,584.
Tiskus, John R., and Vey. 3,417,810.
Westbury, David E. 3,417,907.
United Steel and Wire Co.: *See*—
Close, Garth. 3,417,872.
Universal Mfg. Corp.: *See*—
Miller, Imrich M. 3,418,527.
Universal Milking Machine Division, National Cooperatives, Inc.: *See*—
Fjermestad, Arnold R., and Christensen. 3,417,763.
Universal Oil Products Co.: *See*—
Dombro, Robert A. 3,418,382.
Univis, Inc.: *See*—
Beasley, George A. 3,417,454.
Upjohn Co., The: *See*—
Foster, Ebenezer A. T., Sayigh, and Tilley. 3,418,370.
Houtman, Ronald L. 3,418,414.
Robert, Andre, and Skaletzky. 3,418,329.
Urbashich, Lee J.: *See*—
Rentschler, John J., and Urbashich. 3,418,001.
Ushakoff, Alexis E., to Cordes Corp. Red cell preservation. 3,418,209, 12–24–68, Cl. 195—1.8.
Uzunoglu, Vasil, and P. R. Koenig, Jr., to Westinghouse Electric Corp. Semiconductor memory device. 3,418,493, 12–24–68, Cl. 307—238.
VDO Tachometer Werke Adolf Schindling G.m.b.H.: *See*—
Barnstorf, Ingo. 3,417,613.
VEB Carl Zeiss Jena: *See*—
Hann, Eberhard, and Hoch. 3,418,465.
V-M Corp.: *See*—
Freier, Gerald H. 3,417,999.
Valente, Raymond L., to Manco Mfg. Co. Apparatus for pointing workpieces. 3,417,598, 12–24–68, Cl. 72—383.
Valentine, Gordon A., to Stanley Aviation Corp. Catapult rocket repositioning device. 3,417,947, 12–24–68, Cl. 244—122.
Van Alstyne, Earl M., to North American Rockwell Corp. Projectable structure. 3,417,942, 12–24–68, Cl. 244—1.
Van Daelen, Henri J. G. M., to North American Philips Co., Inc. Control circuit for an ignitron utilizing a silicon controlled rectifier and a Zener diode in series. 3,418,525, 12–24–68, Cl. 315—168.
Van Den Honert, Alexander, to North American Philips Co., Inc. Pressure equalizing devices suitable for use in power-water reactors. 3,417,815, 12–24–68, Cl. 165—107.
Vanderbilt, John H., to United Aircraft Corp. Manual override unit for automatic valves. 3,417,637, 12–24–68, Cl. 74—625.
Van de Weijer, Martinus H. A.: *See*—
T'Jampens, Germain R., Meijer, and Van de Weijer. 3,418,512.
Van Dril, William A., to Whiting Corp. Cupola construction. 3,417,983, 12–24–68, Cl. 266—31.

Van Duuren, Hendrik C. A., to De Staat der Nederlanden ten Deze Vertezenwoordigd Door de Directeur-Generaal der Posterijen Telegrafie en Telefonie. Double check signal test self-correcting communication system. 3,418,630, 12–24–68, Cl. 340—146.1.
Vanicek, Victor T. Drying kiln. 3,417,486, 12–24–68, Cl. 34—218.
Van Lanen, James M., and M. B. Smith, to Hiram Walker & Sons, Inc. Process of producing glucamylase and an alcohol product. 3,418,211, 12–24–68, Cl. 195—31.
Van Iperen, Bernardus B., and W. Kuypers, to North American Philips Co., Inc. Arrangements for producing electric oscillations of very high frequency. 3,418,516, 12–24–68, Cl. 315—5.53.
Van Poollen, Hendrik K., to Marathon Oil Co. Lost circulation restoring devices. 3,417,824, 12–24–68, Cl. 166—117.
Van Slageren, Nanno, to North American Philips Co., Inc. Device for adjustably driving two parallel reel spindles. 3,417,937, 12–24–68, Cl. 242—55.12.
Varian Associates: *See*—
Cook, Edward J. 3,418,521.
Cook, Edward J. 3,418,522.
Nelson, Forrest A. 3,418,564.
Varrin, Andre J., to International Telephone and Telegraph Corp. Retaining ring. 3,417,650, 12–24–68, Cl. 85—8.8.
Vassiliades, Anthony E., to U.S. Plywood-Champion Papers, Inc. Microcapsules, process for their formation and transfer sheet record material coated therewith. 3,418,250, 12–24–68, Cl. 252—316.
Vassiliades, Anthony E., to Champion Papers Inc. Microcapsules, process for their formation and transfer sheet record material coated therewith. 3,418,656, 12–24–68, Cl. 252—316.
Vawter, Verne E.: *See*—
Emerson, Herff C., Rieger, Kitchin, and Vawter. 3,418,549.
Vedex Dansk Skovindustri A/S: *See*—
Christoffersen, Christen, and Sorensen. 3,418,159.
Veit, Anton. Optical apparatus for photographic printing. 3,418,048, 12–24–68, Cl. 355—38.
Velcro S.A.: *See*—
Billarant, Jean. 3,417,440.
Velsicol Chemical Corp.: *See*—
Richter, Sidney B. 3,418,102.
Vereinigte Glanzstoff-Fabriken A.G.: *See*—
Gemeinhardt, Hermann, Schatz, and Brucher. 3,417,445.
Vetter, Ronald F., to United States of America, Navy. Smoke producing propellant. 3,418,184, 12–24–68, Cl. 149—19.
Vey, Regis A.: *See*—
Tiskus, John R., and Vey. 3,417,810.
Vi Vox, Inc.: *See*—
Pegan, John R., and Newcomb. 3,417,570.
Victor Co. of Japan, Ltd.: *See*—
Takayanagi, Kenjiro and S. 3,418,424.
Victor Electric Wire & Cable Corp.: *See*—
Grober, Abraham. 3,418,616.
Vienna, Arthur W. Cargo ships. 3,417,721, 12–24–68, Cl. 114—43.5.
Vincent, Conway, to The Hoover Co. Blender jar with stirrer and strainer. 3,417,972, 12–24–68, Cl. 259—37.
Vissers, Herbert, to Landbouwwerktuigen Machinefabriek H. Vissers N.V. Coupling shafts. 3,417,579, 12–24–68, Cl. 64—32.
Vlasaty, Frank J., to American Gage & Machine Co. Device for checking instrument accuracy and wear. 3,417,475, 12–24–68, Cl. 33—168.
Vocaline Co. of America: *See*—
Wood, Orville T. 3,417,649.
Volcheck, Emil J., Jr.: *See*—
Anton, Anthony, and Volcheck. 3,418,199.
Von Isaiah: *See*—
Gordon, John E., and Von Isaiah. 3,418,321.
Von Meyer, Walter G. Luggage spotter. 3,417,496, 12–24–68, Cl. 40—2.
Von Roll AG: *See*—
Iacobovici, Theodor. 3,417,716.
Iacobovici, Theodor. 3,417,717.
Von Stron, Gerald F. H., to Industrial Science Corp. Externally fired cupola furnace and method of operation thereof. 3,418,108, 12–24–68, Cl. 75—43.
Voorhoeve, Ernst W., to Leeds & Northrup Co. Linearized magnetic amplifiers. 3,418,588, 12–24–68, Cl. 330—8.
Waber, Morris L., to Waber Tool & Engineering Co. Mobile support for electric drills. 3,417,949, 12–24–68, Cl. 248—13.
Waber Tool & Engineering Co.: *See*—
Waber, Morris L. 3,417,949.
Wada, Tatsuaki: *See*—
Tsutsumi, Teruo, Yamada, Nagai, and Wada. 3,417,982.
Wagner, Kuno, H. Scheurlen, and H. Kritzler, to Farbenfabriken Bayer Aktiengesellschaft. Stabilization of acylated or alkylated polyoxymethylenes. 3,418,271, 12–24–68, Cl. 260—45.8.
Waldron, Cloyd D. Room air purifier. 3,417,577, 12–24–68, Cl. 62—263.
Walker, Darrell W.: *See*—
Bjornson, Geir, and Walker. 3,418,357.
Walker, Edward J.: *See*—
Fang, Frank F., Walker, and Yu. 3,417,464.
Walker, Eugene J., and J. Majcher, to Westinghouse Electric Corp. Circuit breaker with improved trip means. 3,418,607, 12–24–68, Cl. 335—41.
Walker, Hiram & Sons, Inc.: *See*—
Van Lanen, James M., and Smith. 3,418,211.
Walker, Peter: *See*—
Thommes, Glen A., and Walker. 3,418,118.
Wallace, Elmer E., to Controls Co. of America. Gas control snap acting and modulating valve assembly. 3,417,918, 12–24–68, Cl. 236—48.
Wallace & Tiernan Inc.: *See*—
MacLeay, Ronald E., and Sheppard. 3,418,294.
Wallis, George: *See*—
Pomerantz, Daniel I., Wallis, and Dorsey. 3,417,459.
Walsh, James L.: *See*—
Chung, David H., and Walsh. 3,418,491.
Walter, Fred, and B. Podolsky, to Giannini Scientific Corp. Apparatus and method for generating high-intensity light. 3,418,524, 12–24–68, Cl. 315—111.
Ward-Turner Machinery Co., The: *See*—
Hartka, Theodore J. 3,417,693.
Warner, John M. Method of making a self-contained refrigeration system. 3,417,573, 12–24–68, Cl. 62—60.
Warner & Swasey Co., The: *See*—
Curran, John V. 3,417,435.
Warnock, Merville L.: *See*—
Hershey, Harold J., McGee, and Warnock. 3,418,431.
Warren, Daniel, to Shell Oil Co. Salts of imidazoles and benzimidozoles. 3,418,333, 12–24–68, Cl. 260—309.
Wasson, Loerwood C., to A. O. Smith Corp. Relief valve mechanism. 3,417,768, 12–24–68, Cl. 137—73.
Watanabe, Junichi, and M. Matsumoto, to Tokyo Shibaura Electric Co., Ltd. Apparatus for detecting rotating speed. 3,418,528, 12–24–68, Cl. 317—5.
Watanabe, Syotaro: *See*—
Ariga, Ken-ichi, Watanabe, and Godai. 3,418,126.
Waterhouse, Frederick T., to Diamond International Corp. Apparatus for setting up packaging trays. 3,417,666, 12–24–68, Cl. 93—52.
Watkins, Wilfred L., and L. L. Kepkay, to Massey-Ferguson Service N.V. Automatic table height control. 3,417,555, 12–24–68, Cl. 56—208.
Watson, George A., to Celanese Corp. Method and apparatus for producing a semi-continuous filament yarn. 3,417,560, 12–24–68, Cl. 57—34.
Watson, Robert D., J. H. C. Long, and R. V. Hacking, to Atomic Energy of Canada Ltd. Bearing structure. 3,418,028, 12–24–68, Cl. 308—241.
Weaver, Max A.: *See*—
Dale, John I., III, and Weaver. 3,418,309.
Dale, John I., III, Weaver, and Straley. 3,418,310.
Weber, Arthur: *See*—
Schmidt, Karl H., Weber, Rowe, and Brinker. 3,418,286.
Webster, Frederick, to Webster Machine Development Ltd. Longwall coal-cutting machine. 3,418,023, 12–24–68, Cl. 299—43.
Webster Machine Development Ltd.: *See*—
Webster, Frederick. 3,418,023.
Wedl, Gerald F., and D. D. Draisey, to Grain Belt Breweries, Inc. Apparatus for automating packaging machines and packaging production lines. 3,417,541, 12–24–68, Cl. 53—55.
Weidenhoffer, Zdenek: *See*—
Hala, Slavoj, Landa, and Weidenhoffer. 3,418,387.
Weis, Joseph H., to General Electric Co. Process for making aluminum-containing ferrites. 3,418,241, 12–24–68, Cl. 252—62.58.
Weisbord, Leon: *See*—
Parker, Bernard, and Weisbord. 3,417,627.
Welch Allyn, Inc.: *See*—
Moore, William C., and Caldwell. 3,417,746.
Weld Tooling Corp.: *See*—
Cable, Harold E. and H. E. 3,417,979.
Welham, Brian H., to Bausch & Lomb Inc. Optical system for angular measuring instruments. 3,418,037, 12–24–68, Cl. 350—202.
Welker, Arthur, to A. Attenhofer A.G. Mounting base for a portion of a ski binding. 3,418,004, 12–24–68, Cl. 280—11.35.
Wells, John A., to Irving Air Chute Co., Inc. Power controller and augmentor for cartridge and pyrotechnically powered devices. 3,417,656, 12–24–68, Cl. 89—1.
Wells, Robert R., and E. B. Mikus, to Northrop Corp. Thin-film diffusion brazing of titanium members utilizing copper intermediates. 3,417,461, 12–24–68, Cl. 29—487.
Welsh, Charles E. Animal mausoleum. 3,417,521, 12–24–68, Cl. 52—90.
Wendler, Norman L.: *See*—
Taub, David, and Wendler. 3,418,316.
Wentworth, Ralph L., to W. R. Grace & Co. Fuel cell with water removing means at cathode. 3,418,168, 12–24–68, Cl. 136—86.
Wentz, Edward C.: *See*—
Seidel, Martin P., Norton, and Wentz. 3,417,466.
Werner, Frank D., and T. D. Lode, to Rosemont Engineering Co. Electric discharge device. 3,417,606, 12–24–68, Cl. 73—24.
Werner, Johannes, to H. T. Golde, G.m.b.H. Apparatus for the bending of sections, tubes or the like. 3,417,601, 12–24–68, Cl. 72—465.
Werner, Thomas J., to Minnesota Mining and Mfg. Co. Method for storing and retrieving information onto and from an electroplatable recording medium. 3,418,640, 12–24–68, Cl. 340—173.
Werotte, Louis E., and P. D. Grammont, to Diamond Shamrock Corp. Preparation of macroporous ion exchange resins. 3,418,262, 12–24–68, Cl. 260—2.2.
West, Donald L.: *See*—
Mix, Arthur L., Jr., and West. 3,417,850.
West, L. Elwood: *See*—
Boggs, Raymond R., Jr., Locklar, and West. 3,418,432.
Westbury, David E., to United States Steel Corp. Yieldable entry guide for strip-processing line. 3,417,907, 12–24–68, Cl. 226—198.

Western Electric Co., Inc.: *See*—
Sandmore, Donald K., and Stegner. 3,417,600.
Cane, Domenick. 3,418,214.
Farley, Earl T. 3,418,498.
Forrest, Richard A. 3,418,182.
France, Robert W., and Nandor. 3,418,544.

Westinghouse Air Brake Co.: *See*—
Gonski, Joseph, and Marberg. 3,417,851.
McConnell, Charles D. 3,417,882.

Westinghouse Electric Corp.: *See*—
Hoffmann, Thomas A. 3,418,052.
Lin, Hung C. 3,418,492.
Marino, Joseph, and Schaefer. 3,418,543.
McLaughlin, Emmett J. 3,418,622.
Ortolano, Ralph J. 3,417,964.
Petersen, Joseph G. 3,418,560.
Reese, Edward G., Jr. 3,418,518.
Seidel, Martin P., Norton, and Wentz. 3,417,466.
Simon, Harold C., and Gerber. 3,418,526.
Spindle, Harvey E. 3,418,575.
Sullivan, Robert J. 3,418,539.
Thornton, William A., Jr. 3,418,248.
Thunander, Hans T. 3,417,480.
Uzunoglu, Vasil, and Koenig. 3,418,493.
Walker, Eugene J., and Majcher. 3,418,607.

Weston Instruments, Inc.: *See*—
Dean, Derek J. 3,418,576.
Lakshmanan, Tavorath K., and Mitchell. 3,418,229.

Wetzel, Robert E., to Uniroyal, Inc. Method of making toothed drive belts. 3,418,186, 12–24–68, Cl. 156—140.

Wheeler, Marshall L., Jr., to Union Carbide Corp. Process for producing graft copolymers. 3,418,354, 12–24–68, Cl. 260—448.2.

Wheeler, Michael J.: *See*—
Hazelden, Denis W. J., Norreys, and Wheeler. 3,418,245.

Whitaker, Arthur C.: *See*—
Barle, Walter P., Jr., Franke, and Whitaker. 3,418,359.
Schulz, Johann G. D., Whitaker, and Winteler. 3,418,360.

White, William J.: *See*—
Richens, Raymond H., White, and Richardson. 3,417,967.

Whitehead, Robert C., Jr., to Honeywell Inc. Apparatus for measuring the fat content of animal tissue. 3,417,625, 12–24–68, Cl. 73—432.

Whiten, Joseph G.: *See*—
St. Louis, Robert V., Whiten, and Sprouse. 3,418,244.

Whiting Corp.: *See*—
Van Dril, William A. 3,417,983.

Whitlatch, Robert W. Easel for photographic enlargers. 3,418,049, 12–24–68, Cl. 355—54.

Whitten, George W.: *See*—
Gilman, Harold, Stein, and Whitten. 3,418,338.

Wick, Richard, E. Geyken, H.-D. Frick, and W. Kwiatkowski, to Agfa Aktiengesellschaft. Electrolytic method and apparatus for reclaiming metals from electrolytes. 3,418,225, 12–24–68, Cl. 204—109.

Widess, Moses G.: *See*—
Farr, John B., Lang, and Widess. 3,418,626.

Wiechert, Rudolf: *See*—
Prezewowsky, Klaus, Neumann, and Wiechert. 3,418,415.

Wieland, Howard N., and D. E. Ehrlich, to Gregory Industries, Inc. Stud-welding tool. 3,418,441, 12–24–68, Cl. 219—98.

Wiener Schwachstromwerke Gesellschaft m.b.H.: *See*—
Fadler, Walter. 3,418,019.

Wiens, Frank B.: *See*—
Brubaker, Wilson M., and Wiens. 3,418,464.

Wilder, Dallas R. Phase shift vibrato circuit using light dependent resistors and an indicating lamp. 3,418,418, 12–24–68, Cl. 84—1.25.

Wildhaber, Ernest. Method and means for crowning teeth. 3,417,510, 12–24–68, Cl. 51—95.

Wilke, Norbert: *See*—
Benedikter, Kurt, Hagel, and Wilke. 3,418,299.

Willard, Miles J. Food dehydration apparatus. 3,417,483, 12–24–68, Cl. 34—117.

Willard, Miles J. Dehydration of mashed potatoes with a cooled spreader roll and apparatus therefor. 3,418,142, 12–24–68, Cl. 99—207.

Williams, Gerald I., J. H. Boucher, J. M. Duffy, and W. L. Olson, to Control Data Corp. Apparatus for displaying characters selectable by digital data. 3,418,043, 12–24–68, Cl. 353—25.

Williams, Paul H.: *See*—
Jennings, Thomas J., and Williams. 3,418,381.

Williamson, James A., to The Boeing Co. Intruder detection system. 3,418,649, 12–24–68, Cl. 340—258.

Williamson, Roger C.: *See*—
Hurley, Daniel J., Rosenthal, and Williamson. 3,418,388.

Williamson, William R., to American Machine & Foundry Co. Multistage evaporator with evaginated venturi inlet for each stage. 3,418,213, 12–24–68, Cl. 202—173.

Wilson, Duncan M., Jr. Quick-change license plate holder. 3,417,957, 12–24–68, Cl. 248—488.

Wilson, George R.: *See*—
Solomon, James E., and Wilson. 3,418,592.

Wilson, Harold W., 50% to Wilson Laboratories, Inc., and 10% each to J. W. Flowers, J. H. Maxey, D. C. Casey, W. D. Rogers, Jr., and V. E. Thompson. Process for preparing additive-modified silico gels. 3,418,238, 12–24–68, Cl. 252—1.

Wilson, Jack O.: *See*—
Hansen, Richard C., and Wilson. 3,418,046.

Wilson, James D. Load-bearing structural column. 3,417,537, 12–24–68, Cl. 52—731.

Wilson Laboratories, Inc.: *See*—
Wilson, Harold W. 3,418,238.

Wilson, Rosser L., and P. E. Redelman, to Abex Corp. Switching apparatus. 3,418,462, 12–24–68, Cl. 246—393.

Wininger, John M., Jr.: *See*—
Dyer, Richard F., and Wininger. 3,417,552.

Winkler, Richard, and K. Dunnebier. Method and device for the application of latex. 3,417,694, 12–24–68, Cl. 101—401.1.

Winteler, Paolo: *See*—
Schulz, Johann G. D., Whitaker, and Winteler. 3,418,360.

Wise, Glenn H.: *See*—
Knutrud, Thorleif, and Wise. 3,418,477.

Wofford, Clinton F., to Phillips Petroleum Co. Process for making block copolymers of conjugated dienes and vinyl-substituted aromatics. 3,418,394, 12–24–68, Cl. 260—880.

Wohrer, Luis C.: *See*—
Economy, James, Wohrer, and Mason. 3,418,273.

Wolf, Calvin N., and M. H. Reich, to Ethyl Corp. Process for preparing polyoxymethylene interpolymers. 3,418,283, 12–24–68, Cl. 260—73.

Wolf, Horst, to Zinser-Textilmaschinen Gesellschaft mit Beschrankter Haftung. Drives for textile machinery. 3,417,561, 12–24–68, Cl. 57—100.

Wood, Billy G.: *See*—
Jones, Philip D., and Wood. 3,418,633.

Wood, Orville T., to Vocaline Company of America. Keyboard construction. 3,417,649, 12–24–68, Cl. 84—433.

Woods, Harold J.: *See*—
Lucy, Carl F., and Woods. 3,417,697.

Woods, Roger M., and D. R. Moul, to Corillium Corp. Chromium plating process. 3,418,221, 12–24–68, Cl. 204—51.

Wooster, Philip A.: *See*—
Wooster, Richard L. 3,418,029.

Wooster, Richard L., to Philip A. Wooster. Cabinet for dispensing paper toweling in roll form. 3,418,029, 12–24–68, Cl. 312—39.

Wright, Donald R., to The Dow Chemical Co. Apparatus for the preparation of walled structures. 3,417,429, 12–24–68, Cl. 18—5.

Wright, Robert L.: *See*—
Summers, Charles G., and Wright. 3,418,373.

Wronke, Louis J., and E. G. Swick, to Illinois Tool Works Inc. Rotatable indicator assembly. 3,417,731, 12–24–68, Cl. 116—124.1.

Wyandotte Chemicals Corp.: *See*—
Otrhalek, Joseph V., and Gansser. 3,418,151.

Wyckoff, Robert L., to Raytheon Co. Spectrum analyzer using limited operating frequency bandwidth. 3,418,574, 12–24–68, Cl. 324—77.

Wyllie, Malcolm R. J., to Gulf Research & Development Co. Method of fracturing with a high viscosity liquid. 3,417,819, 12–24–68, Cl. 166—42.

Xerox Corp.: *See*—
Hansen, Richard C., and Wilson. 3,418,046.

Yamada, Tatsuo: *See*—
Tsutsumi, Teruo, Yamada, Nagai, and Wada. 3,417,982.

Yamazaki, Kichisaburo. Trailer for towing cars. 3,417,890, 12–24–68, Cl. 214—506.

Yasumura, Tomohide: *See*—
Taniguchi, Isoji, Maemoto, Shimamura, Yasumura, Samejima, Onodera and Oono. 3,418,393.

Yates, John, and E. Haddock, to Shell Oil Co. 2-(2,6-dihalophenyl)-4-hydroxy thiazole-5-acetic acid and derivatives thereof. 3,418,331, 12–24–68, Cl. 260—302.

Yee, Seening, to Sperry Rand Corp. Complementary emitter follower amplifier biased for class A operation. 3,418,589, 12–24–68, Cl. 330—13.

Yenawine, David L., and E. C. Hirakis, to United Aircraft Corp. Coating composition comprising aluminum and metal fluorides. 3,418,145, 12–24–68, Cl. 106—286.

Yocom, Perry N., to Radio Corp. of America. Rare earth activated lanthanum and lutetium oxy-chalcogenide phosphors. 3,418,247, 12–24–68, Cl. 252—301.4.

Yoshida, Makoto: *See*—
Kimura, Shiro, Yoshida, and Sano. 3,418,129.

Yoshida, Makoto, and A. Okumura, to Fuji Shashin Film Kabushiki Kaisha. Photographic developer composition containing 2-(o-propionamido-β-phenylethyl-1-hydroxy-naphthamide as a color former. 3,418,121, 12–24–68, Cl. 96—55.

Young, Larry L. Gaseous, arc-radiation source with electrodes, radiation window, and specular focus aligned on the same axis. 3,418,507, 12–24–68, Cl. 313—18.

Young, Louis C., to North American Rockwell Corp. Self-restarting supersonic inlet. 3,417,767, 12–24–68, Cl. 137—15.2.

Young, Marvin P., to United States of America, Navy. Delay line switch predre and failure indicating system. 3,418,634, 12–24–68, Cl. 340—147.

Young, Raymond H., Jr.: *See*—
Cohen, Saul M., and Young. 3,418,277.

Young, Walter M.: *See*—
Koons, John P., Young, and Yungkurth. 3,418,534.

Youngstown Steel Door Co., The: *See*—
Madland, Thorvald, and Kennedy. 3,417,515.

Yu, Hwa N.: *See*—
Fang, Frank F., Walker, and Yu. 3,417,464.

Yungkurth, Charles R.: *See*—
Koons, John P., Young and Yungkurth. 3,418,534.

Zachek, Joseph P. Finishing machine. 3,417,513, 12–24–68, Cl. 51—180.

Zahuranec, Emery J., and Z. Szohatzky, to Crawford Fitting Co. Tube bending tool. 3,417,594, 12–24–68, Cl. 72—318.

Zaklady Energetyczne Okregu Poludniowego Zaklad Remontowny Energetyki: *See*—
Ziebinski, Zygmunt. 3,417,419.

Zambruski, Edwin A.: *See*—
Pulcrano, Frank C., O'Leary, and Zambruski. 3,417,712.

Zarins, Egils: *See*—
Sipress, Jack M., and Zarins. 3,418,631.

Zeidler, Reinhold C., to Borg-Warner Corp. Clutch actuating mechanism. 3,417,844, 12–24–68, Cl. 192—70.3.

Zelle, Karl: *See*—
Heusner, Alex, and Zelle. 3,418,319.

Zeis, Steve E.: *See*—
Trifunovic, Alexander L., and Zeis. 3,417,447.

Zell, Robert M., to Brass Craft Mfg. Co. Method for making a plumbing valve body. 3,417,450, 12–24–68, Cl. 29—157.1.

Zerand Corp.: *See*—
Hardt, David R. 3,417,489.

Zerwes, Paul J., to Bell Electric Co. Junction box extension device. 3,418,420, 12–24–68, Cl. 174—53.

Ziccardi, John J., 50% to W. B. Jaspert. Wheeled vehicle selectively convertible to endless track vehicle. 3,417,832, 12–24–68, Cl. 180—9.3.

Ziebinski, Zygmunt, to Zaklady Energetyczne Okregu Poludniowego Zaklad Remontowny Energetyki. Device for removing slag from heating surfaces of waterwall-tubes in the boiler. 3,417,419, 12–24–68, Cl. 15—104.04.

Ziegler, George E., to Concrete Thermal Casings, Inc. Method of making an insulated pipe structure. 3,418,399, 12–24–68, Cl. 264—35.

Ziegler, George F.: *See*—
Buchroeder, Richard A., and Ziegler. 3,418,038.

Zimmer, Joseph. Hose pump. 3,417,707, 12–24–68, Cl. 103—148.

Zinser-Textilmaschinen Gesellschaft mit Beschrankter Haftung: *See*—
Wolf, Horst. 3,417,561.

Zoran, William A., to United Aircraft Corp. Method for forming seamless pressure vessels. 3,418,112, 12–24–68, Cl. 75—208.

Zschunke, Heinz W.: *See*—
Scholtis, Walter E., Ploch, and Zschunke. 3,417,580.

Zuckerman, Jack I. Grid for suspended tile ceilings and suspension means therefor. 3,417,535, 12–24–68, Cl. 52—650.

Zuppiger, Paul: *See*—
Schonfelder, Max, Zuppiger, and Bouladon. 3,417,878.

CLASSIFICATION OF PATENTS

ISSUED DECEMBER 24, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2— 2.1 : 3,417,406	30— 41 : 3,417,468	56— 27.5 : 3,417,556
180 : 3,417,407	272 : 3,417,469	208 : 3,417,555
239 : 3,417,408	276 : 3,417,470	294 : 3,417,557
3— 1.2 : 3,417,409	32— 67 : 3,417,471	328 : 3,417,558
4—225 : 3,417,410	33— 24 : 3,417,472	329 : 3,417,559
251 : 3,417,411	62 : 3,417,473	57— 34 : 3,417,560
5— 82 : 3,417,412	72 : 3,417,474	100 : 3,417,561
338 : 3,417,413	168 : 3,417,475	60— 30 : 3,417,562
8— 21 : 3,418,063	174 : 3,417,476	39.27: 3,417,563
39 : 3,418,064	3,417,477	.34: 3,417,564
55 : 3,418,065	185 : 3,417,478	54 : 3,417,565
115.5 : 3,418,066	203.17: 3,417,479	95 : 3,417,566
116.2 : 3,418,067	34— 45 : 3,417,480	61— 15 : 3,417,570
158 : 3,417,414	72 : 3,417,481	36 : 3,417,567
9—309 : 3,417,415	104 : 3,417,482	40 : 3,417,568
12— 1 : 3,417,416	117 : 3,417,483	46 : 3,417,569
15— 93 : 3,417,417	156 : 3,417,484	72.6 : 3,417,571
104 : 3,417,418	160 : 3,417,489	62— 17 : 3,417,572
.04: 3,417,419	182 : 3,417,485	60 : 3,417,573
230.16: 3,417,420	218 : 3,417,486	93 : 3,417,574
250.41: 3,417,421	233 : 3,417,487	119 : 3,417,575
16— 26 : 3,417,422	236 : 3,417,488	244 : 3,417,576
17— 2 : 3,417,423	35— 9 : 3,417,490	263 : 3,417,577
11 : 3,417,424	3,417,491	63— 5 : 3,417,578
32 : 3,417,425	24 : 3,417,492	64— 32 : 3,417,579
18— 1 : 3,417,426	30 : 3,417,493	65— 3 : 3,418,094
3,417,427	36— 44 : 3,417,494	5 : 3,418,095
5 : 3,417,428	37— 93 : 3,417,495	29 : 3,418,096
3,417,429	40— 2 : 3,417,496	269 : 3,418,097
12 : 3,417,430	.2 : 3,417,497	273 : 3,418,098
3,417,431	30 : 3,417,498	284 : 3,418,099
14 : 3,417,432	42— 75 : 3,417,499	66—120 : 3,417,580
30 : 3,417,433	43— 18 : 3,417,500	147 : 3,417,581
45 : 3,417,434	24 : 3,417,501	68— 24 : 3,417,582
19—129 : 3,417,435	27.4 : 3,417,502	210 : 3,417,583
258 : 3,417,436	42.08: 3,417,503	71— 24 : 3,418,100
21— 74 : 3,418,068	85 : 3,417,504	72 : 3,418,101
3,418,069	44— 69 : 3,418,091	106 : 3,418,102
23— 2 : 3,418,070	71 : 3,418,092	72— 7 : 3,417,584
22 : 3,418,071	46— 16 : 3,417,505	8 : 3,417,585
23 : 3,418,072	131 : 3,417,506	32 : 3,417,586
3,418,073	202 : 3,417,507	50 : 3,417,587
87 : 3,418,074	48—214 : 3,418,093	56 : 3,417,588
105 : 3,418,075	49— 35 : 3,417,508	60 : 3,417,589
142 : 3,418,076	130 : 3,417,509	157 : 3,417,590
165 : 3,418,077	220 : 3,417,515	181 : 3,417,591
213 : 3,418,082	51— 95 : 3,417,510	199 : 3,417,592
230 : 3,418,078	135 : 3,417,511	211 : 3,417,593
253 : 3,418,079	165 : 3,417,512	318 : 3,417,594
3,418,083	180 : 3,417,513	354 : 3,417,595
259 : 3,418,080	216 : 3,417,514	361 : 3,417,596
3,418,084	281 : 3,417,516	377 : 3,417,597
.6 : 3,418,085	356 : 3,417,517	383 : 3,417,598
285 : 3,418,081	52— 7 : 3,417,518	410 : 3,417,599
301 : 3,418,086	11 : 3,417,519	437 : 3,417,600
315 : 3,418,087	80 : 3,417,520	465 : 3,417,601
357 : 3,418,088	90 : 3,417,521	466 : 3,417,602
24— 27 : 3,417,437	97 : 3,417,522	479 : 3,417,603
73 : 3,417,438	110 : 3,417,523	73— 15 : 3,417,604
3,417,439	115 : 3,417,524	23 : 3,417,605
204 : 3,417,440	160 : 3,417,525	24 : 3,417,606
221 : 3,417,441	169 : 3,417,526	30 : 3,417,607
3,417,442	200 : 3,417,527	67.1 : 3,417,608
252 : 3,417,443	367 : 3,417,528	.7 : 3,417,610
26— 57 : 3,417,444	468 : 3,417,529	71.5 : 3,417,609
28— 1 : 3,417,445	496 : 3,417,530	136 : 3,417,611
3,417,446	520 : 3,417,531	272 : 3,417,612
71.3 : 3,417,447	584 : 3,417,532	319 : 3,417,613
29— 25.13: 3,417,448	589 : 3,417,533	327 : 3,417,614
.35: 3,417,449	624 : 3,417,534	3,417,615
157.1 : 3,417,450	650 : 3,417,535	339 : 3,417,616
.3 : 3,417,451	673 : 3,417,536	341 : 3,417,617
193.5 : 3,418,089	731 : 3,417,537	359 : 3,417,618
197.5 : 3,418,090	749 : 3,417,538	362 : 3,417,619
208 : 3,417,452	53— 42 : 3,417,539	379 : 3,417,620
460 : 3,417,453	48 : 3,417,540	382 : 3,417,621
468 : 3,417,454	55 : 3,417,541	400 : 3,417,622
470.1 : 3,417,455	78 : 3,417,542	422 : 3,417,623
3,417,456	126 : 3,417,543	432 : 3,417,624
.3 : 3,417,457	180 : 3,417,544	3,417,625
471.9 : 3,417,458	182 : 3,417,545	516 : 3,417,626
472.9 : 3,417,459	190 : 3,417,546	74— 5.6 : 3,417,627
473.1 : 3,417,460	55— 27 : 3,417,547	48 : 3,417,628
487 : 3,417,461	67 : 3,417,548	56 : 3,417,629
526.2 : 3,417,462	316 : 3,417,549	61 : 3,417,630
528 : 3,417,463	376 : 3,417,550	125 : 3,417,631
571 : 3,417,464	498 : 3,417,551	142 : 3,417,632
603 : 3,417,465	528 : 3,417,552	232 : 3,417,633
605 : 3,417,466	56— 11 : 3,417,553	473 : 3,417,634
30— 34.2 : 3,417,467	27 : 3,417,554	484 : 3,417,635

74—606 : 3,417,636	99—171 : 3,418,139	128—287 : 3,417,751
625 : 3,417,637	3,418,140	322 : 3,417,752
720 : 3,417,638	179 : 3,418,141	349 : 3,417,753
758 : 3,417,639	207 : 3,418,142	395 : 3,417,754
866 : 3,417,640	100— 8 : 3,417,688	516 : 3,417,755
75— .5 : 3,418,103	101— 69 : 3,417,689	519 : 3,417,756
3,418,104	93 : 3,417,690	131—171 : 3,417,757
3,418,105	269 : 3,417,691	266 : 3,417,758
3,418,106	350 : 3,417,692	267 : 3,417,759
26 : 3,418,107	364 : 3,417,693	132— 40 : 3,417,760
43 : 3,418,108	401.1 : 3,417,694	46 : 3,417,761
60 : 3,418,109	407 : 3,417,695	84 : 3,417,762
124 : 3,418,110	409 : 3,417,696	134— 58 : 3,417,763
171 : 3,418,111	102— 41 : 3,417,697	135— 5 : 3,417,764
208 : 3,418,112	70.2 : 3,417,698	50 : 3,417,765
214 : 3,418,113	3,417,699	136— 24 : 3,418,166
3,418,114	3,417,700	86 : 3,418,167
81— 53 : 3,417,641	75 : 3,417,701	3,418,168
83— 13 : 3,417,642	103— 37 : 3,417,702	3,418,169
146 : 3,417,643	41 : 3,417,703	89 : 3,418,170
230 : 3,417,644	87 : 3,417,704	100 : 3,418,171
368 : 3,417,645	97 : 3,417,705	111 : 3,418,172
84— 1.15: 3,418,417	136 : 3,417,706	208 : 3,418,173
.25: 3,418,418	148 : 3,417,707	137— 1 : 3,417,766
293 : 3,417,646	104— 8 : 3,417,708	15.2 : 3,417,767
305 : 3,417,647	23 : 3,417,709	73 : 3,417,768
423 : 3,417,648	173 : 3,417,710	81.5 : 3,417,769
433 : 3,417,649	105—157 : 3,417,711	3,417,770
85— 8.8 : 3,417,650	368 : 3,417,712	3,417,771
13 : 3,417,651	106— 1 : 3,418,143	3,417,772
3,417,652	14 : 3,418,144	85 : 3,417,773
63 : 3,417,653	286 : 3,418,145	155 : 3,417,774
86— 1 : 3,417,654	300 : 3,418,146	218 : 3,417,775
25 : 3,417,655	308 : 3,418,147	512.5 : 3,417,776
89— 1 : 3,417,656	107— 4 : 3,417,713	514 : 3,417,795
33 : 3,417,657	54 : 3,417,714	525 : 3,417,777
3,417,658	109— 50 : 3,417,715	543.23: 3,417,778
40 : 3,417,659	110— 7 : 3,417,716	604 : 3,417,779
198 : 3,417,660	3,417,717	608 : 3,417,780
90— 13.1 : 3,417,661	112—203 : 3,417,718	614.04: 3,417,781
16 : 3,417,662	114— 20 : 3,417,719	624.11: 3,417,782
91— 36 : 3,417,663	39 : 3,417,720	625.41: 3,417,783
119 : 3,417,664	43.5 : 3,417,721	.65: 3,417,784
177 : 3,417,665	66.5 : 3,417,722	138—108 : 3,417,785
375 : 3,417,667	144 : 3,417,723	140 : 3,417,786
376 : 3,417,668	206 : 3,417,724	139— 91 : 3,417,787
421 : 3,417,669	209 : 3,417,725	3,417,790
92— 52 : 3,417,670	235 : 3,417,726	92 : 3,417,788
62 : 3,417,671	116— 70 : 3,417,727	96 : 3,417,789
106 : 3,417,672	3,417,728	109 : 3,417,791
241 : 3,417,673	114 : 3,417,729	125 : 3,417,792
93— 8 : 3,417,674	118 : 3,417,730	126 : 3,417,793
35 : 3,417,675	124.1 : 3,417,731	420 : 3,417,794
52 : 3,417,666	173 : 3,417,732	144—208 : 3,417,796
94— 1.5 : 3,417,676	117— 36.1 : 3,418,148	145— 35 : 3,417,797
22 : 3,417,677	37 : 3,418,149	146— 2 : 3,417,798
23 : 3,417,678	38 : 3,418,150	50 : 3,417,799
46 : 3,417,679	62.1 : 3,418,151	186 : 3,417,800
51 : 3,417,680	63 : 3,418,152	148— 6.35: 3,418,174
95— 1.1 : 3,417,681	72 : 3,418,153	3,418,175
10 : 3,417,682	88 : 3,418,154	9 : 3,418,176
3,417,683	93.31: 3,418,155	11.5 : 3,418,177
3,417,684	124 : 3,418,156	12.4 : 3,418,178
12 : 3,417,685	132 : 3,418,157	24 : 3,418,179
89 : 3,417,686	3,418,158	187 : 3,418,180
93 : 3,417,687	137 : 3,418,159	3,418,181
96— 1 : 3,418,115	138.8 : 3,418,160	188 : 3,418,182
.5 : 3,418,116	161 : 3,418,161	149— 6 : 3,418,183
3 : 3,418,117	3,418,162	19 : 3,418,184
11 : 3,418,118	201 : 3,418,163	151— 21 : 3,417,801
27 : 3,418,119	215 : 3,418,164	37 : 3,417,802
49 : 3,418,120	118— 49 : 3,417,733	41.73: 3,417,803
55 : 3,418,121	637 : 3,417,734	156— 73 : 3,418,185
63 : 3,418,122	119— 18 : 3,417,735	140 : 3,418,186
3,418,123	122—406 : 3,417,736	180 : 3,418,187
64 : 3,418,124	448 : 3,417,737	246 : 3,418,188
3,418,125	123— 78 : 3,417,738	277 : 3,418,189
79 : 3,418,126	3,417,739	295 : 3,418,190
82 : 3,418,127	182 : 3,417,740	397 : 3,418,191
90 : 3,418,128	124— 8 : 3,417,741	401 : 3,418,192
100 : 3,418,129	126— 21 : 3,417,742	468 : 3,418,358
109 : 3,418,130	127— 48 : 3,418,165	583 : 3,418,193
3,418,131	128— 2 : 3,417,743	159— 20 : 3,417,804
111 : 3,418,132	3,417,744	160—152 : 3,417,805
99— 1 : 3,418,133	6 : 3,417,745	188 : 3,417,806
23 : 3,418,134	3,417,746	348 : 3,417,807
31 : 3,418,135	66 : 3,417,747	161— 27 : 3,418,194
48 : 3,418,136	85 : 3,417,748	37 : 3,418,195
94 : 3,418,137	171 : 3,417,749	38 : 3,418,196
158 : 3,418,138	278 : 3,417,750	58 : 3,418,197

161 – 84 : 3,418,198	204 – 192 : 3,418,229	242 – 55.13: 3,417,938
175 : 3,418,199	195 : 3,418,231	.2 : 3,417,935
177 : 3,418,200	197 : 3,418,230	68.3 : 3,417,939
184 : 3,418,201	263 : 3,418,232	125.1 : 3,417,940
192 : 3,418,202	300 : 3,418,233	243 – 16 : 3,417,941
162 – 145 : 3,418,203	206 – 45.28: 3,417,861	244 – 1 : 3,417,942
164 : 3,418,204	46 : 3,417,865	23 : 3,417,943
372 : 3,418,205	56 : 3,417,862	54 : 3,417,944
164 – 68 : 3,417,808	57 : 3,417,863	77 : 3,417,945
127 : 3,417,809	3,417,864	87 : 3,417,946
150 : 3,417,810	65 : 3,417,866	122 : 3,417,947
240 : 3,417,811	80 : 3,417,867	148 : 3,417,948
165 – 1 : 3,417,812	208 – 59 : 3,418,234	246 – 393 : 3,418,462
35 : 3,417,813	310 : 3,418,235	248 – 13 : 3,417,949
105 : 3,417,814	209 – 28 : 3,417,868	24 : 3,417,950
107 : 3,417,815	210 – 44 : 3,418,236	62 : 3,417,951
166 – 24 : 3,417,816	54 : 3,418,237	171 : 3,417,952
30 : 3,417,817	90 : 3,417,869	280 : 3,417,953
39 : 3,417,818	321 : 3,417,870	351 : 3,417,955
42 : 3,417,819	512 : 3,417,871	379 : 3,417,956
3,417,820	211 – 59 : 3,417,872	462 : 3,417,954
3,417,821	77 : 3,417,873	488 : 3,417,957
43 : 3,417,822	100 : 3,417,874	249 – 40 : 3,417,958
45 : 3,417,823	126 : 3,417,875	117 : 3,417,959
117 : 3,417,824	213 – 60 : 3,417,876	250 – 41.3 : 3,418,463
170 – 135.28: 3,417,825	214 – 1 : 3,417,877	.9 : 3,418,464
172 – 591 : 3,417,826	3,417,878	49.5 : 3,418,465
174 – 42 : 3,418,419	16 : 3,417,879	3,418,466
53 : 3,418,420	17 : 3,417,880	51.5 : 3,418,467
57 : 3,418,421	3,417,881	65 : 3,418,468
94 : 3,418,422	18 : 3,417,882	3,418,469
152 : 3,418,423	41 : 3,417,883	71 : 3,418,470
175 – 4.52: 3,417,827	83.1 : 3,417,884	.5 : 3,418,471
19 : 3,417,828	95 : 3,417,885	83 : 3,418,472
67 : 3,417,829	145 : 3,417,886	.3 : 3,418,473
209 : 3,417,830	147 : 3,417,887	.6 : 3,418,474
176 – 2 : 3,418,206	303 : 3,417,888	105 : 3,418,475
19 : 3,418,207	505 : 3,417,889	199 : 3,418,476
178 – 6.6 : 3,418,424	506 : 3,417,890	201 : 3,418,477
7.1 : 3,418,425	778 : 3,417,891	202 : 3,418,478
.82: 3,418,426	215 – 1 : 3,417,892	206 : 3,418,479
30 : 3,418,427	9 : 3,417,893	208 : 3,418,480
48 : 3,418,428	219 – 98 : 3,418,441	211 : 3,418,481
179 – 1 : 3,418,429	100 : 3,418,442	219 : 3,418,482
2 : 3,418,430	110 : 3,418,443	225 : 3,418,483
90 : 3,418,431	113 : 3,418,444	237 : 3,418,484
100.1 : 3,418,432	121 : 3,418,445	251 – 14 : 3,417,960
.2 : 3,418,433	130 : 3,418,446	212 : 3,417,961
3,418,434	156 : 3,418,447	262 : 3,417,962
.4 : 3,418,435	213 : 3,418,448	252 – 1 : 3,418,238
111 : 3,418,436	215 : 3,418,449	8.55: 3,418,239
115.5 : 3,418,437	279 : 3,418,450	46.7 : 3,418,240
180 – 8 : 3,417,831	341 : 3,418,451	62.58: 3,418,241
9.3 : 3,417,832	370 : 3,418,452	67 : 3,418,242
19 : 3,417,833	400 : 3,418,453	154 : 3,418,243
33 : 3,417,834	504 : 3,418,454	188.3 : 3,418,244
73 : 3,417,835	220 – 4 : 3,417,894	301.1 : 3,418,245
109 : 3,417,836	23 : 3,417,895	.4 : 3,418,246
181 – .5 : 3,417,837	41 : 3,417,896	3,418,247
24 : 3,417,838	60 : 3,417,897	.6 : 3,418,248
50 : 3,417,839	66 : 3,417,898	311.5 : 3,418,249
182 – 8 : 3,417,840	67 : 3,417,899	316 : 3,418,250
187 – 1 : 3,417,841	86 : 3,417,900	3,418,251
29 : 3,417,842	222 – 95 : 3,417,901	3,418,656
188 – 170 : 3,417,843	96 : 3,417,902	360 : 3,418,252
192 – 70.3 : 3,417,844	238 : 3,417,903	392 : 3,418,253
87.19: 3,417,845	386 : 3,417,904	3,418,254
89 : 3,417,846	223 – 74 : 3,417,905	397 : 3,418,255
195 – 1 : 3,418,208	95 : 3,417,906	415 : 3,418,256
.8 : 3,418,209	226 – 198 : 3,417,907	455 : 3,418,257
3,418,210	227 – 83 : 3,417,908	472 : 3,418,258
31 : 3,418,211	229 – 15 : 3,417,909	253 – 2 : 3,417,963
103.5 : 3,418,212	19 : 3,417,910	37 : 3,417,964
197 – 18 : 3,417,847	37 : 3,417,911	256 – 13.1 : 3,417,965
82 : 3,417,848	62 : 3,417,912	259 – 1 : 3,417,966
91 : 3,417,849	230 – 101 : 3,417,913	4 : 3,417,967
133 : 3,417,850	3,417,914	7 : 3,417,968
198 – 9 : 3,417,851	150 : 3,417,915	3,417,969
19 : 3,417,852	234 – 1 : 3,417,916	3,417,970
22 : 3,417,853	235 – 60 : 3,417,917	37 : 3,417,971
24 : 3,417,854	61.11: 3,418,456	3,417,972
32 : 3,417,855	.12: 3,418,457	54 : 3,417,973
33 : 3,417,856	.7 : 3,418,455	260 – 2 : 3,418,259
39 : 3,417,857	150.2 : 3,418,459	3,418,260
110 : 3,417,858	151.22: 3,418,458	3,418,261
122 : 3,417,859	155 : 3,418,460	.2 : 3,418,262
197 : 3,417,860	236 – 48 : 3,417,918	23 : 3,418,263
200 – 51.1 : 3,418,438	87 : 3,417,919	.7 : 3,418,264
144 : 3,418,439	237 – 12.3 : 3,417,920	29.6 : 3,418,265
148 : 3,418,440	238 – 264 : 3,417,921	33.8 : 3,418,266
202 – 173 : 3,418,213	292 : 3,417,922	3,418,267
176 : 3,418,214	239 – 112 : 3,417,923	37 : 3,418,268
203 – 49 : 3,418,215	428.5 : 3,417,924	38 : 3,418,269
204 – 14 : 3,418,216	504 : 3,417,925	41 : 3,418,270
18 : 3,418,217	673 : 3,417,926	3,418,274
35 : 3,418,218	240 – 52.5 : 3,418,461	45.75: 3,418,273
38 : 3,418,219	241 – 24 : 3,417,927	.8 : 3,418,271
41 : 3,418,220	32 : 3,417,928	3,418,272
51 : 3,418,221	46.04: 3,417,929	47 : 3,418,275
58 : 3,418,222	64 : 3,417,930	3,418,276
70 : 3,418,223	161 : 3,417,931	49 : 3,418,277
78 : 3,418,224	208 : 3,417,932	64 : 3,418,278
109 : 3,418,225	280 : 3,417,933	67 : 3,418,279
143 : 3,418,226	242 – 55 : 3,417,934	3,418,280
3,418,227	.12: 3,417,936	72 : 3,418,282
158 : 3,418,228	3,417,937	.5 : 3,418,281

260 – 73 : 3,418,283	260 – 683 : 3,418,390	313 – 109.5 : 3,418,509
3,418,284	.57: 3,418,391	146 : 3,418,510
75 : 3,418,285	834 : 3,418,392	167 : 3,418,511
3,418,286	857 : 3,418,393	185 : 3,418,512
78 : 3,418,287	880 : 3,418,394	230 : 3,418,513
3,418,288	895 : 3,418,395	231 : 3,418,514
.3 : 3,418,289	897 : 3,418,396	3,418,515
3,418,290	900 : 3,418,397	315 – 5.53: 3,418,516
3,418,291	261 – 28 : 3,417,974	21 : 3,418,517
.5 : 3,418,292	114 : 3,417,975	22 : 3,418,518
80 : 3,418,293	263 – 7 : 3,417,976	27 : 3,418,519
3,418,294	19 : 3,417,977	31 : 3,418,520
.72: 3,418,295	21 : 3,417,978	39.63: 3,418,521
3,418,296	52 : 3,418,398	3,418,522
82.1 : 3,418,297	264 – 35 : 3,418,399	.65: 3,418,523
3,418,298	36 : 3,418,400	111 : 3,418,524
85.3 : 3,418,299	56 : 3,418,401	168 : 3,418,525
.5 : 3,418,300	65 : 3,418,402	205 : 3,418,526
86.7 : 3,418,301	91 : 3,418,403	244 : 3,418,527
87.5 : 3,418,302	173 : 3,418,404	317 – 5 : 3,418,528
88.2 : 3,418,303	190 : 3,418,405	11 : 3,418,529
93.7 : 3,418,304	206 : 3,418,406	16 : 3,418,530
94.9 : 3,418,305	219 : 3,418,407	41 : 3,418,531
3,418,306	221 : 3,418,408	53 : 3,418,532
112.5 : 3,418,307	230 : 3,418,409	100 : 3,418,533
154 : 3,418,308	242 : 3,418,410	101 : 3,418,534
158 : 3,418,309	262 : 3,418,411	3,418,535
3,418,310	319 : 3,418,412	119 : 3,418,536
209 : 3,418,311	349 : 3,418,413	123 : 3,418,537
212 : 3,418,312	266 – 23 : 3,417,979	3,418,538
3,418,313	3,417,980	142 : 3,418,539
239.3 : 3,418,314	3,417,981	153 : 3,418,540
3,418,315	27 : 3,417,982	156 : 3,418,541
.5 : 3,418,316	31 : 3,417,983	157.5 : 3,418,542
244 : 3,418,317	267 – 1 : 3,417,984	234 : 3,418,543
247.5 : 3,418,318	11 : 3,417,985	3,418,544
256.4 : 3,418,319	33 : 3,417,986	235 : 3,418,545
260 : 3,418,320	270 – 61 : 3,417,987	246 : 3,418,546
274 : 3,418,321	271 – 19 : 3,417,988	318 – 18 : 3,418,547
279 : 3,418,322	64 : 3,417,989	3,418,548
290 : 3,418,323	272 – 30 : 3,417,990	39 : 3,418,549
293 : 3,418,324	35 : 3,417,991	138 : 3,418,550
295 : 3,418,328	273 – 43 : 3,417,992	320 – 2 : 3,418,551
3,418,329	51 : 3,417,993	3,418,552
.5 : 3,418,325	106.5 : 3,417,994	24 : 3,418,553
297 : 3,418,330	134 : 3,417,995	321 – 5 : 3,418,554
302 : 3,418,331	157 : 3,417,996	15 : 3,418,555
3,418,332	161 : 3,417,997	16 : 3,418,556
309 : 3,418,333	274 – 10 : 3,417,998	18 : 3,418,557
.5 : 3,418,334	23 : 3,417,999	43 : 3,418,558
345.6 : 3,418,335	39 : 3,418,000	45 : 3,418,559
.9 : 3,418,336	277 – 165 : 3,418,001	47 : 3,418,560
347.8 : 3,418,337	188 : 3,418,002	323 – 22 : 3,418,561
348 : 3,418,338	280 – 5 : 3,418,003	43.5 : 3,418,562
3,418,339	11.35: 3,418,004	48 : 3,418,563
.5 : 3,418,340	47.26: 3,418,005	324 – .5 : 3,418,564
349 : 3,418,341	96 : 3,418,006	3,418,565
377 : 3,418,342	150 : 3,418,007	30 : 3,418,566
397.4 : 3,418,326	179 : 3,418,008	37 : 3,418,567
3,418,327	285 – 39 : 3,418,009	43 : 3,418,568
.45: 3,418,344	92 : 3,418,010	52 : 3,418,569
.5 : 3,418,343	287 – 87 : 3,418,011	54 : 3,418,570
404.5 : 3,418,345	189.36: 3,418,012	61 : 3,418,571
429 : 3,418,346	3,418,013	67 : 3,418,572
.5 : 3,418,347	289 – 13 : 3,418,014	73 : 3,418,573
3,418,348	3,418,015	77 : 3,418,574
.7 : 3,418,349	290 – 1 : 3,418,485	117 : 3,418,575
439 : 3,418,350	292 – 96 : 3,418,016	151 : 3,418,576
3,418,351	169 : 3,418,017	325 – 18 : 3,418,577
448.2 : 3,418,352	251.5 : 3,418,018	45 : 3,418,578
3,418,353	294 – 71 : 3,418,019	52 : 3,418,579
3,418,354	93 : 3,418,020	137 : 3,418,580
459 : 3,418,355	297 – 388 : 3,418,021	141 : 3,418,581
463 : 3,418,356	299 – 31 : 3,418,022	328 – 39 : 3,418,582
465.3 : 3,418,357	43 : 3,418,023	48 : 3,418,583
468 : 3,418,364	303 – 6 : 3,418,024	134 : 3,418,585
475 : 3,418,359	307 – 62 : 3,418,486	143 : 3,418,584
3,418,360	66 : 3,418,487	329 – 104 : 3,418,586
476 : 3,418,361	114 : 3,418,488	205 : 3,418,587
482 : 3,418,362	3,418,489	330 – 8 : 3,418,588
485 : 3,418,363	202 : 3,418,490	13 : 3,418,589
544 : 3,418,365	214 : 3,418,491	14 : 3,418,590
551 : 3,418,366	3,418,492	21 : 3,418,591
553 : 3,418,367	232 : 3,418,496	23 : 3,418,592
563 : 3,418,368	238 : 3,418,493	40 : 3,418,593
3,418,369	239 : 3,418,494	147 : 3,418,594
570 : 3,418,370	3,418,495	331 – 9 : 3,418,595
3,418,371	252 : 3,418,497	33 : 3,418,596
576 : 3,418,372	293 : 3,418,498	65 : 3,418,597
3,418,373	308 – 5 : 3,418,025	94.5 : 3,418,598
583 : 3,418,374	6 : 3,418,026	3,418,599
3,418,375	70 : 3,418,027	97 : 3,418,600
604 : 3,418,376	241 : 3,418,028	107 : 3,418,601
613 : 3,418,377	310 – 4 : 3,418,499	113 : 3,418,602
619 : 3,418,378	5 : 3,418,500	333 – 9 : 3,418,603
624 : 3,418,379	6 : 3,418,501	20 : 3,418,604
3,418,380	32 : 3,418,502	24.1 : 3,418,605
3,418,381	39 : 3,418,503	31 : 3,418,606
632 : 3,418,382	50 : 3,418,504	335 – 41 : 3,418,607
3,418,383	266 : 3,418,505	131 : 3,418,608
648 : 3,418,384	268 : 3,418,506	203 : 3,418,609
665 : 3,418,385	312 – 39 : 3,418,029	205 : 3,418,610
666 : 3,418,386	194 : 3,418,030	3,418,611
3,418,387	319 : 3,418,031	222 : 3,418,612
671 : 3,418,388	313 – 18 : 3,418,507	284 : 3,418,613
674 : 3,418,389	65 : 3,418,508	337 – 164 : 3,418,614

337 – 190 : 3,418,615	340 – 52 : 3,418,628	340 – 173 : 3,418,641	340 – 347 : 3,418,654	353 – 7 : 3,418,044	356 – 246 : 3,418,061
290 : 3,418,616	146.1 : 3,418,629	.1 : 3,418,642	343 – 6.5 : 3,418,655	18 : 3,418,042	401 – 188 : 3,418,054
368 : 3,418,617	3,418,630	174 : 3,418,643	350 – 35 : 3,418,032	25 : 3,418,043	199 : 3,418,056
387 : 3,418,618	3,418,631	3,418,644	138 : 3,418,033	122 : 3,418,045	206 : 3,418,055
338 – 20 : 3,418,619	.2 : 3,418,632	3,418,645	3,418,034	355 – 13 : 3,418,046	209 : 3,418,057
57 : 3,418,620	.3 : 3,418,633	3,418,646	139 : 3,418,035	28 : 3,418,047	259 : 3,418,058
339 – 18 : 3,418,621	147 : 3,418,634	3,418,647	151 : 3,418,036	38 : 3,418,048	266 : 3,418,059
56 : 3,418,622	154 : 3,418,635	228 : 3,418,648	202 : 3,418,037	54 : 3,418,049	424 – 181 : 3,418,414
94 : 3,418,623	171 : 3,418,636	258 : 3,418,649	209 : 3,418,038	90 : 3,418,050	238 : 3,418,415
340 – 9 : 3,418,624	172.5 : 3,418,637	311 : 3,418,650	226 : 3,418,039	356 – 101 : 3,418,051	263 : 3,418,416
15.5 : 3,418,625	3,418,638	321 : 3,418,651	3,418,040	123 : 3,418,052	431 – 158 : 3,418,060
3,418,626	173 : 3,418,639	324 : 3,418,652	351 – 153 : 3,418,041	181 : 3,418,053	350 : 3,418,062
29 : 3,418,627	3,418,640	347 : 3,418,653			

CLASSIFICATION OF DESIGNS

D 2 – 329 : 213,001	D26 – 14 : 213,007	D35 – 1 : 213,013	D52 – 3 : 213,019	D56 – 4 : 213,024	D74 – 10 : 213,029
D14 – 30 : 213,002	213,008	2 : 213,014	6 : 213,020	D61 – 1 : 213,025	D83 – 1 : 213,030
D25 – 1 : 213,003	D34 – 5 : 213,009	213,015	10 : 213,021	D64 – 10 : 213,026	213,031
D26 – 14 : 213,004	213,010	D37 – 3 : 213,016	D56 – 1 : 213,022	D72 – 1 : 213,027	213,032
213,005	213,011	D48 – 28 : 213,017	4 : 213,023	213,028	D87 – 3 : 213,033
213,006	15 : 213,012	D52 – 3 : 213,018			

CLASSIFICATION OF PLANTS

P. – 26 : 2,851	P. – 28 : 2,850	P. – 70 : 2,852

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,417,538	6 : 3,417,818	6 : 3,418,434	9 : 3,418,478	12 : 3,418,061	17 : 3,417,952
3,417,577	3,417,831	3,418,448	3,418,557	3,418,292	3,417,962
3,418,572	3,417,834	3,418,464	3,418,570	3,418,366	3,417,974
4 : 3,417,587	3,417,848	3,418,468	3,418,601	3,418,409	3,417,981
3,417,752	3,417,865	3,418,496	3,418,608	3,418,506	3,417,983
3,418,181	3,417,870	3,418,507	3,418,610	13 : 3,417,407	3,417,988
3,418,427	3,417,899	3,418,514	3,418,622	3,417,543	3,417,996
3,418,490	3,417,906	3,418,517	10 : 3,417,413	3,417,645	3,417,997
3,418,592	3,417,915	3,418,519	3,417,431	3,417,714	3,417,998
5 : 3,417,926	3,417,918	3,418,520	3,417,447	3,417,887	3,418,020
6 : 3,417,443	3,417,934	3,418,524	3,417,812	3,417,946	3,418,026
3,417,448	3,417,938	3,418,541	3,418,074	3,418,031	3,418,035
3,417,452	3,417,942	3,418,546	3,418,088	3,418,554	3,418,049
3,417,455	3,417,958	3,418,549	3,418,147	16 : 3,417,482	3,418,051
3,417,457	3,417,960	3,418,559	3,418,198	3,417,483	3,418,060
3,417,461	3,417,964	3,418,564	3,418,201	3,418,142	3,418,078
3,417,465	3,417,965	3,418,591	3,418,228	17 : 3,417,410	3,418,098
3,417,471	3,417,966	3,418,595	3,418,242	3,417,417	3,418,102
3,417,472	3,417,985	3,418,599	3,418,260	3,417,425	3,418,172
3,417,492	3,417,990	3,418,612	3,418,267	3,417,469	3,418,211
3,417,504	3,418,003	3,418,627	3,418,275	3,417,475	3,418,219
3,417,507	3,418,009	3,418,639	3,418,287	3,417,515	3,418,274
3,417,519	3,418,010	3,418,642	3,418,290	3,417,537	3,418,344
3,417,520	3,418,012	3,418,644	3,418,303	3,417,542	3,418,374
3,417,548	3,418,017	3,418,652	3,418,337	3,417,556	3,418,382
3,417,562	3,418,018	3,418,655	3,418,341	3,417,565	3,418,385
3,417,572	3,418,029	8 : 3,417,609	3,418,346	3,417,575	3,418,399
3,417,591	3,418,041	3,417,824	3,418,369	3,417,598	3,418,403
3,417,617	3,418,054	3,417,947	3,418,376	3,417,600	3,418,407
3,417,620	3,418,059	3,418,471	3,418,393	3,417,603	3,418,411
3,417,623	3,418,080	3,418,597	3,418,397	3,417,614	3,418,418
3,417,646	3,418,091	9 : 3,417,424	3,418,466	3,417,615	3,418,420
3,417,650	3,418,109	3,417,437	11 : 3,417,700	3,417,635	3,418,438
3,417,656	3,418,137	3,417,518	3,418,221	3,417,641	3,418,443
3,417,663	3,418,139	3,417,531	3,418,584	3,417,653	3,418,485
3,417,671	3,418,143	3,417,533	12 : 3,417,449	3,417,670	3,418,487
3,417,686	3,418,157	3,417,628	3,417,454	3,417,690	3,418,593
3,417,697	3,418,173	3,417,637	3,417,470	3,417,804	3,418,614
3,417,721	3,418,184	3,417,649	3,417,502	3,417,845	3,418,650
3,417,732	3,418,203	3,417,691	3,417,521	3,417,851	3,418,651
3,417,755	3,418,222	3,417,720	3,417,522	3,417,853	18 : 3,417,631
3,417,764	3,418,244	3,417,809	3,417,527	3,417,857	3,417,800
3,417,767	3,418,323	3,418,065	3,417,529	3,417,875	3,417,826
3,417,770	3,418,351	3,418,112	3,417,564	3,417,882	3,417,833
3,417,776	3,418,356	3,418,119	3,417,655	3,417,891	3,417,876
3,417,784	3,418,361	3,418,177	3,417,689	3,417,898	3,417,877
3,417,785	3,418,381	3,418,213	3,417,723	3,417,900	3,417,893
3,417,799	3,418,400	3,418,237	3,417,771	3,417,901	3,417,907
3,417,802	3,418,417	3,418,370	3,417,873	3,417,919	3,417,970
3,417,803	3,418,433	3,418,455	3,417,971	3,417,928	3,418,006

18 : 3,418,104	26 : 3,417,429	34 : 3,417,627	36 : 3,417,894	39 : 3,417,713	42 : 3,417,979
3,418,105	3,417,450	3,417,643	3,417,908	3,417,742	3,417,994
3,418,111	3,417,462	3,417,681	3,417,924	3,417,807	3,418,014
3,418,358	3,417,490	3,417,698	3,417,930	3,417,886	3,418,015
3,418,431	3,417,536	3,417,726	3,417,939	3,417,897	3,418,030
19 : 3,417,505	3,417,551	3,417,727	3,417,945	3,417,950	3,418,062
3,417,553	3,417,652	3,417,746	3,417,975	3,417,972	3,418,087
3,417,616	3,417,661	3,417,750	3,418,007	3,417,980	3,418,089
3,417,762	3,417,662	3,417,772	3,418,033	3,418,044	3,418,097
3,417,868	3,417,725	3,417,779	3,418,034	3,418,086	3,418,101
20 : 3,417,432	3,417,738	3,417,794	3,418,036	3,418,095	3,418,128
3,417,576	3,417,739	3,417,837	3,418,037	3,418,099	3,418,170
3,417,987	3,417,749	3,417,842	3,418,038	3,418,141	3,418,174
21 : 3,417,850	3,417,753	3,417,856	3,418,039	3,418,153	3,418,182
3,417,866	3,417,783	3,417,905	3,418,040	3,418,154	3,418,186
3,418,432	3,417,813	3,417,941	3,418,042	3,418,156	3,418,193
22 : 3,417,495	3,417,835	3,417,984	3,418,046	3,418,179	3,418,214
3,417,557	3,417,836	3,418,000	3,418,050	3,418,180	3,418,246
3,417,569	3,417,844	3,418,022	3,418,053	3,418,189	3,418,254
3,417,817	3,417,852	3,418,052	3,418,055	3,418,190	3,418,315
3,417,822	3,417,869	3,418,057	3,418,073	3,418,191	3,418,326
3,417,889	3,417,871	3,418,071	3,418,094	3,418,197	3,418,327
3,418,107	3,417,885	3,418,092	3,418,103	3,418,212	3,418,343
3,418,256	3,417,902	3,418,114	3,418,117	3,418,230	3,418,350
23 : 3,418,615	3,417,949	3,418,118	3,418,120	3,418,265	3,418,359
24 : 3,417,456	3,417,951	3,418,123	3,418,122	3,418,284	3,418,360
3,417,523	3,417,989	3,418,124	3,418,127	3,418,286	3,418,362
3,417,602	3,417,999	3,418,161	3,418,131	3,418,297	3,418,364
3,417,624	3,418,002	3,418,169	3,418,132	3,418,298	3,418,368
3,417,664	3,418,013	3,418,176	3,418,146	3,418,347	3,418,380
3,417,693	3,418,021	3,418,204	3,418,149	3,418,406	3,418,388
3,417,710	3,418,024	3,418,208	3,418,152	3,418,408	3,418,401
3,417,722	3,418,045	3,418,229	3,418,158	3,418,413	3,418,419
3,417,743	3,418,151	3,418,234	3,418,185	3,418,421	3,418,439
3,418,138	3,418,155	3,418,235	3,418,215	3,418,441	3,418,440
3,418,183	3,418,218	3,418,240	3,418,226	3,418,446	3,418,444
3,418,200	3,418,233	3,418,247	3,418,232	3,418,456	3,418,461
3,418,270	3,418,243	3,418,248	3,418,241	3,418,475	3,418,498
3,418,372	3,418,281	3,418,253	3,418,250	3,418,497	3,418,505
3,418,453	3,418,288	3,418,259	3,418,251	3,418,542	3,418,535
3,418,492	3,418,320	3,418,261	3,418,263	3,418,562	3,418,543
3,418,493	3,418,329	3,418,280	3,418,266	3,418,567	3,418,544
3,418,510	3,418,377	3,418,283	3,418,272	3,418,613	3,418,550
3,418,526	3,418,379	3,418,295	3,418,273	3,418,617	3,418,575
3,418,596	3,418,414	3,418,304	3,418,276	3,418,632	3,418,587
3,418,602	3,418,488	3,418,316	3,418,294	40 : 3,417,481	3,418,588
3,418,646	3,418,489	3,418,321	3,418,312	3,417,514	3,418,607
25 : 3,417,416	3,418,556	3,418,333	3,418,313	3,417,605	3,418,623
3,417,420	3,418,606	3,418,340	3,418,328	3,417,820	3,418,636
3,417,453	27 : 3,417,493	3,418,386	3,418,330	3,417,821	3,418,645
3,417,459	3,417,541	3,418,402	3,418,338	3,417,881	44 : 3,417,578
3,417,484	3,417,584	3,418,442	3,418,348	3,417,896	3,418,430
3,417,494	3,417,606	3,418,447	3,418,353	3,417,923	3,418,531
3,417,499	3,417,658	3,418,462	3,418,354	3,417,954	3,418,616
3,417,512	3,417,763	3,418,482	3,418,365	3,418,106	3,418,628
3,417,618	3,417,910	3,418,527	3,418,392	3,418,236	45 : 3,417,511
3,417,619	3,417,911	3,418,530	3,418,423	3,418,249	3,417,940
3,417,666	3,417,959	3,418,539	3,418,429	3,418,252	3,417,957
3,417,679	3,417,977	3,418,561	3,418,459	3,418,305	3,418,067
3,417,719	3,418,001	3,418,566	3,418,467	3,418,357	47 : 3,417,414
3,417,728	3,418,043	3,418,581	3,418,469	3,418,384	3,417,552
3,417,737	3,418,068	3,418,586	3,418,481	3,418,390	3,417,758
3,417,765	3,418,081	3,418,619	3,418,483	3,418,391	3,417,759
3,417,773	3,418,163	3,418,631	3,418,484	3,418,394	3,418,027
3,417,792	3,418,217	3,418,635	3,418,502	3,418,398	3,418,066
3,417,808	3,418,322	3,418,641	3,418,534	3,418,568	3,418,202
3,417,839	3,418,324	35 : 3,418,637	3,418,536	3,418,626	3,418,306
3,417,862	3,418,335	36 : 3,417,408	3,418,548	41 : 3,417,517	3,418,309
3,417,903	3,418,457	3,417,415	3,418,558	3,417,559	3,418,310
3,417,913	3,418,460	3,417,423	3,418,560	3,417,797	48 : 3,417,426
3,417,925	3,418,470	3,417,434	3,418,577	3,417,995	3,417,451
3,417,935	3,418,473	3,417,444	3,418,585	3,418,649	3,417,473
3,417,953	3,418,640	3,417,464	3,418,589	42 : 3,417,427	3,417,487
3,417,993	28 : 3,418,255	3,417,467	3,418,600	3,417,466	3,417,571
3,418,016	29 : 3,417,590	3,417,476	3,418,605	3,417,485	3,417,586
3,418,047	3,417,638	3,417,491	3,418,629	3,417,488	3,417,611
3,418,076	3,417,644	3,417,509	3,418,633	3,417,525	3,417,636
3,418,113	3,417,651	3,417,510	3,418,638	3,417,532	3,417,673
3,418,140	3,417,711	3,417,535	3,418,643	3,417,534	3,417,729
3,418,168	3,417,712	3,417,550	3,418,647	3,417,547	3,417,766
3,418,171	3,417,781	3,417,566	3,418,653	3,417,570	3,417,774
3,418,178	3,417,948	3,417,582	3,418,654	3,417,573	3,417,775
3,418,205	3,418,005	3,417,583	3,418,656	3,417,585	3,417,823
3,418,209	3,418,008	3,417,596	37 : 3,417,412	3,417,599	3,417,830
3,418,231	3,418,011	3,417,622	3,417,558	3,417,610	3,417,840
3,418,277	3,418,070	3,417,629	3,417,560	3,417,612	3,417,872
3,418,449	3,418,144	3,417,648	3,417,884	3,417,625	3,417,874
3,418,463	3,418,268	3,417,665	3,418,160	3,417,633	3,417,883
3,418,472	3,418,334	3,417,669	3,418,289	3,417,647	3,417,976
3,418,474	3,418,345	3,417,675	3,418,454	3,417,684	3,418,085
3,418,477	3,418,363	3,417,680	3,418,500	3,417,688	3,418,145
3,418,486	3,418,451	3,417,695	3,418,553	3,417,692	3,418,194
3,418,495	3,418,618	3,417,702	3,418,621	3,417,761	3,418,227
3,418,521	31 : 3,417,421	3,417,704	38 : 3,418,100	3,417,787	3,418,238
3,418,522	3,417,798	3,417,744	39 : 3,417,406	3,417,788	3,418,239
3,418,540	3,418,084	3,417,745	3,417,411	3,417,810	3,418,296
3,418,547	3,418,611	3,417,746	3,417,435	3,417,811	3,418,301
3,418,552	32 : 3,418,223	3,417,756	3,417,438	3,417,816	3,418,389
3,418,574	33 : 3,418,518	3,417,760	3,417,480	3,417,819	3,418,396
3,418,578	34 : 3,417,474	3,417,782	3,417,496	3,417,827	3,418,422
3,418,580	3,417,508	3,417,805	3,417,497	3,417,829	3,418,445
3,418,598	3,417,516	3,417,806	3,417,530	3,417,832	3,418,480
3,418,604	3,417,528	3,417,814	3,417,540	3,417,858	3,418,491
3,418,620	3,417,563	3,417,859	3,417,574	3,417,904	3,418,508
3,418,624	3,417,589	3,417,861	3,417,594	3,417,909	3,418,545
26 : 3,417,428	3,417,626	3,417,867	3,417,672	3,417,956	3,418,573

51 : 3,417,593	51 : 3,418,579	53 : 3,417,825	53 : 3,418,435	55 : 3,417,513	55 : 3,417,880
3,417,699	3,418,634	3,417,863	54 : 3,417,595	3,417,544	3,417,932
3,417,724	53 : 3,417,506	3,417,864	3,418,108	3,417,639	3,418,056
3,417,973	3,417,546	3,417,895	3,418,302	3,417,731	3,418,135
3,418,090	3,417,549	3,417,912	3,418,373	3,417,740	3,418,136
3,418,134	3,417,554	3,417,929	55 : 3,417,477	3,417,768	3,418,499
3,418,336	3,417,715	3,418,206	3,417,489	3,417,769	3,418,529
3,418,537	3,417,735	3,418,224	3,417,501	3,417,796	

Design Patents

6 : 213,003	9 : 213,005	13 : 213,027	17 : 213,019	25 : 213,001	39 : 213,033
213,011	213,006	213,028	213,023	27 : 213,016	41 : 213,030
213,012	213,007	17 : 213,013	213,024	213,029	213,031
213,021	213,008	213,017	20 : 213,026	34 : 213,020	213,032
213,022	12 : 213,010	213,018	24 : 213,002	213,025	42 : 213,009
9 : 213,004					

Plant Patents

26 : 2,852	36 : 2,851				

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 24, 1968 Volume 857 Number 4

TRADEMARKS

NOTICES

Reprint of Pages TM 137 through 168 of the Official Gazette of November 26, 1968 (856 O.G.)

Since it appears that a large number of copies of the OFFICIAL GAZETTE of the Patent Office of November 26, 1968 did not contain the section Marks Published For Opposition, a reprint of those pages is included herewith. In view of this error, opposition under Section 13 may be filed within 30 days of this publication. See Rules 2.101 to 2.105.

EDWIN L. REYNOLDS.
First Assistant Commissioner.

Dec. 10, 1968.

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 26, 1968 Volume 856 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 121,818 (DESIGN OF MR. PEANUT), Planters Nut & Chocolate Co., Salted peanuts and peanut bars; **Reg. No. 123,641** (PLANTERS AND DESIGN), same, Salted peanuts, peanut bars, raw peanuts, peanut-butter, peanut-meal, chocolate cream candy, nut-candy, chocolate candy, and peanut-candy; **Reg. No. 237,024** (GROTESQUE FIGURE OF A PEANUT MAN), same, Chocolate-covered peanuts; **Reg. No. 506,052** (MR. PEANUT AND DESIGN OF PEANUT MAN), same, Salted peanuts, peanut candy, chocolate covered peanuts, and salted assorted nuts, and peanut oil for cooking purposes; **Reg. No. 526,962** (DESIGN OF MR. PEANUT), same, Peanut oil for medicinal purposes; **Reg. No. 536,518**, same, Plastic salt and pepper shakers; **Reg. No. 528,882** ("MR. PEANUT"), same, Salted shelled peanuts, potato chips, candied and buttered pop corn and doughnuts; **Reg. No. 799,958** (MR. PEANUT AND DESIGN), Standard Brands Incorporated, Shelled nuts, candy, peanut bars, peanut butter and peanut oil; **Reg. No. 206,415** (MR. PEANUT), The Planters Nut and Chocolate Company, Candy, salted peanuts, peanut meal, peanut butter and candied peanuts; **Reg. No. 526,963** (MR. PEANUT AND DESIGN), same, Peanut oil for medicinal purposes; **Reg. No. 222,961** (PLANTERS JUMBO BLOCK), same, Peanut-candy bar; **Reg. No. 315,261** (PLANTERS "HI-HAT"), Planters Edible Oil Company, Edible oils for salads and for cooking purposes; **Reg. No. 319,615** ("PLANTERS" AND DESIGN), Planters Nut and Chocolate Co., Salted peanuts; **Reg. No. 322,461** (PLANTERS), same, Roasted peanuts, raw peanuts, salted peanuts, peanut butter, peanut meal; candy and peanut confections—namely, peanut candy bars, chocolate coated peanuts, and chocolate coated peanut candy bars; **Reg. No. 528,074**, same, Shelled and salted peanuts, salted mixed nuts, peanut butter sandwiches, potato chips, candied and buttered popped popcorn, and doughnuts; **Reg. No. 706,102**, same, Edible peanut oil, **filed** May 6, 1968, D.C.N.J. (Camden), Doc. 436–68, *Standard Brands Incorporated* v. *Solomon Gelnik*. Consent decree for permanent injunction, Aug. 2, 1968.

Reg. No. 123,641. (See Reg. No. 121,818.)

Reg. No. 133,143 (KITCHENAID), The Hobart Manufacturing Company, Electrically driven beating and mixing machines; **Reg. No. 167,175**, same, Brushes designed for household use, including brushes for washing dishes, glassware, bottles, percolators, and like utensils; **Reg. No. 234,988**, same, Oil droppers, food choppers, coffee mills and cereal grinders, fruit-juice extractors, and vegetable slicers; **Reg. No. 235,207**, same, Ice cream freezers; **Reg. No. 549,810**, same, Electric dishwashers; **Reg. No. 610,242**, same, Dishwashers and dishwasher sinks, metal mixing bowls, bowl covers, pouring chutes, colanders and sieves, and parts therefor; **Reg.**

CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 15,450
Date of oldest new application ..... November 17, 1967
Date of oldest amended application (filing date) ..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	2- 9-68	5- 3-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12- 1-67	10-18-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	11-17-67	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	11-27-67	1-5 -65
Renewals (All Classes)	8-19-68	.....
Sec. 12(c) Publications (All Classes)	8-26-68	.....

Applications filed during the month of September 1968—2,238

Registrations Issued ..... 449—No. 860,756 to No. 861,204
Renewals Issued 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

No. 610,772, same, Aprons; **Reg. No. 611,638**, same, Buffing wheels and grinding and knife-sharpening wheels; **Reg. No. 614,411**, same, Glass culinary equipment—namely, bowls, mixing bowls, and containers for receiving ground coffee; **Reg. No. 615,734**, same, Graduated measures for ground coffee and devices for feeding fluids to foodstuffs at a controlled rate—namely, droppers for oils, fruit juices, flavoring extracts, and the like; **Reg. No. 672,776**, same, Serving scrapers with blades of rubber-like material; **Reg. No. 841,987**, same, Food waste disposers, **filed** Sept. 4, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1484–IH, *The Hobart Manufacturing Company* v. *Kitchen Maid Mfg., Inc.*

Reg. No. 167,175. (See Reg. No. 133,143.)

Reg. No. 206,415. (See Reg. No. 121,818.)

Reg. No. 222,961. (See Reg. No. 121,818.)

Reg. No. 234,988. (See Reg. No. 133,143.)

Reg. No. 235,207. (See Reg. No. 133,143.)

Reg. No. 237,084. (See Reg. No. 121,818.)

Reg. No. 315,261. (See Reg. No. 121,818.)

Reg. No. 319,615. (See Reg. No. 121,818.)

Reg. No. 322,461. (See Reg. No. 121,818.)

Reg. No. 508,052. (See Reg. No. 121,818.)

Reg. No. 526,962. (See Reg. No. 121,818.)

Reg. No. 526,963. (See Reg. No. 121,818.)

Reg. No. 528,074. (See Reg. No. 121,818.)

Reg. No. 536,518. (See Reg. No. 121,818.)

Reg. No. 538,882. (See Reg. No. 121,818.)

Reg. No. 549,810. (See Reg. No. 133,143.)

Reg. No. 610,242. (See Reg. No. 133,143.)

Reg. No. 610,772. (See Reg. No. 133,143.)

Reg. No. 611,638. (See Reg. No. 133,143.)

Reg. No. 614,411. (See Reg. No. 133,143.)

Reg. No. 615,734. (See Reg. No. 133,143.)

Reg. No. 672,776. (See Reg. No. 133,143.)

Reg. No. 706,102. (See Reg. No. 121,818.)

Reg. No. 724,686 (PERMCO), Precision Metal Fabricators Co., Metal forms used in the pouring of concrete, **filed** Sept. 4, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–654, *Permco Corporation* v. *Industrial Metal Services, Inc. and Service Station Equip. Co., Inc.*

Reg. No. 740,467 (SADDLEGUN), Ithaca Gun Company, Inc., Guns, **filed** Aug. 22, 1968, D.C., N.D.N.Y. (Utica), Doc. 68–CV-280, *Ithaca Gun Company, Inc.* v. *Charles G. Greco and Professional Industries, Inc.*

Reg. No. 799,958. (See Reg. No. 121,818.)

Reg. No. 841,987. (See Reg. No. 133,143.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 256,568. Lit-Ning Products Company, Beverly Hills, Calif. Filed Oct. 17, 1966.

LIT-NING

Owner of Reg. No. 599,974.

Class 2—Receptacles

For Storage Bins, Storage Trays, Filing Boxes, Waste Baskets, and Portable Carrying Files (Int. Cl. 16).

Class 25—Locks and Safes

For Bond Boxes, Cash Boxes, Check Files, and Coin Boxes, All in the Nature of a Safe (Int. Cl. 6).

Class 32—Furniture and Upholstery

For Office Equipment—Namely, Literature, Card and Display Racks; Stationery Holders; Storage Cabinets; Copy Holders; Message Racks; Filing Cabinets and Filing Shelves (Int. Cl. 20).

First use in or before August 1961.

SN 260,697. Chemap AG, Mannedorf, Zurich, Switzerland. Filed Dec. 14, 1966.

Chemap

Class 26—Measuring and Scientific Appliances

For Pneumatically Driven Instruments for Process Contron—Namely, Pneumatic Thermostats and Programme Cycle Controllers, Flow Meters, and Power Operated Vibration Liquid Stirrers (Int. Cl. 9).

Class 31—Filters and Refrigerators

For Self-Cleaning Closed-System Filter Apparatus for Use in the Textile, Paper, Chemical, and Pharmaceutical Industries (Int. Cl. 11).

First use June 1957; in commerce March 1959.

SN 264,632. Lear Siegler, Inc., Santa Monica, Calif., assignee of National Broach and Machine Co., Detroit, Mich. Filed Feb. 14, 1967.



The drawing is lined for the color red. Owner of Reg. Nos. 356,073, 357,504, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machines and Tools for Gear and Spline Production—Namely, Machines for Finishing, Shaving and Lapping Gears; Grinding Machines; Cutters, Shaving Tools for Gears; Lapping Tools, and Holders Therefor (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Measuring, Checking, and Testing Equipment for Gears and Splines—Namely, Machines for Checking Gears; Gauges and Machines for Sound Testing Gears (Int. Cl. 9).

First use Jan. 10, 1967; 1956 in another form.

SN 266,124. Weathermeasure Corporation, Sacramento, Calif., assignee of Aerojet-General Corporation, El Monte, Calif. Filed Mar. 7, 1967.

WEATHER MEASURE

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Transponders (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Meteorological Instruments—Namely, Remote Recording Rain Gages, Remote Recording Heated Snow Gages, Solar Radiation Recorders, Wind Vanes, Air Meters, Anemometers, Hygrothermographs, Barographs, Thermographs, and Psychrometers (Int. Cl. 9).

First use Nov. 9, 1965.

SN 269,410. Joh. Friedrich Behrens, Ahrensburg/Holstein, Germany. Filed Apr. 18, 1967.

BEA

Priority claimed under Sec. 44(d) on German application filed Oct. 20, 1966; Reg. No. 827,032, dated Dec. 7, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Staples, Nails, and Tacks (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pneumatic Stapling, Nailing and Tacking Machines, and Parts Thereof (Int. Cl. 7).

SN 273,808. The Thomas & Betts Co., Elizabeth, N.J. Filed June 13, 1967.

T&B THOMAS & BETTS

No registration rights are claimed herein for the word "Engineered" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof. The mark is lined for the color red or pink, however, color is not claimed as a distinctive feature of the mark. Owner of Reg. Nos. 517,396, 524,097, and 528,237.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

Class 15—Oils and Greases

For Hydraulic Oil (Int. Cl. 4).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use not later than May 1961.

SN 273,809. The Thomas & Betts Co., Elizabeth, N.J. Filed June 13, 1967.



No registration rights are claimed herein for the word "Engineered" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof. Owner of Reg. Nos. 517,396, 524,097, and 528,237.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

Class 15—Oils and Greases

For Hydraulic Oil (Int. Cl. 4).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

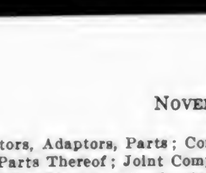
For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use not later than May 1961.

SN 273,810. The Thomas & Betts Co., Elizabeth, N.J. Filed June 13, 1967.



The drawing is lined for the color red or pink, but color is not claimed as a distinctive feature of the mark. No registration rights are claimed herein for the word "Engineered" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof. Owner of Reg. Nos. 517,396, 524,097, and 528,237.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

Class 15—Oils and Greases

For Hydraulic Oil (Int. Cl. 4).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use not later than May 1961.

SN 273,811. The Thomas & Betts Co., Elizabeth, N.J. Filed June 13, 1967.

T & B

Owner of Reg. Nos. 517,396, 524,097, and 528,237.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

Class 15—Oils and Greases

For Hydraulic Oil (Int. Cl. 4).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use on or about Oct. 1, 1902.

SN 273,875. Dennison Manufacturing Company, Framingham, Mass. Filed June 14, 1967.



Owner of Reg. No. 777,373.

Class 6—Chemicals and Chemical Compositions

For Electrophotographic Liquid Electrostatic Image Developers for Use in Electrostatic Copying Machines (Int. Cl. 1).

Class 37—Paper and Stationery

For Copying Paper for Use in Electrostatic Copying Machines (Int. Cl. 16).

First use Jan. 8, 1964.

SN 276,380. Screen Gems, Inc., New York, N.Y. Filed July 20, 1967.



Owner of Reg. No. 829,594.

Class 2—Receptacles

For Lunch Kits Consisting of Vacuum Bottles Made of Metal and/or Plastic (Int. Cl. 21).
First use Mar. 20, 1967.

Class 22—Games, Toys, and Sporting Goods

For Toy Non-Motorized Wheel Goods Such as Unicycles, Bicycles and Tricycles, Slot-Racing Model Car and Trailer Kits; Toy Musical Instruments, Musical Toys, Puppets, Toy and Stuffed Animals, Toy Key Chains; and Equipment (or Apparatus) Sold as a Unit for Playing a Board Game or Similar Type of Parlor Game (Int. Cl. 28).
First use Sept. 22, 1966.

Class 26—Measuring and Scientific Appliances

For Sunglasses (Int. Cl. 9).
First use Feb. 1, 1967.

Class 39—Clothing

For Men's and Boys' Socks, Sneakers, Knitted Cotton Sweat Shirts and T-Shirts; and Girls' Coordinated Slacks, Shirts, and Jackets (Int. Cl. 25).
First use Dec. 12, 1966.

SN 278,044. The Thomas & Betts Co., Elizabeth, N.J. Filed Aug. 10, 1967.



Owner of Reg. Nos. 517,396, 524,097, and 528,237.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

Class 15—Oils and Greases

For Hydraulic Oil (Int. Cl. 4).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use on or about Nov. 1, 1966.

SN 279,719. Corl International Corporation, Bremen, Ind. Filed Sept. 6, 1967.

CORLGLAS

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Bath Tubs and Vanities Designed for Use in Conjunction With Plumbing Fixtures (Int. Cl. 11).

Class 19—Vehicles

For Rigid Fiber Glass Tops and Ends for Trailers of the Camper and Mobile Home Type, and Lifting Arms for Such Tops and for Tents of Such Trailers (Int. Cl. 12).

First use Oct. 27, 1966.

SN 280,767. Compagnie Industrielle de Textiles Artificels et Synthetiques, Paris, France. Filed Sept. 20, 1967.

OCTA

Priority claimed under Sec. 44(d) on French Reg. No. 723,868, dated Mar. 21, 1967.

Class 1—Raw or Partly Prepared Materials

For Fibers and Filaments of Any Nature and Particularly of Regenerated Cellulose (Int. Cl. 22).

Class 39—Clothing

For Men's, Women's, and Children's Underwear, Shirts, Jackets, Trousers, Collars, Cuffs, Blouses, Dresses, Coats, Swimsuits, Corsets, Lingerie, Gloves, Hosiery, and Shoes (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics of Regenerated Cellulose Fibers (Int. Cl. 24).

SN 280,768. Compagnie Industrielle de Textiles Artificiels et Synthetiques, Paris, France. Filed Sept. 20, 1967.

O-C TA

Priority claimed under Sec. 44(d) on French Reg. No. 723,866, dated Mar. 21, 1967.

Class 1—Raw or Partly Prepared Materials

For Fibers and Filaments of Any Nature and Particularly of Regenerated Cellulose (Int. Cl. 22).

Class 39—Clothing

For Men's, Women's, and Children's Underwear, Shirts, Jackets, Trousers, Collars, Cuffs, Blouses, Dresses, Coats, Swimsuits, Corsets, Lingerie, Gloves, Hosiery, and Shoes (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics of Regenerated Cellulose Fibers (Int. Cl. 24).

SN 281,238. The Thomas & Betts Co., Elizabeth, N.J. Filed Sept. 26, 1967.

T&B

Owner of Reg. Nos. 517,396, 524,097, and 528,237.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic and Pneumatic Hose Connectors and Fittings (Int. Cl. 6).

Class 15—Oils and Greases

For Hydraulic Oil (Int. Cl. 4).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Raceway Parts, Fittings, Connectors and Supports; Electrical Cable and Cord Parts, Fittings, Connectors and Supports; Floor Boxes, Floor Outlets, Parts and Fittings; Bus Bar Parts and Fittings; Cable Bundling and Harnessing Straps, Parts, Markers and Supports; Terminal Connectors, Insulators, Adaptors, Parts; Connector and Terminal Blocks and Parts Thereof; Joint Compound for Establishing and Maintaining Electrical Conductivity Between Conductors and Conduit and Terminals, Connectors and Fittings (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electrical Raceway Cutting, Shaping, Bending, Forming, Installing and Maintaining Tools; Electrical Cable and Cord Cutting, Shaping, Bending, Forming, Stripping, Splicing, Fishing and Maintaining Tools and Dies; Terminal and Connector Applying and Installing Tools and Dies; Cable Bundling and Harnessing Strap Applying, Tensioning and Cutting Tools; Plastic and Rubber Cutting Tools and Parts Thereof; Metal Cutting and Reaming Tools and Parts Thereof; Dies; Electrically and Pneumatically Operated Hydraulic Pumps and Heads; Tool Kits Consisting Essentially of Cable Pulling, Cutting, and Connector and Terminal Installing Tools; Linemen's Accessories Consisting Essentially of Heavy Duty Cable Cutting, Bending and Installing Tools; Automatic Splicing Units for Splicing Electrical Cables; Portable Tool Stands and Supports; Electrical and Pneumatic Remote Control Units for Operating Hydraulically Operated Tools (Int. Cls. 7 and 8).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Hydraulic Hose Assemblies; Hydraulic and Pneumatic Pump Seals (Int. Cl. 17).

First use in or about November 1965.

SN 284,172. Dominique France, Inc., New York, N.Y. Filed Nov. 6, 1967.

CHARVET

Owner of Reg. Nos. 425,728, 689,945, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Empty Toilet Kits, Wallets, and Luggage (Int. Cl. 18).

Class 28—Jewelry and Precious-Metal Ware

For Jewelry (Int. Cl. 14).

Class 39—Clothing

For Men's Ties, Mufflers, Handkerchiefs, Shirts (Both Sport and Dress), Jackets, Slacks, Hats, Sweaters, Socks, Suspenders, Belts, Shoes, Slippers, Underwear, Pajamas, Robes, Gloves, and Raincoats (Int. Cl. 25).

Class 41—Canes, Parasols, and Umbrellas

For Umbrellas (Int. Cl. 18).

First use 1924.

SN 284,173. Dominique France, Inc., New York, N.Y. Filed Nov. 6, 1967.

CHARVET ET FILS

Owner of Reg. Nos. 425,728, 689,945, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Empty Toilet Kits, Wallets, and Luggage (Int. Cl. 18).

Class 28—Jewelry and Precious-Metal Ware

For Jewelry (Int. Cl. 14).

Class 39—Clothing

For Men's Ties, Mufflers, Handkerchiefs, Shirts (Both Sport and Dress), Jackets, Slacks, Hats, Sweaters, Socks, Suspenders, Belts, Shoes, Slippers, Underwear, Pajamas, Robes, Gloves, and Raincoats (Int. Cl. 25).

Class 41—Canes, Parasols, and Umbrellas

For Umbrellas (Int. Cl. 18).

Class 51—Cosmetics and Toilet Preparations

For Cologne (Int. Cl. 3).

First use 1924.

SN 286,023. Mipro Metal Products Company, South San Francisco, Calif. Filed Dec. 1, 1967.

MIPRO

Class 2—Receptacles

For Vinyl Liners for Waste Receptacles (Int. Cl. 20).

Class 39—Clothing

For Vinyl Aprons (Int. Cl. 25).

First use April 1962.

SN 286,503. Clark Paper Converting Corp., South El Monte, Calif. Filed Dec. 8, 1967.

ARMDOR

Owner of Reg. Nos. 636,182, 649,544, and 739,911.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Paper Toilet Seat Cover Dispensers (Int. Cl. 6).
First use Oct. 20, 1967.

Class 37—Paper and Stationery

For Paper Toilet Seat Covers (Int. Cl. 16).
First use Sept. 29, 1967.

SN 286,504. Clark Paper Converting Corp., South El Monte, Calif. Filed Dec. 8, 1967.

PELDOR

Owner of Reg. Nos. 636,182, 649,544, and 739,911.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Paper Toilet Seat Cover Dispensers (Int. Cl. 6).
First use Oct. 23, 1967.

Class 37—Paper and Stationery

For Paper Toilet Seat Covers (Int. Cl. 16).
First use Sept. 29, 1967.

SN 289,937. Grayco Enterprises Ltd., Montreal, Quebec, Canada. Filed Jan. 31, 1968.

THE BOBO HUT

Priority claimed under Sec. 44(d) on Canadian application filed Aug. 3, 1967; Reg. No. 157,748, dated July 26, 1968.

Class 46—Foods and Ingredients of Foods

For Gourmet Dishes—Namely, Meat Balls With Assorted Ingredients (Int. Cl. 29).

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).

SN 290,556. Bunnell Plastics, Inc., Camden, N.J. Filed Feb. 8, 1968.

BUNNELL

Class 1—Raw or Partly Prepared Materials

For Plastic Tubing, Rods, Profiles, and Strips (Int. Cl. 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Plastic Machined Parts—Namely, Bearings, Bushings, Sliding Blocks, Gears and Cams, for Use in Machinery, and Parts Thereof (Int. Cl. 7).

First use Dec. 21, 1967; Feb. 15, 1964, as to "Bunnell."

SN 293,070. Essex Wire Corporation, Fort Wayne, Ind. Filed Mar. 13, 1968.

RBM

Owner of Reg. Nos. 418,361, 703,856, and 777,763.

Class 21—Electrical Apparatus, Machines, and Supplies

For Relays, Contactors, Solenoids, Electric Motor Starting Controls, and Overvoltage Protection Controls (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Electrical Time Delay Controls (Int. Cl. 9).

First use Mar. 2, 1964.

SN 293,771. Textron Inc., Providence, R.I. Filed Mar. 21, 1968.

TWISTON

Owner of Reg. Nos. 691,261, 747,268, and 764,652.

Class 27—Horological Instruments

For Watches (Int. Cl. 14).
First use Mar. 7, 1968.

Class 28—Jewelry and Precious-Metal Ware

For Bracelets, Including Watch Bracelets (Int. Cl. 14).
First use Mar. 26, 1963.

SN 297,332. The Villager, Inc., Philadelphia, Pa. Filed May 6, 1968.

THE VILLAGER

Owner of Reg. Nos. 702,965, 841,021, and others.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags, Beach Bags, and Tote Bags (Int. Cl. 18).
First use at least as early as spring 1964.

Class 39—Clothing

For Wearing Apparel—Namely, Belts; Blazers; Blouses; Coats; Culotes; Cummerbunds; Dickies; Dresses; Dress Ensembles, Namely, Skirts and Blouses, Blouses and Slacks, Sweaters and Slacks, Sweaters and Skirts, and Blazer and Skirt Sets; Hats; Hosiery; Jackets; Kerchiefs; Kilts; Knitwear, Namely, Culottes, Dresses, Hosiery, Pullovers, Shells, Shirts, and Tights; Lingerie; Nightwear, Namely, Nightgowns, Pajamas, and Nightrobes; Neckwear; Pant-Dresses and Pant-Skirts; Raincoats; Sashes; Shells; Shirts; Skirts; Slacks; Shorts; Suits; Suspenders; Sweaters; Shoes; Swimwear, Namely, Beachrobes, Beach Cover-Ups, Beach Dresses, Beach Shirts, Swim Dresses, and Swimsuits; and Vests (Int. Cl. 25).

First use at least as early as June 1, 1956.

SN 300,774. Bercy Industries, Inc., Venice, Calif. Filed June 19, 1968.

GO LIGHTLY

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Travel Cases (Int. Cl. 18).

Class 32—Furniture and Upholstery

For Portable Mirrors (Int. Cl. 20).

First use June 16, 1966.

SN 303,465. Giffen Industries, Inc., Miami, Fla. Filed July 24, 1968.

GI

Class 21—Electrical Apparatus, Machines, and Supplies

For Seaming Irons (Int. Cl. 17).
First use May 3, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

For Carpet Seaming Tapes (Int. Cl. 9).
First use May 22, 1968.

SN 304,174. Ashland Oil & Refining Company, Ashland, Ky. Filed Aug. 2, 1968.

ASHLAND

Owner of Reg. Nos. 558,675, 840,704, and others.

Class 1—Raw or Partly Prepared Materials

For Synthetic Latex and Synthetic Rubber (Int. Cl. 17).
First use Mar. 27, 1968.

Class 6—Chemicals and Chemical Compositions

For Carbon Black (Int. Cl. 1).
First use Mar. 7, 1968.

SN 304,175. Ashland Oil & Refining Company, Ashland, Ky. Filed Aug. 2, 1968.

Ashland

Owner of Reg. Nos. 558,675, 840,704, and others.

Class 1—Raw or Partly Prepared Materials

For Synthetic Latex and Synthetic Rubber (Int. Cl. 17).
First use Mar. 27, 1968.

Class 6—Chemicals and Chemical Compositions

For Carbon Black (Int. Cl. 1).
First use Mar. 7, 1968.

SN 304,850. Armour-Dial, Inc., Chicago, Ill. Filed Aug. 12, 1968.

GREENBACK GIRL

Class 6—Chemicals and Chemical Compositions

For Spray Sizing for Textile Fabrics (Int. Cl. 1).

Class 51—Cosmetics and Toilet Preparations

For Personal Deodorant (Int. Cl. 5).

First use on or prior to May 17, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 271,755. Pacific Vegetable Oil Corporation, San Francisco, Calif. Filed May 18, 1967.

SAFFHI 165

Owner of Reg. Nos. 664,151, 775,995, and others.
For Agricultural Planting Seeds (Int. Cl. 31).
First use Nov. 1, 1966.

SN 271,826. Pacific Vegetable Oil Corporation, San Francisco, Calif. Filed May 18, 1967.

SAFFHI 161

Owner of Reg. Nos. 664,151, 775,995, and others.
For Agricultural Planting Seeds (Int. Cl. 31).
First use Nov. 1, 1966.

SN 281,228. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Crude and Partly Prepared Materials—Namely, Kapok, Fibers, Feathers, Batting, Upholstery Padding in Uncut Sheets, Foam Rubber Sheets, Leather, Imitation Leather, Animal Skins, Asbestos, Mica, and Plastic Tubing, for General Use in the Industrial Arts (Int. Cls. 17, 18 and 22).

SN 285,582. SCM Corporation, Cleveland, Ohio. Filed Nov. 24, 1967.

MACCO

Owner of Reg. Nos. 646,968, 742,536, and 758,262.
For Resinous Compositions for Use Primarily in the Industrial Arts—Namely, Reactive Resinous Monomers, Both Solvent-Free and in Organic Solutions, Reactive Formaldehyde Resins and Acrylic Resins in Organic Solution, and Aqueous Latex Solutions or Dispersions (Int. Cl. 1).
First use Sept. 1, 1967.

SN 290,822. Carlee Corporation, Northvale, N.J. Filed Feb. 12, 1968.

Wonda puff

For Wadding of Synthetic Materials or Staple Fiber Filling Material (Int. Cl. 22).
First use Sept. 7, 1955.

SN 291,649. Tantalum Mining Corporation of Canada Limited, Toronto, Ontario, Canada. Filed Feb. 21, 1968.

TANCO

For Tantalum-Bearing Ores and Concentrates (Int. Cl. 6).
First use Jan. 22, 1968; in commerce Jan. 22, 1968.

SN 293,335. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 1, 1968.

PLYACRYL

Owner of Reg. Nos. 549,987, 815,687, and 825,147.
For Acrylic Resin and Film for General Industrial Use (Int. Cls. 1 and 17).
First use Feb. 13, 1968.

SN 303,098. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFRITE

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

SN 303,099. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFHUE

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

SN 303,100. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFTEST

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

SN 303,101. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFSPUN

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

SN 303,103. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFMATE

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

SN 303,107. Dow Badische Company, Williamsburg, Va. Filed July 19, 1968.

ZEFCROWN

Owner of Reg. Nos. 647,642, 756,148, and others.
For Acrylic Fiber (Int. Cl. 22).
First use July 12, 1968.

Class 2 — Receptades

SN 240,108. Motor City Paper Tube Company, Detroit, Mich. Filed Mar. 3, 1966.



The configuration of the goods and the words "Round Containers" are disclaimed. Owner of Reg. No. 222,894.
For Paper Cans, Mailing Tubes, Paper Cartons, Cases, and Discs (Int. Cl. 16).
First use on or about May 26, 1926.

SN 248,254. Ritter Pfaudler Corporation, Rochester, N.Y. Filed June 16, 1966.

PFAUDLER

Owner of Reg. No. 432,268.
For Reactor Vessels for Industrial Chemical Reactions and Storage Vessels Made of Metal or Plastic Materials, or Metal Lined With Glass, Partially Crystallized Glass, Glass-Ceramic, Plastic, and Other Metals (Int. Cls. 6 and 20).
First use prior to September 1921.

SN 258,151. A. A. Richards & Co., Inc., Mobile, Ala. Filed Nov. 7, 1966.



No claim is made to the representation of the container apart from the mark as shown. The drawing is lined for the color blue. Apart from the mark as shown, no claim is made to the term "Pak" in its sense as defining a container and descriptive of the goods.
For Storage and Shipping Containers for Foods Under Refrigeration, and Particularly of Expanded Polystyrene (Int. Cl. 20).
First use about April 1966.

SN 295,033. International Paper Company, New York, N.Y. Filed Apr. 5, 1968.



Applicant disclaims the representation of the goods apart from the mark.
For Boxes and Containers Made From Corrugated Paperboard (Int. Cl. 16).
First use Oct. 24, 1967.

SN 299,321. The Bomar Company, Inc., Squantum, Mass. Filed May 29, 1968.

SANI-SIPPER

Owner of Reg. Nos. 772,107 and 792,869.
For Plastic Training Cups for Infants (Int. Cl. 21).
First use May 1, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 243,013. J. C. Penney Company, New York, N.Y. Filed Apr. 8, 1966.

CAROL EVANS

"Carol Evans" is the name of a living person whose consent is of record. Owner of Reg. Nos. 391,625, 790,029, and 817,421.
For Children's Handbags and Children's Wallets (Int. Cl. 18).
First use June 11, 1965; at least as early as Feb. 5, 1941, on related goods.

SN 272,931. Vernon C. Johnson, Tulsa, Okla. Filed June 2, 1967.

KAY-9 KUMFORT

For Animal Supplies and Equipment—Namely, Electrical Canine or Feline House or Bed Warmer (Int. Cl. 9).
First use July 15, 1966.

SN 281,229. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Trunks, Suitcases, and Saddles (Int. Cl. 18).

SN 292,417. Platt Luggage, Inc., Chicago, Ill. Filed Mar. 4, 1968.



The representation of the piece of luggage is disclaimed apart from the mark.
For Hand Luggage and Carrying Cases (Int. Cl. 18).
First use September 1966.

Class 4 — Abrasives and Polishing Materials

SN 283,925. Plexorize, Inc., Long Island City, N.Y. Filed Nov. 1, 1967.

PLEXORIZE

For Preparation for Cleaning and Polishing Surfaces (Int. Cl. 3).
First use Apr. 10, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 273,411. Petrochemicals Company, Inc., Fort Worth, Tex. Filed June 8, 1967.



For Wetting Agents, Surfactants, Emulsifiers, and Organo Sulfonates Used in Reducing the Tendency of Particled Material Such as Ammonium Nitrate To Cake (Int. Cl. 1).
First use Feb. 13, 1967.

SN 276,762. Releasall Limited, Montreal, Quebec, Canada. Filed July 25, 1967.



Owner of Canadian Reg. No. 142,600, dated Nov. 5, 1965.
For Layout Fluid and Bearing Blue (Int. Cls. 1 and 2).
First use at least Oct. 26, 1965; in commerce at least May 9, 1966.

SN 286,241. Apollo Chemical Corp., Clifton, N.J. Filed Dec. 5, 1967.

MC-7

Owner of Reg. No. 796,203.
For Multifunctional Catalyst and Combustion Activator for Use in Residual Fuels (Int. Cl. 1).
First use Dec. 22, 1966.

SN 286,860. Vikon Chemical Company, Inc., Elon College, N.C. Filed Dec. 13, 1967.

VIKOL

For Bactericidal and Fungicidal Agents for Textiles and Synthetic Plastics (Int. Cl. 5).
First use April 1959.

SN 287,070. Inchem Graphic Products, Inc., Glendale, N.Y. Filed Dec. 18, 1967.

IGP TOTAL ETCH

No exclusive rights are claimed in the term "Etch," apart from the mark as shown.
For Liquid Chemical—Namely, Engravers' Iron Perchloride Solution, for Modern Powderless Etching on Copper (Int. Cl. 1).
First use Aug. 1, 1967.

SN 287,510. Argus Chemical Corporation, Brooklyn, N.Y. Filed Dec. 26, 1967.

USP-245

For Organic Peroxides and Compositions Containing Organic Peroxides (Int. Cl. 1).
First use June 1, 1965.

SN 287,511. Argus Chemical Corporation, Brooklyn, N.Y. Filed Dec. 26, 1967.

BZQ

Owner of Reg. No. 711,689.
For Organic Peroxides and Compositions Containing Organic Peroxides (Int. Cl. 1).
First use Jan. 1, 1962.

SN 287,576. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 26, 1967.



The drawing is lined for the color red. Owner of Reg. Nos. 529,105 and 758,641.
For Herbicides, Insecticides, and Fungicides (Int. Cl. 5).
First use on or about Mar. 1, 1965.

SN 293,435. Imperial Adhesives Inc., Cincinnati, Ohio. Filed Mar. 18, 1968.

PEDI-PAK

For Bactericidal-Deodorant Spray for Use in Shoes (Int. Cl. 5).
First use at least as early as Feb. 22, 1968.

SN 295,095. Astor Products Inc., Jacksonville, Fla. Filed Apr. 8, 1968.

BLUE ARROW

Owner of Reg. Nos. 669,721, 797,964, and 798,177.
For Fabric Softener (Int. Cl. 3).
First use June 16, 1964.

SN 296,272. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

ENCO

For Plasticizers (Int. Cl. 1).
First use Oct. 31, 1967.

SN 296,477. The Wun Drop Company, Littleton, Colo. Filed Apr. 24, 1968.

EMERALD SEA

For Scented Additive for Water Used in Steam Irons (Int. Cl. 3).
First use Mar. 8, 1968.

SN 296,562. National Starch and Chemical Corporation, New York, N.Y. Filed Apr. 25, 1968.

CATO-BOND

Owner of Reg. Nos. 640,536 and 802,523.
For Modified Starch for Use as a Coating Binder for Paper (Int. Cl. 1).
First use December 1967.

SN 296,563. National Starch and Chemical Corporation, New York, N.Y. Filed Apr. 25, 1968.

CATO-SIZE

Owner of Reg. Nos. 640,536 and 802,523.
For Modified Starch for Application to the Surface of Previously Prepared Paper Products (Int. Cl. 1).
First use February 1968.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 287,815. S. M. Frank & Co., Inc., New York, N.Y. Filed Dec. 29, 1967.

YELLO-BOLE NOVA

Owner of Reg. Nos. 520,810 and 799,699.
For Smokers' Pipes (Int. Cl. 34).
First use Nov. 8, 1967.

Class 12 — Construction Materials

SN 256,395. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. Filed Oct. 12, 1966.

PLATANO

For Lumber and Wood Products, i.e., Plywood (Int. Cl. 19).
First use Sept. 23, 1966.

SN 272,165. Certain-Teed Products Corporation, Ardmore, Pa. Filed May 23, 1967.

CERTA-SEAL

For Asbestos Cement Pipe, and Fittings, Couplings and Components Used With Such Pipe (Int. Cl. 19).
First use Mar. 8, 1967.

SN 277,945. United Shoe Machinery Corporation, Boston, Mass. Filed Aug. 9, 1967.

SOLBIT

For Sealant Strip for Securing Panels Such as Windshields and Windows (Int. Cl. 17).
First use Aug. 11, 1966.

SN 285,098. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Nov. 17, 1967.

DURAGARD

Owner of Reg. Nos. 331,076, 805,425, and others.
For Wood Products, i.e., a Decorative Plastic Overlay for a Wood Fiber Base or Substrate (Int. Cl. 19).
First use at least as early as May 1966; June 14, 1965, as to "Dura-Guard."

SN 287,833. Roseburg Lumber Co., Roseburg, Oreg. Filed Dec. 29, 1967.

PECKY TSUGA

For Plywood and Industrial and Decorative Type Wooden Panels, Including Flakeboard, Hardboard and Particleboard (Int. Cl. 19).
First use Dec. 15, 1967.

SN 290,554. Avnet, Inc., Plainview, N.Y. Filed Jan. 26, 1968.



The drawing is lined for red, but color is not claimed as a feature of the mark.
For Refractory Materials, Binders and Potting Agents Used in the Preparation of Refractory Precision Molds (Int. Cl. 19).
First use in or about December 1966.

SN 291,491. Canadian Cedar, Inc., Fort Lauderdale, Fla. Filed Feb. 20, 1968.

RANCH DECK

No claim is made to the word "Deck" apart from the mark as shown.
For Wall and Roof Decking (Int. Cl. 19).
First use on or about Dec. 1, 1967.

SN 291,492. Canadian Cedar, Inc., Fort Lauderdale, Fla. Filed Feb. 20, 1968.

RANCH PANEL

No claim is made to the word "Panel" apart from the mark as shown.
For Interior and Exterior Wall Panelling (Int. Cl. 19).
First use on or about Dec. 1, 1967.

SN 292,942. Julian A. Lipman, d.b.a. Chemiquip Company, New York, N.Y. Filed Mar. 11, 1968.

TEPtape

For Tetrafluoroethylene Ribbon for Sealing Threaded Joints (Int. Cl. 17).
First use Feb. 2, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 274,599. The Enterprise Aluminum Company, Massillon, Ohio. Filed June 23, 1967.

Thermo-Fused

For Base Metal Cookware Coated With a Ceramic Frit (Int. Cl. 21).
First use June 7, 1967.

SN 274,721. Dresser Industries, Inc., Dallas, Tex. Filed June 26, 1967.

POSI-HOLD

For Pipe Couplings for Joining Pipe Sections Into a Piping System in Which Fluid Is To Be Contained (Int. Cl. 6).
First use May 24, 1967.

SN 283,420. Automatic Switch Company, Florham Park, N.J. Filed Oct. 26, 1967.

FLIPVAL

For Valves for Controlling the Flow of Fluids Through Conduits (Int. Cl. 6).
First use Oct. 16, 1967.

SN 289,288. Engine Accessories Mfg. Co., Los Angeles, Calif. Filed Jan. 22, 1968.

THE EDUCATED NUT

The word "Nut" is disclaimed apart from other segments shown.
For Automotive Front Wheel Spindle Nut (Int. Cl. 12).
First use Apr. 13, 1967.

SN 290,904. A. O. Smith Corporation, Milwaukee, Wis. Filed Feb. 12, 1968.

POLY THREAD

For Fiber Reinforced Plastic Pipe and Accessories Thereof (Int. Cl. 17).
First use Jan. 4, 1968.

SN 292,278. Lafayette Brass Company, Inc., New York, N.Y. Filed Mar. 1, 1968.

CLOG-BUSTER

For Toilet Plungers (Int. Cl. 8).
First use September 1963.

SN 292,774. Fastener Products, Inc., Southport, Conn. Filed Mar. 8, 1968.

FIN-SET

For Metal Inserts (Int. Cl. 6).
First use Feb. 29, 1968.

SN 293,303. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Mar. 14, 1968.

JEL-N-SERVE

For Gelatine Mold (Int. Cl. 21).
First use January 1965.

SN 293,767. Zimmer-Lightbody Ind., Inc., Detroit, Mich. Filed Mar. 20, 1968.

Z-TORK

For Nuts and More Specifically for Prevailing Torque Nuts (Int. Cl. 6).
First use Oct. 7, 1967.

SN 293,898. Beneke Corporation, Columbus, Miss. Filed Mar. 22, 1968.



For Toilet Seats (Int. Cl. 11).
First use July 30, 1966.

SN 294,313. Redema Corporation, Livonia, Mich. Filed Mar. 27, 1968.

LITTLE EAVE

For Gutter Cleaning Hose Attachment (Int. Cl. 6).
First use Feb. 27, 1968.

SN 294,329. Universal Marion Corporation, Chester, Pa. Filed Mar. 27, 1968.

BACO

For Cast Steel Chain (Int. Cl. 6).
First use Apr. 9, 1959.

SN 294,602. John L. Doré Co., Houston, Tex. Filed Apr. 1, 1968.

POLYDOR

For Pipe, Fittings, Dip Pipes, Spargers, Expansion Joints, and Thermo Wells (Int. Cl. 6).
First use May 1966.

SN 295,870. Yoshida Kogyo K.K., Chiyoda-ku, Tokyo, Japan. Filed Mar. 28, 1968.

CONCEAL

For Slide Fasteners (Int. Cl. 26).
First use November 1959; in commerce December 1960.

SN 297,259. George G. Hutchison, d.b.a. Hutchison-Western, Denver, Colo. Filed May 3, 1968.

H-W

For Stockade Gates (Int. Cl. 6).
First use Dec. 20, 1967.

SN 305,516. I-T-E Imperial Corporation, Philadelphia, Pa. Filed Aug. 20, 1968.

MINI-FLEX

For Tube Fittings and Couplings (Int. Cl. 6).
First use May 24, 1968.

SN 305,518. Kenney Manufacturing Company, Warwick, R.I. Filed Aug. 20, 1968.

IMPERIAL

For Drapery Hardware (Int. Cl. 6).
First use 1950.

Class 14 — Metals and Metal Castings and Forgings

SN 304,187. Louis Dejonge and Company, Staten Island, N.Y. Filed Aug. 2, 1968.



For Foil Sandwich Wrap (Int. Cl. 6).
First use July 15, 1968.

Class 15 — Oils and Greases

SN 283,703. Electrolux Corporation, New York, N.Y., assignee of Peck's Products Company, St. Louis, Mo. Filed Oct. 30, 1967.

SYN-LUBE

For Conveyor Lubricant (Int. Cl. 4).
First use 1946.

SN 286,334. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. Filed Dec. 6, 1967.

LEVAFORM

Owner of German Reg. No. 709,181, dated Dec. 10, 1957.
For Mold Release Agents (Int. Cl. 4).

SN 288,019. The Ironsides Company, Columbus, Ohio. Filed Jan. 3, 1968.



The drawing is lined for the color blue, but no claim is made for color. Applicant disclaims the words "Products," "Columbus, Ohio," and the trade name "The Ironside Company" apart from the mark as shown. Owner of Reg. Nos. 39,047, 39,155, and 315,112.
For Lubricating Oils and Greases (Int. Cl. 4).
First use in 1912.

SN 289,887. Edward Foley, Scranton, Pa. Filed Jan. 30, 1968.

POSCARE

For Corrosion Inhibitor in the Nature of a Grease for Storage Batteries and Dry Cell Batteries (Int. Cl. 4).
First use Mar. 1, 1965.

Class 16 — Protective and Decorative Coatings

SN 278,682. Ford Motor Company, Dearborn, Mich. Filed Aug. 21, 1967.

ELECTROCURE

For Paints, Enamels, Lacquers, and Varnishes (Int. Cl. 2).
First use Sept. 14, 1966.

Class 17 — Tobacco Products

SN 268,933. The American Tobacco Company, New York, N.Y. Filed Apr. 12, 1967.

EMPERORS

For Cigarettes (Int. Cl. 34).
First use Apr. 3, 1967.

SN 302,643. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed July 12, 1968.

PORTLAND

For Cigarettes (Int. Cl. 34).
First use Mar. 5, 1968; in commerce Mar. 5, 1968.

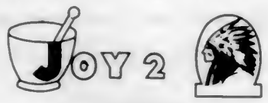
Class 18 — Medicines and Pharmaceutical Preparations

SN 273,621. Eastern Shore Laboratories, Inc., Laurel, Del. Filed June 12, 1967.

VITA-BOOST

For Mixture of Raw Grain Vitamins and Nutrients To Supplement the Nutritional Balance of Poultry (Int. Cl. 5).
First use Dec. 24, 1965.

SN 275,047. Glenn Sales Co., Inc., Dallas, Tex. Filed June 29, 1967.



For Medicated Desensitizing Agent (Int. Cl. 5).
First use on or about July 7, 1962.

SN 276,577. Philips Roxane, Inc., New York, N.Y. Filed July 21, 1967.

BIO-CEUTIC

For Veterinary Preparations (Int. Cl. 5).
First use July 20, 1965.

SN 276,578. Philips Roxane, Inc., New York, N.Y. Filed July 21, 1967.



The mortar and Pestle are disclaimed apart from the mark as shown.
For Veterinary Preparations (Int. Cl. 5).
First use July 20, 1965.

SN 277,515. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

CUPRATE

For Veterinary Preparation for Use as an Aid in Treatment and the Prevention of Molybdenum Poisoning (Int. Cl. 5).
First use May 26, 1967.

SN 277,517. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

CALCIPET

Owner of Reg. No. 824,796.
For Veterinary Preparation To Prevent and Treat Calcium Deficiency (Int. Cl. 5).
First use May 26, 1967.

SN 277,529. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

BVMO

For Veterinary Preparation To Prevent and Treat Vitamin-Mineral Deficiencies (Int. Cl. 5).
First use May 16, 1967.

SN 277,532. Burns Pharmaceuticals, Inc., d.b.a. Burns Pharmaceuticals, Oakland, Calif. Filed Aug. 4, 1967.

MICROPURE

For Veterinary Preparation for the Removal of Intestinal Worms (Int. Cl. 5).
First use Nov. 21, 1966.

SN 283,537. Moorman Manufacturing Company of California, Inc., San Gabriel, Calif. Filed Oct. 27, 1967.

MIXER-AID

For Vitamin and Mineral Supplement for Livestock Feed (Int. Cl. 5).
First use Sept. 8, 1967.

SN 283,744. Zirin Laboratories International, Inc., Hialeah, Fla. Filed Oct. 30, 1967.

TITEN-ZEM

For Veterinarian Preparation—Namely, a Topically Applied Skin Massaging Liquid for Relief of Wind Puffs, Bursitis, Suspensory Trouble, Tendonitis, Spavins, Osselots, and Muscle Soreness (Int. Cl. 5).
First use Jan. 15, 1956.

SN 284,288. American Cyanamid Company, Wayne, N.J. Filed Nov. 7, 1967.

HEMOQUEL

For Hemostatic Agent (Int. Cl. 5).
First use Oct. 20, 1967.

SN 284,744. G. D. Searle & Co., Skokie, Ill. Filed Nov. 13, 1967.

DEPETHINE

Owner of Reg. No. 795,489.
For Preparation for Treatment of the Gastro-Intestinal System (Int. Cl. 5).
First use Nov. 3, 1967.

SN 285,722. Ciba Limited, Basel, Switzerland. Filed Nov. 28, 1967.

RIMACTANE

Priority claimed under Sec. 44(d) on Swiss Reg. No. 228,480, dated Nov. 2, 1967.
For Antibiotic (Int. Cl. 5).

SN 285,740. Hudson Vitamin Products, d.b.a. Hudson National, Inc., New York, N.Y. Filed Nov. 28, 1967.

REGACILIUM

For Preparation for Treatment of Constipation and Regulation of Elimination (Int. Cl. 5).
First use Dec. 31, 1966.

SN 285,755. Pan American Laboratories, Inc., New Orleans, La. Filed Nov. 28, 1967.



For Line of Pharmaceutical Preparations (Int. Cl. 5).
First use Aug. 14, 1958.

SN 291,368. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Feb. 19, 1968.

SENO-VET

For Veterinary Laxative Preparation (Int. Cl. 5).
First use Sept. 15, 1959.

SN 291,369. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Feb. 19, 1968.

ASCAVET

For Veterinary Laxative Preparation (Int. Cl. 5).
First use July 25, 1961.

SN 297,245. Colgate-Palmolive Company, New York, N.Y. Filed May 3, 1968.

DEW DABS

For Medicated Body Lotion, in Paper Applicator, for Treating the Skin (Int. Cl. 5).
First use June 26, 1967.

SN 301,891. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 3, 1968.

FOOT-GUARD

For Pharmaceutical Preparation for the Treatment of Athlete's Foot (Int. Cl. 5).
First use June 10, 1968.

SN 302,285. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 9, 1968.

CLINICARE

For Vitamin and Mineral Supplement for Dogs and Cats (Int. Cl. 5).
First use July 1966.

SN 303,123. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed July 19, 1968.

ANABOLIN

Owner of Reg. No. 502,101.
For Metabolic Regulator for the Middle-Age Slowdown, States of Chronic Depletion and Debilitation, and Other Effects of Endocrine Imbalance (Int. Cl. 5).
First use July 10, 1968.

SN 303,749. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 29, 1968.

LIGHTS OUT

For Medicinal Preparation for Use as an Aid in Controlling the Smoking Habit (Int. Cl. 5).
First use July 23, 1968.

SN 305,284. Roesbery Laboratories, Inc., Melba, Idaho. Filed Aug. 16, 1968.

UDDERWISE

For Antiseptic Cream for Livestock and Other Animals (Int. Cl. 5).
First use at least as early as July 20, 1968.

SN 305,372. Miles Laboratories, Inc., Elkhart, Ind. Filed Aug. 19, 1968.

RALLY

For Analgesic and Cold Preparation (Int. Cl. 5).
First use on or before Apr. 4, 1968.

Class 19—Vehides

SN 288,639. Parkdale Manufacturing, Inc., Westminster, Calif. Filed Jan. 11, 1968.

Parkdale

For House Trailer (Int. Cl. 12).
First use Nov. 3, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 256,957. The National Acme Company, Cleveland, Ohio. Filed Oct. 21, 1966.

NAMCO

For Switches, Solenoids, and Parts Thereof (Int. Cl. 9).
First use on or about Dec. 15, 1938.

SN 257,520. Societe des Accumulateurs Fixes et de Traction, Romainville, France. Filed Oct. 28, 1966.

LUMISTICK

Owner of French Reg. No. 700,610, dated Aug. 17, 1965.
For Lighting Apparatus—Namely, Flashlights (Int. Cl. 11).

SN 275,902. Aluminum Extrusions, Inc., Charlotte, Mich. Filed July 13, 1967.

OMNI

Owner of Reg. No. 690,541.
For Electrical Lighting Fixtures and Parts Thereof. (Int. Cl. 11).
First use Sept. 25, 1958.

SN 286,898. Better Home Products of Texas Corp., Houston, Tex. Filed Dec. 14, 1967.

BETTER

The word "Better" is disclaimed apart from the mark as shown.
For Lighting Equipment—Namely, Light Bulbs (Int. Cl. 11).
First use Sept. 9, 1967.

SN 288,624. Adam B. Kronk, d.b.a. Kronk Co., Detroit, Mich. Filed Jan. 11, 1968.

CY-CO-LATOR

For Pre-Set Electric Cycle Control Regulator for Shutting Down Machinery (Int. Cl. 9).
First use Aug. 20, 1966.

SN 293,871. Tymshare, Inc., Los Altos, Calif. Filed Mar. 21, 1968.

TYMSHARE

For Audio Magnetic Data Transceivers (Int. Cl. 9).
First use Sept. 12, 1966.

SN 294,229. Electrolytic Marine Corrosion Services Limited, Victoria, British Columbia, Canada. Filed Mar. 27, 1968.

CATHELCO SYSTEMS

Applicant disclaims any exclusive right to the use of the word "Systems" apart from the mark as shown.
For Anodes and Control Panels for Use on Ships or Other Installations Employing Sea Water for Coolant, Ballast, etc. To Render the Sea Water Non-Corrosive Through Electrolytic Action (Int. Cl. 11).
First use 1952; in commerce May 1957.

Class 22—Games, Toys, and Sporting Goods

SN 254,343. Vereinigte Baubeschlagfabriken Gretsch & Co. GmbH., Leonberg, near Stuttgart, Germany. Filed Sept. 12, 1966.

Topstar S

Priority claimed under Sec. 44(d) on German application filed Mar. 19, 1966; Reg. No. 820,724, dated June 16, 1966. Owner of U.S. Reg. No. 786,673.
For Hardware for Sporting Goods—Namely, Fittings and Mountings for Sporting Equipment; Ski Bindings, in Particular Front-Jaw Safety Ski-Bindings; Boot Straightener Devices Made of Metal, in Particular Ski-Boot Straightener Devices (Int. Cl. 28).

SN 270,793. Lesney Products & Co. Limited, London, England. Filed May 5, 1967.

MODELS OF YESTERYEAR

Owner of U.S. Reg. No. 720,488.
For Toy Models of Land Vehicles, Machines, and Their Accessories (Int. Cl. 28).
First use July 5, 1957; in commerce July 26, 1957.

SN 275,077. Romper Room, Inc., Baltimore, Md. Filed June 29, 1967.

ROMPER STOMPERS

For Physical Fitness Balancing Toy—Namely, Foot Engaging, Inverted, Cup-Like Devices With Attached Hand Cord (Int. Cl. 28).
First use May 10, 1967.

SN 277,173. B. L. Humphries, d.b.a. Art Artifices, Wichita Falls, Tex. Filed July 31, 1967.

DINO SORES



The drawing is lined for the color red. The word "Sores" is disclaimed apart from the mark as shown.
For Adhesive Strip on Which Simulated Wounds Are Shown, Which Strips Are Applied to the Body (Int. Cl. 28).
First use June 15, 1967.

SN 286,901. Campbell Manufacturing Company, Limited, Willowdale, Ontario, Canada. Filed Dec. 14, 1967.

DYNA·MAX

Priority claimed under Sec. 44(d) on Canadian application filed July 26, 1967; Reg. No. 156,934, dated May 17, 1968.
For Golf Balls and Golf Clubs (Int. Cl. 28).

SN 289,433. Triangle Leather Goods Company, Chicago, Ill. Filed Jan. 23, 1968.

BALL-ARIS

For Bowling Ball Bags (Int. Cl. 28).
First use Apr. 8, 1963.

SN 289,509. Steve A. Jures, Lansing, Ill. Filed Jan. 24, 1968.

GEE-MIN-EE

For Fish Lures (Int. Cl. 28).
First use Dec. 8, 1967.

SN 289,595. Lindberg Products, Incorporated, Skokie, Ill. Filed Jan. 25, 1968.

MINI-LINDY

Owner of Reg. Nos. 789,348 and 815,402.
For Hobby-Type Model Cars and Trucks, and Kits for Assembling Them (Int. Cl. 28).
First use Jan. 10, 1968.

SN 292,859. Mattel, Inc., Hawthorne, Calif. Filed Mar. 11, 1968.

Storybook Kiddles BY MATTEL

No claim of exclusive right, apart from the mark as shown, is made to the term "Storybook" for the goods recited. Owner of Reg. Nos. 753,681, 823,342, and 830,532.
For Dolls, Toy Animals, and Doll Accessories (Int. Cl. 28).
First use Sept. 29, 1966.

SN 292,969. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 11, 1968.

WHO YOU?

For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).
First use Feb. 16, 1968.

SN 292,970. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 11, 1968.

PULL THE RUG OUT

For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).
First use Feb. 16, 1968.

SN 292,971. Schaper Manufacturing Company, Inc., Minneapolis, Minn. Filed Mar. 11, 1968.

HUFF 'N PUFF

For Equipment for Playing a Parlor-Type Game (Int. Cl. 28).
First use Feb. 13, 1968.

SN 294,167. Cragstan Industries, Inc., New York, N.Y. Filed Mar. 26, 1968.

SCOOTIES

For Wind-Up Mobile Toys (Int. Cl. 28).
First use November 1966.

SN 294,410. Regent Sports Co., Hauppauge, N.Y. Filed Mar. 28, 1968.

LIDO

For Fishing Reels (Int. Cl. 28).
First use March 1962.

SN 296,934. Layman E. Allen, d.b.a. Wff 'N Proof, Ann Arbor, Mich. Filed Sept. 4, 1968.

PROPAGANDA

For Equipment (or Apparatus), Sold as a Unit for Playing an Educational Social Studies Game (Int. Cl. 28).
First use Oct. 1, 1966.

SN 300,872. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed June 20, 1968.

GOODIE

For Artificial Fishing Lures (Int. Cl. 28).
First use May 23, 1968.

SN 303,110. Mattel, Inc., Hawthorne, Calif. Filed July 19, 1968.

LUVVY DUVVY KIDDLE

Owner of Reg. Nos. 830,532, 838,306, 842,798, and others.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use May 29, 1968.

SN 303,748. Mattel, Inc., Hawthorne, Calif. Filed July 29, 1968.

KIDDLE-KONES

Owner of Reg. Nos. 830,532, 838,306, 842,798, and others.
For Dolls, Doll Clothing, and Doll Accessories, Including Miniature Dolls in Non-Edible Ice Cream Cones (Int. Cl. 28).
First use June 19, 1968.

SN 304,735. Buddy L Corporation, East Moline, Ill. Filed Aug. 9, 1968.

BRUTE

For Toy Vehicles (Int. Cl. 28).
First use Apr. 12, 1968.

SN 304,739. Mattel, Inc., Hawthorne, Calif. Filed Aug. 9, 1968.

NIPPY

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 19, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 229,706. Fichtel & Sachs Aktiengesellschaft, Schweinfurt-am-Main, Germany. Filed Oct. 11, 1965.

SACHS

Owner of German Reg. No. 143,844, dated Feb. 9, 1911.
For Multi-Speed Hubs, Gear Shift and Power Transmission Mechanisms, Combustion, Steam, Wind, and Hydraulic Motors, and Hydraulic Pumps, r.p.m. Regulators for Motors, Belt Pulleys, Clutches fo All Kinds; Agricultural, Domestic and Industrial Machines and Devices—Namely, Motorized Lawn-Mowers for Use by Gardeners, and Motorized Building Hoists and Elevators; Also Bicycle Chains, Sprockets and Gears, and Component Parts of the Above-Mentioned Articles (Int. Cls. 7 and 12).
First use May 31, 1932; in commerce Dec. 31, 1958.

SN 259,459. O'Brien Manufacturing Company, Inc., Chicago, Ill. Filed Nov. 25, 1966.

ELECTRIC ROD MASTER

Applicant disclaims the words "Electric" and "Rod" apart from the mark as shown. Owner of Reg. No. 427,522.
For Electric Portable Unitary Sewer Cleaning Machines for Rodding Waste and Sewer Lines (Int. Cl. 7).
First use on or about Jan. 22, 1946.

SN 270,241. General Precision Systems Inc., Glendale, Calif., by change of name from General Precision, Inc., Glendale, Calif. Filed Apr. 28, 1967.

LIBRADRIVE

Owner of Reg. Nos. 372,767, 822,743, and others.
For Retaining Pin Ejector Tools for Removing Retaining Pins From Gear Hub and Shaft Collar Mounting Holes (Int. Cl. 7).
First use Apr. 5, 1967.

SN 273,629. Bruce N. Fleming, Ottawa, Kans. Filed June 12, 1967.

FAT-CAT

For Mechanical Fish Feeders (Int. Cl. 7).
First use June 1, 1967.

SN 275,960. Ross Porta-Plant, Inc., Brownwood, Tex. Filed July 13, 1967.

ROSS

Owner of Reg. No. 668,000.
For Unitized Mobile Concrete Batching Plants, and Parts Therefor (Int. Cl. 7).
First use on or about Sept. 10, 1957.

SN 278,532. Rockwell Manufacturing Company, Pittsburgh, Pa. Filed Aug. 17, 1967.

FLEXIBLE

For Pipe Cleaning Equipment—Namely, Augurs, Brushes, Buckets, Power Bucket Machines, Pipe Scrapers, Rod-Type Cleaners, Hydraulic Cleaners, Root Saws, Sand Traps, Scale Drills, and Associated Tools and Accessories and Parts Thereof (Int. Cls. 7 and 8).
First use September 1933.

SN 281,335. Wencor, Inc., Miami Springs, Fla. Filed Sept. 27, 1967.

ORFIT

For Handtools for the Installation of O-Ring Seals (Int. Cl. 8).
First use Oct. 7, 1965.

SN 281,930. Sunbeam Corporation, Chicago, Ill. Filed Oct. 5, 1967.

LAWN CHAMP

Applicant disclaims the exclusive right to the word "Lawn," except as included in the mark as shown.
For Lawn Mowers and Parts Therefor (Int. Cl. 7).
First use July 26, 1967.

SN 288,246. Union Pump Company, d.b.a. Union Pump Co., Battle Creek, Mich. Filed Jan. 5, 1968.

UNILIGN

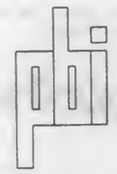
Owner of Reg. Nos. 658,261 and 810,432.
For Centrifugal Pumps (Int. Cl. 7).
First use May 1967.

SN 290,022. Royal Zenith Corporation, New York, N.Y. Filed Jan. 31, 1968.

JOBBER

For Offset Printing Machines (Int. Cl. 7).
First use Nov. 21, 1967.

SN 292,056. Popeil Brothers, Inc., Chicago, Ill. Filed Feb. 28, 1968.



For Complete Line of Kitchen Appliances of the Small Manually Operated Type—Namely, Food Choppers, Food Slicers, Food Comminuters, Pancake Dough Dispensers, Food Garnishing and Decorating Devices, Kitchen Knives, and Parts Thereof (Int. Cls. 8 and 21).
First use Oct. 17, 1967.

SN 295,661. McCulloch Corporation, Los Angeles, Calif. Filed Apr. 15, 1968.

SCRENCH

For Combination Screwdriver-Wrenches (Int. Cl. 8).
First use Dec. 12, 1967.

Class 26—Measuring and Scientific Appliances

SN 264,983. Spindler & Sauppe, Glendale, Calif. Filed Feb. 17, 1967.

SELECTROSLIDE

Owner of Reg. No. 382,255.
For Slide Projectors (Int. Cl. 9).
First use August 1938.

SN 272,513. Motomco, Inc., Clark, N.J. Filed May 26, 1967.

DRILL-OM-ETERS

For Portable Compressed Air Measuring Meter for Use With Pneumatic Tools (Int. Cl. 9).
First use at least as early as 1910.

SN 274,807. Loenco, Inc., Altadena, Calif. Filed June 26, 1967.

GRAPHMATIC-F

The letter "F" is disclaimed.
For Gas Chromatographs and Parts Thereof (Int. Cl. 9).
First use June 1, 1966.

SN 277,543. Consolidated Electrodynamics Corporation, Pasadena, Calif. Filed Aug. 4, 1967.

DATADIGIT

For Galvanometer Character Printers and Signal Conditioning Equipment for Use With Recording Oscillographs (Int. Cl. 9).
First use Sept. 27, 1965.

SN 278,129. Rowe Electronics, Inc., Summit, N.J. Filed Aug. 11, 1967.

PROX

For Electronic Counter Responsive to Changes in an Electric Field Developed in a Sensing Probe (Int. Cl. 9).
First use July 20, 1967.

SN 280,734. The Virtis Company, Inc., Gardiner, N.Y. Filed Sept. 19, 1967.

VIRTRONICS

For Electrical Apparatus—Namely, Instruments To Measure, Register, and Control Engineering Variables (Int. Cl. 9).
First use Aug. 14, 1967.

SN 282,145. Svenska Diamantbergborrnings Aktiebolaget, Sundbyberg, Sweden. Filed Oct. 9, 1967.

TURAM

For Apparatus and Instruments Used for Phase Measurements in Electromagnetic Prospecting for Ore—Namely, Field Generating Cables, Pick-Up Coils, Compensator-Amplifying Units, Ear Phones, Generating Sets, Control Boxes, and Connecting Cables (Int. Cl. 9).
First use 1932; in commerce 1957.

SN 283,849. Argus Incorporated, Chicago, Ill. Filed Nov. 1, 1967.

ROUNDABOUT

For Slide Projectors (Int. Cl. 9).
First use Oct. 17, 1967.

SN 284,258. Werkzeugmaschinenfabrik Oerlikon Bührle & Co., Zurich, Switzerland. Filed Nov. 6, 1967.

FOTOMAT

Owner of Swiss Reg. No. 214,275, dated Nov. 24, 1965.
For Numerical Control System for Machine Tools Consisting of a Linear Measuring Scale and Photoelectric Microscope, for Measuring Linear Traverses; Rotary Measuring Head for Angular and Indirect Measurement; Punched Tape Reader; Co-Ordinate Control; Memory for Auxiliary Functions and Drive Controls (Int. Cl. 9).

SN 286,418. Electronic Switchgear (London) Limited, Westminster, London, England. Filed Dec. 7, 1967.

SOLUVISOR

Priority claimed under Sec. 44(d) on British Reg. No. 911,889, dated July 12, 1967.
For Solution Concentration Controller (Int. Cl. 9).

SN 286,435. Lundell Controls, Inc., Chicago, Ill. Filed Dec. 7, 1967.

RECORDALARM

For Electronic Sequential Event Recorder Instrument for Continuously Monitoring a Variety of Points and Printing Out an Immediate Record of Abnormal Operating Conditions (Int. Cl. 9).
First use on or about July 15, 1961.

SN 287,532. Endevco Corporation, Pasadena, Calif. Filed Dec. 26, 1967.

PIXIE

For Strain Sensitive Piezoresistive Elements Employed as Parts of Electromechanical Transducers (Int. Cl. 9).
First use Aug. 31, 1965.

SN 288,263. Raytheon Company, Lexington, Mass. Filed Jan. 8, 1968.

DIDS-400

For Digital Information Display Systems (Int. Cl. 9).
First use October 1964.

SN 291,789. Technical Education and Manufacturing, Inc., Ferndale, Mich. Filed Feb. 23, 1968.

TEAM

For Hydraulic and Pneumatic Scientific Apparatus Used for Measuring and Testing for Educational Purposes (Int. Cl. 9).
First use Oct. 20, 1967.

SN 293,569. Photon, Inc., Wilmington, Mass. Filed Mar. 18, 1968.

KEYCOMP

For Keyboards for Production of Coded Paper or Magnetic Tape, for Keyboards for the Direct Control of Computers or Typesetting Machines (Int. Cl. 9).
First use on or about Jan. 30, 1968.

SN 293,707. Essex Wire Corporation, Fort Wayne, Ind. Filed Mar. 20, 1968.

TRAVEL-TROL

For Combined Temperature Regulator and Safety Pilot Controls for Gas Burners (Int. Cl. 9).
First use Mar. 12, 1968.

SN 294,731. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Apr. 2, 1968.

ANSCOGRAPH

Owner of Reg. No. 210,571.
For Light-Sensitive Photographic Materials—Namely, Paper and Film (Int. Cl. 1).
First use Feb. 12, 1968.

SN 296,047. Spiratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

CUSTOMIZER

For Adapter Which Makes Possible Use of an Accessory Designed for One Type of Lens or Camera on a Camera of a Different Design or Size (Int. Cl. 9).
First use June 1, 1967.

SN 296,048. Spiratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

MIRROTACH

For Photographic Right-Angle Lens Attachment (Int. Cl. 9).
First use Nov. 5, 1967.

SN 296,050. Spiratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

COLOR-BROME

For Sensitized Photographic Printing and Enlarging Paper (Int. Cl. 1).
First use Mar. 14, 1967.

SN 297,628. Leach Corporation, South Pasadena, Calif. Filed May 8, 1968.

HDDR

For Recording and Reproducing Equipment Employing a Magnetic Medium and Associated Read and Write Electronics for Storing and Retrieving Information Signals on the Medium (Int. Cl. 9).
First use at least as early as Mar. 25, 1968.

SN 298,174. Hexol, Inc., d.b.a. The Bex Company, San Francisco, Calif. Filed May 15, 1968.

Bex-ometer

For Torque Measuring Instruments (Int. Cl. 9).
First use Jan. 11, 1965.

SN 299,073. Paillard Incorporated, Linden, N.J. Filed May 27, 1968.

MULTIMATIC

For Photographic Projectors and Cameras (Int. Cl. 9).
First use May 15, 1968.

SN 300,407. Pappagallo, Inc., New York, N.Y. Filed June 14, 1968.

Pappagallo

For Sunglasses (Int. Cl. 9).
First use at least as early as April 1968.

Class 27 — Horological Instruments

SN 268,984. Orient Watch Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed Apr. 12, 1967.

ORIENT

For Watches and Clocks, and Parts Thereof (Int. Cl. 14).
First use Nov. 10, 1958; in commerce Dec. 15, 1958.

SN 281,601. Morris B. Mass, d.b.a. Mass Sales Co., St. Louis, Mo. Filed Oct. 2, 1967.

MARC MASSON

The name "Marc Masson" is fanciful.
For Watches (Int. Cl. 14).
First use Sept. 21, 1967.

SN 285,671. Montre de Sport Genève S.A., Geneva, Switzerland. Filed Nov. 27, 1967.

MILUNA

Owner of Swiss Reg. No. 225,025, dated Apr. 14, 1967.
For Watches and Parts Thereof (Int. Cl. 14).

SN 286,942. Joval Ring Co., Inc., New York, N.Y. Filed Dec. 14, 1967.

JEAUVAL

For Watches (Int. Cl. 14).
First use Nov. 2, 1967.

SN 287,012. Gold Medal Jewelry Inc., New York, N.Y. Filed Dec. 15, 1967.

GOLD MEDAL G.M.J.

Owner of Reg. No. 793,333.
For Watches (Int. Cl. 14).
First use June 1966.

SN 291,686. R. J. Raphael, Inc., Miami, Fla. Filed Feb. 23, 1968.

RAJAR

For Wristwatches (Int. Cl. 14).
First use Feb. 1, 1967.

SN 297,497. Aquastar SA. ci-devant Jean Richard, Geneva, Switzerland. Filed May 7, 1968.

JEANRICHARD

The name "Jean Richard" does not identify any particular living individual.
For Watches (Int. Cl. 14).
First use 1948; in commerce 1948.

Class 28 — Jewelry and Precious-Metal Ware

SN 280,882. Oneida Ltd., Oneida, N.Y. Filed Sept. 21, 1967.

FLORAL GLEN

For Silverplated Flatware (Int. Cl. 8).
First use Sept. 8, 1967.

SN 286,830. Patrick J. Leonard, Dallas, Tex. Filed Dec. 13, 1967.

"Le Soleil d'Or."

The English translation of "Le Soleil d'Or" is "the golden sun."
For Diamonds (Int. Cl. 14).
First use Dec. 14, 1966.

SN 288,717. S.p.A. Signori & Bondioli, Milan, Italy. Filed Jan. 12, 1968.

POMELLATO

Owner of Italian Reg. No. 213,704, dated Sept. 4, 1967.
For Jewelry and Imitation Jewelry (Int. Cl. 14).

SN 290,299. Jacques Kreisler Manufacturing Corporation North Bergen, N.J. Filed Feb. 5, 1968.

Kreisler Stelux

Owner of Reg. No. 642,339.
For Watch Bracelets (Int. Cl. 14).
First use Jan. 5, 1968.

SN 292,167. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers, Philadelphia, Pa. Filed Feb. 29, 1968.

BARR'S

For Jewelry and Diamonds (Int. Cl. 14).
First use 1853.

SN 293,685. Baumgold Bros., Inc., New York, N.Y. Filed Mar. 20, 1968.

jubilee

The mark consists of the word "Jubilee" and a fanciful representation of eight letter "J's." Applicant disclaims the representation of diamonds apart from the mark shown.
For Rings, Pins, Earrings, and Other Items of Jewelry in Which Are Mounted Diamonds (Int. Cl. 14).
First use Jan. 25, 1949.

Class 31 — Filters and Refrigerators

SN 286,359. Multiplex Company, St. Louis, Mo. Filed Dec. 6, 1967.

QUADRATOR

For Non-Alcoholic Refrigerated Beverage Dispensers (Int. Cl. 11).
First use about July 1966.

SN 289,090. Flint & Walling Manufacturing Co., Inc., Kendallville, Ind. Filed Jan. 18, 1968.

MARINA

For Water Conditioners, Water Softeners, Cartridge Type Water Filter Units, and Replacement Elements for Filter Units (Int. Cl. 11).
First use Nov. 26, 1967.

SN 289,257. Amicon Corporation, Lexington, Mass. Filed Jan. 22, 1968.

Diaflo

Owner of Reg. No. 833,683.
For Ultrafiltration Membranes and Ultrafiltration Apparatus (Int. Cl. 11).
First use Apr. 17, 1967.

SN 289,476. Cambridge Filter Corporation, Syracuse, N.Y. Filed Jan. 24, 1968.

SIDE-CARB

Owner of Reg. Nos. 820,734 and 820,735.
For Air Filters (Int. Cl. 11).
First use Jan. 16, 1968.

Class 32 — Furniture and Upholstery

SN 287,285. Drexel Enterprises, Inc., Drexel, N.C. Filed Dec. 20, 1967.

DREXOTHANE

For Plastic Material Sold as a Component Part of Furniture Items—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Sept. 18, 1967.

SN 298,779. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed May 22, 1968.

CONTRACT SEVEN

For Institutional and Office Furniture—Namely, Movable Office and Home Partitions, Cabinets, Storage Cabinets, Wardrobes, Desks, and Chairs (Int. Cl. 20).
First use on or about Mar. 12, 1968.

Class 33 — Glassware

SN 294,153. American Saint Gobain Corporation, Kingsport, Tenn. Filed Mar. 26, 1968.

LUSTRONIC

Owner of Reg. No. 564,683.
For Flat and Sheet Glass (Int. Cl. 21).
First use Mar. 4, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 248,630. Neoweld Electric Inc., Cornwall Bridge, Conn. Filed June 21, 1966.

KAOPAK

For Portable Electrical Resistance Heating Units and Parts and Controls Therefor, for Preheating, Stress Relieving and Heat Treating Various Metals and Metal Products (Int. Cl. 11).
First use Oct. 1, 1965.

SN 268,580. The Coleman Company, Inc., Wichita, Kans. Filed Apr. 7, 1967.

COLEMAN COMBO

Owner of Reg. Nos. 140,701, 726,393, and others.
For Combination Air Conditioner and Heating Unit for Mobile Homes (Int. Cl. 11).
First use on or before Jan. 27, 1967.

SN 268,987. Pacific Scientific Company, City of Commerce, Calif. Filed Apr. 12, 1967.

VACU-DRAW

For Vacuum-Type Heat Treating Furnaces (Int. Cl. 11).
First use Nov. 19, 1964.

SN 269,457. Ronson Corporation, Woodbridge, N.J. Filed Apr. 18, 1967.

VARAFLAME

Owner of Reg. No. 726,873.
For Gas-Fired Candles, Gas-Fired Chafing Dishes, and Gas-Fired Torches (Int. Cl. 11).
First use Aug. 15, 1962, on gas-fired candles.

SN 272,284. Liquid Carbonic Corporation, Chicago, Ill. Filed May 24, 1967.

DYNAWELD

For Automatic and Semi-Automatic Welding Apparatus for Use in the MIG and TIG Welding Processes (Int. Cl. 7).
First use Dec. 5, 1966.

SN 272,285. Liquid Carbonic Corporation, Chicago, Ill. Filed May 24, 1967.

DYNATUBE

For Automatic Pulsed Arc Welding Systems and Parts Thereof (Int. Cl. 9).
First use Dec. 5, 1966.

SN 279,925. Boyar-Schultz Corporation, Broadview, Ill. Filed Sept. 8, 1967.

COOKIE-MATIC

For Commercial Cooky Forming and Baking Machine (Int. Cl. 11).
First use Mar. 1, 1959.

SN 282,279. Kobe Steel, Ltd., Fukiai-ku, Kobe, Japan. Filed Oct. 11, 1967.

ALEX

Owner of Japanese Reg. No. 733,001, dated Feb. 13, 1967.
For Brazed Aluminum Heat Exchanger (Int. Cl. 11).

SN 287,318. Raypak Company, Inc., South El Monte, Calif. Filed Dec. 20, 1967.

CALIFORNIAN

For Hot Water Heaters and Swimming Pool Heaters (Int. Cl. 11).
First use 1963.

SN 295,368. Plascon AG, Munchenstein, Switzerland. Filed Apr. 10, 1968.

LUMATIC

Owner of Swiss Reg. No. 190,427, dated Feb. 22, 1962.
For Steam Generators of All Types, Especially Steam Humidifiers (Int. Cl. 11).
First use July 21, 1967; in commerce July 21, 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 289,936. Westinghouse Air Brake Company, Wilmerding, Pa. Filed Jan. 30, 1968.

WHITE DOT

Owner of Reg. No. 717,595.
For Gaskets, Compression Rings, O-Rings or Grommets, Diaphragms, and Packing Cups (Int. Cl. 17).
First use Nov. 16, 1967.

SN 290,510. McCreary Tire & Rubber Company, Indiana, Pa. Filed Feb. 7, 1968.

SCOT WIDE SPORT

The term "Wide" is disclaimed apart rfom the mark as a whole.
For Vehicle Tires (Int. Cl. 12).
First use Dec. 27, 1967.

SN 303,880. Wencor, Inc., Miami, Fla. Filed July 30, 1968.

Wanaar

For O-Ring Seals (Int. Cl. 17).
First use Oct. 29, 1956.

Class 36 — Musical Instruments and Supplies

SN 280,106. Troy National Bank, Troy, Mich., assignee of Stereodyne, Inc., Troy, Mich. Filed Sept. 11, 1967.

DYNAPAK

For Single Reel, Endless Magnetic Tape Cartridges (Int. Cl. 9).
First use on or about June 26, 1967.

SN 286,444. Dick Paladino, Las Vegas, Nev. Filed Dec. 7, 1967.

Dick Paladino D

For Clarinet and Saxophone Mouthpieces (Int. Cl. 15).
First use May 5, 1966.

SN 291,877. Edward A. Kotlar, d.b.a. Kotlar Enterprises, Grosse Pointe Woods, Mich. Filed Feb. 26, 1968.

Contrast

For Phonograph Records and Prerecorded Magnetic Tapes (Int. Cl. 9).
First use Jan. 9, 1967.

SN 294,423. Think Thin International, Long Beach, Calif. Filed Mar. 28, 1968.



For Phonograph Records (Int. Cl. 9).
First use Jan. 19, 1968.

Class 37 — Paper and Stationery

SN 275,446. Kee Lox Manufacturing Company, Rochester, N.Y. Filed July 6, 1967.

MARVEL

For Carbon Paper and Typewriter Ribbon (Int. Cl. 16).
First use June 13, 1967.

SN 276,151. Ludlow Corporation, Needham, Mass., by merger from The Marvellum Company, Holyoke, Mass. Filed July 17, 1967.

PEARLTONE

For Coated Paper and Paper-Board (Int. Cl. 16).
First use July 1959.

SN 278,490. Highland Supply Corporation, d.b.a. Arrow Brands, Highland, Ill. Filed Aug. 17, 1967.

PLASTIFOIL

For Laminates of Aluminum Foil and Plastic for Use as a Wrapping Material (Int. Cl. 16).
First use about Aug. 16, 1955.

SN 281,231. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Paper and Articles Made of Paper, Specifically Writing Papers, Printing Papers, Paper Mounts for Photographers, Book Covers, Artists' Papers, and Wall Papers (Int. Cls. 16 and 27).

SN 283,246. Georgia-Pacific Corporation, Portland, Oreg. Filed Oct. 24, 1967.

HOPPER SMOOTHOPAQUE

The word "Smoothopaque" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 652,065, 739,021, and 812,552.
For Printing Paper (Int. Cl. 16).
First use Oct. 1, 1965; 1939 as to the word "Hopper."

SN 287,468. Textron Inc., Providence, R.I. Filed Dec. 22, 1967.

DESKETTE

For Desk Stands for Writing Instruments and Parts for Such Desk Stands, Writing Instrument Sockets, Fountain Pens, Ballpoint Pens, Mechanical Pencils, and Marking Pens (Int. Cl. 16).
First use Aug. 1, 1967.

Class 38 — Prints and Publications

SN 273,395. Grolier Incorporated, New York, N.Y. Filed June 8, 1967.

AIR PIX

Owner of Reg. No. 408,804.
For Photographs of Airplanes and Photographs Taken From Airplanes (Int. Cl. 16).
First use Sept. 29, 1966.

SN 271,859. Marjorie T. Thomas, d.b.a. Air Pix, Melville, N.Y. Filed May 18, 1967.

THE NEW BOOK OF KNOWLEDGE

For Series of Books Published Periodically (Int. Cl. 16).
First use May 1, 1967.

SN 278,514. Mecanorma S.A., Paris, France. Filed Aug. 17, 1967.

NORMATYPE

Priority claimed under Sec. 44(d) on French Reg. No. 723,945, dated June 7, 1967.
For Dry Transfer Sheet for Transfer on All Surfaces of Letters, Signs, Drawings, Webs, Colors, and All Graphic Representations or Symbols (Int. Cl. 16).

SN 279,166. Bond Publishing Company, Newport Beach, Calif. Filed Aug. 28, 1967.

CAR LIFE

Owner of Reg. No. 640,351.
For Periodical Magazine (Int. Cl. 16).
First use February 1954.

SN 282,570. Girl Scouts of the United States of America, New York, N.Y. Filed Oct. 16, 1967.

THE BROWNIE READER

For Magazine (Int. Cl. 16).
First use Sept. 22, 1967.

SN 284,505. Ridge Tool Company, Elyria, Ohio. Filed Nov. 9, 1967.

RIDGID

Owner of Reg. Nos. 419,190, 770,621, and others.
For Calendars (Int. Cl. 16).
First use December 1935.

SN 285,318. F-D-C Reports, Inc., Washington, D.C. Filed Nov. 21, 1967.

"The Gold Sheet"

For Specialized Trade Report Issued Periodically in the Food, Drug, Cosmetic, and Related Industries (Int. Cl. 16).
First use July 21, 1967.

SN 285,319. F-D-C Reports, Inc., Washington, D.C. Filed Nov. 21, 1967.

QC

For Specialized Trade Report Issued Periodically in the Food, Drug, Cosmetic, and Related Industries (Int. Cl. 16).
First use July 21, 1967.

SN 288,725. Peter J. Steincrohn, M.D., Coral Gables, Fla. Filed Jan. 12, 1968.

STOP KILLING YOURSELF

For Nationally Syndicated Medical Columns (Int. Cl. 16).
First use November 1955.

SN 290,317. Ernest N. Oeland, Jr., d.b.a. Dial-A-Play, West Covina, Calif. Filed Feb. 5, 1968.

DIAL-A-PLAY

For Rotatable Chart Containing Information About the Playing of Baseball (Int. Cl. 16).
First use Mar. 15, 1965.

SN 297,829. Fleer Corp., Philadelphia, Pa. Filed May 10, 1968.

Show Offs

For Printed Images or Pictures Transferrable to Skin (Int. Cl. 16).
First use Apr. 21, 1968.

Class 39 — Clothing

SN 276,116. Farah Manufacturing Company, Inc., d.b.a. Farah Industries, El Paso, Tex. Filed July 17, 1967.

COZY-KNIT

For Diapers (Int. Cl. 25).
First use June 5, 1967.

SN 280,336. Sanrival S.r.l., Milan, Italy. Filed Sept. 14, 1967.

Sanrival

Priority claimed under Sec. 44(d) on Italian application filed Aug. 30, 1967; Reg. No. 225,515, dated Apr. 17, 1968. The lining shown in the drawing is for shading purposes only and does not represent color.
For Clothing for Men, Women and Children—Namely, Shirts, Underpants, Stockings, Socks, Bathing Suits, Foundation Garments, Garter Belts, Hats, Brassieres, Scarfs, Ties, and Garters (Int. Cl. 25).
First use 1948; in commerce 1952.

SN 282,076. Goodyear Rubber Company, Middletown, Conn. Filed Oct. 9, 1967.

LINCOLN

For Rubber Boots and Shoes (Int. Cl. 25).
First use December 1884.

SN 282,077. Goodyear Rubber Company, Middletown, Conn. Filed Oct. 9, 1967.

CRACK PROOF

For Rubber Boots and Shoes (Int. Cl. 25).
First use December 1876.

SN 286,153. Kastinger & Co. KG Sportschuhfabrik, Seewalchen am Attersee, Austria. Filed Dec. 4, 1967.



Priority claimed under Sec. 44(d) on Austrian application filed June 16, 1967; Reg. No. 60,710, dated Nov. 9, 1967. The drawing is lined for gold.
For Shoes (Int. Cl. 25).

SN 286,355. Mayer & Cie Pelzfabrik, Zurich, Switzerland. Filed Dec. 6, 1967.

MISS MINK

Priority claimed under Sec. 44(d) on Swiss Reg. No. 225,764, dated July 7, 1967. No claim is made to the exclusive use of the word "Mink" apart from the mark as a whole.
For Mink and/or Mink Trimmed Coats, Capes, Jackets, and Suits (Int. Cl. 25).
First use Mar. 6, 1967; in commerce Mar. 23, 1967.

SN 287,755. Peter Pan International, Inc., New York, N.Y. Filed Dec. 28, 1967.

PETER PAN HOSIERY

The term "Hosiery" is disclaimed apart from the mark as shown. Owner of Reg. No. 578,495.
For Hosiery (Int. Cl. 25).
First use Dec. 14, 1967.

SN 289,188. Gilbert Shoe Stores, Inc., Columbus, Ohio. Filed Jan. 19, 1968.

weather gaiters

No claim is made to the word "Gaiters" apart from the mark as shown. The lining on the drawing is not intended to depict any particular color.
For Rubber Boots and Overshoes (Int. Cl. 25).
First use Jan. 4, 1968.

SN 291,602. David Ferguson Ltd., New York, N.Y. Filed Feb. 21, 1968.



For Women's Sportwear—Namely, Dresses, Skirts, Bathing Suits, Shirts, Pants, Shorts, Blouses, Raincoats, Sweaters, Hats, Suits, and Coats (Int. Cl. 25).
First use January 1965.

SN 292,173. A. S. Beck Shoe Corporation, New York, N.Y. Filed Feb. 29, 1968.

Beck COLORVISION

Owner of Reg. Nos. 693,556, 695,384, and others.
For Shoes (Int. Cl. 25).
First use Feb. 8, 1968.

SN 295,807. J. P. Conroy, Inc., Johnstown, N.Y. Filed Apr. 17, 1968.

ALUMINAR

For Glove Linings, Sold as Components of Gloves (Int. Cl. 25).
First use September 1967.

SN 302,024. The Villager, Inc., Philadelphia, Pa. Filed July 5, 1968.

Village

Owner of Reg. Nos. 702,965, 841,021, and others.
For Shirts, Blouses, Dresses, Skirts, Suits, Slacks, Shorts, and Sweaters (Int. Cl. 25).
First use January 1962.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 287,424. David and David, Inc., Long Island City, N.Y. Filed Dec. 22, 1967.

CURLETTE

For Wigs and Hairpieces (Int. Cl. 26).
First use Feb. 6, 1967.
Subj. to Intf. with SN 287,684.

SN 287,684. Tovar Tresses, Inc., New York, N.Y. Filed Dec. 27, 1967.

CURL-ETTE

For Wigs, Wiglets, and Hairpieces (Int. Cl. 26).
First use Dec. 1, 1957.
Subj. to Intf. with SN 287,424.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 292,951. G. W. Onthank Company, Des Moines, Iowa. Filed Mar. 11, 1968.

Capitol Carpets

The word "Carpets" is disclaimed.
For Carpets (Int. Cl. 27).
First use Jan. 31, 1968.

SN 299,186. Olin Mathieson Chemical Corporation, New York, N.Y. Filed May 28, 1968.

KITTEN STEP

For Rug Underlay (Int. Cl. 27).
First use Mar. 26, 1968.

SN 302,202. Shapiro and Son Bedspread Corp., New York, N.Y. Filed July 8, 1968.

JET SET

For Bedspreads, Drapes, Pillow Shams, and Dust Ruffles (Int. Cl. 24).
First use June 10, 1968.

Class 43 — Thread and Yarn

SN 292,828. T. G. & Y. Stores Company, Oklahoma City, Okla. Filed Mar. 8, 1968.

GOLDEN T

For Knitting Yarns (Int. Cl. 23).
First use Oct. 18, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 237,623. Sweden Freezer Manufacturing Co., Seattle, Wash. Filed Jan. 28, 1966.

Sweden

Owner of Reg. Nos. 523,137, 750,552, and others.
For External Artificial Kidney Units (Int. Cl. 10).
First use on or about Dec. 10, 1962.

SN 270,124. Gebeco, Inc., Buffalo, N.Y. Filed Apr. 27, 1967.

CARESSE

For Body Massaging Devices Which Exert Rhythmic Pressure on the Body by the Use of an Alternately Inflatable and Deflatable Member Strapped to the Body Which Is Actuated by an Air Pump (Int. Cl. 10).
First use Mar. 9, 1967.

SN 275,066. Modern Denture Research Co., Los Angeles, Calif. Filed June 29, 1967.

AIR-CENTRIC

For Denture Diagnostic and Bite Registration Kits Used by Dentists in Fitting and Adjusting Dentures in the Mouth of a Patient (Int. Cl. 10).
First use Mar. 25, 1966.

SN 287,673. Ritter Pfaudler Corporation, Rochester, N.Y. Filed Dec. 27, 1967.

ULTRA-CENTRIC

For Dental Handpieces and an Air and/or Water Spray Clip-On Attachment Accessory (Int. Cl. 10).
First use Mar. 27, 1967.

SN 287,992. Edward Fitz, d.b.a. El-Fax, Ardmore, Pa. Filed Jan. 2, 1968.

XLATOR

For Lung Exercising Device—Namely, an Apparatus Intended To Aid Persons in the Development of Contractile Strength for Their Lungs, To Increase the Strength of Exhalation, and To Provide an Isometric, Isotonic or Isometric-Isotonic Type of Exercise for the User's Lungs (Int. Cl. 10).
First use Dec. 17, 1967.

SN 291,528. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Feb. 20, 1968.

SEAMLESS SURGICAL SCRUBBER

Applicant disclaims "Surgical Scrubber" apart from the mark as shown. Owner of Reg. Nos. 146,606 and 444,431.
For Disposable Sponges (Int. Cl. 5).
First use Jan. 29, 1968.

SN 295,991. Ethicon, Inc., Somerville, N.J. Filed Apr. 19, 1968.

LABYRINTH PACKAGE

For Sutures (Int. Cl. 10).
First use Mar. 5, 1968.

SN 298,010. The Kendall Company, Walpole, Mass. Filed May 13, 1968.

TENDERSKIN

For Surgical Adhesive Tape (Int. Cl. 5).
First use June 27, 1966.

Class 46 — Foods and Ingredients of Foods

SN 253,318. Peter J. Ferrara, d.b.a. Keep Chemical Company, New York, N.Y. Filed Aug. 29, 1966.

CAMBRIDGE FORMULA

The word "Formula" is disclaimed apart from the mark as shown.
For Baked Goods—Namely, Breads, Rolls, Biscuits, Pastries, Puff Pastries, Muffins, and Crisp-Breads (Int. Cl. 30).
First use May 6, 1965.
Subj. to Intf. with SN 258,270.

SN 262,108. American Dairy Queen Corporation, Minneapolis, Minn. Filed Jan. 9, 1967.

brazier

Owner of Reg. Nos. 738,023, 814,632, and others.
For Condiments—Namely, Catsup, Mustard, Pickles, Relish, and Salt and Pepper (Int. Cls. 29 and 30).
First use Jan. 15, 1964.

SN 263,115. Riviana Foods Inc., Houston, Tex. Filed Jan. 23, 1967.

NUTTY

For Rice (Int. Cl. 30).
First use Jan. 10, 1967.

SN 288,490. Big Icy System, Inc., Phoenix, Ariz. Filed Jan. 10, 1968.



For Flavor Bases for Making Fruit Flavored Ices (Int. Cl. 30).
First use Nov. 27, 1967.

SN 291,960. Brooklyn Cheese Company, Inc., Brooklyn, N.Y. Filed Feb. 27, 1968.

4C CRUM 'N BAKE

Owner of Reg. No. 766,467.
For Seasoned Crumbing Mix, for Poultry, Fish and Meat (Int. Cl. 30).
First use Feb. 14, 1968.

SN 295,425. Delicia, Inc., d.b.a. Progress Confection Company, Elizabeth, N.J. Filed Apr. 11, 1968.

HIGH-JINKS

For Confectionery—Namely, Assorted Nuts and Popcorn Coated With a Caramel Coating (Int. Cl. 30).
First use Feb. 5, 1968.

SN 298,041. Reddi-Wip, Inc., Los Angeles, Calif. Filed May 13, 1968.

REDDI WIP

Owner of Reg. Nos. 560,710, 827,404, and others.
For Sour Dressing of the Type Derived From Vegetable Fat Rather Than Cream, and Similarly Derived Garlic Onion Dip, French Onion Dip, and Chive Onion Dip (Int. Cl. 29).
First use Apr. 25, 1968.

Class 48 — Malt Beverages and Liquors

SN 304,869. Jos. Schlitz Brewing Company, Milwaukee, Wis. Filed Aug. 12, 1968.

SCHLITZ

Owner of Reg. Nos. 52,011, 820,875, and others.
For Beer (Int. Cl. 32).
First use May 1, 1888.

Class 49 — Distilled Alcoholic Liquors

SN 284,139. Myers Rum Company Limited, Nassau, Bahamas. Filed Nov. 6, 1967.



Applicant disclaims all words except "Myer's" and "Planters'" apart from the mark as shown. Owner of U.S. Reg. Nos. 312,595, 639,814, and others.
For Rum (Int. Cl. 33).
First use at least as early as Jan. 15, 1951; in commerce at least as early as Jan. 15, 1951.

Class 50 — Merchandise Not Otherwise Classified

SN 272,115. Carroll E. Thomas, San Francisco, Calif. Filed S.R. May 22, 1967; Am. P.R. Oct. 15, 1968.

THOMAS

For Artist's Painting Kit (Int. Cl. 16).
First use Feb. 10, 1965.

SN 275,092. Clarence P. Ward, d.b.a. Travalet Products, Klamath Falls, Oreg. Filed June 29, 1967.

TraValet

For Trouser Holding Device in the Nature of a Tube (Int. Cl. 21).
First use Apr. 20, 1967.

SN 278,208. Hall-Neal Furnace Company, Indianapolis, Ind. Filed Aug. 14, 1967.



The drawing is lined for the colors green and yellow.
For Heated Hovers, Brooder Heaters, and Brooder Systems, Each Such System Comprising a House, a Hover Within the House and Adjustable Between a Condition in Which Heated Air Supplied Thereto Is Confined to the Interior of the House, Means for Heating Air and Means for Delivering Such Heated Air at a Controlled Rate to the Interior of the Hover (Int. Cl. 11).
First use May 9, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 252,440. Yardley of London, Inc., Totowa, N.J. Filed Aug. 15, 1966.

DEVONSHIRE CREAM

The word "Cream" is disclaimed apart from the mark as shown.
For Bath Products—Namely, Bath Oil and Foam Bath (Int. Cl. 3).
First use June 15, 1966.
Subj. to Intf. with SN 284,735.

SN 270,169. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.



For Cologne (Int. Cl. 3).
First use Feb. 1, 1967.

SN 270,170. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.



For Cologne (Int. Cl. 3).
First use Feb. 1, 1967.

SN 270,172. Valhalla Inc., Tuscaloosa, Ala. Filed Apr. 27, 1967.

VIKING

For Cologne (Int. Cl. 3).
First use Feb. 1, 1967.

SN 272,571. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. Filed May 29, 1967.

HOLD EVERYTHING

Owner of Reg. No. 426,975.
For Cold Wave and Neutralizer Solution for Permanent Waves (Int. Cl. 3).
First use Mar. 16, 1962.

SN 276,525. Autumn Leaves Company, Ada, Mich. Filed July 21, 1967.

AUTUMN LEAVES

For Cologne (Int. Cl. 3).
First use May 24, 1967.

SN 277,458. W. K. M. Hassenstein, d.b.a. Hassenstein, Hollywood, Calif. Filed Aug. 3, 1967.



No claim is made to the exclusive use of the words "Skin Beauty," apart from the other features of the mark as shown.
For Skin Cream (Int. Cl. 3).
First use Jan. 31, 1960.

SN 281,306. Mowatt & Moore Limited, Pointe Claire, Quebec, Canada. Filed Sept. 27, 1967.

PROMANI

Owner of Canadian Reg. No. 115/29,684, dated Mar. 18, 1948.
For Hand Lotion (Int. Cl. 3).
First use Mar. 16, 1946; in commerce Sept. 20, 1967.

SN 281,691. Exquisite Form Industries, Inc., New York, N.Y. Filed Oct. 3, 1967.

MANDATE!

Owner of Reg. No. 743,495.
For Toiletries for Men, Specifically After-Shave Lotion (Int. Cl. 3).
First use Sept. 22, 1967.

SN 287,381. Sea & Ski Corporation, San Francisco, Calif. Filed Dec. 21, 1967.

SUNMATE

For After Shave Bronzer (Int. Cl. 3).
First use Nov. 14, 1967.

SN 287,651. Hoffritz for Cutlery, Inc., d.b.a. Hoffritz, New York, N.Y. Filed Dec. 27, 1967.

TICKER TAPE

For Men's After-Shave Lotion and Cologne (Int. Cl. 3).
First use Nov. 24, 1967.

SN 289,788. Dorosy, Incorporated, Chicago, Ill. Filed Jan. 29, 1968.

KIX KINKS

Applicant disclaims the word "Kinks" in connection with any use apart from the mark as shown.
For Cosmetic Hair Straightener (Int. Cl. 3).
First use Jan. 20, 1920.

SN 292,091. Gabel's Cosmetics, Inc., Los Angeles, Calif. Filed Feb. 28, 1968.

IMPROVE

For Hair Styling Lotion (Int. Cl. 3).
First use at least as early as July 10, 1967.

SN 295,299. Avon Products, Inc., New York, N.Y. Filed Apr. 10, 1968.

PROFIT

For Toothpaste, Personal Deodorant, and After Shave Lotion (Int. Cls. 3 and 5).
First use Mar. 22, 1968.

SN 302,891. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed July 17, 1968.

MOPPET

For Cologne (Int. Cl. 3).
First use June 24, 1968.
Subj. to Intf. with SN 301,571.

SN 303,747. The Gillette Company, Boston, Mass. Filed July 29, 1968.

HIGH TIME

For Hairspray (Int. Cl. 3).
First use July 18, 1968.

SN 303,966. Physicians Formula Cosmetics, Inc., Los Angeles, Calif. Filed July 31, 1968.

SUN SHIELD

For Liquid Make-Up, Skin Lubricating and Protection Lotion (Int. Cl. 3).
First use Feb. 4, 1965.
Subj. to Intf. with SN 278,775.

Class 52 — Detergents and Soaps

SN 275,887. Foresight Corporation, d.b.a. Water Soluble Products, Chicago, Ill. Filed July 12, 1967.

DETERGENT "3·2·4"

The word "Detergent" is disclaimed apart from the mark as shown.
For All-Purpose Cleaning Preparation (Int. Cl. 3).
First use June 1, 1967.

SN 276,045. Maurice H. Simson, d.b.a. Alpha Chemical Company, Baltimore, Md. Filed July 14, 1967.

ALPHA

For Liquid Toilet Soaps, Liquid Detergents for Household, Automobile, and General Cleaning, Liquid Cleaning Compound for Wood, Metal, Glass, Marble, Painted Woodwork, Floors, Walls, and Furniture (Int. Cl. 3).
First use May 1, 1925.
Subj. to Intf. with SN 285,995.

SN 279,107. Shur-Dol Chemical Company, Holland, Mich. Filed Aug. 25, 1967.

BY*PAS

For Household All-Purpose Cleaning Concentrate (Int. Cl. 3).
First use May 29, 1967.

SN 279,767. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Sept. 6, 1967.

DEEPSOL

For Toilet Bowl Cleaner (Int. Cl. 3).
First use June 20, 1967.

SN 280,279. West Chemical Products, Inc., Long Island City, N.Y. Filed Sept. 13, 1967.



Owner of Reg. No. 210,422 and others.
For Liquid Hand Soap; Surgical Soap; Hand Soap; Liquid Castile Soap and Powdered Hand Soap; Chemical Preparations for Use in Disinfecting and Cleaning Bowls, Pipes; and Leaf Cleansing Agents (Int. Cls. 3 and 5).
First use Feb. 13, 1967.

SN 281,739. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Sept. 19, 1967.

RC-1

Owner of Reg. Nos. 430,777, 611,886, and others.
For Alkaline Detergent for Cleaning Rubber in Dairy and Food Processing Plants (Int. Cl. 3).
First use Apr. 26, 1967.

SN 282,636. Stanley Home Products, Inc., Westfield, Mass. Filed Oct. 16, 1967.

TENDER FOAM

The word "Foam" is disclaimed apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use June 10, 1964.

SN 284,000. ESWA, Gloor, Meier & Co., Chem.-Techn. Produkte, Wascherei-Bedarfsartikel, Stansstad, Stansstad, Nidwalden, Switzerland. Filed Nov. 2, 1967.

ESWA

Owner of Swiss Reg. No. 182,689, dated Aug. 9, 1960.
For Laundry Detergents and Soaps (Int. Cl. 3).

SN 286,875. Alberto-Culver Company, Melrose Park, Ill. Filed Dec. 14, 1967.

MAKES YOUR HAIR DO WHAT YOU WANT IT TO!

For Hair Shampoo (Int. Cl. 3).
First use at least as early as May 1963.

SN 295,300. Avon Products, Inc., New York, N.Y. Filed Apr. 10, 1968.

PROFIT

For Toilet Soap (Int. Cl. 3).
First use Mar. 22, 1968.

SN 298,698. Bristol-Myers Company, New York, N.Y. Filed May 21, 1968.

MOISTURA

For Hair Shampoo (Int. Cl. 3).
First use Apr. 1, 1968.
Subj. to Intf. with SN 304,843.

SN 300,881. Purex Corporation, Ltd., Lakewood, Calif. Filed June 20, 1968.

BRILLO

Owner of Reg. Nos. 93,517, 736,958, and others.
For Spray and Wipe Surface Cleaner for Household Use (Int. Cl. 3).
First use May 29, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 281,046. Denny's Restaurants, Inc., La Mirada, Calif. Filed Sept. 25, 1967.

Denny's

Owner of Reg. Nos. 736,161 and 740,359.
For Restaurant Services (Int. Cl. 42).
First use on or about Mar. 5, 1963.

SN 286,020. Majoda Tool & Mfg. Corp., Hoboken, N.J. Filed Dec. 1, 1967.

MAJODA

For Engineering Design Services (Int. Cl. 42).
First use Nov. 1, 1967.

SN 288,711. The National Urban League, Inc., New York, N.Y. Filed Jan. 12, 1968.

For Community Services Designed To Secure Equal Opportunities for Negroes and Other Minorities in All Areas of American Life With Special Emphasis on Housing, Health and Welfare, Education, and Employment (Int. Cl. 42).
First use Jan. 8, 1968.

SN 289,176. Educational Data Corporation, d.b.a. Ed-Data Corp., Fort Lauderdale, Fla. Filed Jan. 19, 1968.

COM-DATE

For Matching of People Through Computer Testing (Int. Cl. 42).
First use Oct. 1, 1964.

SN 294,435. Dentacenters, Inc., Indianapolis, Ind. Filed Mar. 29, 1968.

DENTACENTERS

For Consulting Services In Connection With Dental Health Plans and the Like (Int. Cl. 42).
First use Mar. 19, 1968.

SN 304,289. Tin Lizzy, Inc., Pomona, Calif. Filed Aug. 5, 1968.

TIN LIZZY

For Restaurant Services (Int. Cl. 42).
First use Feb. 23, 1968.

SN 304,553. Mr. Bun, Inc., North Palm Beach, Fla. Filed Aug. 7, 1968.

Mr. Bun

For Restaurant Services (Int. Cl. 42).
First use June 11, 1968.

Class 101 — Advertising and Business

SN 252,400. Metro-Graphics, Inc., Washington, D.C. Filed Aug. 15, 1966.

METRO-GRAPHICS, INC.

For Printing Services (Int. Cl. 35).
First use in or about September 1965.

SN 254,612. Minute Man Dairy Stores, Inc., Atlantic City, N.J. Filed Sept. 16, 1966.

MINUTE MAN

For Promotion and Sale of Retail Dairy Food Store Services (Int. Cl. 35).
First use Jan. 25, 1966.

SN 258,554. Patrick F. Kennedy, d.b.a. P. F. Kennedy and Associates, Newtown Square, Pa. Filed Nov. 14, 1966.

Tele-voting

For Collecting Information About an Audience and Measuring Audience Opinion (Int. Cl. 35).
First use June 28, 1966.
Subj. to Intf. with SN 269,660 and SN 272,274.

SN 266,815. Unishops, Inc., Jersey City, N.J. Filed Mar. 15, 1967.

For Operating Men's and Boys' Wear Sections in Department Stores (Int. Cl. 35).
First use on or about July 31, 1962.

SN 278,767. Key-Write Corporation, Chicago, Ill. Filed Aug. 22, 1967.

KEY-WRITE

For Rental of Electronic Data Processing Equipment and Advisory Services in Setting Up, Programming, Maintaining and Supervising the Use of Electronic Data Processing Equipment and Systems (Int. Cl. 35).
First use July 7, 1967.

SN 285,391. Bradshaw-Welles Company, Inc., Los Angeles, Calif. Filed Nov. 22, 1967.

For Brokerage Merchandising—Namely, Negotiating the Sale of Merchandise for the Accounts of Sellers as Principals (Int. Cl. 35).
First use on or about June 15, 1962.

SN 289,631. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Jan. 25, 1968.

STAFF

Owner of Reg. Nos. 838,162, 844,219, and others.
For Retail Grocery Store Services (Int. Cl. 35).
First use Jan. 18, 1959.

SN 291,701. Auto-Tronix Universal Corporation, Denver, Colo. Filed Feb. 23, 1968.

ATU

Owner of Reg. No. 812,303.
For Business Services in and Relating to the Field of Electronic Data Processing—Namely, Computer Programming, Systems Design, Systems Analysis, Management Consulting, and Data Processing Operations (Int. Cl. 35).
First use May 1966.
Subj. to Intf. with SN 266,299.

SN 295,594. Ballinger-Meserole Company, Philadelphia, Pa. Filed Apr. 15, 1968.

BMC

For Management Consultation Services—Namely, Assessment and Evaluation of Executive Staffs, Labor, Material, and Production Schedules for Business and Industry (Int. Cl. 35).
First use December 1966.

SN 297,243. Castle & Cooke, Inc., d.b.a. Plan, Honolulu, Hawaii. Filed May 3, 1968.

PLAN

Owner of Reg. No. 816,753.
For Contract Management and Management Consulting Services in the Fields of Agriculture, Fisheries, Shipping, Urban Planning, Land Development, and Management of Construction Projects (Int. Cl. 35).
First use Jan. 1, 1968.

SN 299,076. The World of Sleep, Inc., Denver, Colo. Filed May 27, 1968.

WORLD OF SLEEP

For Retail Furniture Store Services (Int. Cl. 35).
First use Oct. 3, 1965.

SN 301,887. Inmark, Inc., Kensington, Md. Filed July 3, 1968.

Rentronix

For Electronic Instrumentation and Computer Rental (Int. Cl. 35).
First use Feb. 1, 1968.

SN 304,319. Dial-A-Score, Inc., Houston, Tex. Filed Aug. 5, 1968.

DIAL-A-SCORE

For Service of Advertising Subscribing Patrons to Members of the Public Who Call by Telephone To Obtain Scores of Various and Sundry Sporting Events (Int. Cl. 35).
First use in or before August 1966.

SN 305,183. Esquire, Inc., New York, N.Y. Filed Aug. 15, 1968.

I-R-I-S

For Answering Service Providing a Reader of an Advertisement With Substantially Instant Information as to the Retail Store Most Convenient to the Reader Handling the Merchandise Advertised (Int. Cl. 35).
First use May 6, 1968.

Class 102 — Insurance and Financial

SN 258,285. Midwest Bank Card System, Inc., Chicago, Ill., assignee of Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 9, 1966.



The drawing is lined for blue and green.
For Providing Credit Card Services (Int. Cl. 36).
First use Sept. 27, 1966.

SN 258,287. Midwest Bank Card System, Inc., Chicago, Ill., assignee of Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Nov. 9, 1966.



For Providing Credit Card Services (Int. Cl. 36).
First use as early as Sept. 27, 1966.

SN 269,363. Union Mutual Life Insurance Company, Portland, Maine. Filed Apr. 17, 1967.



The mark consists of the letters "PIP."
For Setting Up or Development of Insurance Programs for Individuals and Corporations (Int. Cl. 36).
First use Jan. 27, 1967.

SN 277,457. The Gramatan Company Incorporated of Bronxville, New York, N.Y. Filed Aug. 3, 1967.



The name and portrait are those of a deceased Indian Chief.
Owner of Reg. Nos. 742,108 and 768, 001.
For Industrial Banking Services (Int. Cl. 36).
First use July 1, 1930.

SN 287,135. Bankers Commercial Life Insurance Company, Dallas, Tex. Filed Dec. 18, 1967.

GOLD CROWN PLAN

No claim is made to exclusive rights in the word "Plan" apart from the mark as shown.
For Underwriting Medical, Surgical and Hospital Expenses, Accidental Bodily Injury and Accidental Death and Life Insurance (Int. Cl. 36).
First use Oct. 7, 1967.

SN 289,238. Financial Programs, Inc., Denver, Colo. Filed Jan. 22, 1968.



The mark comprises a fanciful representation of the letter "d."
For Providing Investment Advisory Service (Int. Cl. 36).
First use in or about June 1966.

Class 103 — Construction and Repair

SN 270,709. The Richardson Company, Melrose Park, Ill. Filed May 4, 1967.



Owner of Reg. Nos. 765,724 and 765,725.
For Chemical Cleaning Services on Industrial Equipment (Int. Cl. 37).
First use on or before Dec. 26, 1965.
Subj. to Intf. with SN 295,784.

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 24, 1968 Volume 857 Number 4

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 40,619 (PEPSI-COLA), Pepsi-Cola Company, Flavoring syrup for soda water; **Reg. No. 55,199**, same, PepsiCo, Inc., tonic beverage; **Reg. No. 349,886**, same, Pepsi-Cola Company, Beverages and syrups for the manufacture of such beverages; **Reg. No. 349,985** (PEPSI-COLA AND DESIGN), same; **Reg. No. 350,201** (PEPSI-COLA), same, Bottle closures, particularly crowns; **Reg. No. 356,723**, same, Wooden receptacles and cases and racks for bottles, which cases and racks are sold in trade empty; **Reg. No. 369,426**, same, Beverage coolers sold in trade empty; **Reg. No. 824,151**, same, PepsiCo, Inc., Soft drinks and syrups and concentrates for the preparation thereof; **Reg. No. 111,508** (PEPSI), The Pepsi-Cola Co., Flavoring syrup for soda water; **Reg. No. 824,150**, same, PepsiCo, Inc., same; **Reg. No. 51,959** (PEPKOLA), PepsiCo, Inc., Non-alcoholic tonic beverages; **Reg. No. 824,153** (MISCELLANEOUS DESIGN), same, Soft drinks, **filed** June 13, 1968, D.C., S.D. Mich. (Detroit), Doc. 31364, *PepsiCo, Inc. v. Red Arrow Bottling, Inc., National Beverage Marketing, Inc.* Consent judgment for permanent injunction without costs, Sept. 26, 1968.

Reg. No. 51,959. (See Reg. No. 40,619.)
Reg. No. 55,199. (See Reg. No. 40,619.)
Reg. No. 111,508. (See Reg. No. 40,619.)
Reg. No. 349,886. (See Reg. No. 40,619.)
Reg. No. 349,985. (See Reg. No. 40,619.)
Reg. No. 350,201. (See Reg. No. 40,619.)
Reg. No. 356,723. (See Reg. No. 40,619.)
Reg. No. 369,426. (See Reg. No. 40,619.)

Reg. No. 532,971 (ERNEST BOREL), Ernest Borel & Co. S.A., Watches, clocks and parts of watches; **Reg. No. 631,284** (ERNEST BOREL SEA GEM), Ernest Borel & Cie. S.A., Clocks, watches, and all parts thereof; **Reg. No. 736,586** (BOREL), same; **Reg. No. 826,095** (ERNEST BOREL), same, All types of watches, clocks, alarm clocks, and parts thereof, watch movements, watch cases, and watch dials, **filed** Feb. 7, 1968, D.C., S.D.N.Y., Doc. 68-C-516, *Ernest Borel & Cie. S.A., etc., et ano v. Borel Watch Company of N.Y. et al.* Defendants enjoined and restrained from using plaintiff's trademark.

Reg. No. 631,284. (See Reg. No. 532,971.)

Reg. No. 681,947 (ULTRA SHEEN), Johnson Products Co., Inc., Creme hair oil, creme shampoo, hair and scalp conditioner, pin curl setting cream, and creme press for straightening hair, **filed** Feb. 1, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c192, *Johnson Products Co., Inc. v. Beauty-Rama Corporation.* On stipulation and order cause hereby dismissed without prejudice, June 12, 1968.

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 16,348
Date of oldest new application ..... September 11, 1967
Date of oldest amended application (filing date) ..... January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	3-12-68	10- 6-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	2- 1-68	7-26-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	2-28-68	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-11-67	1-5 -65
Renewals (All Classes)	9-23-68	----------
Sec. 12(c) Publications (All Classes)	10- 4-68	----------

Applications filed during the month of October 1968—2,732

Registrations Issued ..... 363—No. 862,196 to No. 862,558
Renewals Issued 110

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $6.00 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 723,570 (TYPOSITOR, ETC.), Visual Graphics Corporation, Photographic lettering compositor, **filed** Oct. 3, 1968, D.C., E.D. Mich. (Detroit), Doc. 31805, *Visual Graphics Corp.* v. *Louis and Mildred Glassheim, doing business as Photo Typsetor Sales & Service.*

Reg. No. 736,586. (See Reg. No. 532,971.)

Reg. No. 761,750 (GBS AND DESIGN), General Business Services, Inc., Business advisory, tax, and record keeping service, **filed** Oct. 4, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1839, *General Business Services, Inc.* v. *Harbey J. Franks, doing business as General Business Services.*

Reg. No. 775,552 (SERVOMATION IN CIRCLE DESIGN), Servomation Corp., Cafeteria services rendered by means of a variety of vending machines which dispense foods including complete menus, beverages, and tobacco products, **filed** Sept. 13, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49950, *Servomation Corp. et al.* v. *Clarence Lee et al.*

Reg. No. 808,974 (MISS U.S.A.), Miss Universe, Inc., Promoting the sale of goods and services of others through the medium of a beauty contest conducted on a national and regional basis; **Reg. No. 808,975** (MISS UNITED STATES OF AMERICA), same, **filed** June 5, 1967, D.C. Conn. (New Haven), Doc. 11996, *Miss Universe, Inc.* v. *Alfred Patricelli.* Judgment, defendant's counterclaim dismissed; defendant perpetually and permanently restrained and enjoined, Sept. 11, 1968.

Reg. No. 808,975. (See Reg. No. 808,974.)

Reg. No. 817,329 (DRINK-LITE), E. W. Gilson, Battery operated, portable signal light, **filed** Jan. 25, 1967, D.C., S.D.N.Y. Doc. 67–C–328, *Crossbow, Inc. et ano.* v. *Dan-Dee Imports, Inc.* Stipulation and order of dismissal without prejudice, Oct. 3, 1968.

Reg. No. 824,150. (See Reg. No. 40,619.)

Reg. No. 824,151. (See Reg. No. 40,619.)

Reg. No. 824,153. (See Reg. No. 40,619.)

Reg. No. 824,612 (SAHARA), Sahara-Nevada Corporation, Hotel service, **filed** Sept. 13, 1968, D.C. Nev. (Las Vegas), Doc. 1199, *Sahara-Nevada Corporation* v. *Robert Millspaugh, doing business as The Sahara Saloon and Liquor Store.*

Reg. No. 826,095. (See Reg. No. 532,971.)

Reg. No. 838,648 (PFLASH!), American Petrofina Company of Texas, Gasoline and motor oils, **filed** Aug. 1, 1968, D.C., M.D. Fla. (Jacksonville), Doc. 68–11–C–OC, *Halo Sales Corporation* v. *Pioneer Products, Inc.* Consent judgment for plaintiff, Sept. 16, 1968.

Reg. No. 841,389. (See Reg. No. 841,390.)

Reg. No. 841,390 (ATLAS), Atlas Van-Lines, Inc., Transporting household and other goods by motor van; **Reg. No. 841,389** (ATLAS AND DESIGN), same, **filed** July 11, 1968, D.C., E.D. La. (Baton Rouge), Doc. 68–115–CA, *Atlas Van Lines, Inc.* v. *Dan J. Constant, doing business as Atlas Moving & Storage Company.*

Reg. No. 855,715 (TANTALLON), Prestwick, Inc., Real estate, brokerage, leasing and management; mortgaging real estate; construction, maintenance, and repair of residential communities—namely, houses, public buildings, swimming pools, apartments, marinas, golf courses, and shopping centers, **filed** Sept. 20, 1968, D.C. Md. (Baltimore), Doc. 19908, *Prestwick, Inc.* v. *Don Kelly Building Company.* **Same, filed** Sept. 25, 1968, D.C. Md. (Baltimore), Doc. 19914, *Prestwick, Inc.* v. *Wilkinson Construction Co., Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 259,870. Watkins-Johnson Company, Palo Alto, Calif. Filed Dec. 2, 1966.

WATKINS-JOHNSON

Class 21—Electrical Apparatus, Machines, and Supplies

For Traveling-Wave Tubes, Backward-Wave Oscillators, Yttrium-Iron-Garnet Filters, Oscillators, Electronic Intrusion Alarms, Amplifiers, Transmitters, and Receivers (Int. Cl. 9).
First use September 1959.

Class 26—Measuring and Scientific Appliances

For Telemetering Amplifiers, Telemetering Transmitters, and Telemetering Receivers (Int. Cl. 9).
First use May 1962.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Production and Laboratory Furnaces (Int. Cl. 9).
First use January 1965.

SN 259,871. Watkins-Johnson Company, Palo Alto, Calif. Filed Dec. 2, 1966.



Class 21—Electrical Apparatus, Machines, and Supplies

For Traveling-Wave Tubes, Backward-Wave Oscillators, Yttrium-Iron-Garnet Filters, Oscillators, Electronic Intrusion Alarms, Amplifiers, Transmitters, and Receivers (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Telemetering Amplifiers, Telemetering Transmitters, and Telemetering Receivers (Int. Cl. 9).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Production and Laboratory Furnaces (Int. Cl. 9).
First use Mar. 2, 1965; September 1959 as to letters "WJ" and "Watkins-Johnson."

SN 269,376. Bergdorf & Goodman Company, New York, N.Y. Filed Apr. 18, 1967.

BERGDORF GOODMAN

Owner of Reg. No. 674,632.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Billfolds, Business and Credit Card Cases, Handbags, and Wallets (Int. Cl. 18).
First use 1928.

Class 27—Horological Instruments

For Watches (Int. Cl. 14).
First use 1928.

Class 28—Jewelry and Precious-Metal Ware

For Jewelry—Namely, Bracelets, Pins, Rings, Earrings, and Necklaces (Int. Cl. 14).
First use 1928.

Class 32—Furniture and Upholstery

For Antique Furniture—Namely, Chairs, Tables, and Lamps (Int. Cl. 20).
First use 1936.

Class 39—Clothing

For Women's Clothing—Namely, Brassieres, Chemises, Coats, Dresses, Furs, Girdles, Gloves, Hats, Jackets, Nightgowns, Peignoirs, Petticoats, Raincoats, Robes, Scarves, Shoes, Skirts, Slacks, Slippers, Slips, Stockings, Sweaters; and Men's Clothing—Namely, Coats, Cummerbunds, Jackets, Pajamas, Pants, Robes, Shirts, Sweaters, Swimming Trunks, Ties, and Vests (Int. Cl. 25).
First use 1901.

Class 41—Canes, Parasols, and Umbrellas

For Umbrellas (Int. Cl. 18).
First use 1928.

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Cologne, Bath Oil, Dusting Powder, Shaving Soap, After Shave Lotion, Personal Deodorants, and Hair Dressings (Int. Cls. 3 and 5).
First use 1928.

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).
First use 1928.

SN 272,135. Bergdorf & Goodman Company, New York, N.Y. Filed May 23, 1967.



Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Billfolds, Business and Credit Card Cases, Handbags, and Wallets (Int. Cl. 18).

Class 27—Horological Instruments

For Watches (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Jewelry—Namely, Bracelets, Pins, Rings, Earrings, and Necklaces (Int. Cl. 14).

Class 32—Furniture and Upholstery

For Antique Furniture—Namely, Chairs, Tables, and Lamps (Int. Cl. 20).

Class 39—Clothing

For Women's Clothing—Namely, Brassieres, Chemises, Coats, Dresses, Furs, Girdles, Gloves, Hats, Jackets, Nightgowns, Peignoirs, Petticoats, Raincoats, Robes, Scarves, Shoes, Skirts, Slacks, Slippers, Slips, Stockings, Sweaters; and Men's Clothing—Namely, Coats, Cummerbunds, Jackets, Pajamas, Pants, Robes, Shirts, Sweaters, Swimming Trunks, Ties, and Vests (Int. Cl. 25).

Class 41—Canes, Parasols, and Umbrellas

For Umbrellas (Int. Cl. 18).

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Cologne, Bath Oil, Dusting Powder, Shaving Soap, After Shave Lotion, Personal Deodorants, and Hair Dressings (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Soap (Int. Cl. 3).

First use 1929.

SN 272,149. Eaton Yale & Towne Inc., Cleveland, Ohio, by merger from American Monorail Company, Cleveland, Ohio. Filed May 23, 1967.

AMERICAN

Owner of Reg. Nos. 735,956 and 735,957.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Controls for Overhead Conveyors, Cranes, Hoists, and Tractors (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Conveyors, Cranes, Hoists, Overhead Rail Tractors, and Parts Thereof, e.g., Tracks, Rails, Switches, Trolleys, Trolley Yokes, Turntables, Suspension Clamps, Trolley Wheels, Rubber Tired Drive Wheels; Industrial Vacuum Cleaners; Dirt and Lint Collectors; Unloaders for Dirt and Lint Collectors; Centrifugal Separators; Material Handling Equipment—Namely, Stacking Cranes, Pillar Jibs, Swinging Jibs, Swinging Cranes, Crane Pullers, Sheet Steel Grabs, Lifts, Lap Handling Devices (Int. Cl. 7).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Industrial Blowers (Int. Cl. 11).

First use at least before 1928.

SN 275,252. French & Scott Limited, London, England. Filed July 3, 1967.

French OF LONDON

Applicant disclaims the words "of London" separate and apart from the mark as shown on the drawing, reserving unto itself all common law rights which it may have or arise in said term. Owner of British Reg. No. 843,778, dated Jan. 11, 1963.

Class 51—Cosmetics and Toilet Preparations

For Preparation for the Hair—Namely, Re-Conditioning Creams and Lotions, Dressing Creams, Hair Setting Creams and Lotions, Hair Sprays, and Hair Lacquers (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoos (Int. Cl. 3).

SN 278,668. Coggins Granite Industries, Inc., Elberton, Ga. Filed Aug. 21, 1967.

EBONY MIST

Class 1—Raw or Partly Prepared Materials

For Rough Quarried Granite (Int. Cl. 19).

Class 12—Construction Materials

For Finished Granite (Int. Cl. 19).

Class 50—Merchandise Not Otherwise Classified

For Stone Memorials (Int. Cl. 19).

First use 1961.

SN 284,495. Norseman (Cable & Extrusions) Limited, Manningtree, Essex, England, by change of name from Norseman Ropes Limited, Manningtree, Essex, England. Filed Nov. 9, 1967.

NORSEMAN

Owner of British Reg. No. 903,569, dated Dec. 30, 1966.

Class 7—Cordage

For Wire Ropes (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Terminal Slings, Made of Common Metal, and Being Fittings for Wire Ropes (Int. Cl. 6).

First use Mar. 19, 1967; in commerce June 20, 1967.

SN 294,783. Rieke Corporation, Auburn, Ind. Filed Apr. 3, 1968.

RIEKE

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Flanges; Washers; Caps; Bungs; Plugs; Bushings; Sealing Rings and Seals, Internal and External, for Metal and Other Material Containers Such as Drums, Barrels, Cans, and Pails; Manually Controlled Syphon Valves for Attachment to Water Faucets; and Tubular Metal Pail Racks (Int. Cls. 6, 11, and 17).

Class 50—Merchandise Not Otherwise Classified

For Closures (Int. Cl. 20).

First use Jan. 1, 1930.

SN 301,805. CAH Industries Incorporated, Franklin Park, Ill. Filed July 2, 1968.

FLEXLIFE

Owner of Reg. No. 778,023.

Class 16—Protective and Decorative Coatings

For Liquid Coating To Restore, Renew, Protect and Color Leather, Leatherette, Canvas, Concrete, and Plastic Surfaces (Int. Cl. 2).

Class 52—Detergents and Soaps

For Cleaning Solvent for Use With Liquid Coating To Restore, Renew, Protect and Color Leather, Leatherette, Canvas, Concrete, and Plastic Surfaces (Int. Cl. 3).

First use in 1949.

SN 306,102. Comet Packaging Corporation, Bronx, N.Y. Filed Aug. 28, 1968.

CLINGMASTER

Class 2—Receptacles

For Plastic Bags—Namely, Liners for Cans, Pails, and Drums (Int. Cl. 22).

Class 37—Paper and Stationery

For Plastic Sheets for Packaging and Storage Purposes (Int. Cl. 16).

Class 39—Clothing

For Plastic Aprons (Int. Cl. 25).

First use prior to Mar. 31, 1967.

SN 307,607. Hamilton Hamburgers, Inc., Noblesville, Ind. Filed Sept. 18, 1968.



Class 46—Foods and Ingredients of Foods

For Hamburger Sandwiches (Int. Cl. 29).

Class 100—Miscellaneous

For Drive-In Restaurant Services (Int. Cl. 42).

First use May 17, 1965.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 269,983. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed Apr. 25, 1967.

HOSTAFLON

Owner of German Reg. No. 823,718, dated July 8, 1966.

For Plastics for the Manufacture of Linings, Laminates, Coatings, and Various Apparatus and Machine Parts; Natural and Synthetic Resins (Int. Cls. 1, 2, and 17).

SN 271,532. John Frank Schmidt, Jr., Troutdale, Oreg. Filed May 15, 1967.

RED SUNSET

Applicant disclaims the word "Red" apart from the mark as shown, and without prejudice to the applicant's rights therein which may have been established or which might be established in the future.

For Nursery Stock, and Particularly Maple Trees (Int. Cl. 31).

First use at least as early as Jan. 27, 1966.

SN 273,561. Rexall Drug and Chemical Company, d.b.a. Fiberfil, Los Angeles, Calif. Filed June 12, 1967.

XYLON

For Thermoplastic Molding Resin Pellets (Int. Cl. 1).

First use May 19, 1967.

SN 280,649. Taylor Corporation, Valley Forge, Pa. Filed Sept. 18, 1967.



For Metal and Plastic Laminated Sheet Material for General Use in the Industrial Arts (Int. Cl. 17).

First use July 18, 1963.

SN 285,408. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 22, 1967.

"SAFOM"

For Reticulated Polyurethane Foam, Sold as a Filler for Use in Flexible Fuel Tanks (Int. Cl. 17).

First use Aug. 25, 1967.

SN 290,077. Co-Operative Rose Growers, Inc., Tyler, Tex. Filed Feb. 1, 1968.



The word "Grown" is disclaimed apart from the mark as shown.

For Rose Bushes (Int. Cl. 31).

First use Sept. 7, 1967.

SN 290,412. Sinclair-Koppers Company, Pittsburgh, Pa. Filed Feb. 6, 1968.

DYLOY

Owner of Reg. Nos. 631,551, 818,906, and others.
For Mineral Reinforced Polyethylene (Int. Cl. 17).
First use June 21, 1967.

SN 291,644. Serex Inc., Twinsburg, Ohio. Filed Feb. 21, 1968.



For Plastic Foams for Use in Insulation, Flotation, Structural, and Other Applications (Int. Cl. 17).
First use in or about June 1967.

Class 2 — Receptacles

SN 281,263. Aluminum Company of America, Pittsburgh, Pa. Filed Sept. 27, 1967.

SATIN SERVER

Applicant disclaims the word "Server" apart from the mark as shown.
For Compartmentalized Aluminum Containers for Frozen Food Products, Such as Frozen TV Dinners (Int. Cl. 6).
First use June 27, 1967.

SN 297,748. American Can Company, New York, N.Y. Filed May 9, 1968.

RINGSIDE

For Metal Cans (Int. Cl. 6).
First use May 16, 1967.

SN 300,631. Spoz-Pac, Inc., Nutley, N.J. Filed Apr. 25, 1968.

SPOZ-PAC

For Refuse Receptacle Holder and Refuse Receptacle (Int. Cl. 16).
First use Oct. 22, 1965.

SN 301,189. Brown Company, New York, N.Y. Filed June 24, 1968.

CRYSTAL SEAL

For Precut Coated Paperboard and Cartons Formed Therefrom (Int. Cl. 16).
First use Feb. 29, 1968.

SN 304,339. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Aug. 5, 1968.

ARM

For Crash Resistant Fuel Tanks (Int. Cl. 12).
First use June 1, 1965.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 301,087. Prospect Leather Goods Co., Inc., New York, N.Y. Filed June 21, 1968.

"DOUBLE OH!"

For Teenagers' and Children's Pocketbooks (Int. Cl. 18).
First use September 1967.

Class 4 — Abrasives and Polishing Materials

SN 283,121. The Fuller Brush Company, East Hartford, Conn. Filed Oct. 23, 1967.

DCW

For Furniture Polish (Int. Cl. 3).
First use June 1960.

SN 283,122. The Fuller Brush Company, East Hartford, Conn. Filed Oct. 23, 1967.

DCW

For Furniture Polish (Int. Cl. 3).
First use June 1960.

Class 5 — Adhesives

SN 283,563. Radiant Color Company, Richmond, Calif. Filed Oct. 27, 1967.



The stippling shown in the drawing of the mark is not actually part of the mark, but is used to indicate shading only.
For Fluorescent and Luminous Pressure-Sensitive Adhesive Films Supported Between Protective Layers of Release Sheets (Int. Cl. 1).
First use about Aug. 14, 1967.

SN 288,207. Floral Chemetics Company, Weatherford, Tex. Filed Jan. 5, 1968.



For Floral Adhesive (Int. Cl. 1).
First use at least as early as July 18, 1967.

SN 299,467. MR Plastics and Coatings, Inc., Maryland Heights, Mo. Filed May 31, 1968.

MISTABOND

For Resinous Based Adhesives (Int. Cl. 1).
First use Apr. 5, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 287,467. Texize Chemicals, Inc., Greenville, S.C. Filed Dec. 22, 1967.

BREAK-THRU

For Liquid Drain Opener for Household Use (Int. Cl. 3).
First use Dec. 11, 1967.

SN 293,777. Fritzsche Brothers, Inc., New York, N.Y. Filed Mar. 21, 1968.

NOVOVIOL

For Organic Chemical for Use in the Manufacture of Food Flavorings, for Manufacturing and Professional Use Only (Int. Cl. 1).
First use about May 1926.

SN 306,728. Chemclean Corporation, College Point, N.Y. Filed Sept. 6, 1968.

CONOX

For Chemical Compositions for Fume Suppression of Acid Solutions by Means of Addition Thereto (Int. Cl. 1).
First use Aug. 17, 1965.

Class 7 — Cordage

SN 269,595. Zenith Radio Corporation, Chicago, Ill. Filed Apr. 19, 1967.

ZENITH

Owner of Reg. Nos. 164,341, 828,809, and others.
For Radio Tuning Dial Cords (Int. Cl. 22).
First use as early as 1942.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 296,789. Astra Trading Corp., New York, N.Y. Filed Apr. 29, 1968.



For Cigarette Lighters (Int. Cl. 34).
First use Feb. 1, 1968.

SN 304,367. McDonald Products Corporation, Buffalo, N.Y. Filed Aug. 5, 1968.

STOP CIGARETTE FALLOUT

Without waiver of any of its common law rights applicant disclaims the word "Cigarette" apart from the mark as shown.
For Ash Trays (Int. Cl. 34).
First use July 25, 1968.

Class 10 — Fertilizers

SN 301,114. Zook and Ranck, Inc., Gap, Pa. Filed June 21, 1968.



For Garden and Lawn Mulches and Composts (Int. Cl. 1).
First use April 1967.

SN 301,506. Atlantic Richfield Company, Los Angeles, Calif. Filed June 27, 1968.

PETROMULCH

For Asphalt Emulsions as Agricultural Mulch (Int. Cl. 1).
First use July 11, 1962.

SN 301,810. The O. M. Scott & Sons Company, Marysville, Ohio. Filed July 2, 1968.

ULTRA

For Lawn Fertilizer (Int. Cl. 1).
First use May 24, 1968.

SN 306,111. Standard Oil Company, Flemington, N.J. Filed Aug. 28, 1968.

TERICO

For Fertilizer (Int. Cl. 1).
First use Aug. 6, 1968.

SN 307,395. Standard Oil Company, Flemington, N.J. Filed Sept. 16, 1968.

JAYGRO

For Fertilizer (Int. Cl. 1).
First use Aug. 6, 1968.

Class 12 — Construction Materials

SN 264,319. Harsco Corporation, Wormleysburg, Pa. Filed Feb. 9, 1967.

JOINTGUARD

The word "Joint" is disclaimed apart from the mark as shown.
For Metallic Expansion Joints Used for Concrete Slabs (Int. Cl. 6).
First use Oct. 5, 1966.

SN 270,537. Allied Mineral Products, Inc., Columbus, Ohio. Filed May 3, 1967.

MINRO-SIL

For Refractory Ramming Mix (Int. Cl. 19).
First use Apr. 25, 1967.

SN 288,989. American Swimming Pool Research Organization, Inc., New York, N.Y. Filed Jan. 17, 1968. COLLECTIVE MARK.

SIERRA

For Prefabricated Swimming Pools and Accessories Used in Connection Therewith (Int. Cl. 19).
First use on or about Apr. 15, 1967.

SN 299,238. Lake Chemical Co., Chicago, Ill. Filed May 28, 1968.

OXY-TITE

For Pipe Thread Compound (Int. Cl. 17).
First use Apr. 10, 1968.

SN 299,984. Hanger & Ames, Dallas, Tex. Filed June 7, 1968.

COMPOLAM

For Frames and Panels for Building Units (Int. Cl. 19).
First use Apr. 2, 1968.

SN 300,342. De Soto, Inc., Des Plaines, Ill. Filed June 13, 1968.

DESOGLAS

For Glass Asbestos Matte Used as an Industrial Insulating Material in Low to Medium-High Temperature Ranges (Int. Cl. 17).
First use on or about Aug. 31, 1967.

SN 300,623. Van Rensselaer P. Saxe, Baltimore, Md. Filed June 17, 1968.

DEK-JYST

For Steel Bar Joists (Int. Cl. 6).
First use June 5, 1968.

SN 304,284. Penberthy Lumber Company, Los Angeles, Calif. Filed Aug. 5, 1968.

SHEDUA

For Lumber (Int. Cl. 19).
First use July 16, 1968.

SN 304,562. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Aug. 7, 1968.

NOVODECK

For Wood Panels, i.e., Particle Board, To Be Used Especially for Wall Panels and Floor Panels in Buildings, Mobile Homes, and Furniture (Int. Cl. 19).
First use on or about May 9, 1968.

SN 304,857. Construction Products Corporation, Indianapolis, Ind. Filed Aug. 12, 1968.

CPC

For Sealer for Construction Pipes (Int. Cl. 17).
First use Jan. 4, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 275,241. Cotesworth, Curtis, Rathbone, Sheppard, Ltd., North Bergen, N.J. Filed July 3, 1967.

SHEPPARD

For Nails (Int. Cl. 6).
First use April 1960.

SN 279,200. Kitco Engineering and Manufacturing Co., Inc., Bufton, Ind. Filed Aug. 28, 1967.

KITCO

For Precision Rubber Molded Parts—Namely, Brake Cups, Diaphragms, and the Like, Such as May Form Parts of Valve Assemblies (Int. Cl. 17).
First use June 13, 1956.

SN 285,445. Nicholas G. Murgolo, d.b.a. Novel Pleat Co., Derby, Conn. Filed Nov. 22, 1967.

Melody

Applicant disclaims the phrase "5 Way Pleat Maker" apart from the mark as shown.
For Drapery Pleater Hooks (Int. Cl. 6).
First use Sept. 12, 1966.

SN 288,714. The Paine Company, Addison, Ill. Filed Jan. 12, 1968.

SPRING WING

For Toggle Bolts (Int. Cl. 6).
First use prior to 1932.

SN 289,783. Contromatics Corporation, Rockville, Conn. Filed Jan. 29, 1968.

C5

For Valve and Valve Actuators (Int. Cl. 7).
First use Oct. 1, 1967.

SN 292,064. American Standard Inc., New York, N.Y. Filed Feb. 28, 1968.

LADY CHURCH

Owner of Reg. No. 848,089.
For Toilet Seats, Covers and Hinges (Int. Cl. 11).
First use on or about July 1, 1967.

SN 296,870. Rex Chainbelt Inc., Milwaukee, Wis. Filed Apr. 29, 1968.

REX

Owner of Reg. Nos. 126,139, 292,083, and others.
For Rotatable Stud Fasteners, Fastener Receptacles, and Fastener Studs (Int. Cl. 6).
First use Apr. 19, 1968.

SN 298,965. Republic Steel Corporation, Cleveland, Ohio. Filed May 23, 1968.

SATIN-GARD

For Corrosion Resistant Fasteners, i.e., Zinc-Phosphate Coated Bolts, Nuts, and Screws (Int. Cl. 6).
First use Apr. 17, 1968.

Class 14 — Metals and Metal Castings and Forgings

SN 273,270. Dua Corporation, Houston, Tex. Filed June 7, 1967.

DUA

For Corrosion Resistant and Abrasion Resistant Metallic Plate Composites Characterized by a Steel Layer Fusion Bonded to a Hard-Faced Layer Which Specifically is a Combination of Chromium Iron Carbon Alloy and Chromium Carbide (Int. Cl. 6).
First use at least as early as May 3, 1967.

SN 283,013. Latrobe Steel Company, Latrobe, Pa. Filed Oct. 20, 1967.

DYNAMAX

For Steel Bars, Billets, Forgings, and Castings (Int. Cl. 6).
First use Aug. 11, 1967.

Class 15 — Oils and Greases

SN 290,763. Standard Oil Company, Flemington, N.J. Filed Feb. 9, 1968.

LIDOK

For Multi-Purpose Lubricating Greases (Int. Cl. 4).
First use Aug. 11, 1967.

SN 292,882. Industrial Lubricants, Inc., Omaha, Nebr. Filed Mar. 4, 1968.

NOX

For Chemical Concrete Release Agent for Use on All Types of Concrete Forming Materials (Int. Cl. 1).
First use Feb. 20, 1968.

SN 292,811. Phillips Petroleum Company, Bartlesville, Okla. Filed Mar. 8, 1968.

PIER 66

Owner of Reg. Nos. 517,755, 719,532, 731,301, and others.
For Outboard Motor Oil (Int. Cl. 4).
First use Feb. 12, 1968.

SN 298,998. Bayou State Oil Corporation, Shreveport, La. Filed May 24, 1968.

BIO-HD

Owner of Reg. No. 439,139.
For Lubricating Oil (Int. Cl. 4).
First use May 3, 1947.

SN 302,757. Pioneer Products, Inc., Ocala, Fla. Filed July 15, 1968.

CREST

For Candles (Int. Cl. 4).
First use July 11, 1968.

Class 16 — Protective and Decorative Coatings

SN 271,327. Allied Compositions Co., Inc., Maspeth, N.Y. Filed May 12, 1967.

PROTEXON

For Water Base Paint Finish for Floors and Walls (Int. Cl. 2).
First use Jan. 11, 1955.

SN 283,566. Radiant Color Company, Richmond, Calif. Filed Oct. 27, 1967.



The stippling in the drawing is not actually part of the mark, but it is used to indicate shading only.
For Fluorescent Paints and Lacquers (Int. Cl. 2).
First use about Aug. 14, 1967.

SN 294,513. Limbacher Paint & Color Works, Inc., Mount Vernon, N.Y. Filed Mar. 29, 1968.

Star-Flake

For Ready-Mixed Enamel (Int. Cl. 2).
First use Feb. 7, 1968.

SN 295,433. International Paint Company, Inc., New York, N.Y. Filed Apr. 11, 1968.

THERMO-SPAR

For Varnish (Int. Cl. 2).
First use Oct. 9, 1967.

Class 17—Tobacco Products

SN 278,423. Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V., Wageningen, Netherlands. Filed Aug. 16, 1967.

VADA

Owner of Dutch Reg. No. 160,693, dated July 11, 1966.
For Cigars (Int. Cl. 34).

SN 279,968. Valor Tobacco Company Inc., Zurich, Switzerland. Filed Sept. 8, 1967.



Priority claimed under Sec. 44(d) on Swiss Reg. No. 224,414, dated Mar. 30, 1967. The words "King Size" and "Filter" are disclaimed apart from the mark as shown. The drawing is lined for the colors red, blue, and gold.
For Cigarettes; Tobacco for Pipes and Cigars; and Filters for Cigarettes (Int. Cl. 34).

SN 282,788. Alfred Dunhill Limited, London, England. Filed Oct. 18, 1967.

FAIRWAY

Owner of British Reg. No. 902,564, dated Dec. 6, 1966.
For Cigarettes (Int. Cl. 34).

SN 289,898. House of Windsor, Inc., Windsor, Pa. Filed Jan. 30, 1968.

MIDAS

For Cigars (Int. Cl. 34).
First use November 1967.

SN 289,899. House of Windsor, Inc., Windsor, Pa. Filed Jan. 30, 1968.

DOUBLE EAGLE

For Cigars (Int. Cl. 34).
First use June 1964.

SN 290,743. Murray, Sons & Company Limited, Belfast, Northern Ireland. Filed Feb. 9, 1968.

CHARTWELL

Owner of British Reg No. B896,393, dated June 25, 1966.
For Smoking Tobacco (Int. Cl. 34).

SN 297,575. John Middleton, Inc., King of Prussia, Pa. Filed May 7, 1968.



Applicant disclaims the word "Blend" and the representations of a pipe and a cigar, apart from the mark as shown.
Owner of Reg. Nos. 805,883 and 805,884.
For Cigars (Int. Cl. 34).
First use Apr. 1, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 261,797. Friedrich Boehm, Graz, Austria. Filed Jan. 3, 1967.

LUUF

Owner of Austrian Reg. No. 43,964, dated Aug. 11, 1960.
For Medicinal Preparations—Namely, an Ointment To Relieve Coughing and a Tea for the Relief of Coughing (Int. Cl. 5).

SN 268,727. Creative Concepts, Inc., San Francisco, Calif., assignee of L. Chase Grover, d.b.a. The Citra Cola Company, San Francisco, Calif. Filed Apr. 10, 1967.

CITRA COLA

The word "Cola" is disclaimed apart from the mark as shown.
For Cola Flavored Laxative (Int. Cl. 5).
First use Mar. 20, 1967.

SN 282,477. Powell & Scholefield Ltd., Liverpool, England. Filed Oct. 13, 1967.

ALBUMAID

For Pharmaceutical Preparations for the Treatment of Metabolic Disorders (Int. Cl. 5).
First use at least as early as 1959; in commerce in or about December 1965.

SN 284,560. Abbott Laboratories, North Chicago, Ill. Filed Nov. 13, 1967,

COLLOSCAN

For Radioactive Colloid for Pharmaceutical Use (Int. Cl. 5).
First use Oct. 26, 1967.

SN 284,743. G. D. Searle & Co., Skokie, Ill. Filed Nov. 13, 1967.

LOMOMYCIN

For Medicinal Product Useful in the Treatment of Diarrhea and Associated Conditions (Int. Cl. 5).
First use Oct. 31, 1967.

SN 285,261. Societe des Usines Chimiques Rhone-Poulenc, Paris, France. Filed Nov. 20, 1967.

CERUBIDINE

Owner of French Reg. No. 715,480, dated Dec. 1, 1966.
For Antibiotics (Int. Cl. 5).

SN 285,330. Imperial Chemical Industries Limited, London, England. Filed Nov. 21, 1967.

STATYL

Owner of British Reg. No. 900,403, dated Oct. 13, 1966.
For Preparation for the Prevention and Treatment of Coccidiosis in Poultry (Int. Cl. 5).

SN 287,015. Henrietta Rancho Products Co., Fresno, Calif. Filed Dec. 15, 1967.

TAST-E-LAX

For Concentrated Prune Juice for Laxative Purposes (Int. Cl. 5).
First use Nov. 28, 1967.

SN 288,082. Broemmel Pharmaceuticals, San Francisco, Calif. Filed Jan 4, 1968.

TRISOHIST

Owner of Reg. No. 571,006.
For Times Release Capsules for Treatment of Colds (Int. Cl. 5).
First use July 1966.

SN 288,290. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Jan. 8, 1968.

UDDOSIL

For Antiseptic Germicide for Animals (Int. Cl. 5).
First use Aug. 24, 1967.

SN 288,291. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Jan. 8, 1968.

AMBODRENE

For Antiseptic Germicide for Animals (Int. Cl. 5).
First use Aug. 24, 1967.

SN 288,665. American Cyanamid Company, Wayne, N.J. Filed Jan. 12, 1968.

TRI-VET

For Medicated Animal Feed Supplement (Int. Cl. 5).
First use Jan. 3, 1968.

SN 289,529. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 24, 1968.

POVICIDAL

For Antiseptic Pharmaceutical Preparation (Int. Cl. 5).
First use Jan. 12, 1968.

SN 289,530. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 24, 1968.

POVICIDE

For Antiseptic Pharmaceutical Preparation (Int. Cl. 5).
First use Jan. 12, 1968.

SN 289,531. The Purdue Frederick Company, Yonkers, N.Y. Filed Jan. 24, 1968.

POVICIDIL

For Antiseptic Pharmaceutical Preparation (Int. Cl. 5).
First use Jan. 12, 1968.

SN 290,897. Sedames Laboratories, Inc., Boston, Mass. Filed Feb. 12, 1968.

SEDUSAL

For Feminine Hygienic Compositions for Use as a Douche and Vaginal Irrigant (Int. Cl. 5).
First use June 9, 1967.

SN 291,022. Boehringer Ingelheim, G.m.b.H., Ingelheim am Rhine, Germany. Filed Feb. 14, 1968.

PRELUDAX

Owner of Reg. No. 617,739.
For Anorectics (Int. Cl. 5).
First use Jan. 17, 1968; in commerce Jan. 17, 1968.

SN 293,242. Dooner Laboratories, Inc., Haverhill, Mass. Filed Mar. 14, 1968.

FEDAHIST

For Drug for Nasal Congestion (Int. Cl. 5).
First use Mar. 12, 1968.

SN 293,498. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

TANDACYL

Owner of Reg. Nos. 694,148, 827,795, and 827,797.
For Anti-Rheumatic and Anti-Inflammatory Preparations (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,500. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

TASP

For Analgesic Preparations (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,503. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

REGROPRES

Owner of Reg. No. 748,677.
For Diuretic and Anti-Hypertensive Preparation (Int. Cl. 5).
First use Mar. 5, 1968.

SN 294,235. The Norwich Pharmacal Company, Norwich, N.Y. Filed Mar. 27, 1968.

RENAFUR

For Pharmaceutical Preparation Containing Nifuradene for Use in Urinary Tract Infections in Humans (Int. Cl. 5).
First use Feb. 29, 1968.

SN 298,690. Bristol-Myers Company, New York, N.Y. Filed May 21, 1968.

MR. FIZZ

For Antacid Tablets (Int. Cl. 5).
First use Mar. 7, 1968.

SN 301,134. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 24, 1968.

TIS

For Antibiotic Preparation for Veterinary Use (Int. Cl. 5).
First use Oct. 26, 1966.

SN 306,305. Mead Johnson & Company, Evansville, Ind. Filed Aug. 30, 1968.

HALOTEX

Owner of Reg. No. 850,897.
For Topical Anti-Fungal Preparation (Int. Cl. 5).
First use on or prior to Aug. 17, 1968.

SN 306,306. Mead Johnson & Company, Evansville, Ind. Filed Aug. 30, 1968.

TRICLORICIN

Owner of Reg. Nos. 576,619, 592,002, and 680,687.
For Topical Anti-Fungal Preparation (Int. Cl. 5).
First use on or prior to Aug. 17, 1968.

SN 306,308. Mead Johnson & Company, Evansville, Ind. Filed Aug. 30, 1968.

TRI-CO-STAT

Owner of Reg. Nos. 531,808, 845,784, and others.
For Topical Anti-Fungal Preparation (Int. Cl. 5).
First use on or prior to Aug. 17, 1968.

SN 306,309. Mead Johnson & Company, Evansville, Ind. Filed Aug. 30, 1968.

CLOR-I-STAT

Owner of Reg. Nos. 801,218 and 845,784.
For Topical Anti-Fungal Preparation (Int. Cl. 5).
First use on or prior to Aug. 17, 1968.

SN 306,862. Mead Johnson & Company, Evansville, Ind. Filed Aug. 30, 1968.

HALOSTAT

Owner of Reg. Nos. 801,218 and 845,784.
For Topical Anti-Fungal Preparation (Int. Cl. 5).
First use on or prior to Aug. 17, 1968.

Class 19—Vehicles

SN 270,528. Raleigh Industries Limited, Nottingham, England. Filed May 3, 1967.

WISP

Owner of British Reg. No. 899,874, dated Sept. 29, 1966.
For Powered Cycles for Adults, and Parts Therefor (Int. Cl. 12).

SN 276,369. Tuffy Manufacturing Company, Inc., Imperial Mo. Filed July 19, 1967.

"LIL TUFFY"

For Pickup Campers and Fitted Covers for Pickup Trucks (Int. Cls. 12 and 22).
First use about October 1966.

SN 279,836. S. Joostn N.V., Amsterdam, Netherlands. Filed Sept. 7, 1967.

WATERLAND

Owner of Dutch Reg. No. 145,492, dated Aug. 8, 1962.
For Motor, Sailing, Rowing, and Other Boats (Int. Cl. 12).

SN 280,652. Tuffy Manufacturing Company, Inc., Imperial Mo. Filed Sept. 18, 1967.



For Pickup Campers and Fitted Covers for Pickup Trucks (Int. Cls. 12 and 22).
First use about October 1966.

SN 292,171. Bayou Industrial Corporation, Minden, La. Filed Feb. 29, 1968.

TIDE CRAFT

No claim is made to the word "Craft" apart from the mark.
For Boats and Boat Trailers (Int. Cl. 12).
First use January 1960.

Class 20—Linoleum and Oiled Cloth

SN 293,909. Congoleum-Nairn Inc., Kearny, N.J. Filed Mar. 22, 1968.

KINGWOOD

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Mar. 5, 1968.

SN 296,140. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Apr. 22, 1968.

FOAMCRAFT

For Vinyl Sheet Wall, Floor, and Table Top Coverings (Int. Cl. 27).
First use Feb. 13, 1968.

SN 296,968. Kentile Floors Inc., Brooklyn, N.Y. Filed Apr. 30, 1968.

HYDRITE

For Special Backing on Vinyl Sheet Flooring (Int. Cl. 27).
First use Aug. 27, 1967.

SN 297,183. J. Ford & Co. Limited, Portneuf, Quebec, Canada. Filed May 2, 1968.

PERMA-STRIP

For Non-Woven Vinyl Base Fabrics Upon Which Designs May Be Printed To Serve as Wall Coverings (Int. Cl. 27).
First use Mar. 26, 1968; in commerce Mar. 27, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 267,324. Eberhard Bauer Elektromotorenfabrik Gesellschaft mit beschränkter Haftung, Esslingen-Neckar, Germany. Filed Mar. 22, 1967.

BAUER

Owner of German Reg. No. 725,414, dated May 27, 1959.
For Electric Gear and Drum Motors (Int. Cl. 7).

SN 272,260. Demag-Elektrometallurgie G.m.b.H., Duisburg, Germany. Filed May 24, 1967.

OPTIMELT

Owner of German Reg. No. 829,966, dated Feb. 17, 1967.
For Electrical and Electronic Power Controls for Furnaces (Int. Cl. 9).

SN 279,683. Scantlin Electronics, Inc., Los Angeles, Calif. Filed Sept. 5, 1967.

QUOTEVUE

For Data Display Systems, Consisting of Converter Units and Display Units for Indicating and Displaying Stock Market and Business Information (Int. Cl. 9).
First use Aug. 1, 1967.

Class 22—Games, Toys, and Sporting Goods

SN 269,379. Bergdorf & Goodman Company, New York, N.Y. Filed Apr. 19, 1967.

B & G

For Toys—Namely, Plush Animals, Toy Clocks, and Dolls (Int. Cl. 28).
First use 1959.

SN 275,246. Effanbee Doll Corporation, Brooklyn, N.Y. Filed July 3, 1967.

BABY FACE

No claim of exclusive right is made to "Baby" for dolls.
For Dolls (Int. Cl. 28).
First use Mar. 28, 1967.

SN 279,137. Championship Games, Inc., Southport, Conn. Filed Aug. 28, 1967.

A Championship Game
CG
by Tod Hansing

Applicant disclaims the term "A Championship Game." Owner of Reg. No. 828,162.
For Equipment Sold as a Unit for Playing a Board-Type Baseball Game (Int. Cl. 28).
First use Sept. 1, 1964.

SN 287,840. Beulah Harris Stolpen, d.b.a. The Rolling Reader Publishing Co., Westport Conn. Filed Dec. 29, 1967.



Applicant disclaims exclusive use of the blocks, apart from the mark as shown.
For Equipment (or Apparatus) Sold as Units for Playing Educational Word and Sentence Building Games (Int. Cl. 28).
First use Feb. 3, 1967.

SN 288,703. Louis Marx & Co., Inc., New York, N.Y. Filed Jan. 12, 1968.

DESIGN ALL

No claim is made to the word "Design" apart from the mark as shown.
For Toy Set for Making Graphic Designs (Int. Cl. 28).
First use Sept. 6, 1967.

SN 291,829. Best Tackle Manufacturing Company, Sebewaing, Mich. Filed Feb. 26, 1968.

SILVER TIGER

For Fishing Lure (Int. Cl. 28).
First use on or about Apr. 1, 1967.

SN 292,544. Brandell Products Corporation, Rosemont, Ill. Filed Mar. 6, 1968.

TAPERSCOPIC

For Golf Clubs (Int. Cl. 28).
First use Feb. 23, 1968.

SN 297,750. Atlantic Lures, Inc., Providence, R.I. Filed May 9, 1968.

DEVIL SPINNER

The word "Spinner" is disclaimed apart from the mark as shown.
For Fishing Lures (Int. Cl. 28).
First use Aug. 4, 1958.

SN 298,267. T. J. Thomas Co., Inc., Brooklyn, N.Y. Filed May 15, 1968.

WHEEL-A-MATIC

For Machines for Body Exercise and Muscular Conditioning—Namely, Stationary Machines Ridden Like a Bicycle. (Int. Cl. 28).
First use Mar. 20, 1967.

SN 299,954. The Donner Mountain Corporation, Berkeley, Calif. Filed June 7, 1968.

GLACIER BAY

For Sleeping Bags (Int. Cl. 20).
First use Mar. 1, 1968.

SN 299,997. Northwestern Golf Company, Chicago, Ill. Filed June 7, 1968.

WESTCHESTER

For Golf Clubs (Int. Cl. 28).
First use January 1965.

SN 305,894. Mattel, Inc., Hawthorne, Calif. Filed Aug. 26, 1968.

WILD-LAND

For Toy Guns (Int. Cl. 28).
First use July 31, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 245,923. Hewitt-Robins Incorporated, Stamford, Conn. Filed May 18, 1966.

HEWITT-ROBINS

Owner of Reg. Nos. 352,392 and 845,454.
For Industrial Machinery and Equipment for Conveying, Processing and Handling Various Materials and Articles—Namely, Stationary and Portable Belt Conveyors, Extensible Conveyors, Conveyor Drive and Storage Sections, Sectional Conveyors, Self-Propelled Conveyors, Chain Conveyors, Roller Conveyors, Flight Conveyors, Slat Conveyors, Pan Conveyors, Conveyor Aprons, Storage and Reclaiming Machines for Handling Bulk Materials, Machines for Handling, Crushing, Screening and Washing Bulk Materials, Belt and Bucket Elevators, Hoists, Trippers, Stackers, Crushers, Impactors, Flow-Regulating Gates for Use in Material Handling Systems, Self-Loading and Unloading Mechanisms for Ships, Bin-Level Indicators for Use in Material Handling Systems, Storage Bins and Hoppers Forming Part of Equipment for Handling Bulk Materials, Belt Cleaners, Idlers, Pulleys, Vibrating Screens for Feeding, Classifying and Dewaterizing Bulk Materials, Vibratory Car and Foundry Shaking Equipment; Wire Belting for Use in Material Handling and Conveying Equipment; Wire Screen Cloth Forming Part of or as a Replacement Part for Vibratory Screens; Mechanical Power Transmission Equipment; Gears and Gear Drives; Mechanical Speed Reducing and Speed Increasing Mechanisms; Winches; Car Pullers; Chain Drives; Precision and Engineering Type Chain; Conveyor Chain; Elevating Chain; Chain Attachments; Chain Sprockets; Pillow Blocks; Industrial Equipment for Cleaning and Treating Various Articles; Sanitary Washers for Cleaning Utensils, Cabinets, Trays, Racks, Trucks and Cages; and Parts for Such Machinery and Equipment (Int. Cl. 7).
First use in or about the summer of 1950.

SN 272,851. Pedershaab Maskinfabrik A/S, Brondersiev, Denmark. Filed June 1, 1967.

VIHYMATIC

Owner of Danish Reg. No. 2,253/65, dated Aug. 28, 1965.
For Machines for Forming Pipes, Bricks, Blocks, and Like Articles of Concrete, Cement, Clay, and Other Such Materials (Int. Cl. 7).

SN 272,852. Pedershaab Maskinfabrik A/S, Brondersiav, Denmark. Filed June 1, 1967.

VIHY

Owner of Danish Reg. No. 1,599/66, dated June 24, 1966.
For Machines for Forming Pipes, Bricks, Blocks, and Like Articles of Concrete, Cement, Clay, and Other Such Materials (Int. Cl. 7).

SN 276,166. Pacific Car and Foundry Company, Renton, Wash. Filed July 17, 1967.

DART-LOADER

Owner of Reg. No. 649,223.
For Front End Loaders (Int. Cl. 7).
First use July 7, 1967.

SN 277,044. M. W. Hartmann Manufacturing Company, Inc., Hutchinson, Kans. Filed July 28, 1967.

CHATTER

For Mechanically Operated Discharge Gates for Foundry Sand Bins and the Like (Int. Cl. 7).
First use on or about Jan. 1, 1965.

SN 278,104. Howe-Baker Engineers, Inc., Tyler, Tex. Filed Aug. 11, 1967.

MERCAPFINER

For Apparatus for Desulfurizing Petroleum Hydrocarbon Liquids (Int. Cl. 7).
First use July 12, 1964.

SN 282,904. The Kett Tool Company, Cincinnati, Ohio. Filed Oct. 19, 1967.

KETT

Owner of Reg. No. 437,316.
For Electrically Operated Tools—Namely, Portable Hand Saws, Portable Hand Drills; and Attachments Therefor, Including Chucks for Portable Drills, Adjustable Angle Drilling Heads, Flexible Shafts, and Saw Blades (Int. Cl. 7).
First use Dec. 5, 1940.

SN 288,376. Standard Packaging Corporation, Stamford, Conn. Filed Jan. 8, 1968.

STAN-PAK

Owner of Reg. Nos. 595,308, 604,047, and others.
For Cutlery, Tools, and Utensils for Use in and About the Home—Namely, Kitchen Knives, Table Knives, Carving Knives, Pocket Knives, Knife Sharpeners, Cheese Cutters, Fish Scalers, Shears, Scissors, Ice Cream Scoops, Kitchen Spatulas, Kitchen Tongs, Meat Lifters, Meat Holders, Kitchen Shredders and Graters, Hamburger Presses, Hammers, Screw Drivers, Pliers, Carving Boards, Steak and Roast Lifters, Letter Openers, Staplers, Bottle Openers, and Sleet Scrapers (Int. Cls. 8, 16, and 21).
First use at least as early as Apr. 12, 1967; Sept. 17, 1953, as to "Stanpak."

SN 288,885. Tak, Inc., Minneapolis, Minn. Filed Jan. 15, 1968.

ON-TAK

For Electrically Operated Cold Weather Starting Device for Mounting Adjacent the Carburetor of an Internal Combustion Engine (Int. Cl. 12).
First use Oct. 19, 1967.

SN 290,312. Morbark Company, Winn, Mich. Filed Feb. 5, 1968.

GOLDEN HARVEST

For Machinery for Reducing Logs to Chips (Int. Cl. 7).
First use May 20, 1967.

SN 290,662. Standard Dayton Corporation, Dayton, Ohio. Filed Feb. 8, 1968.

WASTROL

For Commercial Garbage Grinding and Disposer Machines (Int. Cl. 7).
First use July 1, 1967.

SN 292,094. Glassips Inc., Towson, Md. Filed Feb. 28, 1968.

HOBNOB

For Beverege Stirrers (Int. Cl. 21).
First use Dec. 18, 1967.

Class 24 — Laundry Appliances and Machines

SN 298,370. Udico Corporation, Los Angeles, Calif. Filed May 16, 1968.

UDICO

Owner of Reg. No. 737,813.
For Clothes Dryers (Int. Cl. 7).
First use prior to Jan. 1, 1968.

SN 305,984. Sears, Roebuck and Co., Chicago, Ill. Filed Aug. 26, 1968.

VARI FLEX

For Agitator Which Is Part of an Automatic Clothes Washing Machine (Int. Cl. 7).
First use on or about Feb. 22, 1968.

Class 25 — Locks and Safes

SN 298,207. Diebold, Incorporated, Canton, Ohio. Filed May 15, 1968.

PACEMAKER

For Vault Doors (Int. Cl. 6).
First use May 6, 1968.

Class 26 — Measuring and Scientific Appliances

SN 277,682. McGraw Colorgraph Company, Burbank, Calif. Filed Aug. 7, 1967.

KEYMASK

For Sensitized Graphic Arts Films and Sensitized Photographic Films (Int. Cl. 1).
First use Nov. 5, 1965.

SN 278,563. Aerospace Research, Inc., Boston, Mass. Filed Aug. 18, 1967.

EPOCH MONITOR

The word "Monitor" is disclaimed apart from the mark as a whole.
For Apparatus To Check the Setting of a Precision Electronic Clock Against External Reference Signals (Int. Cl. 9).
First use May 24, 1967.

SN 281,479. NTT Enterprises, Inc., Hollywood, Calif. Filed Sept. 29, 1967.

MINI-MOUNT

For Precision Built, Vibration Damping Mounts and Housings To Support and Balance Cameras, Telescopes, Night Observation Light Intensifiers, and Binoculars for Easy Movement About a Plurality of Axes, for Commercial Use in Motor Vehicles, Aircraft, Watercraft, Stage Dollies, and the Like (Int. Cl. 9).
First use July 17, 1967.

SN 281,584. Kimco of Minneapolis, Incorporated, Minneapolis, Minn. Filed Oct. 2, 1967.

Kimco

For Educational Biochemistry Kit and Educational Kits Comprising Swabs, Petrie Dishes, and Agar for Teaching Dental Hygiene (Int. Cl. 28).
First use Sept. 20, 1967.

SN 281,585. Kimco of Minneapolis, Incorporated, Minneapolis, Minn. Filed Oct. 2, 1967.

Sir Brushalot

For Educational Kit Comprising Swabs, Petrie Dishes, and Agar for Teaching Dental Hygiene (Int. Cl. 28).
First use Sept. 20, 1967.

SN 287,048. Tandy Corporation, d.b.a. Radio Shack, Boston, Mass. Filed Dec. 15, 1967.

P-BOX

For Scientific Kit Containers Suitable for Use as a Chassis for Mounting Parts of an Electronic Circuit (Int. Cl. 9).
First use at least as early as Nov. 1, 1967.

SN 288,113. The Porter-Spear Company, Hagerstown, Md. Filed Jan. 4, 1968.



The mark comprises the letter "P" in stylized form.
For Educational and Science Sets or Outfits, Comprising Chemicals, Apparatus, Scientific Equipment, Instruction Charts and Manuals, and Other Materials for Use by Beginners and Students in Conducting Chemical and Other Scientific Experiments (Int. Cl. 9).
First use Feb. 27, 1958.

SN 290,196. Shandon Scientific Company Limited, London, England. Filed Feb. 2, 1968.

REPRO-JECTOR

Priority claimed under Sec. 44(d) on British Reg. No. B914,453, dated Sept. 14, 1967.
For Adaptors, Parts and Fittings Therefor, for Use With Syringes To Deliver a Selected Volume of Liquid at a Selected Rate, Primarily Used in Chromatography (Int. Cl. 9).

SN 295,301. Berkey Photo, Inc., New York, N.Y. Filed Apr. 10, 1968.

Modiflex

For Combination Camera and Darkroom (Int. Cl. 9).
First use on or about Apr. 1, 1960.

SN 296,191. Pelouze Manufacturing Co., Evanston, Ill. Filed Apr. 22, 1968.

ZEPHYR

For Postal Weighing Scales (Int. Cl. 9).
First use Dec. 29, 1967.

SN 299,503. Trippensee Planetarium Co., Inc., Saginaw, Mich. Filed May 31, 1968.

SKYSCOPE

For Photographic Film Viewers (Int. Cl. 9).
First use May 2, 1968.

SN 301,300. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

AMERACE

For Developing and Fixing Tanks and Trays for Use in Photographic Art, and Dials Molded and Formed of Plastic Material (Int. Cl. 9).
First use at least as early as December 1966.

SN 302,596. Cole National Corporation, Cleveland, Ohio. Filed July 12, 1968.

HEAD HUGGER

For Ophthalmic Frames (Int. Cl. 9).
First use in or about January 1967.

Class 27 — Horological Instruments

SN 286,323. Centre Electronique Horloger S.A., Neuchatel, Switzerland. Filed Dec. 6, 1967.

SWISSONIC

Priority claimed under Sec. 44 (d) on Swiss Reg. No. 227,549, dated June 20, 1967.
For Watches and Parts Thereof (Int. Cl. 14).

SN 293,156. Lyndamar Enterprises, Inc., New York, N.Y. Filed Mar. 13, 1968.

LYNDAMAR

For Watches (Int. Cl. 14).
First use Feb. 26, 1968.

SN 300,074. Martin R. Dunetz, d.b.a. Chronometrics, Coral Gables, Fla. Filed June 10, 1968.

VERSACLOCK

For Clocks (Int. Cl. 14).
First use June 7, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 289,616. S.P.A. Signori & Bondioli, Milan, Italy. Filed Jan. 25, 1968.



Owner of Italian Reg. No. 213,703, dated Sept. 4, 1967.
For Jewelry and Imitation Jewelry (Int. Cl. 14).

SN 290,324. Poole Silver Co., Inc., Taunton, Mass. Filed Feb. 5, 1968.

BRISTOL

For Holloware Made in Whole or in Part of Precious Metal (Int. Cl. 14).
First use in or about June 1950.

SN 294,539. Textron Inc., Providence, R.I. Filed Mar. 29, 1968.

OLD FRENCH

For Sterling Silver and Silver-plated Flatware, Holloware, and Cutlery (Int. Cls. 8 and 14).
First use Jan. 1, 1905.

SN 294,541. Textron Inc., Providence, R.I. Filed Mar. 29, 1968.

ENGLISH GADROON

For Sterling Silver and Silver-Plated Flatware, Holloware, and Cutlery (Int. Cls. 8 and 14).
First use Aug. 1, 1939.

SN 294,542. Textron Inc., Providence, R.I. Filed Mar. 29, 1968.

OLD ENGLISH TIPT

For Sterling Silver and Silver-Plated Flatware, Holloware, and Cutlery (Int. Cls. 8 and 14).
First use May 24, 1937.

SN 299,469. Mida Mfg. Inc., Philadelphia, Pa. Filed May 31, 1968.



For Jewelry for Personal Use (Int. Cl. 14).
First use Nov. 6, 1964.

Class 29 — Brooms, Brushes, and Dusters

SN 287,088. Nutrilite Products, Inc., Buena Park, Calif. Filed Dec. 18, 1967.

NPI

Owner of Reg. Nos. 792,770, 793,081, and 798,453.
For Treated Dust Cloth To Pick Up and Hold Dust (Int. Cl. 21).
First use Dec. 21, 1966.

Class 30 — Crockery, Earthenware, and Porcelain

SN 293,904. Chatham Potters, Inc., Chatham, N.J. Filed Mar. 22, 1968.



For Handcrafted Stoneware—Namely, Mugs, Pitchers, Casseroles, Dinner and Salad Plates, Cups and Saucers (Int. Cl. 21).
First use on or about May 1, 1966.

SN 299,708. The Vollrath Co., Sheboygan, Wis. Filed June 4, 1968.

CATHEDRAL

For Chinaware—Namely, Dinnerware and Dishes, Plates, Cups, Saucers, and Serving Containers Made of Chinawear (Int. Cl. 21).
First use May 1, 1968.

Class 31 — Filters and Refrigerators

SN 285,936. North American Rockwell Corporation, Pittsburgh, Pa. Filed Nov. 30, 1967.

FIBR-MAZE

Owner of Reg. Nos. 255,632, 813,973, and others.
For Filter Media (Int. Cl. 11).
First use Feb. 12, 1967.

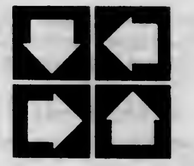
SN 299,623. Becton, Dickinson and Company, East Rutherford, N.J. Filed June 4, 1968.

ENVIRA AIR

No claim of exclusive right is made to "Air" as used for filters.
For Laminar Flow Equipment—Namely, Filters (Int. Cl. 11).
First use Nov. 20, 1967.

Class 32 — Furniture and Upholstery

SN 294,651. Palmer-Shile Company, Detroit, Mich. Filed Apr. 1, 1968.



For Materials Handling Equipment—Namely, Steel Storage Racks (Int. Cl. 20).
First use September 1963.

SN 297,993. Faces West, Incorporated, Santa Monica, Calif. Filed May 13, 1968.

Lite-Fantastik

For Illuminated Portable Mirror (Int. Cl. 20).
First use Mar. 6, 1968.

SN 298,214. Eclipse Sleep Products, Inc., Brooklyn, N.Y. Filed May 15, 1968.

POSTURE SPRINGING

For Mattresses and Box Springs (Int. Cl. 20).
First use Apr. 24, 1968.

SN 299,247. Otis Steel Products Corporation, Ellicottville, N.Y. Filed May 28, 1968.



For Bookcases, Clothing Racks, Storage Cabinets, Transfer Cases, Shelving, and Partitions (Int. Cl. 20).
First use April 1968.

SN 299,417. Alcan Aluminum Corporation, Cleveland, Ohio. Filed May 31, 1968.

Venette

For Venetian Blinds and Components Thereof (Int. Cl. 20).
First use May 3, 1968.

SN 299,418. Alcan Aluminum Corporation, Cleveland, Ohio. Filed May 31, 1968.

Flexalum VENETTE

Owner of Reg. Nos. 522,365, 598,767, and others.
For Venetian Blinds and Components Thereof (Int. Cl. 20).
First use May 3, 1968.

SN 299,419. Alcan Aluminum Corporation, Cleveland, Ohio. Filed May 31, 1968.

Flexalum CONTINENTAL

Owner of Reg. Nos. 522,365, 598,767, and others.
For Venetian Blinds and Components Thereof (Int. Cl. 20).
First use May 3, 1968.

SN 299,679. Krueger Metal Products, Inc., Green Bay, Wis. Filed June 4, 1968.

CADET

For Classroom Furniture—Namely, Coat and Hat Racks (Int. Cl. 20).
First use on or about Jan. 15, 1968.

Class 33 — Glassware

SN 282,503. Wheaton Glass Company, Inc., Millville, N.J. Filed Oct. 13, 1967.

UNI-DOSE

For Glassware (Int. Cl. 21).
First use July 7, 1967.

SN 283,232. Cristalleries et Verreries de Vianne, S.a.r.l., Paris, France. Filed Oct. 24, 1967.



Applicant disclaims the words "Made in France" and "Cristal" apart from the mark as shown. The drawing is lined for the color gold.
For Crystal Stemware and Crystal Tableware (Int. Cl. 21).
First use Sept. 15, 1965; in commerce Sept. 15, 1965.

SN 299,091. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed May 27, 1968.

CANDLE GLOW

For Glass Ovenware—Namely, Baking Dishes, Custard Cups, Casseroles, Pans, Bowls, Covered Dishes, Covered Casseroles, and Similar Articles (Int. Cl. 21).
First use on or about Jan. 19, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 286,985. Alpha Metals, Inc., Jersey City, N.J. Filed Dec. 15, 1967.

LEAK PRUF

Owner of Reg. No. 510,817.
For Solder (Int. Cl. 6).
First use Mar. 3, 1948.

SN 288,185. Blackwell Burner Company, San Antonio, Tex. Filed Jan. 5, 1968.

MELTMOR

For Asphalt Heating Kettles (Int. Cl. 11).
First use 1949.

SN 289,120. Research Products Manufacturing Company, Dallas, Tex. Filed Jan. 18, 1968.

Surgi-Waste

For Incinerators for Use in Hospitals, Clinics, Rest Homes, Doctors' Offices, Laboratories, and Combat Units (Int. Cl. 11).
First use Dec. 12, 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 298,975. Technical Rubber Company, Inc., Johnstown, Ohio. Filed May 23, 1968.

TECH

Owner of Reg. No. 551,038.
For Tire Patches (Int. Cl. 12).
First use June 6, 1937.

Class 36 — Musical Instruments and Supplies

SN 278,675. Emenee Industries, Inc., New York, N.Y. Filed Aug. 21, 1967.

GEAR-MATIC

For Guitars (Int. Cl. 15).
First use Apr. 1, 1967.

SN 289,217. Soulville Records, Harrisburg, Pa. Filed Jan. 19, 1968.

SOULVILLE

For Phonograph Records (Int. Cl. 9).
First use Nov. 17, 1967.

SN 290,379. Deutsche Grammophon Gesellschaft m.b.H., Hamburg, Germany. Filed Feb. 6, 1968.



Applicant disclaims the word "Record" and the representation of an outline map of the world apart from the mark as shown. Owner of German Reg. No. 758,332, dated Feb. 15, 1962.
For Phonograph Records and Magnetic Tapes (Int. Cl. 9).

SN 293,568. Philco-Ford Corporation, Philadelphia, Pa. Filed Mar. 18, 1968.

HIP-POCKET

For Phonograph Records (Int. Cl. 9).
First use during September 1967.

SN 293,905. Chico Recording Company, San Benito, Tex. Filed Mar. 22, 1968.

Chico

The word "Chico" is the Spanish word meaning "little," "small," or "tiny."
For Grooved Phonograph Records (Int. Cl. 9).
First use on or about Mar. 28, 1967.

SN 299,019. Harris-Teller Inc., Chicago, Ill. Filed May 24, 1968.

vivant

For Musical Instruments, Particularly Drums, Sitars, and Musical Instrument Amplifiers (Int. Cls. 9 and 15).
First use September 1967.

SN 299,172. Telepro Industries, Incorporated, Cherry Hill, N.J. Filed May 27, 1968.

TELEPAC

For Cartridges and/or Cassettes for Use With Magnetic Tape Reproduction Equipment (Int. Cl. 9).
First use at least as early as Nov. 15, 1967.

SN 299,422. Atlas Films, Inc., New York, N.Y. Filed May 31, 1968.

STEREX

For Pre-Recorded Tapes (Int. Cl. 9).
First use on or about May 2, 1968.

SN 301,312. Radio Corporation of America, New York, N.Y. Filed June 25, 1968.

RCA

Owner of Reg. Nos. 167,591, 623,978, and others.
For Tape Players, Phonograph Records, and Phonograph Styli (Int. Cl. 9).
First use at least as early as July 6, 1943, on records.

SN 301,594. Radio Corporation of America, New York, N.Y. Filed June 28, 1968.

RCA

Owner of Reg. Nos. 167,591, 623,978, and others.
For Tape Players, Phonograph Records, and Phonograph Styli (Int. Cl. 9).
First use at least as early as July 6, 1943, on records.

Class 37 — Paper and Stationery

SN 275,872. Quik Chek Systems, Inc., Detroit, Mich. Filed July 12, 1967.

QUIK CHEK

For Ledger Record Cards and Sheets for Recording Drug Prescriptions and Customer Transactions (Int. Cl. 16).
First use October 1964.

SN 280,311. Eberhard Faber Inc., Crestwood, Wilkes-Barre, Pa. Filed Sept. 14, 1967.

PERMA-MOIST

For Points, Nibs, and Tips of Pens and Markers (Int. Cl. 16).
First use Sept. 7, 1967.

SN 283,567. Radiant Color Company, Richmond, Calif. Filed Oct. 27, 1967.



The Stippling Shown in the Drawing of the mark is not actually part of the mark, but is used to indicate shading only.
For Non-Sensitized Paper Coated With Fluorescent Material (Int. Cl. 16).
First use about Aug. 14, 1967.

SN 293,844. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Mar. 21, 1968.

DATA CARRIER

For Business Forms (Int. Cl. 16).
First use Feb. 19, 1968.

SN 296,041. Puritan Stationery Company, Philadelphia, Pa. Filed Apr. 19, 1968.

INKLINGS

For Writing Paper and Mailing Envelopes, and Tablets of Writing Paper (Int. Cl. 16).
First use Apr. 4, 1968.

SN 296,334. Marcal Paper Mills, Inc., East Paterson, N.J. Filed Apr. 23, 1968.

FLORENTINE

Owner of Reg. Nos. 722,710 and 843,719.
For Bathroom Tissue and Napkins (Int. Cl. 16).
First use Aug. 12, 1967.

SN 296,342. Paterson Parchment Paper Company, Bristol, Pa. Filed Apr. 23, 1968.

PATAFLEX

Owner of Reg. Nos. 217,634, 816,627, and others.
For Paper for Use in the Manufacture of Book Covers as Well as Record Jackets, Game Boards, Album Covers, and the Like (Int. Cl. 16).
First use Mar. 25, 1968.

SN 296,356. Sperry Rand Corporation, New York, N.Y. Filed Apr. 23, 1968.

RRR

For File Folders and File Guides (Int. Cl. 16).
First use June 2, 1965.

SN 296,454. Penn Corporation, Princeton, N.J., assignee of Ritepoint Corporation, St. Louis, Mo. Filed Apr. 24, 1968.

MAXIM-AD

For Ball Point Pens (Int. Cl. 16).
First use Mar. 28, 1968.

SN 296,588. Sperry Rand Corporation, New York, N.Y. Filed Apr. 25, 1968.

CLASSIFILE

For Filing Folders (Int. Cl. 16).
First use July 11, 1945.

SN 296,866. The C. M. Paula Company, Cincinnati, Ohio. Filed Apr. 29, 1968.

SWEET NOTES

For Writing Paper and Envelopes (Int. Cl. 16).
First use June 18, 1965.

SN 297,683. Kingsbacher-Murphy Company, Los Angeles, Calif. Filed May 8, 1968.

TUFGARD

For Plastic Binders and Book Covers (Int. Cl. 16).
First use Jan. 3, 1968.

SN 302,138. Sperry Rand Corporation, New York, N.Y. Filed July 5, 1968.

REMTAG

For File Folders (Int. Cl. 16).
First use Sept. 1, 1950.

SN 305,580. Tru-Foto, Inc., Dayton, Ohio. Filed Aug. 20, 1968.

BIG SHOW-OFF

For Binders in Which Photographic Booklets Are Retained (Int. Cl. 16).
First use July 24, 1968.

Class 38 — Prints and Publications

SN 262,643. Travel Media International Ltd., New York, N.Y. Filed Jan. 16, 1967.

WAYFARING
New Adventures in Travel

For Travel Column for Use in Newspapers or Magazines (Int. Cl. 16).
First use on or about Nov. 18, 1966.

SN 263,270. Robert I. Gordon, d.b.a. Homemakers Research Institute, Evanston, Ill. Filed Jan. 25, 1967.



The drawing is lined for red, but no color is claimed as a feature of the mark.
For Cook Books and Pamphlets Published From Time to Time (Int. Cl. 16).
First use prior to 1958.

SN 268,126. Xerox Corporation, Rochester, N.Y. Filed Apr. 3, 1967.

AMERICAN EDUCATION PUBLICATIONS

For Printed Newspaper-Type Publications for Students and Teachers Published Weekly During the Regular School Year (Int. Cl. 16).
First use on or before Feb. 17, 1967.

SN 276,659. Gamco Industries, Inc., Big Spring, Tex. Filed July 24, 1967.

TELEDEX

For Seating Chart for Classroom Use (Int. Cl. 16).
First use Dec. 17, 1965.

SN 281,573. Globe Newspaper Company, Boston, Mass. Filed Oct. 2, 1967.

CONFIDENTIAL CHAT

For Feature of a Newspaper (Int. Cl. 16).
First use Feb. 5, 1922.

SN 283,947. Visual Graphics Corporation, New York, N.Y. Filed Nov. 1, 1967.

TROOPER
ROMAN
ITALIC

The term "Roman Italic" is disclaimed apart from the mark.
For Sheets of Letters and Other Characters for Use in Photoprinting and Photographic Reproduction (Int. Cl. 16).
First use May 18, 1967.

SN 283,948. Visual Graphics Corporation, New York, N.Y. Filed Nov. 1, 1967.

TROOPER
ROMAN
LIGHT

The term "Roman Light" is disclaimed apart from the mark.
For Sheets of Letters and Other Characters for Use in Photoprinting and Photographic Reproduction (Int. Cl. 16).
First use Aug. 14, 1967.

SN 283,949. Visual Graphics Corporation, New York, N.Y. Filed Nov. 1, 1967.

TROOPER
ROMAN
LT. ITALIC

The term "Roman Lt. Italic" is disclaimed apart from the mark.
For Sheets of Letters and Other Characters for Use in Photoprinting and Photographic Reproduction (Int. Cl. 16).
First use Aug. 14, 1967.

SN 286,152. The Kansas Livestock Association, Topeka, Kans. Filed Dec. 4, 1967.

The Kansas
STOCKMAN

The drawing is lined for the color red. Owner of Reg. No. 162,280.
For Monthly Magazine (Int. Cl. 16).
First use on or before Dec. 12, 1922.

SN 291,140. Christopher S. Crowell, d.b.a. Chris Crowell & Co., Darien, Conn. Filed Feb. 15, 1968.

DIMENSIONAL MAILERS

Without waiving any common law rights therein, applicant disclaims the word "Mailers" except in the combination "Dimensional Mailers," forming the subject matter of this application.
For Printed Folded Advertising Cards Containing a "Pop-Up" Feature (Int. Cl. 16).
First use on or before June 30, 1967.

SN 291,727. Follett Publishing Company, Chicago, Ill. Filed Feb. 23, 1968.

MERIT
MYSTERY

The word "Mystery" is disclaimed apart from the mark as shown.
For Mystery Books for Young People (Int. Cl. 16).
First use on or about Mar. 15, 1967.

SN 292,613. Purchasing Management Association-Los Angeles, Los Angeles, Calif., assignee of Purchasing Agents Association of Los Angeles, Los Angeles, Calif. Filed Mar. 6, 1968.

GOLDEN WEST PURCHASOR

For Monthly Magazine (Int. Cl. 16).
First use Jan. 17, 1968.

SN 292,709. Po-Li-Glot Publications, Inc., New York, N.Y. Filed Mar. 7, 1968.

FIND E-Z

For City Maps (Int. Cl. 16).
First use Feb. 23, 1968.

SN 293,033. Guido Evangelistic Association, Inc., Metter, Ga. Filed Mar. 12, 1968.

SEEDS FROM THE SOWER

For Religious Column Appearing in Newspapers and Magazines (Int. Cl. 16).
First use July 1, 1966.

SN 293,215. American Society for Metals, Metals Park, Ohio. Filed Mar. 14, 1968.

MATERIALS TODAY

Owner of Reg. Nos. 846,844 and 851,482.
For Monthly Magazine Designed for Applicant's Members and for Engineers, Designers, Processors, Manufacturers, and Others Concerned With Engineering Materials and Products Made of Such Materials (Int. Cl. 16).
First use Dec. 21, 1967.

SN 293,223. The Building Officials Conference of America, Inc., Chicago, Ill. Filed Mar. 14, 1968.

THE BUILDING OFFICIAL

For Trade Magazine (Int. Cl. 16).
First use Oct. 16, 1967.

SN 293,280. The Kiplinger Washington Editors, Inc., Washington, D.C. Filed Mar. 14, 1968.

THE KIPLINGER CALIFORNIA LETTER

Owner of Reg. Nos. 506,031, 738,671, and others.
For Newsletter, Published Bi-Weekly (Int. Cl. 16).
First use in the middle of October 1965.

SN 293,468. E. W. Blair, Republic, Mo. Filed Mar. 18, 1968.

TIMESAVER
Chek ✓A✓ Letr

For Kits of Preprinted Letters and Envelopes (Int. Cl. 16).
First use Jan. 17, 1968.

SN 293,706. James Emerson Elliott, d.b.a. Explorations Publishing Co., Berkeley, Calif. Filed Mar. 20, 1968.

EXPLORATIONS

For Magazine (Int. Cl. 16).
First use May 24, 1964.

SN 293,708. Excerpta Medica Foundation, Amsterdam, Netherlands. Filed Mar. 20, 1968.

EXCERPTA MEDICA

For Magazines, Bulletins, and Pamphlets Containing Abstracts and Related Material of Articles, Papers, and Data Relating to the Sciences of Medicine, Biology, Psychology, and Chemistry (Int. Cl. 16).
First use at least as early as April 1946; in commerce at least as early as April 1946.

SN 293,768. Chek Ads, Chicago, Ill. Filed Mar. 20, 1968.

MIND YOUR MONEY

For Pamphlet Issued Periodically and Distributed for Others (Int. Cl. 16).
First use Mar. 12, 1968.

SN 293,891. Advertising Publications, Inc., Chicago, Ill. Filed Mar. 22, 1968.



Owner of Reg. Nos. 582,347 and 734,581.
For Monthly Magazine (Int. Cl. 16).
First use about Oct. 10, 1967.

SN 293,942. J. A. Moore, d.b.a. Delaware County Realty, Delaware, Ohio. Filed Mar. 22, 1968.



For Periodic Real Estate Newsletter (Int. Cl. 16).
First use on or about Jan. 30, 1968.

SN 294,466. Cathedral Films, Inc., Burbank, Calif. Filed Mar. 29, 1968.



For Motion Pictures and Film Strips Used for Instructional and Educational Purposes (Int. Cl. 9).
First use Jan. 2, 1968.

SN 294,467. Cathedral Films, Inc., Burbank, Calif. Filed Mar. 29, 1968.



For Motion Pictures and Film Strips Used for Instructional and Educational Purposes (Int. Cl. 9).
First use Jan. 2, 1968.

SN 294,468. Cathedral Films, Inc., Burbank, Calif. Filed Mar. 29, 1968.

QED

For Motion Pictures and Film Strips Used for Instructional and Educational Purposes (Int. Cl. 9).
First use Jan. 2, 1968.

SN 296,645. The Case-Hoyt Corporation, Rochester, N.Y. Filed Apr. 26, 1968.

RESPONSE

For Series of Brochures Illustrating and Advertising Samples of Printed Work (Int. Cl. 16).
First use Dec. 11, 1966.

SN 302,070. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed July 5, 1968.



The word "Greetings" is disclaimed apart from the mark as a whole.
For Greeting Cards (Int. Cl. 16).
First use Apr. 1, 1968.

SN 303,692. Mergers & Acquisitions, Inc., Washington, D.C. Filed July 26, 1968.

MERGERS & ACQUISITIONS

Owner of Reg. No. 814,731.
For Magazine Published Bimonthly (Int. Cl. 16).
First use Jan. 15, 1965.

SN 306,986. American Camping Association, Inc., Martinville, Ind. Filed Sept. 10, 1968.

FAMILY CAMPING LEADER

For Bi-Monthly Magazine (Int. Cl. 16).
First use November 1963.

SN 307,396. Success Motivation Institute, Inc., Waco, Tex. Filed Sept. 16, 1968.

MOTIVACCION

For Educational and Training Courses Comprising Books, Booklets, and Related Printed Material, and Sound Recordings Pertaining Thereto (Int. Cl. 16).
First use at least as early as June 21, 1968.

SN 307,398. United States Envelope Company, Springfield, Mass. Filed Sept. 16, 1968.

USE-VELOPE

Owner of Reg. Nos. 550,680 and 838,588.
For Printed Paper Items Designed for Distribution by Mail or Other Methods and Combining in One Piece Two or More Individual Elements Such as a Mailing Envelope, a Return Envelope, a Letter, an Advertisement, a Sales Message, an Order Form, and/or Other Similar Elements Used for a Sales Presentation or the Like (Int. Cl. 16).
First use September 1967.

SN 307,934. Mactier Publishing Corporation, New York, N.Y. Filed Sept. 23, 1968.

electroprocurement

Owner of Reg. Nos. 749,943 and 773,201.
For Monthly Magazine (Int. Cl. 16).
First use at least as early as Aug. 16, 1968.

Class 39 — Clothing

SN 271,365. Her Majesty Underwear Company, Mauldin, S.C. Filed May 12, 1967.

SHOW PANTS

The word "Pants" is disclaimed apart from the mark as shown.
For Underpants of Woven or Knitted Fabric for Toddlers, Girls, Teens, and Women (Int. Cl. 25).
First use Mar. 15, 1967.

SN 299,677. Kayser-Roth Corporation, New York, N.Y. Filed June 4, 1968.

CANDLESTICK CHAMBRAY

The word "Chambray" is disclaimed apart from the mark as shown.
For Men's Shirts (Int. Cl. 25).
First use Apr. 5, 1968.

SN 299,792. Rob Roy Company, Inc., New York, N.Y. Filed June 5, 1968.

OLIVER TWIST

"Oliver Twist" is not the name of any living individual known to applicant.
For Outer Dress and Sport Shirts of Woven and Knitted Materials, Sweaters, Jackets, Trousers, Swimwear, Vests, Caps, Pants and Shirt Combinations, Coats and Knitted Suits for Boys and Young Men (Int. Cl. 25).
First use May 29, 1968.

SN 299,842. Genesco Inc., Nashville, Tenn. Filed June 6, 1968.

Centaur

Owner of Reg. No. 806,774.
For Men's Hosiery (Int. Cl. 25).
First use Apr. 12, 1968.

SN 301,236. Mary Wear, Inc., Portland, Oreg. Filed June 24, 1968.

MARY WEAR

"Mary Wear" does not refer to any living person. The word "Wear" is disclaimed apart from the mark as shown.
For Women's Clothing—Namely, Dresses (Int. Cl. 25).
First use at least as early as June 21, 1968.

SN 301,334. The Fibre-Metal Products Company, Chester, Pa. Filed June 25, 1968.

SUPERFLEX

For Safety Hats and Caps (Int. Cl. 9).
First use June 7, 1968.

SN 303,391. The Bali Company, Inc., New York, N.Y. Filed July 23, 1968.

Bali Saab COLLECTION

Owner of Reg. Nos. 158,797, 553,151, and others.
For Wearing Apparel for Women and Young Women—Namely, Chemises, Slips, Petticoats, Bikini Bathing Suits, Pajamas, and Nightgowns (Int. Cl. 25).
First use Feb. 9, 1968; 1918 as to "Saab" on lingerie.

SN 303,392. The Bali Company, Inc., New York, N.Y. Filed July 23, 1968.

Bali FISCHER COLLECTION

Owner of Reg. No. 553,151.
For Wearing Apparel for Women and Young Women—Namely, Chemises, Slips, Petticoats, Bikini Bathing Suits, Pajamas, and Nightgowns (Int. Cl. 25).
First use Feb. 9, 1968; no later than 1916 as to "Fischer" on lingerie.

SN 303,764. Brookside Industries, Inc., New York, N.Y. Filed July 29, 1968.

FOX'S LAIR

For Shirts (Int. Cl. 25).
First use July 8, 1968.

SN 306,315. Reid & Reid, Inc., Long Island City, N.Y. Filed Aug. 30, 1968.

ROYAL LYNNE

For Ladies' Wearing Apparel—Namely, Dresses, Suits, Coats, Blouses, Skirts, Robes, Pajamas, and Shells (Int. Cl. 25).
First use at least as early as April 1959.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 306,432. Fashion Tress, Inc., Hialeah, Fla. Filed Sept. 3, 1968.

THE GIZMO

For Hair Rollers (Int. Cl. 26).
First use on or about July 1, 1968.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 297,467. Wakefern Food Corporation, Elizabeth, N.J. Filed May 6, 1968.

SHOP-RITE

Owner of Reg. Nos. 738,144, 812,306, and others.
For Dish Towels (Int. Cl. 24).
First use at least as early as 1963.

SN 297,612. Stevcoknit Textile Co., New York, N.Y. Filed May 7, 1968.

PERSET

For Shrinkage Controlled Knitted Fabric for Making Into Shirts, Dresses, Blouses, Sportswear, Children's and Infants' Wear, and Other Apparel (Int. Cl. 24).
First use Apr. 10, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

SN 277,394. Vistron Corporation, Cleveland, Ohio. Filed Aug. 2, 1967.

Jet-stream

The drawing is lined for blue and applicant claims the color blue as part of the mark.
For Readily Portable Oral Hygiene Appliance Utilizing a Very Rapid Pulsed Jet of Water for Massaging the Gums and Cleaning Spaces Adjacent the Teeth (Int. Cl. 10).
First use June 13, 1967.

SN 277,395. Vistron Corporation, Cleveland, Ohio. Filed Aug. 2, 1967.

JET-STREAM

For Readily Portable Oral Hygiene Appliance Utilizing a Very Rapid Pulsed Jet of Water for Massaging the Gums and Cleaning Spaces Adjacent the Teeth (Int. Cl. 10).
First use July 11, 1967.

SN 286,615. Aktiebolaget Stille-Werner, Stockholm, Sweden. Filed Dec. 11, 1967.

URIDOM

Owner of Swedish Reg. No. 104,069, dated Oct. 12, 1962.
For Connector Sleeve With Tube for Tapping Urine (Int. Cl. 10).
First use Nov. 15, 1961; in commerce Oct. 29, 1963.

SN 297,746. Abbott Laboratories, North Chicago, Ill. Filed May 9, 1968.

BUTTERFLY

For Medical Infusion Sets for Administration of Fluids (Int. Cl. 10).
First use Oct. 17, 1966.

SN 298,473. Prak-T-Kal Vapodynamics Corp., Elizabeth, N.J. Filed May 17, 1968.

SINUSTEAM

For Humidifier-Vaporizer for Medical Use (Int. Cl. 10).
First use May 7, 1968.

SN 300,830. Le Voy's Inc., d.b.a. Sorenson Research Corporation, Salt Lake City, Utah. Filed June 19, 1968.

RECEPTAL

For Disposable, Throwaway Receptacles for Suctioned Body Wastes and Debris (Int. Cl. 10).
First use Dec. 12, 1967.

Class 45 — Soft Drinks and Carbonated Waters

SN 253,246. Rocket Citrus Products, Inc., St. Louis, Mo. Filed Aug. 26, 1966.

APPLE JACK

Owner of Reg. No. 818,893.
For Fruit-Flavored Beverages Containing Water, Sold by the Dairy Industry, and Frozen Concentrates for Making the Same (Int. Cl. 32).
First use July 18, 1965.

Class 46 — Foods and Ingredients of Foods

SN 255,447. William M. Lathrop, d.b.a. Uncle Suzy Confections, Lakewood, Colo. Filed Sept. 29, 1966.

UNCLE SUZY

For Candles, Popcorn, Fruit Juices, Pastries, Nut Meats, and Ice Cream (Int. Cls. 30, 31, and 32).
First use Sept. 8, 1966.

SN 261,646. Dyna S.A., Fribourg, Switzerland. Filed Dec. 29, 1966.

Dyna

Owner of Swiss Reg. No. 213,407, dated Oct. 22, 1965.
For Tinned Meat, Vegetable Preserves With Meat Additives, Vegetable Preserves, Unsterilized Condiment Preserves, Seasonings With a Spice or Herb Base, Vegetable or Meat Pastes, Pre-Cooked Dishes Having Meat or Vegetables as Their Main Components; and Dietary Food Products—Namely, Food Supplements Containing Edible Yeast or Beer Yeast To Increase Their Vitamin Content (Int. Cls. 5, 29, and 30).

SN 263,574. The Horn & Hardart Company, New York, N.Y. Filed Jan. 30, 1967.

HORN & HARDART

For Coffee; and Fresh and Frozen Foods—Namely, Harvard Beets, Creamed Spinach, Beef Stew, Sweet Potatoes, Mashed Turnips, Chicken a la King, Burgundy Sauce With Beef and Noodles, Macaroni and Cheese, Baked Beans, Chicken Pie, Beef Pie, Pumpkin Pie, and Mince Pie (Int. Cls. 29, 30, and 31).
First use June 15, 1966.

SN 275,507. J. Bongrain & Cie (Societe Anonyme), Illoud, Haute-Marne, France. Filed July 7, 1967.

TARTARE

The word "Tartare" means "tartar" in French. Owner of French Reg. No. 1,685, dated May 20, 1964 (Chaumont); Natl. Inst. No. 226,822.
For Cheese (Int. Cl. 29).

SN 275,612. Barbier & Dauphin, Societe Anonyme, Aix-en-Provence, France. Filed July 10, 1967.

BARBIER DAUPHIN LE FIN DU FIN

Applicant disclaims the wording "Le Fin du Fin," apart from the mark as shown. "Le Fin du Fin" is translated as meaning "the finest among the finest." Owner of French Reg. No. 2,131, dated Aug. 9, 1954 (Aix); Natl. Inst. No. 41,797.
For Fruit Preserves, Vegetable Preserves, Jams, Jellies, Compotes, Marmalades, Meatless Tomato Sauces, Canned Fruit Juices, Canned Vegetable Juices, Soups, and Canned Alimentary Pastes (Int. Cls. 29, 30, and 32).

SN 279,225. Stewart In-Fra-Red, Inc., Harvard, Ill. Filed Aug. 28, 1967.

STEWART

Owner of Reg. Nos. 636,647 and 729,803.
For Pre-Packaged Sandwiches and Popcorn (Int. Cls. 29 and 30).
First use on or about Dec. 15, 1953, on pre-packaged sandwiches.

SN 279,941. Gerber Products Company, Fremont, Mich. Filed Sept. 8, 1967.

STEPS

For Sugar Coated Cereal (Int. Cl. 30).
First use Aug. 9, 1967.

SN 280,513. Interstate United Corporation, Lincolnwood, Ill. Filed Sept. 18, 1967.

INTERSTATE UNITED

For Sandwiches (Int. Cl. 29).
First use Mar. 10, 1967.

SN 280,514. Interstate United Corporation, Lincolnwood, Ill. Filed Sept. 18, 1967.



For Sandwiches (Int. Cl. 29).
First use Mar. 10, 1967.

SN 280,666. Carlo Erba S.p.A., Milan, Italy. Filed Sept. 19, 1967.

APROTEN

Owner of Italian Reg. No. 171,779, dated Mar. 8, 1965.
For Infants', Invalids', and Dietetic Foods—Namely, Pasta, Biscuits, Rusks, Flour, Semolina, Pizza, Cakes, and Bread (Int. Cl. 5).

SN 281,226. William A. Shade Co., Inc., Belmont, Calif. Filed Sept. 26, 1967.

INDIAN RED

For Fruit Flavors for Food Sold to Manufacturers for Inclusion by the Food Manufacturers in Manufactured Products (Int. Cl. 30).
First use Apr. 29, 1966.

SN 281,557. Dawe's Laboratories, Inc., Chicago, Ill. Filed Oct. 2, 1967.

PRY FERM HB

For Fermentation Factors in Dry Powder Form, and Feed Concentrates Containing Same, for Poultry and Livestock (Int. Cl. 31).
First use November 1966.

SN 281,595. Malone & Hyde, Inc., Memphis, Tenn. Filed Oct. 2, 1967.

Hyde Park

Owner of Reg. No. 792,669.
For Bar-B-Q Sauce, Cottage Cheese, Prepared Mustard, Apple Cider Vinegar, and White Distilled Vinegar (Int. Cls. 29 and 30).
First use Dec. 27, 1966.

SN 281,740. Lewis J. Ort, La Vale, Md. Filed Sept. 20, 1967.

FUNZIES

For Bakery Products—Namely, Bread and Rolls (Int. Cl. 30).
First use July 17, 1967.

SN 281,961. Carnation Company, Los Angeles, Calif. Filed Oct. 6, 1967.

CARNATION

Owner of Reg. Nos. 551,644, 781,111, and others.
For Livestock and Poultry Feeds (Int. Cl. 31).
First use at least as early as 1956.

SN 282,444. Doskocil Sausage, Inc., South Hutchinson, Kans. Filed Oct. 13, 1967.



For Pre-Cooked Meat for Pizza Topping (Int. Cl. 29).
First use on or about May 15, 1967.

SN 282,586. Hulman & Company, Terre Haute, Ind. Filed Oct. 16, 1967.

RUMFORD

Owner of Reg. No. 60,394.
For Baking Powder and Potato Pancake Mix (Int. Cl. 30).
First use 1858.

SN 283,146. S. B. Penick & Company, New York, N.Y. Filed Oct. 23, 1967.

PENZYME

For Proteolytic Enzyme for Reducing Mixing Time and Improving the Texture of Bread Dough (Int. Cl. 1).
First use Oct. 4, 1967.

SN 283,539. National Federation of Coffee Growers of Colombia, New York, N.Y. Filed Oct. 27, 1967.

JUAN VALDEZ

"Juan Valdez" is a fictitious name. Owner of Reg. Nos. 726,575 and 752,589.
For Coffee (Int. Cl. 30).
First use Mar. 6, 1960.

SN 283,542. National Federation of Coffee Growers of Colombia, New York, N.Y. Filed Oct. 27, 1967.



No claim is made to exclusive rights in the phrase "Coffee of Colombia" apart from other features of the mark. The person shown is Jose Duval whose consent is of record. Owner of Reg. Nos. 726,575 and 752,589.
For Coffee (Int. Cl. 30).
First use Mar. 17, 1966.

SN 283,544. National Federation of Coffee Growers of Colombia, New York, N.Y. Filed Oct. 27, 1967.



The person shown is "Jose Duval" whose consent is of record. Owner of Reg. Nos. 726,575 and 752,589.
For Coffee (Int. Cl. 30).
First use Mar. 10, 1967.

SN 283,942. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Nov. 1, 1967.

SHAKE STIX

The word "Stix" is disclaimed apart from the mark as shown, without waiving any common law rights therein. Owner of Reg. No. 830,258.
For Chewing Gum—Namely, Bubble Gum (Int. Cl. 30).
First use Sept. 6, 1967.

SN 284,546. Mead Johnson & Company (Delaware corporation), Evansville, Ind., assignee of Mead Johnson & Company (Indiana corporation), Evansville, Ind. Filed Nov. 13, 1967.

Metrecal
for-lunch-bunch

Owner of Reg. Nos. 746,729, 837,627, and others.
For Specialized Nutritional and Dietary Food Preparations—Namely, Nutritionally Complete Dietary Meals Whose Caloric Content Is Controlled and Is Composed Principally of One or More of the Following Natural Foods: Meat, Fish, Shellfish, Poultry and Vegetables; Dietary Powders That Can Be Mixed With Milk and Be Used for a Nutritionally Complete Meal; Cookies; Dietary Wafers; and Canned Dietary Soups (Int. Cl. 5).
First use on or prior to Nov. 30, 1964.

SN 284,713. National Dairy Products Corporation, Chicago, Ill. Filed Nov. 13, 1967.

TEEZ

Owner of Reg. Nos. 441,170 and 540,015.
For Snack Dips Made With Sour Cream (Int. Cl. 29).
First use Aug. 1, 1967.

SN 286,135. C. H. Guenther & Son, Inc., d.b.a. Pioneer Flour Mills, San Antonio, Tex. Filed Dec. 4, 1967.

PIONEER

Owner of Reg. Nos. 531,426 and 760,405.
For Flour and Corn Meal Mixes—Namely, Biscuit Mix, Pancake Mix, Corn Bread Mix, and French Doughnut Mix (Int. Cl. 30).
First use on or about Nov. 2, 1945.

SN 286,969. Kellogg Company, Battle Creek, Mich. Filed Dec. 15, 1967.



The figure shown is that of "Dennis McMullen" whose consent is of record.
For Cereal-Derived Food Product To Be Used as a Breakfast Food, Snack Food, and Confection (Int. Cl. 30).
First use Nov. 15, 1967.

SN 287,268. Barton's Candy Corporation, Brooklyn, N.Y. Filed Dec. 20, 1967.



Applicant disclaims the word "Nutty" apart from the mark.
For Candy (Int. Cl. 30).
First use Nov. 3, 1967.

SN 287,391. Peter A. Uraine, Whittier, Calif. Filed Dec. 21, 1967.



For Tortillas (Int. Cl. 30).
First use Oct. 31, 1967.

SN 287,665. C. F. Mueller Company, Jersey City, N.J. Filed Dec. 27, 1967.

münchen

In the German language, "Munchen" means "Munich."
For Egg Noodles (Int. Cl. 30).
First use on or about Sept. 27, 1967.

SN 289,328. Nutrition Square, Inc., Pittsburgh, Pa. Filed Jan. 22, 1968.

NUTRITION
SQUARE

For Health and Epicure Foods and Beverages—Namely, Rose Hip and Carob Powders; Mate, Alfalfa, Herb, Papaya, Chamomile, Rose Hips and Fenugreek Teas; Hulled Millet, Raw Wheat Germ, Cracked and Whole Wheat Cereals; Alfalfa and Sunflower Seeds; Gelatin, Jelly; Safflower, Soybean, Sunflower, Vegetable and Wheat Germ Oils; Yeast, Vegetable Broth Mixes; Bone Meal, Liver and Yeast, Garlic and Parsley, Kelp and Lecithin Tables and Capsules (Int. Cls. 5, 29, and 30).
First use Oct. 25, 1956.

SN 290,093. General Foods Corporation, White Plains, N.Y. Filed Feb. 1, 1968.

MHC

For Coffee (Int. Cl. 30).
First use Aug. 28, 1967.

SN 291,845. Dallas City Packing, Inc., Dallas, Tex. Filed Feb. 26, 1968.

OKIE SMOKIE

The word "Smokie" is disclaimed apart from the mark as shown.
For Smoked Sausage Encased in a Batter Mix on a Stick (Int. Cl. 29).
First use Jan. 18, 1968.

SN 292,008. Plantation Foods Corporation, Miami, Fla. Filed Feb. 27, 1968.



For Canned and Frozen Asparagus, Asparagus Spears, Beans, Broccoli, Brussel Sprouts, Carrots, Cauliflower, Corn, Mixed Vegetables, Green Peas, Spinach, Collard Greens, Mustard Greens, Okra, Blackeye Peas, Squash, Turnip Greens, Baby Lima Beans, Fordhook Lima Beans, Potatoes, Strawberries, Peaches, Coffee Whitener, Whip Topping, Plain Sourcream, Chive Sourcream, Lemon Juice, Lime Juice, Frozen Shrimp, Flounder, Seafood Dinner, Scallops, Oysters, Crab Roll, Crab Burger, Shrimpburger, Cod Fillets, Haddock Fillets, Ocean Perch, Sole Fillets, Grouper Fillets, Catfish Okeechobee, Jumbo Cod, Shrimp Egg Rolls; and Frozen Breaded Veal Patties, Cubed Beef Steak, Cubed Veal Steak, Floured Swiss Steak, Pepper Beef Steak Patties, Solid Cube Swiss Steak, Delmonico Steak, New York Boneless Loin Strip Steak, New York Bone-In Strip Steak, T-Bone Steak, Rib Eye Steak, Filet Mignon Steak, Beef Liver, Breaded Pork Chopette, Bacon Wrapped Chopped Sirloin, Chopped Sirloin, Breaded Veal for Parmigiane, Diced Stew Meat, Ground Beef Bulk, Ground Beef Steak, Corned Beef Brisket, Weiner; Shortening, Mayonnaise, Salad Dressing, Tartar Sauce, and M.S.G. Seasoning (Int. Cls. 29, 30, and 32).
First use on or about May 1, 1961.

SN 292,172. Beatrice Foods Co., Chicago, Ill. Filed Feb. 29, 1968.

BLUE MINT COOLERS

Without waiving any of its common law rights, applicant waives exclusive right to the words "Blue Mint" apart from the mark as shown.
For Candy (Int. Cl. 30).
First use Feb. 1, 1968.

SN 292,267. Frito-Lay, Inc., Dallas, Tex. Filed Mar. 1, 1968.

FANDANGOS

For Snack Foods—Namely, Potato Chips, Corn Chips, Puffed Corn Snacks, and Tortilla Chips (Int. Cl. 29).
First use Jan. 31, 1968.

SN 292,269. W. R. Grace & Co., New York, N.Y. Filed Mar. 1, 1968.



For Food Supplement for Horses (Int. Cl. 31).
First use Nov. 11, 1964.

SN 292,515. Tootsie Roll Industries, Inc., Hoboken, N.J. Filed Mar. 5, 1968.

TUTSI ROLS

Owner of Reg. Nos. 75,218, 849,537, and others.
For Candy (Int. Cl. 30).
First use Jan. 30, 1968.

SN 292,516. Tootsie Roll Industries, Inc., Hoboken, N.J. Filed Mar. 5, 1968.

TUTSI

Owner of Reg. Nos. 75,218, 849,537, and others.
For Candy (Int. Cl. 30).
First use at least as early as Jan. 30, 1968.

SN 292,625. Standard Milling Company, Kansas City, Mo. Filed Mar. 6, 1968.



The drawing is lined for the colors red and blue, however, no claim is made to color.
For Breakfast Cereal (Int. Cl. 30).
First use at least as early as June 1, 1967.

SN 295,409. Philip Morris Incorporated, d.b.a. Flavor Tree Foods Co., New York, N.Y. Filed Apr. 11, 1968.

HAVA JAVA

For Candy (Int. Cl. 30).
First use Apr. 1, 1968.

SN 295,450. Midwest Biscuit Company, Burlington, Iowa. Filed Apr. 11, 1968.

KOFFEE-KLOTCH

For Cookies and Crackers (Int. Cl. 30).
First use Mar. 12, 1968.

SN 295,556. Quality Kitchen Foods, Inc., Danbury, Conn. Filed Apr. 12, 1968.

QUALITY KITCHEN

For Cream Cheese Cake, Canned Cooked Ham, Frozen Vegetables, Frozen Fish and Shellfish (Int. Cls. 29 and 30).
First use July 11, 1966.

SN 296,027. The Larsen Company, Green Bay, Wis. Filed Apr. 19, 1968.

veg·all

Owner of Reg. Nos. 502,367 and 610,028.
For Canned Mixed Vegetables and Fresh Frozen Mixed Vegetables (Int. Cl. 29).
First use Mar. 25, 1968; May 28, 1925, in a different form.

SN 296,051. Standard Oil Company, Flemington, N.J. Filed Apr. 19, 1968.

ENCEL

For Protein Food Supplement for Use as an Ingredient in Foods for Human Consumption and for Animal Feedstuffs (Int. Cls. 5 and 31).
First use Jan. 5, 1968.

SN 296,117. Chick-Fil-A, Inc., Hapeville, Ga. Filed Apr. 22, 1968.



For Bread Crumbs (Seasoned Coater), Pickles (Kosher Dill Chips), and Peanut Oil (Int. Cls. 29 and 30).
First use June 1, 1964.

SN 296,450. Primrose Confectionery Company Limited, Slough, England. Filed Apr. 24, 1968.

MOUNTIES

For Candy, Chewing Gum, and Bubble Gum (Int. Cl. 30).
First use on or about Mar. 8, 1951; in commerce on or about Mar. 1, 1961.

SN 296,951. Federal Sweets & Biscuit Co., Clifton, N.J. Filed Apr. 30, 1968.

WAFER
bunch

The word "Wafer" is disclaimed apart from the mark as shown.
For Cookie Wafers (Int. Cl. 30).
First use Apr. 3, 1968.

SN 297,675. Hijos de Ybarra S.A., Seville, Spain. Filed May 8, 1968.



The English equivalent of "El Toro" is "the bull." Owner of Spanish Reg. No. 96,933, dated Mar. 3, 1962; and U.S. Reg. No. 184,632.
For Olive Oils (Int. Cl. 29).
First use 1934; in commerce 1962.

SN 300,227. Golden Grain Macaroni Co., d.b.a. Ghirardelli Chocolate Co., San Leandro, Calif. Filed June 12, 1968.

choc-O-bread

The word "Bread" is disclaimed apart from the mark as shown.
For Bread (Int. Cl. 30).
First use May 15, 1968.

SN 304,287. Sucrest Corporation, New York, N.Y. Filed Aug. 5, 1968.

SUCROVERT

Owner of Reg. No. 264,215.
For Improved Standardized Liquid Invertase Used as a Stabilizer in the Manufacture of Confectionery Products (Int. Cl. 30).
First use on or about Jan. 1, 1968.

SN 304,437. The Quaker Oats Company, Chicago, Ill. Filed Aug. 6, 1968.



The design is not a representation of any living person. Owner of Reg. Nos. 17,825, 777,559, and others.
For Table Syrup, Grits, Corn Meal, Flour; Prepared Baking Mixes for Making Pancakes, Waffles, Cakes, Breads, Muffins, and the Like; and Frozen Bakery Products—Namely, Waffles, Cakes, and Breads (Int. Cl. 30).
First use November 1966; Nov. 27, 1889, in a different form.

SN 304,438. The Quaker Oats Company, Chicago, Ill. Filed Aug. 6, 1968.



Aunt Jemima

The name "Aunt Jemima" and the design are fanciful and not the name or representation of any living person. Owner of Reg. Nos. 17,825, 797,560, and others.
For Table Syrup, Grits, Corn Meal, Flour; Prepared Baking Mixes for Making Pancakes, Waffles, Cakes, Breads, Muffins, and the Like; and Frozen Bakery Products—Namely, Waffles, Cakes, and Breads (Int. Cl. 30).
First use November 1966; Nov. 27, 1889, in a different form.

SN 305,275. Farmers Regional Cooperative, Fort Dodge, Iowa. Filed Aug. 16, 1968.



Owner of Reg. No. 600,806 and others.
For Feeds and Feed Supplements for Stock and Poultry (Int. Cl. 31).
First use at least as early as Dec. 1, 1967; April 1930 as to "Felco."

SN 306,440. Golden Gate Salami Co., San Francisco, Calif. Filed Sept. 3, 1968.

LUCCA

For Salami (Int. Cl. 29).
First use 1947.

SN 306,442. Golden Gate Salami Co., San Francisco, Calif. Filed Sept. 3, 1968.



"Verdi" is the name of the famous Italian composer, now deceased.
For Salami (Int. Cl. 29).
First use 1947.

SN 306,988. Iroquois Popcorn Co., Inc., Chicago, Ill. Filed Sept. 10, 1968.

IROQUOIS

For Popcorn (Int. Cl. 30).
First use in or about August 1948.

Class 49 — Distilled Alcoholic Liquors

SN 259,556. Moritz Thienelt, Likörfabrik "Echte Kroatzbeere," Holzbuettgen, Germany. Filed Nov. 28, 1966.



The word "Schüttboden" may be translated from a German dialect to mean "granary." The wording on the neck of the bottle is the name "Moritz Thienelt." The drawing is lined for red, but color is not claimed as an integral part of the mark. Owner of U.S. Reg. Nos. 828,389, 850,725, and 850,728; and German Reg. No. 674,392, dated Apr. 13, 1955.
For Kummel (Int. Cl. 33).

SN 294,012. William P. Cashman, d.b.a. Marita and Marita Spirits & Wine Company, Cleveland, Ohio. Filed Mar. 25, 1968.



For Whiskey and Vodka (Int. Cl. 33).
First use Jan. 23, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 289,889. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. Filed Jan. 30, 1968.

LOC-LENS

For Reflective Tape and Reflective Sheeting (Int. Cl. 17).
First use Dec. 21, 1967.

SN 295,884. Diamond National Corporation, New York, N.Y. Filed Apr. 18, 1968.

DATAVOTE

For Marking Device Consisting of Stylus and Pad for Hand Marking of Tabulating Card Ballots by Punching Out Portions Thereof (Int. Cl. 16).
First use Jan. 23, 1968.

SN 299,740. Adler Silhouette Letter Co., Los Angeles, Calif. Filed June 5, 1968.

PRONTO

For Demountable Letters for Signs (Int. Cl. 16).
First use Apr. 18, 1968.

SN 299,956. Duracraft, Inc., Griggsville, Ill. Filed June 7, 1968.

DURACRAFT

For Birdhouses (Int. Cl. 21).
First use Feb. 9, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 274,994. Sears, Roebuck and Co., d.b.a. Lyric Distributors, Chicago, Ill. Filed June 28, 1967.

TURNING POINT

For Perfume and Cologne (Int. Cl. 3).
First use on or about Nov. 9, 1955.

SN 275,004. Yardley of London, Inc., Totowa, N.J. Filed June 28, 1967.

DOLLY FACE

Without waiving any common law rights, applicant disclaims the word "Face" apart from the mark as shown.
For Beauty Facial Mask (Int. Cl. 3).
First use June 20, 1967.

SN 276,584. Leonard L. Roberts, d.b.a. Roberts Laboratories, Denver, Colo. Filed July 21, 1967.

Trianon

For Dry Skin Creme and Dry Skin and All-Purpose Body or Skin Lotion (Int. Cl. 3).
First use April 1939.

SN 277,255. Bristol-Myers Company, New York, N.Y. Filed Aug. 1, 1967.

COME ON

For After Shower Body Rub (Int. Cl. 3).
First use May 17, 1967.

SN 280,358. E. R. Holloway Limited, Lavenham, Suffolk, England. Filed Aug. 28, 1967.

BABY DOLL

For Cosmetics and Toiletries—Namely, Eye, Lip, Face and Nail Makeup; Powder Compacts Sold Filled and Refills Therefor; and Hair Spray (Int. Cl. 3).
First use on or about Apr. 15, 1967; in commerce on or about May 15, 1967.

SN 285,609. Yardley of London, Inc., Totowa, N.J. Filed Nov. 24, 1967.

DOLLY NAILS

Without waiving any common law rights, applicant disclaims the word "Nails" apart from the mark as shown.
For Nail Polish (Int. Cl. 3).
First use Nov. 13, 1967.

SN 286,456. Watkins Products, Inc., Winona, Minn. Filed Dec. 6, 1967.

ULTRA LIME

Applicant disclaims the word "Lime," apart from the mark as shown, without waiving its common law rights therein.
For Toilet Preparations for Men—Namely, After Shave Lotion, Cologne, and Personal Deodorant (Int. Cl. 3 and 5).
First use Nov. 10, 1967.

SN 286,932. Helene Curtis Industries, Inc., Chicago, Ill. Filed Dec. 14, 1967.

INNER NATURE

For Hair Conditioner (Int. Cl. 3).
First use on or about June 10, 1967.

SN 287,911. Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. Filed Jan. 2, 1968.

HAWAIIAN
SANDAL
'N' SPICE

Applicant disclaims the word "Hawaiian" apart from the mark as shown.
For Men's After-Shave Cologne and After-Shave Lotion (Int. Cl. 3).
First use Aug. 25, 1967.

SN 288,104. Luzier Incorporated, Kansas City, Mo. Filed Jan. 4, 1968.

EST EST EST

The translation of the mark is "it is, it is, it is."
For Cologne (Int. Cl. 3).
First use Nov. 8, 1967.

SN 289,022. Helene Curtis Industries, Inc., d.b.a. Sue Cory, Chicago, Ill. Filed Jan. 17, 1968.

MARDI GRAS

For Cold Permanent Waving Lotion and Neutralizer Therefor (Int. Cl. 3).
First use on or about Dec. 15, 1967.

SN 291,068. Greer Enterprises, Inc., d.b.a. Hairstyling Research Co., Quincy, Mich. Filed Feb. 14, 1968.

Cosmetic SPARKLE

No claim is made to the word "Cosmetic" apart from the mark as shown.
For Hair Spray (Int. Cl. 3).
First use Nov. 8, 1967.

SN 291,130. Samuel Bonat & Bro., Inc., Paterson, N.J. Filed Feb. 15, 1968.

CHAMPAGNE SET

The word "Set" is disclaimed apart from the mark as shown.
For Setting and Hair Conditioning Product (Int. Cl. 3).
First use Jan. 26, 1968.

SN 291,141. Daggett & Ramsdell International Corp., New York, N.Y. Filed Feb. 15, 1968.

GREENBRIAR

For After-Shave Lotion (Int. Cl. 3).
First use during July 1964.

SN 291,178. Olga Company, Van Nuys, Calif. Filed Feb. 15, 1968.

OLGA

Owner of Reg. Nos. 531,785 and 780,385.
For Skin Lotions, Bath Perfumes and Splashes or Toilet Waters (Int. Cl. 3).
First use Oct. 9, 1967.

SN 293,370. Estee Lauder Incorporated, New York, N.Y. Filed Mar. 15, 1968.

ROXY RED

No claim is made to the word "Red" apart from the mark.
For Lipsticks (Int. Cl. 3).
First use Feb. 29, 1968.

SN 303,383. The Procter & Gamble Company, Cincinnati, Ohio. Filed July 23, 1968.



The drawing is lined for the color red.
For Toothpaste (Int. Cl. 3).
First use Feb. 14, 1955.

SN 304,442. Yardley of London, Inc., New York, N.Y. Filed Aug. 6, 1968.

COUNTRY TREATS

For Facials With Oatmeal (Int. Cl. 3).
First use July 16, 1968.

SN 304,649. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 8, 1968.

PERSON TO PERSON

For Personal Deodorant (Int. Cl. 5).
First use May 15, 1968.

SN 306,960. Topco Associates, Inc., Skokie, Ill. Filed Sept. 9, 1968.

TOPCO

For Toothpaste, Denture Cream, Powdered Denture Cleanser, Denture Adhesive, Baby Powder, Shave Cream, and Personal Deodorant (Int. Cls. 3 and 5).
First use Nov. 17, 1967.

Class 52 — Detergents and Soaps

SN 269,353. S. Sampino & Waverly Beauty Products, Inc., d.b.a. Waverly Beauty Products, Brooklyn, N.Y. Filed Apr. 17, 1967.

DU foam

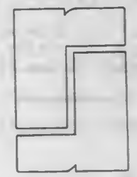
Applicant disclaims the word "Foam" apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use Apr. 18, 1966.

SN 290,040. A. L. Wilson Chemical Company, Kearny, N.J. Filed Jan. 31, 1968.

ECONOPAK

For Cleaning Preparations—Namely, Stain Removers, Spot Removers, Rug Cleaners, Dry Cleaning Preparations, and the Like (Int. Cl. 3).
First use Nov. 1, 1967.

SN 292,132. Recoton Corporation, Long Island City, N.Y. Filed Feb. 28, 1968.



For Tape Recorder Head Cleaners (Int. Cl. 3).
First use Nov. 15, 1967.

SN 301,304. Amerace Corporation, New York, N.Y. Filed June 25, 1968.

AMERACE

For Solvents, Degreasers and Cleansers for Industrial and Institutional Use (Int. Cl. 1).
First use at least as early as May 1966.

SERVICE MARKS

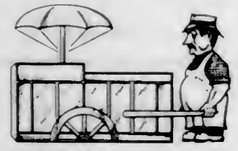
Class 100 — Miscellaneous

SN 261,154. Nathan's Famous, Inc., Coney Island, N.Y. Filed S.R. Dec. 20, 1966; Am. P.R. Oct. 5, 1967.

Nathan's FAMOUS NY

The word "Famous" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 542,188, 644,517, and others.
For Catering Services (Int. Cl. 42).
First use Jan. 1, 1915.

SN 265,963. Arizona Horizons, Inc., Phoenix, Ariz. Filed Mar. 6, 1967.



"World Wide" and the world map representation are disclaimed apart from the mark as used. The drawing is lined for yellow or gold, but color is not claimed as a feature of the mark.
For Development of Vacant Land or Improved Properties in Need of a Utilization Program (Int. Cl. 42).
First use Oct. 14, 1966.

SN 266,811. Tony's Pushcart, Fairfield, N.J. Filed Mar. 15, 1967.

No claim is made to the particular design of the building apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Nov. 28, 1966.

SN 275,596. Air Canada, Montreal, Quebec, Canada. Filed July 10, 1967.

CONNOISSEUR

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 17, 1967; Reg. No. 152,632, dated Aug. 18, 1967.
For In-Flight Restaurant Services (Int. Cl. 42).

SN 278,798. Hilton Hotels Corporation, Chicago, Ill. Filed Aug. 22, 1967.

STATLER HILTON

Owner of Reg. Nos. 757,508, 843,001, and others.
For Hotel, Motel and Restaurant Services (Int. Cl. 42).
First use about Nov. 15, 1965; December 1964 as to "Statler Hilton."

SN 288,655. Vitro Corporation of America, New York, N.Y. Filed Jan. 11, 1968.

Vitro

Owner of Reg. Nos. 184,300, 643,814, and 804,077.
For Engineering Consulting, Planning, Research and Development, Design, Testing, Interface and Compatibility Determination and Attendant Services in Defense, Space, Atomic Energy and Related Areas (Int. Cl. 42).
First use on or about Aug. 31, 1951.

SN 291,985. Health Facilities, Inc., Beaverton, Oreg. Filed Feb. 27, 1968.

MICROLABORATORIES

For Clinical Laboratory Service to Physicians in Conducting Biochemical, Microbiological, Hematological and Other Related Determinations on Blood and Other Body Fluids for the Diagnosis and Treatment of Disease in Infants, Children and Adults (Int. Cl. 42).
First use Oct. 1, 1967.

SN 295,195. Thunderbird Motel Corporation, Minneapolis, Minn. Filed Apr. 8, 1968.



For Motel Service (Int. Cl. 42).
First use Jan. 2, 1959.

SN 295,814. Drummer Boy, Inc., Topeka, Kans. Filed Apr. 17, 1968.

DRUMMER BOY

Owner of Reg. No. 526,082.
For Restaurant Services (Int. Cl. 42).
First use Sept. 10, 1962.

SN 295,815. Drummer Boy, Inc., Topeka, Kans. Filed Apr. 17, 1968.



The drawing is lined for gray or silver, brown, red and blue, but color is not claimed as a feature of the mark. Owner of Reg. No. 526,082.
For Restaurant Services (Int. Cl. 42).
First use Sept. 10, 1962.

SN 295,816. Gordon R. Eliassen, d.b.a. The Nugget, Allen Park, Mich. Filed Apr. 17, 1968.

The NUGGET

For Restaurant Services (Int. Cl. 42).
First use on or about Jan. 15, 1963.

SN 295,880. The Deerwood Club, Inc., Jacksonville, Fla. Filed Apr. 18, 1968.

DEERWOOD

For Development and Operation of Community Facilities for Private Residential Community (Int. Cl. 42).
First use November 1960.

SN 295,882. The Deerwood Club, Inc., Jacksonville, Fla. Filed Apr. 18, 1968.



For Development and Operation of Community Facilities for Private Residential Community (Int. Cl. 42).
First use November 1960; January 1963 as to "Deerwood."

SN 304,430. Breckenridge Hotels Corp., Brentwood, Mo. Filed Aug. 6, 1968.

THE LIBRARY

For Cocktail Lounge Services (Int. Cl. 42).
First use on or about Jan. 1, 1965.

SN 304,431. Breckenridge Hotels Corp., Brentwood, Mo. Filed Aug. 6, 1968.

THE MUSIC ROOM

For Cocktail Lounge Services (Int. Cl. 42).
First use on or about Aug. 26, 1966.

SN 307,065. H/P Consultants Ltd., Chicago, Ill. Filed Sept. 11, 1968.

H/P

For Fitting, Styling, and Repairing Hairpieces (Int. Cl. 42).
First use Sept. 15, 1967.

SN 307,072. Westminster Little Banquet, Inc., Westminster, Colo. Filed Sept. 11, 1968.



For Restaurant Services (Int. Cl. 42).
First use on or about 1958.

SN 307,176. Jos. Schlitz Brewing Company, Milwaukee, Wis. Filed Sept. 12, 1968.

THE BROWN BOTTLE

For Meeting Facilities and Tap Room Services (Int. Cl. 42).
First use at least as early as 1938.

Class 101 — Advertising and Business

SN 290,404. A. C. Nielsen Company, Chicago, Ill. Filed Feb. 6, 1968.

NMMS

Owner of Reg. Nos. 528,873, 800,022, and others.
For Marketing Research—Namely, Marketing Research With Reference to Sales of Consumer Goods Such as Foods, Drugs, Variety Goods, etc. (Int. Cl. 35).
First use July 14, 1967.

SN 290,405. A. C. Nielsen Company, Chicago, Ill. Filed Feb. 6, 1968.

NMMI

Owner of Reg. Nos. 528,873, 800,022, and others.
For Marketing Research—Namely, Marketing Research With Reference to Sales of Consumer Goods Such as Foods, Drugs, Variety Goods, etc. (Int. Cl. 35).
First use Oct. 29, 1962.

Class 102 — Insurance and Financial

SN 283,096. Charlesbank Trust Company, Cambridge, Mass. Filed Oct. 23, 1967.

CHEQUE 99

The term "Cheque" is disclaimed apart from the mark as shown.
For Banking Service—Namely, Operation of a Checking Account Service (Int. Cl. 36).
First use Aug. 30, 1967.

SN 285,809. American Bankers Insurance Company of Florida, Miami, Fla. Filed Nov. 29, 1967.

VALUMATICS

For Automobile Insurance (Int. Cl. 36).
First use July 1966.

SN 290,204. Albert S. Weston, New York, N.Y. Filed Jan. 24, 1968.



For Insurance Brokerage (Int. Cl. 36).
First use Aug. 1, 1967.

Class 103 — Construction and Repair

SN 277,434. Wallace Oscar Byrd, d.b.a. A & B Muffler Shop, Fort Worth, Tex. Filed Aug. 3, 1967.



For Automotive Services—Namely, the Inspection of Automotive Exhaust Systems and Installation of Automotive Mufflers, and Exhaust System Parts (Int. Cl. 37).
First use July 5, 1954.

SN 288,083. Butler Manufacturing Company, Kansas City, Mo. Filed Jan. 4, 1968.

AGRI-CONTRACTOR

Owner of Reg. No. 771,292.
For Construction of Fabricated Metal Buildings and Shelters and Fabricated Metal Bins and Tanks for the Storage of Bulk Commodities (Int. Cl. 37).
First use Nov. 1, 1964.

Class 104 — Communication

SN 289,136. Star Broadcasting Corp., Hartsdale, N.Y. Filed Jan. 18, 1968.

Star Broadcasting Group

Applicant disclaims any right to the exclusive use of the words "Broadcasting Group" apart from the mark as shown.
For Television and Radio Broadcasting (Int. Cl. 38).
First use Nov. 15, 1967.

Class 105 — Transportation and Storage

SN 269,202. Northeast Airlines, Inc., Boston, Mass. Filed Apr. 14, 1967.



The drawing is lined for the color yellow. No claim is made of exclusive right to use of the color yellow for aircraft marking apart from the mark as shown.
For Air Transportation of Passengers and Freight (Int. Cl. 39).
First use Sept. 15, 1966.

SN 273,039. Colpitts Tourist Co., Inc., d.b.a. Colpitts Travel Center, Boston, Mass. Filed June 5, 1967.

COLPITTS

For Travel Agency Services (Int. Cl. 39).
First use prior to Jan. 1, 1961.

SN 303,009. Trojan Incorporated, Hyattsville, Md. Filed July 11, 1968.



For Transfer and Storage of Office and Other Heavy Equipment Belonging to Others (Int. Cl. 39).
First use July 1965.

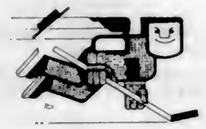
Class 107 — Education and Entertainment

SN 275,837. Thomas F. Curtis, Washington, D.C. Filed July 12, 1967.

WAYNE'S LUV

For Entertainment in the Nature of Social Parties, Including Dances, and Special Events Such as, for Example, a Style Show (Int. Cl. 41).
First use Dec. 12, 1966.

SN 284,835. The Philadelphia Hockey Club, Inc., Philadelphia, Pa. Filed Nov. 14, 1967.



The drawing is lined for the color gold, but no claim is made as to color.
For Professional Hockey Exhibitions (Int. Cl. 41).
First use no later than Sept. 17, 1967.

SN 285,602. Vidicam Television Limited, Toronto, Ontario, Canada. Filed Nov. 24, 1967.

VIDICAM

For Production of Motion Picture and Television Programme Material and the Rental of Motion Picture and Television Production Equipment, Particularly Cameras, Switching Units, Controls, Consoles and Audio Equipment (Int. Cl. 41).
First use Oct. 11, 1967.

SN 304,435. Foreign Language League Schools, d.b.a. The Foreign Study League, Salt Lake City, Utah. Filed Aug. 6, 1968.



For Arranging Summer School Programs Abroad (Int. Cl. 41).
First use May 1, 1963.

SN 304,542. Compass, Inc., Alexandria, Va. Filed Aug. 7, 1968.

COMPASS

For Supplying Information Services to Students Identifying Appropriate Colleges for Admissions Purposes (Int. Cl. 41).
First use Sept. 5, 1967.

SN 306,422. Advanced Communication Techniques Seminars, Incorporated, Westport, Conn. Filed Sept. 3, 1968.

HANDS-ON

For Educational Seminars in the Fields of Television and Videotape Techniques (Int. Cl. 41).
First use July 15, 1967.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 281,291. Intertel, Incorporated, Fort Wayne, Ind. Filed Sept. 27, 1967.

Intertel

For Indicating Membership in Applicant.
First use Aug. 20, 1966.

SN 287,622. Alpha Tau Omega Fraternity, Inc., Champaign, Ill. Filed Dec. 27, 1967.

ALPHA TAU OMEGA FRATERNITY

Applicant disclaims the word "Fraternity" apart from the mark as shown.
For Indicating Membership in Applicant.
First use September 1865.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

862,196. MOWITAL. Canadian Hoechst Limited. SN 263,014. Pub. 10–8–68. Filed 1–23–67.

862,197. DURAFLEX. Clark Bros. Felt Co. SN 271,225. Pub. 6–11–68. Filed 5–11–67.

862,198. SILCOSET. Imperial Chemical Industries Limited. SN 273,281. Pub. 10–8–68. Filed 6–7–67.

862,199. NOVOLEN. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 282,349. Pub. 10–8–68. Filed 10–12–67.

862,200. PROFILE. Vistron Corporation. SN 286,392. Pub. 10–8–68. Filed 12–6–67.

862,201. MISCELLANEOUS DESIGN. Sunnyside Nurseries, Inc. SN 301,975. Pub. 10–8–68. Filed 7–3–68.

Class 2 — Receptacles

862,202. RESIN-FAB. Resin-Fab Corporation. SN 266,092. Pub. 10–8–68. Filed 3–6–67.

862,203. EMI. Equipment Manufacturing, Inc. SN 269,756. Pub. 7–16–68. Filed 4–21–67.

862,204. JEWEL BOX AND DESIGN. Riegel Paper Corporation. SN 275,551. Pub. 10–8–68. Filed 7–7–67.

862,205. FLUOROFLO. The Fluorocarbon Company. SN 277,828. Pub. 10–8–68. Filed 8–8–67.

862,206. SHADE. Shade Business Forms Inc. MULTIPLE CLASS (Classes 2 and 23). SN 279,685. Pub. 10–8–68. Filed 9–5–67.

862,207. SHAMROCK. Shamrock-Neatway Products, Inc. MULTIPLE CLASS (Classes 2, 13, and 23). SN 281,416. Pub. 10–8–68. Filed 9–29–67.

862,208. A & P AND DESIGN. The Great Atlantic & Pacific Tea Company, Inc. MULTIPLE CLASS (Classes 2 and 37). SN 283,595. Pub. 10–8–68. Filed 10–30–67.

862,209. ADL AND DESIGN. A.D.L. Cement Products, Inc. SN 289,754. Pub. 10–8–68. Filed 1–29–68.

862,210. HOME PRIDE AND DESIGN. The Kroger Co. SN 292,586. Pub. 10–8–68. Filed 3–6–68.

862,211. KIDD-I-OS. Lenox, Incorporated. SN 292,941. Pub. 10–8–68. Filed 3–11–68.

862,212. DI-NA-LOOP. Diamond National Corporation. SN 294,134. Pub. 10–8–68. Filed 3–26–68.

862,213. SOUP T' NUT. Thermoformed Plastics Corporation. SN 298,880. Pub. 10–8–68. Filed 5–22–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

862,214. PRESERVE GAME USE A TRAINED DOG AND DESIGN. Sporting Dog Specialties, Inc. MULTIPLE CLASS (Classes 3, 6, 8, 22, 33, 38, and 39). SN 265,134. Pub. 10–8–68. Filed 2–20–67.

862,215. GARAY. Garay & Co., Inc. MULTIPLE CLASS (Classes 3 and 39). SN 274,611. Pub. 7–9–68. Filed 6–23–67.

862,216. MILLION MILER. Eastern Case Co., Inc. SN 289,578. Pub. 10–8–68. Filed 1–25–68.

862,217. ROCK-N-CLAW. Lowe's, Inc. SN 292,114. Pub. 10–8–68. Filed 2–28–68.

Class 4 — Abrasives and Polishing Materials

862,218. GODDARD'S SHINE KEEPER. J. Goddard & Sons Limited. SN 270,569. Pub. 10–8–68. Filed 5–3–67.

862,219. MERIT. Merit Products, Inc. SN 272,077. Pub. 10–8–68. Filed 5–22–67.

862,220. TCM AND DESIGN. The Texas Construction Material Company. SN 293,754. Pub. 10–8–68. Filed 3–20–68.

862,221. BLAZE. Alberto-Culver Company. SN 302,267. Pub. 10–8–68. Filed 7–9–68.

Class 5 — Adhesives

862,222. FLEX STIK AND DESIGN. Adchem Corp. SN 271,108. Pub. 10–8–68. Filed 5–10–67.

862,223. TIRE EAL AND DESIGN. Tire Seal Chemical Corp. SN 285,872. Pub. 10–8–68. Filed 10–27–67.

862,224. SPEED-LOK AND DESIGN. Bigelow-Sanford, Inc. SN 288,407. Pub. 10–8–68. Filed 1–5–68.

Class 6 — Chemicals and Chemical Compositions

862,214. (See Class 3 for this trademark.)

862,225. VITAVAX. United States Rubber Company. SN 253,369. Pub. 8–8–67. Filed 8–29–66.

862,226. CALFLO. Johns-Manville Corporation. SN 265,637. Pub. 5–14–68. Filed 2–28–67.

862,227. EMPLEX. C. J. Patterson Company, d.b.a. Patco Products. SN 280,884. Pub. 8–6–68. Filed 9–21–67.

862,228. CORNELL AND DESIGN. The Pep Boys—Manny, Moe & Jack, d.b.a. Cornell Tire and Rubber Co. SN 285,347. Pub. 10–8–68. Filed 11–21–67.

862,229. GEVADEL. Gevaert-Agfa N.V. SN 287,692. Pub. 10–8–68. Filed 12–6–67.

862,230. KEETONE. Kee Lox Manufacturing Company. SN 288,623. Pub. 10–8–68. Filed 1–11–68.

862,231. UNIVERSAL AND DESIGN. John F. Brobst. SN 288,774. Pub. 10–8–68. Filed 1–15–68.

862,232. PRYM. Sun Chemical Corporation. SN 289,043. Pub. 10–8–68. Filed 1–17–68.

862,233. "GOOD RIDDANCE." Germain's, Inc. SN 289,185. Pub. 10–8–68. Filed 1–19–68.

862,234. ROSE GUARD. Germain's, Inc. SN 289,186. Pub. 10–8–68. Filed 1–19–68.

862,235. PROPANEX. Dawson Chemical Company. SN 289,491. Pub. 10–8–68. Filed 1–24–68.

862,236. MISTAKE OUT. Mistake Out Company. SN 289,516. Pub. 10–8–68. Filed 1–23–68.

862,237. IRGASOLVENT. Geigy Chemical Corporation. SN 289,888. Pub. 10–8–68. Filed 1–30–68.

862,238. KPL. Eastman Kodak Company. SN 290,729. Pub. 10–8–68. Filed 2–9–68.

862,239. OFA–6. Continental Oil Company. SN 290,827. Pub. 10–8–68. Filed 2–12–68.

862,240. MISCELLANEOUS DESIGN. Ciba Limited. SN 291,135. Pub. 10–8–68. Filed 2–15–68.

862,241. PREFORAN. Ciba Limited. SN 291,136. Pub. 10–8–68. Filed 2–15–68.

862,242. PENSCO. Pennsalt Chemicals Corporation. SN 292,235. Pub. 10–8–68. Filed 2–16–68.

862,243. CLAUDIUM. International Dioxcide, Inc. SN 297,739. Pub. 10–8–68. Filed 5–9–68.

862,244. CHOLE-TECH. Uni-Tech Chemical Manufacturing Company. SN 301,144. Pub. 10–8–68. Filed 6–24–68.

862,245. URI-PAK. Uni-Tech Chemical Manufacturing Company. SN 301,145. Pub. 10–8–68. Filed 6–24–68.

Class 7 — Cordage

862,246. NATIONAL. Frederick C. Halliday, d.b.a. National Cordage Company. SN 290,489. Pub. 10–8–68. Filed 2–7–68.

Class 8 — Smokers' Articles, Not Including Tobacco Products

862,214. (See Class 3 for this trademark.)

Class 9 — Explosives, Firearms, Equipments, and Projectiles

862,247. HI-PRIME. American Cyanamid Company. SN 228,972. Pub. 9–6–66. Filed 9–30–65.

862,248. BUZZ BOMB. Zenith Corporation. SN 289,854. Pub. 10–8–68. Filed 1–29–68.

862,249. ITHACAGUN AND DESIGN. Ithaca Gun Company, Incorporated, d.b.a. Ithaca and Ithaca Gun Company, Inc. SN 290,801. Pub. 10–8–68. Filed 2–12–68.

862,250. ESCORT. Bangor Punta Operations, Inc., d.b.a. Smith & Wesson. SN 302,003. Pub. 10–8–68. Filed 7–5–68.

Class 10 — Fertilizers

862,251. U–45. Agway, Inc. SN 297,017. Pub. 10–8–68. Filed 5–1–68.

862,252. LYMEBASE. Clarence R. Rex. SN 297,216. Pub. 10–8–68. Filed 5–2–68.

862,253. GREENITE. Agway, Inc. SN 297,359. Pub. 10–8–68. Filed 5–6–68.

Class 12 — Construction Materials

862,254. LESTER'S. Lester's, Inc. SN 272,837. Pub. 10–8–68. Filed 6–1–67.

862,255. G AND DESIGN. General Pools Corporation. MULTIPLE CLASS (Classes 12, 21, and 23). SN 276,597. Pub. 10–8–68. Filed 7–24–67.

862,256. CORSON METALSEAL XR 80. G. & W. H. Corson, Incorporated. SN 277,889. Pub. 10–8–68. Filed 8–9–67.

862,257. FYR-GARD. Niedermeyer-Martin Company. SN 278,155. Pub. 8–6–68. Filed 8–14–67.

862,258. SAF-T-GRATE. Metalex Corporation. SN 288,058. Pub. 10–8–68. Filed 1–4–68.

862,259. A-OK. Limbacher Paint & Color Works, Inc. SN 294,949. Pub. 8–20–68. Filed 4–4–68.

862,260. UNICOR AND DESIGN. Unicor, Inc. SN 295,684. Pub. 10–8–68. Filed 4–15–68.

862,261. DESIGN OF TWO HUMANS. Raymond Rosen & Co., Inc. SN 296,482. Pub. 10–8–68. Filed 4–16–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

862,207. (See Class 2 for this trademark.)

862,262. TEMPERFIX. Albert Lins. SN 247,936. Pub. 10–8–68. Filed 6–13–66.

862,263. SPEED FLO. Mid-States Steel and Wire Company. MULTIPLE CLASS (Classes 13 and 14). SN 266,439. Pub. 10–8–68. Filed 3–10–67.

862,264. SUPER 2XN BOWL. Koch Supplies, Inc. SN 266,667. Pub. 10–8–68. Filed 3–14–67.

862,265. CZ. Cerzel Tool & Engineering Co. MULTIPLE CLASS (Classes 13 and 23). SN 275,194. Pub. 7–9–68. Filed 7–3–67.

862,266. FLEXEQUIP. Fairey Hydraulics Limited. MULTIPLE CLASS (Classes 13 and 35). SN 277,239. Pub. 10–8–68. Filed 8–1–67.

862,267. TUBEX. Tubex Corporation. SN 278,619. Pub. 6–25–68. Filed 8–18–67.

862,268. VANCE VANVALVE. Vance Industries, Inc. SN 279,884. Pub. 10–8–68. Filed 9–7–67.

Class 14 — Metals and Metal Castings and Forgings

862,263. (See Class 13 for this trademark.)

862,269. IMPRESSUM. Bauersche Giesserei. SN 274,397. Pub. 10–8–68. Filed 6–21–67.

862,270. B & L. Bliss & Laughlin Industries Incorporated. SN 288,491. Pub. 10–8–68. Filed 1–10–68.

862,271. ALUMA COMB. Die Mesh Corp. SN 295,126. Pub. 10–8–68. Filed 4–8–68.

862,272. DSC AND DESIGN. Detroit Stoker Company. SN 295,923. Pub. 10–8–68. Filed 4–18–68.

862,273. AMETEK AND DESIGN. Ametek, Inc. SN 302,001. Pub. 10–8–68. Filed 7–3–68.

Class 15 — Oils and Greases

862,274. HESS AND DESIGN. Hess Oil & Chemical Corporation. SN 283,799. Pub. 10–8–68. Filed 10–31–67.

862,275. COPPERSKIN. R. H. Miller Company. SN 285,745. Pub. 10–8–68. Filed 11–28–67.

862,276. BIOSOL. Specialty Products Company. SN 291,782. Pub. 10–8–68. Filed 2–23–68.

862,277. BELMONT. Strauss Stores Corporation. SN 291,907. Pub. 10–8–68. Filed 2–26–68.

Class 16 — Protective and Decorative Coatings

862,278. CHAMELEON. Dale J. Franklin, d.b.a. The Colored Wax Co. SN 279,179. Pub. 10–8–68. Filed 8–28–67.

862,279. ETCHCOAT. Alpha Metals, Inc. SN 279,259. Pub. 10–8–68. Filed 8–29–67.

862,280. ROGSTONE. Dixon's Paints Limited. SN 281,461. Pub. 10–8–68. Filed 9–29–67.

862,281. OLD OAK. Robert Joseph Herbert, d.b.a. Old Oak Waterproofing. SN 286,010. Pub. 10–8–68. Filed 12–1–67.

Class 17 — Tobacco Products

862,282. MISCELLANEOUS DESIGN. Dixon & Hamilton Tobacco Suppliers, Inc. SN 282,892. Pub. 10–8–68. Filed 10–19–67.

862,283. LA CORONA AND DESIGN. The American Tobacco Company. SN 301,322. Pub. 10–8–68. Filed 6–25–68.

862,284. OTHELLO. Bayuk Cigars Incorporated. SN 301,509. Pub. 10–8–68. Filed 6–27–68.

862,285. RYO. Sutliff Tobacco Company. SN 302,022. Pub. 10–8–68. Filed 7–5–68.

862,286. REWARD. The American Tobacco Company. SN 302,277. Pub. 10–8–68. Filed 7–9–68.

Class 18 — Medicines and Pharmaceutical Preparations

862,287. DESIGN OF A MALE FIGURE. Richardson Merrell S.p.A., by merger and change of name from Istituto Chimico Eurosud S.p.A. SN 277,461. Pub. 10–8–68. Filed 8–3–67.

862,288. DUMOGEN. Evsco Pharmaceutical Co. SN 277,992. Pub. 8–20–68. Filed 8–10–67.

862,289. OVOSTAT. Organon Inc. SN 280,326. Pub. 10–8–68. Filed 9–14–67.

862,290. ALMICORTEN-V. Ciba Limited. SN 282,361. Pub. 10–8–68. Filed 10–12–67.

862,291. IMIBAN. Colgate-Palmolive Company. SN 285,996. Pub. 10–8–68. Filed 12–1–67.

862,292. TRICLOS. Colgate-Palmolive Company. SN 285,997. Pub. 10–8–68. Filed 12–1–67.

862,293. STIM-O-STAM. Durotex Chemical Company. SN 287,810. Pub. 10–8–68. Filed 12–29–67.

862,294. C–300. General Nutrition Corporation, d.b.a. Natural Sales Company. SN 288,807. Pub. 10–8–68. Filed 1–15–68.

862,295. LYSIGIN. Philips Roxane, Inc. SN 289,031. Pub. 10–8–68. Filed 1–17–68.

862,296. VETRETTES. Parke, Davis & Company. SN 294,359. Pub. 8–13–68. Filed 3–28–68.

862,297. FORTIGRO. Chas. Pfizer & Co., Inc. SN 297,740. Pub. 8–20–68. Filed 5–9–68.

Class 19 — Vehicles

862,298. COPPERLOY AND DESIGN. Copperloy Corporation. MULTIPLE CLASS (Classes 19, 23, and 50). SN 264,123. Pub. 10–8–68. Filed 2–7–67.

862,299. HATTERAS AND DESIGN. North American Rockwell Corporation, assignee of Hatteras Yacht Company. SN 278,211. Pub. 10–8–68. Filed 8–14–67.

862,300. "THE FLOAT KING." Monroe-Daniel Inc. SN 282,811. Pub. 10–8–68. Filed 10–18–67.

862,301. HATTERAS AND DESIGN. North American Rockwell Corporation, assignee of Hatteras Yacht Company. SN 285,546. Pub. 10–8–68. Filed 11–24–67.

862,302. SKI-FLEE. Trident Research & Development Corporation Limited. SN 292,030. Pub. 10–8–68. Filed 2–27–68.

862,303. HAWK. Fenton Manufacturing Corp. SN 292,563. Pub. 10–8–68. Filed 3–6–68.

862,304. SCORCHER. Fenton Manufacturing Corp. SN 292,564. Pub. 10–8–68. Filed 3–6–68.

862,305. SHARK. Fenton Manufacturing Corp. SN 292,565. Pub. 10–8–68. Filed 3–6–68.

Class 20 — Linoleum and Oiled Cloth

862,306. CAMINA. The Goodyear Tire & Rubber Company. SN 283,000. Pub. 8–20–68. Filed 10–20–67.

862,307. WEDGE-STONE. Kentile Floors Inc., SN 289,991. Pub. 10–8–68. Filed 1–31–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

862,255. (See Class 12 for this trademark.)

862,308. HP AND DESIGN. Hewlett-Packard Company. CONSOLIDATED CERTIFICATE. SN 259,919, pub. 3–12–68, filed 12–2–66, Cl. 21; SN 260,050, pub. 3–12–68, filed 12–5–66, Cl. 26; SN 259,729, pub. 6–11–68, filed 11–30–66, Cl. 44.

862 309. PORTA COLOR. General Electric Company. SN 268,723. Pub. 10–8–68. Filed 4–10–67.

862,310. ALL-COMM. Weltronic Company. SN 270,520. Pub. 10–8–68. Filed 5–2–67.

862,311. TOASTREAT. John J. Connolly. SN 273,871. Pub. 10–8–68. Filed 6–14–67.

862,312. BIPIC-2. Essex Wire Corporation. SN 274,865. Pub. 10–8–68. Filed 6–27–67.

862,313. T (DESIGN). Telesis Corporation. SN 274,901. Pub. 10–8–68. Filed 6–27–67.

862,314. PRO-TEK-ALL AND DESIGN. Harold P. Smith, d.b.a. Plains Aluminum Industries. SN 275,473. Pub. 10–8–68. Filed 7–6–67.

862,315. GO GO. The Singer Company. MULTIPLE CLASS (Classes 21, 23, 32, 36, 40, and 50). SN 277,325. Pub. 8–6–68. Filed 8–2–67.

862,316. MEMA. Teledyne, Inc. SN 278,830. Pub. 10–8–68. Filed 8–22–67.

862,317. HYDRO-AIRE. Crane Co. SN 278,877. Pub. 4–9–68. Filed 8–23–67.

862,318. NARCO AND DESIGN. Narco Scientific Industries, Inc. (Delaware corporation), by merger from Narco Scientific Industries, Inc. (New Jersey corporation). MULTIPLE CLASS (Classes 21 and 26). SN 280,362. Pub. 6–11–68. Filed 9–15–67.

862,319. ALUM-A-PAK. Sarex Corporation. SN 282,212. Pub. 8–13–68. Filed 10–10–67.

862,320. GARD. Dale Electronics, Inc. SN 284,896. Pub. 10–8–68. Filed 11–15–67.

862,321. TRAVELITE. Hartman Products. SN 285,328. Pub. 10–8–68. Filed 11–21–67.

862,322. MISCELLANEOUS DESIGN. The Raymond Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 286,396. Pub. 10–8–68. Filed 12–8–67.

862,323. COLORTONE. S & A Electronics, Inc. SN 288,118. Pub. 10–8–68. Filed 1–4–68.

862,324. LA SCALA. Klipsch and Associates, Inc. SN 291,164. Pub. 10–8–68. Filed 2–15–68.

862,325. ULTRA-GLOW. UID Electronics Corporation. SN 296,732. Pub. 10–8–68. Filed 4–26–68.

Class 22 — Games, Toys, and Sporting Goods

862,214. (See Class 3 for this trademark.)

862,326. BAT-BOMB. National Periodical Publications, assignee of Mattel, Inc. SN 243,692. Pub. 3–14–67. Filed 4–18–66.

862,327. ZEE. Zee International, Inc. SN 254,960. Pub. 10–8–68. Filed 9–22–66.

862,328. TROOPER. Rempel Mfg. Co., Inc. SN 274,346. Pub. 10–8–68. Filed 6–20–67.

862,329. APACHE. Blazon, Inc. SN 275,615. Pub. 10–8–68. Filed 7–10–67.

862,330. DESIGN OF ANCHOR AND H. Anchor Hocking Glass Corporation. SN 282,251. Pub. 10–8–68. Filed 10–11–67.

862,331. ANCHOR HOCKING. Anchor Hocking Glass Corporation. SN 282,255. Pub. 10–8–68. Filed 10–11–67.

862,332. KOHO DEVLE. Lou J. Eppinger Mfg. Co. SN 286,421. Pub. 10–8–68. Filed 12–7–67.

862,333. PICTURE BOOK TOYS. Allied Doll and Toy Corp. SN 292,662. Pub. 10–8–68. Filed 3–7–68.

862,334. FRUP. Wilbur Henry Adams. SN 292,873. Pub. 10–8–68. Filed 3–11–68.

862,335. MY SON-THE-DOCTOR. What-Cha-Ma-Call-It, Inc. SN 293,968. Pub. 10–8–68. Filed 3–22–68.

862,336. ENCORE. A. G. Spalding & Bros. Inc. SN 295,187. Pub. 10–8–68. Filed 4–8–68.

862,337. REBEL. A. G. Spalding & Bros. Inc. SN 295,188. Pub. 10–8–68. Filed 4–8–68.

862,338. TRU-CHANNEL. A. G. Spalding & Bros. Inc. SN 295,189. Pub. 10–8–68. Filed 4–8–68.

862,339. GOLF MATE AND DESIGN. ABC Industries, Inc. SN 298,670. Pub. 10–8–68. Filed 5–21–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

862,206. (See Class 2 for this trademark.)

862,207. (See Class 2 for this trademark.)

862,255. (See Class 12 for this trademark.)

862,265. (See Class 13 for this trademark.)

862,298. (See Class 19 for this trademark.)

862,315. (See Class 21 for this trademark.)

862,340. WESTFALIA - INTERNATIONAL. Gewerkschaft Eisenhuette Westfalia. SN 269,415. Pub. 10–8–68. Filed 4–18–67.

862,341. DAY AND DESIGN. Carter-Day Company. MULTIPLE CLASS (Classes 23 and 31). SN 272,328. Pub. 10–8–68. Filed 5–25–67.

862,342. INCINO-TRELL. Research-Cottrell, Inc. SN 278,242. Pub. 10–8–68. Filed 8–14–67.

862,343. PERMANEX. Sears, Roebuck and Co. SN 278,424. Pub. 10–8–68. Filed 8–16–67.

862,344. LABOUR PUMP COMPANY AND DESIGN. American Gage & Machine Company. SN 282,340. Pub. 10–8–68. Filed 10–12–67.

862,345. DUNCAN AND DESIGN. Duncan Ceramic Products, Inc. SN 285,212. Pub. 10–8–68. Filed 11–20–67.

862,346. FERT-O-BATCHER. Ferguson Industries, d.b.a. Agricultural Chemical Equipment Division. SN 289,981. Pub. 10–8–68. Filed 1–31–68.

862,347. TWIN BRUTE. B-M-B Company, Inc. SN 290,242. Pub. 10–8–68. Filed 2–5–68.

862,348. LIQUI-THERM. Liqui-Trol Systems, Inc. SN 290,962. Pub. 10–8–68. Filed 2–13–68.

862,349. LT. Liqui-Trol Systems, Inc. SN 290,963. Pub. 10–8–68. Filed 2–13–68.

862,350. UNIPAC. Liqui-Trol Systems, Inc. SN 290,964. Pub. 10–8–68. Filed 2–13–68.

862,351. CORONET AND DESIGN. "Automatic" Sprinkler Corporation of America, d.b.a. Ascoa. SN 290,996. Pub. 10–8–68. Filed 2–14–68.

862,352. TUBE-WICK. Koinzan Seed & Flying Service, Inc. SN 292,584. Pub. 10–8–68. Filed 3–6–68.

862,353. LIQUI-TROL. Liqui-Trol Systems, Inc. SN 296,850. Pub. 10–8–68. Filed 4–29–68.

Class 26 — Measuring and Scientific Appliances

862,318. (See Class 21 for this trademark.)

862,322. (See Class 21 for this trademark.)

868,308. CONSOLIDATED CERTIFICATE. See Class 21.

862,354. THERMOVISION. AGA Aktiebolag. SN 235,478. Pub. 10–8–68. Filed 12–29–65.

862,355. AC (DESIGN). Air Control, Inc. MULTIPLE CLASS (Classes 26, 32, and 34). SN 241,955. Pub. 9–26–67. Filed 3–28–66.

862,356. PERFECT. Perfect Photo, Inc. SN 255,642. Pub. 10–8–68. Filed 10–3–66.

862,357. MI AND DESIGN. Mercury Instruments, Inc. SN 257,286. Pub. 1–23–68. Filed 10–26–66.

862,358. LAVAC. Winslow Tele-Tronics, Inc. SN 265,232. Pub. 10–8–68. Filed 2–21–67.

862,359. AE (DESIGN). Adret Electronique. SN 268,135. Pub. 10–8–68. Filed 4–3–67.

862,360. ADRET ELECTRONIQUE. Adret Electronique. SN 268,136. Pub. 10–8–68. Filed 4–3–67.

862,361. PIXIE (DESIGN). OMSI/KIT, Inc., assignee of Oregon Museum of Science & Industry. SN 269,341. Pub. 10–8–68. Filed 4–17–67.

862,362. CINEMATION. Essoldomatic Limited. SN 273,878. Pub. 10–8–68. Filed 6–14–67.

862,363. WHITE ELECTRONICS AND DESIGN. White Electronic Development Corporation (1966), Limited. SN 275,716. Pub. 10–8–68. Filed 7–10–67.

862,364. PLESTAR. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 279,185. Pub. 10–8–68. Filed 8–28–67.

862,365. DURO-ZONE. Duro-Dyne Corporation. MULTIPLE CLASS (Classes 26 and 34). SN 283,512. Pub. 10–8–68. Filed 10–27–67.

862,366. SEE-ALL. Norman Industries, Inc. SN 285,048. Pub. 10–8–68. Filed 11–16–67.

862,367. THE KNOW-IT-ALL. The Citizen and Southern National Bank. SN 289,171. Pub. 10–8–68. Filed 1–19–68.

862,368. SKINNIES. Foster Grant Co., Inc. SN 290,602. Pub. 10–8–68. Filed 2–8–68.

862,369. CLINDATA. Berkeley Scientific Laboratories, Inc., assignee of Berkeley Scientific Laboratories. SN 291,244. Pub. 10–8–68. Filed 2–16–68.

862,370. ORKON. N. P. Benson Optical Company, d.b.a. Benson Optical Company. SN 301,673. Pub. 10–8–68. Filed 7–1–68.

862,371. BIRDWATCHERS AND DESIGN. The Parker Pen Company. SN 301,683. Pub. 10–8–68. Filed 7–1–68.

Class 27 — Horological Instruments

862,372. PIERRE VALLEE. Merchandisers Association, Inc., assignee of Croton Watch Co. Inc. SN 270,234. Pub. 10–8–68. Filed 4–28–67.

862,373. MIRVAINE. Mirvaine Importacao Ltda. SN 275,773. Pub. 10–8–68. Filed 7–11–67.

862,374. RACO. Southwestern Drug Corporation, d.b.a. Raco Products. SN 285,156. Pub. 10–8–68. Filed 11–17–67.

862,375. KINGMATIC HS 360. Movado Watch Agency, Inc. SN 287,448. Pub. 10–8–68. Filed 12–22–67.

Class 28 — Jewelry and Precious-Metal Ware

862,376. COSMIC THE NAME FOR FINE DIAMOND RINGS AND DESIGN. The House of Commans, Inc. SN 261,493. Pub. 10–8–68. Filed 12–27–66.

862,377. TIARA. Fred Seltzer Corporation, d.b.a. Tiara. SN 265,298. Pub. 5–14–68. Filed 2–23–67.

862,378. CHEVRON AND DESIGN. R. F. Simmons Company. SN 272,312. Pub. 7–16–68. Filed 5–24–67.

Class 30 — Crockery, Earthenware, and Porcelain

862,379. AEP. Allied English Potteries Limited. SN 255,402. Pub. 7–2–68. Filed 9–29–66.

Class 31 — Filters and Refrigerators

862,341. (See Class 23 for this trademark.)

862,380. SUPER-FREEZE. Super Freeze Company. SN 254,327. Pub. 10–8–68. Filed 9–12–66.

862,381. SGN. Saint-Gobain Techniques Nouvelles. SN 263,228. Pub. 10–8–68. Filed 1–17–67.

862,382. MICRO-MAG. Pall Corporation. SN 266,250. Pub. 10–8–68. Filed 3–8–67.

862,383. WAFLO. Pall Corporation. SN 266,251. Pub. 10–8–68. Filed 3–8–67.

862,384. HI-F. McQuay, Inc. MULTIPLE CLASS (Classes 31 and 34). SN 266,382. Pub. 10–8–68. Filed 3–10–67.

862,385. ULTRA-FREEZE. Chemetron Corporation. SN 271,768. Pub. 10–8–68. Filed 5–18–67.

862,386. ARTESIAN. Artesian Water Conditioning, Inc. SN 277,973. Pub. 10–8–68. Filed 8–10–67.

862,387. INF. Liquid Carbonic Corporation. SN 278,893. Pub. 10–8–68. Filed 8–23–67.

862,388. BEVERATOR. The Beverator Co. SN 281,679. Pub. 10–8–68. Filed 10–3–67.

862,389. SPACE PAK. Space Conditioning, Inc. SN 283,822. Pub. 10–8–68. Filed 10–31–67.

Class 32 — Furniture and Upholstery

862,315. (See Class 21 for this trademark.)

862,355. (See Class 26 for this trademark.)

862,390. SHOEWAVE. Central Fixture Manufacturing Company. SN 268,699. Pub. 10–8–68. Filed 4–10–67.

862,391. FORMWOOD AND DESIGN. Formwood Limited. SN 284,810. Pub. 7–30–68. Filed 11–14–67.

Class 33 — Glassware

862,214. (See Class 3 for this trademark.)

Class 34 — Heating, Lighting, and Ventilating Apparatus

862,355. (See Class 26 for this trademark.)

862,365. (See Class 26 for this trademark.)

862,384. (See Class 31 for this trademark.)

862,392. ROTO-SHIELD. Compak-O-Matic, Inc., assignee of Acme Welding Supply Co. SN 266,396. Pub. 10–8–68. Filed 3–10–67.

862,393. PRECISION AND DESIGN. Precision Welder and Flexopress Corp. SN 272,631. Pub. 10–8–68. Filed S.R. 5–29–67; Am. P.R. 8–8–68.

862,394. TAB GUN. Sigma Systems Corporation. SN 274,248. Pub. 10–8–68. Filed 6–19–67.

862,395. EVERKLEEN. Hardwick Stove Company. SN 274,871. Pub. 10–8–68. Filed 6–27–67.

862,396. MILROS. Alpha Metals, Inc. SN 276,515. Pub. 10–8–68. Filed 7–21–67.

862,397. ALLROS. Alpha Metals, Inc. SN 276,516. Pub. 10–8–68. Filed 7–21–67.

862,398. RELIACOR. Alpha Metals, Inc. SN 276,517. Pub. 10–8–68. Filed 7–21–67.

862,399. RELIAFOAM. Alpha Metals, Inc. SN 276,518. Pub. 10–8–68. Filed 7–21–67.

862,400. RELIAROS. Alpha Metals, Inc. SN 276,519. Pub. 10–8–68. Filed 7–21–67.

862,401. ECONOFLUX. Alpha Metals, Inc. SN 279,258. Pub. 10–8–68. Filed 8–29–67.

862,402. HYDROSOLV. Alpha Metals, Inc. SN 279,260. Pub. 10–8–68. Filed 8–29–67.

862,403. UNI-COR. Alpha Metals, Inc. SN 279,262. Pub. 10–8–68. Filed 8–29–67.

862,404. TOOL-ALLOY. The McKay Company. SN 279,562. Pub. 10–8–68. Filed 9–1–67.

862,405. SOFT ARC. Stanley Kessler & Co., Inc. SN 285,354. Pub. 10–8–68. Filed 11–21–67.

862,406. JENN-AIR. Jenn-Air Corporation. SN 289,693. Pub. 10–8–68. Filed 1–26–68.

862,407. VVV (DESIGN). Jenn-Air Corporation. SN 290,100. Pub. 10–8–68. Filed 2–1–68.

862,408. HUMIDIMATIC. Skuttle Manufacturing Company. SN 290,903. Pub. 10–8–68. Filed 2–12–68.

862,409. ROLL-A-FLOW. Pullman, Incorporated. SN 291,098. Pub. 10–8–68. Filed 2–14–68.

862,410. VERTIBROIL 90. Vertibroil Inc. SN 291,819. Pub. 10–8–68. Filed 2–26–68.

862,411. ULTRA-CLEAN. Caloric Corporation. SN 300,775. Pub. 10–8–68. Filed 6–19–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

862,266. (See Class 13 for this trademark.)

862,412. UNI-SEAL. Technical Rubber Company, Inc. SN 281,132. Pub. 10–8–68. Filed 9–25–67.

862,413. CLUB AND DESIGN. Regional Services Corporation, assignee of The General Tire & Rubber Company. SN 285,919. Pub. 10–8–68. Filed 11–30–67.

862,414. HPG. The Armstrong Rubber Company. SN 294,004. Pub. 10–8–68. Filed 3–25–68.

862,415. HERCUPREME. The Hercules Tire & Rubber Company. SN 294,047. Pub. 10–8–68. Filed 3–25–68.

862,416. POLARPREME. The Hercules Tire & Rubber Company. SN 297,562. Pub. 10–8–68. Filed 5–7–68.

862,417. HERCUGRIP. The Hercules Tire & Rubber Company. SN 298,725. Pub. 10–8–68. Filed 5–21–68.

862,418. LIFETIME TUBE. "Automatic" Sprinkler Corporation of America, d.b.a. Blaze Guard Manufacturing. SN 301,305. Pub. 10–8–68. Filed 6–25–68.

Class 36 — Musical Instruments and Supplies

862,315. (See Class 21 for this trademark.)

862,419. BIBLE VOICE. Bible Voice, Inc. SN 223,515. Pub. 10–8–68. Filed 7–16–65.

862,420. AUDIOVOX. Custom Imports, Inc. SN 233,885. Pub. 3–21–67. Filed 12–3–65.

862,421. PLAZA. Atlas Films, Inc. SN 271,905. Pub. 10–8–68. Filed 5–19–67.

862,422. SOLO AND DESIGN. Solo, Inc. SN 285,069. Pub. 10–8–68. Filed 11–16–67.

862,423. SKREEMER AND DESIGN. Walter E. Smith. SN 288,125. Pub. 10–8–68. Filed 1–4–68.

862,424. GUITALIA. M. Lidell, Inc. SN 288,332. Pub. 10–8–68. Filed 1–8–68.

862,425. MISCELLANEOUS DESIGN. Sanders Associates, Inc. SN 297,604. Pub. 10–8–68. Filed 5–7–68.

Class 37 — Paper and Stationery

862,208. (See Class 2 for this trademark.)

862,426. SECURITY PARCHMENT. H. A. Friend & Company, Inc. SN 199,986. Pub. 10–8–68. Filed 8–17–64.

862,427. DATA PRINT. International Paper Company. SN 271,148. Pub. 7–30–68. Filed 5–10–67.

862,428. PANTA-WRAP. The Pantasote Company of New York, Inc. SN 297,210. Pub. 10–8–68. Filed 5–2–68.

Class 38 — Prints and Publications

862,214. (See Class 3 for this trademark.)

862,429. ZENITH. Zenith Radio Corporation. SN 271,001. Pub. 10–8–68. Filed 5–8–67.

862,430. BIOGRAPH PICTURES. Biograph Pictures, Inc. SN 272,346. Pub. 10–8–68. Filed 5–25–67.

862,431. DODGE CONSTRUCTION NEWS. McGraw-Hill, Inc. SN 275,678. Pub. 10–8–68. Filed 7–10–67.

862,432. TRAVELAGE. The Reuben H. Donnelley Corporation. SN 278,377. Pub. 10–8–68. Filed 8–16–67.

862,433. RATE-O-GRAM. Roy S. Thompson, Jr. SN 279,424. Pub. 7–30–68. Filed 8–30–67.

862,434. YOUNG AMERICA TODAY. Photocompositors, Inc. SN 284,235. Pub. 10–8–68. Filed 11–6–67.

862,435. COMPUSTRENGTH. Chartcraft Inc. SN 285,648. Pub. 10–8–68. Filed 11–27–67.

862,436. TRADE WINDS. Leonard M. Sive and Associates, Inc. SN 288,358. Pub. 10–8–68. Filed 1–8–68.

862,437. THE BINNACLE. Johnston & Associates, Inc. SN 293,987. Pub. 8–20–68. Filed 3–25–68.

862,438. THE COMPUTER STRATEGIST. Shields & Company. SN 294,559. Pub. 10–S–68. Filed 4–1–68.

862,439. SAFETY-TORIALS. Charles T. Evans, d.b.a. Safety Motivations. SN 295,794. Pub. 10–8–68. Filed 4–17–68.

862,440. CTBS. McGraw-Hill, Inc. SN 298,664. Pub. 10–8–68. Filed 4–19–68.

862,441. NEWSREEL. McGraw-Hill, Inc. SN 302,195. Pub. 10–8–68. Filed 7–8–68.

Class 39 — Clothing

862,214. (See Class 3 for this trademark.)

862,215. (See Class 3 for this trademark.)

862,442. PANTEX. Youthcraft Creations, Inc. SN 112,010. Pub. 6–4–63. Filed 1–17–61.

862,443. PERMA-NEAT. Riverside Manufacturing Company. SN 268,619. Pub. 7–16–68. Filed 4–7–67.

862,444. DHOBI. Dhobi Weatherlux Limited. SN 271,775. Pub. 8–6–68. Filed 5–18–67.

862,445. DENNY MURRAY. Commonwealth Shoe & Leather Co., Inc. SN 272,359. Pub. 10–8–68. Filed 5–25–67.

862,446. HARTLY AND DESIGN. Hartly, Inc. SN 272,831. Pub. 10–8–68. Filed 6–1–67.

862,447. LANE MATE. Ted C. Deutsch, d.b.a. Lane Mate Manufacturing Company. SN 288,196. Pub. 10–8–68. Filed 1–5–68.

862,448. COCOANUT WEAVE. Wembley, Inc. SN 288,247. Pub. 10–8–68. Filed 1–5–68.

862,449. KR. Kayser-Roth Corporation. SN 291,407. Pub. 10–8–68. Filed 2–19–68.

862,450. TREND-II. Huntley of York, Ltd. SN 291,870. Pub. 10–8–68. Filed 2–26–68.

862,451. RAMARIO. Palizzio, Inc. SN 292,954. Pub. 10–8–68. Filed 3–11–68.

862,452. TUPPENCE. Apparel, Inc. SN 293,896. Pub. 10–8–68. Filed 3–22–68.

862,453. CRAIG/CRAELY. Litt-Gluck Co., Inc. SN 294,291. Pub. 10–8–68. Filed 3–27–68.

862,454. WESTVALE. Plymouth Wholesale Corporation. SN 294,748. Pub. 10–8–68. Filed 4–2–68.

862,455. "KIPPER." Berkley Cravats Ltd. SN 301,032. Pub. 10–8–68. Filed 6–21–68.

Class 40 — Fancy Goods, Furnishings, and Notions

862,315. (See Class 21 for this trademark.)

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

862,456. PATTERN-MAKER. Wedgwood Fabrics. SN 290,674. Pub. 10–8–68. Filed 2–8–68.

862,457. VARDON. Allied Stores Corporation. SN 297,157. Pub. 10–8–68. Filed 5–2–68.

Class 43 — Thread and Yarn

862,458. SOFT-LOFT. Grove Silk Company. SN 274,062. Pub. 8–27–68. Filed 6–16–67.

862,459. BRUNSWICK AND DESIGN. Brunswick Worsted Mills, Inc. SN 275,623. Pub. 6–4–68. Filed 7–10–67.

862,460. RSM RIVERSIDE MILLS RIVERSPUN. Riverside Mills. SN 277,796. Pub. 8–13–68. Filed 8–8–67.

Class 44 — Dental, Medical, and Surgical Appliances

868,308. CONSOLIDATED CERTIFICATE. See Class 21.

862,461. HOLCO. Holco Instrument Corporation. SN 266,380. Pub. 10–8–68. Filed 3–7–67.

862,462. III. American Hospital Supply Corporation, assignee of Institutional Industries, Inc. SN 269,316. Pub. 10–8–68. Filed 4–17–67.

862,463. STA-CATH. Hospitaline Products, Inc. SN 273,777. Pub. 10–8–68. Filed 6–13–67.

862,464. VITALOGRAPH. Vitalograph Limited. SN 276,374. Pub. 10–8–68. Filed 7–19–67.

862,465. NITRALYZER. Med-Science Electronics Inc. SN 287,567. Pub. 10–8–68. Filed 12–26–67.

862,466. SINUSIZER. Kaz Manufacturing Co., Inc. SN 287,921. Pub. 10–8–68. Filed 1–2–68.

862,467. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,366. Pub. 4–30–68. Filed 1–8–68.

Class 45 — Soft Drinks and Carbonated Waters

862,468. FLAVOR-STRIPE. Canada Dry Corporation. SN 280,145. Pub. 8–6–68. Filed 9–12–67.

Class 46 — Foods and Ingredients of Foods

862,469. HARVEY'S. Harvey Nunley Hudson. SN 249,643. Pub. 7–23–68. Filed 7–6–66.

862,470. CALEO FARMS. Packers Marketing Corporation. SN 268,988. Pub. 7–16–68. Filed 4–12–67.

862,471. CHICKEN LICKENS. Keebler Company. SN 272,498. Pub. 8–27–68. Filed 5–26–67.

862,472. SEELAROM. Bush Boake Allen Inc. SN 272,575. Pub. 10–8–68. Filed 5–29–67.

862,473. TATER BOATS. American Home Products Corporation. SN 272,685. Pub. 10–8–68. Filed 5–31–67.

862,474. TATER THINS. American Home Products Corporation. SN 272,686. Pub. 10–8–68. Filed 5–31–67.

862,475. GOLDEN RICH. Creative Bakery Specialists, Inc. SN 273,376. Pub. 4–16–68. Filed 6–8–67.

862,476. "EVERY BITE A FRESH TREAT." A. H. Robins Company, Incorporated. SN 276,352. Pub. 6–18–68. Filed 7–19–67.

862,477. HO HOS. Continental Baking Company. SN 278,952. Pub. 7–23–68. Filed 8–24–67.

862,478. CERES. Bauer & Loewy Trading Corp. SN 279,522. Pub. 8–6–68. Filed 9–1–67.

862,479. GRAN MUCHACHO BRAND AND DESIGN. Chanticleer, Inc. SN 283,097. Pub. 8–20–68. Filed 10–23–67.

862,480. SCHOOL WHIP AND DESIGN. Allen Foods, Inc. SN 284,881. Pub. 8–13–68. Filed 11–15–67.

862,481. FLAVOR TREE. Flavor Tree Foods, Inc. SN 287,904. Pub. 4–30–68. Filed 1–2–68.

862,482. PANTASTIC. International Industries, Inc. SN 291,872. Pub. 7–23–68. Filed 2–26–68.

862,483. SWISS LAD. Sanna, Inc. SN 292,160. Pub. 5–28–68. Filed 2–29–68.

862,484. KELLOGG'S 1005. Kellogg Company. SN 300,087. Pub. 10–8–68. Filed 6–10–68.

Class 50 — Merchandise Not Otherwise Classified

862,298. (See Class 19 for this trademark.)

862,315. (See Class 21 for this trademark.)

862,485. BLAZ'R BANNERS AND DESIGN. Creative Screen Print Corp. SN 274,120. Pub. 10–8–68. Filed 6–16–67.

862,486. TRAIL KIT. Roy W. Walholm, Jr., d.b.a. Survival Research Laboratories. SN 277,232. Pub. 10–8–68. Filed 7–31–67.

Class 51 — Cosmetics and Toilet Preparations

862,487. CURL-ON. The Nestle-Le Mur Company. SN 285,045. Pub. 10–8–68. Filed 11–16–67.

862,488. FONDNESS. Clairol Incorporated. SN 285,113. Pub. 10–8–68. Filed 11–17–67.

862,489. GOODNESS. Clairol Incorporated. SN 285,115. Pub. 10–8–68. Filed 11–17–67.

862,490. BEACH BALL. The Gillette Company, d.b.a. The Toni Company. SN 285,325. Pub. 10–8–68. Filed 11–21–67.

862,491. THE QUIET TOUCH. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 289,740. Pub. 10–8–68. Filed 1–29–68.

862,492. 100 LASHES. Helene Curtis Industries, Inc. SN 292,272. Pub. 10–8–68. Filed 3–1–68.

862,493. HOME RUN. Amrcan, Inc. SN 297,733. Pub. 10–8–68. Filed 5–9–68.

862,494. SLAP SHOT. Amrcan, Inc. SN 297,736. Pub. 10–8–68. Filed 5–9–68.

862,495. EYE WHISKERS. Helena Rubinstein, Inc. SN 298,293. Pub. 10–8–68. Filed 5–16–68.

862,496. MILK SILK. Chesebrough-Pond's Inc. SN 300,518. Pub. 10–8–68. Filed 6–17–68.

Class 52 — Detergents and Soaps

862,491. (See Class 51 for this trademark.)

862,497. COLD-STEAM. Madison Chemical Corporation. SN 261,503. Pub. 7–23–68. Filed 12–27–66.

862,498. ROYAL BLEND. Plough, Inc. SN 275,299. Pub. 8–20–68. Filed 7–3–67.

862,499. HURRI-KLEEN. Hurricane Car Wash Systems, Inc. SN 281,511. Pub. 10–8–68. Filed 9–7–67.

862,500. SCOOP! Madison Chemical Corporation. SN 283,679. Pub. 5–28–68. Filed 10–30–67.

862,501. MHRA. Michigan Hot Rod Association. SN 285,438. Pub. 10–8–68. Filed 11–22–67.

862,502. TAM O'SHANTER. Avon Products, Inc. SN 291,344. Pub. 10–8–68. Filed 2–19–68.

862,503. NU-LOOK. Roberts and Porter, Inc. SN 292,297. Pub. 10–8–68. Filed 3–1–68.

862,504. GLAZ-A-WAY. Roberts and Porter, Inc. SN 292,300. Pub. 10–8–68. Filed 3–1–68.

862,505. SHAPE-UP. Madison Chemical Corporation. SN 292,945. Pub. 10–8–68. Filed 3–11–68.

862,506. CLEARLY GREAT. American Home Products Corporation. SN 299,618. Pub. 10–8–68. Filed 6–4–68.

862,507. PARTY. Simoniz Company. SN 301,142. Pub. 10–8–68. Filed 6–24–68.

862,508. COMPUTE. Lever Brothers Company. SN 301,309. Pub. 10–8–68. Filed 6–25–68.

862,509. CARESS. Lever Brothers Company. SN 302,019. Pub. 10–8–68. Filed 7–5–68.

862,510. FUN TIME. Alberto-Culver Company. SN 302,180. Pub. 10–8–68. Filed 7–8–68.

Service Marks

Class 100 — Miscellaneous

862,511. SEE. Auerbach Electronics Corporation, d.b.a. Auerbach Corporation. SN 246,147. Pub. 10–8–68. Filed 5–20–66.

862,512. PHOTO-CORLOG. Geo-Engineering Development Company. SN 252,375. Pub. 10–8–68. Filed 8–15–66.

862,513. POLE CONTROL AND DESIGN. Pole Control, Inc. SN 252,414. Pub. 10–8–68. Filed 8–15–66.

862,514. MAP AND DESIGN. Medical Assistance Programs, Inc. SN 256,573. Pub. 10–8–68. Filed 10–17–66.

862,515. UML INC. AND DESIGN. United Medical Laboratories, Inc. SN 260,690. Pub. 10–8–68. Filed 12–13–66.

862,516. ROOMMATES UNLIMITED. Roommates Unlimited. SN 267,062. Pub. 10–8–68. Filed 3–17–67.

862,517. CQ AND DESIGN. Crichton Corporation. SN 268,046. Pub. 10–8–68. Filed 4–12–67.

862,518. EMI. Equipment Manufacturing, Inc. SN 269,755. Pub. 7–23–68. Filed 4–21–67.

862,519. DESIGN OF AN ANIMATED HOT DOG. Shake 'n' Dog, Inc. SN 273,120. Pub. 10–8–68. Filed 6–5–67.

862,520. WATER AUDIT. Calgon Corporation (Delaware corporation), assignee of Calgon corporation (Pennsylvania corporation). SN 274,307. Pub. 4–23–68. Filed 6–20–67.

862,521. DAVY JONES. Paul Jones. SN 275,270. Pub. 10–8–68. Filed 7–3–67.

862,522. MULTRONICS. Multronics, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 276,028. Pub. 8–6–68. Filed 7–14–67.

862,523. STEAK AND ALE. Steak and Ale, Inc. SN 282,220. Pub. 8–27–68. Filed 10–10–67.

862,524. AHRA. American Hot Rod Association, Incorporated. SN 283,411. Pub. 10–8–68. Filed 10–26–67.

862,525. CID. Confidential International Detection, Inc. SN 283,874. Pub. 10–8–68. Filed 11–1–67.

862,526. INTERNATIONAL CONSUMER CREDIT ASSOCIATION ETC. AND DESIGN. International Consumer Credit Association. SN 284,916. Pub. 10–8–68. Filed 11–15–67.

Class 101 — Advertising and Business

862,527. PARTNERS-IN-PROFIT. Rust-Oleum Corporation. SN 265,923. Pub. 4–30–68. Filed 3–3–67.

862,528. LB AND DESIGN. Louis Berger, Inc. SN 276,526. Pub. 10–8–68. Filed 7–21–67.

862,529. MASTER CERTIFIED WALLCOVERINGS DEALER AND DESIGN. Wallcoverings Council Incorporated. SN 284,853. COLLECTIVE MARK. Pub. 10–8–68. Filed 11–14–67.

862,530. THE SEWING NOOK. I & L Knitting Mills, Inc. SN 298,384. Pub. 10–8–68. Filed 5–17–68.

Class 102 — Insurance and Financial

862,531. FIRSTCARD. The First National Bank of Chicago. SN 259,097. Pub. 6–25–68. Filed 11–21–66.

Class 103 — Construction and Repair

862,522. (See Class 100 for this trademark.)

862,532. WE CAN EXTERMINATE ANY BUG IN THE WORLD EXCEPT THE LITTERBUG AND DESIGN. Lystads, Incorporated. SN 257,717. Pub. 10–8–68. Filed 11–1–66.

862,533. COLORED PENNANTS. The Cessna Aircraft Company. SN 263,814. Pub. 10–8–68. Filed 2–2–67.

862,534. H AND DESIGN. Thomas M. Hamill, d.b.a. Hamill & Company. SN 277,168. Pub. 10–8–68. Filed 7–31–67.

862,535. TW AND DESIGN. Transworld Drilling Company. SN 281,329. Pub. 10–8–68. Filed 9–27–67.

862,536. MISCELLANEOUS DESIGN. Continental Office Trailers, Inc. SN 281,869. Pub. 10–8–68. Filed 10–5–67.

862,537. NU GLO. Jones Fur Service. SN 289,243. Pub. 10–8–68. Filed 1–22–68.

Class 105 — Transportation and Storage

862,538. JETWEST AND DESIGN. Thos. Cook & Son Incorporated. SN 268,583. Pub. 10–8–68. Filed 4–7–67.

Class 106 — Material Treatment

862,539. DELA-SHAPE. Cold Spring Bleachery. SN 285,395. Pub. 10–8–68. Filed 11–22–67.

862,540. PERM-O-BOND. Materials Improvement, Inc. SN 286,274. Pub. 10–8–68. Filed 12–5–67.

Class 107 — Education and Entertainment

862,541. PUNJAB FOLK DANCE TROUPE OF INDIA. Punjab Folk Dance Troupe of India. SN 270,412. Pub. 10–8–68. Filed 5–1–67.

862,542. NAME DROPPERS. WBNS-TV, Inc. SN 277,577. Pub. 10–8–68. Filed 8–4–67.

862,543. TOWN AND COUNTRY DANCE CLUB AND DESIGN. Stephen Bernat. SN 283,507. Pub. 10–8–68. Filed 10–27–67.

862,544. THE MUSIC FACTORY. Metro-Goldwyn-Mayer Inc. SN 286,768. Pub. 10–8–68. Filed 12–12–67.

862,545. COUNSEL AND DESIGN. Computer College Selection Service, Inc. SN 288,282. Pub. 7–23–68. Filed 1–8–68.

862,546. CV COLORVISION STUDIOS AND DESIGN. I.P.S., Inc., d.b.a. Colorvision Studios. SN 301,011. Pub. 10–8–68. Filed 6–21–68.

Collective Membership Marks

Class 200

862,547. THESPIAN AND DESIGN. The National Thespian Society. SN 279,564. Pub. 10–8–68. Filed 9–1–67.

862,548. ARIS ETC. AND DESIGN. Affiliated Registered Institutional Suppliers. SN 284,791. Pub. 10–8–68. Filed 11–14–67.

862,549. ARIS. Affiliated Registered Institutional Suppliers. SN 284,792. Pub. 10–8–68. Filed 11–14–67.

862,550. THE SAMOTHRACE CLUB. The National Federation of Business and Professional Women's Clubs, Inc. of the United States of America. SN 285,040. Pub. 10–8–68. Filed 11–16–67.

862,551. THE NIKE CLUB. The National Federation of Business and Professional Women's Clubs, Inc. of the United States of America. SN 285,041. Pub. 10–8–68. Filed 11–16–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

862,553. The West Bend Company, West Bend, Wis. SN 268,265. Filed P.R. 4–4–67; Am. S.R. 10–9–68.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Aluminum and Stainless Steel Cooking Utensils—Namely, Saucepans, Double Boilers, Casseroles, Skillets, Dutch Ovens, Egg Poachers, Griddles, Baking Pans, Cookie Sheets, Mixing Bowls, Tea Kettles, Percolators, Broilers, French Fryers, Ovenettes (Int. Cl. 21).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Cooking Utensiles—Namely, Coffee Makers, Toasters, Skillets, Roasters, Griddles, Bean Pot Sets, Patio Service Sets, Service Ranges, and Corn Poppers (Int. Cl. 11).

First use May 1966.

SECTION 2

Class 4 — Abrasives and Polishing Materials

862,552. Standard International Corporation, Andover, Mass. SN 276,589. Filed P.R. 7–21–67; Am. S.R. 10–3–68.

DUST 'N WIPE

For Furniture Polish (Int. Cl. 3).
First use July 5, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

862,553. See Section 1 (Combined Certificate).

Class 21 — Electrical Apparatus, Machines, and Supplies

862,553. See Section 1 (Combined Certificate).

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

862,554. Eversharp, Inc., Milford, Conn. SN 282,326. Filed P.R. 10–12–67; Am. S.R. 10–14–68.

THIN LINE

For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Sept. 20, 1967.

862,555. Eversharp, Inc., Milford, Conn. SN 282,327. Filed P.R. 10–12–67; Am. S.R. 10–14–68.

SLIM LINE

For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Sept. 20, 1967.

862,556. Perma-Sharp Manufacturing Corp., New York, N.Y. SN 294,894. Filed 4–4–68.



For Razor Blades (Int. Cl. 8).
First use December 1966.

Class 38 — Prints and Publications

862,557. The Independent Electronic Music Center, Inc., Trumansburg, N.Y. SN 276,785. Filed P.R. 7–13–67; Am. S.R. 8–20–68.

ELECTRONIC MUSIC REVIEW

For Magazine (Int. Cl. 16).
First use Dec. 16, 1965.

Class 44 — Dental, Medical, and Surgical Appliances

862,558. Da-Laur, Incorporated, West Roxbury, Mass. SN 284,625. Filed 11–13–67.

DESIGNED BY OPHTHALMOLOGISTS FOR OPHTHALMOLOGISTS

For Ophthalmic Appliances—Namely, Examining Tables, Optical Kinetic Drums, Tangent Screens, Electrical Controls for Ophthalmological Equipment, Automatic Astigmatic Dials, Flashlights, Fixation Lights, Binocular Vision Testers, Chart Changers and Occluders (Int. Cl. 10).
First use at least as early as February 1962.

TRADEMARK REGISTRATIONS RENEWED

32,301. UNEEDA. Cl. 46 (Int. Cl. 30). 12–27–1898.
70,021. ODOL. Cl. 51 (Int. Cl. 3). 7–21–08.
71,005. ZENO. Cl. 46 (Int. Cl. 30). 10–20–08.
71,222. "EL VERSO" ETC. AND DESIGN. Cl. 17 (Int. Cl. 34). 11–10–08.
248,860. GOLD-SEAL. Cl. 20 (Int. Cl. 27). 10–30–28.
249,390. KREML. Cl. 51 (Int. Cl. 3). 11–13–28.
251,301. DECALIN. Cl. 6 (Int. Cl. 1). 1–1–29.
251,517. "ROMAN" AND REPRESENTATION OF ROMAN SOLDIER IN A CIRCULAR DESIGN. Cl. 46 (Int. Cl. 30). 1–8–29.
251,546. BADGER'S. Cl. 23 (Int. Cl. 9). 1–8–29.
251,547. BADGER'S. Cl. 23 (Int. Cls. 1 and 23). 1–8–29.
252,077. CAR BAR. Cl. 50 (Int. Cl. 22). 1–22–29.
252,873. AGRITOL. Cl. 9 (Int. Cl. 13). 2–19–29.
253,402. PROTECTO. Cl. 9 (Int. Cl. 34). 2–26–29.
254,497. MILES STANDISH. Cl. 46 (Int. Cl. 29). 3–26–29.
254,517. YUMA MESA. Cl. 46 (Int. Cl. 31). 3–26–29.
255,018. LEE. Cl. 39 (Int. Cl. 25). 4–9–29.
439,678. TAKE-ME-ALONG. Cl. 2 (Int. Cl. 21). 7–13–48.
439,713. PROX-PEEL. Cl. 16 (Int. Cl. 2). 7–13–48.
440,497. GRAPILLON. Cl. 45 (Int. Cl. 32). 9–7–48.
441,126. CORONET. Cl. 21 (Int. Cls. 9 and 11). 10–19–48.
441,193. PILLSBURY AND DESIGN. Cl. 46 (Int. Cl. 30). 11–2–48.
441,246. RITA. Cl. 46 (Int. Cl. 29). 11–9–48.
441,513. SON-CHIEF. Cl. 21 (Int. Cls. 9 and 11). 11–30–48.
441,610. VISI-DRAFT. Cl. 26 (Int. Cl. 9). 12–14–48.
441,835. DON. Cl. 46 (Int. Cl. 30). 1–18–49.
442,110. FLURSOL. Cl. 6 (Int. Cl. 5). 2–22–49.
501,205. CARNIVAL. Cl. 46 (Int. Cl. 30). 7–27–48.
501,892. AMULINE. Cl. 52 (Int. Cl. 3). 8–31–48.

502,462. MINIMAX. Cl. 9 (Int. Cl. 13). 9–28–48.
502,845. VERSON AND DESIGN. Cl. 23 (Int. Cl. 7). 10–12–48.
502,885. TRIBUNO. Cl. 47 (Int. Cl. 33). 10–12–48.
502,917. PETRIES. Cl. 39 (Int. Cl. 25). 10–12–48.
502,988. AR AND DESIGN. Cl. 25 (Int. Cl. 6). 10–19–48.
502,993. FOTO CAST. Cl. 38 (Int. Cl. 16). 10–19–48.
503,071. QUALITY KLEENWELL BRAND AND DESIGN. Cl. 4 (Int. Cl. 3). 10–19–48.
503,116. KRUSE. Cl. 3 (Int. Cl. 18). 10–19–48.
503,161. MISS SIMPLICITY. Cl. 28 (Int. Cl. 14). 10–19–48.
503,280. EYE-PETIZED. Cl. 38 (Int. Cl. 16). 10–19–48.
503,296. HANG-A-FILE. Cl. 32 (Int. Cls. 16 and 20). 10–19–48.
503,337. LIFE. Cl. 6 (Int. Cl. 3). 10–26–48.
503,340. HOROWITZ MARGARETEN AND DESIGN. Cl. 46 (Int. Cl. 30). 10–26–48.
503,388. VITAMINERALS. Cl. 44 (Int. Cl. 5). 10–26–48.
503,654. ROMPSTERS. Cl. 39 (Int. Cl. 25). 11–2–48.
503,658. BABE LE ROI AND DESIGN. Cl. 39 (Int. Cl. 25). 11–2–48.
503,953. PRD AND DESIGN. Cl. 26 (Int. Cl. 9). 11–16–48.
504,103. PICKARD. Cl. 30 (Int. Cl. 21). 11–23–48.
504,291. LINDQUIST. Cl. 44 (Int. Cl. 10). 11–30–48.
504,296. GOODYEAR. Cl. 35 (Int. Cl. 12). 11–30–48.
504,314. SAFE-T-STAK. Cl. 32 (Int. Cl. 20). 11–30–48.
504,345. CLYDESDALE. Cl. 37 (Int. Cl. 16). 11–30–48.
504,346. SHELBURNE. Cl. 37 (Int. Cl. 16). 11–30–48.
504,347. MILLBROOK. Cl. 37 (Int. Cl. 16). 11–30–48.
504,734. FOLLOMATIC AND DESIGN. Cl. 26 (Int. Cl. 9). 12–14–48.
505,221. SEALTITE. Cl. 13 (Int. Cl. 6). 12–28–48.
505,229. MYVAX. Cl. 6 (Int. Cl. 5). 12–28–48.
505,409. R. Cl. 5 (Int. Cl. 1). 1–4–49.
505,417. WRIGHT'S. Cl. 40 (Int. Cl. 26). 1–4–49.
505,601. CARISSIMA. Cl. 42 (Int. Cl. 24). 1–11–49.
505,604. GABRIGAN. Cl. 42 (Int. Cl. 24). 1–11–49.
505,605. VEL BOUFFANT. Cl. 42 (Int. Cl. 24). 1–11–49.
505,608. FAVOROY. Cl. 42 (Int. Cl. 24). 1–11–49.
505,796. SPRABRONZE. Cl. 14 (Int. Cl. 6). 1–18–49.
505,797. SPRABABBITT. Cl. 14 (Int. Cl. 6). 1–18–49.
505,798. SPRABRASS. Cl. 14 (Int. Cl. 6). 1–18–49.
505,920. STEAM-PAK. Cl. 34 (Int. Cl. 11). 1–25–49.
505 977. BAKER'S. Cl. 45 (Int. Cl. 32). 1–25–49.
506,069. NARASWEET. Cl. 46 (Int. Cl. 31). 1–25–49.
506,130. YOUTHCRAFT. Cl. 39 (Int. Cl. 25). 2–1–49.
506,186. SIR WALTER. Cl. 39 (Int. Cl. 25). 2–1–49.
506,271. PLAYROY. Cl. 42 (Int. Cl. 24). 2–1–49.
506,342. CASKETVEL. Cl. 42 (Int. Cl. 24). 2–1–49.
506,417. DIVERSEY. Cl. 6 (Int. Cl. 53). 2–8–49.
506,431. ROIDIN. Cl. 6 (Int. Cl. 5). 2–8–49.
506,432. NIBESOL. Cl. 18 (Int. Cl. 5). 2–8–49.
506,455. SKY-TOP. Cl. 46 (Int. Cl. 31). 2–8–49.
506,462. DIVERSEY. Cl. 16 (Int. Cl. 23). 2–8–49.
506,539. VACUUMSTAT. Cl. 26 (Int. Cl. 9). 2–8–49.
506,540. FELICITY. Cl. 46 (Int. Cl. 31). 2–8–49.
506,639. BAKER'S. Cl. 6 (Int. Cl. 2). 2–15–49.
506,678. BLUE RIBBON AND DESIGN. Cl. 26 (Int. Cl. 9). 2–15–49.
506,709. AIR LEADER. Cl. 42 (Int. Cl. 24). 2–15–49.
506,802. BRENDA STAR REPORTER. Cl. 38 (Int. Cl. 16). 2–22–49.
506,803. TOPPS. Cl. 46 (Int. Cl. 30). 2–22–49.
506,813. PRESTO. Cl. 13 (Int. Cl. 21). 2–22–49.
506,865. OLD THOMPSON. Cl. 49 (Int. Cl. 33). 2–22–49.
506,872. BAZOOKA AND DESIGN. Cl. 46 (Int. Cl. 30). 2–22–49.
507,016. WAYNESROY. Cl. 42 (Int. Cl. 24). 2–22–49.
507,036. PLICAST. Cl. 12 (Int. Cl. 19). 2–22–49.
507,369. CJ. Cl. 14 (Int. Cl. 6). 3–8–49.
507,375. ELECTRIC LIGHT & POWER. Cl. 38 (Int. Cl. 16). 3–8–49.
507,417. KENNEL KLUB. Cl. 3 (Int. Cl. 18). 3–8–49.
507,519. PRISCILLA. Cl. 2 (Int. Cl. 21). 3–15–49.
507,577. ENZINGER. Cl. 31 (Int. Cl. 11). 3–15–49.
507,603. MONARCH AND DESIGN. Cl. 23 (Int. Cl. 7). 3–15–49.
507,628. GATES. Cl. 21 (Int. Cl. 9). 3–15–49.
507,638. WHATMAN. Cl. 31 (Int. Cl. 16). 3–15–49.
507,653. V–8. Cl. 46 (Int. Cl. 32). 3–15–49.
507,664. CEM. Cl. 23 (Int. Cl. 7). 3–15–49.
507,665. CEMCO. Cl. 23 (Int. Cl. 7). 3–15–49.
507,774. FLAVAROMA. Cl. 46 (Int. Cl. 1). 3–22–49.
507,840. 1098 LA. Cl. 25 (Int. Cl. 6). 3–22–49.
507,841. 1011. Cl. 25 (Int. Cl. 6). 3–22–49.
507,842. 1001 EB. Cl. 25 (Int. Cl. 6). 3–22–49.
507,843. 999. Cl. 25 (Int. Cl. 6). 3–22–49.
507,844. 1022. Cl. 25 (Int. Cl. 6). 3–22–49.
507,854. CASTLE FILMS AND DESIGN. Cl. 26 (Int. Cl. 9). 3–22–49.
507,859. KWIK-BLAK. Cl. 6 (Int. Cl. 1). 3–22–49.
507,877. CLAPP'S. Cl. 46 (Int. Cls. 20 and 30). 3–22–49.
507,906. POTTER & JOHNSON. Cl. 23 (Int. Cl. 7). 3–22–49.
508,137. STAR AND DESIGN. Cl. 32 (Int. Cl. 20). 4–5–49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

74,709. REPRESENTATION OF HEAD OF GRAIN. Cl. 23. 8–3–09.
160,695. BLUE RIBBON FICTION AND DESIGN. Cl. 38. 10–24–22.
394,070. OLDTOWN TRAMPEZE AND DESIGN. Cl. 39. 3–17–42.
396,229. BEAVERCREST. Cl. 39. 6–30–42.
396,641. WHITE FLAME. Cl. 51. 7–28–42.
397,392. LAUNDERWELL. Cl. 40. 9–8–42.
398,125. FELLOWS. Cl. 18. 10–13–42.
399,135. DANDY-LINE. Cl. 11. 12–15–42.
399,229. FLIGHT-LUSTRE. Cl. 4. 12–22–42.
411,664. CELL-U-BLANKET. Cl. 12. 1–30–45.

The following registrations issued Nov. 6, 1962

740,154. RESILO-PAK. Cl. 1.
740,156. NYL-PRO. Cl. 1.
740,160. FURYMEL. Cl. 1.
740,161. "DURATANNED." Cl. 1.
740,167. PERMALOFT. Cl. 1.
740,168. POXI-PAK. Cl. 1.
740,169. GENSOY. Cl. 1.
740,170. LAMITAN. Cl. 1.
740,171. PALMER METHOD. Cl. 1.
740,173. U.S. DALEX. Cl. 1.
740,182. NEUSOL. Cl. 6.
740,183. SEED SENTRY. Cl. 6.
740,188. 2 GEM AND DESIGN. Cl. 6.
740,195. THERMOPRINT. Cl. 6.
740,199. PINCH. Cl. 6.
740,202. EX-SOL. Cl. 6.
740,209. GIFT OF DREAM. Cl. 18.
740,210. ORIPAC. Cl. 18.
740,211. WELLCOVAX. Cl. 18.
740,214. DIVASO. Cl. 18.
740,215. SPASMOREL. Cl. 18.
740,217. ELAN. Cl. 18.
740,220. DANCING FEET AND DESIGN. Cl. 18.
740,224. ACOTRAL. Cl. 18.
740,226. STANOPASTE. Cl. 18.
740,229. PHENOXALID. Cl. 18.
740,231. NATRITOPE. Cl. 18.
740,235. TOTAVAR. Cl. 18.
740,241. THIAVER. Cl. 18.
740,247. CROSS CUT PUZZLE. Cl. 22.
740,252. AUTO-EYE. Cl. 26.
740,254. LOGICARD. Cl. 26.
740,255. DATA RAY. Cl. 26.
740,257. FUJIYA. Cl. 36.
740,258. STEREOMONIC. Cl. 36.
740,259. SERVICE-AIDE. Cl. 37.
740,262. CERT-A-CHECK. Cl. 37.
740,271. SBI. Cl. 38.
740,284. GIANDUIA AND DESIGN. Cl. 46.
740,296. WHIPPETS "5 TO 1" TOPPING. Cl. 46.
740,297. STRUCOL. Cl. 46.
740,301. DAN-VIKING. Cl. 46.
740,303. REPRESENTATION OF A CHEF WITH "A" ON CHEF'S HAT AND ITALIAN CALLIGRAPHY. Cl. 46.

740,304. NORWAY NORMA BRAND AND DESIGN. Cl. 46.
740,309. V.I.P. Cl. 46.
740,313. M.V. Cl. 46.
740,314. CANTEEN. Cl. 46.
740,315. GENPRO. Cl. 46.
740,320. DOUGH-MOGENIZED. Cl. 46.
740,323. BLANCHARD'S HAWAIIAN CRUISE SCREWDRIVER AND DESIGN. Cl. 49.
740,327. TANTALLON. Cl. 49.
740,330. LUMIPLIX. Cl. 51.
740,331. SATIN JEUNE. Cl. 51.
740,337. GLO & BEHOLD. Cl. 51.
740,351. KARALENE. Cl. 52.
740,353. SMART. Cl. 52.
740,355. EX-SOIL. Cl. 52.
740,357. STEREO-MONIC. Cl. 100.
740,361. REPRESENTATION OF ANSUL MAN FIGURE. Cl. 100.
740,366. LINDE. Cl. 100.
740,373. TOWERS AND DESIGN. Cl. 101.
740,374. AMERICAN PARENTS GUILD. Cl. 101.
740,375. TIMELY SHOPPING GUIDE AND DESIGN. Cl. 101.
740,379. MEDCOMP. Cl. 101.
740,381. THE HOMESAVER PLAN. Cl. 102.
740,382. I.D. AND DESIGN. Cl. 102.
740,383. INA AGENCY BUILDER. Cl. 102.
740,386. INSURE/MENTS. Cl. 102.
740,388. ADVENT HOMES. Cl. 103.
740,392. SOUNTIFIC RADIO. Cl. 104.
740,396. NEVADARAMA. Cl. 105.
740,397. VOODOO SAFARIS. Cl. 105.
740,401. CARIBBEAN CRUISE LINES AND DESIGN. Cl. 105.
740,402. VAC-CAD. Cl. 106.
740,404. PERMA BRITE. Cl. 106.
740,405. PICTURE PROTECTION AND DESIGN. Cl. 106.
740,406. BRIEFHAND WORKSHOPS. Cl. 107.
740,407. "SCHOOL-ON-THE-ROAD." Cl. 107.
740,408. REPRESENTATION OF TWO HANDS. Cl. 107.
740,413. A.I.D. FOR BETTER HEALTH, ETC. AND DESIGN. Cl. 200.
740,415. POLYFIBER. Cl. 7.
740,421. YOUR WORLD. Cl. 38.
740,422. PERFUME-AROMA. Cl. 38.
740,425. CURL KEEPER. Cl. 39.

Section 18

774,888. WRAP-LOK. Cl. 21. 8–11–64.
811,410. MAJOR-DENT. Cl. 44. 7–19–66.
836,602. BRONCHODIL. Cl. 18. 10–10–67.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

71,217. COMET. Cl. 2. 11–10–08. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

COMET

249,344. FORD. Cl. 10. 11–13–28. Ford Motor Company, Dearborn, Mich. Amended: In the statement, column 1, line 8, "sulphate" is deleted and *containing inorganic* is inserted, and in column 2, line 5, after "1919" *and others* is inserted.

250,072. FORD. Cl. 33. 11–27–28. Ford Motor Company, Dearborn, Mich. Amended: In the statement, column 1, line 8, "plate glass" is deleted and *sheet and float glass* is inserted, and in column 2, line 5, after "1919" *and others* is inserted.

410,471. NF AND DESIGN. Cl. 14. 11–28–44. National Forge and Ordnance Company. National Forge Company, Irvine, Pa. Amended to appear:

NF

441,285. POWELL. Cl. 13. 11–9–48. The Wm. Powell Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 9, "antomatic" should be deleted and *automatic* should be inserted.

741,013. CRAFT MASTER "THE ART OF CREATIVE RELAXATION" AND DESIGN. Cl. 50. 11–20–62. Palmer-Pann Corporation. Craft Master Corporation, Toledo, Ohio. Amended to appear:

Craft Master
"The Art of Creative Relaxation"

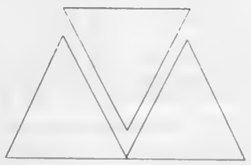
838,183. COPYTONE. Cl. 6. 11–7–67. Copystatics Manufacturing Corporation, Miami Lakes, Fla. Corrected: In the statement, column 1, line 1, "Florida" should be deleted and *New York* should be inserted.

855,687. BLACO-STRIP. Cl. 52. 8–27–68. Baron Blakeslee, Inc., Chicago, Ill. Corrected:

BLACO-STRIP

855,958. AUTOMAZING AND DESIGN. Cl. 23. 9–3–68. Industrial Concepts Incorporated, Bernardsville, N.J. Corrected: In the statement, column 2, line 1, "and" should be deleted and *an* should be inserted.

859,087. MISCELLANEOUS DESIGN. Cl. 102. 10–22–68. The Marquette National Bank of Minneapolis, doing business as Marquette National Bank, Minneapolis, Minn. Corrected:



859,141. DIXON'S FAMOUS CHILI. Cl. 100. 10–22–68. Leonard J. Totta, doing business as Dixon's Famous Chili Parlor, Kansas City, Mo. Corrected:

DIXON'S FAMOUS CHILI

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

63,643. 9 AND DESIGN. Cl. 6. Frank A. Hoppe. 7–2–07. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

538,880. CORTRIM. Cl. 12. Ralph G. Spiegle, doing business as Cortrim Lumber Company. 3–6–51. New Cert. Sec. 7(c) to Cortrim Hardwood Parts Company, Bristol, Tenn.

634,741. HOPPE'S. Cl. 15. Frank A. Hoppe, Inc. 9–25–56. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

637,326. HOPPE'S. Cl. 9. Frank A. Hoppe, Inc. 11–20–56. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

638,180. HOPPE'S. Cl. 52. Frank A. Hoppe, Inc. 12–4–56. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

668,543. TORGINOL. Cl. 12. Torginol Vertriebsgesellschaft Berlin G.m.b.H. 10–21–58. New Cert. Sec. 7(c) to Torginol of America, Inc., Montebello, Calif.

684,286. HOPPE'S. Cl. 6. Frank A. Hoppe, Inc. 9–1–59. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

690,385. SOLVENT 9 AND DESIGN. Cl. 6. Frank A. Hoppe, Inc. 12–29–59. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

702,459. HOPPE'S ETC. AND DESIGN. Cl. 15. Frank A. Hoppe, Inc. 8–9–60. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

703,841. VANGUARD. Cl. 20. Congoleum-Nairn Inc. 9–6–60. New Cert. Sec. 7(c) to Viking Carpets, Inc., New York, N.Y.

717,070. HOPPE'S AND DESIGN. Cl. 9. Frank A. Hoppe, Inc. 6–20–61. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

753,784. FLITE. Cl. 46. Bowey's Inc. 7–30–63. New Cert. Sec. 7(c) to Mead Johnson & Company, Evansville, Ind.

797,716. AMERICAN AND DESIGN. Cl. 21. American Battery, Inc. 10–19–65. New Cert. Sec. 7(c) to Contract Manufacturing, Inc., Tampa, Fla.

800,152. HOPPE'S AND DESIGN. Cl. 9. Frank A. Hoppe, Inc. 12–14–65. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

825,293. PROGRESSION. Cl. 30. Noritake Co., Inc. 3–7–67. New Cert. Sec. 7(c) to Nippon Toki Kabushiki Kaisha, Nishiku, Nagoya, Japan.

836,591. HOPPE'S AND DESIGN. Cl. 15. Frank A. Hoppe, Inc. 10–10–67. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

839,455. HOPPE'S. Cl. 16. Frank A. Hoppe, Inc. 11–28–68. New Cert. Sec. 7(c) to Penguin Industries, Inc., Parkesburg, Pa.

849,671. FIESTA. Cl. 12. International Paper Company. 5–28–68. New Cert. Sec. 7(c) to Standard Packaging Corporation, New York, N.Y.

INDEX OF REGISTRANTS

DECEMBER 24, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ABC Industries, Inc., Milwaukee, Wis. 862,339, pub. 10–8–68. Cl. 22.

A.D.L. Cement Products, Inc., Portland, Mich. 862,209, pub. 10–8–68. Cl. 2.

Abbott Laboratories, North Chicago, Ill. 740,217, canc. Cl. 18.

Acme Welding Supply Co. : *See*—
Compak-O-Matic, Inc.

Adams Rite Mfg. Co., assignee of Arthur R. Adams, to Adams Rite Mfg. Co., Glendale, Calif. 502,988, ren. 12–24–68. Cl. 25.

Adams, Wilbur H., New York, N.Y. 862,334, pub. 10–8–68. Cl. 22.

Adchem Corp., Westbury, N.Y. 862,222, pub. 10–8–68. Cl. 5.

Adret Electronique, Paris, France. 862,359–60, pub. 10–8–68. Cl. 26.

Advent Homes : *See*—
Lewis, Harold D.

Affiliated Registered Institutional Suppliers, Chicago, Ill. 862,-548–9, pub. 10–8–68. Cl. 200.

Aga Aktiebolag, Stockholm-Lidingo, Sweden. 862,354, pub. 10–8–68. Cl. 26.

Agricultural Chemical Equipment Division : *See*—
Ferguson Industries.

Agway, Inc., De Witt, N.Y. 862,251, pub. 10–8–68. Cl. 10.

Agway, Inc., De Witt, N.Y. 862,253, pub. 10–8–68. Cl. 10.

Air Control, Inc., Norristown, Pa. 862,335, pub. 9–26–67. Multiple Class (Classes 26, 32, and 34).

Aktieselskabet Matador Food & Export Co., Charlottenlund, near Copenhagen, Denmark. 740,301, canc. Cl. 46.

Alberto-Culver Co., Melrose Park, Ill. 862,221, pub. 10–8–68. Cl. 4.

Alberto-Culver Co., Melrose Park, Ill. 862,510, pub. 10–8–68. Cl. 52.

Allen Foods, Inc., St. Louis, Mo. 862,480, pub. 8–13–68. Cl. 46.

Allied Doll & Toy Corp., Brooklyn, N.Y. 862,333, pub. 10–8–68. Cl. 22.

Allied English Potteries Ltd., Stoke-On-Trent, England. 862,-379, pub. 7–2–68. Cl. 30.

Allied Publishers, Inc., Portland, Oreg. 740,406, canc. Cl. 107.

Allied Stores Corp., New York, N.Y. 862,457, pub. 10–8–68. Cl. 42.

Alpha Metals, Inc., Jersey City, N.J. 862,279, pub. 10–8–68. Cl. 16.

Alpha Metals, Inc., Jersey City, N.J. 862,396–403, pub. 10–8–68. Cl. 34.

American Bakeries Co., Chicago, Ill. 740,320, canc. Cl. 46.

American Battery, Inc., to Contract Mfg., Inc., Tampa, Fla. 797,716, new cert. Cl. 21.

American Cyanamid Co., Wayne, N.J. 862,247, pub. 9–6–66. Cl. 9.

American Gage & Machine Co., Elkhart, Ind. 862,344, pub. 10–8–68. Cl. 23.

American Home Foods, Inc., assor. to Chef Boy-Ar-Dee Quality Foods, Inc., Milton, Pa., now by change of name American Home Foods, Inc., New York and Rochester, to Duffy-Mott Co., Inc., New York, N.Y. 507,877, ren. 12–24–68. Cl. 46.

American Home Products Corp., New York, N.Y. 862,473–4, pub. 10–8–68. Cl. 46.

American Home Products Corp., New York, N.Y. 862,506, pub. 10–8–68. Cl. 52.

American Hospital Supply Corp., Evanston, Ill., from Institutional Industries, Inc., Cincinnati, Ohio. 862,462, pub. 10–8–68. Cl. 44.

American Hot Rod Association, Inc., Kansas City, Mo. 862,-524, pub. 10–8–68. Cl. 100.

American Parents Guild : *See*—
Weinberg, Jacob L.

American Tobacco Co., The, New York, N.Y. 862,283, pub. 10–8–68. Cl. 17.

American Tobacco Co., The, New York, N.Y. 862,286, pub. 10–8–68. Cl. 17.

Ametek, Inc., New York, N.Y. 862,273, pub. 10–8–68. Cl. 14.

Amrcan, Inc., Chicago, Ill. 862,493–4, pub. 10–8–68. Cl. 51.

Anadite Inc., South Gate, Calif. 740,402, canc. Cl. 106.

Anchor Hocking Glass Corp., Lancaster, Ohio. 862,330–1, pub. 10–8–68. Cl. 22.

Ansul Chemical Co., Marinette, Wis. 740,361, canc. Cl. 100.

Apparel, Inc., Mebane, N.C. 862,452, pub. 10–8–68. Cl. 39.

Armanino, G., & Son, Inc., San Francisco, Calif. 740,303, canc. Cl. 46.

Armstrong Cork Co., Lancaster, Pa. 740,154, canc. Cl. 1.

Armstrong Rubber Co., The, West Haven, Conn. 862,414, pub. 10–8–68. Cl. 35.

Artesian Water Conditioning, Inc., Flint, Mich. 862,386, pub. 10–8–68. Cl. 31.

Ascoa : *See*—
"Automatic" Sprinkler Corp. of America.

Association of Independent Druggists, Inc., Philadelphia, Pa. 740,413, canc. Cl. 200.

Atlas Films, Inc., New York, N.Y. 862,421, pub. 10–8–68. Cl. 36.

Atmore & Son, Inc., Jersey City, N.J. 254,497, ren. 12–24–68. Cl. 46.

Auerbach Corp. : *See*—
Auerbach Electronics Corp.

Auerbach Electronics Corp., d.b.a. Auerbach Corp., Philadelphia, Pa. 862,511, pub. 10–8–68. Cl. 100.

"Automatic" Sprinkler Corp. of America : *See*—
Badger Fire Extinguisher Co.

"Automatic" Sprinkler Corp. of America, d.b.a. Ascoa, Elmira, N.Y. 862,351, pub. 10–8–68. Cl. 23.

"Automatic" Sprinkler Corp. of America, d.b.a. Blaze Guard Mfg., Cleveland, Ohio. 862,418, pub. 10–8–68. Cl. 35.

Avon Products, Inc., New York, N.Y. 862,502, pub. 10–8–68. Cl. 52.

B-M-B Co., Inc., Holton, Kans. 862,347, pub. 10–8–68. Cl. 23.

Badger Fire Extinguisher Co., Boston, Mass., to "Automatic" Sprinkler Corp. of America, d.b.a. Badger Fire Extinguisher Division, Ranson, W. Va. 251,546–7, ren. 12–24–68. Cl. 23.

Badger Fire Extinguisher Division : *See*—
Badger Fire Extinguisher Co.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 862,199, pub. 10–8–68. Cl. 1.

Baker Extract Co., Springfield, Mass., to McCormick & Co., Inc., Baltimore, Md. 505,977, ren. 12–24–68. Cl. 45.

Baker Extract Co., Springfield, Mass., to McCormick & Co., Inc., Baltimore, Md. 506,639, ren. 12–24–68. Cl. 6.

Balston, W. & R., Ltd., Maidstone, England. 507,638, ren. 12–24–68. Cl. 31.

Bangor Punta Operations, Inc., d.b.a. Smith & Wesson, Springfield, Mass. 862,250, pub. 10–8–68. Cl. 9.

Baron Blakeslee, Inc., Chicago, Ill. 855,687, cor. Cl. 52.

Bauer & Loewy Trading Corp., New York, N.Y. 862,478, pub. 8–6–68. Cl. 46.

Bauersche Giesserei, Frankfurt am Main, Germany. 862,269, pub. 10–8–68. Cl. 14.

Bayuk Cigars Inc., Philadelphia, Pa. 862,284, pub. 10–8–68. Cl. 17.

Beaver Shirt Mfg. Co., Inc., New York, N.Y. 396,229, canc. Cl. 39.

Behner Travel, Inc., Monroe, Mich. 740,407, canc. Cl. 107.

Bennett Pumps Corp., to John Wood Co., Muskegon, Mich. 252,077, ren. 12–24–68. Cl. 50.

Benson, N. P., Optical Co., d.b.a. Benson Optical Co., Minneapolis, Minn. 862,370, pub. 10–8–68. Cl. 26.

Benson Optical Co. : *See*—
Benson, N. P., Optical Co.

Berger, Louis, Inc., Harrisburg, Pa. 862,528, pub. 10–8–68. Cl. 101.

Berkley Cravats Ltd., New York, N.Y. 862,455, pub. 10–8–68. Cl. 39.

Berkeley Scientific Laboratories : *See*—
Berkeley Scientific Laboratories, Inc.

Berkeley Scientific Laboratories, Inc., from Berkeley Scientific Laboratories, Berkeley, Calif. 862,369, pub. 10–8–68. Cl. 26.

Bernat, Stephen, Tucson, Ariz. 862,543, pub. 10–8–68. Cl. 107.

Beverator Co., The, Aurora, Ill. 862,388, pub. 10–8–68. Cl. 31.

Bible Voice, Inc., Van Nuys, Calif. 862,419, pub. 10–8–68. Cl. 36.

Bigelow-Sanford, Inc., New York, N.Y. 862,224, pub. 10–8–68. Cl. 5.

Biograph Pictures, Inc., Oakland, N.J. 862,430, pub. 10–8–68. Cl. 38.

Blanchard Importing & Distributing Co., Inc., Boston, Mass. 740,323, canc. Cl. 49.

Blaze Guard Mfg. : *See*—
"Automatic" Sprinkler Corp. of America.

Blazon, Inc., Akron, Ohio. 862,329, pub. 10–8–68. Cl. 22.

Bliss & Laughlin Industries Inc., Oak Brook, Ill. 862,270, pub. 10–8–68. Cl. 14.

Blue Channel Corp., The, Port Royal, S.C. 740,297, canc. Cl. 46.

Bowey's Inc., to Mead Johnson & Co., Evansville, Ind. 753,-784, new cert. Cl. 46.

Brobst, John F., St. Clair Shores, Mich. 862,231, pub. 10–8–68. Cl. 6.

Brunswick Worsted Mills, Inc., Moosup, Conn. 862,459, pub. 6–4–68. Cl. 43.

Bubbles, Inc., to Topps Chewing Gum, Inc., to Topps Chewing Gum, Inc., Brooklyn, N.Y. 506,872, ren. 12–24–68. Cl. 46.

Bush Boake Allen Inc., Emerson, N.J. 862,472, pub. 10–8–68. Cl. 46.

Caffarel Prochet, Torino, Italy. 740,284, canc. Cl. 46.

Cahners Publishing Co., Inc. : *See*—
Electrical Publications, Inc.

Calgon Corp., from Calgon Corp., Pittsburgh, Pa. 862,520, pub. 4–23–68. Cl. 100.

Caloric Corp., Topton, Pa. 862,411, pub. 10–8–68. Cl. 34.

Campbell Soup Co. : *See*—
Standard Brands Inc.

Canada Dry Corp., New York, N.Y. 862,468, pub. 8–6–68. Cl. 45.

Canadian Hoechst Ltd., Montreal, Quebec, Canada. 862,196, pub. 10–8–68. Cl. 1.
Caprio Bros., Dunmore, Pa. 740,210, canc. Cl. 18.
Caribbean Cruise Lines, Inc., Washington, D.C. 740,401, canc. Cl. 105.
Carter-Day Co., Minneapolis, Minn. 862,341, pub. 10–8–68. Multiple Class (Classes 23 and 31).
Central Fixture Mfg. Co., St. Louis, Mo. 862,390, pub. 10–8–68. Cl. 32.
Cert-A-Check, Inc., Denver, Colo. 740,262, canc. Cl. 37.
Cerzel Tool & Engineering Co., Chicago, Ill. 862,265, pub. 7–9–68. Multiple Class (Classes 13 and 23).
Cessna Aircraft Co., The, Wichita, Kans. 862,533, pub. 10–8–68. Cl. 103.
Chanticleer, Inc., Miami, Fla. 862,479, pub. 8–20–68, Cl. 46.
Chaplin, W. H., & Co. Ltd., London, England. 740,327, canc. Cl. 49.
Chartcraft Inc., Larchmont, N.Y. 862,435, pub. 10–8–68. Cl. 38.
Chemetron Corp., Chicago, Ill. 862,385, pub. 10–8–68. Cl. 31.
Chesebrough-Pond's Inc., New York, N.Y. 862,496, pub. 10–8–68. Cl. 51.
Chicago Sanitary Products Co., Chicago, Ill. 503,071, ren. 12–24–68. Cl. 4.
Chicago Tribune Co.: *See*—
Tribune Co.
Chicopee Mfg. Corp., d.b.a. Refined Products Co., New Brunswick, N.J. 740,351, canc. Cl. 52.
Chill Products Corp., Ltd., Los Angeles, Calif., to Universal Foods Corp., Milwaukee, Wis. 441,835, ren. 12–24–68. Cl. 46.
Ciba Ltd., Basel, Switzerland. 862,240–1, pub. 10–8–68. Cl. 6.
Ciba Ltd., Basel, Switzerland. 862,290, pub. 10–8–68. Cl. 18.
Citizen & Southern National Bank, The, Atlanta, Ga. 862,367, pub. 10–8–68. Cl. 26.
Clairol Inc., New York, N.Y. 862,488–9, pub. 10–8–68. Cl. 51.
Clairol Inc., New York, N.Y. 862,491, pub. 10–8–68. Multiple Class (Classes 51 and 52).
Clark Bros. Felt Co., Fort Worth, Tex. 862,197, pub. 6–11–68. Cl. 1.
Clifford-Jacobs Forging Co., Champaign, Ill. 507,369, ren. 12–24–68. Cl. 14.
Cold Spring Bleachery, Yardley, Pa. 862,539, pub. 10–8–68. Cl. 106.
Colgate-Palmolive Co., New York, N.Y. 862,291–2, pub. 10–8–68. Cl. 18.
Colored Wax Co., The: *See*—
Franklin, Dale J.
Colorvision Studios: *See*—
I.P.S., Inc.
Commonwealth Shoe & Leather Co., Inc., Whitman, Mass. 862,445, pub. 10–8–68. Cl. 39.
Compak-O-Matic, Inc., Aislip, Ill., from Acme Welding Supply Co., Chicago, Ill. 862,392, 10–8–68. Cl. 34.
Computer College Selection Service, Inc., Pittsfield, Mass. 862,545, pub. 7–23–68. Cl. 107.
Confidential International Detection, Inc., New York, N.Y. 862,525, pub. 10–8–68. Cl. 100.
Congoleum Industries, Inc.: *See*—
Congoleum-Nairn, Inc.
Congoleum-Nairn, Inc., to Congoleum Industries, Inc., Kearny, N.J. 248,860, ren. 12–24–68. Cl. 20.
Congoleum-Nairn, Inc., to Viking Carpets, Inc., New York, N.Y. 703,841, new cert. Cl. 20.
Connaught Medical Research Laboratories, University of Toronto: *See*—
Governors of the University of Toronto, The.
Connolly, John J. New York, N.Y. 862,311, pub. 10–8–68. Cl. 21.
Continental Baking Co., Rye, N.Y. 862,477, pub. 7–23–68. Cl. 46.
Continental Office Trailers, Inc., Baltimore, Md. 862,536, pub. 10–8–68. Cl. 103.
Continental Oil Co., Ponca City, Okla. 862,239, pub. 10–8–68. Cl. 6.
Contract Mfg., Inc.: *See*—
American Battery, Inc.
Cook, Thos., & Son Inc., New York, N.Y. 862,538, pub. 10–8–68. Cl. 105.
Copperloy Corp., Cleveland, Ohio. 862,298, pub. 10–8–68. Multiple Class (Classes 19, 23, and 50).
Copystatics Mfg. Corp., Miami Lakes, Fla. 838,183, cor. Cl. 6.
Cornell Tire & Rubber Co.: *See*—
Pep Boys—Manny, Moe & Jack, The.
Corson, G., & W. H., Inc., Plymouth Meeting, Pa. 862,256, pub. 10–8–68. Cl. 12.
Cortrim Hardwood Parts Co.: *See*—
Spiegle, Ralph G.
Cortrim Lumber Co.: *See*—
Spiegle, Ralph G.
Cowles Chemical Co., Cleveland, Ohio. 740,182, canc. Cl. 6.
Craddock-Terry Shoe Corp., Lynchburg, Va. 506,186, ren. 12–24–68. Cl. 39.
Crane Co., New York, N.Y. 862,317, pub. 4–9–68. Cl. 21.
Creative Bakery Specialists, Inc., Youngstown, Ohio. 862,475, pub. 4–16–68. Cl. 46.
Creative Screen Print Corp., Clarksville, Tenn. 862,485, pub. 10–8–68. Cl. 50.
Crichton Corp., Milwaukee, Wis. 862,517, pub. 10–8–68. Cl. 100.
Crompton Co., New York, N.Y. 505,601, ren. 12–24–68. Cl. 42.
Crompton Co., New York, N.Y. 505,604–5, ren. 12–24–68. Cl. 42.
Crompton Co., New York, N.Y. 505,608, ren. 12–24–68. Cl. 42.
Crompton Co., New York, N.Y. 506,271, ren. 12–24–68. Cl. 42.
Crompton Co., New York, N.Y. 506,342, ren. 12–24–68. Cl. 42.
Crompton Co., New York, N.Y. 506,709, ren. 12–24–68. Cl. 42.
Crompton Co., New York, N.Y. 507,016, ren. 12–24–68. Cl. 42.
Croton Watch Co. Inc.: *See*—
Merchandisers Association, Inc.
Crown Cork & Seal Co., Inc., Philadelphia, Pa. 507,664–5, ren. 12–24–68. Cl. 23.
Curtis, Helene, Industries, Inc., Chicago, Ill. 862,492, pub. 10–8–68. Cl. 51.
Custom Imports, Inc., New York, N.Y. 862,420, pub. 3–21–67. Cl. 36.
Da-Laur, Inc., West Roxbury, Mass. 862,558. Cl. 44.
Dale Electronics, Inc., Columbus, Nebr. 862,320, pub. 10–8–68. Cl. 21.
Dawson Chemical Co., Houston, Tex. 862,235, pub. 10–8–68. Cl. 6.
Deisel-Wemmer Co., The, Lima, Ohio, to National Cigar Co., Frankfort, Ind. 71,222, ren. 12–24–68. Cl. 17.
Detroit Stoker Co., Monroe, Mich. 862,272, pub. 10–8–68. Cl. 14.
Deutsch, Ted C., d.b.a. Lane Mate Mfg. Co., Cincinnati, Ohio. 862,447, pub. 10–8–68. Cl. 39
Dhobi Weatherlux Ltd., Oldham, England. 862,444, pub. 8–6–68. Cl. 39.
Diamond International Corp.: *See*—
Diamond Match Co., The.
United States Printing & Lithograph Co., The.
Diamond Match Co., The, Chicago, Ill., to Diamond International Corp., New York, N.Y. 253,402, ren. 12–24–68. Cl. 9.
Diamond National Corp., New York, N.Y. 862,212, pub. 10–8–68. Cl. 2.
Dick Broadcasting Co., Inc., d.b.a. Radio Station WIVK, Bearden, Tenn. 740,392, canc. Cl. 104.
Die Mesh Corp., Pelham, N.Y. 862,271, pub. 10–8–68. Cl. 14.
Diebold, Inc., Canton, Ohio. 504,314, ren. 12–24–68. Cl. 32.
Distillation Products, Inc., Wilmington, Del., and Rochester, N.Y., to Eastman Kodak Co., Rochester, N.Y. 505,229, ren. 12–24–68. Cl. 6.
Diversey Corp., The, Chicago, Ill. 506,417, ren. 12–24–68. Cl. 6.
Diversey Corp., The, Chicago, Ill. 506,462, ren. 12–24–68. Cl. 16.
Dixon & Hamilton Tobacco Suppliers, Inc., Kinston, N.C. 862,282, pub. 10–8–68. Cl. 17.
Dixon's Paints Ltd., Barking, Essex, England. 862,280, pub. 10–8–68. Cl. 16.
Donnelley, Reuben H., Corp., The, New York, N.Y. 862,432, pub. 10–8–68. Cl. 38.
Duffy-Mott Co., Inc.: *See*—
American Home Foods, Inc.
Duncan Ceramic Products, Inc., Fresno, Calif. 862,345, pub. 10–8–68. Cl. 23.
Du Pont de Nemours, E. I., & Co.: *See*—
Newport Mfg. Co.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 252,873, ren. 12–24–68. Cl. 9.
Duriron Co., Inc., The: *See*—
Enzinger Union Corp.
Duro-Dyne Corp., Farmingdale, N.Y. 862,365, pub. 10–8–68. Multiple Class (Classes 26 and 34).
Durotex Chemical Co., Weatherford, Okla. 862,293, pub. 10–8–68. Cl. 18.
Dwyer, F. W., Mfg. Co.: *See*—
Dwyer, Frank W.
Dwyer, F. W., Mfg. Co., Inc.: *See*—
Dwyer, Frank W.
Dwyer, Frank W., d.b.a. F. W. Dwyer Mfg. Co., to F. W. Dwyer Mfg. Co., Chicago, Ill., to F. W. Dwyer Mfg. Co., Inc., Michigan City, Ind. 441,610, ren. 12–24–68. Cl. 26.
Eastern Case Co., Inc., Maspeth, N.Y. 862,216, pub. 10–8–68. Cl. 3.
Eastman Kodak Co.: *See*—
Distillation Products, Inc.
Eastman Kodak Co., Rochester, N.Y. 862,238, pub. 10–8–68. Cl. 6.
Eisenstadt Mfg. Co., St. Louis, Mo. 507,519, ren. 12–24–68. Cl. 2.
Electrical Publications, Inc., Chicago, Ill., to Cahners Publishing Co., Inc., Boston, Mass. 507,375, ren. 12–24–68. Cl. 38.
Enzinger Union Corp., Angola, N.Y., to The Duriron Co., Inc., Dayton, Ohio. 507,577, ren. 12–24–68. Cl. 31.
Eppinger, Lou J., Mfg. Co., Dearborn, Mich. 862,332, pub. 10–8–68. Cl. 22.
Equipment Mfg., Inc., Warren, Mich. 862,203, pub. 7–16–68. Cl. 2.
Equipment Mfg., Inc., Warren, Mich. 862,518, pub. 7–23–68. Cl. 100.
Essex Wire Corp., Fort Wayne, Ind. 862,312, pub. 10–8–68. Cl. 21.
Essoldomatic Ltd., London, England. 862,362, pub. 10–8–68. Cl. 26.
Evans, Charles T., d.b.a. Safety Motivations, Newton, Pa. 862,439, pub. 10–8–68. Cl. 38.
Eversharp, Inc., Milford, Conn. 862,554–5. Cl. 23.
Evsco Pharmaceutical Co., Oceanside, N.Y. 862,288, pub. 8–20–68. Cl. 18.
Fairey Hydraulics Ltd., Heston, Middlesex, England. 862,266, pub. 10–8–68. Multiple Class (Classes 13 and 35).

Farber, Louis H., Chicago, Ill., to Sheller-Globe Corp., Toledo, Ohio. 503,296, ren. 12–24–68. Cl. 32.
Fellows Medical Mfg. Co., Inc., Detroit, Mich. 398,125, canc. Cl. 18.
Fenton Mfg. Corp., Gardena, Calif. 862,303–5, pub. 10–8–68. Cl. 19.
Ferguson Industries, d.b.a. Agricultural Chemical Equipment Division, Dallas, Tex. 862,346, pub. 10–8–68. Cl. 23.
Fifty State Marketing Network, Inc., Chicago, Ill. 740,425, canc. Cl. 39.
First National Bank of Chicago, The, Chicago, Ill. 862,531, pub. 6–25–68. Cl. 102.
Fischer Industries, Inc., to Fischer-Davila Industries, Inc., Cincinnati, Ohio. 501,892, ren. 12–24–68. Cl. 52.
Fischer-Davila Industries, Inc.: *See*—
Fischer Industries, Inc.
Flavor Tree Foods, Inc., Melrose Park, Ill. 862,481, pub. 4–30–68. Cl. 46.
Fluorocarbon Co., The, Anabeim, Calif. 862,205, pub. 10–8–68. Cl. 2.
Ford Motor Co., Dearborn, Mich. 249,344. Am. 7(d). Cl. 10.
Ford Motor Co., Dearborn, Mich. 250,072. Am. 7(d). Cl. 33.
Formwood Ltd., Coleford, England. 862,391, pub. 7–30–68. Cl. 32.
Foster Grant Co., Inc., Leominster, Mass. 862,368, pub. 10–8–68. Cl. 26.
Foti, Leonard: *See*—
Rosa Food Products Co.
Franklin, Dale J., d.b.a. The Colored Wax Co., Fort Worth, Tex. 862,278, pub. 10–8–68. Cl. 16.
Franklin Research Co., Philadelphia, Pa., to Purex Corp., Ltd., Lakewood, Calif. 503,337, ren. 12–24–68. Cl. 6.
Friedman, Paul J., d.b.a. Timely Shopping Guide, Lancaster, Pa. 740,375, canc. Cl. 101.
Friend, H. A., & Co., Inc., Zion, Ill. 862,426, pub. 10–8–68. Cl. 37.
Fujiya Denki Kabushiki Kaisha, from Messrs. Fujiya Denki Sangyo Kabushiki Kaisha, Tokyo, Japan. 740,257, canc. Cl. 36.
Fujiya Denki Sangyo Kabushiki Kaisha: *See*—
Fujiya Denki Kabushiki Kaisha.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 862,364, pub. 10–8–68. Cl. 26.
Garay & Co., Inc., New York, N.Y. 862,215, pub. 7–9–68. Multiple Class (Classes 3 and 39).
Gates Rubber Co., The, Denver, Colo. 507,628, ren. 12–24–68. Cl. 21.
Geigy Chemical Corp., Ardsley, N.Y. 862,237, pub. 10–8–68. Cl. 6.
Gellich Tanning Co., Taunton, Mass. 740,170, canc. Cl. 1.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Electric Co., Schenectady, N.Y. 862,309, pub. 10–8–68. Cl. 21.
General Mills, Inc., Minneapolis, Minn. 740,169, canc. Cl. 1.
General Mills, Inc., Mineapolis, Minn. 740,315, canc. Cl. 46.
General Nutrition Corp., d.b.a. Natural Sales Co., Pittsburgh, Pa. 862,294, pub. 10–8–68. Cl. 18.
General Pools Corp., Addison, Ill. 862,255, pub. 10–8–68. Multiple Class (Classes 12, 21, and 23).
General Tire & Rubber Co., The: *See*—
Regional Services Corp.
Geo-Engineering Development Co., Mount Vernon, Ill. 862,512, pub. 10–8–68. Cl. 100.
Germain's, Inc., Los Angeles, Calif. 862,233–4, pub. 10–8–68. Cl. 6.
Gevaert-Agfa N.V., Mortsel, Belgium. 862,229, pub. 10–8–68. Cl. 6.
Gewerkschaft Eisenhuette Westfalia, Luenen, Germany. 862,340, pub. 10–8–68. Cl. 23.
Gift of Dream, Inc., d.b.a. Madam Boykins Hair Products Co., Birmingham, Ala. 740,209, canc. Cl. 18.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 862,490, pub. 10–8–68. Cl. 51.
Glenmore Distilleries Co., Louisville, Ky. 506,865, ren. 12–24–68. Cl. 49.
Goddard, J., & Sons Ltd., Leicester, England. 862,218, pub. 10–8–68. Cl. 4.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 504,296, ren. 12–24–68. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 862,306, pub. 8–20–68. Cl. 20.
Governors of the University of Toronto, The, d.b.a. Connaught Medical Research Laboratories, University of Toronto, Toronto, Ontario, Canada. 740,229, canc. Cl. 18.
Grapillon S.A., Mont Sur Rolle, Switzerland. 440,497, ren. 12–24–68. Cl. 45.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 501,205, ren. 12–24–68. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The: *See*—
Great Atlantic & Pacific Tea Co., The.
Great Atlantic & Pacific Tea Co., Inc., The, New York, N.Y. 862,208, pub. 10–8–68. Multiple Class (Classes 2 and 37).
Grove Silk Co., Scranton, Pa. 862,458, pub. 8–27–68. Cl. 43.
HMH Publishing Co. Inc.: *See*—
Hartfort Publications, Inc.
Halliday, Frederick C., d.b.a. National Cordage Co., Toronto, Ontario, Canada. 862,246, pub. 10–8–68. Cl. 7.
Hammermill Paper Co.: *See*—
Keith Paper Co.
Hamill & Co.: *See*—
Hamill, Thomas M.
Hamill, Thomas M., d.b.a. Hamill & Co., Kailua, Hawaii. 862,534, pub. 10–8–68. Cl. 103.
Hardwick Stove Co., Cleveland, Tenn. 862,395, pub. 10–8–68. Cl. 34.
Harshaw Chemical Co., The, Cleveland, Ohio. 740,195, canc. Cl. 6.
Hartfort Publications, Inc., New York, N.Y., from HMH Publishing Co. Inc., Chicago, Ill. 740,271, canc. Cl. 38.
Hartly, Inc., Westwood, N.J. 862,446, pub. 10–8–68. Cl. 39.
Hartman Products, Beverly Hills, Calif. 862,321, pub. 10–8–68. Cl. 21.
Hudson, Harvey N., Bremerton, Wash. 862,469, pub. 7–23–68. Cl. 46.
Hatteras Yacht Co.: *See*—
North American Rockwell Corp.
Hayes-Sammons Chemical Co., Mission, Tex. 740,183, canc. Cl. 6.
Heatbath Corp., Indian Orchard, Mass. 507,859, ren. 12–24–68. Cl. 6.
Herbert, Robert J., d.b.a. Old Oak Waterproofing, Erie, Pa. 862,281, pub. 10–8–68. Cl. 16.
Hercules Tire & Rubber Co., The, Findlay, Ohio. 862,415–7, pub. 10–8–68. Cl. 35.
Hess Oil & Chemical Corp., Perth Amboy, N.J. 862,274, pub. 10–8–68. Cl. 15.
Hewlett-Packard Co., Palo Alto, Calif. 862,308, pub. 3–12–68. Multiple Class (Classes 21, 26, and 44).
Halco Instrument Corp., New York, N.Y. 862,461, pub. 10–8–68. Cl. 44.
Honeywell Inc.: *See*—
Minneapolis-Honeywell Regulator Co.
Hoppe, Frank A., to Penguin Industries, Inc., Parkesburg, Pa. 63,643, new cert. Cl. 6.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 634,741, new cert. Cl. 15.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 637,326, new cert. Cl. 9.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 638,180, new cert. Cl. 52.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 684,286, new cert. Cl. 6.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 690,385, new cert. Cl. 6.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 702,459, new cert. Cl. 15.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 717,070, new cert. Cl. 9.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 800,152, new cert. Cl. 9.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 836,591, new cert. Cl. 15.
Hoppe, Frank A., Inc., to Penguin Industries, Inc., Parkesburg, Pa. 839,455, new cert. Cl. 16.
Horowitz Bros. & Margareten, Long Island City, N.Y. 503,340, ren. 12–24–68. Cl. 46.
Hospitaline Products, Inc., Inwood, N.Y. 862,463, pub. 10–8–68. Cl. 44.
House of Commans, Inc., The, Kansas City, Mo. 862,376, pub. 10–8–68. Cl. 28.
Howard, Charles K., Associates, Blue Bell, Pa. 740,259, canc. Cl. 37.
Huntley of York, Ltd., York, S.C. 862,450, pub. 10–8–68. Cl. 39.
Hurricane Car Wash Systems, Inc., Phoenix, Ariz. 862,499, pub. 10–8–68. Cl. 52.
I & L Knitting Mills, Inc., New York, N.Y. 862,530, pub. 10–8–68. Cl. 101.
I.P.S., Inc., d.b.a. Colorvision Studios, Hollywood, Calif. 862,546, pub. 10–8–68. Cl. 107.
Ilco Corp.: *See*—
Independent Lock Co.
Imperial Chemical Industries Ltd., London, England. 862,198, pub. 10–8–68. Cl. 1.
Independent Electronic Music Center, Inc., The, Trumansburg, N.Y. 862,557. Cl. 38.
Independent Lock Co., to Ilco Corp., Fitchburg, Mass. 507,840–4, ren. 12–24–68. Cl. 25.
Industrial Concepts Inc., Bernardsville, N.J. 855,958, cor. Cl. 23.
Institutional Industries, Inc.: *See*—
American Hospital Supply Corp.
Instituto Chimico Eurosud S.p.A.: *See*—
Merrell, Richardson, S.p.A.
Insurance City Life Co., Hartford, Conn. 740,381, canc. Cl. 102.
Insurance Co. of North America, Philadelphia, Pa. 740,383, canc. Cl. 102.
Intercontinental Leather Corp., New York, N.Y. 740,161, canc. Cl. 1.
International Consumer Credit Association, St. Louis, Mo. 862,526, pub. 10–8–68. Cl. 100.
International Cosmetics, Inc., Los Angeles, Calif. 740,337, canc. Cl. 51.
International Dioxcide, Inc., New York, N.Y. 862,243, pub. 10–8–68. Cl. 6.
International Industries, Inc., North Hollywood, Calif. 862,482, pub. 7–23–68. Cl. 46.
International Paper Co., to Standard Packaging Corp., New York, N.Y. 849,671, new cert. Cl. 12.
International Paper Co., New York, N.Y. 862,427, pub. 7–30–68. Cl. 37.
International Sound, Inc., from Sound Enterprises, Inc., Hollywood, Calif. 740,357, canc. Cl. 100.
Ithaca: *See*—
Ithaca Gun Co., Inc.
Ithaca Gun Co., Inc., d.b.a. Ithaca and Ithaca Gun Co., Inc., Ithaca, N.Y. 862,249, pub. 10–8–68. Cl. 9.
J & J Research Co., Fort Worth, Tex. 740,188, canc. Cl. 6.

Jenn-Air Corp., Indianapolis, Ind. 862,406–7, pub. 10–8–68. Cl. 34.
Johns-Manville Corp., New York, N.Y. 862,226, pub. 5–14–68. Cl. 6.
Johnston & Associates, Inc., Fairfield, Conn. 862,437, pub. 8–20–68. Cl. 38.
Jones Fur Service, Greensboro, N.C. 862,537, pub. 10–8–68. Cl. 103.
Jones, Paul, San Francisco, Calif. 862,521, pub. 10–8–68. Cl. 100.
Jones, William A., Nashville, Tenn. 740,422, canc. Cl. 38.
Katz, S. & N., Inc., to Reliable Stores Corp., Baltimore, Md. 503,161, ren. 12–24–68. Cl. 28.
Kayser-Roth Corp., New York, N.Y. 862,449, pub. 10–8–68. Cl. 39.
Kaz Mfg. Co., Inc., New York, N.Y. 862,466, pub. 10–8–68. Cl. 44.
Kee Lox Mfg. Co., Rochester, N.Y. 862,230, pub. 10–8–68. Cl. 6.
Keebler Co., Elmhurst, Ill. 862,471, pub. 8–27–68. Cl. 46.
Keith Paper Co., Turners Falls, Mass., to Hammermill Paper Co., Erie, Pa. 504,345–7, ren. 12–24–68. Cl. 37.
Kellogg Co., Battle Creek, Mich. 862,484, pub. 10–8–68. Cl. 46.
Kentile Floors Inc., Brooklyn, N.Y. 862,307, pub. 10–8–68. Cl. 20.
Kessler, Stanley, & Co., Inc., King of Prussia, Pa. 862,405, pub. 10–8–68. Cl. 34.
Kidde Mfg. Co., Inc., Bloomfield, N.J. 740,296, canc. Cl. 46.
Kleinert, I. B., Rubber Co., New York, N.Y. 397,392, canc. Cl. 40.
Klipsch & Associates, Inc., Hope, Ark. 862,324, pub. 10–8–68. Cl. 21.
Koch Supplies, Inc., Kansas City, Mo. 862,264, pub. 10–8–68. Cl. 13.
Koinzan Seed & Flying Service, Inc., Elgin, Nebr. 862,352, pub. 10–8–68. Cl. 23.
Kroger Co., The, Cincinnati, Ohio. 862,210, pub. 10–8–68. Cl. 2.
Kruse, G., & Co., Newark, N.J. 503,116, ren. 12–24–68. Cl. 3.
Lakeside Laboratories, Inc., Milwaukee, Wis. 740,224, canc. Cl. 18.
Lane Mate Mfg. Co.: *See*—
Deutsch, Ted C.
Lee, Forrest A., Inc., San Francisco, Calif. 740,386, canc. Cl. 102.
Lee, H. D., Co., Inc., The: *See*—
Lee, H. D., Mercantile Co., The.
Lee, H. D., Mercantile Co., The, Salina, Kans., and Kansas City, Mo., to The H. D. Lee Co., Inc., Shawnee Mission, Kans. 255,018, ren. 12–24–68. Cl. 39.
Lenox, Inc., Trenton, N.J. 862,211, pub. 10–8–68. Cl. 2.
Le Roi Hosiery Co., Inc., New York, N.Y. 503,654, ren. 12–24–68. Cl. 39.
Le Roi Hosiery Co., Inc., New York, N.Y. 503,658, ren. 12–24–68. Cl. 39.
Les Usines de Melle, Melle, Deux-Sevres, France. 740,160, canc. Cl. 1.
Lester's, Inc., Lester Prairie, Minn. 862,254, pub. 10–8–68. Cl. 12.
Lever Bros. Co., New York, N.Y. 862,508–9, pub. 10–8–68. Cl. 52.
Lewis Bolt & Nut Co., Minneapolis, Minn. 505,221, ren. 12–24–68. Cl. 13.
Lewis, Harold D., d.b.a. Advent Homes, New Orleans, La. 740,388, canc. Cl. 103.
Lidell, M., Inc., New York, N.Y. 862,424, pub. 10–8–68. Cl. 36.
Limbacher Paint & Color Works, Inc., Mount Vernon, N.Y. 862,259, pub. 8–20–68. Cl. 12.
Lindquist, R. J., & Co.: *See*—
Lindquist, Robert J.
Lindquist, Robert J., d.b.a. R. J. Lindquist & Co., Los Angeles, Calif. 504,291, ren. 12–24–68. Cl. 44.
Lingner, Karl A., Dresden, Germany, to Odol Chemical Corp., Plainfield, N.J. 70,021, ren. 12–24–68. Cl. 51.
Lins, Albert, Zurich, Switzerland. 862,262, pub. 10–8–68. Cl. 13.
Lionid Carbonic Corp., Chicago, Ill. 862,387, pub. 10–8–68. Cl. 31.
Liqui-Trol Systems, Inc., Brookfield, Ill. 862,348–50, pub. 10–8–68. Cl. 23.
Liqui-Trol Systems, Inc., Brookfield, Ill. 862,353, pub. 10–8–68. Cl. 23.
Litt-Gluck Co., Inc., New York, N.Y. 862,453, pub. 10–8–68. Cl. 39.
Long Island Plastics Corp., Lindenhurst, N.Y. 740,156, canc. Cl. 1.
L'Oreal, from Societe Monsavon-L'Oreal, Societe Anonyme, Paris, France. 740,330–1, canc. Cl. 51.
Lowe's, Inc., Cassopolis, Mich. 862,217, pub. 10–8–68. Cl. 3.
Luce Mfg. Co., Kansas City, Mo. 439,678, ren. 12–24–68. Cl. 2.
Lystads, Inc., Grand Forks, N. Dak. 862,532, pub. 10–8–68. Cl. 103.
Mab Service Corp., Paterson, N.J. 740,404, canc. Cl. 106.
Madam Boykins Hair Products Co.: *See*—
Gift of Dream, Inc.
Madison Chemical Corp., Maywood, Ill. 862,497, pub. 7–23–68. Cl. 52.
Madison Chemical Corp., Maywood, Ill. 862,500, pub. 5–28–68. Cl. 52.
Madison Chemical Corp., Maywood, Ill. 862,505, pub. 10–8–68. Cl. 52.
Major-Dent U.S.A.: *See*—
Shimer, F. Alexander.
Martin Marietta Corp., St. Louis, Mo. 740,168, canc. Cl. 1.
Marquette National Bank of Minneapolis, The, d.b.a. Marquette National Bank, Minneapolis, Minn. 859,087, cor. Cl. 102.
Masonite Corp., Chicago, Ill. 411,664, canc. Cl. 12.
Materials Improvement, Inc., Center Line, Mich. 862,540, pub. 10–8–68. Cl. 106.
Mattel, Inc.: *See*—
National Periodical Publications.
McCormick & Co., Inc.: *See*—
Baker Extract Co.
McGraw-Hill, Inc., New York, N.Y. 862,431, pub. 10–8–68. Cl. 38.
McGraw-Hill, Inc., New York, N.Y. 862,440–1, pub. 10–8–68. Cl. 38.
McKay Co., The, Pittsburgh, Pa. 862,404, pub. 10–8–68. Cl. 34.
McQuay, Inc., Minneapolis, Minn. 862,384, pub. 10–8–68. Multiple Class (Classes 31 and 34).
Mead Johnson & Co.: *See*—
Bowey's Inc.
Meat Industry Suppliers, Inc., Northfield, Ill. 507,774, ren. 12–24–68. Cl. 46.
Medical Computing Associates, Hyannis, Mass. 740,379, canc. Cl. 101.
Medical Assistance Programs, Inc., Wheaton, Ill. 862,514, pub. 10–8–68. Cl. 100.
Med-Science Electronics Inc., St. Louis, Mo. 862,465, pub. 10–8–68. Cl. 44.
Merchandisers Association, Inc., Chicago, Ill., from Croton Watch Co. Inc., Croton, N.Y. 862,372, pub. 10–8–68. Cl. 27.
Mercury Instruments, Inc., Cincinnati, Ohio. 862,357, pub. 1–23–68. Cl. 26.
Merit Products, Inc., Los Angeles, Calif. 862,219, pub. 10–8–68. Cl. 4.
Merrell, Richardson, S.p.A., Florence, from Instituto Chimico Eurosud S.p.A., Rome, Italy. 862,287, pub. 10–8–68. Cl. 18.
Metal & Thermit Corp., Woodbridge Township, N.J. 740,226, canc. Cl. 18.
Metalex Corp., Libertyville, Ill. 862,258, pub. 10–8–68. Cl. 12.
Metallizing Engineering Co. Inc., Long Island City, to Metco Inc., Westbury, L.I., N.Y. 505,796–8, ren. 12–24–68. Cl. 14.
Metco Inc.: *See*—
Metallizing Engineering Co. Inc.
Metro-Goldwyn-Mayer Inc., New York, N.Y. 862,544, pub. 10–8–68. Cl. 107.
Meyer Laboratories, Inc., Detroit, Mich. 836,602, canc. Cl. 18.
Michigan Hot Rod Association, Centerline, Mich. 862,501, pub. 10–8–68. Cl. 52.
Mid-States Steel & Wire Co., Crawfordsville, Ind. 862,263, pub. 10–8–68. Multiple Class (Classes 13 and 14).
Miller, R. H., Co., Homer, N.Y. 862,275, pub. 10–8–68. Cl. 15.
Minneapolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 506,539, ren. 12–24–68. Cl. 26.
Mirvaine Importacao Ltda., Sao Paulo, Brazil. 862,373, pub. 10–8–68. Cl. 27.
Mission Valley Canning Co.: *See*—
Mission Valley Canning Co., Inc.
Mission Valley Canning Co., Inc., d.b.a. Mission Valley Canning Co., San Jose, Calif. 740,313–4, canc. Cl. 46.
Mistake Out Co., Dallas, Tex. 862,236, pub. 10–8–68. Cl. 6.
Monarch Marking System Co., The, Dayton, Ohio. 507,603, ren. 12–24–68. Cl. 23.
Monroe-Daniel Inc., Cleveland, Ohio. 862,300, pub. 10–8–68. Cl. 19.
Movado Watch Agency, Inc., New York, N.Y. 862,375, pub. 10–8–68. Cl. 27.
Multronics, Inc., Rockville, Md. 862,522, pub. 8–6–68. Multiple Class (Classes 100 and 103).
Nadal, Jeanne: *See*—
Nadal, Jeanne, Inc.
Nadal, Jeanne, Inc., d.b.a. Jeanne Nadal, Chicago, Ill. 740,220, canc. Cl. 18.
Naranjo Packing House Co., Woodlake, Calif. 506,069, ren. 12–24–68. Cl. 46.
Narco Scientific Industries, Inc., from Narco Scientific Industries, Inc., Fort Washington, Pa. 862,318, pub. 6–11–68. Multiple Class (Classes 21 and 26).
National Baby Care Council, Wilmington, Del. 740,408, canc. Cl. 107.
National Biscuit Co., New York, N.Y. 32,301, ren. 12–24–68. Cl. 46.
National Cigar Co.: *See*—
Deisel-Wemmer Co., The.
National Cordage Co.: *See*—
Halliday, Frederick C.
National Federation of Business & Professional Women's Clubs, Inc. of the United States of America, The, Washington, D.C. 862,550–1, pub. 10–8–68. Cl. 200.
National Forge & Ordnance Co., to National Forge Co., Irvine, Pa. 410,471. Am. 7(d). Cl. 14.
National Periodical Publications, New York, N.Y., from Mattel, Inc., Hawthorne, Calif. 862,326, pub. 3–14–67. Cl. 22.
National Pressure Cooker Co., to National Presto Industries, Inc., Eau Claire, Wis. 506,813, ren. 12–24–68. Cl. 13.
National Presto Industries, Inc.: *See*—
National Pressure Cooker Co.

National Thespian Society, The, Cincinnati, Ohio. 862,547, pub. 10–8–68. Cl. 200.
Natural Sales Co.: *See*—
General Nutrition Corp.
Nestle-Le Mur Co., The, New York, N.Y. 862,487, pub. 10–8–68. Cl. 51.
Nevadarama, Inc., San Francisco, Calif. 740,396, canc. Cl. 105.
Newport Mfg. Co., Carrollville, Wis., to E. I. du Pont de Nemours & Co., Wilmington, Del. 251,301, ren. 12–24–68. Cl. 6.
Niedermeyer-Martin Co., Portland, Oreg. 862,257, pub. 8–6–68. Cl. 12.
Niles-Bement-Pond Co.: *See*—
Potter & Johnston Machine Co.
Nippon Toki Kabushiki Kaisha Nishiku: *See*—
Noritake Co., Inc.
Norman Industries, Inc., Chicago, Ill. 862,366, pub. 10–8–68. Cl. 26.
Norrig Hermetikkfabrikker A/S (A/S-Aksjeslskap), Stavanger, Norway. 740,304, canc. Cl. 46.
North American Rockwell Corp., Pittsburgh, Pa., from Hatteras Yacht Co., High Point, N.C. 862,299, pub. 10–8–68. Cl. 19.
North American Rockwell Corp., Pittsburgh, Pa., from Hatteras Yacht Co., High Point, N.C. 862,301, pub. 10–8–68. Cl. 19.
Noritake Co., Inc., to Nippon Toki Kabushiki Kaisha, Nishiku, Nogoya, Japan. 825,293, new cert. Cl. 30.
Novocol Chemical Mfg. Co., Inc.: *See*—
Strean, L. P., Laboratories Inc.
O-Cedar of Canada Ltd., Toronto, Ontario, Canada. 399,229, canc. Cl. 4.
Odol Chemical Corp.: *See*—
Lingner, Karl A.
Ojai Orange Association, Ojai, Calif. 506,540, ren. 12–24–68. Cl. 46.
Old Oak Waterproofing: *See*—
Herbert, Robert J.
Olin Industries, Inc., East Alton, Ill., to Olin Mathieson Chemical Corp., New York, N.Y. 502,462, ren. 12–24–68. Cl. 9.
Olin Mathieson Chemical Corp.: *See*—
Olin Industries, Inc.
Olin Mathieson Chemical Corp., New York, N.Y. 740,231, canc. Cl. 18.
Olympus Optical Co., Ltd., Tokyo, Japan. 740,252, canc. Cl. 26.
Omsi/Kit, Inc., from Oregon Museum of Science & Industry, Portland, Oreg. 862,361, pub. 10–8–68. Cl. 26.
Oregon Museum of Science & Industry: *See*—
Omsi/Kit, Inc.
Organon, Inc., West Orange, N.J. 862,289, pub. 10–8–68. Cl. 18.
PRD Electronics, Inc.: *See*—
Polytechnic Research & Development Co., Inc.
Packers Marketing Corp., Kansas City, Kans. 862,470, pub. 7–16–68. Cl. 46.
Palizzio, Inc., New York, N.Y. 862,451, pub. 10–8–68. Cl. 39.
Pall Corp., Glen Cove, N.Y. 862,382–3, pub. 10–8–68. Cl. 31.
Palmer, Thomas J., d.b.a. Young-Walders, Paterson, N.J. 740,171, canc. Cl. 1.
Palmer-Pann Corp., to Craft Master Corp., Toledo, Ohio. 741,013, Am. 7(d). Cl. 50.
Panama Carbon Co., Parma, Ohio. 399,135, canc. Cl. 11.
Pantasote Co. of New York, Inc., The, New York, N.Y. 862,428, pub. 10–8–68. Cl. 37.
Parke, Davis & Co., Detroit, Mich. 862,296, pub. 8–13–68. Cl. 18.
Parker Pen Co., The, Janesville, Wis. 862,371, pub. 10–8–68. Cl. 26.
Patco Products: *See*—
Patterson, C. J., Co.
Patterson, C. J., Co., d.b.a. Patco Products, Kansas City, Mo. 862,227, pub. 8–6–68. Cl. 6.
Penguin Industries, Inc.: *See*—
Hoppe, Frank A.
Hoppe, Frank A., Inc.
Pennsalt Chemicals Corp., Philadelphia, Pa. 862,242, pub. 10–8–68. Cl. 6.
Pennzoil Co., The, to Pennzoil United, Inc., Oil City, Pa. 504,734, ren. 12–24–68. Cl. 26.
Pennzoil United, Inc.: *See*—
Pennzoil Co., The.
Pep Boys—Manny, Moe & Jack, The, d.b.a. Cornell Tire & Rubber Co., Philadelphia, Pa. 862,228, pub. 10–8–68. Cl. 6.
Perfect Photo, Inc., Philadelphia, Pa. 862,356, pub. 10–8–68. Cl. 26.
Perma-Sharp Mfg. Corp., New York, N.Y. 862,556. Cl. 23.
Petrie Stores Corp.: *See*—
Red Robin Stores, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 862,297, pub. 8–20–68. Cl. 18.
Philco Finance Corp., Philadelphia, Pa. 740,382, canc. Cl. 102.
Philco Shoe Corp., Bangor, Maine. 394,070, canc. Cl. 39.
Phillips Roxane, Inc., New York, N.Y. 862,295, pub. 10–8–68. Cl. 18.
Photo Service, Inc., Des Plaines, Ill. 740,405, canc. Cl. 106.
Photocompositors, Inc., Shawnee Mission, Kans. 862,434, pub. 10–8–68. Cl. 38.
Pickard, Inc., Antioch, Ill. 504,103, ren. 12–24–68. Cl. 30.
Pierce & Stevens Chemical Corp.: *See*—
Pyroxylin Products, Inc.
Pillsbury Co., The: *See*—
Pillsbury Mills Inc.
Pillsbury Mills Inc., to The Pillsbury Co., Minneapolis, Minn. 441,193, ren. 12–24–68. Cl. 46.
Plains Aluminum Industries: *See*—
Smith, Harold P.
Plibrico Co.: *See*—
Plibrico Jointless Firebrick Co.
Plibrico Jointless Firebrick Co., to Plibrico Co., Chicago, Ill. 507,036, ren. 12–24–68. Cl. 12.
Plough, Inc., Memphis, Tenn. 862,498, pub. 8–20–68. Cl. 52.
Plymouth Wholesale Corp., New York, N.Y. 862,454, pub. 10–8–68. Cl. 39.
Pole Control, Inc., Minneapolis, Minn. 862,513, pub. 10–8–68. Cl. 100.
Polytechnic Research & Development Co., Inc., Brooklyn, to PRD Electronics, Inc., Westbury, N.Y. 503,953, ren. 12–24–68. Cl. 26.
Potter & Johnston Machine Co., assor. to Niles-Bement-Pond Co., West Hartford, and Pawtucket, R.I., to Pratt & Whitney Inc., West Hartford, Conn. 507,906, ren. 12–24–68. Cl. 23.
Powell, Wm., Co., The, Cincinnati, Ohio. 441,285, cor. Cl. 13.
Pratt & Whitney Inc.: *See*—
Potter & Johnston Machine Co.
Precision Welder & Flexopress Corp., Cincinnati, Ohio. 862,393, pub. 10–8–68. Cl. 34.
Pullman, Inc., Pittsburgh, Pa. 862,409, pub. 10–8–68. Cl. 34.
Punjab Folk Dance Troupe of India, San Francisco, Calif. 862,541, pub. 10–8–68. Cl. 107.
Purex Corp., Ltd.: *See*—
Franklin Research Co.
Pyroxylin Products, Inc., Chicago, Ill., to Pierce & Stevens Chemical Corp., Buffalo, N.Y. 439,713, ren. 12–24–68. Cl. 16.
Raco Products: *See*—
Southwestern Drug Corp.
Radio Station WIVK: *See*—
Dick Broadcasting Co., Inc.
Raymond Corp., The, Greene, N.Y. 862,322, pub. 10–8–68. Multiple Class (Classes 21 and 26).
Raytheon Co., Waltham, Mass. 740,255, canc. Cl. 26.
Red Robin Stores, Inc., to Petrie Stores Corp., New York, N.Y. 502,917, ren. 12–24–68. Cl. 39.
Refined Products Co.: *See*—
Chicopee Mfg. Corp.
Regional Services Corp., Washington, D.C., from The General Tire & Rubber Co., Akron, Ohio. 862,413, pub. 10–8–68. Cl. 35.
Reliable Stores Corp.: *See*—
Katz, S. & N., Inc.
Rempel Mfg. Co., Inc., West Point, Miss. 862,328, pub. 10–8–68. Cl. 22.
Research-Cottrell, Inc., Bound Brook, N.J. 862,342, pub. 10–8–68. Cl. 23.
Resin-Fab Corp., Belding, Mich. 862,202, pub. 10–8–68. Cl. 2.
Rex, Clarence R., Toledo, Ohio. 862,252, pub. 10–8–68. Cl. 10.
Riegel Paper Corp., New York, N.Y. 862,204, pub. 10–8–68. Cl. 2.
Riker Laboratories, Inc., Northridge, Calif. 740,241, canc. Cl. 18.
Riverside Mfg. Co., Moultrie, Ga. 862,443, pub. 7–16–68. Cl. 39.
Riverside Mills, Augusta, Ga. 862,460, pub. 8–13–68. Cl. 43.
Robbins Co., The, Attleboro, Mass. 507,417, ren. 12–24–68. Cl. 3.
Roberts & Porter, Inc., Chicago, Ill. 862,503–4, pub. 10–8–68. Cl. 52.
Robins, A. H., Co., Inc., Richmond, Va. 862,476, pub. 6–18–68. Cl. 46.
Rochester Ropes, Inc., Culpepper, Va. 740,415, canc. Cl. 7.
Rockwell Mfg. Co., Pittsburgh, Pa. 505,409, ren. 12–24–68. Cl. 5.
Roman Meal Co., Tacoma, Wash. 251,517, ren. 12–24–68. Cl. 46.
Roommates Unlimited, New York, N.Y. 862,516, pub. 10–8–68. Cl. 100.
Rosa Food Products Co., to Leonard Foti, d.b.a. Rosa Food Products Co., Philadelphia, Pa. 441,246, ren. 12–24–68. Cl. 46.
Rosen, Raymond, & Co., Inc., Philadelphia, Pa. 862,261, pub. 10–8–68. Cl. 12.
Roth, Joan, d.b.a. Roth Laboratories, Cleveland, Ohio. 740,353, canc. Cl. 52.
Roth Laboratories: *See*—
Roth, Joan.
Rubinstein, Helena, Inc., New York, N.Y. 396,641, canc. Cl. 51.
Rubinstein, Helena, Inc., New York, N.Y. 862,495, pub. 10–8–68. Cl. 51.
Rust-Oleum Corp., Evanston, Ill. 862,527, pub. 4–30–68. Cl. 101.
S & A Electronics, Inc., Toledo, Ohio. 862,323, pub. 10–8–68. Cl. 21.
Safaritours, Inc., Hollywood, Calif. 740,397, canc. Cl. 105.
Safety Motivations: *See*—
Evans, Charles T.
Saint-Gobain Techniques Nouvelles, Courbevoie (Seine), France. 862,381, pub. 10–8–68. Cl. 31.

Sanders Associates, Inc., Nashua, N.H. 862,425, pub. 10–8–68. Cl. 36.
Sanna, Inc., Madison, Wis. 862,483, pub. 5–28–68. Cl. 46.
Sarex Corp., Carteret, N.J. 862,319, pub. 8–13–68. Cl. 21.
Schaufler, Ernst, Reutlingen, Germany, to The J. B. Williams Co., Inc., New York, N.Y. 249,390, ren. 12–24–68. Cl. 51.
Scott-Alison Co., Inc., Hempstead, N.Y. 740,214–15, canc. Cl. 18.
Searle, G. D., & Co., Skokie, Ill. 740,235, canc. Cl. 18.
Sears, Roebuck & Co., Chicago, Ill. 862,343, pub. 10–8–68. Cl. 23.
Seltzer, Fred, Corp., d.b.a. Tiara, Lincolnwood, Ill. 862,377, pub. 5–14–68. Cl. 28.
Shade Business Forms Inc., Green Bay, Wis. 862,206, pub. 10–8–68. Multiple Class (Classes 2 and 23).
Shake 'n' Dog, Inc., Morgantown, W. Va. 862,519, pub. 10–8–68. Cl. 100.
Shamrock-Neatway Products, Inc., Minneapolis, Minn. 862,207, pub. 10–8–68. Multiple Class (Classes 2, 13, and 23).
Sheller-Globe Corp.: *See*—
Farber, Louis H.
Shields & Co., New York, N.Y. 862,438, pub. 10–8–68. Cl. 38.
Shimer, F. Alexander, d.b.a. Major-Dent U.S.A., Los Angeles, Calif. 811,410, canc. Cl. 44.
Sigma Systems Corp., San Diego, Calif. 862,394, pub. 10–8–68. Cl. 34.
Simmons, R. F., Co., Attleboro, Mass. 862,378, pub. 7–16–68. Cl. 28.
Simoniz Co., Chicago, Ill. 862,507, pub. 10–8–68. Cl. 52.
Singer Co., The, New York, N.Y. 862,315, pub. 8–6–68. Multiple Class (Classes 21, 23, 32, 36, 40, and 50).
Sive, Leonard M., & Associates, Inc., Cincinnati, Ohio. 862,436, pub. 10–8–68. Cl. 38.
Skuttle Mfg. Co., Milford, Mich. 862,408, pub. 10–8–68. Cl. 34.
Smith, Harold P., d.b.a. Plains Aluminum Industries, Panhandle, Tex. 862,314, pub. 10–8–68. Cl. 21.
Smith, Walter E., Caldwell, Idaho. 862,423, pub. 10–8–68. Cl. 36.
Smith & Wesson: *See*—
Bangor Punta Operations, Inc.
Societe Monsavon-l'Oreal, Societe Anonyme: *See*—
L'Oreal.
Solo, Inc., Camden, S.C. 862,422, pub. 10–8–68. Cl. 36.
Son-Chief Electrics, Inc., Winsted, Conn. 441,126, ren. 12–24–68. Cl. 21.
Son-Chief Electrics, Inc., Winsted, Conn. 441,513, ren. 12–24–68. Cl. 21.
Sound Enterprises, Inc.: *See*—
International Sound, Inc.
Southwestern Drug Corp., d.b.a. Raco Products, Dallas, Tex. 862,374, pub. 10–8–68. Cl. 27.
Space Conditioning, Inc., Harrisonburg, Va. 862,389, pub. 10–8–68. Cl. 31.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 862,336–8, pub. 10–8–68. Cl. 22.
Specialty Products Co., Jersey City, N.J. 862,276, pub. 10–8–68. Cl. 15.
Spiegle, Ralph G., d.b.a. Cortrim Lumber Co., to Cortrim Hardware Parts Co., Bristol, Tenn. 538,880, new cert. Cl. 12.
Sporting Dog Specialties, Inc., Spencerport, N.Y. 862,214, pub. 10–8–68. Multiple Class (Classes 3, 6, 8, 22, 33, 38, and 39).
Sprague Electric Co., North Adams, Mass. 740,254, canc. Cl. 26.
Sprague Electric Co., North Adams, Mass. 774,888, canc. Cl. 21.
Standard Brands Inc., New York, N.Y., to Campbell Soup Co., Camden, N.J. 507,653, ren. 12–24–68. Cl. 46.
Standard International Corp., Andover, Mass. 862,552. Cl. 4.
Standard Packaging Corp.: *See*—
International Paper Co.
Standard Packaging Corp., New York, N.Y. 862,467, pub. 4–30–68. Cl. 44.
Stanley Fruit Co., Phoenix, Ariz. 506,455, ren. 12–24–68. Cl. 46.
Star Bedding Co., St. Louis, Mo. 508,137, ren. 12–24–68. Cl. 32.
Steak & Ale, Inc., Dallas, Tex. 862,523, pub. 8–27–68. Cl. 100.
Stereotone, Inc., Columbus, Ga. 740,258, canc. Cl. 36.
Strauss Stores Corp., Maspeth, N.Y. 862,277, pub. 10–8–68. Cl. 15.
Strean, L. P., Laboratories Inc., to Atlantic Mfg. Corp., New Rochelle, to Novocol Chemical Mfg. Co., Inc., Brooklyn, N.Y. 442,110, ren. 12–24–68. Cl. 6.
Sun Chemical Corp., New York, N.Y. 862,232, pub. 10–8–68. Cl. 6.
Sunnyside Nurseries, Inc., Hayward, Calif. 862,201, pub. 10–8–68. Cl. 1.
Super Freeze Co., Burbank, Calif. 862,380, pub. 10–8–68. Cl. 31.
Survival Research Laboratories: *See*—
Walholm, Roy W., Jr.
Sutliff Tobacco Co., Richmond, Va. 862,285, pub. 10–8–68. Cl. 17.
Table Rock Laboratories, Inc., Greenville, S.C. 506,431–2, ren. 12–24–68. Cl. 6.
Technical Rubber Co., Inc., Johnstown, Ohio. 862,412, pub. 10–8–68. Cl. 35.
Teledyne, Inc., Mountain View, Calif. 862,316, pub. 10–8–68. Cl. 21.
Telesis Corp., Chicago, Ill. 862,313, pub. 10–8–68. Cl. 21.
Texas Construction Material Co., The, Houston, Tex. 862,220, pub. 10–8–68. Cl. 4.
Texize Chemicals, Inc., Greenville, S.C. 740,202, canc. Cl. 6.
Texize Chemicals, Inc., Greenville, S.C. 740,355, canc. Cl. 52.
Thermoformed Plastics Corp., Flushing, N.Y. 862,213, pub. 10–8–68. Cl. 2.
Thompson, Roy S., Jr., Atlanta, Ga. 862,433, pub. 7–30–68. Cl. 38.
Tiara: *See*—
Seltzer, Fred, Corp.
Timely Shopping Guide: *See*—
Friedman, Paul J.
Tire Seal Chemical Corp., Keystone Point, North Miami, Fla. 862,223, pub. 10–8–68. Cl. 5.
Toni Co., The: *See*—
Gillette Co., The.
Topps Chewing Gum: *See*—
Topps Chewing Gum, Inc.
Topps Chewing Gum, Inc., assignee of Topps Chewing Gum, to Topps Chewing Gum, Inc., Brooklyn, N.Y. 506,803, ren. 12–24–68. Cl. 46.
Topps Chewing Gum, Inc.: *See*—
Bubbles, Inc.
Torginol of America, Inc.: *See*—
Torginol Vertriegsgesellschaft Berlin G.m.b.H.
Torginol Vertriebsgesellschaft Berlin G.m.b.H., to Torginol of America, Inc. 66,543, new cert. Cl. 12.
Totta, Leonard J., d.b.a. Dixon's Famous Chili Parlor, Kansas City, Mo. 859,141, cor. Cl. 100.
Towers Marts, Inc., New York, N.Y. 740,373, canc. Cl. 101.
Transworld Drilling Co., Oklahoma City, Okla. 862,535, pub. 10–8–68. Cl. 103.
Tribune Co., Chicago, Ill. 160,695, canc. Cl. 38.
Tribune Co., to Chicago Tribune Co., Chicago, Ill. 506,803, ren. 12–24–68. Cl. 38.
Trident Research & Development Corp., Ltd., Toronto, Ontario, Canada. 862,302, pub. 10–8–68. Cl. 19.
Tubex Corp., Chicago, Ill. 862,267, pub. 6–25–68. Cl. 13.
UID Electronics Corp., Hollywood, Fla. 862,325, pub. 10–8–68. Cl. 21.
Unicor, Inc., Paramount, Calif. 862,260, pub. 10–8–68. Cl. 12.
Union Bag & Paper Co., The, to Union Camp Corp., New York, N.Y. 71,217. Am. 7(d). Cl. 2.
Union Carbide Corp., New York, N.Y. 740,366, canc. Cl. 100.
Uni-Tech Chemical Mfg. Co., Sun Valley, Calif. 862,244–5, pub. 10–8–68. Cl. 6.
United Medical Laboratories, Inc., Portland, Oreg. 862,515, pub. 10–8–68. Cl. 100.
United Newspapers Magazine Corp., New York, N.Y. 740,421, canc. Cl. 38.
United Press International, Inc.: *See*—
Wagner, Edward L. A.
United World Films, Inc., to Universal City Studios, Inc., New York, N.Y. 507,854, ren. 12–24–68. Cl. 26.
United States Printing & Lithograph Co., The, Norwood, Ohio, to Diamond International Corp., New York, N.Y. 503,280, ren. 12–24–68. Cl. 38.
United States Rubber Co., New York, N.Y. 740,173, canc. Cl. 1.
United States Rubber Co., New York, N.Y. 862,225, pub. 8–8–67. Cl. 6.
Universal City Studios, Inc.: *See*—
United World Films, Inc.
Universal Foods Corp.: *See*—
Chili Products Corp., Ltd.
Usines Metallurgiques de Vallorbe, Vallorbe, Switzerland. 74,709, canc. Cl. 23.
Vance Industries, Inc., Chicago, Ill. 862,268, pub. 10–8–68. Cl. 13.
Vermouth Industries of America Inc., Lodi, N.J. 502,885, ren. 12–24–68. Cl. 47.
Verson Allsteel Press Co., Chicago, Ill. 502,845, ren. 12–24–68. Cl. 23.
Vertibroil Inc., Long Island City, N.Y. 862,410, pub. 10–8–68. Cl. 34.
Viking Carpets, Inc.: *See*—
Congoleum-Nairn Inc.
Vistron Corp., Cleveland, Ohio. 862,200, pub. 10–8–68. Cl. 1.
Vitalograph Ltd., London, England. 862,464, pub. 10–8–68. Cl. 44.
Vitaminerals, Inc., Glendale, Calif. 303,388, ren. 12–24–68. Cl. 44.
Vose, Samuel N., Boston, Mass. 740,247, canc. Cl. 22.
WBNS-TV, Inc., Columbus, Ohio. 862,542, pub. 10–8–68. Cl. 107.
Wagner, Edward L. A., to United Press International, Inc., New York, N.Y. 502,993, ren. 12–24–68. Cl. 38.
Walholm, Roy W., Jr., d.b.a. Survival Research Laboratories, Colorado Springs, Colo. 862,486, pub. 10–8–68. Cl. 50.
Wallcoverings Council Inc., New York, N.Y. 862,529, pub. 10–8–68. Cl. 101.
Wedgwood Fabrics, New York, N.Y. 862,456, pub. 10–8–68. Cl. 42.
Weinberg, Jacob L., d.b.a. American Parents Guild, Evanston, Ill. 740,374, canc. Cl. 101.
Weiss, N., & Co. Inc., Chicago, Ill. 740,309, canc. Cl. 46.
Wellcome Foundation, Ltd., The, London, England. 740,211, canc. Cl. 18.
Weltronic Co., Southfield, Mich. 862,310, pub. 10–8–68. Cl. 21.
Wembley, Inc., New Orleans, La. 862,448, pub. 10–8–68. Cl. 39.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 740,167, canc. Cl. 1.

West Bend Co., The, West Bend, Wis. 862,553. Multiple Class (Classes 13 and 21).
What-Cha-Ma-Call-It, Inc., New York, N.Y. 862,335, pub. 10–8–68. Cl. 22.
White Electronic Development Corp. (1966), Ltd., Rexdale, Canada. 862,363, pub. 10–8–68. Cl. 26.
White-Haines Optical Co., The, Columbus, Ohio. 506,678, ren. 12–24–68. Cl. 26.
Williams, J. B., Co., Inc., The: *See*—
Schaufler, Ernst.
Winslow Tele-Tronics, Inc., Asbury Park, N.J. 862,358, pub. 10–8–68. Cl. 26.
Wood, John, Co.: *See*—
Bennett Pumps Corp.
Wright, Benjamin F., Port Alberni, British Columbia, Canada. 740,199, canc. Cl. 6.
Wright, William E., & Sons Co., to Wm. E. Wright & Sons Co., West Warren, Mass. 505,417, ren. 12–24–68. Cl. 40.
Wrigley, Wm., Jr. Co.: *See*—
Zeno Mfg. Co.
York-Shipley, Inc., York, Pa. 505,920, ren. 12–24–68. Cl. 34.
Young-Walders: *See*—
Palmer, Thomas J.
Youthcraft Creations, Inc., New York, N.Y. 862,442, pub. 6–4–63. Cl. 39.
Youthcraft Mfg. Co., to Youthcraft Mfg. Co., Kansas City, Mo. 506,130, ren. 12–24–68. Cl. 39.
Yuma Mesa Fruit Growers Association, Yuma, Ariz. 254,517, ren. 12–24–68. Cl. 46.
Zee International, Inc., Los Angeles, Calif. 862,327, pub. 10–8–68. Cl. 22.
Zenith Corp., Clinton, Mo. 862,248, pub. 10–8–68. Cl. 9.
Zenith Radio Corp., Chicago, Ill. 862,429, pub. 10–8–68. Cl. 38.
Zeno Mfg. Co., to Wm. Wrigley, Jr. Co., Chicago, Ill. 71,005, ren. 12–24–68. Cl. 46.

U.S. GOVERNMENT PRINTING OFFICE: 0—1968

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 31, 1968 Volume 857 Number 5

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of September 1968

Examiner affirmed	151
Examiner affirmed in part	30
Examiner reversed	50
Total	229

Patent Printing Priority

In view of the backlog of allowed cases waiting to be printed, the applications placed in the weekly formulation of an issue set aside for printing will be selected according to the following priorities:

1. Allowed cases which were made special by the Commissioner (including those under the New Special Examining Procedure).
2. Allowed cases that are more than five years old.
3. Allowed reissue applications.
4. Allowed applications having an effective filing date earlier than that required for declaring an interference with a copending application claiming the same subject matter.
5. Allowed application of a party involved in a terminated interference.
6. Allowed applications in which the applicant has filed a request in the nature of a petition setting forth his reasons for advancing the printing date.
7. Allowed applications ready for printing and not covered by any of the six preceding categories. The selection of cases in the involved category will be by chronological sequence based on the date the issue fee was paid.

To ensure that any application falling within the scope of the categories outlined above and identified by numbers 1 to 5 receives special treatment the Examiners should staple on the file wrapper a tag entitled "Special in Issue and Gazette Branch." The special tag, PO–364, may be obtained from the Group Clerk. The Examiner shall print directly on the tag the recitation "In Issue and Gazette Branch" and the appropriate printing category outlined above. The application is then forwarded to Issue and Gazette Branch in accordance with existing procedures.

The personnel in Issue and Gazette Branch will then set the tagged cases aside and make a notation on all copies of the Notice of Allowance to be mailed that further processing of this application will be "special."

In cases falling in category No. 6, the request must be filed after the Notice of Allowance has been received and no later than the date the issue fee is paid. The request must be directed to the Head of the Issue and Gazette Branch.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 29, 1968.

Foreign Patents Received in the Search Center as of November 30, 1968

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Nov. 25, 1968	42,185/68
(*Patents*)	Nov. 8, 1968	282,602
Austria	Nov. 1, 1968	265,189
Belgium	Nov. 1, 1968	676,200
Canada	Nov. 25, 1968	799,650
Czechoslovakia	Nov. 15, 1968	126,027
Denmark:		
(*Patents*)	Nov. 19, 1968	110,050
(*Fremlaeggelsskrifter*)	Nov. 19, 1968	111,520
East Germany	Nov. 21, 1968	64,254
Egypt	June 28, 1967	6,873
Finland	Oct. 8, 1968	37,023
France:		
(*Patents*)	Nov. 26, 1968	1,530,350
(*Additions*)	Nov. 26, 1968	91,550
(*Medicaments*)	Sept. 15, 1968	5,300 M
(*Additions*)	May 2, 1968	162 CAM
Germany:		
(*Auslegeschriften*)	Oct. 7, 1968	1,272,850
(*Patents*)	Oct. 7, 1968	1,258,667
Great Britain	Nov. 21, 1968	1,132,450
India	Apr. 11, 1968	101,130
Ireland	Nov. 20, 1968	27,641
Italy	Apr. 25, 1968	670,000
Japan	Nov. 26, 1968	24,880/68
Netherlands:		
(*Octrooiaanvragen*)	Oct. 7, 1968	07,864/68
(*Patents*)	Oct. 8, 1968	124,900
Norway:		
(*Patents*)	Oct. 2, 1968	113,252
(*Utlegningsskrifter*)	Nov. 15, 1968	115,529
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Oct. 11, 1968	55,723
Rumania	Nov. 1, 1968	50,850
Sweden:		
(*Patents*)	Nov. 12, 1968	301,938
(*Utläggningsskrifter*)	Nov. 22, 1968	303,171
Switzerland	Nov. 20, 1968	461,405
U.S.S.R.	Nov. 1, 1968	218,070

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Adjudicated Patents

(C.A. Ohio) Miller Patent No. 2,330,370 (18—15), for APPARATUS AND METHOD FOR MANUFACTURE OF RUBBER TUBING. Claims 4, 10 and 16 to 18 *Held* invalid.

New Applications Received During October 1968

Patents	8383
Designs	463
Plant Patents	10
Reissues	38
Total	9061

Issue—December 31, 1968

Patents	1250	No. 3,418,657 to No.	3,419,906, incl.
Designs	50	No. 213,034 to No.	213,083, incl.
Plant Patents	3	No. 2,853 to No.	2,855, incl.
Reissues	5	No. 26,510 to No.	26,514, incl.
Total	1308		

B. F. Goodrich Company v. *Rubber Latex Products, Inc.*, 400 F.2d 401; 158 USPQ 513.

(C.A.R.I.) North et al. Patent No. 2,694,168 (317—234), for GLASS-SEALED SEMICONDUCTOR CRYSTAL DEVICE. Claim 60 *Held* invalid. *General Instrument Corporation* v. *Hughes Aircraft Company*, 399 F.2d 373; 158 USPQ 498.

(C.A.R.I.) Barnes et al. Patent No. 2,742,383 (148—33), for GERMANIUM JUNCTION-TYPE SEMICONDUCTOR DEVICES. Claims 2 and 4 *Held* valid but not infringed, claims 10 and 11 *Held* invalid but not infringed. *Id.*

(C.A. Mich.) Suess et al. Patent No. 2,800,631 (75—60), for METHOD OF CARRYING OUT MELTING PROCESSES, *Held* invalid. *Kaiser Industries Corporation* v. *McLouth Steel Corporation*, 400 F.2d 36; 158 USPQ 565.

(C.A. Tex.) Williams Patent No. 2,953,354 (255—61), for DRILL BIT. Claim 5 *Held* valid and infringed. *Williams Bit and Tool Company* v. *Christensen Diamond Products Company*, 399 F.2d 628; 159 USPQ 11.

(C.A. Del.) Cole et al. Patent No. 2,967,778 (99—205), for METHOD FOR MAKING JUICE CONCENTRATES. Claims 4 to 8 *Held* invalid. *Sperti Products, Inc.* v. *The Coca Cola Company*, 399 F.2d 607; 158 USPQ 627.

United States Adopted Names

LIST NO. 21

July 1, 1968 to October 31, 1968

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeial Convention) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (USAN) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the United States Pharmacopeia, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Secretary, United States Adopted Names Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

alamecin: anthiotic
alexidine: antimicrobial
algestone acetophenide: progestogen
aranotin: antiviral
azaserine: fungicide
bendazac: anti-inflammatory
benzetimide hydrochloride: antiparkinson
besylate: benzenesulfonate radical
betamethasone sodium phosphate: glucocorticoid
bisobrin lactate: fibrinolytic
bromhexine hydrochloride: expectorant; mucolytic
carpolene: suspending and emulsifying agent
citenamide: anticonvulsant
clindamycin: antiparasitic
clodazon hydrochloride: antidepressant
clonidine hydrochloride: antihypertensive
clorazepate dipotassium: tranquilizer
clozapine: sedative
cyproquinate: coccidiostat
diflumidone sodium: anti-inflammatory
difluprednate: anti-inflammatory
fantridone hydrochloride: antidepressant
fetoxylate hydrochloride: antidiarrheal
flunidazole: antiprotozoal
fluocinolide acetate: glucocorticoid
fospirate: veterinary anthelmintic
glyburide: oral hypoglycemic
hoquizil hydrochloride: bronchodilator
ipronidazole: histomonacide
levodopa: antiparkinson
mesuprine hydrochloride: vasodilator; uterine relaxant
metformin: oral hypoglycemic
metolazone: diuretic
midaflur: ataractic
nalbuphine hydrochloride: analgesic; narcotic antagonist
naranol hydrochloride: tranquilizer
nequinate: veterinary coccidiostat
niridazole: schistosomicide
nisobamate: tranquilizer; sedative; hypnotic
oxilapine: tranquilizer
pentazocine hydrochloride: analgesic
pentazocine lactate: analgesic
piquizil hydrochloride: bronchodilator
polacrilin potassium: pharmaceutical aid (tablet disintegrant)
pyrantel pamoate: anthelmintic
sulfamoxole: antibacterial sulfonamide
sulpiride: digestive aid; psychotropic
tebutate: tertiary butyl acetate radical
tinidazole: antiprotozoal
triflumidate: anti-inflammatory

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 16, 1968

PATENT EXAMINING OPERATIONS AND GROUPS * Denotes date of oldest application for each Operation.	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-08-66	3-04-64
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	6-17-66	7-10-63
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	8-11-66	2-28-64
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*4-11-66	*7-03-63
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-25-66	5-07-64
ELECTRICAL EXAMINING OPERATION		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	10-31-66	4-06-64
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-13-67	6-01-65
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*1-04-66	*11-01-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-15-66	10-21-63
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-09-67	4-28-65
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	3-04-68	6-14-67
MECHANICAL EXAMINING OPERATION		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	5-10-67	11-08-65
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	1-20-67	2-26-65
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*1-18-67	12-08-64
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	11-13-67	1-11-67
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	8-03-67	5-19-65
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	4-17-67	*2-21-64

Total number of pending applications (excluding Designs)..... 186,641
Total number of Design applications pending..... 2,743

Expiration of patents: The patents within the range of numbers indicated below expire during January 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their term curtailed by disclaimer under the provisions of 35 U.S.C. 253.

Patents..... Numbers 2,580,379 to 2,584,101, inclusive
Plant Patents..... Numbers 1,059 to 1,070, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRANCIS J. BOYLAN

No. 7846. Decided April 25, 1968

[55 CCPA—; 392 F.2d 1017; 157 USPQ 370]

1. PATENTABILITY—DOUBLING PATENTING—PRIOR ART—1952 PATENT ACT.
   Held, with respect to "double patenting" rejections, "in analyzing cases of these types, it must always be carefully observed that the appellant's patent is not 'prior art' under either section 102 or section 103 of the 1952 Patent Act (35 U.S.C., as amended)."
2. SAME—SAME—TERMINAL DISCLAIMER—SAME SUBJECT MATTER—35 U.S.C. 101.
   "We agree that if the appellant claims the *same* subject matter (i.e., the same invention) that he claimed in his copending, but earlier-issued patent, 35 U.S.C. 101 bars the issuance of a second patent, *In re Faust*, 54 CCPA 1459, 378 F.2d 966, 153 USPQ 813 (1967) and a terminal disclaimer is of no avail, *In re Knohl*, 55 CCPA —, 386 F.2d 476, 155 USPQ 586 (1967)."
3. SAME—SAME—SAME—OVERLAPPING CLAIMS.
   "Where * * * the subject matter claimed in the application is not the same as subject matter claimed in the patent, *In re Walles*, 54 CCPA 710, 366 F.2d 786, 151 USPQ 185 (1966), questions of whether the two sets of claims 'overlap,' or are 'patentably distinct,' one from the other, and the like, are of no moment, so long as a terminal disclaimer has been filed. See *In re Braithwaite*, 54 CCPA 1589, 379 F.2d 594, 154 USPQ 29 (1967); *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474 (1964); *In re Kaye*, supra; and *In re Robeson*, supra."
4. SAME—SAME—COMPOSITION AND METHOD CLAIMS.
   " * * * it is observed that here the subject matter of the patent claims is 'a composition of matter and a method of preparing the composition' while the subject matter of the claims on appeal is 'a method for controlling foaming in an aqueous system.' The fact that the patent claims recite a 'defoaming composition' and the application claims refer broadly to the step of *adding* a small amount of a 'defoaming composition' likewise does not convince us that but one invention is being claimed in the issued patent and the present application."
5. SAME—SAME—SAME.
   Upon considering the rejection based on "double patenting" of claims to a method of controlling foaming in an aqueous system, which comprises adding thereto a small amount of a defoaming composition, in view of patent claims to a defoaming composition. *Held* that "On initial error in analysis here seems to have caused the Examiner and the Board to consider that, since the composition claimed in the patent may be included in the process claimed in the appealed claims, a double patenting rejection is proper."
6. SAME—SAME—TERMINAL DISCLAIMER—COMPOSITION AND METHOD CLAIMS—*In re Byck* AND *Kistler* v. *Coe* DISTINGUISHED.
   "On the issue of 'double patenting' between *claims to a composition* and claims to a *method* in which the composition may be used, the Solicitor, like the Examiner and the Board, relies heavily on *In re Byck*, supra, and *Kistler* v. *Coe*, supra. Whatever may have been the relevance of those cases to these issues at the time they were decided, they are not controlling under the present facts in view of the terminal disclaimer which is here present."
7. SAME—SAME—SAME—SAME.
   " * * * since method and composition claims presented in the same application may be permitted, subject, of course, to a proper requirement for restriction, the mere fact that the respective sets of claims are in two applications, as here, makes no difference, so long as a terminal disclaimer is present so that the date of expiration of both patents is the same."
8. SAME—SAME—SAME—SAME.
   "In our view, the subject matter set forth in the appealed claims [to a method of controlling foaming in an aqueous system which comprises adding

thereto a small amount of a defoaming composition] is not the same as the subject matter in the claims of appellant's patent [to a defoaming composition]. Since here a terminal disclaimer has been timely filed, we *reverse*."

APPEAL from the Patent Office. Serial No. 122,395.

REVERSED.

Clinton F. Miller (*Marion C. Staves*, of counsel) for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

The issue presented by this appeal is whether appellant's claims were properly rejected on the basis of "double patenting." The rejection is thus predicated on the Patent Office position that the same invention was previously claimed in appellant's earlier-issued patent. Since a terminal disclaimer was timely filed, the sole issue before us is whether the appellant, in the appealed claims, seeks to claim again the "same invention" previously claimed in his prior-issued patent. [2]

This issue arises in an appeal from the decision of the Patent Office Board of Appeals, [3] adhered to on reconsideration, affirming the Examiner's rejection of the claims of the appellant's application [4] "on the ground of double patenting over the claims of" appellant's patent.[5]

The application on appeal was copending with the application which resulted in the patent which forms the basis for the rejection and is denominated a "continuation-in-part" thereof. Both the application at bar and the application for the patent were filed by the same inventor. For convenience, appellant's application will be generally referred to as the "application" and appellant's patent will be referred to as the "patent." Both the application and the patent have been assigned to Hercules Powder Company.

Following its filing of an appeal to the Board, but before the filing of the Examiner's answer, Hercules Powder Company, as appellant's assignee, filed a terminal disclaimer under 35 U.S.C. 253 in which it disclaimed the terminal portion of any patent granted on appellant's application which would extend beyond February 5, 1980, the expiration date of appellant's patent.

The Invention Claimed in the Application

Appellant's claimed invention here on appeal relates to a *process for inhibiting foaming in an aqueous system.* Appellant's process is

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Thus, with the presence of the terminal disclaimer filed under 35 U.S.C. 253, this appeal presents an issue very similar to issues involving an analysis of whether the same invention is twice claimed by the same inventor as frequently before the court in recent years. See *In re Knohl*, 55 CCPA —, 386 F.2d 476, 155 USPQ 586 (1967); *In re Braithwaite*, 54 CCPA 1589, 379 F.2d 594, 154 USPQ 29 (1967); *In re Faust*, 54 CCPA 1459, 378 F.2d 966, 153 USPQ 813 (1967); *In re Walles*, 54 CCPA 710, 366 F.2d 786, 151 USPQ 185 (1966); *In re Taylor*, 53 CCPA 1187, 360 F.2d 232, 149 USPQ 615 (1966).
In the *absence* of a timely filed terminal disclaimer, the approach to the analysis of the invention or inventions claimed, and whether a second invention is "patentable over" the first invention becomes more complex. See *In re Cole*, 54 CCPA 1107, 373 F.2d 532, 152 USPQ 807 (1967); *In re Higgins*, 54 CCPA 907, 369 F.2d 414, 152 USPQ 103 (1966). In that instance, it is necessary to consider the additional question of whether the subject matter of the appealed claims is obvious in view of the patent claims relied on as the basis for the rejection on the ground of "double patenting."
[1] However, in analyzing cases of these types, it must always be carefully observed that the appellant's patent is not "prior art" under either section 102 or section 103 of the 1952 Patent Act (35 U.S.C., as amended.)

[3] The board consisted of Messrs. Asp and Magil, Examiners-in-Chief, and Gaston, Acting Examiner-in-Chief. Mr. Asp wrote the opinion of the board.

[4] Serial No. 122,395, filed July 7, 1961, entitled "Defoamer."

[5] Patent No. 3,076,768, issued February 5, 1963, entitled "Defoamer," from application Serial No. 19,990, filed April 5, 1960. Appellant's application states that it is a continuation-in-part of application Serial No. 828,051, filed July 20, 1959, and the application which matured into the patent relied upon to support the rejection here on appeal.

alleged to reduce or prevent such foaming by adding to the aqueous system a small amount of defoaming composition comprising from about 80% to about 97% of a water-insoluble hydrophobic organic liquid such as vegetable oil, from about 3% to about 20% of small, solid, normally hydrophilic particles, such as silica treated to have a hydrophobic surface, suspended in the organic liquid, and up to about 5% of a surfactant dissolved in the organic liquid.

Claim 1 is representative of the nine claims on appeal. It claims:

1. The method of controlling foaming in an aqueous system which comprises adding thereto a small amount of a defoaming composition comprising from about 80% to about 97% of a water-insoluble hydrophobic organic liquid selected from the group consisting of vegetable oils, mineral hydrocarbons, fluorinated hydrocarbons, long chain alcohols, long chain esters and long chain amines, from about 3% to about 20% of small solid normally hydrophilic particles selected from the group consisting of silica particles, bentonite particles, diatomaceous earth particles, talc particles, attapulgite particles and titanium dioxide particles which have been treated to render the surface thereof hydrophobic suspended in the organic liquid, and from about 0% to about 5% of a surfactant, said percentages being based on the composition.

The Invention Claimed in Appellant's Patent

The Patent Office relied upon the claims of appellant's patent to support the rejection. The claims of the patent are all directed to *a composition of matter* or to a *method of preparing that composition.* Claims 1 and 9 of the patent are representative:

1. A defoaming composition consisting essentially of from about 80% to about 97% of a water-insoluble, organic liquid selected from the group consisting of kerosene, naphthenic mineral oil, paraffinic mineral oil, chlorinated naphthenic mineral oil, chlorinated paraffinic mineral oil, and liquid trifluorovinyl chloride polymer, from about 3% to about 20% of hydrophobic silica suspended in the liquid, and from about 0.5% to about 5% of a surfactant for the organic liquid, said percentages being based on the composition.

9. The method of preparing a defoaming composition which comprises dispersing hydrophobic colloidal silica in a water-insoluble, organic liquid selected from the group consisting of kerosene, naphthenic mineral oil, paraffinic mineral oil, chlorinated naphthenic mineral oil, chlorinated paraffinic mineral oil, and liquid trifluorovinyl chloride polymer, said water-insoluble organic liquid containing a surfactant, the defoaming composition consisting essentially of from about 80 to about 97% of the organic liquid, from about 3 to about 20% of the hydrophobic colloidal silica and from about 0.5% to about 5% of the surfactant.

The Rejection

As is often the case, the true basis for the rejection based upon the ground of "double patenting" remains obscure. We conclude that the basis must be that the appellant has twice claimed the same subject matter. We set forth here the reasoning of the Examiner and the Board in support of the affirmative of that position insofar as it aids the understanding of our decision here.

The Examiner, in his answer, stated that the patent claims "cover subject matter not patentably distinct" from the appealed claims, holding:

• • • An antifoaming or defoaming agent is covered by the patent claims. Here methods of preventing foaming using that composition are being claimed. Only one inventive concept is present in both cases. The patented composition is useful only for preventing foam, the use being claimed in method form here. *Kistler* v. *Coe* [142 F.2d 94, 61 USPQ 102 (D.C. Cir. 1944)] • • • involves an analogous situation in which claims to a method of insulating using an aerogel were held unpatentable over the applicant's patent to the aerogel itself. While the compositions of the instant claims and those of the patent claims may not be identical, they are not patentably distinct, one from the other.

As to the terminal disclaimer, the Examiner considered the decisions of this court in *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 (1964) and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829 (1964) not to be "controlling" for the reason that:

• • • in those cases, the invention defined in the claims of the second patent was more than a mere colorable variation of the invention defined in the claims of the first patent, whereas *in the instant case, the claims recite a genus as to the organic liquid which overlaps that recited in the claims of appellant's patent.* [Emphasis added.]

The Examiner disagreed with appellant's contention that there could be no "overlapping" since the claims of the patent, directed to a composition of matter, and the claims of the application, setting forth a process, were drawn to different statutory classes of invention.[6] He stated:

• • • it does not follow therefrom that there can be no overlapping, (See the *Kistler* v. *Coe* decision cited above and also the decision in *In re Byck*, [18 CCPA 1208, 48 F.2d 665, 9 USPQ 205 (1931)] • • • wherein claims were held unpatentable as stating only an obvious use of a composition of matter covered by a patent granted to the applicant on a copending application.), and it is submitted that the *difference here between the composition and the process is nothing more than a mere colorable variation.* [Emphasis added.]

The Board affirmed, adding that:

• • • there is clearly an overlap in the compositions involved in the patent and in the instant application. Appellant further admits • • • that his process is obvious in view of his patent but insists that in view of his terminal disclaimer the issue is "whether the subject matter claimed herein is more than a mere colorable variation of the subject matter claimed in appellant's patent" • • •.

The instant situation is clearly distinguishable from that in the preceding cases where there was no overlap in the claimed subject matter, distinct species being involved. • • • That a composition and process are in different statutory classes is not controlling as is evident from the decisions relied upon by the Examiner.

The claims of appellant's patent indicate the utility of the composition by the recital "A defoaming composition • • •" followed by a recital of ingredients which are encompassed by the instant claims. These claims constitute a recital of that use which turns out to be the sole utility of the patented composition. Clearly there is but one inventive concept here which, under the decisions cited by the Examiner, would not sustain two patents. The principle of *In re Byck* was reaffirmed in the recent decision *In re Sebek and Spero* [52 CCPA 1442, 347 F.2d 632] • • • 146 USPQ 44 (1965) wherein claims to the therapeutic administration of a steroid were held unpatentable (for obvious use) over the claims of appellant's patent covering that steroid *per se.*

In response to appellant's request for reconsideration, the Board stated:

We have considered this re-argument of the legal issue and the decisions bearing thereon but have not been convinced of any error in our conclusion. We simply cannot agree with appellant that two inventions are involved.

Appellant on page 5 of his petition mentions another possible use. Aside from being speculative this is irrelevant since both appellant's patent and the instant specification *disclose but one use and one invention,* namely that forming the basis of the patent. [Emphasis added.]

Thus, in summary, and with the benefit of the thinking of our recent decisions on this difficult subject, we observe that the position taken below was inconsistent. The major reasons advanced by the Patent Office for refusing to grant a second patent to the appellant

[6] It is helpful in understanding the respective arguments below to note that the Board's opinion was rendered on July 16, 1965. At that time the decisions in *Robeson* and *Kaye* were slightly over a year old; thus attention was directed to whether the claims "overlap" or were "distinct," albeit unpatentable, one over the other. This distinction was laid to rest in *In re Braithwaite,* supra note 2.

may be summarized as follows: (1) there is but one "inventive concept" present in the patent and the application (one invention), (2) while the *compositions* of the two sets of claims are not identical, they are not patentably distinct (two inventions, one not unobvious in view of the other), (3) the appealed claims recite a *genus* as to the organic liquid which overlaps that recited in the claims of applicant's patent (one invention?), (4) it does not follow that sets of claims drawn to different statutory classes preclude "overlapping" of those sets of claims (one invention?), and (5) but one use and one invention is disclosed in the patent and in the application (one invention).

Opinion

The analyses of the Examiner and the Board are not in accord with the recent decisions of this court which hopefully alleviated some of the confusion surrounding the "law" of "double patenting." See note 2, supra. Thus, we reverse.

[2] We agree that if the appellant claims the *same* subject matter (i.e., the same invention) that he claimed in his copending, but earlier-issued patent, 35 U.S.C. 101 bars the issuance of a second patent, *In re Faust*, 54 CCPA 1459, 378 F.2d 966, 153 USPQ 813 (1967) and a terminal disclaimer is of no avail, *In re Knohl*, 55 CCPA —, 386 F.2d 476, 155 USPQ 586 (1967).

[3] Where, as here, the subject matter claimed in the application is not the same as subject matter claimed in the patent, *In re Walles*, 54 CCPA 710, 366 F.2d 786, 151 USPQ 185 (1966), questions of whether the two sets of claims "overlap," or are "patentably distinct," one from the other, and the like, are of no moment, so long as a terminal disclaimer has been filed. See *In re Braithwaite*, 54 CCPA 1589, 379 F.2d 594, 154 USPQ 29 (1967); *In re Sarett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474 (1964); *In re Kaye*, supra; and *In re Robeson*, supra.

As this court noted in *In re Walles*, supra:

> • • • before two sets of claims may now be said to claim the "same invention," they must *in fact* claim the *same subject matter*.
>
> * * * * * * *
>
> We think the proper way to determine whether claims in two applications or in an application and a patent define the same subject matter is to determine *independently* precisely what subject matter is defined in the two sets of claims. Where it may be concluded after comparing these independent determinations that the subject matter is in fact the same, the appealed claims are properly rejected in view of the patent claims. 35 U.S.C. 101. The inquiry is factual and requires that *all* of the subject matter defined by the claim be considered. • • •

[4] Initially, it is observed that here the subject matter of the patent claims is "a composition of matter and a method of preparing the composition" while the subject matter of the claims on appeal is "a method for controlling foaming in an aqueous system." The fact that the patent claims recite a "defoaming composition" and the application claims refer broadly to the step of *adding* a small amount of a "defoaming composition" likewise does not convince us that but one invention is being claimed in the issued patent and the present application.

Faced with a related situation in *In re Taylor*, 53 CCPA 1187, 360 F.2d 232, 149 USPQ 615 (1966), this court stated:

> • • • One aspect of the rejection presents an argument that appellant, in the appealed claim, has set forth but another way of claiming the process defined in the patent claims and that therefore the claims, while using different language, define the same invention, i.e., the same process.
>
> First, do the claims in fact define the same invention, i.e., a process? The answer is no. The appealed claim defines a product per se in terms of its physical properties as well as in terms of a process for making it. The *invention* defined by the appealed claim is a product. The patent claims define a process. Thus, two independent, albeit related inventions are presented, the appealed claim covering a product and the issued patent claiming a process.

[5] An initial error in analysis here seems to have caused the Examiner and the Board to consider that, since the composition claimed in the patent may be included in the process claimed in the appealed claims, a double patenting rejection is proper.

In *Taylor*, supra, the appealed claim defined a collagen film as a *product per se*, in terms both of its physical characteristics and a process for making it. The patent claims defined a *process for making a film of collagen*. Here, we have a related situation. Appellant's patent claims are directed to a *composition and a method of making that composition*. The appealed claims define a *process*, one aspect of which is that it may use the composition previously claimed. The invention of the appealed claims, nevertheless, is a *process for using a composition of matter*, not a *composition of matter per se*, or a *process for making that composition of matter*. The error of the Examiner and the Board here is that the rejection on the ground of double patenting was predicated upon what appears to us to be an inaccurate factual analysis as to the inventions claimed in the patent and in the appealed application. *In re Taylor*, supra; *In re Walles*, supra.

Appellant argues that there can be *no* "overlapping" between claims drawn to different statutory classes of invention. Without passing on this position, we do not consider "overlapping" to be the determining factor. See *In re Braithwaite*, supra.

[6] On the issue of "double patenting" between *claims to a composition* and claims to a *method* in which the composition may be used, the Solicitor, like the Examiner and the Board, relies heavily on *In re Byck*, supra and *Kistler* v. *Coe*, supra. Whatever may have been the relevance of those cases to these issues at the time they were decided, they are not controlling under the present facts in view of the terminal disclaimer which is here present.

In re Byck, supra, considered a rejection of appellant's appealed claims for failure to define "anything inventive over" subject matter claimed in appellant's patent in view of the prior art. This court would now characterize this rejection as an "obviousness-type double patenting" rejection. Byck's appealed claims were directed to conductors or coils insulated with a phenolic condensation product which was disclosed and claimed in Byck's patent. As here, Byck's patent was copending with his appealed application, and was not "prior art" as to the Byck application. However, in Byck, a proper prior art reference showed conductors and coils insulated with other materials. The Board there obviously thought that it would involve no "invention" to use the phenolic condensation product for insulation of the conductor and coils shown in the prior art. No terminal disclaimer was before the court in *Byck*.

Similarly, *Kistler* v. *Coe*, supra, is characterized by the absence of a terminal disclaimer. Appellant's patent was directed to a material known as aerogel; his application, which was copending with his patent, claimed a method of insulating using the patented aerogel material. The rejection was based on a "lack of invention." The court af-

firmed, for the reason that appellant's claim defined no "invention" over his patent.

Similarly, this court in *In re Sebek*, 52 CCPA 1442, 347 F.2d 632, 146 USPQ 44 (1965) considered whether, in the absence of a terminal disclaimer, the later granting of a patent with claims drawn to a use of a product for which appellants had been granted a patent was foreclosed. There we placed emphasis on the circumstance that a patent, if granted on the application, would expire later than the prior patent. We stated:

> * * * Any prolongation of the period of that monopoly by embracing in a second, *later-expiring* patent obvious processes or compositions utilizing the compound is contrary to well established principles of law. [Emphasis added.]

See also *In re Keim*, 43 CCPA 784, 229 F.2d 466, 108 USPQ 330 (1956); *In re Horneman*, 39 CCPA 809, 194 F.2d 108, 92 USPQ 316 (1952).

However, as this court noted in *In re Braithwaite*, supra:

> * * * When a terminal disclaimer causes two patents to expire together a situation is created which is tantamount for all practical purposes to having all the claims in one patent. It is common for a single patent to contain overlapping, i.e., generic and specific claims. * * * We have previously indicated that generic and specific claims, though by definition they "overlap," may be considered as "distinct" in the double patenting context. * * *

[7] Thus, since method and composition claims presented in the same application may be permitted, subject, of course, to a proper requirement for restriction, the mere fact that the respective sets of claims are in two applications, as here, makes no difference, so long as a terminal disclaimer is present so that the date of expiration of both patents is the same.

[8] In our view, the subject matter set forth in the appealed claims is not the same as the subject matter set forth in the claims of appellant's patent. Since here a terminal disclaimer has been timely filed, we reverse.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

U.S. Court of Customs and Patent Appeals

FORT HOWARD PAPER COMPANY *v.* KIMBERLY-CLARK CORPORATION

No. 7915. Decided March 14, 1968

[55 CCPA—; 390 F.2d 1015; 157 USPQ 55]

1. TRADEMARK—CONFUSING SIMILARITY—"HI DRI," "SHUR DRI," AND "SO DRI" FOR PAPER TOWELS.

   Upon reviewing the decision of the Trademark Trial and Appeal Board dismissing appellant's opposition, based on the registered marks "So-Dri" and "Shur-Dri" for paper towels, to the registration by appellee of "Hi-Dri" for similar goods, where "A key factor in the Board's decision of no likelihood of confusion is the descriptiveness of the term "dry" or "dri" as applied to any kind of towel and the apparent commonplace use of that term as a syllable or part of trademarks adopted and used by applicant-appellee and third parties for towels of both paper and cloth," and the Board found that despite similar meaning in the marks "the differences between them in both sound and appearances are sufficient, in view of the nature of the marks, to preclude a likelihood of confusion or mistake as to the source of the goods sold thereunder," *held* that "We see no clear error in that conclusion or in the reasoning by which it was reached."

2. SAME—USE—INITIAL SALE FOR REGISTRATION PURPOSES.

   "The Board held, in effect, that applicant has complied with the law, and that although the initial sale was deliberately made expressly for federal registration purposes, this fact 'is not damning per se' where the record shows there was an intent to continue to use the mark, and that such use was in fact continued. * * * Appellee's testimony was that it normally takes it about three years after adoption and first use of a new mark to take the necessary steps leading to national distribution of a product under it, during which time marketing and advertising tests and preparation for production and sale are progressing. An eighteen-month hiatus in sales, absent any indication of an intent not to proceed, does not seem to us unreasonable. We think it appropriate that appellee should proceed with caution to try out its right to registration of 'Hi-Dri,' as it is doing in this proceeding, before plunging into the market with more extensive sales than it did. We agree with the Board's decision that appellee complied with the law."

3. SAME—OPPOSITION—USE.

   In connection with opposer's argument that applicant's first sale was not "bona fide," which was characterized by the Trademark Trial and Appeal Board as an "ex parte" matter, *Held* that "we do not know why an opposer should be precluded from raising this reason for denying registration in an inter partes proceeding."

AFFIRMED.

Morsell & Morsell, Curtis B. Morsell (*Arthur L. Morsell*, of counsel) for appellant.

Hume, Clement, Hume & Lee, Jerome Gilson (*Dean A. Olds*, of counsel) for appellee.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Trademark Trial and Appeal Board, 148 USPQ 607, dismissing appellant's opposition to the registration by appellee of "Hi-Dri" on the Principal Register for "Absorbent Paper Tissue Suitable for Hygienic, Cosmetic, or Cleaning Purposes," Serial No. 160,711, filed January 15, 1963, claiming first use December 27, 1962.

Appellant's opposition is based on the admittedly long prior use as trademarks for paper towels of "So-Dri," [2] principally relied on, its earlier-used variant "Sodri," [3] and "Shur-Dri." [4]

Both parties took testimony, the witnesses for each side being cross-examined by counsel for the other.

The appeal presents two issues: (1) likelihood of confusion, etc., within the meaning of section 2(d) of the Lanham Act (15 U.S.C. 1052(d)); [5] (2) whether appellee made bona fide commercial use of its mark so as to support right to register.[6]

The essential facts shown by the testimony and exhibits are adequately summarized in the Board's published opinion and we see no need to repeat them. The highlights are that opposer's registered marks have been used extensively on paper towels designed and sold to automotive service stations for cleaning windshields and the like. Applicant's goods include paper towels and there is, therefore, identity of goods.

[1] A key factor in the Board's decision of no likelihood of confusion is the descriptiveness of the term "dry" or "dri" as applied to

---

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Reg. No. 651,198, Sept. 3, 1957, for paper towels.
[3] Reg. No. 165,832, Mar. 20, 1923, twice renewed, last renewal for paper towels only, and No. 651,196, Sept. 3, 1957, for paper towels.
[4] Reg. No. 720,359, Aug. 22, 1961, for paper towels.
[5] Appellant makes two issues out of this by separately stating them as "confusing similarity" of the marks and likelihood of confusion, mistake or deception. These are, however, inseparable aspects of a single issue, as we view the matter.
[6] There is no question but that the mark was used, under conditions hereinafter explained, and appellant disavows any reliance on a theory of abandonment.

any kind of towel and the apparent commonplace use of that term as a syllable or part of trademarks adopted and used by applicant-appellee and third parties for towels of both paper and cloth. The record shows use by what is now a division of applicant, Kimberly-Clark, since 1911, of "Driwell" on paper towels, Reg. No. 522,321, except for the period 1924–1934 when "Drytex" was used instead. In the 1941–1964 period some 2,000,000 cases of "Driwell" towels were sold. Kimberly-Clark also has a registration of "Kaydry," No. 774,552, for disposable towels which the record shows to be paper towels. There are, in addition, 25 third-party registrations of record of marks containing "dry" or "dri," 11 of them for paper towels and 14 for cloth towels. The paper towel marks are in several instances the subject of recent or renewed registrations, indicating a probability of recent or present use.

Notwithstanding the apparent similarities between "So-Dri" in particular and "Hi-Dri," the Board concluded there would be no likelihood of confusion on the following basis:

> Opposer's marks "So-Dri" and "Shur-Dri" and applicant's mark "Hi-Dri" obviously were adopted to suggest that the paper towels sold thereunder possess superior drying qualities. It likewise appears from the record that it has been a common practice for producers of paper towels and of such competitive products as cloth towels to adopt as trademarks for their products designations comprising the word "Dry" or "Dri," having a similar suggestive connotation, such as "Dri-N-Shine," "Dri-Kleen," "Dry-Mor," "Sparkle-Dri," "Easi-Dri," "Dryfast," and "Wipemdri." Under such circumstances, the scope of protection afforded opposer's marks must necessarily be narrow and manifestly cannot extend to preclude the registration by others of similar but otherwise distinguishable notations or trademarks for towels. [Cases cited.] * * * The fact, as urged by opposer, that its marks and that of applicant are hyphenated marks and the syllable "Dri" appears therein as a prefix instead of a suffix as in the third-party registrations is of no particular significance * * *. Accordingly, although the designations "So-Dri," "Shur-Dri," and "Hi-Dri" may have similar meanings, the differences between them in both sound and appearances are sufficient, in view of the nature of the marks, to preclude a likelihood of confusion or mistake as to the source of the goods sold thereunder.

We see no clear error in that conclusion or in the reasoning by which it was reached.

Compare *Fort Howard Paper Co.* v. *Gulf States Paper Corp.*, 54 CCPA 1375, 376 F.2d 904, 153 USPQ 646, where opposition to registration of "E–Z NAPS" by the owner of "HANDINAP" and "HANDINAPS" was dismissed, the goods of both parties being paper napkins.

On the second issue, it is opposer's contention that there was no bona fide use of "Hi-Dri" in commerce adequate to support a registration. Briefly, the facts are as follows. Kimberly-Clark's legal department made careful arrangements for the interstate shipment and sale on December 12, 1962, from its plant in Neenah, Wisconsin, to a drugstore in Waukegan, Illinois, of six boxes each of facial tissues, table napkins, toilet tissues and paper towels, all boxed or wrapped in coverings bearing the "Hi-Dri" trademark printed thereon. No further sales were made until July 1964, a period of eighteen months. Then sales under the mark were made as follows: July, 40 cases of toilet tissue and 260 cases of facial tissue; October, 700 cases of toilet tissue, 530 cases of facial tissue, and 357 cases of towels; November, 350 cases of toilet tissue and 50 cases of napkins. The total value of 1964 sales under the mark was $15,013.60.

Appellant argues that the first sale was not "bona fide," that the mark was not actually in use at the time the application was filed, some 18 days later, and that the 1964 sales were obviously stimulated by the opposition.

The Board characterized this issue as an "ex parte" matter but considered it anyway, "in the interest of removing any cloud that may be placed on applicant's activities in regard to its use of 'Hi-Dri' * * *." Since the Board considered it, we will consider it.[7]

[2] The Board held, in effect, that applicant has complied with the law, and that although the initial sale was deliberately made expressly for federal registration purposes, this fact "is not damning per se" where the record shows there was an intent to continue to use the mark, and that such use was in fact continued. The Board relied on the following cases: *Montgomery Ward & Co.* v. *Sears, Roebuck & Co.*, 18 CCPA 1386, 49 F.2d 842, 9 USPQ 524; *California Spray-Chemical Corp.* v. *Ansbacher Siegle Corp.*, 55 USPQ 298 (Comm'r.); *Western Stove Co.* v. *Geo. D. Roper Corp.*, 80 USPQ 393 (S.D. Cal. 1949); and *Maternally Yours, Inc.* v. *Your Maternity Shop, Inc.*, 110 USPQ 462 (2d Cir. 1956). Appellant attempts, unsuccessfully we think, to distinguish these cases. Appellee's testimony was that it normally takes it about three years after adoption and first use of a new mark to take the necessary steps leading to national distribution of a product under it, during which time marketing and advertising tests and preparation for production and sale are progressing. An eighteen-months hiatus in sales, absent any indication of an intent not to proceed, does not seem to us unreasonable. We think it appropriate that appellee should proceed with caution to try out its right to registration of "Hi-Dri," as it is doing in this proceeding, before plunging into the market with more extensive sales than it did. We agree with the Board's decision that appellee complied with the law.

For the foregoing reasons, the decision dismissing the opposition is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, did not participate.

[3] [7] We do not know why an opposer should be precluded from raising this reason for denying registration in an *inter partes* proceeding. See *Roger & Gallet* v. *Janmarie, Inc.*, 46 CCPA 787, 263 F.2d 350, 120 USPQ 484, on the delay of final disposition which may result from the characterization of rulings as "ex parte." Here both parties are arguing the question and neither questions our right to pass upon it.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,849,932, E. Marogg, METHOD AND APPARATUS FOR MAKING FILTER RODS, **filed** Mar. 31, 1965, D.C., S.D.N.Y., Doc. 65–C–967, *Paul Muller* v. *Kimberly-Clark Corp. et ano.* Stipulation and order of discontinuance, Nov. 28, 1967.

2,855,735, F. A. Groth, PACKAGING PROCESS, **filed** Apr. 24, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–295, *Whittaker Corp.* v. *Litho Color Printing Corp.*

2,953,460, J. C. Baker, PROCESS AND APPARATUS FOR PREPARING DOUGH, **filed** July 29, 1968, D.C. Kans. (Kansas City), Doc. KC–2830, *Baker Process Company* v. *Marion Corporation.*

3,032,044, A. L. Pansini, AUTOMATIC SWIMMING POOL CLEANER, **filed** June 26, 1968, D.C., N.D. Calif. (San Francisco), Doc. 49511, *Arneson Products, Inc. et al.* v. *Anthony Pools Inc.*

3,042,468, Rudow and Rudow, METALLIC SLIDE ASSEMBLY FOR EXTENSION TABLES, **filed** July 2, 1968, D.C. Md. (Baltimore), Doc. 19659, *Hardware for Furniture, Inc.* v. *H and M Products Co. et al.*

3,070,680, McBride and De Bolt, SWITCH GEAR; **3,226,499**, Curtis and Gebhardt, LOAD BREAK SWITCH GEAR; **3,255,332**, same, OPERATING ASSEMBLY FOR LOAD BREAK SWITCHGEAR, **filed** July 22, 1968, D.C., E.D. Ill. (St. Louis), Doc. C68–90–D, *A. B. Chance Company* v. *Turner Electric Corporation.*

3,111,337, R. Kates, SUPPORTING LEG STRUCTURE FOR BARBECUE BOWLS AND THE LIKE, **filed** June 16, 1966, D.C., S.D.N.Y., Doc. 66–C–1713, *Federal Steel Corporation* v. *Keystone Lamp Manufacturing Corp.* By stipulation and order complaint and counterclaim are dismissed without prejudice, July 30, 1968.

3,112,907, E. Gilberton, GAS LIGHTER OF THE SUSPENDED CONTAINER TYPE, **filed** May 16, 1968, D.C., S.D.N.Y., Doc. 68–C–2007, *Etablissements Genoud & Cie.* v. *Medico Pipes, Inc.*

3,126,692, Weygandt and Weygandt, MACHINE FOR HARVESTING BERRIES AND SIMILAR PRODUCE FROM THEIR PLANTS; **3,203,159**, same, METHOD OF HARVESTING BERRIES AND SIMILAR PRODUCE FROM THEIR PLANTS; **3,380,236**, E. S. Shepardson, APPARATUS FOR HARVESTING GRAPES, **filed** May 28, 1968, D.C., W.D.N.Y. (Buffalo), Doc. C–1968–179, *Chisholm-Ryder Company, Inc. et al* v. *Mecca Bros., Inc. et al.*

3,147,214, Kressman and Millar, REMOVAL OF ANIONS FROM AQUEOUS SOLUTIONS, **filed** Nov. 29, 1967, D.C.

District of Columbia (Washington), Doc. 3038–67, *Farbenfabriken Bayer Aktiengesellschaft* v. *The Permutit Company, Limited.*

3,161,051, J. A. Perry, Jr., LEVEL INDICATING DEVICE AND SYSTEM, **filed** June 10, 1966, D.C., W.D.N.Y. (Buffalo), Doc. C–11,864, *Cherry-Burrell Corporation* v. *Taylor Instrument Companies.* Final order on consent dismissing action, May 28, 1968.

3,165,386, M. Kapeker, VACUUM VALVE, **filed** Feb. 25, 1965, D.C., S.D.N.Y., Doc. 65–C–586, *Thermovac Industries Corp.* v. *The Virtis Co., Inc.* The motion for a dismissal granted, May 15, 1968.

3,203,159. (See 3,126,692.)

3,226,499. (See 3,070,680.)

3,255,332. (See 3,070,680.)

3,265,290, A. J. Cali, AXIAL FLOW COMPRESSORS FOR JET ENGINES, **filed** Mar. 26, 1968, D.C., S.D.N.Y., Doc. 68–C–293, *Anthony J. Cali* v. *Eastern Air Lines, Inc.*

3,266,015, Pickering and Becker, PORTABLE BATTERY-OPERATED WARNING LIGHT FOR MOUNTING ON BARRICADES AND THE LIKE, **filed** Feb. 2, 1968, D.C., C.D. Calif (Los Angeles), Doc. 68–170–EC, *Thomas E. Pickering* v. *R. E. Dietz Co. et al.*

3,292,903, Meyer and Van Gompel, PAPER ROLL STRAIGHTENER, **filed** July 23, 1968, D.C., M.D. Fla. (Orlando), Doc. 68–130 Orl., *S & S Enterprises, Inc.* v. *David L. Sterr et al.*

3,297,155, Gattenby, D'Amato, Golner and Feinstein, TUBULAR CORES, **filed** Apr. 15, 1968, D.C. Del. (Wilmington), Doc. 3517, *Ethyl Corporation* v. *The Borden Company.*

3,318,769, Folckemer, Hanson, Miller, RESIN COMPOSITIONS COMPRISING ORGANOPHOSPHOROUS PESTICIDES, **filed** July 3, 1968, D.C., N.D. Tex. (Dallas), Doc. CA–3–2674–C, *Shell Oil Company* v. *Thuron Industries, Inc.*

3,341,884, B. Pryor, PORTABLE COMBINATION NAIL POLISH AND POLISH REMOVER HOLDER AND APPLICATOR, **filed** July 1, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1223, *Barbara Pryor* v. *Chesebrough-Pond's, Inc.*

3,380,236. (See 3,126,692.)

3,382,440, W. T. Turner, APPARATUS FOR AUTOMATICALLY CONVERTING A RADIO RECEIVER TO AN FM OR VHF RECEIVER, **filed** May 8, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–754–F, *William T. Turner, doing business as Skywatch Engineering Co.* v. *Realtone Western Corp.*

Re. 26,019, W. D. Watt, Jr., DRAWER PULL, **filed** Aug. 2, 1968, D.C., W.D. Mich. (Grand Rapids), Doc. 5917, *Keeler Brass Co.* v. *Bliss and Laughlin Industries, Inc.*

Re. 26,368, H. B. Brose, TIRE REPAIR INSERT, **filed** July 22, 1968, D.C., S.D. Fla. (Miami), Doc. 68–860–C–CA, *Horace B. Brose* v. *Sears, Roebuck and Co., and John M. Huffman, doing business as Huffman's Western Auto Store.*

Pl. Pat. 1,895, W. Thornburg, GRAPEVINE, **filed** May 8, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–767–IH, *Heggblade-Margulcas Co.* v. *Edward C. Apodac.* **Same, filed** May 8, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–766–CC, *Heggblade-Margulcas Co.* v. *Paul S. Sandoval.*

REISSUES

DECEMBER 31, 1968

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,510

WATER RESISTANT PAPER COATING COMPOSITIONS

Emil D. Mazzarella, Mountainside, and Edward Dalton, Jersey City, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original No. 3,320,080, dated May 16, 1967, Ser. No. 373,070, June 5, 1964. Application for reissue Sept. 6, 1967, Ser. No. 669,983

8 Claims. (Cl. 106—210)

A paper coating composition which yields coatings of improved water resistance. The composition comprises water, an inert mineral pigment, a cationic starch and an insolubilizing agent for the starch.

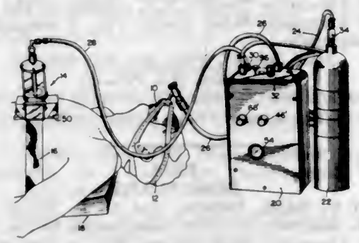
26,511

HEART AND LUNG RESUSCITATOR

Carl E. Hewson, Marshfield, Mass.
(90 Myrtle St., North Quincy, Mass. 02171)

Original No. 3,307,541, dated Mar. 7, 1967, Ser. No. 277,169, May 1, 1963. Application for reissue Aug. 23, 1967, Ser. No. 669,342

16 Claims. (Cl. 128—145.8)



A heart-lung resuscitator having a duct and fitting adapted to be connected to a source of lung ventilating gas for introducing the gas into the lungs of a patient and a cardiac compressor mounted on the chest for applying a mechanical compression to the heart of a patient. Drive means operated by the lung ventilating gas are connected to the duct and fitting and the cardiac compressor for cyclically activating each in timed relationship with one another.

26,512

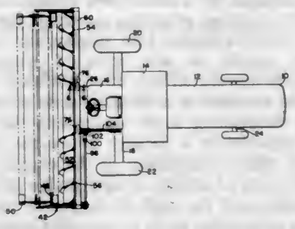
MOUNTING AND DISMOUNTING MEANS FOR AGRICULTURAL MACHINES

Glen W. Rohweder, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Original No. 3,270,489, dated Sept. 6, 1966, Ser. No. 295,086, July 15, 1963. Application for reissue Dec. 21, 1966, Ser. No. 607,355

11 Claims. (Cl. 56—21)

A mounting and dismounting arrangement of grain combine headers and other crop-handling and crop-treating units with respect to the forward supporting structure or feeder house of a typical agricultural combine so as to improve the flexibility of the basic chassis structure



as a self-propelled vehicle capable of performing a wide variety of agricultural functions.

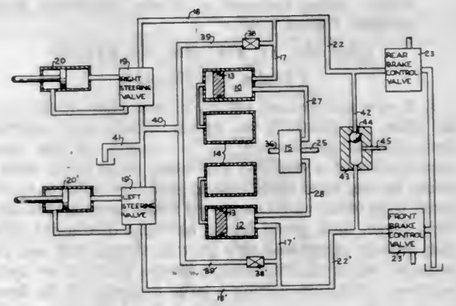
26,513

HYDRAULIC BRAKE AND STEERING SYSTEM FOR VEHICLES

Frederick C. Klaus, Joliet, and Jackson C. Medley, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Original No. 3,278,239, dated Oct. 11, 1966, Ser. No. 386,522, July 31, 1964. Application for reissue Mar. 17, 1967, Ser. No. 637,025

5 Claims. (Cl. 180—79.2)



1. A hydraulic brake and steering system for a vehicle having separate hydraulic circuits for front brakes and rear brakes, comprising separate sources of fluid under pressure, a first fluid circuit including one source and the front brakes, a second fluid circuit including the other source and the rear brakes, a passage communicating pressure between said circuits, valve means in said passage operable by pressure in either circuit which exceeds pressure in the other circuit to close said passage, an auxiliary circuit in communication with said passage, said valve means being operable when the pressure is higher in one circuit to close communication between the auxiliary circuit and the other circuit, an auxiliary brake, a spring means biasing the auxiliary brake toward engagement, and pressure responsive means actuated by pressure in the auxiliary circuit opposing the spring means whereby upon failure of pressure in the first and second circuits pressure in the auxiliary circuit will fail and the auxiliary brake will be engaged.

26,514

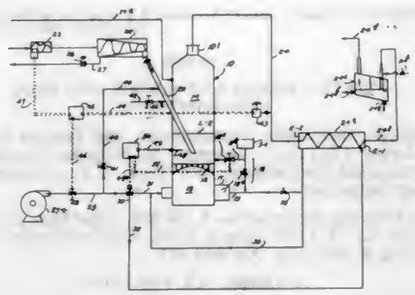
TREATMENT AND DISPOSAL OF WASTE SLUDGES

Orris E. Albertson, Norwalk, and William E. Budd, Ridgefield, Conn., assignors to Door-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Original No. 3,319,586, dated May 16, 1967, Ser. No. 131,455, July 10, 1961. Application for reissue Aug. 18, 1967, Ser. No. 663,463

19 Claims. (Cl. 110—8)

1. The method of oxidizing the organic solids contained in waste sludges by combustion, which comprises in a combustion chamber providing a body of hot graded inert granular material having heat storing and heat radfating capability; supply to said body of granular material a continuous upward stream of combustion air for maintaining said material in a fluidized state while hot; simultaneously introducing waste sludge into the body of hot fluidized material in a locality above the bottom plane thereof, to effect combustion of the organic solids; controlling the rate of supply of said sludge to said combustion chamber and the rate of supply of combustion air relative to each other so as to maintain complete thermal oxidation of the organic sludge solids with the total of the air supply such as to provide a space rate of the resulting combustion gases in said chamber sufficient and not in excess of that required for maintaining said fluidized state; diverting a portion of the required total of combustion air and preheating said diverted portion by heat exchange with the combustion gases; and controlling the proportion of diverted combustion air relative to the



organic solids concentration in the sludge and supplying said diverted portion together with the non-diverted portion of the combustion air to said fluidized bed for maintaining said complete oxidation at a predetermined temperature.

PLANT PATENTS

GRANTED DECEMBER 31, 1968

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,853

ROSE PLANT

Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors, by mesne assignments to O. L. Weeks, doing business as Weeks Wholesale Rose Grower, Chino, Calif.

Filed May 11, 1967, Ser. No. 637,853

1 Claim. (Cl. Plt.—14)

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous and bushy plant habit, with the plants having good resistance to powdery mildew as compared with other varieties grown under comparable conditions, large, dark green leaves having a distinctive silvery cast, heavily pigmented new growth, strong, stiff and erect stems on which the flowers are always borne in an upright position, a habit of bearing a large majority of the flowers singly to the stems, an urn-shaped flower bud form which opens to alrge, high-centered white or nearly white flowers of good petalage and a substantial flower petal substance as compared with most other white roses of the hybrid tea or grandiflora classes, with consequent resistance to blemish by rain, heat and other adverse weather conditions.

2,854

ROSE PLANT

Jack D. Lissemore, Tenafly, N.J., assignor to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed July 27, 1967, Ser. No. 656,604

1 Claim. (Cl. Plt.—5)

A new and distinct variety of climbing shrub rose plant originated by crossing "New Dawn" with "Spartan."

2,855

ROSE PLANT

Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors, by mesne assignments, to The Conard-Pyle Company, West Grove, Pa., a corporation of Pennsylvania

Filed June 20, 1967, Ser. No. 647,572

1 Claim. (Cl. Plt.—19)

1. The new variety of rose plant, substantially as herein shown and described, said plant being characterized by its vigorous habit of growth and abundant flower production, as well as by the stiff erect character of the stems and neck, the quantity of small prickles on the peduncle, the large size of the prickles on the canes and branches, and the rolled-down margins of the leaflets; the flower of said plant being further characterized by its distinctive two-tone orange-red color, its high-centered form, and the abundance of its petals.

PATENTS

GRANTED DECEMBER 31, 1968

GENERAL AND MECHANICAL

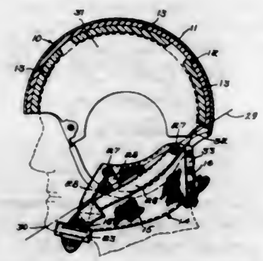
3,418,657

RETENTION DEVICE FOR PROTECTIVE HELMET

Abraham L. Lastnik and Peter James, Framingham, Mass., assignors to the United States of America as represented by the Secretary of the Army

Filed May 31, 1966, Ser. No. 554,938

5 Claims. (Cl. 2—6)



A flexible harness which snugly engages the lower portion of the human head to provide for retention of a protective helmet attached to the harness on the head during high impact conditions.

3,418,658

TWO COMPONENT VENTILATOR

Henry F. Danico, Stoneham, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Apr. 10, 1967, Ser. No. 629,666

8 Claims. (Cl. 2—14)



A two component ventilating device having snap fastener elements for telescopic snap engagement through an opening in a support, for example, the shield of a pair of goggles. The component mounted at the outer surface of the support has an imperforate base and a side wall which is apertured to permit fresh air to flow through the components to the inner side of the support. The snap fastener elements are disposed opposite the apertures in the side wall and act as a baffle directing the air flow and a barrier to the passage of potentially harmful solid and fluid substances through the components.

3,418,659

CLOTHING CONSTRUCTION FOR INFANT WEAR

Joanne N. Brown, 40 Robin Road, Rumson, N.J. 07760

Filed Oct. 17, 1967, Ser. No. 675,932

5 Claims. (Cl. 2—70)



Waterproof pants for infants, comprising tab means for establishing a moistureproof connection with the hold-down straps of an infant's shirt.

3,418,660

MAN'S UNDERGARMENT AND METHOD OF MAKING

Clifford W. Shumate, Carlisle, Ky., assignor to Blue Grass Industries, Inc., Carlisle, Ky., a corporation of Kentucky

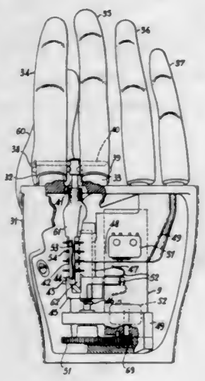
Filed Nov. 24, 1967, Ser. No. 686,003

11 Claims. (Cl. 2—224)



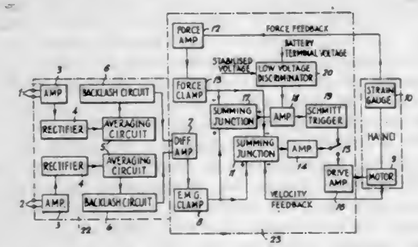
A man's undergarment and a method of manufacture therefor are disclosed. The front panel of the garment is a non-woven fibrous fabric provided with a permanent vertical pleat arranged so as to provide convenient access to the interior fold of the pleat along at least a substantial portion of its vertical length. The material of the front panel is provided with a perforation line, preferably colinear with the interior fold line of the pleat, and the material is adapted to tear along the perforation line under moderate hand pressure to thereby define a fly opening. The garment construction is completed by a back panel seamed to the front panel along a pair of adjoining lateral edges and by a crotch seam that defines a pair of separate leg openings in the garment. The disclosed method and construction provide an economical product especially well-suited to the characteristics and requirements of disposable type undergarments.

3,418,661
PROSTHETIC HAND FOR CONTROLLED ACTUATION BY ELECTROMYOGRAM SIGNALS
Ronald Allison and Phillip Harvey Jilbert, Tadley, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Mar. 29, 1966, Ser. No. 538,386
Claims priority, application Great Britain, Mar. 30, 1965, 13,371/65
4 Claims. (Cl. 3—1.1)



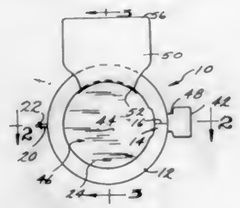
1. An artificial hand comprising a frame supporting at least one gripping member mounted to be movable relative to the frame for contacting an object, drive means comprising a reversible electric motor mounted rigidly on said frame, rod means connected to said gripping member, means for causing rotary motion of the motor to be converted into longitudinal motion of said rod means connected to move said member, and force feedback signal generating means comprising strain gauge means mounted on said rod means for providing a signal corresponding to the longitudinal stress in the rod means.

3,418,662
PROSTHETIC HAND WITH IMPROVED CONTROL SYSTEM FOR ACTIVATION BY ELECTROMYOGRAM SIGNALS
Alastair Howard Bottomley, Great Kingshill, Peter Robert Dennis Styles, Woking, Phillip Harvey Jilbert, Tadley, and John William Birtill and John Raymond Truscott, Reading, England, assignors to National Research Development Corporation, London, England, a British Corporation
Filed Mar. 29, 1966, Ser. No. 538,387
Claims priority, application Great Britain, Mar. 31, 1965, 13,661/65; Apr. 9, 1965, 15,204/65; Oct. 28, 1965, 45,639/65
8 Claims. (Cl. 3—1.1)



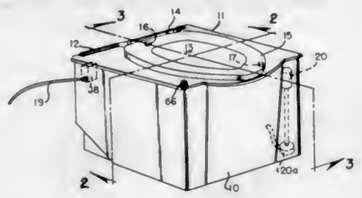
1. In a prosthetic device having a prosthetic limb and a control system for actuating said limb wherein the improvement resides in the control system comprising, means for deriving a control signal from EMG signals, drive means, a closed loop feedback system in which the control signal is modified by a velocity feedback signal and a force feedback signal to obtain an error signal to operate the drive means, and switch means for rendering the drive means inoperative whenever the difference between the force feedback signal and the control signal is less than a predetermined amount.

3,418,663
DISPOSABLE BODY WASTE RECEPTACLE
Nathaniel C. Scott, 5914 N. 52nd St., Omaha, Nebr. 68104
Filed Feb. 25, 1966, Ser. No. 530,186
7 Claims. (Cl. 4—113)



There is disclosed a body waste receptacle having a bottom wall and upstanding inflatable generally toroidal sidewall. A perineal apron is secured to the sidewall at the front of the receptacle. A specimen collecting sac extends laterally from the bottom wall, under the sidewall to hang from the bed side. The sac may be twisted closed and severed to provide a container for the collected specimen.

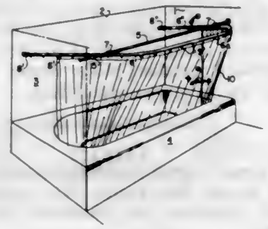
3,418,664
VEHICLE FLUSH TOILET
Thomas Carmichael, 2311 Blanton Drive 78209, and Durrell U. Howard, 306 Krameria Drive 78213, both of San Antonio, Tex.
Filed Dec. 9, 1966, Ser. No. 600,437
22 Claims. (Cl. 4—115)



The disclosure relates to a flush toilet for vehicles or the like. A storage receptacle receives waste from a bowl with which it communicates when an intervening shutter is open. During the flushing cycle, the shutter is closed and flushing fluid is pumped from a separate reservoir to the bowl and thence back to the reservoir, bypassing the receptacle.

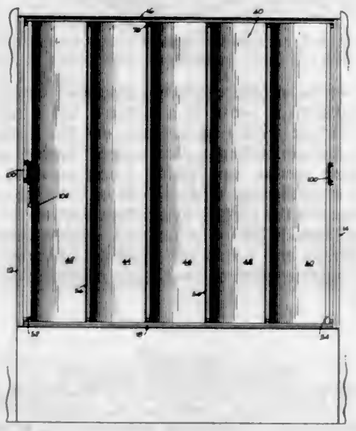
3,418,665
SHOWER INSTALLATIONS
John C. Long, 90 Broad St., Charleston, S.C. 29401
Filed Feb. 23, 1966, Ser. No. 529,412
3 Claims. (Cl. 4—149)

A shower space extending installation comprising a space extending generally U-shaped curtain rod including an elongated portion and legs extending substantially at right angles thereto, attachment means carried by each of the legs in proximity to the elongated portion, and friction bumpers mounted at the end of each leg. The space extending rod may be connected to the usual curtain



mounting rod by the attachment means so that the ends of the legs abut against the opposite shower stall wall and the elongated portion projects laterally outwardly of the usual curtain rod and shower space.

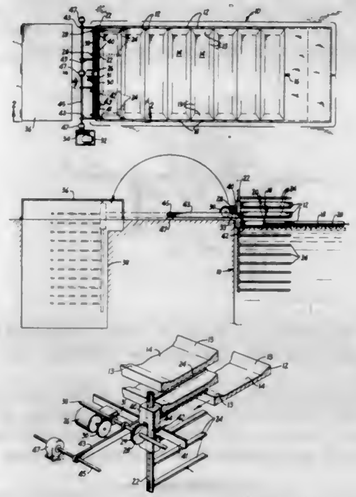
3,418,666
SHOWER AND TUB ENCLOSURE
Thomas Rockey, Miami, Fla., assignor, by mesne assignments, to Kinkead Industries Incorporated, Chicago, Ill., a corporation
Filed Mar. 17, 1966, Ser. No. 535,117
1 Claim. (Cl. 4—154)



A shower closure having a stanchion guiding and supporting structure including a pair of rollers on an axle fitted in a box-like channel member on a bracket entering the member through an elongated slot. The roller axle fits through an elongated vertical slot in the bracket. A single fastener secures to the stanchion both the bracket and a plate for locking flexible panels to the stanchion.

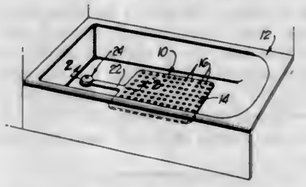
3,418,667
INSULATING SWIMMING POOL COVER
Roy Y. Powlan, 1 Chapel Drive, Lafayette, Calif. 94549
Filed July 5, 1966, Ser. No. 562,832
6 Claims. (Cl. 4—172)

1. A pool cover comprising a plurality of floatable slabs serially connected to one another, a plurality of tine members mounted in at least one rack at one wall of the pool, said tine members being movable in the rack through the plane of the surface of the pool for seriatim engagement with said slabs, means on the rack for moving said tine



members through the plane of the surface of the pool, and means adjacent to the pool for removing said rack tines and slabs from said one wall of the pool.

3,418,668
NON-SKID MATS
Frank R. Anderson and Albert J. Castro, Santa Maria, Calif., assignors to Westates Space-Era Products, Inc., Santa Maria, Calif., a corporation of California
Filed June 11, 1965, Ser. No. 463,268
3 Claims. (Cl. 4—185)



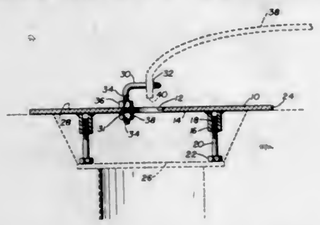
The bath mat is provided with holding means on both of its surfaces, which holding means impede the sliding of the mat in a shower stall or bathtub. Interconnecting means is also provided on one side of the mat, which interconnecting means is capable of interlocking with a raised pop-up type drain valve. This interconnecting means comprises a cavity into which the pop-up valve is positioned. Perforations around the cavity permit the drainage of shower water. The other side of the interconnecting means has an extension or projection which can be engaged in the openings in an ordinary drain screen in a shower floor. Again, the perforations permit the discharge of shower water into the drain.

3,418,669
SANITARY COVER FOR A RECESSED FLOOR DRAIN
Stuart L. Maxwell, 727 Dayton, Muskogee, Okla. 74401
Filed July 14, 1966, Ser. No. 565,247
2 Claims. (Cl. 4—286)

1. A sanitary cover for a recessed floor drain comprising:

a flat horizontal plate member having a small diameter opening in the center thereof;

vertical downwardly extending lugs affixed to the lower surface of said plate member, said lugs being spaced from each other and positioned intermediate said small opening and the periphery of said plate, each of said lugs having a threaded opening therein communicating with the lower surface thereof;



a bolt threadably positioned in each of said lugs threaded openings and extending downwardly therefrom; and

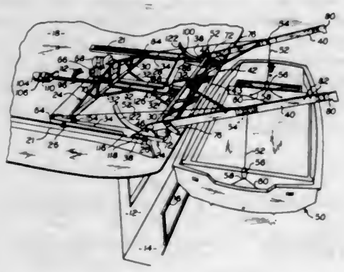
an upstanding tube holder affixed to the upper surface of said plate member adjacent said opening, said tube holder having a tube receiving opening therein coaxial with and spaced above said plate opening.

3,418,670
ROLLER STRETCHER
Rubie F. Morgan, Rte. 2, Box 840, Trussville, Ala. 35173
Filed Apr. 27, 1967, Ser. No. 634,180
4 Claims. (Cl. 5—81)



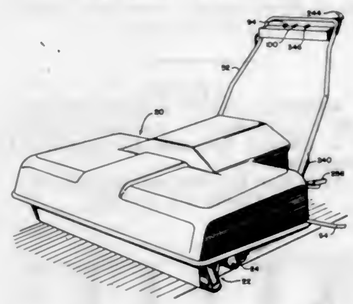
The roller stretcher comprises an arrangement of two separate belts. The lower belt is a track belt and the upper belt is bed belt. As to the size of the rollers, they may be varied according to design, but the device is used to lift an injured or sick person from the ground or other area without picking them up, while the smaller roller reduces the height by which such person may have to be lifted.

3,418,671
HOISTING AND LAUNCHING APPARATUS FOR DINGHY
Patrick T. Marotta, Rockaway Valley Road, Boonton Township, N.J. 07005
Filed Mar. 6, 1967, Ser. No. 620,870
18 Claims. (Cl. 9—39)



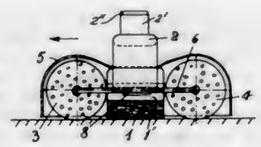
The disclosure relates to apparatus for handling a dinghy which is carried aboard a ship. A davit structure swings angularly about a horizontal fore-and-aft axis on pivot connections to a frame which is itself movable athwartship along tracks attached to the deck of the ship. Flexible cables passing over pulleys on the davit structure pull the dinghy up into contact with the davit structure as the cables are wound on a winch while the davit structure is in outboard position. Continued winding of the cables pulls the davit structure upward and inward about the pivot connections to turn the dinghy into a position bottomside up over the deck. The frame then moves further inboard along the tracks to carry the dinghy to its final inboard location. Motor means have automatic controls for the sequence of operations.

3,418,672
BOWLING LANE MAINTENANCE DEVICE
Patrick J. Regan, Elm Grove, Wis., assignor to D.B.A. Products Company, Inc., Deerfield, Ill., a corporation of Illinois
Filed May 22, 1962, Ser. No. 196,769
Claims priority, application Australia, Apr. 19, 1962, 16,801/62
16 Claims. (Cl. 15—98)



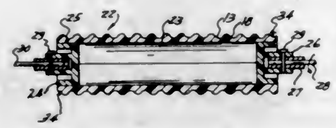
2. A device of the character described comprising a vehicle adapted to move in a forward and a reverse direction, surface wiping means adjacent the forward end thereof, surface buffing means spaced behind said surface wiping means, said means being mounted on the vehicle for adjustment into and out of working positions with respect to the surface over which the vehicle travels, and spray means mounted on said vehicle behind said buffing means and actuatable to apply dressing material onto the surface when the vehicle is moved in its reverse direction.

3,418,673
CHALK BOARD ERASER
André E. Kruth, 18 Rue de Rome a, Verviers, Belgium
Filed Feb. 6, 1967, Ser. No. 614,069
Claims priority, application Belgium, Feb. 9, 1966, 676,279
3 Claims. (Cl. 15—118)



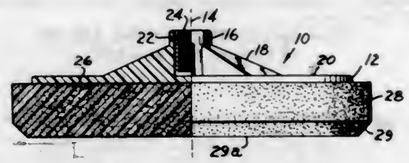
A chalk board eraser comprising a mounting member, a backing member secured to the bottom of the mounting member, a felt wiper secured to the backing member, a pair of cylindrical wipers of porous material rotatably and loosely mounted on each side of the mounting member. Each of the cylindrical wipers is laterally displaceable in a direction opposite the movement of the eraser and engages with the backing member which prevents the rotation of this particular cylindrical wiper. A handle, a cover and a hanging device for the eraser are provided.

3,418,674
DISPOSABLE BROOM CORE AND BRISTLE ASSEMBLY
Leo L. Lechene, R.D. 1, Box 364, Patton, Pa. 16668
Filed Nov. 30, 1967, Ser. No. 687,039
1 Claim. (Cl. 15—182)



A disposable core and bristle assembly for street sweeping brooms, which includes a moulded plastic core with exterior sprial groove along its length, with plastic adapter hubs secured within its ends, a series of bristle mats formed into U-shape and at their apices nested end to end in said groove and secured therein by a plastic cable wound therearound, each mat including a plurality of parallel engaging plastic coplanar bristles transversely fused together at their central portions; and the method of making said core and bristle assembly.

3,418,675
BUFFING WHEEL
Larry G. Megular and Kenneth D. Megular, Pasadena, Calif., assignors to Mirror Bright Polish Co., Pasadena, Calif., a partnership
Continuation-in-part of application Ser. No. 598,687, Dec. 2, 1966. This application Oct. 17, 1967, Ser. No. 675,912
2 Claims. (Cl. 15—230)

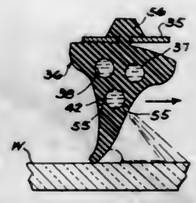


This disclosure relates to buffing wheels, and particularly to buffing wheels for buffing a sheen on a surface substantially free from whorls.

A buffing wheel according to the present invention comprises a substantially cylindrical buffer head having a diameter of not less than six inches and constructed of an open-cellular foam, such as polyurethane foam. The buffer head has a buffing face and a beveled portion at the outer portion of the buffing face.

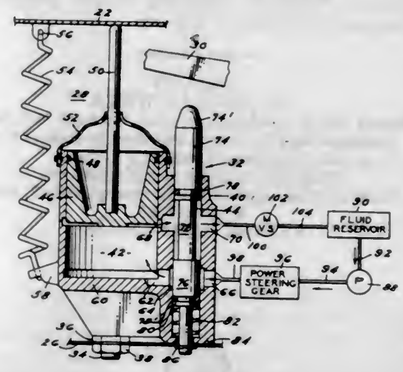
3,418,676
WINDSHIELD WIPER AND WASHER SYSTEM
Ernest Byczkowski, Detroit, and Henry J. Tischler, Bloomfield Hills, Mich., assignors to Young Spring & Wire Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,973
6 Claims. (Cl. 15—250.04)

A windshield wiper and washer system comprising a windshield wiper arm that is pivoted adjacent the windshield and has three passages therein, two of which are connected to the liquid circulating system of the engine and the third of which is connected to a source of windshield washer liquid. The windshield wiper arm, in turn, supports a windshield wiper blade intermediate its ends, the blade also having three passages therein, two of which communicate with one another and are connected to two of the passages in the wiper arm to form a closed liquid coolant circulating system for heating the windshield wiper blades when the engine is operating and the liquid coolant is circulated. The third passage in the windshield wiper



blade is connected to the third passage in the wiper arm and the wiper blade is formed with sealable openings therein so that when the blade is moved along the windshield and pressure is applied to the washing liquid, the liquid is dispensed against the windshield due to the flexing of the windshield wiper blade.

3,418,677
WINDSHIELD WIPER CLOSURE CONTROL SYSTEM
William B. Goodale, Orchard Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 618,194
9 Claims. (Cl. 15—250.19)

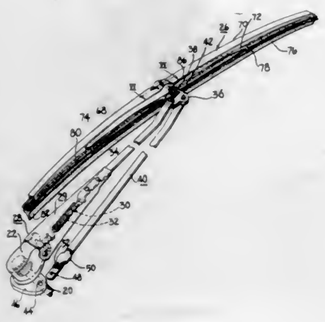


A control system operating a closure member concealing a motor vehicle windshield wiper in its depressed park position. The control system includes wiper position sensing means controlling the operation of valve means for directing fluid pressure to a closure member operating motor upon initial movement of the wiper from its parked position and terminating the application of pressure to the motor upon the return of the wiper to the parked position.

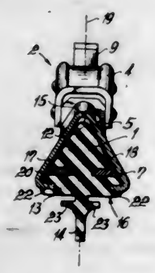
3,418,678
WINDSHIELD WIPER ARM AND BLADE ASSEMBLY
Raymond A. Deibel, Cheektowaga, and Anthony C. Scinta, Hamburg, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed June 10, 1966, Ser. No. 556,715
6 Claims. (Cl. 15—250.23)

A windshield wiper arm and blade combination for motor vehicles in which a primary wiper arm is pivoted

to a pivot block at its free end and includes a mounting section for securement to a pivot shaft at its other end. A drag link is pivoted at the pivot block on an axis parallel to, but spaced from the pivotal axis of the primary wiper arm and is adapted to be pivotally secured to an axis parallel to, but spaced from the pivot shaft at its other end. The blade includes within its profile a transverse opening for reception of a pin secured to the pivot block having its axis in the plane of the pivot block. The pin is releasably retained within the transverse opening by a coil spring, which coil spring is also utilized for distributing arm pressure to a pair of levers. The pin includes opposed shoulders between which the coil spring is disposed. Means for depressing the coil spring to permit removal of the blade is provided.

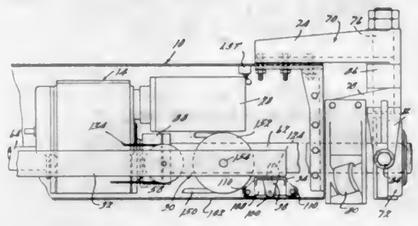


3,418,679
WINDSHIELD WIPER
Robert Barth, Waldstetten, and Gerhard Adalbert, Stuttgart-Bad, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed May 4, 1966, Ser. No. 547,569
Claims priority, application Germany, May 7, 1965, B 81,811/65
6 Claims. (Cl. 15—250.36)



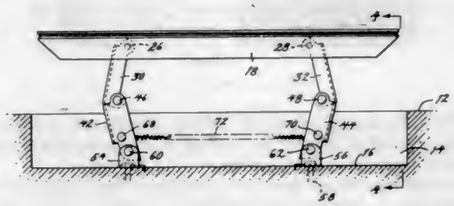
A windshield wiper comprises a reciprocable wiper element having an elongated carrier of triangular cross-section whose base faces the windshield. An elongated wiper blade extends from the base towards and into engagement with the windshield. Means is provided for reciprocating the wiper element and air currents which develop during such reciprocation sweep along the rearwardly tapering sides of the carrier and thereby exert a component of force thereon tending to displace the carrier in the direction toward the windshield to prevent lift-off of the blade from the windshield.

3,418,680
LONG RETRACTING SOOT BLOWER
David A. Rausch, Lancaster, Ohio, assignor to Diamond Power Specialty Corporation, a corporation of Ohio
Filed Apr. 13, 1967, Ser. No. 630,741
10 Claims. (Cl. 15—317)



A long retracting type soot blower for cleaning the surfaces of heat exchange apparatuses having a feed tube and a lance tube mounted in telescopic relationship around the feed tube and rotatably and movably carried at one of its ends by a carriage for movement to and from a retracted position and a projected or cleaning position. An auxiliary carriage mounted for movement and drivingly coupled to the principal carriage incorporating a support thereon for movably supporting the lance tube and/or the feed tube in all moved positions thereof and a take-up reel around which a flexible conduit is trained and is maintained in appropriate aligned position for supplying energy to the drive motor on the principal carriage in all moved positions thereof.

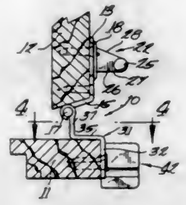
3,418,681
COLLAPSIBLE HANDLE OPERABLE BY EXERTION OF A PUSH DOWNWARDLY ON ONE END THEREOF
Marton Szabo, Broomall, Pa., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey
Filed Apr. 12, 1967, Ser. No. 630,389
10 Claims. (Cl. 16—115)



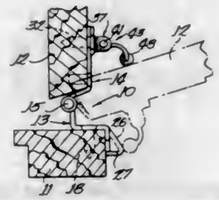
A handle for a carrying case, luggage and the like which is collapsible to a non-carrying position against the carrying case wall or into a well provided therein, the handle including resilient means selectively acting to releasably retain it in the well or against the wall and to urge the handle in a raised carrying position after a push has been exerted on one end thereof.

3,418,682
HINGE AND CATCH ASSEMBLY
Ralph F. Anderson, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 538,059
5 Claims. (Cl. 16—145)

A hinge and catch assembly for the door of a cabinet having a pair of hinge wings pivotally joined together and mounted on the cabinet door and the cabinet with one hinge wing carrying a catch member and the other hinge wing carrying a projecting strike cooperating with the catch member. The strike has a base mounted in a pocket in its associated hinge wing with a projection extending through and beyond the hinge wing to terminate in an enlarged spherical portion. The catch member is provided with a slot having a generally spherical recess to receive the strike, the walls of the recess forming camming ramps acting to engage the spherical portion of the strike and draw it inward.



3,418,683
COMBINED HINGE AND CATCH ASSEMBLY
Roy A. Stone, Rockford, and Leslie M. Ellis, Capron, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,278
3 Claims. (Cl. 16—145)

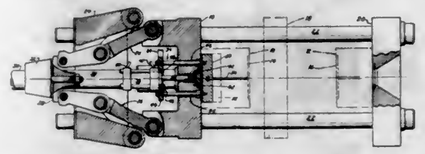


A combined hinge and catch assembly utilizing a cabinet wing mounted on a cabinet and provided with a hinge portion receiving a hinge pintle and a flange with an integral strike including an inclined camming portion extending away from the hinge portion and terminating in an inwardly extending retaining surface, and a door wing mounted on a door and having a hinge portion cooperating with the hinge portion of the cabinet wing and the pintle and an embossed portion receiving a spring yoke. The yoke carries a pin which is encompassed by coils of springs that each have one end secured on the embossment and the other end outwardly curved and carrying a roller adapted to engage the camming surface and retaining surface as the door is closed.

3,418,684
EJECTOR MECHANISM FOR A PLASTIC INJECTION MOLDING MACHINE OR THE LIKE
Harvey H. Collins, North Wilbraham, Mass., assignor to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts
Filed Aug. 31, 1966, Ser. No. 576,395
3 Claims. (Cl. 18—2)

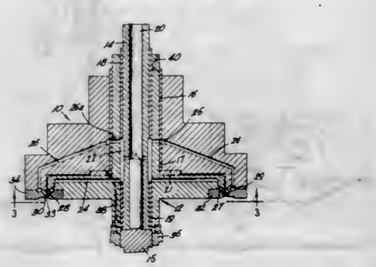
1. An ejector mechanism for a plastic injection molding machine or the like having a plate supporting a first die half for movement forwardly into engagement with a fixed second die half to define a cavity therewith and

rearwardly to carry a part molded in the cavity away from the fixed die half, said mechanism comprising a reversible fluid motor including a cylinder element and a piston element, one of said elements being secured to the rear of said die support plate and the other element having at least one rod connected therewith and slidable through said die support plate, an ejector plate disposed forwardly of said die support plate for reciprocation relative to



said first die half and movable forwardly by said rod, and at least one ejector rod secured to said ejector plate and slidable through said first die half to eject said molded part with forward movement of said other element, and wherein the piston element is secured to the rear of the die support plate, a cylinder plate is secured to said cylinder and has more than the said one rod secured thereto and slidable through said die support plate.

3,418,685
DURABLE EXTRUSION APPARATUS
Henry H. Anderson, Westfield, and Walter A. Miller, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 23, 1966, Ser. No. 604,219
11 Claims. (Cl. 18—12)

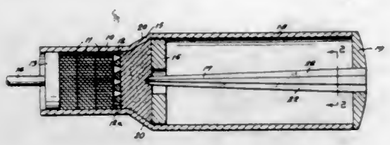


One or more bearing members are placed between a pair of movable die members, which members have heretofore been in sliding contact with each other, to absorb the wear of such contact and preserve the die members. The bearings can be employed with linear and tubular dies including a pair of tubular dies for extruding plastic net. A plastic distributor chamber is provided within the apparatus and the bearings are mounted wholly outside of the chamber so that there is virtually no plastic leakage between the die members. The relative rates of flow of plastic in the ducts of the die members can be controlled by restricting or enlarging the communication of the die ducts with the chamber.

3,418,686
APPARATUS FOR FORMING ROCKET PROPELLANT GRAINS
Richard G. Guenter, Wilmington, Del., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Original application July 16, 1965, Ser. No. 472,742, now Patent No. 3,390,210, dated June 25, 1968. Divided and this application Jan. 23, 1967, Ser. No. 622,379
3 Claims. (Cl. 18—12)

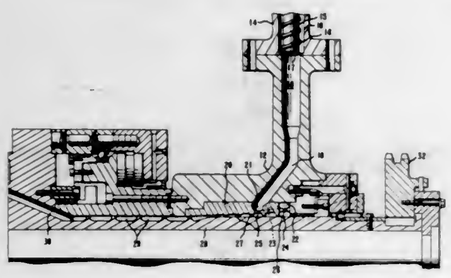
A large grain propellant forming device having re-

duced, outwardly tapered and unreduced or die segments. A disc shaped axially moveable ram is positioned in the reduced segment, and is utilized to extrude the propellant through a multiplicity of orifices positioned adjacent the outwardly tapered segment. The movement of the extruded material is opposed or retarded by a disc shaped



consolidation ram positioned in the die segment which slides loosely on a stake. The retarding of the movement of the material results in a product having a large propellant grain while at the same time relieving the stresses and strains generated by the extrusion.

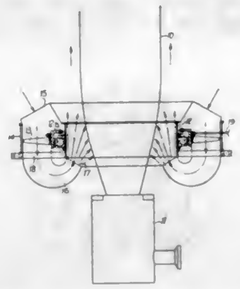
3,418,687
EXTRUDING APPARATUS
Richard James Albert, Clinton, Iowa, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 589,008
4 Claims. (Cl. 18—14)



An apparatus for extruding organic polymeric materials is provided comprising a feeder for advancing a stream of polymeric material, an annular extruder die for forming said organic polymeric material into tubular form and an adapter operatively interconnecting said feeder and said extruding die wherein said adapter is characterized by tubular flow passages communicating with said feeder and a cylindrical flow insert therein having bifurcated flow passages in connection with a helical flow path located internally thereof adapted to advance axially a progressively increasing amount of said polymeric material toward said annular extruding die.

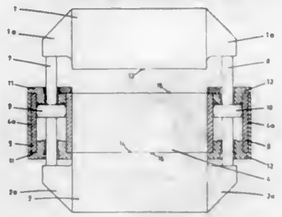
3,418,688
MANUFACTURE OF PLASTIC TUBING OR SHEETING
Derrick S. Clarke, 440 Hough Fold Way, Harwood, near Bolton, Lancashire, England
Filed Nov. 29, 1966, Ser. No. 597,684
6 Claims. (Cl. 18—14)

Apparatus for manufacture of extruded plastic tubing wherein external air cooling is provided, characterized in that the means for applying external air cooling comprises an axial flow fan with an annular nozzle arranged coaxially of the tubular extrusion, whereby an air stream with a helical component is produced including means,



preferably baffles, for adjusting the helical component before it leaves the nozzle.

3,418,689
HYDRAULIC FORMING OR INJECTION PRESS FOR MOLDING SYNTHETIC MATERIALS
Otto Karl Buchheit, St. Ingbert, Germany, assignor to Verwaltungsgesellschaft Moeller und Neumann offene Handelsgesellschaft, St. Ingbert (Saar), Germany
Filed Oct. 24, 1966, Ser. No. 589,055
Claims priority, application Germany, Oct. 22, 1965, V 29,575
6 Claims. (Cl. 18—16)



1. Hydraulic press for a forming and injection press to mold synthetic materials comprising columns supporting outer cross-beams and a pressing plate mounted between the cross-beams and movable in opposite directions by a hydraulic drive characterized in that hydraulic drives (**5–10**) are provided at opposite sides of the pressing plate (**4**), and that the opposed surfaces (**13, 14**) of the cross-beams (**1, 2**) as well as of the opposite surfaces (**15, 16**) of the pressing plate facing the two cross-beams are constructed as tool supports to receive two alternately loaded form pairs.

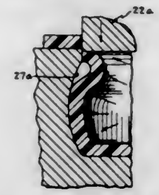
ERRATUM

For Class 18—17 see:
Patent No. 3,419,889

3,418,690
APPARATUS FOR MANUFACTURING PLASTIC CONTAINER WITH THICKENED BEAD
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original application May 10, 1961, Ser. No. 109,134, now Patent No. 3,190,530, dated June 22, 1965. Divided and this application Jan. 4, 1965, Ser. No. 423,163
1 Claim. (Cl. 18—19)

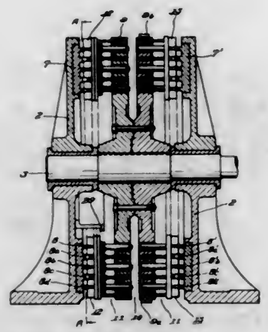
Apparatus for forming a smooth beaded undercut rim simultaneously with the molding of an article from a heated web of thermoplastic material utilizing opposed mold members, one of which has a curved portion, to

form the article, support a portion of it adjacent its rim against the curved portion of the mold, sever the article from the web and subsequently squash the severed free



end thereof while the supported portion is held in place against the curved mold portion by a pressure differential to form the smooth beaded undercut rim.

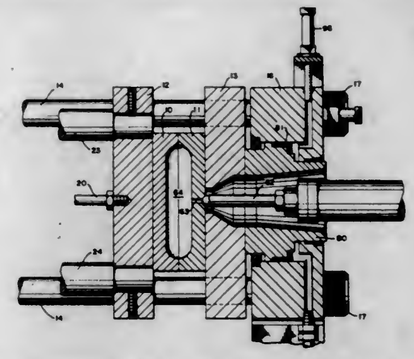
3,418,691
APPARATUS FOR AUTOMATICALLY FABRICATING CAPS, DISC AND THE LIKE ARTICLES OF PLASTICS
Mikihiko Hanai, 8–7 4-chome, Kachidoki, Chuo-ku, Tokyo, Japan
Filed May 20, 1966, Ser. No. 551,698
Claims priority, application Japan, Dec. 28, 1965, 40/80,542
4 Claims. (Cl. 18—20)



This apparatus includes rotary platen means carrying a multiplicity of forcing mold assemblies radially arranged on one side of such rotary platen means and a multiplicity of supporting mold assemblies radially arranged on the other side of the rotary platen means. Male molds are carried on each of the forcing mold assemblies and female molds are carried on each of the supporting mold assemblies in aligned relation. The apparatus also includes other features such as gear train means carried by the rotary platen means and the male molds, and a stationary gear segment means is present to engage and drive the gear train means to rotate the male molds and unscrew them from a formed threaded article at one portion of movement of the rotary platen means. Base plates are operably associated with each of the mold assemblies and are movable independently in relation to knock-out pins slidably engaged with each of the molds present in the apparatus.

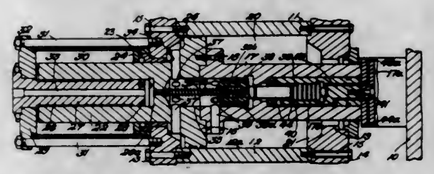
3,418,692
MOLD CLAMPING APPARATUS
Emery I. Valyi, New York, N.Y. (5200 Sycamore Ave., Riverdale, N.Y. 10471)
Filed Oct. 6, 1965, Ser. No. 493,489
4 Claims. (Cl. 18—30)

Molding apparatus including two platens receiving, respectively, the parts of a two-part mold. One platen is mounted to be moved over a long stroke at relatively low pressure and clamped in molding position. The other



platen is moved under high pressure over a short stroke into molding position and held under molding pressure.

3,418,693
DOUBLE ACTING PRESS MECHANISM FOR INJECTION MOULDING MACHINES
Peter Franklin Harrison, London, England, assignor to Peco Machinery Limited, London, England, a British company
Filed Jan. 6, 1966, Ser. No. 519,047
Claims priority, application Great Britain, Jan. 7, 1965, 824/65
9 Claims. (Cl. 18—30)

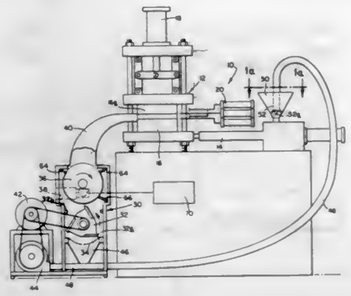


A press mechanism, particularly suitable for an injection moulding machine, has a double acting ram consisting of a piston movable in a cylinder with a passage through the piston to connect the two sides thereof, this passage including a valve. Means are provided for applying fluid pressure to unequal areas on the two sides of the piston. With the valve open, rapid movement of the piston can be achieved whereas, by closing the valve, a larger force with slower movement is obtained. In a press mechanism for injection moulding machine, closing of a movable mould part is preferably effected by applying fluid pressure to a first area on one side of the piston and fluid pressure to second and third areas on the other side of the piston, the second and third areas being together greater than the first area. Closing the valve and opening the first area to drain enables a high pressure to be obtained and final mould closing movement. Opening of the mould is obtained by applying fluid pressure to the first and second areas of the piston only with the valve open, the second area being less than the first area.

3,418,694
APPARATUS SCRAP GRINDER AND PLASTIC INJECTION MOLDING MACHINE
William Strauss, Huntingdon Valley, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1966, Ser. No. 583,221
10 Claims. (Cl. 18—30)

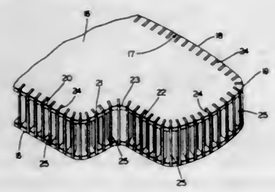
Scrap grinding apparatus for continuously comminuting plastic scrap discharged from an injection molding

machine and feeding comminuted scrap to the inlet port of the injection cylinder. A gate interposed in the conduit leading to the separable molds dispenses the scrap



to the comminutor at predetermined intervals but always obstructs and prevents dust and hard particles produced during comminution from returning through the conduit to the molds so as to avoid fly-back.

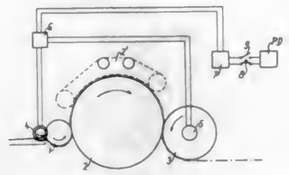
3,418,695
PAPERBOARD FORM CONSTRUCTION FOR RUBBER MOLD
Howard B. Claflin, 1951 Tudor St., Cuyahoga Falls, Ohio 44221
Filed Sept. 30, 1966, Ser. No. 583,250
12 Claims. (Cl. 18—45)



1. In a paperboard mold for use in the manufacture of hollow articles, spaced paperboard end walls each having a marginal edge at least a portion of which has a curved contour; paperboard slats extending between the end walls at spaced intervals around said curved marginal edge portions; the slats having ends joined to said end walls and having outer edges extending between the end wall curved portion marginal edges to define the contour of a curved mold side wall portion; a kraft paper member extending between the end walls and around the slats and the end wall curved portion marginal edges; and the kraft paper member being joined to the slats to form a curved mold side wall portion with a smooth outer surface.

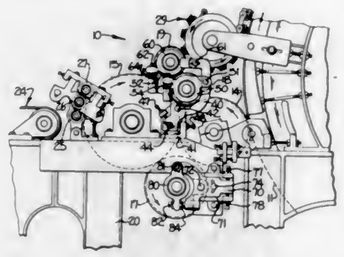
3,418,696
CONTROL SYSTEM FOR CARDING MACHINE
Vladislav Kramolis, Antonin Danhel, Alois Rataj, and Zdenek Kochta, Brno, Czechoslovakia, assignors to Elitex, Liberec, Czechoslovakia
Filed July 15, 1965, Ser. No. 472,223
3 Claims. (Cl. 19—105)

A control system for carding machines which include a first rotary member for feeding a fibrous material, and a second rotary member spaced from the first rotary member and receiving the fibrous material therefrom. Drive means is provided for both of these rotary members



and includes means for starting and stopping rotation of one of these members subsequent to starting and stopping of the other.

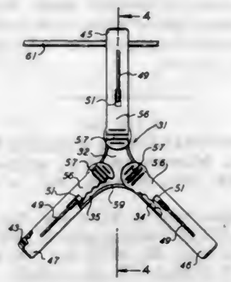
3,418,697
AUXILIARY TRANSFER ROLLS FOR TEXTILE CARD LICKER-IN
Homer W. Groce and William A. Warnock, Lyman, S.C., assignors to Wellman Industries, Inc., Johnsonville, S.C., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 617,868
3 Claims. (Cl. 19—105)



In a high production textile card, correct feeding of textile material to the operating instrumentalities of the card is assured by a novel mounting and drive arrangement for two licker-in rolls and a plurality of auxiliary rolls including divider rolls cooperating with the licker-in rolls. The auxiliary rolls are supported from the card frame adjacent the two licker-ins so as to be adjustable as a unit in at least one predetermined group and so as to be individually adjustable relative to other auxiliary rolls in the same group. A transmission means is provided to operatively connect the auxiliary and licker-in rolls together for coordinated rotation and to the main cylinder of the card to normally be driven in rotation therefrom in coordination to the working of textile fibers thereby, while permitting easily accomplished variation in the ratio of operating speeds through the use of a readily interchangeable ratio determining element. This mounting and drive arrangement provides a wide range of choices as to roll spacing adjustment and ratio drives in accommodating the intended high production of the textile card.

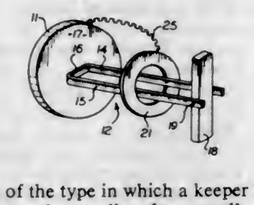
3,418,698
MULTIPLE GRIP CLOTHESPINS
Stephen A. Holcomb, 1369 N. Los Robles, Pasadena, Calif. 91104
Filed June 7, 1967, Ser. No. 644,319
5 Claims. (Cl. 24—81)

A clothespin having two or more jaw pairs in which the first jaw components of each pair are combined in a unitary base. The second jaw component of each pair is independently springloaded with respect to the first



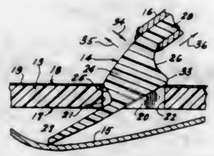
jaw component such that each gripping jaw pair may be operated to grip and release independently of the other jaw pair or pairs.

3,418,699
CUFF LINK PROTECTOR
Samuel Feldman, 900 Bay Drive, Miami Beach, Fla. 33141
Filed Jan. 13, 1967, Ser. No. 609,161
2 Claims. (Cl. 24—90.5)



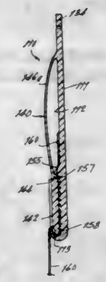
A cuff link of the type in which a keeper bar is pivotally mounted on a stud extending downwardly from the back of the face plate of the cuff link, in which the cuff link in use is inserted through a cuff button hole with the keeper bar aligned with the stud, and thereafter the keeper bar is pivoted to a position perpendicular to the stud to retain the cuff link in desired position, a washer member surrounding the stud and bearing against the keeper bar to maintain same in desired perpendicular orientation with respect to the stud when the cuff link is in operative position so as to prevent inadvertent loss of the cuff link.

3,418,700
SEPARABLE FASTENER FOR WEARING APPAREL
Irving Edelman, Franklin Square, N.Y., assignor to Maid-Rite Novelty Corporation, Long Island City, N.Y., a corporation of New York
Filed June 24, 1966, Ser. No. 560,142
9 Claims. (Cl. 24—201)



In a separable fastener for connecting articles of wearing apparel by way of plastic male and female elements which are to transmit a longitudinally applied force, the female element has flat inner and outer faces parallel to the direction of such force and at least one aperture presenting opposed edges perpendicular to the faces and extending transverse to the force direction, and the male element is generally Z-shaped in cross-section to define a body insertable in the aperture and having opposed shoulders to abut the aperture edges and prevent relative movement in the force direction and further to define first and second projections extending beyond the shoulders at opposite sides of the body to respectively lie against the inner and outer faces of the female element when the body is disposed in the aperture, the first projection being laterally dimensioned for movement through the aperture and the second projection extending laterally beyond the adjacent shoulder, which shoulder has a lip along its edge remote from the second projection to snap past an edge of the aperture during insertion and removal of the body in and from the aperture.

3,418,701
BUMPLESS GARTER DEVICE
Sidney R. Deitch, New York, N.Y. (61—35 98th St., Rego Park, N.Y. 11374)
Continuation-in-part of application Ser. No. 616,081, Feb. 14, 1967. This application Dec. 29, 1967, Ser. No. 694,593
10 Claims. (Cl. 24—245)



A garter device is disclosed, of the type which may be used in conjunction with a garter belt, girdle or other undergarment, wherein all parts of the device are integrally molded together, and which causes no bump or minimum bump under outer clothing and which can be operated with one hand. The device comprises two main integrally formed plastic parts, namely a main body of molded material, such as plastic; and a flexible sliding tongue member integrally molded therewith. The upper portion of the tongue member is a thin flexible plastic strap, which is fixed at its upper extremity to the main rear portion of the device by being integrally molded therewith. Novel tapered upwardly narrowing flaps or ears are integrally molded into the main body of the device and form a surface which is spaced from the back of the main body. The lower end of the tongue member, also integrally molded with the device, is somewhat thicker than the upper strap portion of the tongue member. The lower end of the tongue member is engageable with the lateral ears of the main body portion. A wedge member, also integrally molded and protruding forwardly from the back wall member of the main body, is provided with a relatively flat bottom surface which mates with an upper flat surface at the upper rear of the thickened portion of the tongue member. These two mating surfaces engage between them a part of the hosiery at a first location thereof. The lower terminal end of the thickened tongue member forms a somewhat thinner downward projection which mates with an upwardly open J-shaped pocket formed at the lower end of the main body as a bottom continuation of the lateral ears. Part of the hosiery is engaged at a second location thereof between the downward projection of the tongue and the J-shaped pocket in the main body.

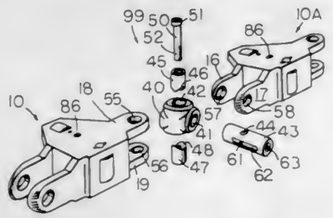
According to another embodiment of the invention, the tongue member is provided with indentations engageable with lateral stop members or obstructions which are integral with the main body and join the bottom of the lateral flaps to the back of the main body.

In operation, the top of the hosiery is pulled up the leg over the main body of the device with its integral flaps, the tongue member is placed over the hosiery, and the tongue member, being flexible at its strap portion, is slipped below the wedge member and between the side flaps and the main body back; and, in the second embodiment the tongue member is slipped down between the lateral obstructions which engage indentations in the tongue and hold the latter in place. Since the retaining means for the tongue are lateral to a great extent and no thicker than the tongue, the overall garter device can be made much thinner than those of the prior art. Furthermore, since all parts can be integrally molded together, assembly labor is eliminated and the device is much cheaper than other devices of the prior art.

3,418,702
TENTER CLIP CHAIN

Theodore Robert Coburn, Coventry, R.I., assignor to Bevis Industries, Inc., Providence, R.I., a corporation of Florida

Filed Oct. 8, 1965, Ser. No. 494,137
3 Claims. (Cl. 26—61)



A tenter clip chain comprising universal joints interconnecting base members of adjacent tenter clips, each clip being adapted to be drivable from two different directions by sprockets lying in two different planes.

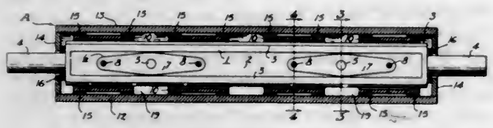
ERRATUM

For Class 29—115 see:
Patent No. 3,419,890

3,418,703
ANTIDEFLECTION ROLL WITH NON-ROTATING BEAM AND LEVER SUPPORTS

Leon F. Thiry, Chagrin Falls, Ohio
(Thiry et Cie, Huy, Belgium)

Filed May 31, 1966, Ser. No. 554,149
23 Claims. (Cl. 29—116)

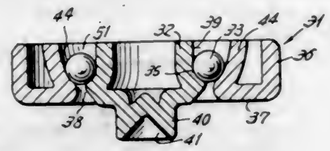


Antideflection roll for heavy calenders having nonrotatable central beam and nonrotatable levers thereon supporting a series of non-rotatable supporting rings having a multiplicity of peripheral bearing means rotatably supporting the outer cylindrical shell. The lever means and supporting members distribute the load substantially uniformly along the length of the outer shell, which is the only rotating element.

3,418,704
METHOD OF MAKING A ROLLER BEARING

Odd N. Oddsen, Morristown, N.J., assignor to Hillside Metal Products, Inc., Newark, N.J., a corporation of New York

Original application Sept. 2, 1964, Ser. No. 393,948, now Patent No. 3,317,257, dated May 2, 1967. Divided and this application Apr. 28, 1967, Ser. No. 647,279
6 Claims. (Cl. 29—148.4)

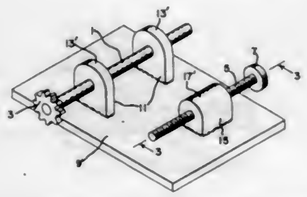


This invention is for a method of forming a roller bearing with an inner race member, an outer race member and a plurality of bearings disposed therebetween to effect relative rolling relationship between the members. The method consists of the steps of (1) drawing the outer race member in a series of successive drawing operations from a blank of sheet material into an annular shape having a centrally disposed annular raceway, (2) drawing the inner race member in a series of successive drawing operations from a blank of sheet material into a shape having an annular raceway, (3) positioning said inner race member within an opening formed in said annular outer race member so that the respective raceways thereof are oppositely disposed, (4) placing a plurality of ball bearings between said raceways, (5) and bending the respective raceways of said members to conform to the curvature of the ball bearings and to enclose and retain the ball bearings.

3,418,705
METHOD AND APPARATUS FOR MOUNTING SHAFTS AND LIKE DEVICES IN PLASTIC CABINETS

William Aluah Sours, Sauquoit, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 15, 1966, Ser. No. 557,700
5 Claims. (Cl. 29—149.5)

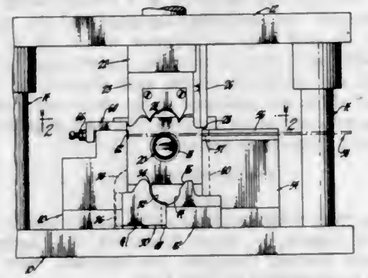


A method and apparatus for mounting an elongated rotatable member, such as a shaft or threaded member, to a cabinet through the use of an integrally molded, open-ended cradle, the cradle receiving the rotatable member and then being heat deformed to capitivate the rotatable member.

3,418,706
METHOD AND APPARATUS FOR MAKING BEARINGS

Charles S. White, 35826 41st St., Palmdale, Calif. 93550

Continuation-in-part of abandoned application Ser. No. 472,956, July 19, 1965. This application Sept. 25, 1967, Ser. No. 676,000
31 Claims. (Cl. 29—149.5)

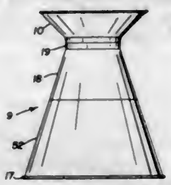


In accordance with the invention, low friction bearings are manufactured by wrapping around a curved member such as a shaft or a ball, a metal strip preferably having a low friction facing and having complementary locking means at the opposite ends thereof. The locking means are locked together to form an annulus around the shaft or ball as the final step in the wrapping operation. In the preferred embodiment the central portion of the strip is first bent into conformity with the shaft or ball after which one end of the strip and then the other end are wrapped against the shaft or ball. To accomplish this, the apparatus has a plurality of die members which function in sequence to contact the various portions of the strip and wrap them against the shaft or ball in the order described. A long length of strip can be fed to the apparatus and cut to proper length, with the locking means formed therein, by the apparatus just prior to the wrapping operation. Hence, self lubricating bushings, ball joints and similar bearings can be rapidly manufactured to close tolerances and at low cost.

3,418,707
INTEGRATED AND MATCH MACHINED ROCKET NOZZLE AND PROCESS OF MAKING SAME

Herff C. Emerson, Chula Vista, Calif., assignor to Rohr Corporation, San Diego, Calif., a corporation of California

Filed Apr. 19, 1965, Ser. No. 449,076
4 Claims. (Cl. 29—157)

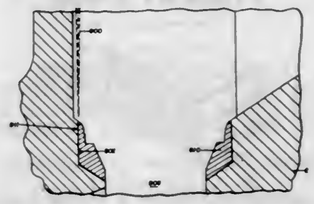


A rocket nozzle shell-ablative liner composite is disclosed in which a large hot sized, high strength unitary nozzle is formed of annularly welded frusto-conical ring sections of varying diameters and cone angles. Each of the ring sections is formed of arcuate ring segments welded together to form a unitary frusto-conical ring section, and each ring segment is cut and contoured plate metal. The welded ring sections and unitary nozzle are hot sized to remove distortion, and the external surfaces of the resulting nozzle structure is only nominally machined to design configuration. The internal surface dimensions of the nozzle are measured numerically to receive a match machined ablative liner which is bonded thereto. The liner has an inner layer of an ablative material and an outer layer of a resin impregnated fibre glass fabric which is machined to the inner dimensions of the nozzle shell.

3,418,708
METHOD OF MAKING VALVES BY ELECTRON BEAM WELDING

Chester A. Siver, Longmeadow, Mass.
(10 Fair Hill Lane, Suffield, Conn. 06078)

Original application Dec. 12, 1962, Ser. No. 244,092, now Patent No. 3,219,311, dated Nov. 23, 1965. Divided and this application Jan. 20, 1964, Ser. No. 338,680
10 Claims. (Cl. 29—157.1)

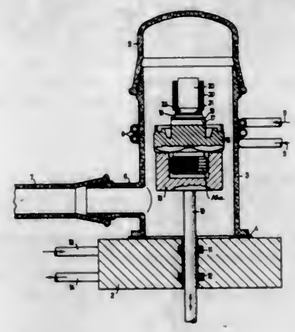


A first metallic valve component and a second valve component of hard, wear-resistant metallic alloy are assembled in abutting relationship with cooperatively configured and dimensioned abutting surfaces providing an annular band-like abutment area of close surface contact. A beam of high energy charged particles brackets the abutment area and is focused to weld the two components together over the abutment area without loss of the desirable properties of the metals.

3,418,709
PROCESS OF ATTACHING ELECTRIC CONNECTIONS TO A SEMICONDUCTOR BODY

Adolf Herlet, Schloss, and Rene Rosenheinrich, Ebermannstadt, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany

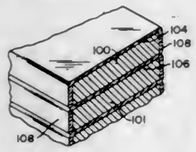
Continuation-in-part of application Ser. No. 119,988, June 27, 1961. This application July 6, 1965, Ser. No. 473,555
Claims priority, application Germany, June 28, 1960, S 69,152
5 Claims. (Cl. 29—589)



In a method of alloying a metal connecting member to the metal electrode of a monocrystalline semiconductor body, a layer of metal is alloyed with the semiconductor body in area contact therewith to form an electrode of eutectic alloy having a melting point of slightly less than 400° C. The connecting member is placed in contact with the electrode in a vacuum and the electrode and the member are heated in the vacuum by electric induction in a high-frequency field at such rate as to raise their temperatures to about 400° C. within a period of about 3 to 5 minutes to cause remelting of the electrode. The heating

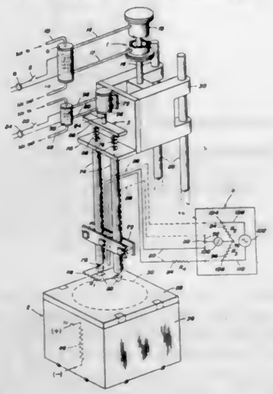
is discontinued upon melting of the electrode. Immediately thereafter the semiconductor body with the electrode and the member are cooled at such rate as to reach a temperature of at most about 80° C. within a period of about 15 to 20 minutes.

3,418,710
HIGH TEMPERATURE MAGNETIC CORES AND PROCESS FOR PRODUCING THE SAME
Joseph Seidel, Penn Hills, and Charles A. Eaves, Jamestown, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 8, 1963, Ser. No. 278,944
9 Claims. (Cl. 29—609)



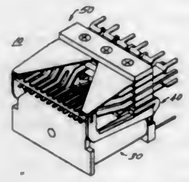
1. In a method for making a bonded magnetic core from magnetic metal which is suitable for use in high temperature environments the steps comprising, preparing the surface of the metal for subsequent coating thereon of a thin layer of an inorganic glassy adhesive, fusing on the magnetic metal a continuous nonporous thin layer of inorganic glassy adhesive at a first elevated temperature, assembling the coated metal into a plurality of layers to form a core, placing the formed core in a furnace and loading it to assure substantial contact between adjacent layers of the core, heating the core to a second elevated temperature somewhat lower than the first elevated temperature and in the range of from about 700° C. to about 1000° C. for a period of about 1 hour to 4 hours to stress relieve the magnetic metal and soften the glassy adhesive to bond adjacent layers of the core to each other.

3,418,711
WIRE STRAIN GAGE AND PROCESS FOR THE MANUFACTURE THEREOF
John D. Russell, Malibu, Calif., assignor to Microdot Inc., South Pasadena, Calif., a corporation of California
Original application June 15, 1960, Ser. No. 36,304, now Patent No. 3,245,016, dated Apr. 5, 1966. Divided and this application Sept. 15, 1965, Ser. No. 505,208
11 Claims. (Cl. 29—613)



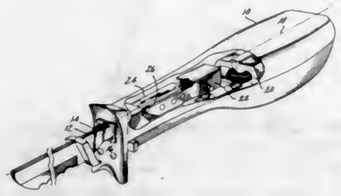
1. A method for producing an unmounted temperature compensated strain gage composed of a strain-responsive resistance filament coupled through an electrical insulating material to a metallic housing; a thin, substantially flat, metallic strip extending the length of said housing and welded thereto, and so disposed as to define an extension beyond the sides thereof to provide flat welding surfaces for effecting attachment of the gage to a test specimen; said method comprising disposing said gage in a fixed position in gage securement means; connecting said gage filament by means of a circuit to an electrical current source, in parallel to means for measuring the sensitivity of said filament, and in series to a compensating resistance element; and inserting said gage and the adjacent portions of said gage securement means in an oven; and heating said oven to a curing temperature sufficient to adjust the sensitivity of the gage filament to accord with that of the test specimen upon which said gage is to be mounted; and thereafter removing said gage and said securement means from said oven.

3,418,712
PROCESS FOR MANUFACTURING RELAYS
Walter R. Scherb, Jr., South Plainfield, N.J., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 29, 1963, Ser. No. 276,334
4 Claims. (Cl. 29—622)



A method of manufacturing relays, especially miniature relays, wherein the springs are blanked on a strip in card form and intermediate connecting webs at opposite ends of the springs, which are provided with locating holes, facilitate the handling of the parts. After the contacts are welded thereon, the springs are assembled into a pile-up and the connecting webs are removed, except for one connecting web, which is removed earlier in the process. The pile-up is mounted together with the armature and the coil in the final relay assembly.

3,418,713
BLADE CONNECTION MEANS FOR POWER-OPERATED SLICING KNIFE
Douglas M. Bauer, Danvers, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 24, 1967, Ser. No. 625,799
6 Claims. (Cl. 30—272)

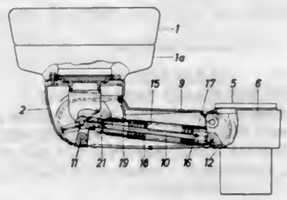


The disclosure herein shows a power-operated slicing knife with an improved latching structure for removable attachment of the knife blades.

ERRATUM

For Class 32—2 see:
Patent No. 3,419,891

3,418,714
DEVICE FOR VARIABLE HEIGHT POSITIONING OF TREATMENT APPLIANCES ON DENTAL EQUIPMENT
Helmut Pietschmann, Karlsruhe, Baden, Germany, assignor to Ritter Company Inc., Rochester, N.Y.
Filed Mar. 23, 1964, Ser. No. 353,776
Claims priority, application Germany, Mar. 25, 1963, R 347,778
9 Claims. (Cl. 32—22)



A vertically adjustable cuspidor connected to a dental stand by an arm which includes a parallel motion linkage between pivots **7**, **8**, **11**, and **12**, and a lengthwise adjustable diagonal strut including a bar **10**, tubes **19** and **21**, shell **18** and spring **15**. The cuspidor can be vertically movable responsive to vertical movement of a dental chair **23** by means of a rod or lever **22** carried on the cuspidor and a fork **24** carried on the chair.

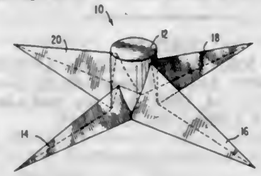
3,418,715
DENTAL HANDPIECE DRIVE MECHANISM AND DENTAL TOOL HOLDER
Charles A. Ellis, Hamden, Conn., assignor to Ritter Pfaudler Corporation, a corporation of New York
Filed Sept. 3, 1957, Ser. No. 681,683
10 Claims. (Cl. 32—26)



7. A dental handpiece comprising, in combination, an elongated casing adapted to fit in the hand of the user, a head at one end of said casing having a bore the axis of which extends at an angle to the long direction of the handle, a unitary capsule comprising a cylindrical shell, a fluid driven turbine and bearings therefor mounted in said shell, said shell being adapted to fit within and be held in said bore and means communicating between said casing and the turbine and extending through the shell wall for supplying fluid under pressure to the turbine from said casing, whereby said unitary capsule can be easily removed and a like replaced in said bore.

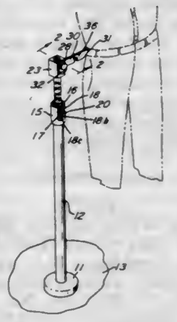
3,418,716
INTERPROXIMAL WEDGING DEVICE
Robert E. Woods, 206 W. Chestnut, Butler, Mo. 64730
Filed Feb. 3, 1966, Ser. No. 524,708
6 Claims. (Cl. 32—64)

Device for positioning dental matrices to prevent overhang of dental filling into interproximal space. The device includes a hub and a plurality of matrix-securing wedges radiating outwardly from the hub. The wedges are of different sizes to provide in one device a selection of wedges of varying sizes, so that the dentist need not stop a dental operation to fabricate or sort through a collection of wedges to find a wedge meeting size requirements for interproximal space encountered in the dental operation.



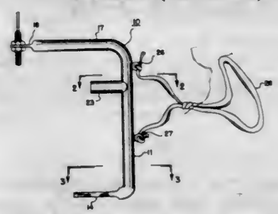
A projection from the hub facilitates manipulation of the device.

3,418,717
MEASURING APPARATUS
Irving L. W. Gloninger, Bala Cynwyd, and Lawrence P. W. Belmont, Sr., Philadelphia, Pa. (both % Irving L. Wilson Company, 1 Highland Ave., Bala Cynwyd, Pa. 19004)
Filed Nov. 15, 1966, Ser. No. 594,509
6 Claims. (Cl. 33—8)



Apparatus is disclosed for determining the inseam and outseam measurements of trousers. A stand is provided having a telescoped post and a collar for accommodating the device to a desired distance from the floor to the lower margin of the trousers. The post has a head with a gage arm adjustably mounted for setting to a selected crotch to upper margin of the trousers dimension. By proper setting of the device, measurement of the compensated height of the outseam is all that is required in connection with the proper fitting of trousers to determine the inseam measurement.

3,418,718
BOW AND ARROW SIGHT
George C. Current and Susie B. Current, both of 5752 E. 12th St., Tucson, Ariz. 85711
Continuation-in-part of application Ser. No. 538,155, Mar. 21, 1966. This application Oct. 30, 1967, Ser. No. 679,061
6 Claims. (Cl. 33—46)



A bow and arrow sight including a hand piece having a sleeve for releasably engaging the bow string and nocked

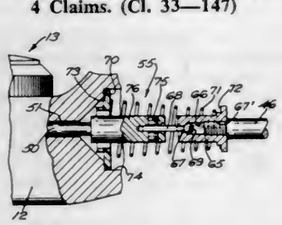
arrow. A rear peep sight is affixed to the hand piece and is sighted through a bead sight provided on the bow.

3,418,719
DRAPERY MEASURING TAPE ASSEMBLY
Edna L. Davis, 4001 Ave. F, Council Bluffs, Iowa 51501
Filed Oct. 24, 1965, Ser. No. 504,646
4 Claims. (Cl. 33—137)



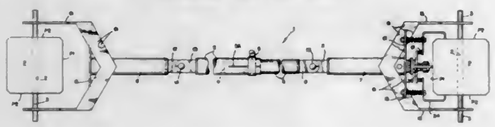
An assembly for use in measuring for draperies at a window facing includes a measuring tape attached to a carrier plate which is provided with a perpendicular end flange to engage the facing and supports a detent carrying bar and has hook position indicia alongside the bar; a hook for engaging the drapery rod is slidably attached to the bar, the means attaching the hook means to the tape characterized as being sufficiently releasable as to allow a detent engaging means on said hook and said hook both to be moved lengthwise of said tape.

3,418,720
BORE GAGE WITH SHOCK ABSORBING MOTION TRANSMITTING MEANS
John H. Worthen, Providence, R.I., assignor to Federal Products Corporation, a corporation of Rhode Island
Filed Feb. 17, 1967, Ser. No. 616,838
4 Claims. (Cl. 33—147)



A shock absorber transmitting means located between a dial indicator and a work engaging measuring head of a bore edge.

3,418,721
APPARATUS FOR PLUMBING AND GAUGING POSTS
Vernon E. Christensen, P.O. Box 304, Yoncalla, Oreg. 97499
Filed Dec. 30, 1966, Ser. No. 606,127
9 Claims. (Cl. 33—180)



1. An apparatus for spacing and plumbing consecutive ground supported posts comprising in combination, an elongate center section for placement intermediate a pair of posts and including a pair of end members, bracket support means for said center section carried by said end members and positionable into supported and fixed relationship adjacent to the upper end of both of said posts, and

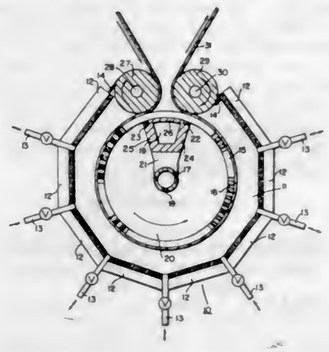
post engaging plumbing means comprising in combination an elongated carrier slidably supported at one of its ends by and telescopically extendable from at least one end member, pivoted arm means attached to said carrier and positionable into and out of contact with at least two sides of said post, visual plumb-indicating means supported by said carrier and positionable by said pivoted arm means to indicate the plumb condition of said two sides of one of said posts.

3,418,722
COMPASS CARD MOUNTING
Cornelis M. Verhagen, Heemstede, Netherlands, assignor to Datawell N.V., Haarlem, Netherlands
Filed Feb. 15, 1966, Ser. No. 527,460
Claims priority, application Netherlands, Feb. 16, 1965, 6501890
6 Claims. (Cl. 33—222)



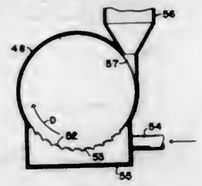
A compass having a compass card with its center region being a thin flexible diaphragm clamped between pins on opposite sides of the diaphragm, the clamped part of the diaphragm being in the center of the compass card. Allows tilting of the compass card over a large angle while still remaining centered, and facilitates reading of the compass from a distance while still maintaining accuracy.

3,418,723
TURBULENT DRYING PROCESS
Bernard W. Burgess, Senneville, Quebec, and Stuart M. Chapman, Beaconsfield, Quebec, Canada, assignors to Pulp and Paper Research Institute of Canada, Montreal, Quebec, Canada
Filed Oct. 27, 1965, Ser. No. 505,383
Claims priority, application Great Britain, Oct. 27, 1964, 43,872/64
10 Claims. (Cl. 34—1)



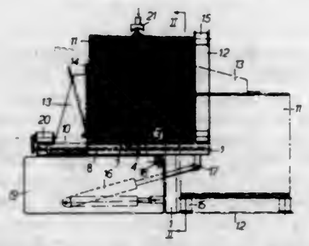
The present invention provides an improvement in a process for drying wet material, such as a continuous water-wet web, e.g. paper. It was known to dry the material by substantially simultaneously subjecting the material to percolation of hot gases through the material by means of a difference in gaseous pressure between two faces of the material, and to heating by means of radiation and also by means of convection. The inventive contribution resides in providing the convection by means of a hot gas, e.g. at a temperature of 400° F. or more, having a velocity which is sufficient to create a turbulent condition at the area where it impinges on, or contacts, the material being dried, e.g. a velocity of 100 ft./sec. or more.

3,418,724
METHOD AND APPARATUS FOR SUBJECTING MATERIAL TO CONDITIONING GAS WITH WHIRLING MOTION
Rudolph E. Futer, Oakland, Calif., assignor to Bangor Punta Operations, Inc., Oakland, Calif., a corporation of New York
Continuation-in-part of application Ser. No. 486,965, Sept. 13, 1965. This application Oct. 11, 1967, Ser. No. 687,406
22 Claims. (Cl. 34—10)



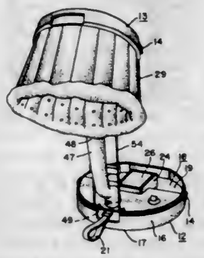
Small objects, particles or liquid, are subjected to a conditioning gas, e.g., to heat or cool them or, in the case of solids, to change their humidity, by supplying them to a whirl chamber defined by a confining wall at least a part of which is a membrane wall having a plurality of gas passages directed to emit a series of gas jets spaced apart in the circumferential direction by less than the throw distance of one gas jet to form a high-velocity gas current which moves peripherally about the chamber wall and entrains the material being treated, moving the material adjacently to said wall. The chamber may be one of a series of passive housings which are moved along a stationary membrane wall constituting the active part of each chamber; or the apertured membrane wall may be a fixed part of the chamber. In either case, the material is subjected to repeated blasts from the gas jets during each circuit, and, in the embodiments shown, many circuits are made about the chamber wall.

3,418,725
METHOD AND APPARATUS FOR MECHANICAL AERATION OF STACKS OF CARDBOARD, PAPER OR OTHER SHEET MATERIAL
Gunnar Ruud, Elgveien 12, Sarpsborg, Norway
Filed May 26, 1967, Ser. No. 641,648
Claims priority, application Norway, June 11, 1966, 163,399
9 Claims. (Cl. 34—33)



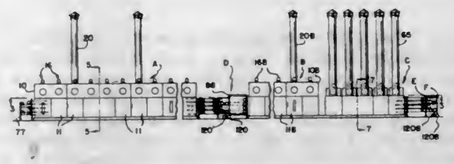
The invention is related to mechanical means for airing stacks of newly printed sheet material to prevent sticking and smearing of the printed text. The apparatus comprises a base for supporting the stack with the sheets positioned vertically and a sheet-lifting means having a ridge is moved under the stack in order to move the sheets in relation to each other. The sheets may also be vibrated.

3,418,726
HAIR DRYER
Walton E. Sparks, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1966, Ser. No. 602,883
10 Claims. (Cl. 34—99)



A portable hair dryer having an inflatable hood and a support structure therefor which enables it to be used like a salon type unit by slipping the head into and out of the hood. When inflated the side walls of the hood stand away from each other to form a salon type hood which when collapsed packs neatly into a compact carrying case provided therefor.

3,418,727
VENEER DRYER
Edward P. Morris, Painesville, Ohio, assignor to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio
Original application Sept. 21, 1964, Ser. No. 397,886, now Patent No. 3,334,421, dated Aug. 8, 1967. Divided and this application June 12, 1967, Ser. No. 645,371
3 Claims. (Cl. 34—155)

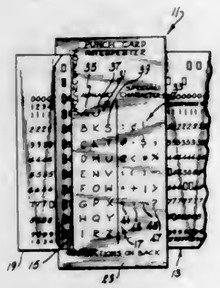


An apparatus for drying material in sheet form, especially veneer and like material which is relatively light and apt to be warped or otherwise irregular in shape and/or to become so, or more so, during drying, which apparatus has a plurality of chambers arranged in tandem and through a plurality of which chambers material is conveyed by discrete endless conveyors including conveying and hold-down members.

3,418,728
PUNCH CARD INTERPRETER
Ramon E. Couceyro, 817 E. Douglas St., Bloomington, Ill. 61701
Filed July 27, 1966, Ser. No. 568,177
5 Claims. (Cl. 35—2)

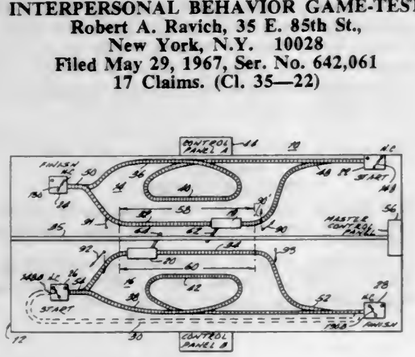
A punch card having punched holes located within various columns and row positions is interpreted by slide-

ably positioning a plate relative to the card to align a mask having a plurality of windows with the punched hole positions in a column. An array of indicia is printed in columns on the plate with each indicia in a column being correlated with a punched hole position in said



card. Disposed behind the card is a visual indicator such as, for example, a color coding which is viewed through an aligned window and a punched hole. The color viewed is correlated with a color coding for the column in which is located the indicia for the punched code.

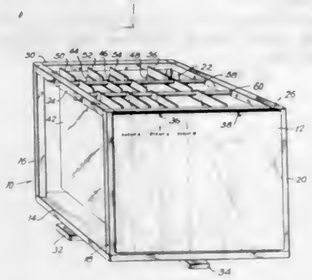
3,418,729
INTERPERSONAL BEHAVIOR GAME-TEST
Robert A. Ravich, 35 E. 85th St., New York, N.Y. 10028
Filed May 29, 1967, Ser. No. 642,061
17 Claims. (Cl. 35—22)



An interpersonal bargaining game-test including two substantially identical layouts upon which electrically operated vehicles, such as model trains, have a choice of traveling a direct route from start to finish and an alternate route, significantly longer than the direct route. The direct route of each layout is so spaced that extending members of the two model vehicles will engage one another, or a common conductive member, or corresponding electrically connected conductive members to cause the vehicles to stop when both vehicles are traveling their direct routes thereby simulating a collision. By recording the responses of the participants, qualified personnel are able to determine the participants' aptitude in a bargaining situation.

3,418,730
PROBLEM-SOLVING EQUIPMENT
Paul Gilmore Williams, Jr., Westport, Conn., assignor to The Williams Inlan Corporation, Westport, Conn., a corporation of Connecticut
Filed Sept. 27, 1966, Ser. No. 582,317
15 Claims. (Cl. 35—24)

Problem-solving equipment wherein a transparent chart displaying a plan including a plurality of vertical lines corresponding to major events in a manager's basic plan may be disposed in a first plane and one or more further transparent charts bearing programs comprising both vertical event lines and horizontal activity lines may be arranged in a plurality of parallel planes at an angle to the program chart. In the embodiment of the invention disclosed, an open-sided cube is provided. The transparent plan chart may be hung from two horizontally disposed pins on one side of the cube. A pair of spaced rails are arranged parallel to the plane of the plan chart. The transparent program charts may be hung and moved along the rails whereby they may be aligned with their corresponding plan event lines on the plan chart. A pair of pins may also be disposed in a plane parallel to the planes of the program charts whereby a particular program may be displayed on one side of the cube at right angles to the plan chart.



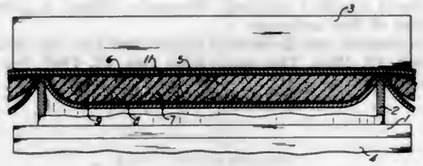
The transparent programming and planning charts comprise a transparent sheet having a plurality of equally-spaced apertures along the top thereof so that they may be hung from the pairs of pins on the sides of the cube. The charts are provided with a time scale along the bottom thereof, the spacing of the apertures corresponding to a unit increment of time on the time scale. Additionally, a programming board is provided having a pair of pins spaced apart a multiple of the spacing of said apertures on which the charts may be hung. The programming board is also provided with a time scale, the increments of which correspond to the spacing of the apertures so that the charts may be mounted in different positions on the planning board corresponding to different unit increments of advanced or delayed time.

3,418,731
SHOE SOLE
Albert T. J. H. Anciaux, 244 Chaussee de Waterloo, Brussels, Belgium
Filed Aug. 24, 1966, Ser. No. 574,756
1 Claim. (Cl. 36—30)



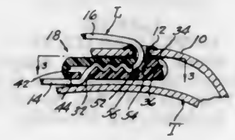
An insole for a shoe or the like is provided having upper and lower surfaces of resilient material, said upper surface of said sole being provided with a plurality of blind recesses open in the area in contact with the sole of foot and of sufficient diameter to allow intrusion of plantar tissue therein during walking, said upper surface being free from projection in the contact area, and said lower surface of said insole being provided with a plurality of corresponding projections opposite said recesses, whereby during the action of walking the diameter of said recesses is increased by foot pressure and contracts when the foot is raised.

3,418,732
FOOT SUPPORTING CONSTRUCTION
Irving L. Marshack, La Jolla, Calif., assignor, by mesne assignments, to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 19, 1965, Ser. No. 480,867
19 Claims. (Cl. 36—44)



A foot-supporting component for a shoe comprising a central sheet of foamed thermoplastic with a sheet of thermoplastic film bonded thereto positioned between outer sheets of fabric backed thermoplastic film, the sheets being united by a heat seal seam, and its production by stacking the component sheets and die sealing cutting the component from the stack.

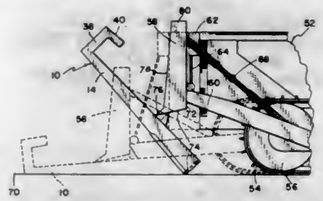
3,418,733
SHOELACE ANCHOR
Cyril M. Tyrrell, Sr., and Cyril M. Tyrrell, Jr., both of 2302 Oak Knoll Drive, Santa Rosa, Calif. 95401
Filed June 19, 1964, Ser. No. 376,434
7 Claims. (Cl. 36—50)



1. In combination, a shoe having a tongue and laterally spaced vamp sections formed with lace receiving eyelets including lowermost eyelets, a lace having free flights passed upwardly through the lowermost eyelets and a middle portion extending across and above the tongue and beneath the vamp portions, at least one lace anchor applied to said middle portion and secured by engagement with the underside of one vamp section, said anchor comprising a thin, flat lower section having a peripheral edge and lying in a single plane, a thin, upper pan-shaped section having a top wall and a flexible shallow sidewall of a height substantially equal to the thickness of said lower section, said sidewall being adapted to be snapped over and grip the peripheral edge of the lower section, said lower section having a jaw on its upper surface, said upper section having a complementary jaw on the undersurface of its top wall, one of said jaws being recessed within its supporting surface and said jaws being normally aligned and registered to interfit with each other for gripping a lace therebetween when the sections are assembled.

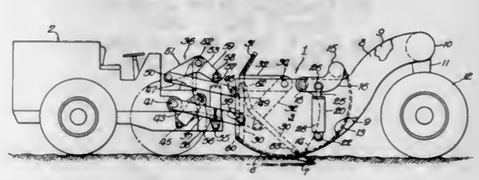
3,418,734
SUBSURFACE CUTTER ATTACHMENT FOR A BULLDOZER
George W. McConnell, South Haven, Kans. 67140
Filed May 28, 1965, Ser. No. 459,737
5 Claims. (Cl. 37—2)

An attachment for the blade of a bulldozer for the subsurface cutting of roots and the like. The attachment comprises two rugged upstanding frame members that are spaced in parallelism with heavy bracing. The upper ends of the frame members are formed as rearwardly extending hooks adapted to engage over the upper edge of a bulldozer blade, and the frame members are each provided at a position spaced above its lower end with a rearwardly extending spur upon which the lower edge of the bulldozer blade can be brought to bear downwardly.



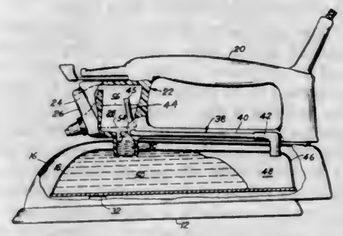
A cutter blade extends between the lower ends of the frame members. The forward edge of the cutter blade and the forward edges of the lower portions of the frame members are sharpened for cutting and reducing drag. The hooks and the spurs are arranged in such a manner that the attachment can be operatively engaged with or detached from the bulldozer blade on proper movements of the bulldozer blade.

3,418,735
LOAD EJECTING WALL MECHANISM FOR SCRAPER BOWL EQUIPMENT
William E. Martin, % Martin Company, P. O. Box 187, Kewanee, Ill. 61443
Filed Oct. 18, 1965, Ser. No. 496,862
6 Claims. (Cl. 37—129)



A movable load ejecting wall structure for a bowl of a material handling road working scraper to normally provide a portion of the closure means for said bowl and to function as load material ejection mechanism for the bowl.

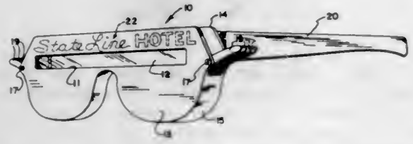
3,418,736
VENTED STEAM IRON WITH BURP-AVOIDING FEATURE
John J. Kueser, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 17 1967, Ser. No. 631,415
1 Claim. (Cl. 38—77)



A steam iron which avoids the "burping" effect, caused by captured steam, or the pressure of heated air, forcing water from its reservoir through the water inlet, is pro-

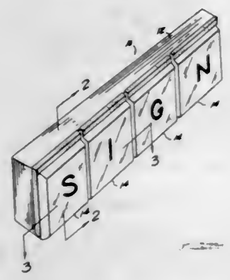
vided by a conduit which interconnects the non-vented region of the reservoir to the water inlet opening particularly at an elevation above the level of maximum surge of water into the water inlet opening that may be caused by the to and fro motion of the iron when being operated.

3,418,737
ADVERTISING SPECTACLES
Charles E. Lambert, 979 Sego Lily Drive, Sandy, Utah 84070
Filed Dec. 23, 1966, Ser. No. 604,459
7 Claims. (Cl. 40—67)



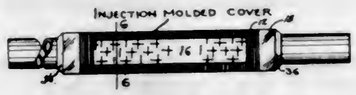
The spectacles of the invention are useful in advertising, as a child's toy and for eye protection. They include a frame, a see-through lens or lenses and normally hidden, movable portions adapted to contain a pertinent sales message, travel data, cartoons, or similar information that can be made visible to the wearer and/or to onlookers through proper manipulation of the movable portions.

3,418,738
SIGN PANEL
Sol Goodman, 20310 Kentfield, Detroit, Mich. 48219
Filed Apr. 6, 1966, Ser. No. 540,765
7 Claims. (Cl. 40—130)



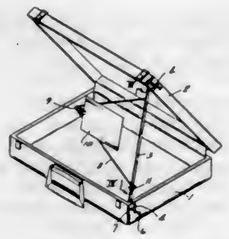
1. In a sign structure, the combination comprising:
(a) a support housing having a rectangular opening;
(b) a plurality of rectangular panels, each having a planar face and a pair of parallel panel sides extending normally to the plane of their faces;
(c) a frame associated with each panel having a pair of parallel frame sides retaining the parallel panel sides of its associated panel, each parallel frame side being formed of an extrusion having a U-shaped cross section defining a slot having a pair of spaced sides, the slot facing in a direction normal to the plane of the face of its associated panel, each slot being engaged with the edge of one of the parallel sides of its panel, the frames being connected with the housing to support the panels in a continuous series over the opening in the housing with their faces in co-planar relationship and the parallel sides of each panel being supported in face-to-face relationship with the parallel sides of its neighboring panels with their frame sides in substantial abutment so that the parallel panel sides are separated by the thickness of the sides of the slots in which the panel sides are retained.

3,418,739
CART HANDLE HAVING A PRINTED LEGEND THEREON
Edwin J. Buczak, Worcester, Mass., assignor to Parker Metal Goods Company, Worcester, Mass., a corporation of Massachusetts
Continuation and division of application Ser. No. 381,732, July 10, 1964. This application Dec. 22, 1967, Ser. No. 697,553
1 Claim. (Cl. 40—308)



A cart handle comprising a U-shaped frame having side arms connected by a horizontal cylindrical metal tube serving as a hand grip, a coating on said tube formed of a metal protective colored film of heat baked enamel, a printed legend in a contrasting color on said film, a transparent, injection moldable thermoplastic synthetic resin body of low heat conductivity shaped as a solid casing extending throughout the length of the hand grip and sealing and protecting said printed legend, said resin body forming a cylindrical lens much larger in diameter than that of the metal tube which forms a grip portion of a substantial size and magnifies the legend materially.

3,418,740
DISPLAY BRACKET
Philip S. Gray, Miami Beach, Fla., assignor to Schack's Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 15, 1967, Ser. No. 623,441
2 Claims. (Cl. 40—313)

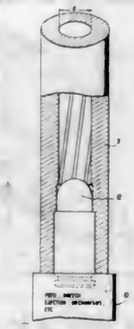


Sales card bearing display bracket capable of holding open substantially any container having a pivoted or hinged lid or cover to make visible the interior of the container, particularly suitable for counter and floor displays of luggage, fitted cases, trunks, and the like.

3,418,741
FIREARM
Bruno Tschoepe, Karlsruhe-Durlach, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Aug. 26, 1966, Ser. No. 575,325
Claims priority, application Germany, Sept. 8, 1965, D 48,145
3 Claims. (Cl. 42—77)

A method and apparatus for firing synthetic plastic projectiles from semi-automatic or fully automatic firearms having automatic recoil actuated mechanisms,

wherein the barrel bore is of a caliber substantially smaller than the projectile to produce correspondingly larger propellant gas pressures for actuating the mechanisms that would correspond to those produced by a heavier



live projectile of the same caliber fired through a barrel bore of a corresponding caliber. The standard size caliber barrel for firing the live ammunition may be detached and replaced by a sub-caliber barrel for firing the synthetic plastic practice projectiles.

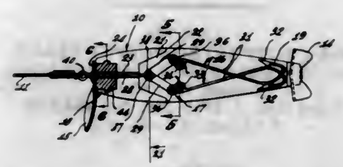
3,418,742
FISHING ROD HANDLE
Frank Yaklyvich, Rte. 2, Silver City, Ontonagon County, Mich.
Filed July 1, 1966, Ser. No. 562,317
7 Claims. (Cl. 43—25.2)



A fishing rod handle having an internal storage cavity formed as an integral part of the handle in one of two axially aligned portions of the handle. The cavity has two access openings, one of which is a longitudinal slit, at an angle to each other. Because the openings are not covered, the storage cavity is always readily accessible to the user of the rod.

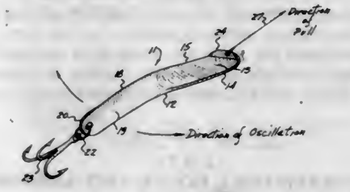
This invention relates to fishing rod handles; more particularly, it relates to a fishing rod handle construction which includes storage space for a hook, bait or lure attached to the end of a fishing line strung on the rod. The handle construction may also include an absorbent pad for holding water to provide for the temporary storage of live bait under conditions which will aid in preserving its freshness.

3,418,743
FISH LURE WITH RETRACTABLE HOOKS
Roy H. Halvorsen, 3112 Cardiff Ave., Los Angeles, Calif. 90034
Filed May 2, 1967, Ser. No. 635,427
9 Claims. (Cl. 43—35)



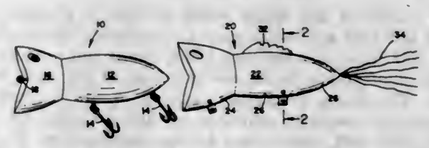
A fish lure with normally retracted hooks which are extended when a fish strikes the body of the lure. A hook-extending mechanism in the lure body is normally biased with the hooks in the retracted position by a magnetic attractive force. When the fish strikes, the magnetic force is overcome and the hooks are extended, and if the fish should not be caught, the magnetic force operates on the hook-extending mechanism to return the hooks to the retracted position.

3,418,744
FISHING LURE
John D. Panicci, 21314 Hamilton, Farmington, Mich. 48024
Filed Jan. 19, 1967, Ser. No. 610,431
3 Claims. (Cl. 43—42.5)



A fishing lure having a body which includes a forward flat horizontal and rearwardly converging body plate terminating at its forward end in a short upwardly and forwardly extending deflector plate centrally apertured to receive the pulling line. The lure is twisted intermediate its ends so that said body plate smoothly merges into upright elongated trailing fin apertured to mount a hook and whose elongated bottom edge smoothly merges with and is coplanar with one of the converging side edges of said body plate, the other rearwardly converging edge of said body plate extending rearwardly and upwardly to smoothly merge with the top edge of said fin. The lure oscillates in a horizontal plane as it is drawn through the water.

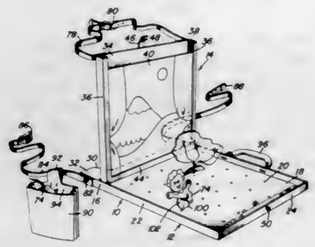
3,418,745
FISHING LURE COVER
Alvin H. Loos, 515 Nordyke Drive, Apt. D, San Jose, Calif. 95127
Filed Oct. 20, 1965, Ser. No. 498,722
2 Claims. (Cl. 43—42.09)



A cover for a fishing lure which comprises a hollow one piece body member whose interior dimensions correspond generally to the exterior dimensions of the lure. The cover is longitudinally slotted to allow it to be

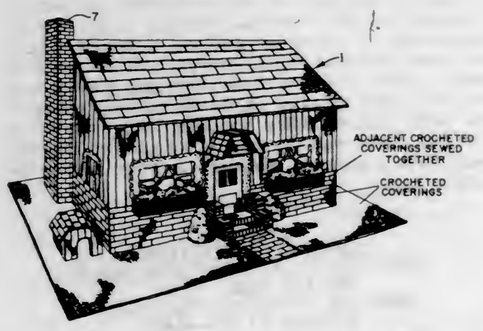
mounted in telescopic relationship over the lure and subsequently secured thereon by a releasable securing mechanism. The securing mechanism includes interengaging latch elements on respective sides of the slot, which are formed as components of the cover.

3,418,746
BODY SUPPORTED PUPPET STAGE
Ethel M. Kharasch, 5750 S. Kenwood Ave., Chicago, Ill. 60637
Filed Sept. 3, 1965, Ser. No. 484,834
9 Claims. (Cl. 46—13)



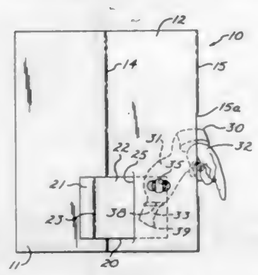
A body attached puppet theater including a shallow tray forming a stage and a hinged lid therefor forming a back drop panel. The tray includes a perforated bottom receiving selector figurines while the lid has opposed grooves receiving scenic panels. The inner edge of the tray is formed to fit the body of the person using the device and straps are provided for attaching the device to the person. Illumination means is provided at the front of the tray to illuminate the stage and back-drop and certain of the figurines have elastic elements thereon to receive the fingers to enable the figurines to be moved along the stage surface.

3,418,747
CROCHETED DOLL HOUSE AND ASSEMBLY THEREOF
Albina M. Dornik, 8500 Denison St., Cleveland, Ohio 44102
Filed Aug. 30, 1965, Ser. No. 483,410
12 Claims. (Cl. 46—21)



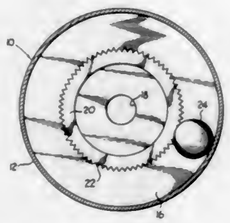
A crocheted doll house which includes a plurality of walls and roof and which may also include a foundation. The doll house also includes facing pieces and supporting pieces conforming to the configuration of the walls and roof. The facing pieces are secured to the supporting pieces, and crocheted coverings are also provided for the walls and roof conforming to the configuration of the same. The crocheted coverings are secured to the facing pieces. The doll house may include interior as well as exterior facing pieces and crocheted coverings and may also include accessory items such as furniture, etc.

3,418,748
ANIMATED GREETING CARD
Alan L. Margolis, South Euclid, Ohio, assignor to American Greetings Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 11, 1965, Ser. No. 454,891
1 Claim. (Cl. 46—34)



An animated card is made up of superimposed front and back panels hinged together along a folded line. A pivotal movable element is sandwiched in-between the back panel and a rear cover panel. Tabs cut out of the back panel project through an aperture in the movable element to form a pivot for the movable element. A pull strip is glued to the back side of the front panel on its one end and is connected to the projecting leg of the movable element at its other end through a slit in the back panel. The movable element is completely hidden between the back panel and the rear cover panel when the card is closed, but when the card is opened the image portion of the movable element is pivoted into view beyond the edge of the card.

3,418,749
VIBRATING SOUNDMAKER
Carl Ayala, Chicago, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Oct. 22, 1965, Ser. No. 500,677
3 Claims. (Cl. 46—189)

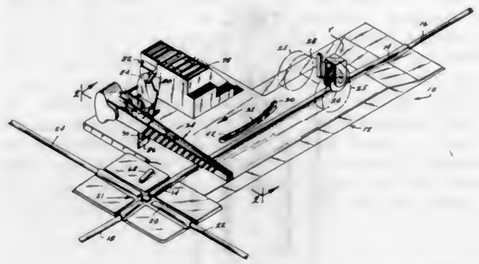


A soundmaker for a toy comprising a hollow resonant chamber provided with a circular side wall and supporting an annular member within the casing having an exposed serrated edge. A metal ball is supported by the serrated edge and the side wall for rolling movement of the ball along the edge to thereby produce sounds.

3,418,750
GATE CROSSING APPARATUS
John W. Ryan, Bel Air, and Daniel H. Meggs, Redondo Beach, Calif., assignors to Mattel, Inc., a corporation of California
Filed May 9, 1966, Ser. No. 548,555
10 Claims. (Cl. 46—216)

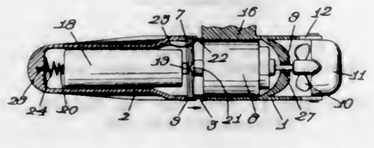
A support pivoted on a horizontal axis and gravity held in a lower position where a crossing gate thereon extends horizontally over a track. The gate is pivoted for horizontal swinging on the support but is gravity urged

to straight-ahead position. An actuator is moved forwardly and downwardly along the track, by a vehicle, to swing a pivoted frame which lifts the gate and latches it



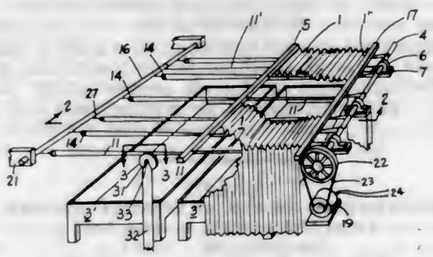
open until the latch is released by a vehicle engaging a latch release member near the track. Sounding means are actuated during gate lifting and lowering movement.

3,418,751
PROPULSION UNIT FOR AQUATIC TOYS
Takaichi Mabuchi, Tokyo, Japan, assignor to Tokyo Kagaku Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 23, 1966, Ser. No. 596,608
Claims priority, application Japan, Dec. 22, 1965, 40/78,512
12 Claims. (Cl. 46—243)



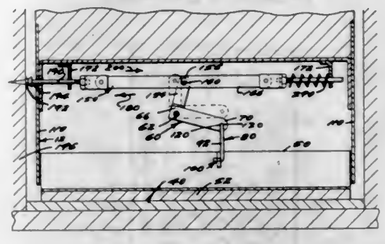
A propulsion unit for use with a toy, such as a boat, is comprised of two housing parts which together define an enclosure for a battery and a driving motor. A shaft extends from the driving motor through the housing and a propeller, secured to its exterior end, is rotated by the motor powered by the battery. The housing parts fit together in a watertight fashion. The electrical circuit connecting the battery to the motor is operated by a switch which is thrown when at least one of the housing parts is displaced.

3,418,752
REMOVABLE COVERING
John K. Stratton, 1130 Standiford Ave., Louisville, Ky. 40213
Filed Feb. 24, 1966, Ser. No. 529,796
7 Claims. (Cl. 47—28)



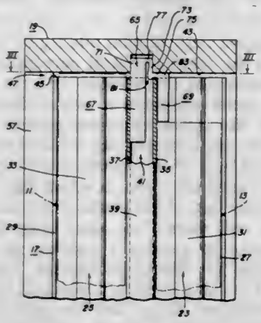
This invention describes a plant shading device which is adapted to automatically exclude light from all or any part of a planted area.

3,418,753
DOOR BOTTOM SEAL
Henry R. Hanson, 1405 28th St., Norton Acres, Sioux Falls, S. Dak. 57105
Filed Sept. 29, 1966, Ser. No. 582,985
3 Claims. (Cl. 49—308)



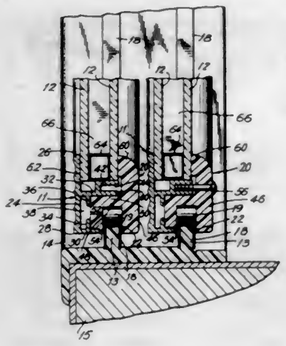
A sealing mechanism for the bottom of a door in which a threshold-engaging member is adapted to move upwardly and downwardly and in which the connection between the threshold engaging member and controlling bell crank means is accomplished by means of linking means which is adapted to pivot with respect to the bell crank lever and with respect to the threshold-engaging member so as to provide efficient flexibility as to permit the engaging member to move vertically without substantial endwise horizontal movement.

3,418,754
HEAD JAMB-WEATHERSTRIP INTERLOCKING KEY MEANS
Thomas J. Beasley, Jr., 281 S. Mendenhall Road 38117, and Richard P. Rodenbaugh, 416 Goodland Circle 38111, both of Memphis, Tenn
Filed Oct. 20, 1967, Ser. No. 676,746
5 Claims. (Cl. 49—407)



For use in a double sash window installation including a somewhat typical window frame having a longitudinally grooved horizontal head jamb member and a somewhat typical vertical weatherstrip member having parting bead wall means defining a longitudinally extending grooved back. The inventive structure includes a small clip-like key adapted to be adjustably fitted over the upper edge portion of the weatherstrip parting bead wall for interposingly interlocking the weatherstrip and the head jamb in a window installation. The interlocking key being adapted to be manipulated from an inactive to an active configuration as the window installation is being fabricated. The interlocking key being adapted to be manipulated from a lowered inactive disposition to a raised active disposition wherein a head portion of the key is permanently received in the horizontal groove in the window frame head jamb.

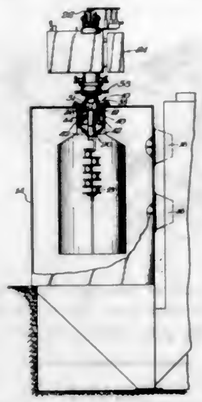
3,418,755
FRAME CONSTRUCTION FOR REFRIGERATOR DOOR
Joseph A. Di Chiaro, 287 Pinebrook Blvd., New Rochelle, N.Y. 10804
Filed Feb. 17, 1967, Ser. No. 616,810
5 Claims. (Cl. 49—501)



A frame structure for refrigerator doors or the like, this frame structure having only two extrusions one of which is an outer metal extrusion and the other of which is an inner plastic extrusion of poor thermal conductiviy. The outer metal extrusion has an outer wall whose exterior surface forms an exterior surface of the frame, and this outer wall is integrally connected with a pair of flanges one of which extends inwardly from an outer edge of the wall and the other of which extends inwardly from the outer wall between the edges thereof, these flanges being parallel to and spaced from each other and extending perpendicularly with respect to the outer wall of the metal extrusion. The plastic extrusion has an inner end wall which extends parallel to and is spaced from the outer wall of the plastic extrusion and which has integrally formed therewith a elongated portion of substantially L-shaped cross section one leg of which extends inwardly from the inner end wall perpendicularly to the latter into overlapping relationship with the intermediate flange of the metal extrusion to which this leg is adhesively secured, the plastic extrusion portion of L-shaped cross section having a second leg which extends parallel to the inner end wall of the plastic extrusion between the flanges of the metal extrusion to which this second leg is joined. The second leg of the plastic extrusion defines with the inner end wall thereof an outer longitudinal groove which is adapted to receive a guiding structure which guides the frame for shifting movement. The part of the outer wall of the metal extrusion which extends inwardly from its intermediate flange and the part of the plastic extrusion which extends inwardly from the longitudinal portion thereof of L-shaped cross section define between themselves an elongated groove adapted to receive a pair of glass sheets which define between themselves an insulating air space.

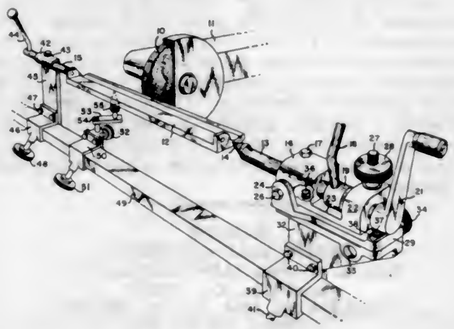
3,418,756
APPARATUS FOR USE IN TREATING WORKPIECES
Davis Lee Baughman and Edwin Frederick Pierce, Hagerstown, Md., assignors to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware
Filed July 7, 1966, Ser. No. 597,184
(Filed under Rule 47(a) and 35 U.S.C. 116)
12 Claims. (Cl. 51—14)

An apparatus for use in treating workpieces includes a treating cabinet which has an elongated opening along one wall so that a workpiece holder may project therein and travel through the opening. The opening is sealed by a first layer of resilient material facing the interior of the cabinet and a second layer of resilient material in face



to face contact with the first layer but being outermost with respect to the cabinet interior. The first layer is longitudinally slit to one side of the opening center line and the second layer is longitudinally slit to the other side of the opening center line.

3,418,757
LAWN MOWER SHARPENER
James McEwan, 138 Stockton Ave., San Jose, Calif. 95111
Filed July 11, 1966, Ser. No. 564,214
3 Claims. (Cl. 51—34)

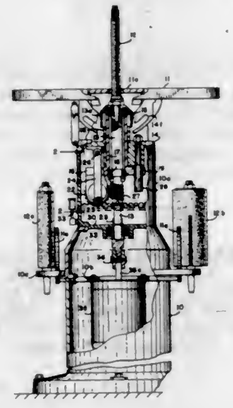


A device for sharpening lawn mowers, including a frame supporting the lawn mower part to be sharpened, said part being mounted between a pair of opposed shafts. One of the shafts is pivoted for both horizontal and vertical adjustment so that the position of the lawn mower part with respect to the grinding wheel may be adjusted after the part is mounted between said shafts.

3,418,758
OSCILLATING VERTICAL SPINDLE SANDER
James McEwan, 138 Stockton Ave., San Jose, Calif. 95111
Filed Jan. 31, 1967, Ser. No. 612,918
5 Claims. (Cl. 51—34)

1. In an oscillating vertical spindle sander, the combination comprising a substantially hollow stand having a

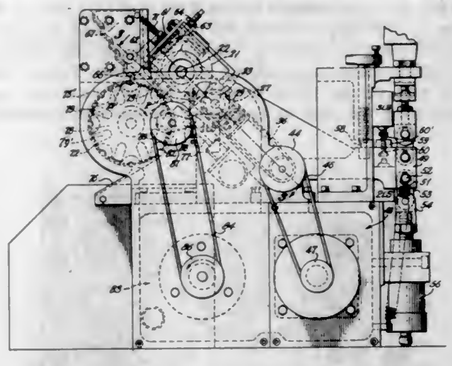
base member and also having an upper part which is adapted to hold a quantity of oil in the bottom thereof, a motor supported in the hollow stand, said upper part of said stand having a cover, said cover having oppositely disposed upright members on the top thereof, a table pivotally attached to said upright members, a spindle, a sanding element supported by said spindle projecting above said table, a tubular member positioned in a hole in said cover, a sleeve slidable in said tubular member, said sleeve receiving said spindle and bearing means therein supporting said spindle, said sleeve having a member extending laterally from the bottom thereof, a mechanism for oscillating said spindle up and down comprising a worm attached to said spindle below said last mentioned member, a worm gear meshing with said worm,



means rotatably supporting said worm gear on the bottom of said last mentioned member, said worm gear having an eccentric, means pivotally connecting said eccentric to the bottom of said cover, the upper part of said stand comprising a housing for said oscillating mechanism, a stub shaft having an opening for receiving the bottom part of said spindle, key means slidably connecting said spindle to said stub shaft so that said spindle is movable axially with respect to said stub shaft, means supporting said stub shaft projecting through a hole in the bottom of of said housing and means connecting said stub shaft to the shaft of said motor for driving said spindle and rotating said worm and said worm gear, whereby said spindle is caused to oscillate up and down simultaneously as it is rotated.

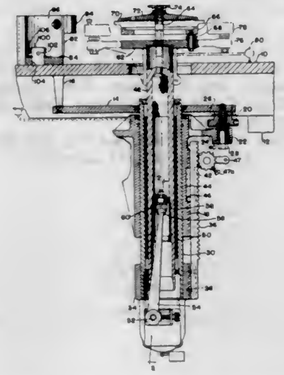
3,418,759
APPARATUS FOR MAKING SLAB CUTS IN RESISTOR FILMS
Albin R. Anderson, Lowell, Roy C. Carlson, Jr., Boxford, Mass., Charles W. Higgins, Salem, N.H., and Norman F. Smith, Methuen, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 8, 1966, Ser. No. 571,066
7 Claims. (Cl. 51—37)

Apparatus for making slab cuts in resistor films includes a rotating cutting wheel mounted to move transversely on an arm. The arm is pivoted toward one of several resistors held on a support wheel. A pair of contact fingers, coupled to a testing circuit, lead the cutting wheel to engage the resistor as the arm is pivoted. At a predetermined measured resistance value, prior to or during cutting, the pivot arm is moyed away from the tested resistor. A Geneva wheel, driven by a pin gear, then indexes



the support wheel and moves another resistor into cutting position.

3,418,760
METHOD AND APPARATUS FOR MAKING INDEX PLATES, MASTER GEARS, AND THE LIKE
Alfred W. Klomp, Detroit, Mich., assignor to Gary Tool, Inc., Madison Heights, Mich., a corporation of Michigan
Filed May 24, 1965, Ser. No. 458,108
19 Claims. (Cl. 51—157)

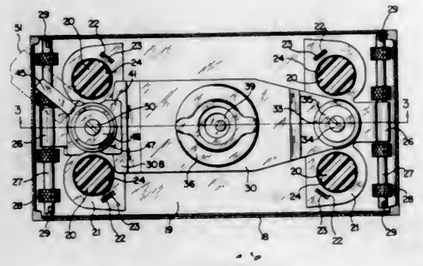


Apparatus for finishing toothed members comprising a planar support, a work support, a multiplicity of individually adjustable abrasive holders, abrasive elements carried by the holders each having an abrasive surface conforming to a tooth surface of the toothed member, and means for locking the holders to the planar support. The two holders are relatively reciprocable in a direction parallel to the axis of the toothed member and are relatively angularly movable about the axis of the toothed member. The supports are indexable to apply the action of each abrasive element to a multiplicity of teeth.

3,418,761
DUAL-ACTION POWER-OPERATED ABRADING TOOL
Martin I. Sheps, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Mar. 28, 1966, Ser. No. 538,005
5 Claims. (Cl. 51—170)

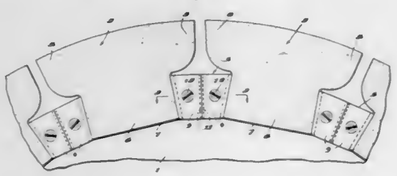
A portable power-operated abrading tool has a "dual action" by means of which the platen is adapted for either

orbital motion or straight-line reciprocation. The mechanism includes a pivot arm between the housing and the platen, and the driving eccentric is operatively connected to the arm intermediate the ends thereof. One end of the arm is pivotably mounted on the platen, and the other end of the arm is free. A combined guiding and selective clamping means is mounted on the platen, beyond the free end of the pivot arm, for slidably receiving and supporting the arm in its normal unrestrained position.



This combined guiding and selective clamping means has a manually-actuated means integrally included therein for selectively clamping the free end of the pivot arm in a vertical plane which is substantially parallel to the vertical axis of the driving eccentric, but offset radially therefrom. In this manner, the free end of the pivot arm may be restrained, thereby selectively converting the straight-line reciprocation of the platen into an orbital-type of reciprocation.

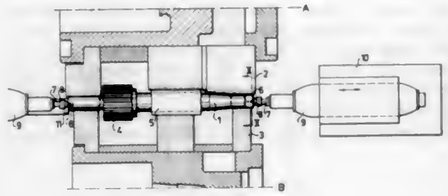
3,418,762
ABRASIVE CUT-OFF WHEELS
Peter C. Dooley, Jr., Lewiston, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 28, 1965, Ser. No. 451,393
4 Claims. (Cl. 51—206.5)



An abrasive wheel having a body and a plurality of posts extending radially therefrom with abrasive segments disposed between adjacent posts. A pair of clamp shoes are engageable with each post and rockable therewith, respectively, and have beveled edges for embracing the complementary beveled edges of adjacent abrasive segments to secure the same onto the body of the wheel.

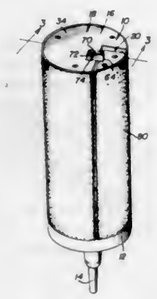
3,418,763
METHOD FOR MAINTAINING OF CENTERING HOLES IN CENTERLESS INFEED GRINDING
John Eric V. Söderquist, Halmstad, Sweden, assignor to Aktiebolaget Malcus Holmquist, Halmstad, Sweden, a corporation of Sweden
Filed Nov. 15, 1965, Ser. No. 507,888
Claims priority, application Sweden, Nov. 27, 1964, 14,380/64
2 Claims. (Cl. 51—281)

A system for maintaining the concentricity of preexisting centering holes in a workpiece which is to be externally, centerless, infeed ground, includes a governing wheel and a grinding wheel having respective, parallel longitudinal axes of rotation and means to provide relative mutual movement of said axes, and a pair of spindles mounted in a mutual, stationary axis of rotation for relative mutual movement along said axes, said stationary axis being disposed between and parallel to said wheel axes. The spin-



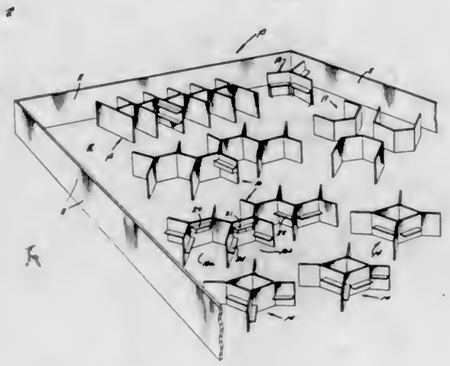
dles support respective grinding rods which are initially inserted into the preexisting centering holes of the workpiece. Subsequently the wheel axes are moved towards each other to cause the grinding wheel to grind the exterior surface of the workpiece, and the grinding rods to grind the interior surface of the respective centering holes.

3,418,764
DRUM SANDER WITH SHEET SANDPAPER ANCHORING MEANS
John J. Kozar, 800 Carl Ave., New Kensington, Pa. 15068
Filed Mar. 3, 1966, Ser. No. 531,625
8 Claims. (Cl. 51—365)



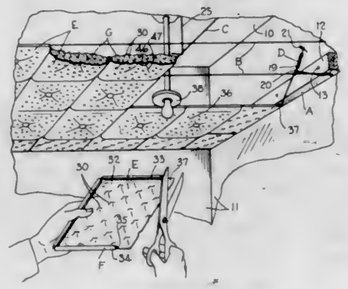
A rotary device for supporting a cover of abrading material including a body defining an axis of intended rotation and consisting of first and second partial cylindrical sections with the first section defining a generally radially outwardly opening recess extending longitudinally of the body and the second section being oscillatably supported from the first section for swinging movement about an axis generally paralleling the first axis between first and second positions snugly seated within the recess and displaced outwardly of the recess, respectively. The second section includes a one-piece latch member shiftable longitudinally of the body between locked and unlocked positions for releasably retaining the second section in the recess and includes portions thereof disposed at opposite ends of the body operative to releasably key the opposite ends of the second section to adjacent portions of the first section when in the locked position in order to retain the second section seated within the recess defined by the first section.

3,418,765
COORDINATED SYSTEM FOR ACTIVITY ISOLATION
Robert L. Propst, Ann Arbor, Mich., and Ronald H. Beckman, New Canaan, Conn., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed Aug. 15, 1966, Ser. No. 572,402
2 Claims. (Cl. 52—36)



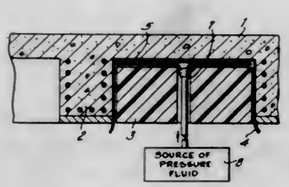
This invention is directed to a space dividing panel system in which groups of panels are arranged in geometric patterns to form several semi-enclosed work areas related to one another in that certain of the panels are common to work areas. Other characteristics of the invention are that the panel groups are self-supporting, stable units capable of movement from one area to another and entirely support free from the floor, all of the furniture or work surfaces for each work area.

3,418,766
SUSPENDED CEILING SYSTEM
William R. Jackson, Greenville, S.C., assignor to McCall Bros. & Co., a corporation of South Carolina
Filed Feb. 3, 1965, Ser. No. 430,057
5 Claims. (Cl. 52—83)



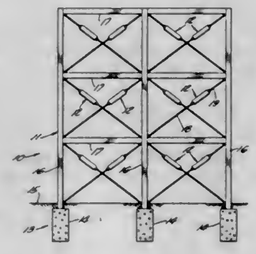
A suspended ceiling for a structure having walls and a ceiling thereabove including, spaced thin parallel flexible wires extending across the ceiling in a criss-cross manner for supporting thin panels therebetween which have flexible marginal downturned flap portions for securing such to the wires. A spring is secured to one end of each of the wires for maintaining such taut as the dimensions of the buildings vary due to settlement and the like.

3,418,767
WALL STRUCTURE WITH EXPELLABLE INSERT
Fritz Seeger, 1 Kirchstrasse, 7501 Blankenloch, near Karlsruhe, Germany
Filed Mar. 22, 1966, Ser. No. 542,990
Claims priority, application Germany, Mar. 24, 1965, S 96,163
8 Claims. (Cl. 52—127)



In the construction of a wall structure an insert of somewhat resilient foamed plastic material is positioned where a recess is to be provided. Hardenable material is poured about this insert so as to leave one side thereof free. Fluid is introduced between the juxtaposed inner surface of the insert and the bottom wall of the recess provided in the wall structure which is obtained when the hardenable material has hardened. The insert is thereby expelled, leaving a recess in the wall structure.

3,418,768
BUILDING CONSTRUCTION
Bernhard Cardan, 8417 Beverly Blvd., Los Angeles, Calif. 90048
Filed July 21, 1966, Ser. No. 566,879
2 Claims. (Cl. 52—167)

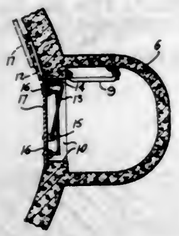


The basic housing structure is a generally rectangular load-bearing unit consisting of a pair of spaced vertical supports secured together by a pair of spaced horizontal supports. The diagonally opposite corners at which the horizontal and vertical supports adjoin are interconnected via respective non-load-bearing structures each including a dashpot. When the construction is subjected to a relatively high velocity motion, such as motion induced by an earthquake, relative horizontal movement of the horizontal and vertical supports cause movement in the dashpot, resulting in conversion of kinetic energy into heat.

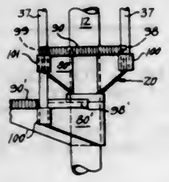
3,418,769
MONOLITHIC CONCRETE SILO AND FORMS FOR MAKING THE SAME
Ewald D. Kuck, Rte. 1, New Bremen, Ohio 45869
Filed July 22, 1965, Ser. No. 473,956
1 Claim. (Cl. 52—184)

A cast concrete silo having an integral chute formed therewith wherein a plurality of vertically spaced door

openings are provided in the portion of the silo wall enclosed by the chute and a series of ladder rings are secured within the chute, said rings having one of their ends secured to the silo wall and the other ends fastened to the wall of the chute.



3,418,770
SPIRAL STAIRS
Thomas R. Allmand, Ann Arbor, Mich., assignor to Fabriques de Produits Chimques de Thann et de Mulhouse, Thann, France, a French body corporate
Filed July 12, 1966, Ser. No. 564,665
2 Claims. (Cl. 52—187)



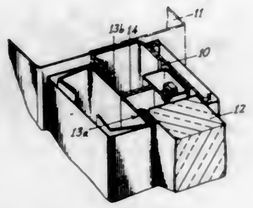
Support means for stair treads arranged in axially spaced relation about a vertical centrally positioned support post to form an open spiral staircase, and wherein each support means is formed of sheet metal and includes a substantially U-shaped support having an arcuate bight of less than 360° for engagement about and fixed connection on said post, and pair of legs diverging away from the ends of said bight; a stair tread fixedly connected between each pair of confronting sides of said legs; clamp means on the distal end of each leg to receive and support an upright ballister therein; a banister segment extending across and connected to each adjacent pair of ballisters; and means connecting together each pair of banister segments having adjacent ends.

3,418,771
METAL FLOOR CONSTRUCTION FOR RAILWAY CARS AND METHOD OF FORMING SAME
Paul G. Kinnecom, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 20, 1966, Ser. No. 603,289
2 Claims. (Cl. 52—377)



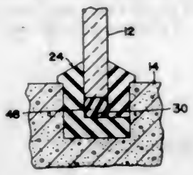
A metal floor construction for railway freight cars and a method of forming same comprising a plurality of interfitting metal panels having suitable nailing grooves and being secured to the underframe of the railway car from a position above the underframe or floor. Each panel includes a plurality of planks formed from single metallic sheets of a generally uniform thickness, each plank having a generally horizontal upper body portion and an integral upwardly opening generally channel-shaped side portion which receives an adjacent plank in interfitting relation and provides a support for the adjacent plank intermediate the width of the adjacent plank.

3,418,772
BUILDING MULLION
Peter E. Helgesen, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Dec. 12, 1966, Ser. No. 601,022
19 Claims. (Cl. 52—397)



A building mullion which is easy to fabricate and assemble and which is both a vertical structural element and a means for joining similar or dissimilar wall sections or panels.

3,418,773
GASKETING SYSTEM
John T. Sarvay, Cleveland, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 26, 1967, Ser. No. 612,045
2 Claims. (Cl. 52—400)

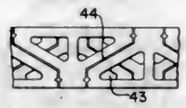


A gasketing system for mounting a construction panel in a channel shaped frame, the system having two sections, each with an outer surface wedging against a sidewall of the channel, and an inner surface wedging against opposite sides of the construction panel. A modification has a third section which fits between the two sections and cushions an edge portion of the construction panel.

3,418,774
BUILDING BLOCK AND WALL MADE THEREFROM
Alfred Lawrence Kocher, 314 Burns Lane, Williamsburg, Va. 23185, and Ernest A. Wiedemann, 3215 Noble Ave., Richmond, Va. 23222
Filed Jan. 6, 1967, Ser. No. 607,730
6 Claims. (Cl. 52—437)

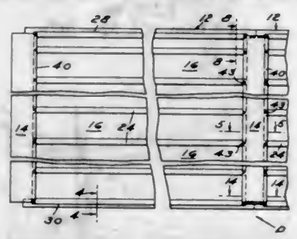
This disclosure relates to a building block having both a header and a stretcher wall with the stretcher wall spaced from the header by two diagonal struts and one

center strut or a solid section equivalent thereto. A wall made from the block as compared to the usual block has greater strength, much greater aesthetic appeal with many possible variations in wall appearance and much



greater resistance to the passage of a driven rain or wind. The block is readily made and transported using present methods and is readily handled by the mason in placing it in a wall.

3,418,775
DOOR CONSTRUCTION
Charles S. Davidson, La Salle, Mich., assignor to Byrne Doors, Inc., Ferndale, Mich., a corporation of Michigan
Filed Sept. 19, 1966, Ser. No. 580,410
5 Claims. (Cl. 52—464)



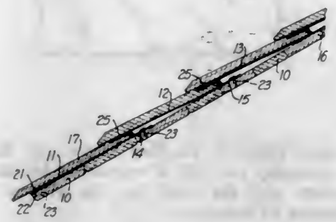
The door construction is made up of a plurality of panel sections each including a vertical series of elongated horizontal preferably channel-shaped members. Vertical stiles connect the adjacent panel sections.

3,418,776
FIRE-RESISTANT WALL CONSTRUCTION
James R. Manderbach, Hacienda Heights, and Paul Pestel, Anaheim, Calif., assignors to The Flintkote Company, New York, N.Y., a corporation of Massachusetts
Filed June 21, 1966, Ser. No. 559,184
1 Claim. (Cl. 52—481)



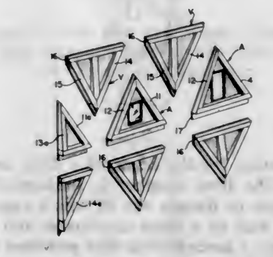
The wall is composed of wall studs to which are secured horizontal T-shaped metal strips. Horizontal panels of gypsum wallboard are secured to the wall studs and to the metal strips, with the stem of the T-shaped metal strips being fitted between the abutting edges of the wallboard panels. The stem of each metal strip is recessed from the outermost surface of the wallboard so as to give a smooth outer wall surface, and the joints are staggered on opposite sides of the wall so as to increase the fire resistance of the wall.

3,418,777
ROOFING
Donald M. Gillis, Los Angeles, Calif., assignor of forty-nine percent to Sam Greenebaum, Los Angeles, Calif.
Filed Mar. 29, 1967, Ser. No. 626,786
5 Claims. (Cl. 52—520)



A variable overlap, metal pan roofing construction for wood shingle roofs. A course of shingles carried on a metal plate. An anchoring clip for supporting a carrier plate and controlling the overlap or course spacing. Anchoring clips of various sizes for evenly covering any height of roof.

3,418,778
BUILDING PANELS
Ellery A. Foster, 6205 E. Halbert Road, Bethesda, Md. 20034
Filed Apr. 27, 1967, Ser. No. 634,253
5 Claims. (Cl. 52—520)

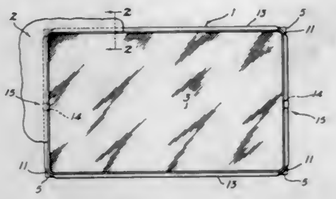


A set of generally triangular structural panels from which the sides and roof of a one or plural story building may be constructed. Two basic types of panels are provided, both having isosceles triangular frames and overlying sheet material. The frames of one type of panel are thicker at the triangle bases, and those of the other type are thicker at the triangle apices, so that the facing sheets may overlap while the backs of the frames lie in the same plane.

3,418,779
WINDOW UNITS
Joseph E. Jendrisak, Northville, and Armando V. Sisto, Taylor, Mich., assignors to Shatterproof Glass Corporation, Detroit, Mich., a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,681
5 Claims. (Cl. 52—616)

A window unit for oven doors comprising a clamping member comprised of no more than two essentially identical sections of unitary construction, each of which has

a tongue at one end and a slot at the other end and, intermediate of those ends, is formed with a pair of spaced glass receiving channels; and a pair of glass panels held in spaced parallel relation by said two sections of said clamping member joined end to end, so that the clamping member is essentially formed of one basic element with the result that the window unit will be inexpensive to construct.



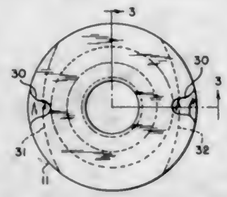
3,418,780
RANGE APPARATUS TRIM
Robert F. Dalton and Eugene J. Barnett, Mansfield, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 28, 1966, Ser. No. 605,245
4 Claims. (Cl. 52—627)



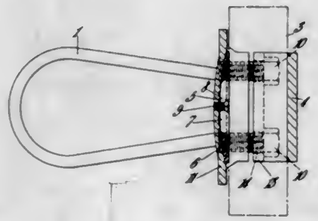
Trim structure for the edges of a door used on major appliances. The trim member is substantially L-shaped and has a pair of flanges one of which engages the free edge of one wall of a front door panel and the other of which engages a lanced projection provided in a complementary wall of the panel and positioned slightly beyond the radiused area joining the complementary walls. The portions of the lanced projection which lie in the plane of the wall are curved toward the radiused area in order to position, fillets produced by enamel build-up, behind the forward edge of the lanced projection, enabling the trim structure flange to properly engage the projection.

3,418,781
BOLT ANCHOR FOR CONCRETE
Vincent S. Penote, Shaker Heights, Ohio, assignor to The Cleveland Trencher Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 12, 1967, Ser. No. 608,836
5 Claims. (Cl. 52—699)

The invention pertains to a bolt anchor which is adapted to be attached to a concrete form and to be embedded into the concrete after the concrete has set. The device comprises a one piece shell of thermoplastic material which has a bolt receiving socket therein by means of which the shell can be bolted to a concrete form before the concrete is poured. The shell is also provided with means for interlocking it to the concrete so as to prevent rotation with respect to the concrete after the concrete has set.

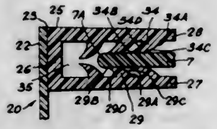


3,418,782
ANCHORS FOR THE PARAPETS OF BALCONIES
Alton Sven Goran Bratt, Linkoping, Sweden, assignor to Sven Andersson, Hogstad, Mjolby, Sweden
Filed Dec. 19, 1966, Ser. No. 602,917
Claims priority, application Sweden, Mar. 3, 1966, 4,279/66
1 Claim. (Cl. 52—707)



Problems occur in trying to obtain vertical parapets on cast concrete balconies. To overcome this a portion of a balcony parapet anchor is cast in situ in a concrete balcony. This portion of the anchor has a vertically orientated concave recess which has adjustably affixed thereto a component having its adjacent side commensurately shaped to the recess and the opposite side flat. This component is then adjusted so its flat side is vertical; and a clamp secures an upright of the parapet against the vertical flat side, thus assuring the upright is vertical.

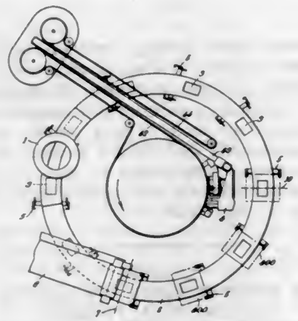
3,418,783
METHOD OF SEALING A CONTAINER BY VACUUM
Rodger D. Collons, Smyrna, Ga.
(5634 Sherborne Drive, Columbus, Ga. 31904)
Original application Mar. 18, 1963, Ser. No. 265,662, now Patent No. 3,211,322, dated Oct. 12, 1965. Divided and this application Sept. 16, 1965, Ser. No. 487,813
1 Claim. (Cl. 53—22)



The invention relates to a method of packaging goods wherein a continuous deformable container body is filled with goods and is closed by closures at opposite ends. At least one of the closures incorporates flexurally resilient

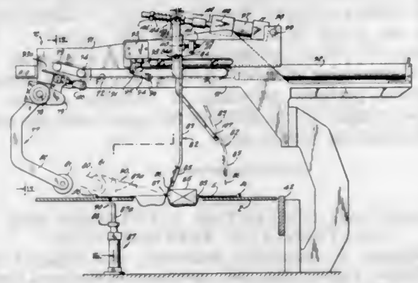
seal structure mounted from the annular edge of the closure. Partial evacuation of the container increases the effectiveness of the seal of the seal structure and also draws the container into supporting engagement with goods contained therein.

3,418,784
WRAPPING MACHINES
Matthew Parker and Geoffrey Gordon Lebeter, Leeds, England, assignors to The Forgrove Machinery Company Limited, Yorkshire, England, a company of Great Britain
Filed Apr. 19, 1966, Ser. No. 543,710
Claims priority, application Great Britain, May 4, 1965, 18,751/65
1 Claim. (Cl. 53—122)



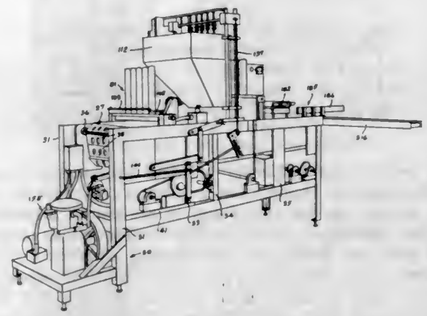
A machine for wrapping margarine and the like which includes a rotatable ring carrying a number of spaced die chambers fed in succession with margarine from an extrusion box, an equal number of wrapping units and an equal number of pairs of grippers which carry wrappers in succession to a position at which blocks of margarine are discharged from a die chamber and transferred to a wrapping unit, and a discharge mechanism for wrapped blocks of margarine which is common to all the wrapping units.

3,418,785
ROUND TABLE PACKAGING MACHINE
George Duryee, Dumont, N.J., assignor to United Shoe Machine Corporation, Boston, Mass., a corporation of New Jersey
Continuation of application Ser. No. 417,285, Dec. 10, 1964. This application Feb. 7, 1967, Ser. No. 614,517
17 Claims. (Cl. 53—184)



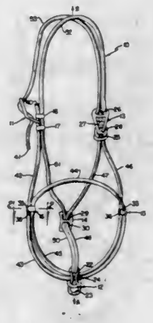
A packaging machine having a station for loading filmed display cards on an indexing transport which moves the card to a film heating station, a station forming product receiving cavities in the film, a station folding the cards to enclose products in the cavities, a station for sealing the folded card and a package removal station.

3,418,786
PACKAGING MACHINE
William C. Christine, Catasauqua, and Joseph E. Pierce, Allentown, Pa., assignors, by mesne assignments, to A.E.I. Corporation, Bethlehem, Pa., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,279
9 Claims. (Cl. 53—282)



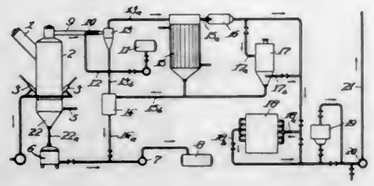
A packaging machine for filling containers or packets with dry powdered material such as food products wherein packets or containers are moved below a hopper to receive predetermined quantities of dry powdered materials and wherein lids are subsequently placed on the containers which are filled with predetermined quantities of material.

3,418,787
HALTER
Jack L. Smith, P.O. Box 231, Vesta, Minn. 56292
Filed Aug. 4, 1966, Ser. No. 570,252
8 Claims. (Cl. 54—24)



This novel halter comprises four fastener means and a continuous length of flexible material configured in such a manner as to permit a handler and/or the animal to place the maximum tension on the fastener means being used as a tie ring and the flexible material, and yet place the least amount of tension on the ends of the material connected to a fastener means being used as a buckle. One end of the flexible material forming the halter is adjustably connected to the buckle and the other end is clamped to an adjacent neckpiece of the halter to hold the other end and the buckle in place.

3,418,788
PROCESS FOR DISPOSING SOLID RADIOACTIVE WASTES
Senichi Sugimoto, Tokai-mura, Naka-gun, Ibaragi-ken, Japan, assignor to Nihon Genshiryoku Kenkyujo, Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 333,063, Dec. 24, 1963. This application Sept. 29, 1966, Ser. No. 583,152
Claims priority, application Japan, Dec. 28, 1962, 37/59,151
3 Claims. (Cl. 55—8)

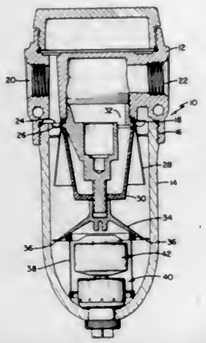


A method for disposing of solid radioactive wastes which comprises incineration to effect a reduction in volume, mixing the ash with water to prevent its dispersion into the atmosphere, and filtering the flue gas to remove solid particles therefrom. The filtering involves cyclone separation for the coarser particles, electrical precipitation for finer particles, cloth filtering for the still finer particles, and high performance filtering for the finest particles.

ERRATUM

For Class 55—156 see:
Patent No. 3,418,792

3,418,789
AUTOMATIC LIQUID DISCHARGE MECHANISM
Robert K. Hoffman and Jerry L. Baldwin, Littleton, Dennis D. MacFarlane, Lakewood, and John Vander Horst, Englewood, Colo., assignors to C. A. Norgren Co., Littleton, Colo., a corporation of Colorado
Filed Aug. 30, 1965, Ser. No. 483,397
11 Claims. (Cl. 55—219)

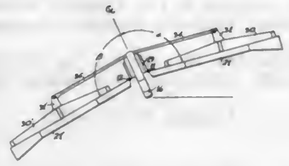


An automatic drain system including a servomechanism operatively connected to a float and a liquid discharge valve. The servomechanism including a reciprocable piston which moves the discharge valve downwardly to discharge liquid.

ERRATUM

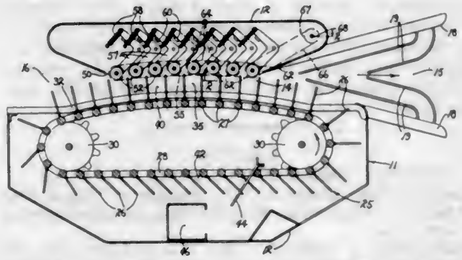
For Class 55—501 see:
Patent No. 3,418,794

3,418,790
ROTARY CUTTERS WITH EQUAL ANGULAR VELOCITIES
Carroll J. Whitfield, Albany, and Marvin L. Nafziger, Baconton, Ga., assignors to Lilliston Implement Company, Albany, Ga., a corporation of Georgia
Filed May 4, 1966, Ser. No. 547,549
10 Claims. (Cl. 56—6)



1. In a rotary cutter having a pair of cutter sections, cutting means mounted on each of said sections, and a support member pivotally connecting the cutter sections, drive means mounted on said support member and operatively connected to each of said cutting means and means for maintaining said support member in an equal angular relationship with respect to each of said cutter sections so as to maintain substantially equal rotational speeds of the cutting means.

3,418,791
ROLLER COMPRESSING APPARATUS FOR MECHANICAL PICKERS
Orval R. Starkey, Fresno, Calif., assignor of fifty percent to Anthony L. Lourenco, Fresno, Calif.
Original application Nov. 8, 1966, Ser. No. 600,333, now Patent No. 3,349,550, dated Oct. 31, 1967. Divided and this application Oct. 30, 1967, Ser. No. 679,039
7 Claims. (Cl. 56—42)

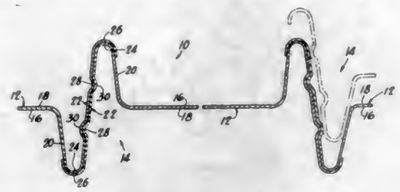


A plant compressing apparatus for a mobile mechanical picker for cotton and the like having a plurality of power driven picking spindles traveled through a picking zone within the picker in a relative direction opposite to the direction of picker movement including a plurality of plant compressing members having substantially aligned peripheral portions providing a movable surface in opposed relation to the spindles for travel with the spindles through the picking zone.

3,418,792
MODULAR COLLECTOR ELECTRODE FOR ELECTROSTATIC PRECIPITATORS
Bartholomew F. Quintilian, Baltimore, and Robert J. W. Williams, Lutherville, Md., assignors to Koppers Company, Inc., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,549
4 Claims. (Cl. 55—156)

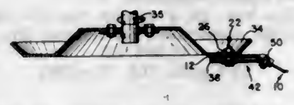
A modular collector electrode for electrostatic precipitators having integral connections formed therein for joining the modules along ther lateral edges comprising

substantially identical interlocking connectons of which one half is formed in the lateral edges of each module which can be snapped into place to form a continuous collector electrode, the interlocking connections preferably having a first flange portion extending at an angle from one side of a the module and a second flange portion



extending in the opposite direction at an angle from the first flange portion to the other side of the module, the second flanges each having complementary male and female detent beads formed therein, with the modules being interdigitally reversed to align the half connections to form a complete interlocking connection.

3,418,793
REINFORCING MEANS FOR ROTARY MOWER BLADES
Willie F. Brewer, Minden, La., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 6, 1966, Ser. No. 563,105
9 Claims. (Cl. 56—295)



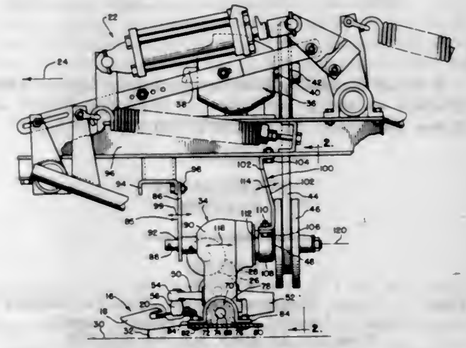
1. Reinforcing means for full swinging blades of a rotary mower which includes a horizontally rotatable blade holder, an eye at one end of each blade and pivot means rotatably connecting said eye to said holder, said reinforcing means comprising an elongated member having inner and outer ends, an eye through said reinforcing means intermediate the ends thereof, second pivot means rotatably connecting the eye of said elongated member to said blade holder for rotation with respect to said holder about the same axis as said blade, and means spaced along the length of said member and said blade from said common axis rigidly interconnecting said blade and said member.

3,418,794
FURNACE FILTER WITH REPLACEABLE FILTER ELEMENT
Charles Doria Roberts, 5754 Youngstown Poland Road, Youngstown, Ohio 44514
Filed Dec. 21, 1966, Ser. No. 603,662
1 Claim. (Cl. 55—501)



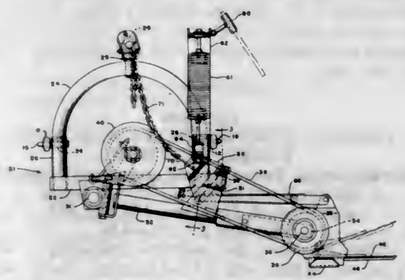
A furnace filter with a replaceable filter element consisting of a rectangular frame having an integral air previous grid, the frame and grid being formed of synthetic resin and molded in one piece, the grid spanning the area defined by the frame and being integral with the frame, the frame having an inturned flange, a replaceable section of air pervious sheet filter material disposed on said grid and overlying the inturned flange, and a rectangular wire clamping member of a size registrable within the frame and against the inturned flange, the frame having a longitudinally extending groove in the inner surface thereof, the wire clamping member having offset upturned sections in the opposite end portions thereof, the rectangular frame having a bracket with an inturned and downturned section registering over one of the offset sections on the wire clamping member and resiliently retaining said wire clamping member in a position holding the section of sheet filter material in position in the frame and on the grid.

3,418,795
COMBINATION MOWER AND CROP PROCESSING APPARATUS
Edward J. Johnston, La Grange, Peter J. Peacock, Western Springs, and Frank J. Macha, Jr., Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,798
19 Claims. (Cl. 56—25)



A harvester having a frame and a sickle reciprocal thereof, a motion conversion unit driving the sickle, and a vibration absorbing mounting for the unit adjacent to the sickle comprising an elastomer support for the unit from the frame and an additional yieldable element connected between the unit and the frame oriented to resist movements of the unit in lateral directions.

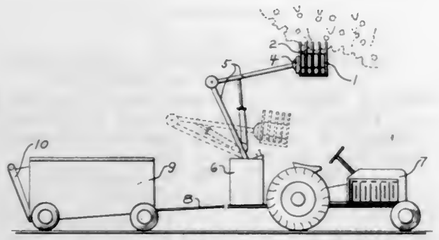
3,418,796
MOWER
Joseph C. Hurlburt, Leola, and Delmar Harer, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Dec. 7, 1965, Ser. No. 512,166
4 Claims. (Cl. 56—25)



A mower drag bar supporting and lifting and cutter bar gagging mechanism having a single control member which

is freely movable to eliminate unbalanced forces and which is quickly operable to raise the cutter bar over foreign objects during the operation thereof.

3,418,797
MECHANICAL NUT AND FRUIT PICKER
Joseph J. Meyerhoffer, 4209 S. Trail, Sarasota, Fla. 33579
Filed July 12, 1965, Ser. No. 471,068
5 Claims. (Cl. 56—328)



A device for picking fruit incorporating a fruit container attached to which are series of projecting fingers and means for rapidly reciprocating said series of fingers.

WITHDRAWN
3,418,798

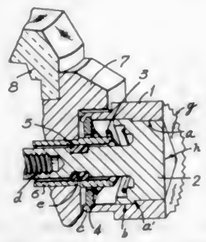
3,418,799
TWINE
Peter V. Catlos, Montreal, Quebec, Canada, assignor to Cordex Limited, Ottawa, Ontario, Canada
Filed Jan. 28, 1965, Ser. No. 428,880
Claims priority, application Canada, Jan. 31, 1964, 894,553
7 Claims. (Cl. 57—152)



This invention is a binder twine comprising a resilient core consisting of continuous filament, twisted or untwisted strands of viscose, polypropylene or nylon or other resilient synthetic filament, and a cover or wrapping consisting of extensible paper, such as kraft paper, twisted about the core.

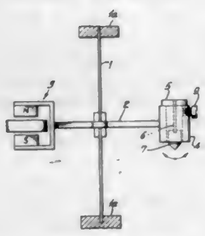
3,418,800
CROWNS COMPRISING PUSH-BUTTON INSIDE OF THEM
Kiyoshi Hashii, Tokyo, Japan, assignor to Kabushiki Kaisha Daini Seikosha, Tokyo, Japan
Filed Oct. 4, 1967, Ser. No. 672,888
5 Claims. (Cl. 58—63)

A crown assembly for watches including a hollow rotary crown formed with a bore passing axially through said crown and having at least in the region of its outer end face a non-circular cross section, and an elongated stem-actuating member disposed within said crown bore and having an outer portion of the same non-circular cross section as that of said bore region. The stem actuating member is axially displaceable in an inwardly direction independently of the crown when it is pushed on its



outer end face to perform a first operation, said stem-actuating member and crown being rotatable and axially displaceable together in connection with two further operations.

3,418,801
DEVICE FOR COMPENSATING FOR THERMAL CHANGES IN OSCILLATORS
Fritz Marti, La Chaux-de-Fonds, Switzerland, assignor to Portescap le Porte-Echappement Universel S.A., La Chaux-de-Fonds, Switzerland
Filed Nov. 29, 1966, Ser. No. 597,787
Claims priority, application Switzerland, Dec. 22, 1965, 17,898/65
10 Claims. (Cl. 58—108)

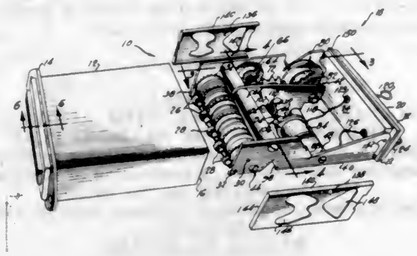


1. Apparatus for correcting the effects of temperature changes in a timepiece oscillator device, said apparatus comprising at least one vibratory member mounted to oscillate about a pivot point, at least one-bi-metallic strip means, and means for mounting said bi-metallic strip means on said vibratory member in a manner such that said strip means can be rotated about its longitudinal axis to a desired position and secured in said position, the plane containing said longitudinal axis extending in substantially the same direction as the plane containing the axis of oscillation of said vibratory member.

3,418,802
HOUR METER
Arthur J. Little, Springfield, and William R. Mayer, Rochester, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 4, 1966, Ser. No. 539,882
9 Claims. (Cl. 58—145)

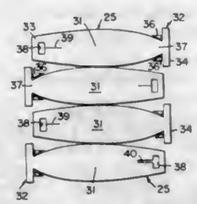
The following specification describes a sealed electrically operated hour meter having a plurality of spaced

parallel plates for journalling all rotating parts along parallel axes with the plates being supported in a housing



on damping pads and the first odometer wheel being driven at a visually observable rate from the drive wheel through a single transfer pinion.

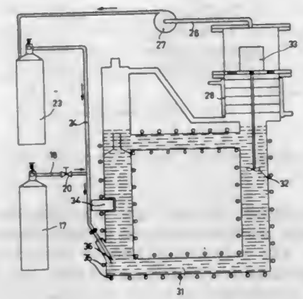
3,418,803
METHOD OF SALVAGING TIRE CARCASSES AND ARTICLES MADE THEREFROM
Macklin F. Martin, 6025 Herzog St., Oakland, Calif. 94608
Filed Feb. 13, 1967, Ser. No. 615,713
8 Claims. (Cl. 59—35)



The method of salvaging tire carcasses by cutting them up completely into elongated straps, wherein the straps have a T-shaped end with the head of the T being formed from the bead portion of the carcass and wherein the straps have an opening at the other end through which the T-shaped end may be put, so that the straps may be connected together end-to-end in belt fashion, or may be made into links and connected together in chain fashion.

3,418,804
DEVICE FOR CONVERTING CALORIFIC ENERGY INTO MECHANICAL ENERGY
Roelf Jan Meijer and Roland Anton Johan Otto van Witteveen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 9, 1967, Ser. No. 637,135
Claims priority, application Netherlands, May 11, 1966, 6606406
4 Claims. (Cl. 60—24)

The combination of a heat engine and heat source therefor is described. More particularly, there is described a system comprising a hot gas engine and heat supply system therefor comprising a container in the form of a circulation duct, a molten metal fuel in the container, a source of oxidizer fluid for the metal coupled to the container and a pumping system for maintaining the molten metal in a circulating condition. The heater system of the hot gas engine is arranged in heat conducting relationship

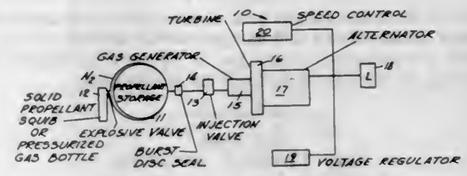


with the molten circulating metal preferably by the use of a heat exchange system having its heat pick-up unit positioned in the circulation duct at a point remote from the point of injection of the oxidizing fluid.

ERRATUM

For Class 60—30 see:
Patent No. 3,419,892

3,418,805
PULSED FUEL DELIVERY SYSTEM FOR TURBINE POWER PACKAGE
Benjamin Barish, Shaker Heights, and Arthur R. Thomson, Cleveland Heights, Ohio, assignors to TRW Inc., a corporation of Ohio
Filed May 10, 1965, Ser. No. 454,439
4 Claims. (Cl. 60—39.28)

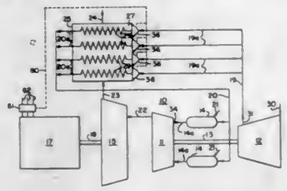


The invention is directed to a power control system for cyclically applying combustible gases to a turbine which, in turn, controls the operation of an alternating current voltage generator or the like. A control system includes a valve which is turned sequentially on and off in response to the speed of the generator.

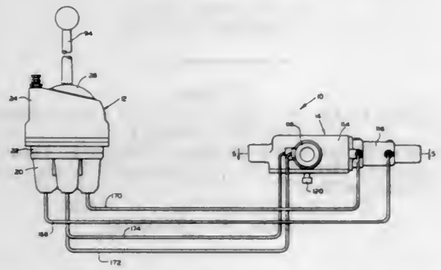
3,418,806
ELASTIC FLUID TURBINE APPARATUS
John T. Wagner, Lansdowne, and Ozro N. Bryant, Chester, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 14, 1966, Ser. No. 593,984
5 Claims. (Cl. 60—39.51)

This invention relates to a gas turbine driven electrical generating power plant in which the compressed air is preheated by exhaust gases from the turbine by sending

the air through a recuperator in the stack. In accordance with the invention there are provided a plurality of grid valves associated with the air conduits at the recuperator. The valves are normally positioned to direct air through the recuperator to the turbine combustion chambers, but are movable to a "dump" position to direct the compressed air to the exhaust gas stack in the event of sudden loss of electrical load, to prevent overspeeding of the turbine. The valves may also be moved to an "off" position individually to interrupt air flow through a portion of the recuperator to cause localized overheating of the recuperator for burning away deposits formed by the exhaust gases.

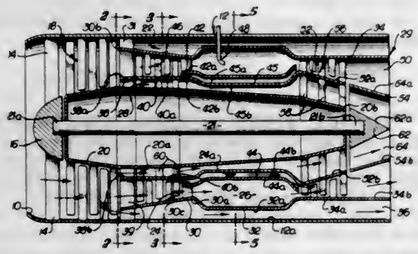


3,418,807
REMOTE CONTROL DEVICE
Barry L. Frost, Jackson, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 16, 1966, Ser. No. 602,279
2 Claims. (Cl. 60—54.5)



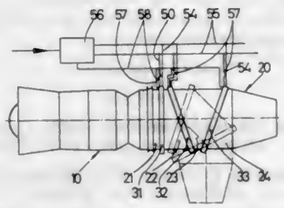
This invention relates to a remote control device and more specifically to a fluid type device suitable for use with a transmission which has an operator manipulated portion located remotely from the transmission.

3,418,808
GAS TURBINE ENGINES
David Rich, 3741 E. Pasadena Ave., Phoenix, Ariz. 85018
Continuation-in-part of application Ser. No. 562,806, July 5, 1966. This application Jan. 3, 1967, Ser. No. 606,777
6 Claims. (Cl. 60—226)



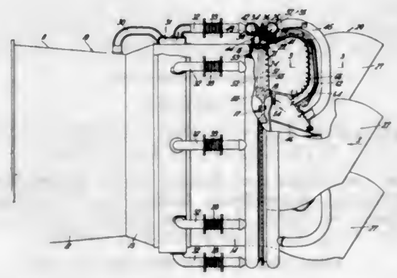
This improvement in gas turbine engines incorporates special internal cooling ducts which provide air passageways adjacent to the internal components of the engine. These cooling ducts are concentric with the combustion duct of a gas turbine engine and function as by-pass passageways which provide a large stream of cooling air inside the engine and through the turbine.

3,418,809
ROTATABLE JET NOZZLE WITH AUTOMATIC COMPENSATION FOR BEARING PLAY
Gerhard Kopp, Munich, Germany, assignor to Entwicklungsring Sud G.m.b.H., a corporation of Germany
Filed June 6, 1967, Ser. No. 643,999
Claims priority, application Germany, June 27, 1966, E 31,929
8 Claims. (Cl. 60—232)



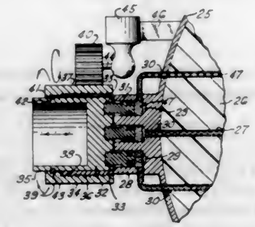
An antifriction bearing between tube segments wherein one of the races thereof is mounted on an expansion member which expands and contracts in response to detected variations in bearing play caused by wide temperature variations.

3,418,810
COOLING MEANS FOR ROTATABLE JET NOZZLE, BEARING AND TURBINE BLADES
Roger Anthony Cresswell, Derby, and George Samuel Kitson, Aspley, Nottingham, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed June 30, 1967, Ser. No. 650,509
Claims priority, application Great Britain, July 22, 1966, 33,108/66
12 Claims. (Cl. 60—232)



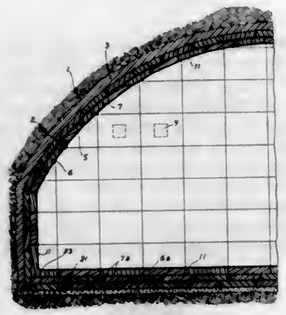
A gas turbine engine has a rotatable final nozzle structure through which pass the exhaust gases, rotation of the final nozzle structure in its bearing varying the direction in which the turbine exhaust gases are directed, and a stream of cooling fluid is employed to cool the bearing, the final nozzle structure, and the turbine blades.

3,418,811
POSITIVE DISPLACEMENT CONTROL SYSTEM FOR CONTROLLING THE FLOW OF GASES WITHIN A SOLID-PROPELLANT ROCKET MOTOR TO REGULATE THE BURNING RATE OF THE SOLID PROPELLANT
Leonard H. Caveny and Robert L. Glick, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,340
2 Claims. (Cl. 60—254)



A positive displacement control system for solid propellant rocket motors having a solid propellant therein provided with a burning surface and having metallic tubes embedded therein and filled with an inhibiting fluid, a cylinder mounted on the motor case communicating with the tubes and having therein one or more pistons for retracting the fluid in the tubes to control the burning rate of the burning surface of the solid propellant.

3,418,812
INSULATING MEANS FOR UNDERGROUND STORAGE SYSTEM
Amanullah R. Khan, Chicago, Bertram E. Eakin, Naperville, and Phillip J. Anderson, Deerfield, Ill., assignors to Institute of Gas Technology, a not-for-profit corporation of Illinois
Filed Feb. 14, 1966, Ser. No. 526,983
10 Claims. (Cl. 61—.5)

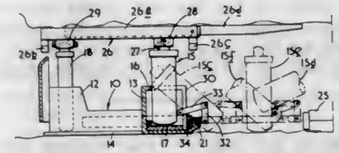


An insulation system for an underground rock cavern for storing liquified gases at cryogenic temperatures. A first vapor and liquid impervious sealant is contiguous with the surface of the rock cavern. A first layer of thermal insulation is contiguous with the first sealant. A second layer of thermal insulating panels is secured to the first layer of thermal insulation. A second liquid and vapor impervious sealant is contiguous with and secured to the innermost surface of the insulating panels to prevent the passage of liquid or vapor from or into the cavern.

3,418,813
SEALING METHOD
Horace T. Dillon, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 3, 1965, Ser. No. 506,258
6 Claims. (Cl. 61—1)

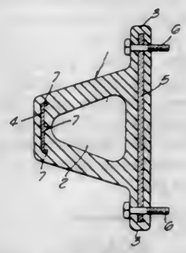
A highly water-swellable polymer is dispersed into a body of water supported by an underlayer of soil subject to water seepage. The polymer has a gel capacity of at least 100 and reduces the water seepage. The treatment is also used for reducing subterranean water conduit leakage.

3,418,814
ROOF SUPPORTS FOR MINE WORKINGS
Karl M. Groetschel, 44 Stolzestrasse, 463 Bochum, Germany
Filed Mar. 3, 1967, Ser. No. 620,513
Claims priority, application Great Britain, Mar. 4, 1966, 9,472/66
8 Claims. (Cl. 61—45)



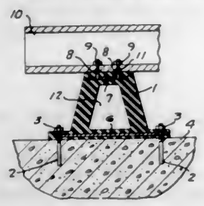
This invention relates to roof supports comprising a base, a plurality of sockets in said base forming prop seatings, a plurality of props in said seatings and a roof engaging superstructure carried by said props, and is concerned with the provision of laterally presented entries in said seatings or any of them and the provision of a power-energized device for releasable connection to the props or any of them for withdrawal and insertion of the prop concerned through its associated entry.

3,418,815
DOCK FENDER
Michio Kumazawa, Yamatomachi, Japan, assignor to Seibu Gomu Kagaku Kabushiki, Kaisha (trade name: Seibu Rubber Chemical Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed May 24, 1967, Ser. No. 640,868
Claims priority, application Japan, May 26, 1966, 41/33,224
3 Claims. (Cl. 61—48)



A device for resiliently cushioning the engagement between a ship and a dock or similar uses where a hollow body of resilient material has a flat steel plate embedded therein near the ship-engaging surface and generally parallel to the side of the ship for distributing the applied forces.

3,418,816
FENDER FOR PROTECTING SHIPS ALONGSIDE A FIXED STRUCTURE
Michio Kumazawa, Yamatomachi, Japan, assignor to Seibu Gomu Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed May 26, 1967, Ser. No. 641,535
Claims priority, application Japan, Sept. 5, 1966, 41/83,434
2 Claims. (Cl. 61—48)



The present ships fender is provided by one or more hollow resilient bodies attached to a fixed structure such as a pier, wharf or the like and having one or more rigid members attached to said bodies for receiving the side of a ship and averting any concentration of the resulting bearing load on the fender or the side of the ship.

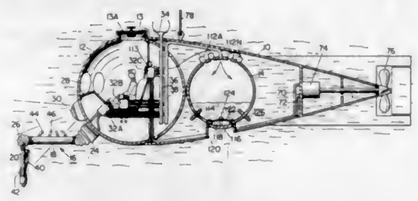
3,418,817
METHOD OF INSTALLING LINER FOR THIN WALL PIPE PILE
Fredric Rusche, 8125 Medina St., Detroit, Mich. 48217
Filed Sept. 12, 1967, Ser. No. 667,306
3 Claims. (Cl. 61—53.52)



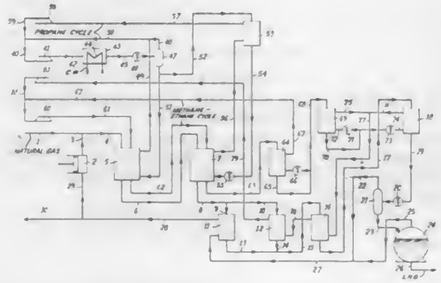
A liner is placed in the lower portion of a thin wall pipe pile to maintain the roundness of the pile section and prevent collapse thereof during heavy driving. Ordinarily, a hole is wet drilled downwardly through earth to a bearing strata leaving the drilling mud in the hole. A thin wall pipe having a driving point is then forced down in the hole until the point reaches the bearing strata. Then the point is driven into the bearing strata by an inserted mandrel which engages both the point and the top of the pile. The mandrel has a lower expansible section which engages in a liner and an upper tubular non-expansible section which fits freely into the pile. The liner is carried down into the lower portion of the pile by the mandrel. After driving the pipe pile until its point penetrates the bearing strata, the mandrel is removed, leaving the liner in the lower end of the pile.

3,418,818
UNDERWATER POWER SOURCE
Renic P. Vincent and Lawrence B. Wilder, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,434
11 Claims. (Cl. 61—69)

A method and apparatus for supplying power to underwater apparatuses which makes use of the head of water at the depth of the apparatus to drive a hydraulic motor. A lower pressure container is provided to receive discharge water from the hydraulic motor. Means are further provided to rejuvenate the low pressure container.



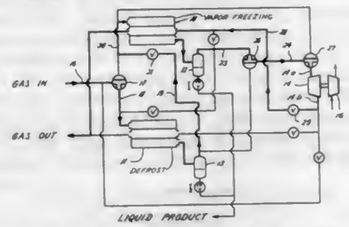
3,418,819
LIQUEFACTION OF NATURAL GAS BY CASCADE REFRIGERATION
Jacques Fred Grunberg, Outremont, Canada, and Harumitsu Takagi, Ashiya, Japan, assignors to L'Air Liquide Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude and Teikoku Sanso Kabushiki Kaisha
Filed June 16, 1966, Ser. No. 557,983
Claims priority, application France, June 25, 1965, 22,421
2 Claims. (Cl. 62—11)



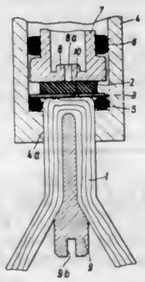
Natural gas is liquefied by employing cascade refrigerant natural gas, is cooled, and a first refrigerant mixture of methane and ethane is liquefied in a first cooling zone by countercurrently flowing a vaporizing propane refrigerant. The refrigerant mixture is further cooled and split into two portions, each one of which is expanded and then vaporized in heat exchange with natural gas being liquefied and the refrigerant mixture being further cooled. The vaporized refrigerant portions are recombined and used to cool subsequent portions of natural gas feed. Liquefied natural gas is expanded to separate a methane rich fraction.

3,418,820
METHOD AND APPARATUS FOR REMOVING VAPORS FROM GASEOUS MIXTURES BY FREEZING
Judson S. Swearingen, 500 Bel Air Road, Los Angeles, Calif. 90024
Filed Nov. 14, 1966, Ser. No. 594,057
5 Claims. (Cl. 62—12)

A gaseous stream containing vapors is passed through two heat exchangers. The stream defrosts the first and is cooled sufficiently in the second for the vapors therein to deposit out as frost. When the first is defrosted and the second charged with frost, the order in which the gas passes through the exchangers is reversed to begin defrosting the second and charging the first. Refrigeration for the cooling of the downstream exchanger is obtained by expanding the gas stream to a lower pressure and temperature through a turboexpander. Before switching the order of the exchangers, the expanded stream is passed through the defrosted exchanger to pre-cool it. Also, periodically a portion of the incoming gaseous stream is passed through the turboexpander to remove any frost which may have collected therein.



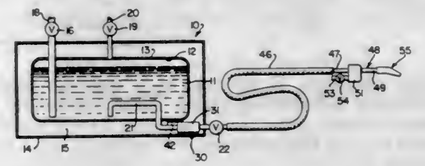
3,418,821
GAS-FUELED LIGHTER
Hermann Remy, Dietzenbach-Steinberg, near Offenbach am Main, and Otto Adler and Franz Heberer, Heusenstamm, near Offenbach am Main, Germany, assignors to Rowenta Metallwarenfabrik G.m.b.H., Offenbach am Main, Germany, a German firm
Filed Oct. 27, 1966, Ser. No. 589,991
Claims priority, application Germany, Dec. 20, 1965, R 42,263
9 Claims. (Cl. 62—52)



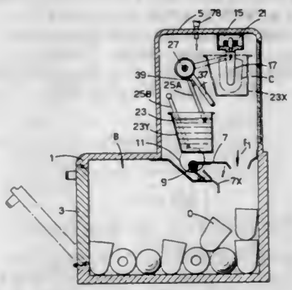
A gas-fueled lighter in which a valve having a fuel passage opening in its seat is axially slidable in a valve housing including a fuel feed opening. A feed member such as a wick protrudes through the feed opening into the housing for feeding liquid fuel into the housing. A throttling member in the form of a porous disc is interposed between the protruding end of the feed member and the valve and a guard disc is interposed between the throttling disc and the protruding end of the wick in abutment with both the throttling disc and the wick. The guard disc has an opening which is laterally displaced in reference to the fuel passage opening of the valve. The throttling action of the throttling disc is controlled by the axial position of the valve in the housing.

3,418,822
APPARATUS FOR TRANSPORTING A STREAM OF CRYOGENIC LIQUIFIED GAS
Alton A. Massey, Tonawanda, N.Y., assignor to The Firewel Company, Inc., Buffalo, N.Y., a corporation of Ohio
Filed June 27, 1967, Ser. No. 649,203
8 Claims. (Cl. 62—55)

In cryosurgery, infrared detectors, and chilling parts being machined, the receiver for a low controlled volume of cryogenic liquid desirably is highly maneuverable and comfortable to handle. Conventional supply equipment requires hoses the flexibility of which deteriorates and which become relatively rigid as cryogenic temperatures are reached. The present apparatus takes advantage of the Leidenfrost phenomena which is a phase transition phenomena of liquified gases involving resolution of the liquid into liquid spheroids and a transport gas flowing simultaneously. The liquified gas from a source is heated in the proximity of Leidenfrost flow development and both the spheroids and transport gas then conducted by a flexible hose to a hollow body having an outlet in line with its inlet bleed openings in its side so that the spheroids are projected through the outlet to the receiver, while a part of the transport gas escapes through the side bleed openings. The temperature of the flexible hose remains close to ambient so that hose flexibility and handleability with bare hands is not impaired. With a pressure source, system operating pressure can be maintained by a discharge metering device from the receiver, and system driving pressure can be maintained constant by regulation of the source pressure and the effect of this discharge metering device. Bleeding of transport gas from the hollow body is regulated in accordance with downstream requirements.



3,418,823
CYCLIC MOVABLE ICE MAKER
Pietro Bartolini Salimbeni Vivai, Via Verdi 1, Florence, Italy
Filed May 15, 1967, Ser. No. 638,396
Claims priority, application Italy, May 20, 1966, 11,578/66
7 Claims. (Cl. 62—138)

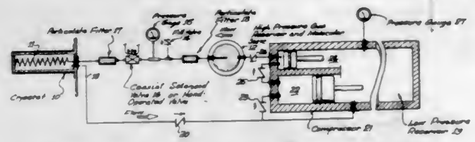


Apparatus for making small ice blocks, which can be used for cooling beverages, comprising a plurality of elongate refrigerated moulds dependent from the roof of a casing. A water containing tray is sequentially and cyclically moved from a position below and to one side of the moulds to a position in which the moulds are immersed in the water in the tray. Consequently, transparent ice layers are formed on the moulds and the formed ice blocks are removed from the moulds by heating the interior of the moulds.

3,418,824
MANUALLY OPERATED CLOSED-CYCLE REFRIGERATION SYSTEM

Helmuth K. Beutel, Azusa, Arvel D. Markum, Covina, and Charles W. O'Donnell, Cucamonga, Calif., assignors to General Dynamics Corporation, a corporation of Delaware

Filed June 16, 1967, Ser. No. 646,573
6 Claims. (Cl. 62—474)

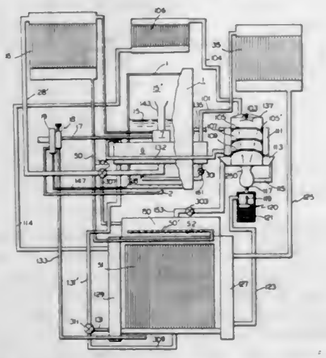


This disclosure is directed to a manually-operated closed-cycle refrigeration system. More particularly, the system includes three major sections: (1) a miniature Joule-Thomson heat exchanger (or cryostat), (2) a hand-operated compressor/low-pressure reservoir section, and (3) a high pressure reservoir/control valve section. The hand-operated compressor comprises first and second compression stages each including a cylinder and piston, said second stage being operatively coupled in series with said first stage whereby gas is introduced into said first stage through an intake check valve from a low pressure reservoir connected with the system return line during the suction stroke of the first stage piston. During the compression stroke of the first stage piston the gas is forced through an interstage check valve into the second stage cylinder cavity and is then compressed to a higher pressure upon the compression stroke of the second stage piston. The two pistons are arranged so that when the first stage piston is in its compression stroke the second stage piston is in its suction stroke. The respective pistons are operatively coupled to a hand-operated reciprocating lever by way of a rack and pinion arrangement. Both of the compression stages are operatively associated with the low pressure reservoir such that leakage past the piston seals is collected by the reservoir thus preventing external leakage of the system.

3,418,825
CDR COMBINATION HIGH AND LOW PRESSURE POWER INJECTION HEATING AND REFRIGERATION MACHINE AND METHOD

Carl D. Russell, 1209 Walnut St., Muskogee, Okla. 74401

Filed Mar. 7, 1967, Ser. No. 621,339
15 Claims. (Cl. 62—483)



An absorption type refrigeration system having a boiler containing refrigerant and absorbent fluid wherein the refrigerant fluid passes through a condenser to an evaporator which includes a passageway to an absorber and wherein the absorbent fluid passes through a cooler to the absorber, the combination comprising: motor injection means in the refrigerant path before the condenser powered by the hot refrigerant vapors to power all fluids in the system; a jet passageway for the absorbent fluid from the cooler to the absorber; a venturi in communication between the jet passageway and the absorber; a further condenser; and a further passage from the absorber to the boiler including the further condenser whereby high pressure absorbent fluid is sprayed via the jet into the absorber for mixing with refrigerant fluid from the evaporator and the mixture returnd to the boiler for reheating.

3,418,826
EARRING CONSTRUCTION HAVING INTERCHANGEABLE PARTS

Franz X. Wieshuber, 2551 Fullerton Ave., Chicago, Ill. 60647

Filed Sept. 2, 1964, Ser. No. 394,005
4 Claims. (Cl. 63—13)

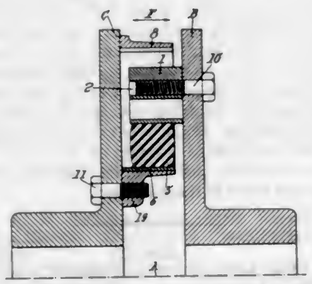


An earring including a back part with an ear attaching device and an ornamental part detachably secured to the back part. The ornamental part has tabs which are passed through slots of a plate on the back part and rotated to lock them behind the plate. A deformable lip on one part may be bent into a recess on the other to prevent separation.

3,418,827
ASSEMBLIES OF THE ELASTIC COUPLING TYPE

Raoul Bernard, Fontenay-aux-Roses, France, assignor to Societe Paulstra, Levallois-Perret, France, a society of France

Filed June 29, 1966, Ser. No. 561,463
Claims priority, application France, July 21, 1965, 25,488
9 Claims. (Cl. 64—11)

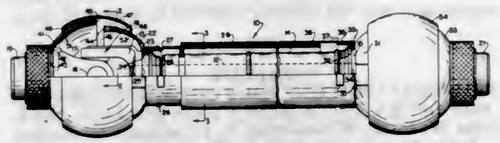


The elastic coupling is intended for coupling one rotatable member to another, and comprises a plurality of coupling units, each disposed eccentrically with respect to the two rotatable members. Each coupling unit comprises an inner element secured to one of the rotatable members, an outer element secured to the other rotatable member, and rubber masses, precompressed circumferentially with respect to the rotation of the two members, disposed between these two elements. The inner element has two outer sides disposed substantially radially with respect to the rotation of the two members, and the rubber masses project circumferentially outwardly from these two sides. The rubber masses are left free both radially inwards and outwards with respect to the rotation of the two members.

3,418,828
SHIELDED ANGULAR DRIVE ASSEMBLY

Sidney Le Roy Carns, Allegan, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Jan. 9, 1967, Ser. No. 607,977
10 Claims. (Cl. 64—32)

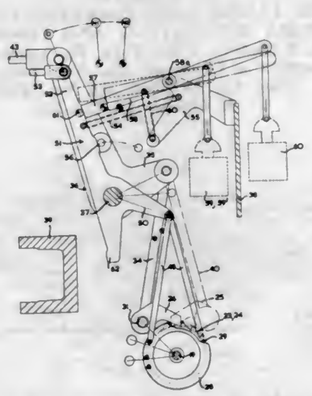


A drive transmitting universal joint wherein two end members are interconnected for relative angular movement has protective external shielding that comprises opposed bell-shaped shield members of different size fixed to the respective joint members and extending toward each other over the joint members to terminate in adjacent open ends with the smaller capable of extending within the larger upon joint irregularity, and an annular shield member is mounted upon and bridges the opposed shield members, the annular shield member having annular resilient lips at opposite ends in sliding association with the external surfaces of the opposed shield members to provide and maintain enclosure of the joint by the shielding during all operative conditions of angularity of the joint.

3,418,829
MULTIHEAD FULLY FASHIONED KNITTING MACHINES

Brian Arthur Monk, Mansfield, England, assignor to S. A. Monk (Sutton in Ashfield) Limited, Sutton-in-Ashfield, Nottinghamshire, England, a corporation of the United Kingdom

Filed June 27, 1966, Ser. No. 560,743
Claims priority, application Great Britain, June 28, 1965, 27,269/65
7 Claims. (Cl. 66—70)

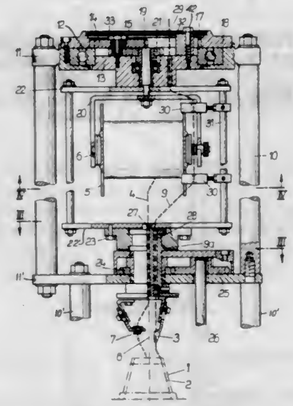


Multihead fully fashioned knitting machines have a single control division and a plurality of knitting divisions. Racking of the fashioning mechanisms is effected by racking mechanisms and associated bluff plate mechanisms. The racking mechanisms and the bluff plate mechanisms are operable through linkage systems which are mechanically interconnected in such manner that they operate, during at least part of their operational movement, as one. A single power unit is provided to actuate both said racking mechanisms and said bluff plate mechanisms.

3,418,830
YARN FEED MECHANISM FOR CIRCULAR KNITTING MACHINES

Emil Nestel, Reutlingen-Betzingen, Germany, assignor to Emil Nestel KG., Reutlingen-Betzingen, Germany, a corporation of Germany

Filed May 24, 1966, Ser. No. 552,484
Claims priority, application Germany, June 22, 1965, N 26,927
6 Claims. (Cl. 66—125)



A cover thread guide arrangement for supplying a cover thread eccentrically of the axis of a knitting machine; a core filament supply spool is suspended centrally of the axis of the machine. The holder for the core filament is rotatable with respect to a pair of guides receiving the eccentrically supplied cover thread, the guides being driven with respect to the machine via planetary gearing so that the core filament supply spool holder will be stationary with respect to the machine and the cover thread will balloon out with the holder located within the space formed by the ballooning thread.

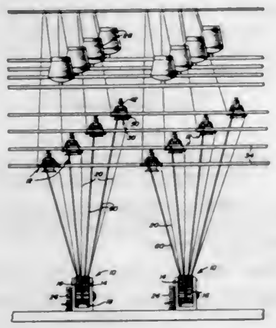
3,418,831
FEED CONTROL FOR AUTOMATIC STRIPER

Lacy C. Nance, Orrum, N.C., assignor of twenty-five percent to Ertle Williamson, twelve and one-half percent to William E. Musselwhite, and twelve and one-half percent to Fred L. Musselwhite

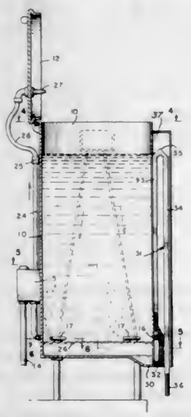
Filed Oct. 27, 1967, Ser. No. 678,627
2 Claims. (Cl. 66—132)

A feed control system for an automatic striper incorporating a positive feed wheel associated with each yarn package and directly controlled by a separate feeder finger of the striper for effecting an instantaneous engagement and disengagement of the yarn from the feed wheel. This control is directly responsive to movement of the feeding finger independently of the yarn itself, such being effected by either a linking rod extending between

the finger and the feed wheel, or a solenoid actuating circuit wherein a physical movement of the finger engages an appropriate microswitch and energizes the circuit.



3,418,832
PORTABLE WASHING MACHINE
Joe M. Valdespino, 5023 Golf Club Parkway, Orlando, Fla. 32808
Filed Aug. 11, 1966, Ser. No. 571,911
3 Claims. (Cl. 68—183)



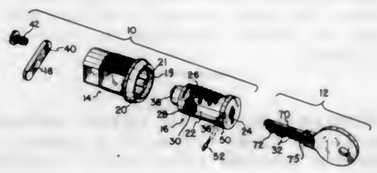
A small portable apparatus connected to an external source of water under pressure which injects water and air from the atmosphere through a venturi-type nozzle arranged generally tangentially of the apparatus. A discharge tube is adapted to discharge the water from the apparatus by a siphon action when the water level reaches a predetermined height so that the apparatus will fill and empty automatically and repeatedly.

ERRATUM

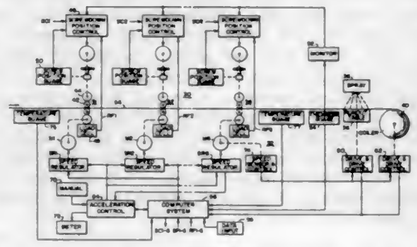
For Class 70—24 see:
Patent No. 3,419,893

3,418,833
TAMPERPROOF CYLINDER LOCK
William J. Kerr, Glenview, Ill., assignor to Chicago Lock Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 15, 1966, Ser. No. 572,555
4 Claims. (Cl. 70—421)

A tamperproof cylinder lock employing, in addition to the usual pin tumblers, a special radial tumbler which slides endwise in the lock plug near the mouth of the keyway and which interlocks with the lock cylinder to prevent turning of the plug within the cylinder during insertion of the key into the keyway. At such time as the key attains full projection into the keyway a socket in the key registers with the special tumbler and affords a clearance whereby such tumbler may move out of interlocking engagement with the cylinder to permit turning of the plug.



3,418,834
TEMPERATURE CONTROL SYSTEM AND METHOD FOR OPERATING A REDUCTION ROLLING MILL
John W. Cook, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1965, Ser. No. 499,493
6 Claims. (Cl. 72—9)

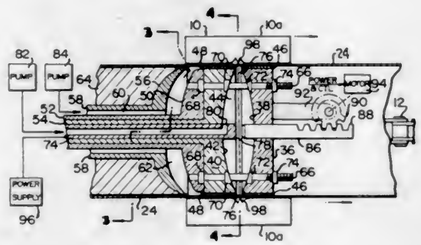


A hot steel strip rolling mill is controllably accelerated to hold desired strip delivery temperature. Closed loop control of mill acceleration is based on delivery temperature detection.

ERRATUM

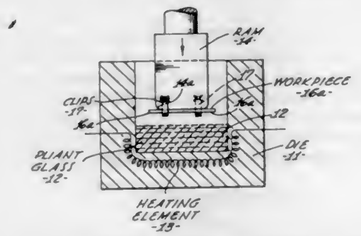
For Class 72—53 see:
Patent No. 3,419,894

3,418,835
FLUID LUBRICATED ELECTROHYDRAULIC BODY SEPARATING AND FORMING
Paul M. Erlandson, Palos Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y.
Filed Apr. 26, 1966, Ser. No. 545,286
26 Claims. (Cl. 72—56)



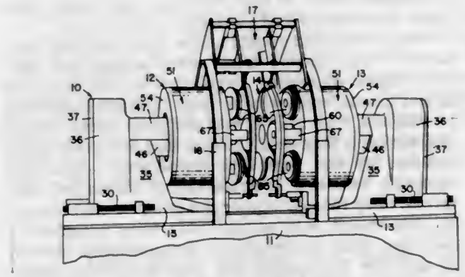
Electrohydraulic methods and apparatus for forming or severing tubular work pieces are disclosed herein. A pair of concave reflectors are mounted by a horn along which the tubular work piece travels. The reflectors are arranged face-to-face and define a peripheral opening therebetween and first and second electrodes extend through the reflectors for the production of an electrical discharge therebetween. Forces resultant from an electrical discharge between the electrodes are radiated outwardly therefrom via a fluid contained in the cavity between the reflectors and these forces are directed against the tubular work piece through the peripheral opening defined by the reflectors.

3,418,836
FORMING METALS USING LIQUID DIES
John H. Olson, 4221 Ben Ave., Studio City, Calif. 91604
Filed May 5, 1966, Ser. No. 547,961
6 Claims. (Cl. 72—57)



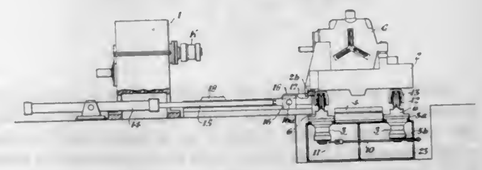
An improved process and apparatus is provided for forming metals and which uses liquid dies. The apparatus uses a vitreous material in a female die, the vitreous material being raised to a high temperature at which it becomes pliant. The part to be shaped is attached to a ram, and the ram is moved into the pliant vitreous material in the female die. Appropriate blocks are placed over the pliant vitreous material in the female die, so that the vitreous material may exert a high pressure against the workpiece, as the ram is moved down into the vitreous material.

3,418,837
SELF-LUBRICATED AND SANITARY DRIVE MEANS FOR CAN FLANGER AND THE LIKE
Dirk Vanderlaan, Alameda, Jack Denney Thomas, Fremont, and Richard Dale Miller, San Jose, Calif., assignors to Miller-Thomas Corporation, doing business as Globe Engineering Company, San Jose, Calif., a corporation of California
Filed Jan. 26, 1967, Ser. No. 611,891
8 Claims. (Cl. 72—94)



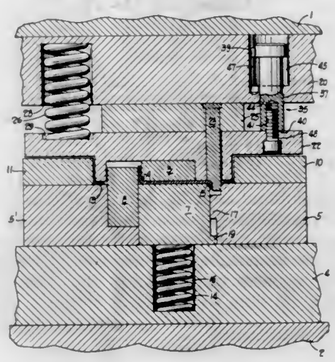
An apparatus for simultaneously forming flanges on open ends of tubular can blanks as the blanks pass between turrets having opposing dies mounted on slide bars, the drive means of which turrets are confined within sealed lubricant chambers for self lubrication, cleanliness and for shielding the dies and can blanks against contamination by lubricant. Each turret is a sealed drum-like pilot head carrying slide bars around a fixed pilot cam serving as a bearing for the shaft which turns the pilot head; and each turret and its drive means is adjustable toward and from the other and relative to a common source of power to handle various lengths of can blanks.

3,418,838
STAND CHANGING UNITS FOR CONTINUOUS ROLLING MILLS
Kurt Rotert, Dusseldorf-Gerresheim, and Ernst Otto Blos, Solingen-Ohligs, Germany, assignors to Kommanditgesellschaft Friedrich Kocks, Dusseldorf, Germany, a corporation of Germany
Filed Apr. 12, 1967, Ser. No. 630,293
Claims priority, application Germany, Apr. 16, 1966, K 59,016
5 Claims. (Cl. 72—239)



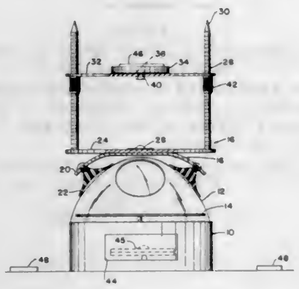
A stand changing unit for continuous rolling mills in which the roll stands are mounted on wheels having grooves adapted to run on first rails which extend to a mill drive parallel to the drive axis and which wheels are transferred to transverse rails intersecting the first rails by means of separate wheel turntables at each rail intersection.

3,418,839
STRIPPER PLATE BOLT ASSEMBLY FOR A DIE SET
Richard E. Hlavac, 25921 Yeoman Drive, Westlake, Ohio 44145
Filed Oct. 22, 1965, Ser. No. 501,919
2 Claims. (Cl. 72—344)



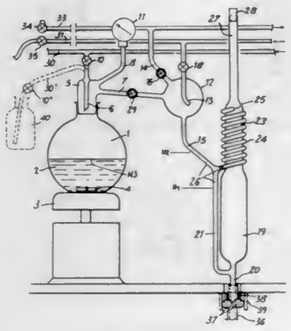
A stripper bolt and a stripper bolt, die set and stripper plate assembly for a die press in which the stripper bolt has a shank, a round head with a projection extending laterally from the edge of said head, a flat end remote from said head, and a drilled and tapped hole for the reception of a fastening screw, the die set is drilled and bored complementarily to the stripper bolt and the stripper plate is held tight against said flat end.

3,418,840
COMPASS COMPENSATION
Richard B. Wallace, Bloomfield Hills, Mich., assignor to The Oakland Corporation, Troy, Mich., a corporation of Michigan
Filed Aug. 2, 1965, Ser. No. 476,343
4 Claims. (Cl. 73—1)



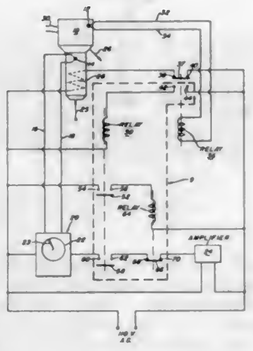
Method and apparatus for compensating a compass on a vehicle which comprises removing the compass from the vehicle to a point where it is subjected only to the earth's magnetic field, there neutralizing the earth's magnetic field by adjustment of first magnetic means, restoring the compass and adjusted magnetic means to the vehicle, thereafter adjusting second magnetic means permanently associated with the compass to neutralize the vehicle's magnetic field, and finally, removing the first magnetic means.

3,418,841
MEASUREMENT OF THE VOLUME OF GASES CONTAINED IN A PREDETERMINED QUANTITY OF ANY MATERIAL AND ESPECIALLY GEOLOGICAL SAMPLES SUCH AS DRILLING MUDS, WATERS AND ROCKS
Olivier Marie Bernard Issenmann, Boulogne-sur-Seine, France, assignor to Geoservices, an anonymous society
Filed June 1, 1965, Ser. No. 460,239
Claims priority, application France, June 3, 1964, 976,904; May 25, 1965, 18,283
9 Claims. (Cl. 73—19)



A method and apparatus for measuring and recovering gases contained in a predetermined quantity of material such as drilling mud, crushed rock and the like, in which the material is heated in a vacuum and the gases emanating during the heating are driven into an evacuated measuring chamber by steam developing during continued heating of the material, in which subsequently thereto any steam in the measuring chamber is condensed while the gas therein is prevented from leaving the measuring chamber, whereafter the gas in the measuring chamber is subjected to atmospheric pressure while mixing of the gas with air is prevented and the amount of gas developed from the predetermined quantity of material is measured at atmospheric pressure. Finally, the gas is discharged from the measuring chamber for qualitative analysis.

3,418,842
PEAK TEMPERATURE RECORDING APPARATUS
Sixt Frederick Kapff, Homewood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed May 28, 1964, Ser. No. 370,928
2 Claims. (Cl. 73—36)



1. Apparatus for recording essentially only peak data temperature from a source producing a cyclic temperature, said source having a first temperature sensing and electrical signal generating means adapted to continually sense and generate temperature signals based on said cyclic temperature, said apparatus comprising:

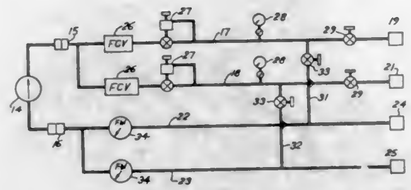
(a) second temperature sensing and electrical signal generating means operably connected to said source, said means being adapted to sense only the occurrence of said peak data temperature from said source and generate a peak data temperature signal at the time of said occurrence;

(b) recording pen means;

(c) electrical circuit means operably connected to said recording pen means and said first temperature sensing and electrical signal generating means and adapted to connect power to said recording pen means only upon actuation of said electrical circuit means;

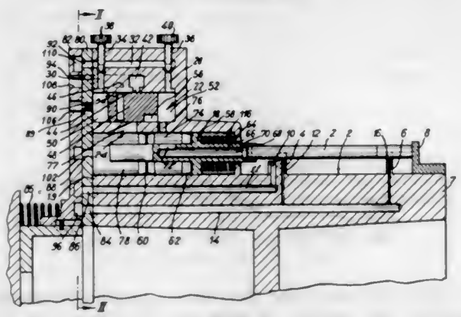
(d) relay means comprising a first relay operably connected to said second temperature sensing and electrical signal generating means and to said electrical circuit means, and a second relay operably connected to said first relay and to said electrical circuit means and having a time delay means, said first relay being actuated by said peak data temperature signal and actuating both said electrical circuit means and said second relay thereby connecting power to said recording pen means, said second relay being actuated by said time delay means after a predetermined interval of time for deactuating said electrical circuit means to thereby remove power from said recording pen means whereby the position of said recording pen means is maintained until the occurrence of the next peak data temperature signal, during which interval of time essentially only said peak data temperature is recorded.

3,418,843
TESTING APPARATUS FOR DUAL HYDRAULIC SYSTEMS
John L. Bosshart, Arlington Heights, Ill., assignor to Sun Electric Corporation, a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,072
8 Claims. (Cl. 73—37)



A testing apparatus for simultaneously testing dual hydraulic systems includes a fluid pressure source connected in parallel to a pair of fluid supply lines and a pair of fluid return lines. Each pair of lines is adapted to be connected to the dual systems to be tested and a flow control valve and pressure regulator is provided in each of the supply lines. A pressure indicator is provided to indicate the pressure in each of the supply lines and a flow rate indicator is provided to indicate the flow rate in each of the return lines.

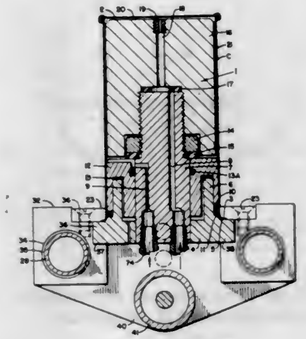
3,418,844
METHOD AND APPARATUS FOR TESTING CIGARETTES OR THE LIKE
Guenter Wahle, Hamburg-Bramfeld, Germany, assignor to Hauni-Werke Koerber & Co., KG., Hamburg-Bergedorf, Germany
Filed Dec. 2, 1966, Ser. No. 598,690
28 Claims. (Cl. 73—45.1)



The integrity of porous wrappers in cigarettes is tested by streams of testing air each of which is admitted into one end of the respective wrapper to pass through the pores whereby the pressure of testing streams changes as a function of the condition of the respective wrappers. The pressure of each testing stream is compared with the pressure of a flowing reference stream whereby the difference between such pressures indicates whether or not the respective wrappers are defective.

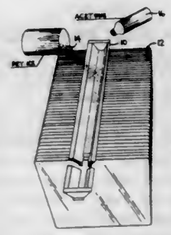
3,418,845
CAN BODY TESTING MACHINE
Thomas F. Helms, New Fairfield, Conn., assignor to Idex Corporation, a corporation of Connecticut
Filed June 21, 1966, Ser. No. 559,297
9 Claims. (Cl. 73—45.5)

This specification discloses a machine for placing a testing fluid pressure on the interior of can bodies prior to the time that such can bodies have their final lid placed ber that extends into the can body, and a sealing arrangethereon. There is disclosed a specific form of plug memment whereby the test fluid pressure within the can body is sealed within the can at the sides thereof near the opening end.



There is also disclosed a fluid pressurizing system involving interlocks so as to place fluid pressure on the cans to be tested only when the cans are submerged in a tank of water whereby the leakage or buckling of the can may be visually checked in safety.

3,418,846
METHOD OF INSPECTING ALL-GLASS MULTIPLE GLAZED UNITS
Walter H. Lehner, Lincoln, Ill., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Filed Sept. 23, 1964, Ser. No. 398,702
3 Claims. (Cl. 73—52)

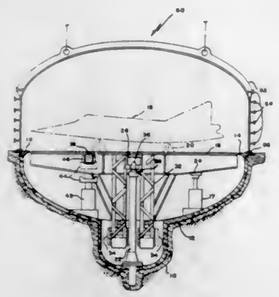


A method of inspecting all-glass multiple glazed units for dew point comprising stacking a plurality of all-glass multiple glazed units in edgewise and closely spaced relation, chilling an exposed edge portion of all of the units simultaneously, and removing any defective units, as indicated by a visible formation of moisture within a unit at the chilled edge portion thereof.

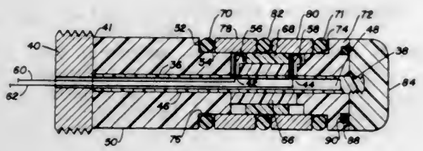
3,418,847
MOMENTS OF INERTIA PLATFORM
Merle E. Nantz, Sun City, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 17, 1966, Ser. No. 559,353
7 Claims. (Cl. 73—65)

A ground level platform onto which an aircraft may be rolled; pivot means with associated jacks located below ground level whereby the platform may be lifted and

then lowered to rest on selected knife edge fulcra. Moments of inertia of an aircraft may then be determined about any of the three mutually perpendicular axes. This is done with one placement of the aircraft.



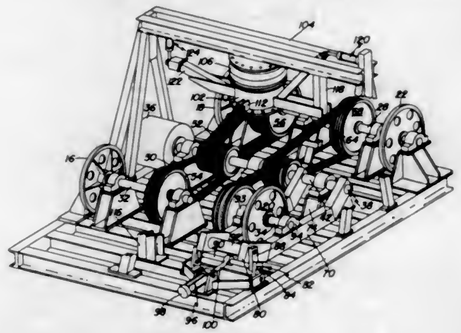
3,418,848
CORROSION TESTING PROBE
Edward Schaschl, Crystal Lake, Ill., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 6, 1965, Ser. No. 511,952
9 Claims. (Cl. 73—86)



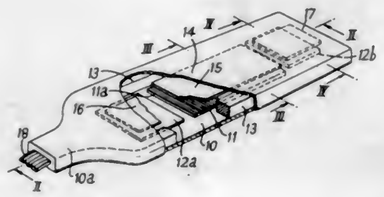
A corrosion test probe comprising a hollow, tubular base member having a recess on the exterior surface thereof, said tubular base member having apertures communicating the recess surface to the hollow interior, at least two metallic tubular test specimens slidably disposed on the recess surface in registry with said apertures and having interior surface conforming to the exterior configuration of said recess surface to substantially fluid-tightly engage at least a portion of said recess surface so as to isolate same from the corrosive environment, independent electrical conductor means contacting each of the unexposed interior surfaces of the test specimens and communicating into and through the hollow interior of the base member through apertures located in the isolated portion of the recess surface, end means on the terminal portion of the base member to prevent relative longitudinal movement between the base member and the test specimens and to fluid-tightly seal the hollow interior of the base member from the corrosive environment.

3,418,849
VEHICLE TEST BED
Arthur O. Beer, Peoria, and Gary H. Kling, East Peoria, Ill., assignors to Westinghouse Air Brake Company, a corporation of Pennsylvania
Filed May 11, 1966, Ser. No. 549,317
11 Claims. (Cl. 73—117)

A test bed for a railway vehicle with four driven wheels on two parallel axles including four rail wheels rotatably mounted to support the driven wheels with each having a profile simulating a rail and an energy absorber drivingly connected to each rail wheel with the test bed being capable of simulating varying conditions encountered in the operation of the vehicle such as operation on a curve, passengers moving to one side of the vehicle, varying loads and a momentary dip in the track.



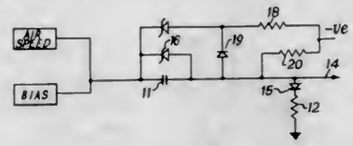
3,418,850
DEVICE FOR MEASURING THE PRESSURE BETWEEN TWO SURFACES AT LEAST ONE OF WHICH IS A ROLL
Derek Joseph Harry Goddin, 56 Yew Tree Road, Southborough, Tunbridge Wells, Kent, England
Filed Mar. 7, 1966, Ser. No. 532,381
Claims priority, application Great Britain, Mar. 11, 1965, 10,419/65
9 Claims. (Cl. 73—141)



Device for measuring the effective pressure developed between two surfaces, at least one of which is of roll form and at least one of which is of resiliently deformable material, in which a flexible metal plate overlying and normally slightly spaced from a resistance wire winding around a thin insulating strip is forced into short circuiting contact with different lengths of such winding in dependence upon the appled pressure and consequent deformation of said deformable material surface.

3,418,851
TAKE-OFF DIRECTORS
Frank Dove, St. Albans, England, assignor to Sperry Rand Limited, London, England, a company of England
Filed Nov. 1, 1966, Ser. No. 591,329
Claims priority, application Great Britain, Dec. 15, 1965, 53,238/65
7 Claims. (Cl. 73—178)

Apparatus for controlling the flight path of an aircraft during take-off utilizing an attitude command signal produced from data representative of aircraft longitudinal acceleration, pitch attitude and airspeed wherein a differentiator circuit including a capacitor, resistor and unidirectional current conductive element operates in conjunction with capacitor charging circuits to modify the airspeed data, the signal at the output of the differentiator being determined by the airspeed data when airspeed increases at a normal rate and by the charging circuits when airspeed increases at less than the normal rate thereby effecting predetermined airspeed requirements within given time intervals.

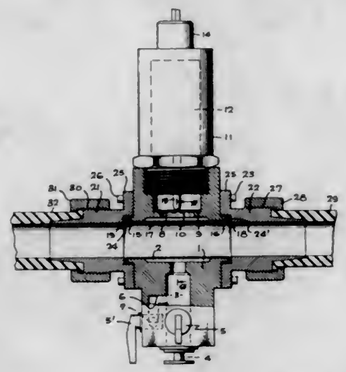


3,418,852
DRIFT DROGUE
John Wilson Martin, Auke Bay, Alaska, assignor to the United States of America as represented by the Secretary of the Interior
Filed Apr. 28, 1967, Ser. No. 635,957
9 Claims. (Cl. 73—189)



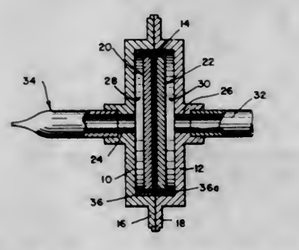
A drift drogue for charting surface currents of water bodies which consists of a winged structure having a float and weights so arranged as to provide a canted attitude to the drogue when it is immersed in water so that the ratio of wind resistance to water drag is reduced to a minimum.

3,418,853
BLOOD PRESSURE TRANSDUCER
Gerald R. Curtis, Ojai, Calif., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California
Filed Jan. 10, 1966, Ser. No. 519,509
2 Claims. (Cl. 73—406)



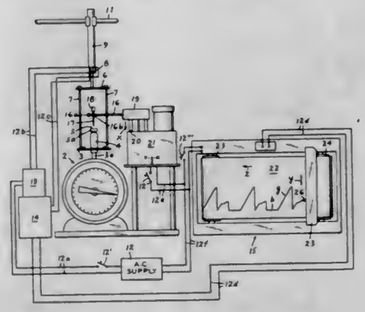
A housing has a continuous bore disposed in serial relation to a blood transmission conduit. Within the housing bore there is provided a chamber surrounding the bore and separated therefrom by a flexible cylindrical member of substantially the same dimensions as the bore cross-section. Inlet and outlet openings are provided to the chamber. A flexible diaphragm isolates the outlet opening from the chamber interior. Coupling fluid is provided to the chamber via the inlet opening. A pressure transducer is received within the outlet opening and has actuating parts in contact with the diaphragm such that as blood passes along the transmission conduit its pressure is transmitted via the flexible member through the coupling fluid and diaphragm to the transducer.

3,418,854
DIAPHRAGM TYPE INSTRUMENT
Sidney B. Williams, Lexington, and Alan C. Burgess, Lynnfield, Mass., assignors to Trans-Sonics Incorporated, Lexington, Mass.
Filed May 19, 1966, Ser. No. 551,406
15 Claims. (Cl. 73—407)



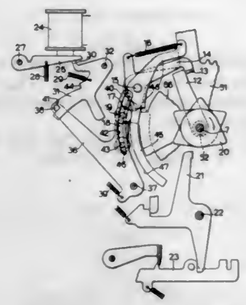
A differential pressure transducer having a thin diaphragm utilizes a circular flanged clamping structure with outer peripheral edges diverging from each other to clamp the diaphragm in tension more strongly along an inner circumference adjacent its free span than along its outer periphery. This minimizes inward slippage of the diaphragm in the clamping structure during deflection.

3,418,855
APPARATUS FOR TESTING SHARPNESS OF NEEDLES
Joseph K. Apat, Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,894
8 Claims. (Cl. 73—432)



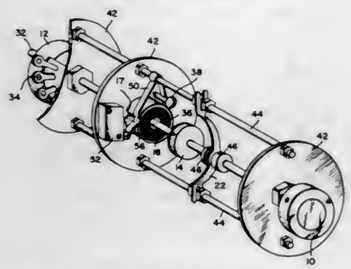
Apparatus for testing the sharpness of needles comprising a penetrable diaphragm mounted on a resilient support, and a constant speed motor for advancing the needle to be tested toward and into abutment with the diaphragm. The linear displacement of the resilient support is recorded on an electric recorder as a measure of sharpness of the needle.

3,418,856
RANGEFINDER FOR A START-STOP TELEGRAPH SELECTOR
Giuseppe Ricciardi and Bruno Sandrone, Ivrea, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Dec. 5, 1966, Ser. No. 599,313
Claims priority, application Italy, Dec. 24, 1965, 31,637
6 Claims. (Cl. 74—1.5)



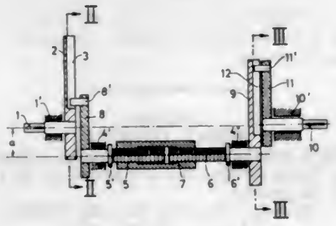
In a telegraph selector wherein the code levers controlled by the receiving cam shaft are fulcrumed on the machine frame, a stop lever is pivoted on a first plate which is manually rotatable on the cam shaft to adjust the stop position thereof. An arm of the stop lever is engageable by an intermediate member and in turn is engaged by an arm of a release lever which is controlled by a stationary selector magnet. The intermediate member is carried by a second plate coaxial with the first plate and is rotated thereby through differential gears maintaining a constant ratio between the effective lengths of the two arms irrespectively of the stop position.

3,418,857
REFERENCE MECHANISM FOR A SHAFT-MOUNTED ROTATABLE ELEMENT
Frederick A. Klein, Vista, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,600
12 Claims. (Cl. 74—10)



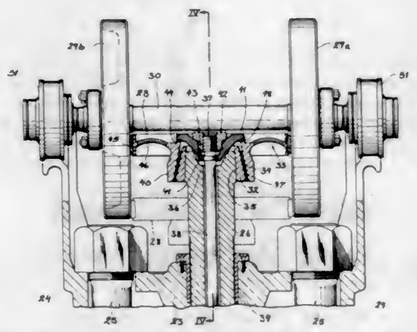
A calibrating mechanism for establishing an angular reference point for a shaft-mounted rotatable element such as a control device. The mechanism comprises a rotatable shaft to which such element is attached. The shaft may be moved in a direction along its longitudinal axis to engage a pair of friction clutch members. A reference body having a detent slot on its periphery is mounted coaxially of the shaft so that rotation of the shaft when the clutch is engaged causes rotation of the reference body. A movable detent spring is positioned for engagement with the slot once during each complete revolution of the shaft to furnish an indication thereof, for example, by operating a limit switch to turn on an electric light. The reference body is independently rotatable whereby the slot may be positioned so as to engage the spring prior to engaging the clutch members to thus establish an angular reference point.

3,418,858
VARIABLE TRANSMISSION
Willy Minnich, Wandsbeker Chaussee 104a, Hamburg 22, Germany
Filed Sept. 1, 1966, Ser. No. 576,617
20 Claims. (Cl. 74—68)



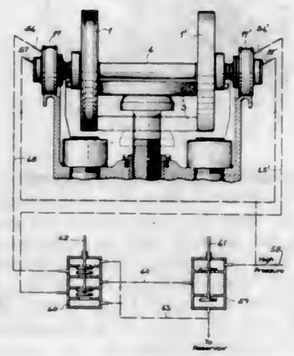
A transmission has an input section driving an output section. The input section has a transmission ratio cyclically varying in accordance with a geometrical progression having a constant factor, and the output section has a transmission ratio cyclically varying in accordance with a geometrical progression having a factor which is the reciprocal of the constant factor. Therefore, the output shaft of the transmission rotates at the same speed at which the input shaft is driven, until the relative position between the output element of the input section and the input element of the output section is adjusted for varying the transmission ratio between the input shaft and the output shaft.

3,418,859
SPINDLE PRESS
Harald Hany and Volker Stille, Kassel-Wilhelmshohe, Germany, assignors to Firma Franz Berrenberg, a corporation of Germany
Filed May 16, 1966, Ser. No. 550,208
Claims priority, application Germany, Oct. 16, 1965, B 84,134
4 Claims. (Cl. 74—199)



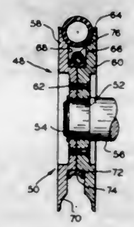
A spindle press in which a driven disk is reversibly rotated with a pair of driving disks mounted on a transverse shaft for alternate frictional entrainment of the driven disk and in which the driven disk has a hub mounted on the spindle and an annular body detachably engaging the hub via co-operating frustoconical outer and inner surfaces of the hub and body, the contact between these surfaces being maintained by coupling means (e.g. an array of bolts surrounding the hub or a central bolt passing through the spindle) bearing axially on the hub and body so as to urge them into firmer peripheral engagement at the frustoconical surfaces.

3,418,860
SHIFT MECHANISM FOR SPINDLE PRESS
Harald Hany and Volker Stille, Kassel-Wilhelmshohe, Germany, assignors to Firma Franz Berrenberg, a corporation of Germany
Filed Sept. 23, 1966, Ser. No. 581,616
Claims priority, application Germany, Oct. 15, 1965, B 84,118; Oct. 16, 1965, B 84,132
10 Claims. (Cl. 74—199)



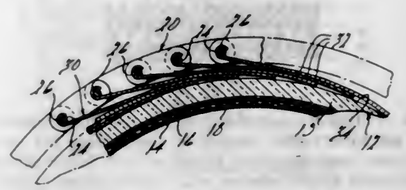
Spindle press with a driven disk flanked by a pair of driving disks on a common shaft which is axially shiftable to bring either driving disk into frictional engagement with the driven disk, the axial shifting being effected by a pneumatic or hydraulic mechanism including a pair of primary pistons and a pair of secondary pistons, the latter pistons being under constant fluid pressure for maintaining the driving disks disengaged from the driven disk unless overriding pressure is applied to one or the other primary piston.

3,418,861
SHEAVE ASSEMBLY
James H. Newhouse, East Leroy, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Apr. 14, 1967, Ser. No. 631,002
1 Claim. (Cl. 74—216.5)



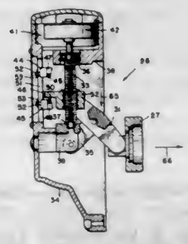
A dual sheave assembly for reeving a pair of flexible conduits in the same plane. The sheave assembly is connected to the extendible ram of a lift upright and a pair of flexible conduits are reeved over the sheave assembly. The conduits are fixed at one of their ends to a stationary portion of the lift upright and at the other of their ends to the upright carriage or to a device carried by the carriage.

3,418,862
REGENERATOR DRIVE
Charles J. Hurbis, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,737
7 Claims. (Cl. 74—229)



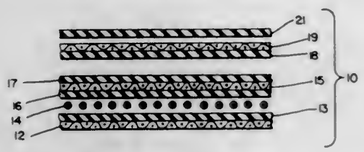
A disc type rotary heat exchanger driven frictionally by a number of circumferentially overlapping leaf-like springs that at one end frictionally abut the heat exchanger matrix, and at their other ends are connected to a metal drive chain spacedly surrounding the matrix, the springs being preloaded against the matrix during assembly of the chain around the matrix to provide sufficient frictional force to cause a unitary movement of the chain and matrix.

3,418,863
CONTROL FOR SPEED VARYING DRIVE
David A. Landau, Columbus, Ind., assignor to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 29, 1966, Ser. No. 582,978
6 Claims. (Cl. 74—230.17)



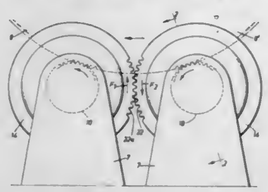
For use with a speed varying device comprising an expansible V-pulley including an axially-shiftable disc, a resiliently-expansible V-pulley and an edge-active belt providing a driving connection between said pulleys; a shifter mechanism comprising a screw shaft fixedly journalled on an axis perpendicular to the axis of the first-named pulley, a traveling nut threadedly mounted on the screw shaft and held against rotation therewith, and a first rigid link means pivotally mounted on an axis perpendicular to the screw shaft axis and to said pulley axis, the three said axes intersecting at a common point. A second link means is intermediately pivotally mounted on the first link means on an axis parallel with and spaced from the pivotal axis of the first link means, one arm of the second link means operatively engaging the traveling nut and the other arm of the second link means operatively engaging the shiftable disc.

3,418,864
PRINTING BLANKET AND METHOD OF MAKING THE SAME
William Campbell Ross, Winchester, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Continuation-in-part of application Ser. No. 280,872, May 16, 1963. This application Jan. 31, 1964, Ser. No. 341,547
9 Claims. (Cl. 74—232)



8. A blanket adapted for use on roll drive screen printing machinery and capable of maintaining the deviation of repeat pattern register to within ±.015 inch per blanket revolution which consists of a rubber-coated cylinder ply rendered dimensionally stable by running-in and stretching under a tension about 10 pounds per transverse inch, a helix of rubber-coated cord wound about the exposed surface of said cylinder ply at a cord tension not in excess of 2 pounds and extending across the said surface, and at least a second coated ply covering said helical layer of cords, the said blanket having been cured under heat and pressure to produce a unitary blanket structure presenting a smooth working surface.

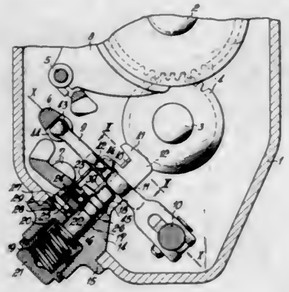
3,418,865
MULTIPLE DRIVE FOR LARGE GEARS
Roman Baldur, Baie d'Urfe, Quebec, Canada, assignor to Dominion Engineering Works, Limited, Lachine, Quebec, Canada, a corporation of Canada
Filed June 19, 1967, Ser. No. 647,062
5 Claims. (Cl. 74—410)



In driving a single large gear wheel with two or more synchronous motors, the problem of "motoring" due to cyclic variations in the gearing transmission is avoided by mechanically interconnecting the stators of the synchronous motors in counterbalanced torque equalizing relationship to maintain both motors in a substantially equally loaded state at all times.

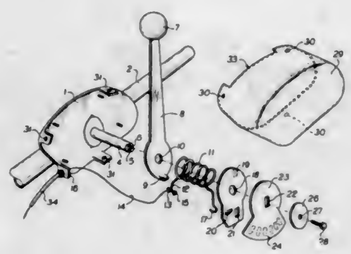
3,418,866
SHIFTING ARRANGEMENT FOR MULTI-SPEED GEAR WHEEL CHANGE-SPEED TRANSMISSIONS, ESPECIALLY FOR MOTOR VEHICLES
Richard Hetmann, Tamm, and Josef Behr, Stuttgart-Rot, Germany, assignors to Firma Dr. Ing. h.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Apr. 15, 1966, Ser. No. 542,789
Claims priority, application Germany, May 6, 1965, P 36,716
31 Claims. (Cl. 74—477)

A shifting mechanism for multi-speed, gear-wheel change-speed transmissions, especially for motor vehicles, in which the shifting or engagement of the speeds takes place by means of a shifting finger which cooperates with several shifting rods arranged parallel to one another, of which only one can be displaced at any one time, whereas the movement of the remaining shifting rods is blocked by a blocking mechanism which comprises an independent and self-supporting U-shaped bow or yoke member between whose leg portions is pivotally supported the shifting finger and whereby the shifting finger provided with projections or nose portions engages during the shifting



movement in apertures of the leg portions of the bow-shaped yoke member. A guide plate is drivingly connected to the shifting finger for movement in the planes of the shifting rods, an abutment bolt is resiliently urged into engagement with the shifting finger for movement in the selecting plane perpendicular to the shifting rod, and a detent mechanism is actuated by movement of the abutment bolt to lock the guide plate for positions of the shifting finger between shifting rods.

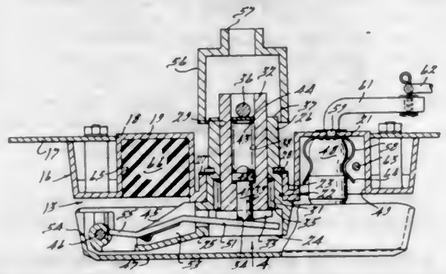
3,418,867
HANDLE CONTROL DEVICE FOR BICYCLE SPEED CHANGE GEAR
Tetsuo Maeda, 16 1-ban, 2-cho, Minami-Koyo-cho, Sakai, Osaka Prefecture, Japan
Filed Dec. 21, 1966, Ser. No. 603,505
Claims priority, application Japan, Nov. 19, 1966, 41/76,257
10 Claims. (Cl. 74—535)



A handle control device for bicycles for a speed change gear comprising a shaft secured to a bicycle frame, and a control handle means including a handle grip and at least one revolving plate jointly operatively connected therewith and the latter pivotally mounted on the shaft for joint rotation with the handle grip. A coil compression spring is disposed axially about the shaft and presses against the revolving plate. The revolving plate is formed with a spring clasping recess through which one end of the coil spring protrudes, the other end of the coil spring engaging a gear

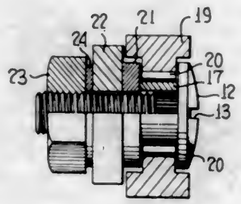
change wire. A spring control plate is non-rotatably secured to the shaft adjacent the revolving plate and has a plurality of circumferentially spaced dents adjacent the spring clasping recess in which the protruding end of the coil selectively and releasably engages upon pivoting of the control handle means.

3,418,868
CRANK HANDLE ASSEMBLY
Herbert C. Mitchell, St. Clair Shores, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,814
7 Claims. (Cl. 74—547)



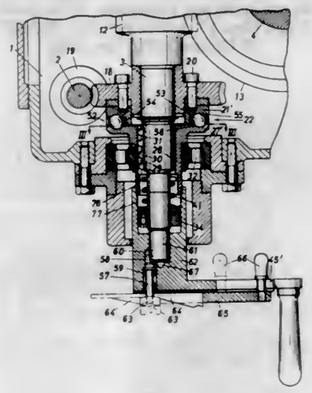
A crank handle assembly having a rotatable crank means and a shaft means journalled in the crank means, the shaft means being connected to the mechanism to be driven by the crank handle assembly. A coupling means interposed between the crank means and shaft means determines whether or not rotation of the crank means will be transmitted to the shaft means. The position of an operating handle pivoted on the crank means determines whether or not the coupling means will couple the crank means to the shaft means.

3,418,869
STUD AND SLEEVE ASSEMBLY
William M. Herpich, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Mar. 22, 1966, Ser. No. 536,340
2 Claims. (Cl. 74—569)



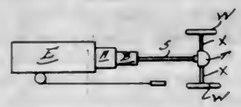
A stud and sleeve assembly, for use as components of a cam follower. The stud includes an enlarged head, a knurled portion adjacent the head, and a threaded connection portion. The sleeve is press-fitted over the knurled portion and has a hardened outer surface, forming an inner race for rolling elements. The knurled portion may comprise axially extending ribs and have a somewhat greater diameter than the threaded connection portion of the stud shank.

3,418,870
MECHANIC GEAR INTENDED FOR LOWERING RAILROAD GUARD BARS
Bertil Ivar Torsten Larson, Norrgard, Bredaryd, Sweden
Filed July 25, 1966, Ser. No. 567,606
5 Claims. (Cl. 74—625)



A gear for lowering railroad guard bars of level crossing gates having an intermediate shaft between an input shaft and an output shaft. A moment clutch is arranged between the input shaft and the intermediate shaft. This intermediate clutch is adapted at the surpassing of a certain torque on the output shaft to be automatically discoupled and at the drop below this torque to be re-engaged automatically. There is between the intermediate shaft and the input shaft on one hand and the output shaft on the other hand a worm gear and the moment clutch is arranged on the intermediate shaft between this latter shaft and the worm gear belonging to the input shaft. The railroad guard bar is arranged on one end of the output shaft and the input shaft is driven by a motor. The moment clutch has a coupling half which is carried freely rotatably but axially undisplaceably on the intermediate shaft and is driven by the input shaft and a coupling half which is carried non-rotatably on the intermediate shaft but is axially displaceable against the action of a spring. The gear ratio—obtainable by means of a worm gear—between the intermediate shaft and the output shaft is preferably chosen in such a way that there is obtained a self-braking effect.

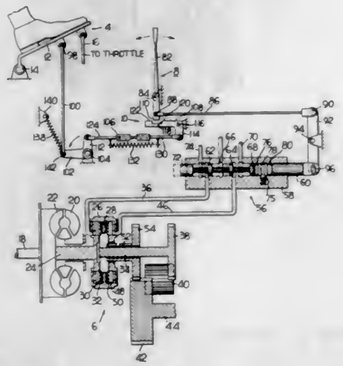
3,418,871
TRANSMISSION FOR MOTOR VEHICLE
Bert W. Cartwright, St. Clair Shores, Leonard E. Froslie, Detroit, and Alfred P. Blomquist, Farmington, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,717
2 Claims. (Cl. 74—763)



A planetary power transmission for motor vehicles in which the gear sets are driven from the engine through a simple fluid coupling and shifting of the gears between

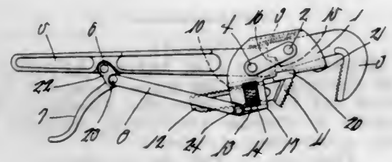
their several combining patterns is selectively accomplished by manual shifting of the operator selector lever.

3,418,872
TRANSMISSION SHIFT AND THROTTLE INTERLOCK
Homer L. Vernati, Beecher, Ill., assignor to Allis Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 19, 1966, Ser. No. 587,852
9 Claims. (Cl. 74—878)



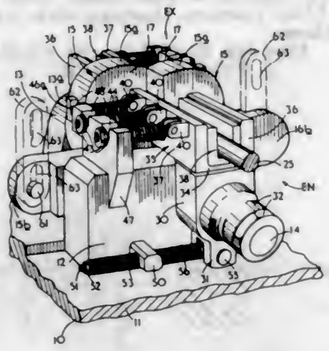
A pivoted member **108** has a notch therein which receives the end of a transmission shift lever **82** so as to lock the lever when it is in neutral position and a throttle **12** is depressed. A lost motion resilient connection between the throttle and member permits the throttle to be operated when the lever is not in neutral. If the lever is then moved towards neutral position, its lower end slides on the member and finally is received in the notch to lock the lever in neutral.

3,418,873
WRENCH
Katsushi Moriwaki, No. 1023, Tadaoka-cho, Senboku-gun, Osaka Prefecture, Japan
Filed July 11, 1967, Ser. No. 652,482
4 Claims. (Cl. 81—99)



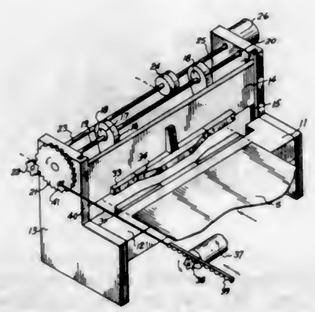
A wrench for use on both pipes and nuts and comprising a swingable jaw pivotally connected to the front portion of a frame member and freely swingable thereon, a main lever freely pivotally connected to the rear portion of the frame member, a movable jaw mounted on the rear and lower portion of the frame member and movable in a forward and backward direction, means coupled to the jaw and main lever to move them up and down simultaneously, a handle pivotally connected to the main lever and freely swingable thereon, and a linking lever extending between the handle and the frame member to turn the frame member relative to the main member when said handle is operated.

3,418,874
STOCK SHEAR HAVING A PAIR OF PIVOTAL SHEAR BLADES
Joseph Lees, Wednesbury, England, assignor to Garringtons Limited, Darlaston, England, a British company
Filed Aug. 26, 1966, Ser. No. 575,458
Claims priority, application Great Britain, Sept. 3, 1965, 37,716/65
10 Claims. (Cl. 83—456)



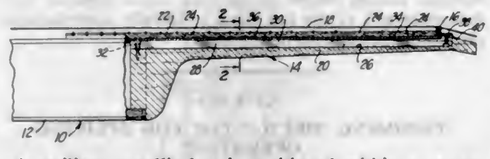
A shear for bar stock for use with a power press, comprising a generally flat base, engageable with the base of the press, two shear blades being mounted on said flat base to provide a secateur type of action, the shear blade being mounted in generally L-shaped holders which are pivotally mounted on said flat base at the junction of their limbs, a blade being carried in one limb of each holder and the other limbs of the holders extending generally parallel to, and spaced above, said flat base and being engageable by the moving ram of the press to cause pivotal movement of the blades and hence shearing of the stock. A resiliently mounted stock guide means may be provided to support the stock during shearing and to absorb the kick produced by the shearing action.

3,418,875
CONVERTED SQUARING SHEARS
Leonard Friedman, 716 N. Hillcrest Drive, Beverly Hills, Calif. 90210
Filed Sept. 12, 1966, Ser. No. 578,541
1 Claim. (Cl. 83—694)



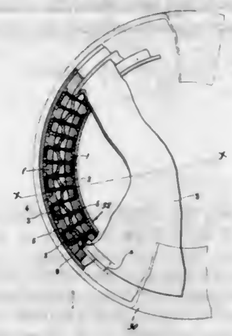
A squaring shear having a vertically moving blade which in normal operation is straight and cooperates with a straight rearward edge of a shearing bed to define a straight shearing line. Complementary attachment means are provided for both the blade and the bed to allow for a cut of non-straight or patterned contour.

3,418,876
STRINGED INSTRUMENT NECK CONSTRUCTION
John Dopyera, 1206 S. Escondido Blvd., Escondido City, Calif. 92025
Continuation-in-part of application Ser. No. 524,196, Feb. 1, 1966. This application Feb. 15, 1967, Ser. No. 616,317
7 Claims. (Cl. 84—293)



A resilient metallic bar is positioned within a rectangular opening through the neck of a stringed instrument beneath the fingerboard thereof. The bar is tapered at at least one end and adjusting screw means extends from the fingerboard side of the neck into the bar so that the bar may be bent to provide forces in opposition to the neck bending forces of the strings.

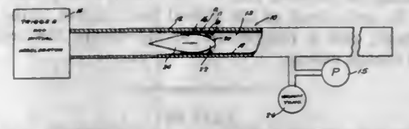
3,418,877
MUSICAL INSTRUMENT CONSTRUCTION
Michio Ito, 3094, Kasuga-cho, 2-chome, Nerima-ku, Tokyo, Japan
Filed Dec. 2, 1966, Ser. No. 598,801
Claims priority, application Japan, June 7, 1966, 41/53,005
5 Claims. (Cl. 84—414)



4. A method of forming a drum end cover assembly comprising arranging first and second annular members of different dimensions one within the other to define a space therebetween, pouring a synthetic resin material into the space between the annular members, stretching a cover member of the inner one of said first and second annular members and directing its marginal periphery into the resin material before it is solidified, sewing through the end frame members, the resin material and the marginal edge of the cover member to secure the cover member to said end frame members and permitting the assembly to solidify.

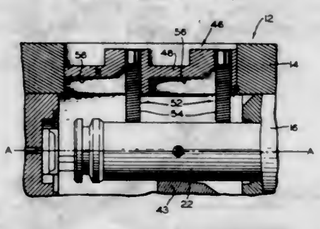
3,418,878
METHOD AND MEANS FOR AUGMENTING HYPERVELOCITY FLIGHT
James A. Stricklin, Texas A and M University, College Station, Tex. 77840
Filed June 2, 1967, Ser. No. 643,281
8 Claims. (Cl. 89—8)

A process and means for augmenting hypervelocity flight of a projectile. A projectile is initially propelled at supersonic velocities through a tube containing a gaseous medium and lined with a chemically explosive propellant responsive to high temperatures and pressures. Movement of the projectile produces a high temperature and pressure shock wave in the gaseous medium which is reflected off the propellant lining beside the projectile



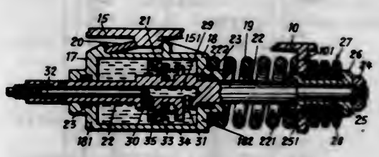
and detonates the lining. Detonation of the propellant will generate a high pressure gas impinged upon the aft portion of the projectile to accelerate it. As the projectile is moved down the tube, this process is continuously repeated to continuously accelerate the projectile.

3,418,879
ROUND CONTROL DEVICE
Frederick P. Reed, Ludlow, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed June 27, 1967, Ser. No. 649,363
4 Claims. (Cl. 89—33)



A pair of round control devices cooperate with other firearm elements in holding cartridges, fed downwardly between the devices to a feeding position, for envelopment by a reciprocating barrel. Each of the round control devices include a pair of longitudinally spaced coil springs which are contactable with the cartridge fore and aft of its center of gravity and which are deflectable by radial pressure to permit passage of the cartridge thereby, and envelopment by the barrel, but are axially incompressible after springing back to normal positions to firmly hold the feeding position cartridge for barrel envelopment.

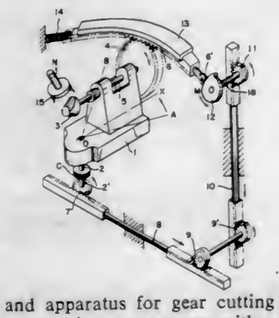
3,418,880
AUTOMATIC FIREARM WITH BREECH CASING FREE TO RECOIL ON A SUPPORT
Heinrich Herlach, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed July 28, 1966, Ser. No. 568,430
Claims priority, application Switzerland, July 29, 1965, 10,699/65
4 Claims. (Cl. 89—42)



An automatic firearm wherein two elements, a support and a breech casing, are provided. The breech casing is mounted free to recoil on the support. A hydraulic damping device is provided for damping the run forward of the breech casing. The damping device has a first and a second part such as respectively a cylinder and a piston. A springloaded valve is open during the recoil of

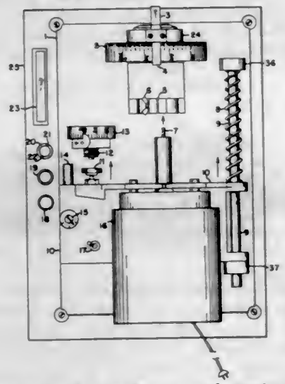
the breech casing for making the damping device ineffective during the recoil of the breech casing. The first part is connected fixedly with one of the two elements and the second part is movable relative to the other of said two elements. An elastic buffer element is provided for braking the forward run of the breech casing and damping the movement of the second part relative to the other element, and a recuperator spring damps the recoil of said breech casing.

3,418,881
GENERATING METHOD OF CUTTING GEARS AND A DEVICE THEREFOR
Ichiro Yasuhara, Shimotsuga-gun, Masaaki Nagano, Kita-Adachi-gun, and Naotoshi Sato, Hekikai-gun, Japan, assignors to Yutaka Seimitsu Kogyo, Ltd., Yono, Japan
Filed Nov. 18, 1965, Ser. No. 508,444
Claims priority, application Japan, Nov. 27, 1964, 39/66,818; Sept. 30, 1965; 40/59,935, 40/79,852; Oct. 5, 1965, 40/60,965, 40/60,966
4 Claims. (Cl. 90—2)



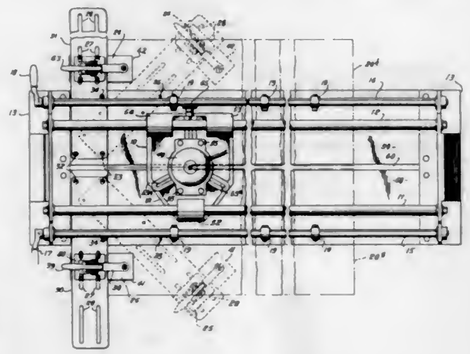
A method and apparatus for gear cutting wherein a cutting tool is rotated into engagement with a gear blank which is fixed to a spindle rotatably mounted on a support table. A master gear is also fixed to the spindle and is in engagement with an arcuate gear which is slidably movable along its pitch circle so that when the support table is revolved, the gear blank is rotated due to the engagement of the master gear with the arcuate gear.

3,418,882
KEY MAKING MACHINE FOR TUBULAR-TYPE KEY
Max K. Brand, P.O. Box 3531, San Diego, Calif. 92103
Filed Sept. 2, 1966, Ser. No. 576,924
4 Claims. (Cl. 90—13.05)



This provides a device for manufacturing barrel keys from blank tubular key stock. The device includes a cutting means which is movable in a direction parallel to the center axis of the key stock which is held in a cutting position. When moved in the parallel direction, the cutting means forms recesses around the outside circumference of said stock at one end thereof. The cutting means is mounted to move in a radial direction with respect to the center axis of the tubular key stock. The device includes aligning means for adjusting the radially movable cutting means an effective radial distance from the center axis of the key stock to thereby accommodate various diametric sizes of key stock.

3,418,883
TRIMMING MECHANISM FOR SPLICING OPERATION
Martin Leibow, 7007 Mason Dells, Dallas, Tex. 75230
Filed Oct. 31, 1966, Ser. No. 590,925
11 Claims. (Cl. 90—15)

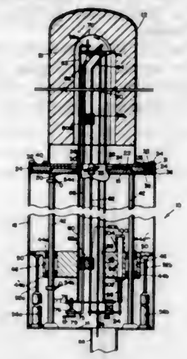


8. A mechanism for trimming the abutting edges of a pair of sheets of decorative laminate or the like which are to be spliced together comprising: a generally flat bed for accommodating said sheets and defining a channel in the central portion thereof, means positioned above said channel and having a fixed position relative to said bed for traversing a trimmer blade along said channel to simultaneously engage the edges of both of said sheets, a pair of indexing bars mounted at one side of said bed adjacent one end of said channel and bearing a fixed angular relationship to said channel, clamping means associated with said indexing bars for securing said sheets firmly against such bars, a plurality of hold-down cam means positioned above said bed spaced from said channel for pressing said sheets against said bed along the length thereof, and a pair of rollers mounted on said means adjacent said trimmer blade engageable with the top of said sheets on each side of said channel for pressing the sheets firmly against said bed in the vicinity of the trimmer blade.

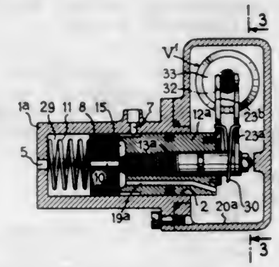
3,418,884
CAVITY SHAPING MACHINE
Alois Baumgartner, Chatsworth, Calif., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 5, 1967, Ser. No. 607,534
3 Claims. (Cl. 90—43)

A cutting machine wherein a cutter is mounted for

movement toward and away from the longitudinal axis of a reciprocating drive shaft, and having a workpiece support table rotatable relative to the longitudinal axis of said drive shaft.



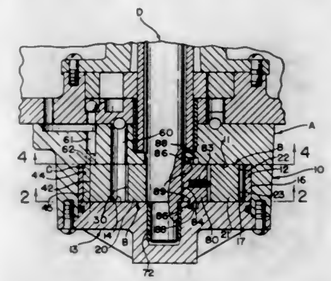
3,418,885
FLUID DISTRIBUTOR
Marcel Dangauthier, Paris, France, assignor to Societe Industrielle et Commerciale des Automobiles Peugeot, Paris, France, a French body corporate
Filed July 12, 1967, Ser. No. 652,845
Claims priority, application France, Aug. 3, 1966, 71,898
6 Claims. (Cl. 91—380)



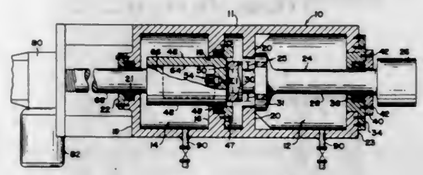
Distributor which comprises, in combination with a single seat, two coaxial closing elements which are longitudinally movable with respect to each other and so arranged that, by their contact with the seat, one of them closes an inlet circuit and the other an outlet circuit.

3,418,886
VANE TYPE OSCILLATING HYDRAULIC MOTOR
Robert Wesley Brundage, St. Louis, Mo., assignor to The Emerson Electric Company, St. Louis, Mo., a corporation of Missouri
Application Jan. 6, 1964, Ser. No. 335,777, which is a division of application Ser. No. 303,905, Aug. 22, 1963. Divided and this application Sept. 29, 1966, Ser. No. 615,863
24 Claims. (Cl. 91—339)

An oscillating type hydraulic motor in which the stator vane also functions as a valve member with the valve member being in sealing engagement with the wall of the cylindrical cavity and the piston hub. The valve member employs a pair of sealing rollers which alternately engage the hub to function as valves and alternately supply fluid to opposite sides of the piston.



3,418,887
HIGH ENERGY RATE ACTUATOR
David J. Matteson, Upper Darby, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Mar. 28, 1967, Ser. No. 626,562
9 Claims. (Cl. 91—392)

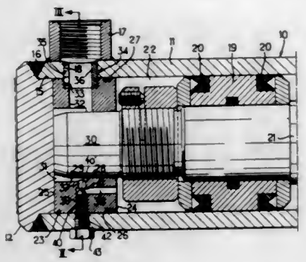


A high energy rate actuator including a housing forming a high pressure chamber and a piston member reciprocable in the chamber between a first and a second position. The piston member has an outer surface area exposed to the pressure in the chamber, and this outer surface area is such that the effective pressure area acted on by the pressure in the chamber acts to move the piston to the second position. Means are provided for moving the piston from the second to the first position. These means include a movable member for contacting the piston member and moving therewith while the piston member moves from the second to the first position. This movable member while contacting the piston member shields a portion of the outer surface from the pressure in the chamber. The portion shielded is such that the effective pressure area of the remaining exposed surface of the piston member acts to move the piston member toward the first position.

3,418,888
HYDRAULIC ACTUATOR WITH INTERNAL DASHPOT
Jacques H. Mercier, 1199 Park Ave., New York, N.Y. 10028
Filed Apr. 26, 1967, Ser. No. 633,975
Claims priority, application France, Apr. 27, 1966, 59,342
2 Claims. (Cl. 91—396)

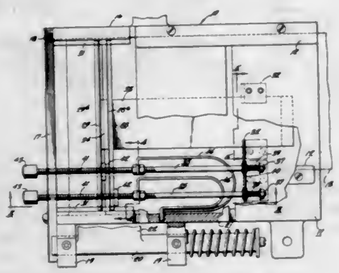
The present invention relates to a hydraulic actuator including a cylinder and piston with damping at the end of a stroke, and more particularly to an actuator in

which the cylinder has a fluid port adjacent one end thereof and in which the piston is movable toward such end and defines a chamber with respect thereto in com-



munication with the said fluid port, with dashport means to restrict such communication when the piston is moved adjacent said end of the cylinder.

3,418,889
DEVICE FOR CREASING AND CUTTING SLOT INSULATION
William F. Weirich, 134 Henley Road, Philadelphia, Pa. 19151, and Henry Weirich, Lenni Road, Lenni, Pa. 19052
Filed Dec. 21, 1965, Ser. No. 515,317
2 Claims. (Cl. 93—1)



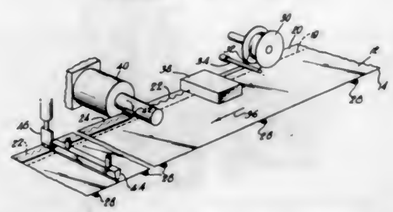
The present disclosure relates to improvements in a device for cutting and forming insulation, which insulation is to be used, for example in the winding slots of electrical machines such as electric motors or the like. As formed by the device, the insulation is easily cut to size while the adjacent portion, which is to be subsequently cut to size, is simultaneously creased so that it may be easily inserted in the winding slots of a machine. Disclosed are improvements in a machine for gauging and cutting slot insulation, which machine comprises means for supplying a sheet or strip of insulation under cooperable knife means, at least one of which knife means is movable to cut, in conjunction with its counterpart, a predetermined length of insulation from the sheet. In addition, crease means are provided to place at least one crease (preferably two) in the portion of the sheet which is to be subsqeuently cut into a predetermined length, the knives and crease means working together to perform a simultaneous creasing and cutting of the sheet. As the location of the creases is critical, both coarse and fine adjustment means are provided for displacing the crease means relative to the cooperable knife means.

3,418,890
METHOD OF MANUFACTURING CYLINDRICAL FILTER PIECES OF FILTER SHEETS
Sachihiko Tachibana, Hajime Umedo, and Susumu Nagai, Tokyo, and Hiroshi Orito, Chiba-ken, Japan, assignors to Honshu Seishi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed May 27, 1966, Ser. No. 553,552
Claims priority, application Japan, June 1, 1965, 40/32,034; Apr. 16, 1966, 41/23,801
10 Claims. (Cl. 93—1)



A method of manufacturing a filter by laminating at least two filter sheets of indefinite length by juxtaposing their longitudinal edges to overlap each other a predetermined amount, folding the resulting laminate gradually so as to ultimately form an S or Z shape, and compressing the shaped laminate.

3,418,891
METHOD OF MAKING A RECLOSABLE BAG
Samuel J. Rivman, White Plains, N.Y., and Henry Alan Carysforth, Wyckoff, N.J., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Sept. 7, 1965, Ser. No. 485,262, now Patent No. 3,321,126, dated May 23, 1967. Divided and this application Feb. 10, 1967, Ser. No. 627,242
2 Claims. (Cl. 93—35)

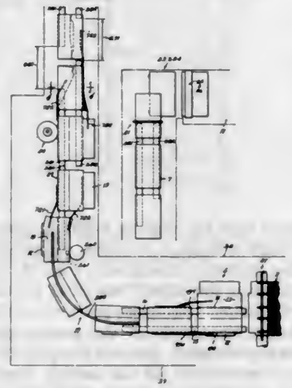


1. A method for making reclosable thermoplastic bags, said method comprising the steps of folding thermoplastic sheet material to form opposed side-walls of said bags and leaving an exposed edge of said sheet to form a flap, continuously feeding said sheet past a first station, continuously laying down a wire on said flap at said first station, continuously feeding said sheet and said wire past a second station, extruding and laying over said wire and onto said flap a relatively wide sheet of heated thermoplastic material, cutting said sheet to form said bags, and heat-sealing the edges of said bags.

3,418,892
CARTON FOLDING AND GLUING MACHINE
Julian A. Dieter, Wickliffe Jones, and George E. Ott, Jr., Cincinnati, Ohio, and Wesley J. Rece, Jr., California, Ky., assignors to R. A. Jones & Company, Inc., Covington, Ky., a corporation of Kentucky
Filed Dec. 20, 1965, Ser. No. 514,997
21 Claims. (Cl. 93—52)

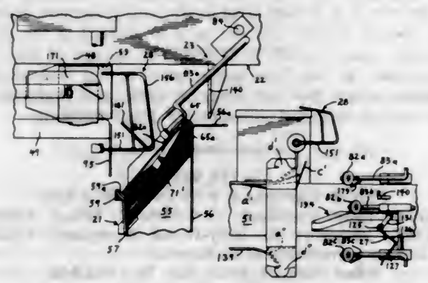
A method and apparatus for prebreaking, folding, and gluing flat paperboard or corrugated board blanks to form

flat cartons ready for insertion into a carton erecting and filling machine. The flat unfolded and scored blanks are sequentially fed out of a magazine onto a first conveyor which transports the blanks along a first straight linear path of travel during which one flap of the blank is folded along a longitudinal score line. The flat blank is then transported by a second conveyor through a curvilinear path of travel of approximately a 90° arc during which the blank orientation is maintained with respect to the direction of travel of the blank and the blank remains in a flat unflexed condition. The blank is then transported by a third straight conveyor along a straight line path of travel during which adhesive is applied to one flap of the blank



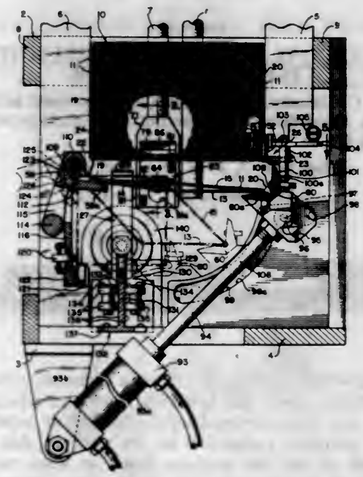
and another flap is folded over the glue-applied flap to form a flat folded carton. Subsequently, the flat folded carton is transported through a right angle turn during which the carton is reoriented by 90° relative to the direction of travel of the carton. The cartons are then transported along a fourth straight line linear path of travel by a fourth conveyor. As the cartons move along this fourth conveyor, a compressive force is simultaneously applied to the full length of each of the longitudinally adhered seams of the carton. The flat folded cartons are then transported into the top of a gravity feed magazine from the bottom of which cartons are sequentially fed to a fifth conveyor of a carton erecting and filling machine.

3,418,893
CARTON FEEDING AND ERECTING APPARATUS
Roger H. Stohlquist and Leo Strombeck, Rockford, Ill., assignors to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Filed Dec. 30, 1965, Ser. No. 517,681
12 Claims. (Cl. 93—53)



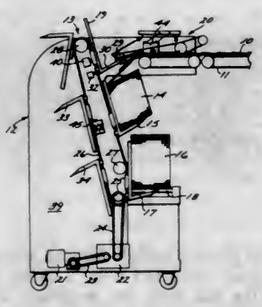
An apparatus for feeding flattened carton blanks from a magazine to a conveyor and for opening and erecting the cartons. The lateral carton guides of the magazine are spaced apart a distance less than the width of a flattened carton so that the blanks extend obliquely therebetween and the magazine advances the cartons to a magazine mouth extending obliquely to the lateral carton guides. The end cartons are individually withdrawn from the stack in a direction generally normal to the plane of the end carton and are opened and squared as they are moved onto the conveyor. A flap folding apparatus is provided for folding the end flaps on the carton as it is moved onto the conveyor.

3,418,894
CARTON OPENING DEVICE
Anton Jivoin, 4307 N. Hamlin Ave., Chicago, Ill. 60618
Filed May 20, 1966, Ser. No. 558,162
16 Claims. (Cl. 93—53)



A carton opening device comprising a pair of opposed jaws disposed to receive diagonally opposite edges of a folded carton, one jaw movable in a path to open the carton with the other jaw and a preopener positioned in intercepting position to folded carton issuing from a magazine and comprising a jaw and a pin, the jaw embracing an edge portion of such folded carton while the pin enters the folded carton to separate the overlapping walls of such carton to present the partially open carton to the opposed jaws.

3,418,895
CONTROL SYSTEM FOR ARTICLE STACKERS
Charles G. Palmer, 937 W. Collins, Orange, Calif. 92667
Filed June 20, 1967, Ser. No. 647,547
14 Claims. (Cl. 93—93)



This application describes a control system for article stacking machines. It is described in detail in its applica-

tion to a newspaper stacker. The control is a servo system which incorporates an article or newspaper counter, a conveyor for holders on which the stacks are to be formed, a drive motor for the conveyor, a transducer for indicating conveyor motion, and apparatus for retarding and then advancing holders relative to the conveyor as stacking is transferred from one holder to another. In addition the system comprises electrical apparatus, for comparing the control and feedback signals, for developing the error signal, and for effecting control of the conveyor motor. The control scheme regulates holder movement from discrete signals to synchronize the average rate of holder displacement. It employs add-subtract pulse counting with adjustable ratio control on an energy balance principle.

3,418,896

REFLECTIVE MARKERS AND REFLECTIVE ELEMENTS THEREFOR

Donald C. Rideout, Huntingdon, Pa., assignor to Prismo Safety Corporation, Huntingdon, Pa., a corporation of Pennsylvania

Filed Feb. 3, 1967, Ser. No. 613,878

10 Claims. (Cl. 94—1.5)



The invention relates to reflective elements which are flat on their upper and lower surfaces and which have vertical side walls covered by a plurality of small glass spheres partially embedded in the vertical side walls, the width of the flat surfaces being at least twice the thickness of the elements and the thickness being in the order of ⅛–½" and the width not exceeding 1". The reflective elements can be incorporated into reflective markers for improved night-time retroreflectivity especially in rainy weather. The elements can be incorporated into a hot sprayed liquid binder which is solvent-free.

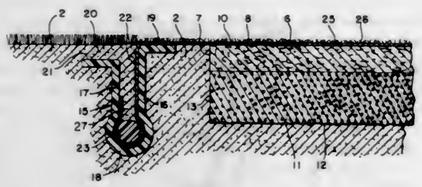
3,418,897

ARTIFICIAL PLAYING SURFACE

Robert A. R. Humalainen, 884 Mill St., Conneaut, Ohio 44030

Filed June 12, 1967, Ser. No. 645,342

10 Claims. (Cl. 94—7)



An artificial playing surface having a continuous layer of artificial grass stretched over a layer of all-weather carpeting or the like with the periphery of the artificial grass layer anchored in the ground outside the periphery of the carpeting.

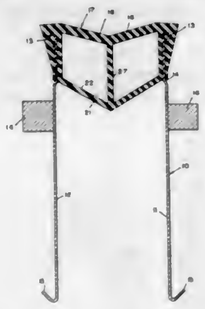
3,418,898

CONCRETE JOINT SEAL

Claude Cimini, Cochituate, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Oct. 10, 1966, Ser. No. 585,620

3 Claims. (Cl. 94—18)



A preformed seal for sealing joints in concrete structures is disclosed wherein a resilient, distortable chevron-shaped sealing member (composed, e.g., of neoprene) is positioned between the upper marginal portions of two opposed, metal strips. The upper portions of the strips are imbedded in the side walls of the sealing member. Tie wires are wrapped around the periphery of the joint seal to maintain compression of the sealing member which tie wires can be severed subsequent to the insertion of the joint seal in the wet concrete structure to permit expansion of the sealing member.

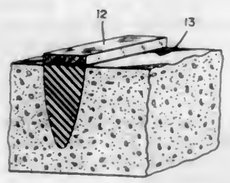
3,418,899

METHOD OF FORMING CONCRETE JOINTS

Yoshiki Fujihara, Lyons, Ill., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Apr. 25, 1966, Ser. No. 545,006

4 Claims. (Cl. 94—22)



Forms joints between sections of a concrete structure by the use of a divider strip having a top element formed of a sponge rubber. Divider strip is planted in the green concrete, and concrete is floated. The sponge of the strip compresses as the float passes over it, but immediately expands, holds the wet concrete back, and maintains a true margin without necessity for hand finishing.

3,418,900

COLD ASPHALT PAVING PROCESS

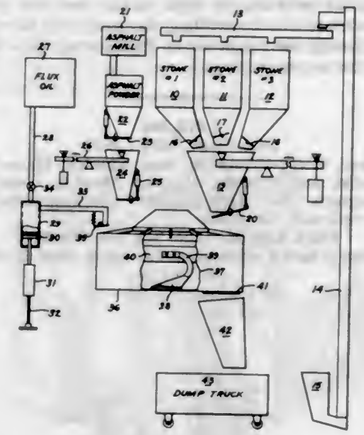
Ulric B. Bray, Pasadena, and Jack E. Wood, Upland, Calif., assignors to Bray-Wood Company, Upland, Calif., a partnership of California

Filed May 29, 1967, Ser. No. 642,050

6 Claims. (Cl. 94—23)

A method of paving with asphalt and stone without heating, wherein the stone is first uniformly coated in a mixing machine with a powdered, hard asphalt, then

mixed with a flux oil and subsequently spread onto the pavement where it is compacted, as by rolling. Excellent



distribution of the asphalt and flux on the stone is obtained in a minimum time of mixing.

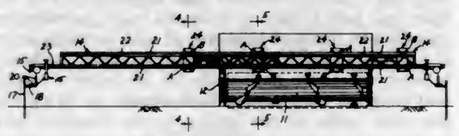
3,418,901

CONTROL FOR ROADWAY SURFACE PREPARATION APPARATUS

Raymond A. Hanson, R. A. Hanson Company, Palouse, Wash. 99161

Filed Aug. 8, 1967, Ser. No. 659,224

3 Claims. (Cl. 94—39)



An apparatus for surface preparation along a multi-lane roadway using automatic line controls wherein the controlling line or lines are located along the respective sides of the roadway and wherein a single lane machine is utilized in successive passes for surface preparation on more than one lane. To provide positive continuity in grade and direction between the several lanes prepared in this fashion, there is provided a support arm for grade and direction monitoring devices which can be extended outwardly from the apparatus in a straight line to serve as a properly positioned extenion of the apparatus. By such extension, discontinuity between the adjacent lane prepared by the apparatus is eliminated.

3,418,902

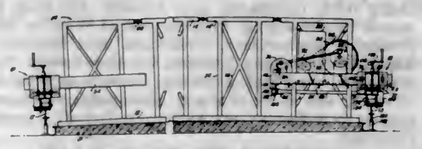
CONCRETE SURFACE FINISHING APPARATUS

Herbert W. Wilson, Rte. 1, Box 457, Abilene, Tex. 79601

Filed Apr. 18, 1966, Ser. No. 543,273

15 Claims. (Cl. 94—45)

A concrete surface finishing apparatus includes a pair of wheeled carriages which move along a preselected path on opposite sides of a concrete surface. A pair of spaced apart truss frameworks span the concrete surface and are slidably supported in rolling engagement at the opposite ends by rollers on each of the wheeled carriages. A screed member is carried on the bottom of each of the truss frameworks for engaging and working the concrete surface. A driving motor supported by one of the truss frameworks includes a lever arm connected to the other of the truss frameworks for relatively reciprocating the



truss frameworks to cause the screed members to finish the concrete surface.

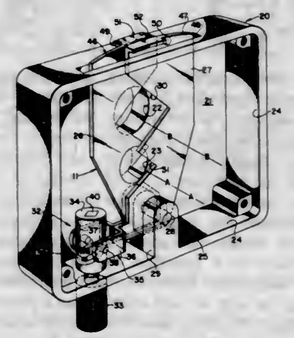
3,418,903

ADJUSTABLE DIAPHRAGM WITH INDICIA THEREON

Edwin H. Land, Cambridge, and Herbert A. Bing, Wellesley, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Oct. 29, 1964, Ser. No. 407,388

3 Claims. (Cl. 95—10)



1. A photographic camera having a housing, shutter means and diaphragm means including at least two diaphragm elements movable relative to said housing, said elements having first cooperating contours which define the effective exposure aperture size;

manually operable actuator means for adjustably moving said diaphragm elements simultaneously in opposite directions;

indicating indicia calibrated in terms of subject distance functionally related to the correct exposure value of said shutter means when the subject is under flash illumination, said indicia comprising first index means on one of said diaphragm elements cooperating with second index means on another of said diaphragm elements and observable by a user when manipulating said actuator means;

second cooperating contours on said diaphragm blades that define a photometer aperture; and

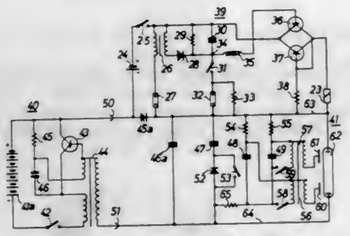
photometer means provided on said camera, said photometer means being responsive to the amount of light passing through said photometer aperture for indicating to the user when manual operation of said actuator means has adjusted the diaphragm elements to provide the exposure aperture that is correct for the average intensity of the scene being photographed under steady lighting conditions whereby under steady lighting conditions the user would operate said actuator means until said photometer means indicate that the exposure aperture is correct for such conditions and under flash illumination conditions the user would operate said actuator means until said index means indicate the distance of the subject to the camera.

3,418,904

PHOTOGRAPHIC CAMERA WITH AUTOMATIC ELECTRONIC FLASH AND DAYLIGHT DIAPHRAGM CONTROL

Richard Wick, Grunwald, near Munich, Friedrich Biedermann, Unterhaching, Munich, Alfred Winkler, Munich, Friedrich Bestenreiner, Grunwald, near Munich, Gerd Kiper, Unterhaching, Munich, Guenter Pawlik, Munich, Reinhard von Sybel, Krailling, Erwin von Wasielewski, Munich, and Karl Wagner, Ottobrunn, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed July 5, 1966, Ser. No. 562,664
Claims priority, application Germany, July 10, 1965, A 49,710
27 Claims. (Cl. 95—10)



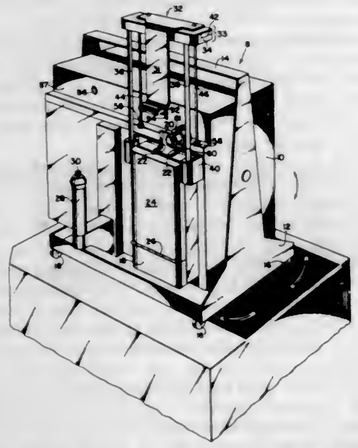
1. In a photographic camera, a diaphragm comprising setting means operative to vary the size of the diaphragm aperture between a minimum value and a maximum value; electronic flash means having a first circuit for discharging a preliminary flash and thereupon a main flash; and an exposure control having a second circuit comprising actuating means for transmitting to said first circuit impulses for generation of said preliminary flash, and control means for controlling the operation of said setting means as a function of the intensity of incident light and including light-sensitive transducer means for influencing the size of said aperture as a function of the intensity of light reaching said transducer means in response to discharge of said preliminary flash.

3,418,905

PHOTORESPONSIVE FILM SUPPLY MONITORING APPARATUS FOR A PHOTOGRAPHIC CAMERA

Milton S. Dietz, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 30, 1965, Ser. No. 517,591
3 Claims. (Cl. 95—11)



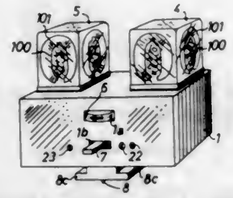
A film supply monitoring apparatus for a photographic camera incorporating a light source for illuminating a predetermined surface of a photographic film assembly and a photoresponsive device coaxial with the light source and located between the light source and the predetermined surface for controlling the operation of a signal for indicating the readiness of the photographic film assembly for exposure.

3,418,906

PHOTOFLASH UNIT

Richard Wick, Grunwald, near Munich, Hans-Peter Huber and Fridolin Hennig, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Aug. 30, 1966, Ser. No. 576,007
Claims priority, application Germany, Sept. 2, 1965, A 50,170
23 Claims. (Cl. 95—11)



1. A flash unit, particularly for use with multiple flash bulb holders of the type having a plurality of angularly spaced equidistant flash bulbs, comprising at least two indexible coupling members each connectable with a multiple flash bulb holder to rotate the same; indexing means operative to rotate at least one of said coupling members at a time through increments corresponding to the angles between successive flash bulbs on the holders carried by said coupling members; a flash circuit for firing successive flash bulbs of one holder during intervals between successive indexing movements of the respective coupling member, said circuit comprising switch contact means movable from a first to a second position to thereby connect the other holder into said circuit; and motion transmitting means for moving said switch contact means to second position in response to that operation of said indexing means which follows the firing of the last unexpended flash bulb of the one holder.

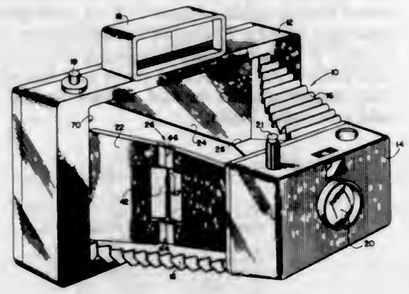
3,418,907

PHOTOGRAPHIC CAMERA ERECTING SYSTEM

Alfred H. Bellows, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 18, 1966, Ser. No. 535,467
4 Claims. (Cl. 95—39)

1. A folding camera comprising, in combination:
(a) a camera body having means defining a film plane;
(b) a lens support for an objective lens movable between folded and extended positions relative to said camera body;
(c) an expansible and collapsible bellows forming a protected light path between said lens and said film plane;
(d) a plurality of support members extending between said camera body and said lens support, said support members comprising substantially flat, sheet-like members hingedly attached at opposite ends to said camera body and said lens support and movable between open and closed positions as said lens support is moved between said extended and folded positions, respectively, said support members being foldable along centrally disposed lines substantially perpendicular to the direction of movement between said open and closed positions and being effective to prevent relative movement between said lens support and said camera body other than toward said folded position when said lens support is in said extended position; and



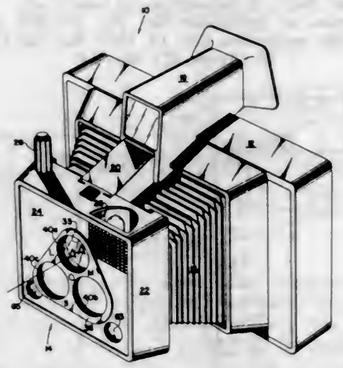
(e) biasing means associated with at least one of said support members, said biasing means being disposed along said centrally disposed line of said support member with which it is associated and movable therewith to urge said support member toward said open position, thereby urging said lens support toward said extended position, when said biasing means is on one side of a zero-biased position thereof, and toward said closed position when said biasing means is on said opposite side of said zero-position, said support members being at an intermediate stage of movement between said opened and closed positions when said biasing means is in said zero-biased position.

3,418,908

RANGE FINDING-FOCUSING APPARATUS FOR A PHOTOGRAPHIC CAMERA

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 6, 1966, Ser. No. 577,413
20 Claims. (Cl. 95—45)



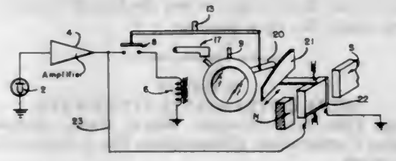
1. In a photographic camera having an exposure aperture on an optical axis for exposing photosensitive materials in an image plane within the camera, range finding-focusing apparatus comprising:
a plurality of lens means of different focal length for focusing the images of photographic subjects at different subject distances upon said image plane;
mounting means for mounting said plurality of lens means for selective movement onto said optical axis;
range finding means for indicating the range of selected photographic subjects, and
coupling means for coupling said mounting means and said range finding means such that said range finding means indicates when a lens means capable of providing proper focus of the image of a subject at a given subject distance has been moved into an operative position upon the optical axis.

3,418,909

OPTICALLY CONTROLLED PHOTOGRAPHIC SHUTTER

Clare Lynn Rabinow, 6920 Selkirk Drive, Bethesda, Md. 20034

Filed Apr. 25, 1966, Ser. No. 544,765
5 Claims. (Cl. 95—53)



1. A hand-held portable photographic camera comprising:
(a) a shutter for admitting light to the camera,
(b) means to cock said shutter,
(c) a photocell exposed to external light,
(d) an amplifier circuit connected to said photocell for amplifying current variations due to a sudden change in either direction of available ambient light falling on said photocell, whether increasing or decreasing,
(e) electromagnetically actuated tripping means for said shutter, connected to the output of said amplifier for tripping said cocked shutter upon a sudden change of light falling on said photocell.

3,418,910

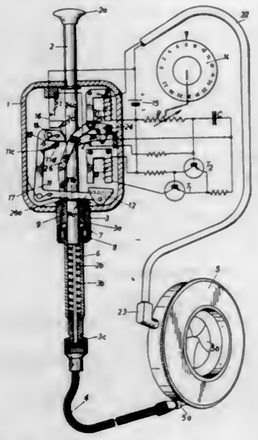
RELEASE DEVICE FOR A PHOTOGRAPHIC CAMERA

Waldemar T. Rentschler and Franz W. R. Starp, Calmbach, Black Forest, and Heinz Karl Mutterer, Sprollenhaus, Germany, assignors to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany

Filed Sept. 19, 1966, Ser. No. 580,457
Claims priority, application Germany, Sept. 21, 1965, P 37,702
13 Claims. (Cl. 95—53.3)

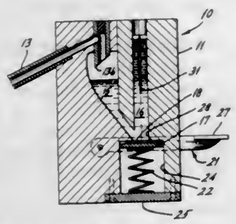
1. A release device for a photographic camera for achieving relatively long exposure times of various duration in the "B" setting of the camera; a release plunger for actuating the camera's shutter; an adjustable electronic timing device; means operably connecting said release plunger and said electronic timing device for actuation of said release device; said electronic timing device including resistor-capacitor means having contact switch means to initiate the charging of the capacitor of said resistor-capacitor means, and relay means operably connected to said switch means and said resistor-capacitor

means, and connecting means for attaching said relay means to the flash contact connector socket of the camera,



said connecting means being operable to receive current by way of the flash contact when the shutter blades of the camera attain the open position.

3,418,911
FILM DEVELOPING APPARATUS
William Otto Nix, Newport Beach, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 3, 1966, Ser. No. 569,895
13 Claims. (Cl. 95—89)



A self contained apparatus for developing photographic film includes a developing chamber for receiving film to be processed. The developing chamber has its lower region in fluid flow communication with a fluid supply chamber that has a relatively enlarged, closed upper region into which extend a plurality of valve-controlled discharge nozzles for film processing fluid. Each nozzle is arranged to direct a processing fluid into the supply chamber for flow therefrom into the processing chamber. Valve means is provided for draining fluid from the chambers simultaneously. The enlarged upper region provides for formation of a captive air region that prevents cross-contamination of the nozzles by the different processing fluids. The invention herein described was made in the course of or under a contract, or subcontract thereunder, with the Department of the Army.

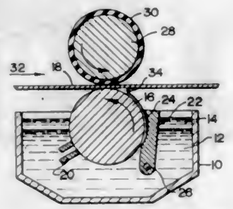
3,418,912
PHOTOGRAPHIC PROCESSING APPARATUS
Edwin H. Land, Cambridge, and Richard J. Chen, Winchester, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,337
11 Claims. (Cl. 95—89)

1. Photographic apparatus for treating a photographic sheet with a liquid processing agent subject to deterioration upon exposure to the atmosphere, said apparatus comprising, in combination:

an open container for holding a quantity of a processing liquid;

a quantity of a second liquid, substantially non-volatile at normal temperatures, immiscible with and having a specific gravity less than said processing liquid, sufficient to form a layer of predetermined thickness on the entire surface of a body of said processing liquid within said container to preclude contact between said processing liquid and the atmosphere;

a applicator member having an endless surface wettable by said processing liquid disposed with a portion of said endless surface located above said second liquid and another portion of said surface located within said processing liquid;



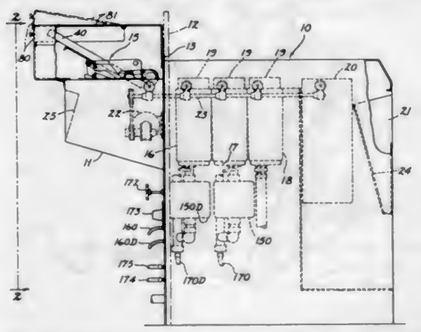
means for so moving said applicator as to advance a descending portion of said endless surface from above said second liquid downwardly into said processing liquid and advance an ascending portion of said endless surface upwardly from said processing liquid through and from said second liquid;

barrier means extending from above said second liquid into said processing liquid and disposed in contact with said ascending portion of said endless surface to prevent contact between said ascending portion of said endless surface and said second liquid;

means for moving said barrier means from contact with said ascending portion of said endless surface to remove said second liquid from the surface of said processing liquid in the region of said ascending portion of said endless surface; and

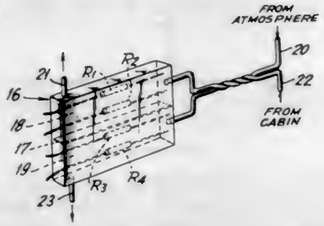
means for pressing said photographic sheet into contact with a portion of said endless surface exterior of said liquids.

3,418,913
FILM PROCESSOR
James L. Snarr, Cleveland Heights, Ohio, assignor, by mesne assignments, to Picker Corporation, White Plains, N.Y., a corporation of New York
Continuation of application Ser. No. 296,999, July 23, 1963. This application Feb. 10, 1967, Ser. No. 615,260
41 Claims. (Cl. 95—94)



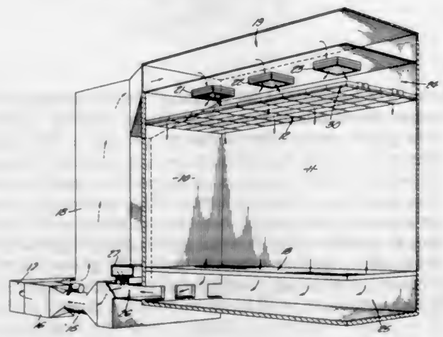
Film processor including an automatic feed for feeding sheets of film one at a time from a stack of cut film of admixed sizes. The feeder includes a tray that is elevated until the top film on a stack of sheets of film supported on the tray is stripped from the stack. The processor senses a sheet of film being fed to control the feeder and thereby control the spacing of the sheets of film uniformly and also to control a supply of replenishment fluid.

3,418,914
AUTOMOBILE VENTILATION TECHNIQUES
Eugene F. Finkin, 817 2nd St., Apt. 106, Santa Monica, Calif. 90403
Filed Jan. 20, 1967, Ser. No. 610,564
8 Claims. (Cl. 98—2)



A temperature responsive impedance bridge for comparing the thermal conductivity of the cabin atmosphere with that of a reference environment in order to monitor the cabin for abnormal carbon dioxide concentrations is coupled to suitable warning and ventilating apparatus via a relay controlling trigger amplifier network. The threshold voltage of the trigger network is preselected to coincide wtih the output voltage of the bridge circuit occurring when the carbon dioxide condition desired to be detected is present, 7:1 being a useful and satisfactory carbon dioxide ratio for actuation.

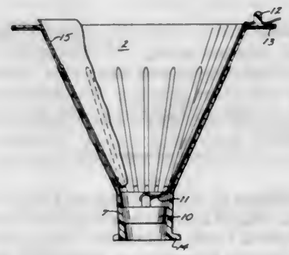
3,418,915
CLEAN AIR CEILING MODULE
Robert I. Marble, Gardena, Calif., assignor to Farr Company, Los Angeles, Calif., a corporation of California
Filed Aug. 18, 1966, Ser. No. 573,337
13 Claims. (Cl. 98—40)



1. A lighting and filtration module comprising

frame means for supporting filter means and lighting means, said frame means comprising side members and cross members for supporting the edges of said filter means in a sealed relationship with said frame means and allowing air to pass through said filter means and for supporting said lighting means with the interior thereof in a sealed relationship with respect to air passing through said filter means, and said lighting means including lighting fixture means for receiving lamps and including duct means upon which said lighting fixture means are mounted for receiving air and supplying cooling air to said lamps, said duct means comprising bottom wall means to which said lighting fixture means are attached with said bottom wall means including a plurality of elongated slots near the sides of said fixture means for allowing air supplied to said duct means to pass through a first slot and across said lamps to a second slot for cooling said lamps and exhausting the air after it has passed across said lamps.

3,418,916
COFFEE MAKING DEVICES
Inez H. Peirce, 157 Camino San Clemente, San Clemente, Calif. 92672
Filed May 26, 1966, Ser. No. 553,099
1 Claim. (Cl. 99—305)



This invention provides an improvement on previously known coffee making devices by offering two cooperating but separable vessels and a filter element. The upper or funnel type vessel receives a folded filter paper and a charge of freshly ground coffee. The funnel element is provided with supporting feet for holding it steady on a flat surface.

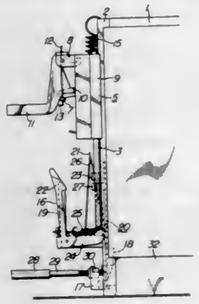
The lower or flask-type vessel receives a quantity of water for heating. When it reaches boiling, it is poured over the charge in the funnel, and is retained in contact therewith by suitable valve means. The funnel is then lifted and placed in the neck of the flask member.

After a suitable brewing period, the valve means are opened and the liquid coffee is permitted to descend into the flask member. The funnel is then removed, and the coffee may be dispensed from the flask as desired.

3,418,917
SEMI-AUTOMATIC POP-UP TOASTER
Hosei Sato, Nishinomiya-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed May 8, 1967, Ser. No. 636,950
Claims priority, application Japan, May 23, 1966, 41/33,423; 41/48,764; 41/48,758
4 Claims. (Cl. 99—329)

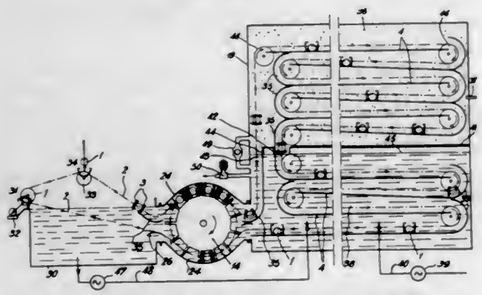
A toaster comprising bread support elevating means having an engaging member thereon and movable up and down between an elevated position and a lower toasting position, latch means having a hook thereon engageable with said bread support elevating means when it is in said lower toasting position for retaining it in said position, a rebound spring adapted to snap back and forth past a dead center position, said rebound spring being engaged by said latching means to move it in one direction past said dead center position when said bread support elevating means is lowered toward said lower toasting position, a bimetallic element for detecting the degree of toasting of bread toasted by the toaster, and an actuating rod

coupled to said bimetallic element and engageable with said rebound spring. The actuating rod snaps the rebound spring back in the other direction past the dead center position as said bimetallic element moves in response to the degree of toasting, and the rebound spring and latch



means are positioned so that the latching means is engaged by said rebound spring and disengaged from said bread support elevating means when said rebound spring snaps back in said other direction. The bread support elevating means, is thus released to permit its return to the elevated position.

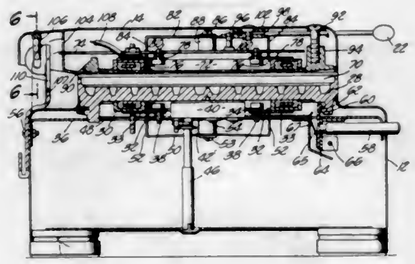
3,418,918
STERILIZATION APPARATUS
Max Beauvais, Saint-Georges-le-Motel, Eure, and Claude Moreau, Nantes, Loire Atlantique, France; said Moreau assignor to Societe Financiere et Industrielle des Ateliers et Chantiers de Bretagne, Prairie au Duc-Nantes Loire-Atlantique, France, a company of France
Filed Jan. 5, 1967, Ser. No. 607,523
Claims priority, application France, Jan. 14, 1966, 45,957
5 Claims. (Cl. 99—362)



A sterilization apparatus, more particularly for the treatment of containers containing products such as food or the like, comprising a chamber containing a sterilization fluid and a cooling liquid and a conveyor adapted to move the containers in the chamber portions containing the sterilization fluid and the cooling liquid, a sealing system being provided for introducing the containers into the chamber and withdrawing them therefrom without substantially changing the pressure in the said chamber.

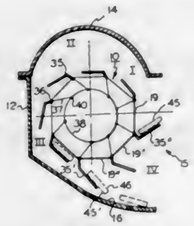
3,418,919
WAFFLE IRON CONSTRUCTION
Carl J. Nardon, 4532 Cockerham Drive, Los Angeles, Calif. 90027
Filed Dec. 20, 1966, Ser. No. 603,286
5 Claims. (Cl. 99—378)

A novel heating element for placement in surface contact with the back face of a waffle iron grid comprising supporting beam means adapted to be mounted on the body of a waffle iron, an annular heating element ring, and a spring mounting between said beam and said heating element, said spring mounting comprising two spaced parallel flexible bodies each having a straight portion affixed to said beam, and at the end of each of said



straight portions, vertical portions being adapted to abut the underside of said heating element for maintaining the upper face of said heating element in contact with the back face of the waffle iron grid during warping of said beam to provide for uniform heating of said grid.

3,418,920
ROTARY BUN GRILL
Harry W. Alexander, Box 256, Rte. 1, Leesburg, Va. 22075
Filed Apr. 25, 1967, Ser. No. 633,543
7 Claims. (Cl. 99—386)

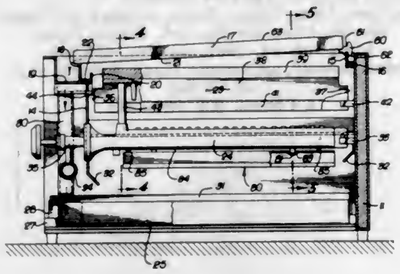


A grill is provided for toasting buns comprising a fixed heater about which a rotating drum revolves to provide a heated surface. Buns sliced to present a flat face are clamped against flat surfaces on the polysided generally cylindrical drum by means of flat webbed paddles pivoted in and out by a camming system. The paddles are cammed for opening and closing over substantially a 90° revolution to thereby provide a substantially horizontal surface upon which the buns may be manually placed to rest by force of gravity and a substantially vertical surface which permits the buns to slide off by force of gravity at the end of a timed rotation in contact with the heated surface to provide the proper degree of toasting or grilling.

3,418,921
BROILER
Howard C. Fautz, Long Beach, Calif., assignor to Vulcan-Hart Corporation, Baltimore, Md., a corporation of Indiana
Filed Apr. 25, 1966, Ser. No. 544,761
25 Claims. (Cl. 99—445)

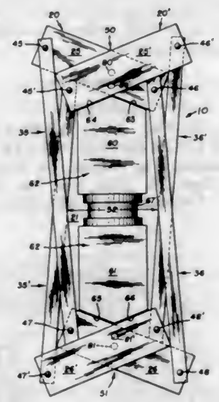
A broiler including a grid of parallel bars with inclined channels conducting grease to a main collecting channel.

A supplementary collecting channel receives grease flowing along the bottom of the grid bars. Radiants below the



grid are supported partially by burners therebelow, the burners also supporting heat baffles therebelow.

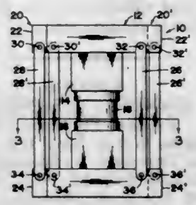
3,418,922
LOAD-BEARING FRAME STRUCTURE
Ruloff F. Kip, Jr., Ossining, N.Y., assignor to Barogenics, Inc., Mount Vernon, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 606,920
18 Claims. (Cl. 100—214)



Frame structures each comprised of two similar closed polygonal load-bearing frames each disposed around a central space within the structure, the frames being each comprised of sets of parallel transversely spaced beams which are connected together by hinge joints and which are all in parallel planes, the frames having respective sets of beams which are interleaved to produce interpenetration of the frames and an overlapping of their respective transverse extents, and the frames being coupled in parallel to a press inside the central space to receive oppositely directed loading forces from the press and to share such loading forces.

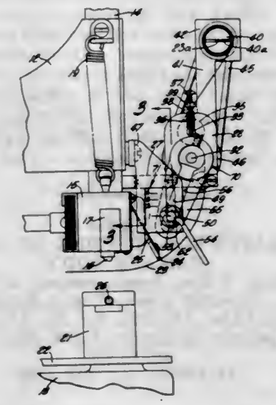
3,418,923
COMPACT FRAME STRUCTURES
Alexander Zeitlin, White Plains, N.Y., and F George Boggio, Glen Rock, N.J., assignors to Barogenics, Inc., Mount Vernon, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 607,052
14 Claims. (Cl. 100—214)

Frame structures each comprised of two similar closed polygonal load-bearing frames each disposed around a central space within the structure, the frames each being comprised of spaced beams in parallel planes and forming upper and lower component crossheads and parallel tie means which are connected together by hinge joints. The two frames are arranged so that the beams forming



their respective upper and lower component crossheads have the same spatial orientation and are in interleaved and overlapping relationship to form a frame structure with compound crossheads.

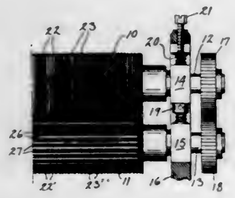
3,418,924
TAPE FEED AND TAKE-UP MECHANISM
Lewis A. Kingsley, Beverly Hills, Calif. (% Kingsley Machine Company, 850 Cahuenga Blvd., Hollywood, Calif. 90038)
Continuation of application Ser. No. 381,476, July 9, 1964. This application Apr. 19, 1966, Ser. No. 554,609
5 Claims. (Cl. 101—9)



1. In a tape feed mechanism for hot stamping machines of the type having a vertically reciprocating operating bar, the combination comprising an assembly of rollers attached to said operating bar, said assembly including a feed roller, an idler roller and a take-up roller; a crank arm connected to said feed roller by a clutch means operable to drive said roller in one direction only, said clutch means including an outer cylindrical housing connected to said crank arm, a pair of clutch plates connected to the shaft of said feed roller, said clutch plates forming a roller cage and having a plurality of spring retaining fingers formed thereon and a plurality of arcuate semi-rectangular apertures formed therein, a plurality of rollers having the shafts thereof extending into said arcuate apertures, a plurality of spring means positioned on said retaining fingers and contacting said rollers thereby to urge same toward one edge of said arcuate aper-

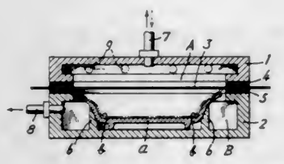
tures and toward the interior surface of said clutch housing; said crank arm having a longitudinal slot; a bracket affixed to a stationary point on said machine, said bracket having a vertical slot, a stationary pivot pin affixed in said vertical slot adapted for adjustable positioning therein, said pivot pin extending into said longitudinal slot of said crank arm and slidable therein to rotate same when said operating bar is reciprocated.

3,418,925
ART OF MANUFACTURING EMBOSSED PAPER PRODUCTS
Robert B. Wiggins, Green Bay, Wis., assignor to Fort Howard Paper Company, a corporation of Delaware
Original application Feb. 17, 1964, Ser. No. 345,411. Divided and this application Mar. 14, 1967, Ser. No. 622,993
4 Claims. (Cl. 101—23)



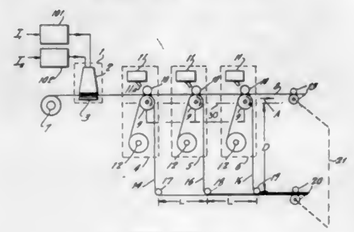
An embossing machine having a pair of cooperating embossing rolls, each with alternating circumferential ridges and valleys, with the ridges of one roll engaging in the valleys of the other roll, in which one of the rolls has circumferentially-spaced axially-extending relief grooves intersecting the ridges to provide alternating axial grooves and ridged strips, and in which there is yielding means normally urging the rolls toward one another. The grooves of the one roll are of sufficient width that a pattern-setting hammering action occurs when the rolls are operated.

3,418,926
APPARATUS FOR PRINTING ON CURVED SURFACE BODY
Ichiro Hakogi, Tokyo, Japan, assignor to Tomi Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Mar. 15, 1966, Ser. No. 534,336
Claims priority, application Japan, Mar. 17, 1965, 40/15,560
16 Claims. (Cl. 101—35)



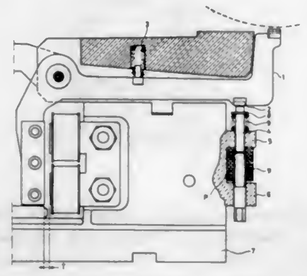
A printing arrangement in which chambers on opposite sides of a extensible printing film are evacuated to provide equal suction pressures on opposite sides of the film and maintain the original position of the film, one of the chambers then being subjected to positive pressure to urge the film into contact with a body in the other chamber to effect printing thereon.

3,418,927
HIGH SPEED INFORMATION RECORDING AND DUPLICATING APPARATUS EMPLOYING A STENCIL MASTER DOCUMENT
Yoshinari Mita, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan
Filed July 28, 1967, Ser. No. 656,792
Claims priority, application Japan, July 30, 1966, 41/49,965
6 Claims. (Cl. 101—90)



The invention is broadly comprised of high speed electronic recording means for forming characters, symbols and the like upon a document in accordance with output information received from a computer. Electronic recording means more closely approaches computer operating speeds than mechanical recording devices. The recording means is preferably of the electric discharge puncture type which forms a character or other symbol in the document at a predetermined location in accordance with a computer control.

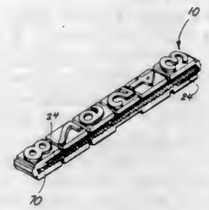
3,418,928
STROKE-ADJUSTING AND REBOUND-DAMPING DEVICE FOR HIGH-SPEED PRINTER HAMMERS
Gianluigi Ponzano, Via Aldisio 14, Ivrea, Turin, Italy
Filed Sept. 30, 1966, Ser. No. 583,382
4 Claims. (Cl. 101—93)



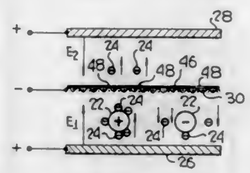
A device for adjusting the stroke and preventing the rebound of a high speed print hammer utilizing the shock absorbing qualities of a block of plastic material through which the stop member is threaded.

3,418,929
ENDLESS TYPE BAND AND METHOD OF MAKING SAME
Robert T. Nelson, Ottumwa, Iowa, assignor to Lin-Den Company, Ottumwa, Iowa, a corporation of Iowa
Continuation-in-part of application Ser. No. 428,655, Jan. 28, 1965. This application Oct. 13, 1967, Ser. No. 677,835
3 Claims. (Cl. 101—111)

The method of making an endless printing band wherein a flat plate mandrel having uniform parallel ridges and grooves formed over its substantial area is wound with a plurality of turns of cord material to extend transversely of the ridges and grooves, placing a sheet of rubber material on opposite sides of the mandrel over the cord windings, heating the assembled package and compressing the assembled package to force the rubber material between the turns of cord and into the indentations in the mandrel for embedding the rubber material, withdrawing the plate mandrel from the resulting unit along lines parallel to the grooves and indentations, and cutting the resulting unit along lines parallel to the turns of cord to provide a plurality of endless type bands.



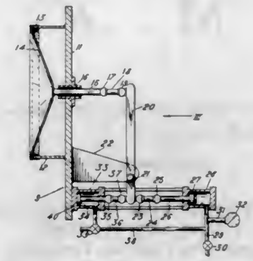
3,418,930
ELECTROSTATIC SCREEN PRINTING USING A TONER REPELLING SCREEN
Kenneth W. Rarey, South Holland, and John B. Kennedy, Jr., Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 15, 1965, Ser. No. 496,516
15 Claims. (Cl. 101—114)



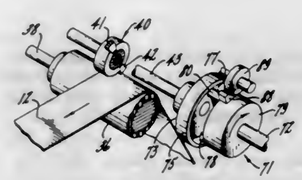
The disclosure relates to electrostatic screen printing wherein a toner-repelling screen is maintained at a potential which is like that induced upon the toner, and the toner is carried toward the toner-repelling screen by conductive carrier particles. Upon impact of the carrier particles and toner with the screen, the toner is dislodged from the carrier particles and is either repelled from the screen toward the substrate or repelled from the screen toward a base electrode.

3,418,931
APPARATUS FOR STENCIL-PRINTING THICK FABRICS
Ernest Wilford, Bingley, England, assignor to The Bradford Dyers' Association Limited, Bradford, Yorkshire, England, a British company
Filed July 20, 1966, Ser. No. 566,592
Claims priority, application Great Britain, July 21, 1965, 31,064/65
5 Claims. (Cl. 101—126)

An apparatus for stencil-printing thick pile carpets using a free flowing coloring material with a constant pressure differential across the carpet created by suction pressure on one side of the carpet utilizes an adjustable pressure regulating valve to adapt the apparatus for printing on carpets having widely varying characteristics. The valve is a frusto-conical disc valve cooperating with a valve seat and having the concave sides subjected to suction. The disc valve is normally held on its seat by a pneumatic cylinder having the piston thereof connected to the valve through a universal joint. The linkage between the piston and the valve gives a mechanical advantage to the valve. There may be a second cylinder and piston to provide a second range of operation.



3,418,932
PRINTER
Gary H. Macchione, 1933 N. New England, Chicago, Ill. 60635, and Robert A. De Nicola, Niles, Ill.; said De Nicola assignor to said Macchione
Filed Nov. 7, 1966, Ser. No. 592,424
3 Claims. (Cl. 101—228)



A device for printing a moving strip of material which has a plurality of sets of type spaced around a rotating printing head and a drive clutch with a cam controlled movable pawl for alternately engaging drive pins on the head to bring one set of type per revolution of an input shaft into printing contact and to permit the head to overrun the input shaft upon printing engagement of the type and moving strip.

3,418,933
PRINTER HAVING FORCE COMPENSATING PLATEN
John O. Schaefer, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 17, 1967, Ser. No. 631,308
11 Claims. (Cl. 101—274)

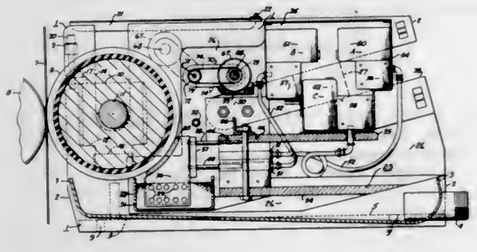
A wide range of character sizes and styles are printed by direct force transfer through an ink ribbon by a pressure roller or platen composed of relatively narrow, closely adjacent steel rings which are supported so as to be resiliently yieldable under pressure. The individual rings flex to develop only the force required for printing a small section of a large character. Accordingly, ade-

quate force is developed by the roller as a whole for printing broad areas, whereas force is automatically lim-



ited as required when printing small area details such as serifs and small characters.

3,418,934
LINE BAND SELECTOR FOR DIFFERENTIAL TIN PLATE MARKER
Ralph A. Pannier, McCandless Township, Allegheny County, Pa., assignor to The Pannier Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1965, Ser. No. 508,514
11 Claims. (Cl. 101—328)



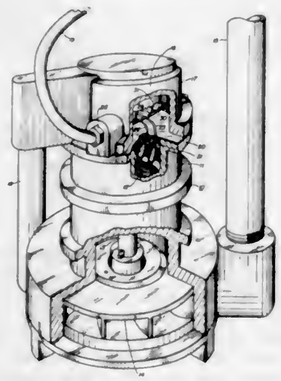
This invention is a simplified band printer for a differential tin plate line having a series of uniformly spaced annular printing bands on a rotary cylinder mounted on a base and synchronously driven to have continuous contact with a travelling strip of material. The printing bands maintain continuous contact with the travelling strip. The selective printing bands print on the running strip of material by selectively moving their applicator into engagement with their respective printing band. Each applicator is continuously supplied with ink and is slidably supported from the base by guide and piston rods which rods are selectively reciprocal to advance and engage each applicator with its respective printer band to transfer ink to the band and thence to the travelling strip to selectively code mark the same while the applicator is in engagement with its band, and when the applicator is retracted it ceases to supply ink to the printing band which is still in continuous contact with the travelling strip. The printing bands always operate in continuous contact with the travelling strip which is the crux of this invention. The applicators are continuously supplied with ink. They are reciprocally mounted and may be selectively advanced or retracted to engage their respective printing band to print a specific code and identify the mill, the character of the sheet, the character of the coating, the date and any number of different intelligence by merely selectively reciprocating the applicators without stopping the basic code printing or the line. The reciprocation of the applicator may be manual with hand levers or locks. An applicator may be power actuated and locked in its advanced or retracted position may be power released from either position or manually released if power locked.

3,418,935
INK TRANSFER MEMBER
Dolor N. Adams, Cleveland Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
No Drawing. Continuation of application Ser. No. 221,905, Sept. 6, 1962. This application July 18, 1966, Ser. No. 565,683
21 Claims. (Cl. 101—348)

1. In an inking roller for printing, a surface thereon adapted to receive a fatty acid-containing ink, said surface comprising an ion-exchange resin polymerized to an ink-insoluble state, said resin being selected from the group consisting of a copolymer of styrene and vinyl pyridine, and polyvinylpyridine, said ion-exchange resin being reactive with the fatty acid of said ink and thereby providing an ink-attractive surface on said roller.

9. The method of using an inking roller comprising the steps of applying to the surface of the printing roller an amino-polymeric ion-exchange oleophilic resin, then applying ink to such oleophilic resin, and subsequently cleaning the surface of such roller by applying to such surface an acid selected from the group consisting of a mineral acid and a strong organic acid to reverse the polarity of such ion-exchange oleophilic resin to make such roller ink-repellent and thereby assist in the cleaning thereof.

3,418,936
PUMP
Franklin W. Dowdican, Rte. 1, Talala, Okla. 74080, and Harry R. Aschan, 2547 E. 18th St., Tulsa, Okla. 74104
Filed Dec. 5, 1966, Ser. No. 599,121
4 Claims. (Cl. 103—25)

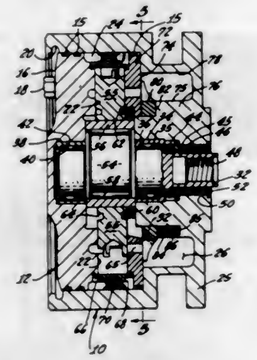


An electric-driven pump is disclosed. The electric motor and switch between the motor and power source are in separate compartments of the same housing, separated by a flexible wall. The switch is normally actuated automatically by the head of liquid to be pumped but can be manually actuated by a lanyard.

3,418,937
RADIAL PISTON PUMP
Joseph S. Cardillo and Einar Jonsson, Palos Verdes, Calif., assignors to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 4, 1966, Ser. No. 592,064
2 Claims. (Cl. 103—39)

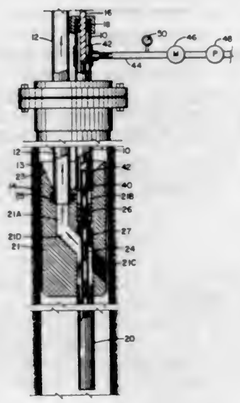
In a radial piston pump an annular low pressure manifold is immediately adjacent the radial cylinders and is separated from the cylinders solely by a radial wall having

apertures to serve as intake ports so that the distance of fluid flow from the low pressure manifold into the cyl-



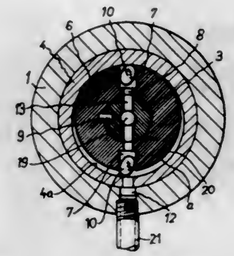
inders is merely the thickness of the radial wall. A rotary throttling valve with a planar face abutting the radial wall has spaced masking parts cooperative with the intake ports to variably restrict intake flow into the cylinders.

3,418,938
APPARATUS FOR INJECTING A VISCOELASTIC MATERIAL IN A SUBSURFACE PUMP
Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,782
9 Claims. (Cl. 103—46)



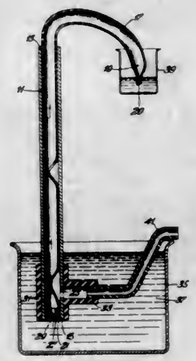
An apparatus for injecting a viscoelastic material into the lower end of a string of tubing in a well bore through which a viscous oil is to be pumped. One of two strings of tubing contains a sucker rod string and the other contains the viscuous oil being produced. A viscoelastic material is injected down through the tubing string containing the sucker rod through a hollow portion of the lower sucker rod through channels in the plunger to the space between the plunger and the pump barrel. An upper part of the plunger is smaller than the bottom part to permit the injection of the proper thickness of the film of the viscoelastic material.

3,418,939
ROTARY PUMPS
Jean Ernst Kopp, Meyriez, Murten, Fribourg, Switzerland
Filed June 23, 1967, Ser. No. 648,289
Claims priority, application Switzerland, June 30, 1966, 9,529/66
6 Claims. (Cl. 103—136)



A rotary pump having a cylindrical rotor mounted for rotation in an eccentric bore of the pump housing comprises fluid passages for the fluid to be delivered formed by radial slots in the rotor and extending inwardly from the periphery of the rotor. Movable valve elements are inserted in said radial slots and permit the fluid to flow radially inwards in said slots but prevent a flow of fluid radially outwards. Upon reversal of the direction of rotation of the pump rotor, said valve elements automatically adjust their position within said slots to again permit flow of fluid only in the direction from the periphery of the rotor inwards towards its center, so as to obtain unidirectional flow of the delivered fuel in both directions of rotation of the rotor.

3,418,940
FLUID MATERIAL TRANSFER APPARATUS
Sterling T. Martin, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 18, 1966, Ser. No. 595,444
2 Claims. (Cl. 103—152)

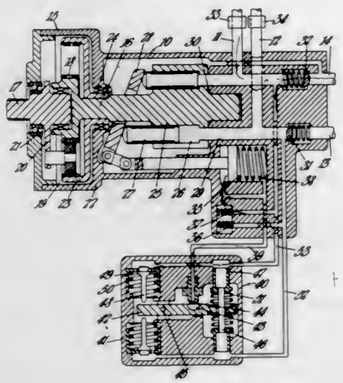


Apparatus capable of operating as a valveless pump for transferring a sample of fluid from one source to another comprising an inner conduit concentrically enclosed within an outer conduit, the interface between the conduits being sealed at one end by plug means which simultaneously operates as a one-way valve. A pulsating fluid medium is introduced into the annular space between the conduits which by peristaltic motion forces fluid up through the inner conduit.

3,418,941
STROKE ADJUSTING MEANS FOR HYDRAULIC MACHINES

Dorian Farrar Mowbray, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 21, 1966, Ser. No. 535,748
3 Claims. (Cl. 103—162)

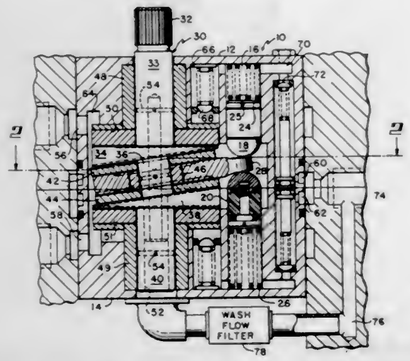


A means for automatically adjusting the stroke of an hydraulic machine which is capable of operating in the manner a pump or a motor and having a fluid pressure operated servo device for varying the stroke, said means comprising a valve for controlling the escape of fluid to and from the cylinder and pressure responsive means for controlling the position of the valve, the pressure responsive means being arranged at opposite sides of the valve respectively and being responsive to the pressure in the ports in the machine respectively.

3,418,942
CONTAMINATION-RESISTANT FUEL PUMP WITH ECCENTRICALLY LOCATED DRIVE SHAFT

Stephen E. Partos, Mamaroneck, N.Y., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware

Filed Oct. 13, 1966, Ser. No. 586,441
6 Claims. (Cl. 103—173)

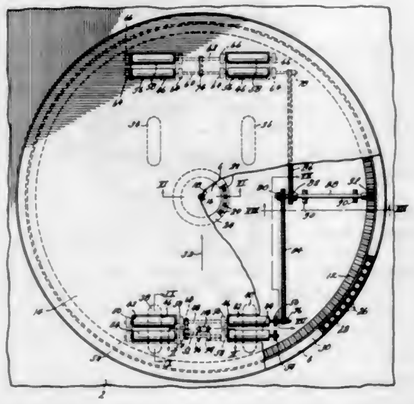


A reciprocating piston pump, housed within a cylindrical casing, is provided with a wobble plate for actuating the pistons. The wobble plate is driven by a drive shaft which is eccentrically positioned with respect to the axis of the casing. A portion of the output from the pump is filtered and used for supplying contaminant-free fluid to the bearings.

3,418,943
AUTOMOBILE TURNTABLE

Tinie R. Teters, 201 S. Cleveland Ave., Fayette, Mo. 65248

Filed Jan. 19, 1967, Ser. No. 610,389
1 Claim. (Cl. 104—44)

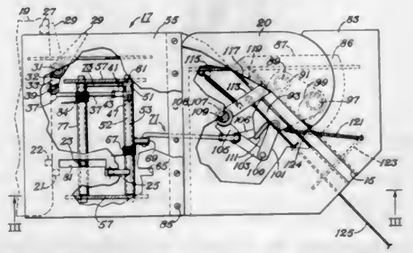


This application discloses a turntable onto which an automobile may be driven, and which may then be rotated as desired so that the automobile may be turned to any desired new heading, and is useful particularly in locations where it is desirable to turn an automobile and there is not sufficient ground area to accomplish the maneuver in the normal way. Special features of the present turntable are that it is powered entirely by the engine of the automobile itself, that its drive is reversible to permit the approach of an automobile thereto from either of two diametrically opposite directions, and that it is adaptable for use with either front wheel drive or rear wheel drive automobiles.

3,418,944
SUBFLOOR CONVEYOR SWITCH CONTROL MEANS

William W. Hansford, Arlington, John F. Bryan, Jr., Irving, and Jesse B. Hutchinson, Dallas, Tex., assignors to M-H Equipment Company, Inc., Duncanville, Tex.

Filed Jan. 21, 1966, Ser. No. 522,288
5 Claims. (Cl. 104—130)



1. In a subfloor conveyor system having conveyor means beneath a main floor slot for propelling conveyor trucks along the surface of a floor by engaging a tow pin that depends from each conveyor truck, and a switch for guiding selected conveyor trucks into a spur slot, the combination therewith of:

(a) two substantially parallel bars rotatably mounted beneath said floor to extend transversely with respect to the path of travel of said conveyor trucks, each said bar having a protrusion that extends through an aperture in said floor;

(b) linkage means joining said bars to cause simultaneous rotations of said bars when either is rotated;

(c) an arming lever positioned to extend across said main floor slot;

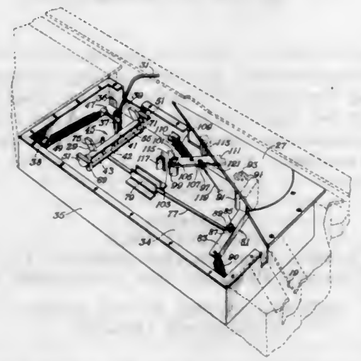
(d) a connecting rod joining said arming lever with one of said bars to rotate said bars and move their protrusions above the floor when said arming lever is engaged by the tow pin of a conveyor truck; and

(e) actuation means connecting one of said bars with said switch to move said switch to a selected position upon engagement of the encoder elements of said truck with the protrusions of said bar.

3,418,945
SUBFLOOR CONVEYOR SWITCH APPARATUS

Norman R. Stevenson and Jesse B. Hutchinson, Dallas, Tex., assignors to M-H Equipment Co., Inc., Duncanville, Tex.

Filed Apr. 30, 1965, Ser. No. 452,265
3 Claims. (Cl. 104—172)



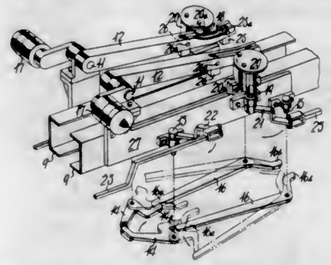
Switch apparatus for use in subfloor conveyor systems includes protrusions movable to above floor position upon engagement of an arm by a cargo tow pin. If two protrusions are engaged simultaneously by cargo truck code elements, then a linkage is actuated to move the switch to the opened spur position. If two protrusions are not engaged simultaneously, then a primary bar and a secondary bar which are connected to respective protrusions assume a skewed relation such that the linkage is not actuated. Relative lengths of first and second sections of the primary bar may be changed, so that a large number of protrusion code combinations may be obtained. The switch is spring biased solely to the closed spur position and is retained in the open spur position by means of a latch which is disposed in the path of the tow pin of cargo trucks entering the spur slot so as to be positively moved to a position to release the switch from the opened spur position. A latch disabling means is secured to the latch and is operable independently of truck tow pins to selectively prevent latching of the switch in the opened spur position.

3,418,946
AUTOMATIC STOP AND FEEDER MECHANISM FOR TROLLEY CONVEYORS

Satoru Yokoi, Kadoma, and Kazumi Ohmura, Toyonaka, Japan, assignors to Tsubakimoto Chain Manufacturing Company, Limited, Osaka, Japan, a corporation of Japan

Filed May 20, 1966, Ser. No. 551,658
Claims priority, application Japan, May 24, 1965, 40/30,564
6 Claims. (Cl. 104—172)

A load trolley stop and feed control system having plural stopping stations along the trolley track with each trolley having a pivotal dog on the trolley engaged by a pusher on a driven power chain with a pivotal balance arm being mounted on each station and being movable by a rotary cam into the path of a pin on the dog to pivot the dog out of driven relationship with the pusher and with a linkage means connected from the cam to a bell crank engageable by the trolley downstream of the

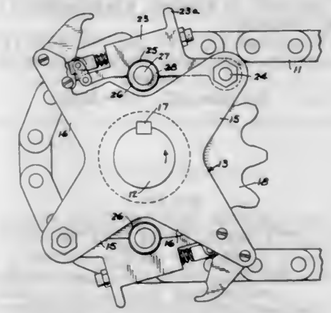


cam at the next downstream station for simultaneously actuating the cam to disconnect the drive to a succeeding load trolley with each balance arm including a lower surface attached check stopper for arresting inertial movement of the trolley after disconnection of the drive to its dog.

3,418,947
OVERLOAD RELEASE FOR A CONVEYOR DRIVE AND THE LIKE

Homer S. Harrison, Detroit, Mich., assignor to Mechanical Handling Systems, Inc., Warren, Mich., a corporation of Michigan

Filed Aug. 1, 1966, Ser. No. 569,128
19 Claims. (Cl. 104—172)



An overload release for a conveyor drive and the like which comprises a rotatable drive member, a driven member mounted for rotation about the axis of the drive member and at least one latch pivoted to the drive member. When the latch is in one position, a portion thereof engages a portion of the driven member and is yieldingly held in engagement therewith. When an excessive load is placed upon the driven member, continued rotation of the drive member causes the latch member to move out of engagement with the driven member.

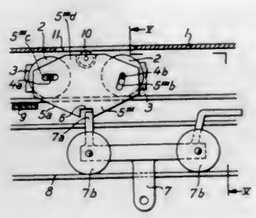
3,418,948
CHAIN DRIVEN CONVEYOR SYSTEM HAVING DRIVING MEMBERS

Hans-Georg Fromme and Franz Nadler, Wetzlar, Germany, assignors to Fromme Forderanlagen G.m.b.H., Wetzlar, Germany

Filed Feb. 20, 1967, Ser. No. 617,258
Claims priority, application Germany, Feb. 23, 1966, F 48,514, Patent 1,238,399
5 Claims. (Cl. 104—172)

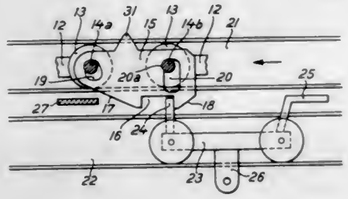
A conveyor system adapted to transport goods in holders from one place to another. The holders are movable

along a fixed trackway under the propulsion of a driving chain running along parallel guide means above and in vertical alignment with said trackway. The chain is provided with rollers journaled on the link pins between the chain links. Driving members are rested on two consecutive link pins by means of two oblong holes. The



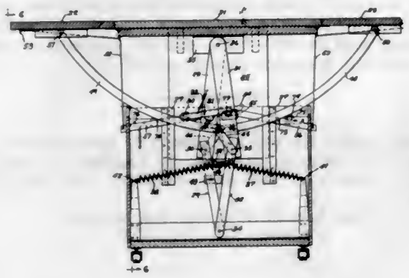
front oblong hole in the direction of chain travel extends horizontally, i.e., parallel to the direction of transportation. The rear hole extends slightly inclined to the vertical direction. The oblong holes are specially shaped to cater for any reverse of propulsion which may occur while the conveyor system transports the holders on a descending section of the trackway.

3,418,949
CHAIN DRIVEN CONVEYOR SYSTEM HAVING DRIVING MEMBERS
Hans-Georg Fromme, Wetzlar, Rudolf-Heinrich Reitz, Oberquembach, and Willi Huppke, Braunfels, Germany, assignors to Fromme Forderanlagen G.m.b.H., Wetzlar, Germany
Filed Mar. 13, 1967, Ser. No. 622,712
Claims priority, application Germany, Aug. 16, 1966, F 49,946
1 Claim. (Cl. 104—172)



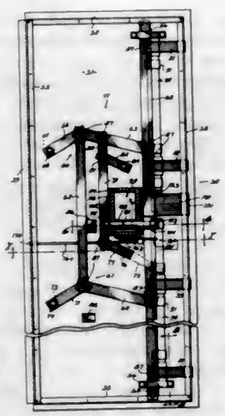
A conveyor system adapted to transport goods in or on holders from one place to another. The holders are movable along a fixed trackway under the propulsion of a driving chain running along guide means above and in parallel to said trackway. The chain is provided with rollers journaled on the link pins between the chain links. Driving members are rested on two adjacent link pins by means of two oblong holes. Both holes extend in a direction perpendicular to the direction of chain travel, i.e., in a vertical direction. The front edge of the front oblong hole is inclined to that vertical direction with the lower end of the edge spaced away from the vertical line in the direction opposite to the direction of chain travel. The holes are sufficiently wide to allow for a lateral as well as for pivotal motions of the driving member relative to the link pins. A recess is provided in the front edge of the rear oblong hole for the rear link pin to rest in during conventional chain travel.

3,418,950
CONVERTIBLE DROP LEAF COFFEE AND DINNER TABLE
Catherine C. Hubbell, 76 Macdougal St., New York, N.Y. 10012, and Elmer V. Pennell, 33 Bethany Road, Beacon Falls, Conn. 06403
Filed Feb. 17, 1967, Ser. No. 616,911
2 Claims. (Cl. 108—136)



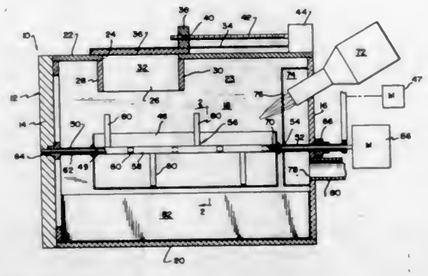
Drop leaf table top raised and lowered by a pair of opposed toggle forming links with springs connected to straighten the toggles to raise the table top, links extending from the toggles to raise the leaves and releasable locking devices for securing the table in the raised or lowered positions.

3,418,951
SECURITY FILE
Leland W. Belew, Hamilton, Ohio, assignor to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Filed Sept. 30, 1966, Ser. No. 583,232
14 Claims. (Cl. 109—59)



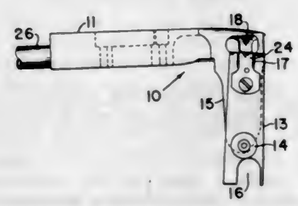
A security file particularly resistant to surreptitious entry. The file comprises a rectangular cabinet having a pivotally mounted door on its front side. The door is securable by a combination lock controlled boltwork which consists of a rectangular linkage made from flat straps of material which are easily bent and distorted in the event of a forced attack on the boltwork. The lock is protected interiorly by a unique cover assembly which prevents surreptitious attack on the lock from the rear of the file cabinet. The cabinet per se incorporates a number of reversed bends to rigidify the cabinet and preclude spreading of the door jamb to gain unauthorized access to the interior of the file.

3,418,952
INCINERATOR
Floyd H. Meller, Lexington, Mass., and Charles L. Swanson, Cincinnati, Ohio, assignors to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,742
13 Claims. (Cl. 110—8)



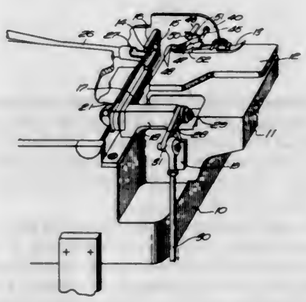
An incinerator for burning combustible sewage, garbage and industrial wastes. The incinerator construction is such that combustible wastes, which are preferably pretreated to reduce their moisture contents, are fed into a combustion chamber. This chamber includes a rotatable firebox in which the waste materials are deposited. A burner unit communicates with the combustion chamber and is arranged to direct a flame at the fire box and at a predetermined angle with respect to the box. During the combustion process, an agitator in the fire box is rotated to churn the waste material therein to promote complete combustion of the material. Gases evolved by the burning waste material are also subjected to the intense heat of the burner flame to produce their substantially complete combustion. Upon completion of a combustion cycle, the fire box is rotated and the ash residue is discharged into a disposal chamber. Another charge of waste material, which may be retained above the combustion chamber during a combustion cycle to utilize the heat generated thereby for drying purposes, is deposited into the combustion chamber and the cycle is repeated.

3,418,953
AUTOMATIC THREAD CUTTING ATTACHMENT FOR INDUSTRIAL SEWING MACHINES
Wilburn R. Fowler, 2211 E. 35th St., Chattanooga, Tenn. 37407
Filed May 19, 1967, Ser. No. 639,688
5 Claims. (Cl. 112—252)



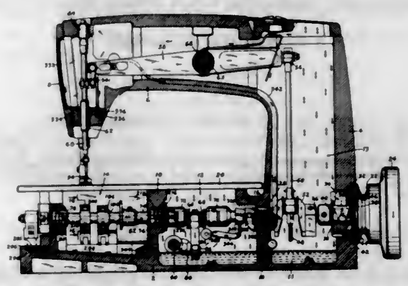
An automatic thread cutter for attachment to and adapted to be driven by the feed dog activating bar of an industrial sewing machine. A bracket is attached to the feed dog activating bar, from which it receives reciprocating horizontal motion. A lever pivotally attached between its ends to a housing is reciprocated at one end by a bearing on the bracket and its other end actuates the movable blade of the cutter. A vacuum tube draws the thread to be cut into the cutter and removes from its vicinity waste thread and lint.

3,418,954
CUTTING ATTACHMENT FOR A SEWING MACHINE AND CONTROL MECHANISM THEREFOR
Noel A. Svendsen, Bedford, Richard Sawdo, West Acton, and Robert Varteresian, Waltham, Mass., assignors, by mesne assignments, to Zalkind Sewing Machine & Supply Co., Inc., Fall River, Mass., a corporation of Massachusetts
Filed Feb. 13, 1967, Ser. No. 615,490
6 Claims. (Cl. 112—252)



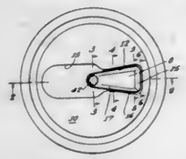
A cutting attachment for a sewing machine in which a pair of fixed, spaced, parallel cutting blades are alternately wiped by a movable blade. The movable blade is pivotally mounted at an extended end of the lower fixed blade. A lever arrangement permits a solenoid to pivotally actuate the movable blade. A sensing finger is mounted on the sewing machine and the work passes beneath the finger. An impulse is then sent to an electronic control circuit which actuates the solenoid. The control circuit has a time delay feature permitting adjustment of the position of the cut.

3,418,955
LUBRICATION SYSTEM FOR SEWING MACHINES
John G. Attwood, Oak Park, Robert L. Kosrow, Elk Grove Village, and George M. Reimer, Elmwood Park, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 20, 1966, Ser. No. 543,995
17 Claims. (Cl. 112—256)



A sewing machine lubrication system including floating bushing pumps having a spiral groove on their interior and a novel system for delivering a predetermined quantity of lubricant to one or more given locations in a sewing machine using porous metering plugs mounted at predetermined radial positions in a hollow lubricant carrying rotating shaft.

3,418,956
CAN TOP AND METHOD OF MAKING SAME
Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio 45429
Original application Feb. 4, 1965, Ser. No. 430,253, now Patent No. 3,303,960, dated Feb. 14, 1967. Divided and this application Oct. 18, 1966, Ser. No. 641,064
6 Claims. (Cl. 113—116)



5. A method of fabricating an easy opening cylindrical container of sheet material wherein the sheet material of the top end of the container is scored to define a tear strip for manual removal to form an opening through which the user may drink the contents of the container, characterized by the steps of:
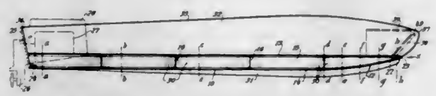
offsetting the sheet material of the top end of the container to form an elongated recess of an initial configuration positioned radially of the end wall, with the recess formed with a nonplanar bottom wall and with the bottom wall of the recess sloping upward to the plane of the can end at the radially inward end of the recess;

scoring the nonplanar bottom wall of the recess to form a tear strip with the leading end of the tear strip extending up the slope of the bottom wall to substantially the plane of the container end and with lines of the scoring extending along the margins of the bottom wall of the recess;

flattening the nonplanar bottom wall of the recess to expand the bottom wall of the recess to spread said lines of scoring apart; and

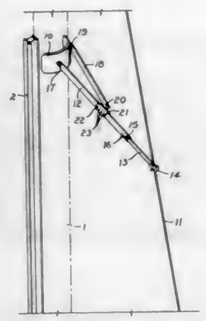
attaching a tab to the leading edge of the tear strip to facilitate severance of the tear strip.

3,418,957
DESIGN AND CONSTRUCTION OF HULLS FOR MARINE CRAFT
Jeremy Joseph Fry, Bath, Somerset, England, assignor to Rotork Marine Limited, Bath, Somerset, England
Filed Dec. 21, 1966, Ser. No. 603,513
Claims priority, application Great Britain, Dec. 23, 1965, 54,599/65
5 Claims. (Cl. 114—66.5)



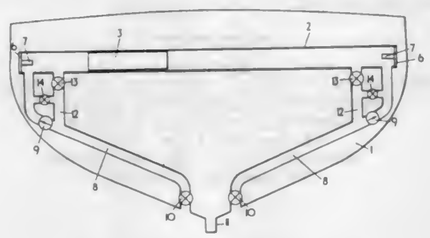
A hull for a marine craft is power propelled and comprises a flat rectangular body having a flat undersurface formed with a pair of spaced keel boards or like members depending therefrom. The keel boards are substantially parallel and positioned adjacent the sides of the hull. The boards have a maximum depth at the bow of the hull and reduce gradually in depth rearwardly to merge with the hull at a point near the position of rise of the hull from the water when planing.

3,418,958
SPAR FOR SAILING CRAFT AND METHOD OF MANUFACTURING SAME
Charles F. Wyatt, 70 Wheaton St., South Plympton, South Australia, Australia
Filed May 1, 1967, Ser. No. 635,122
6 Claims. (Cl. 114—89)



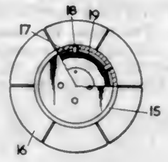
A spar for sailing vessels having an independent sail track secured to prestress the mast for greater strength.

3,418,959
MOVING WEIGHT STABILIZERS FOR FLOATING BODIES
Philip Henry Tanner and Terence Reginald Forbes Nonweiler, Glasgow, Scotland, assignors to Vosper Limited, Paulsgrove, Portsmouth, Hampshire, England, a British company
Filed Jan. 8, 1968, Ser. No. 696,294
Claims priority, application Great Britain, Jan. 13, 1967, 1,944/67
9 Claims. (Cl. 114—124)



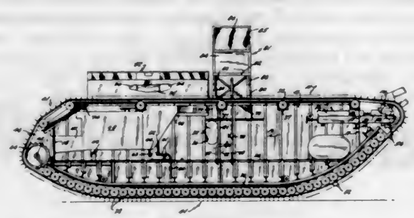
A moving weight stabilizer for a floating body comprises generally horizontally disposed tubular means extending across the floating body and weight means mounted for reciprocation through the tubular means. The tubular means is filled with the liquid medium in which the body is to float and which is alternately drawn in and forced out at the two ends respectively as the weight means is reciprocated. A valve means dissipates the energy of the weight which is transferred to the liquid medium in the form of a pressure increase the liquid medium being forced out from the ends of the tubular means. A discharge means is provided to the floating medium for the thus heated liquid and replenishing means for supplying fresh liquid from the floating medium to replace the expelled liquid.

3,418,960
VEHICLE WHEELS
Herbert Oliver Nelson, Lymington, England, assignor to the Secretary of State for Defence in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Feb. 13, 1967, Ser. No. 615,715
6 Claims. (Cl. 115—1)



This invention relates to vehicle wheels which are particularly adapted for amphibious vehicles when traversing ground such as water saturated soil, sand or shingle, in which normal wheels tend to spin and sink and for the propulsion of such vehicles when swimming. The object of the present invention is so to form the wheels of a vehicle that their propulsive effort will increase as they sink into the ground whilst at the same time they will also tend to resist such sinking.

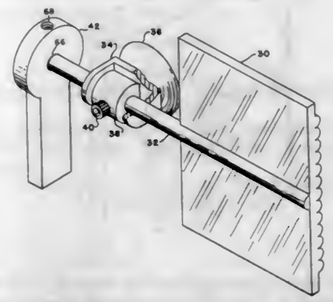
3,418,961
SWAMP CLEARING MACHINE
Frederick Browne Gregg, Leesburg, Fla., assignor to Gregg Gibson & Gregg, Inc., Leesburg, Fla., a corporation of Florida
Filed Mar. 17, 1967, Ser. No. 623,874
13 Claims. (Cl. 115—1)



A relatively large amphibious machine of two separable watertight units joined together for clearing a swamp of trees and underbrush. Each unit has an indepedent power plant controlled from a remote cab for driving an endless track extending entirely around and substantially entirely across the unit and pump means for adding and removing additional weight. A pusher bar on the front of the unit pushes down trees which are then embedded in the earth by the weight of the machine.

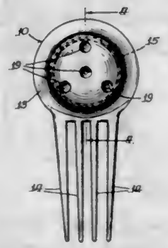
3,418,962
AUTOMOBILE STOP-START INDICATOR
Harold H. Seward, 16 Frost St., Arlington, Mass. 02174
Filed Apr. 4, 1966, Ser. No. 539,904
7 Claims. (Cl. 116—28)

A lenticular-lens changeable picture signal is disclosed which is adapted for attachment to a motor vehicle with a lenticular screen tiltable in response to acceleration forces to present one picture when acceleration is positive, and another picture when acceleration is negative. In the disclosed embodiments tilting is effected by pendulosity of the lenticular screen and associated structure relative to an axis on which the screen is pivotally supported. In one embodiment, an actuating pendulum is viscously



coupled to the screen, so that it may follow the vertical on a long incline, while the screen remains properly facing the rear.

3,418,963
HAIR DRYNESS INDICATOR
William M. Copeland, Villa Park, and Frederick J. Ritter, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 9, 1967, Ser. No. 645,057
5 Claims. (Cl. 116—67)

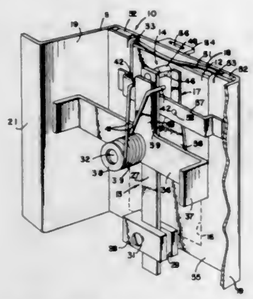


The hair dryness indicator device has the shape of a short comb for retaining the device in the user's hair and contains a bi-metallic thermally responsive and concave shaped disc which will snap into a convex shape when the hair is dry with a "click" type sound. The indicator device being tactile since a snap action change in the position of the thermo-responsive disc will set up forces in the device to cause said device to move from a set position. Thus the user will sense or feel this movement indicating that the hair is dry.

3,418,964
ACCELERATION INDICATING DEVICE
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 601,040
11 Claims. (Cl. 116—114)

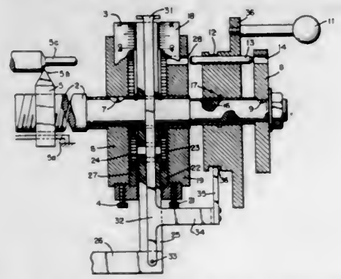
The present invention relates to a device for indicating the presence of a preselected acceleration which may be applied to a mass on which the device is adapted to be mounted. The indicating device comprises generally an indicating member which is restrained against the force of gravity in a position corresponding to the accelerations below the preselected accelerations. Restraining the indicating member against the force of gravity is a pendulum which is mounted to swing about its pivot at acceleration substantially equal to or above the preselected accelerations. When the pendulum swings, the indicating member

is released so as to move to a position under the influence of gravity indicating the latter high accelerations.



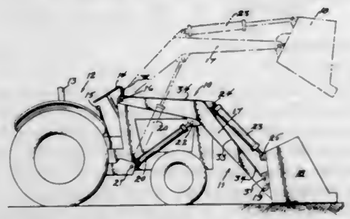
The device may again be manually reset so that the indicating member is again restrained by the pendulum.

3,418,965
METRIC-ENGLISH CONVERTER FOR MACHINE TOOLS WITH AUTOMATIC SELECTOR
Jacob Rabinow, Bethesda, Md., assignor of ten percent to Max L. Libman, Reston, Va.
Filed Jan. 11, 1968, Ser. No. 697,186
4 Claims. (Cl. 116—115.5)



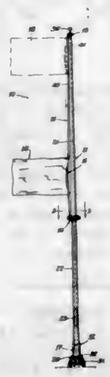
A machine tool shaft control device having scales in two systems, e.g., English and metric, with a manual drive crank selectively connectible, in two different axial positions corresponding to the two different scales, to the shaft directly or through a gear train such that the same unit motion of the crank in either selected position will produce an amount of shaft rotation corresponding to a unit indication on the selected scale, with means for automatically covering the scale which is not in use.

3,418,966
HYDRAULIC INDICATOR FOR A BUCKET
Ernest C. Carlson, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,196
4 Claims. (Cl. 116—124)



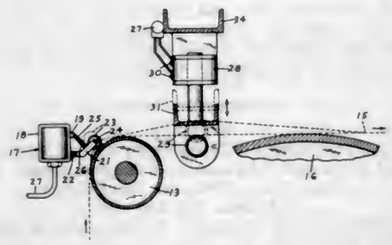
A bucket position indicator having a liquid-filled bulb or diaphragm mounted between the backside of the bucket and the top of the boom arm of a material loader, and a transparent indicator device mounted in easy view of the loader operator, with a flexible tube connecting the bulb and indicator device; so that as the angle between the boom arm and the bucket changes, the fluid level in the indicator device will change thus providing instantaneous and simple indication of the bucket position.

3,418,967
FLAGPOLE ASSEMBLY
Arie Donkersloot, Thornton, Ill., assignor to Electronic Flag Poles, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1967, Ser. No. 610,904
8 Claims. (Cl. 116—173)



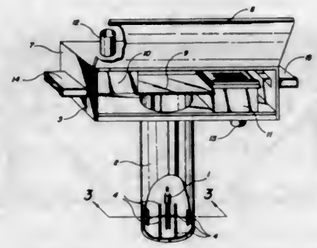
A flagpole assembly wherein the pole is provided with an internal flag storage compartment and an endless halyard movable between the storage compartment and the exterior peak of the flagpole; flag furling and guiding apparatus operating responsively with movement of the halyard for automatically furling the flag in longitudinal folds substantially paralleling and trailing the halyard's direction of movement without entangling the flag and halyard; the halyard being power driven to raise or lower the flag either automatically, according to predetermined climatic conditions and/or manually controlled.

3,418,968
SEAM JUMPER AND SELVAGE LIFTER
William Robert Burnett, Roanoke Rapids, N.C., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 13, 1967, Ser. No. 630,708
7 Claims. (Cl. 118—8)



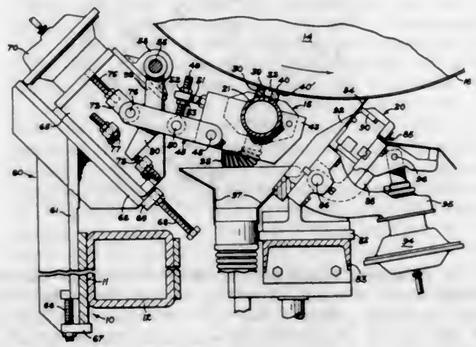
Apparatus for coating sheet material, and more particularly for applying a latex coating to a running material such as textile fabric whereby select areas of the textile fabric are kept in an out-of-contact relation with the coating applicator to retain select areas free of the coating.

3,418,969
TREATMENT OF FIBERS
James E. Harris, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 18, 1965, Ser. No. 433,621
3 Claims. (Cl. 118—325)



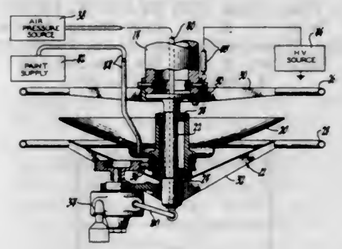
An improved apparatus for applying liquid addenda (i.e. treatment medium) to thick fiber bundles or mats includes an acoustical spray nozzle adapted to atomize the liquid addenda. Additional structure features include an application chamber to which there is connected a fractionating column and several exhaust ports. The fractionating column, into which the nozzle introduces the atomized addenda, and a deflection baffle positioned inside the application chamber are adapted to remove any residual large addenda particles as the particles impinge against them. The smaller addenda particles continue through the column and around the deflection baffle and finally through the fiber bundle as the bundle passes over the exhaust ports.

3,418,970
PAPER COATING APPARATUS
Richard W. Phelps, James T. Coghill and Robert E. Ingison, Fulton, N.Y., assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Nov. 2, 1964, Ser. No. 408,163
11 Claims. (Cl. 118—410)



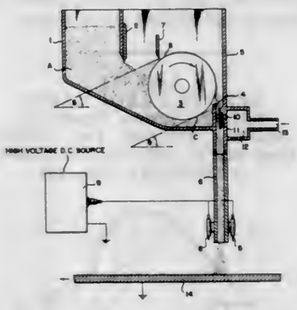
Fountain coaters for coating paper with a coating liquid include a fountain trough extending transversely of a paper web and pivoted for tilting movement and being further urged by an air cylinder into coating engagement with a web support on a backing roll so that the fountain rides on a film of coating. In one embodiment, the fountain is adapted for coating in either direction of web movement and includes deckle bars for controlling the width of application of the coating. The fountains have relatively deep distribution troughs and relatively short planar upstream and downstream coating lips.

3,418,971
APPARATUS FOR ELECTROSTATIC SPRAY COATING
Lewis J. Lamm, Cleveland, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 410,895
3 Claims. (Cl. 118—626)



A centrifugal paint atomizing device is surrounded by a shielding device and voltage is applied to the assembly in such a manner that the electrical field intensity at the edge of the atomizing device is sufficient to effect charging of the paint but insufficient to effect electrostatic atomization of the paint.

3,418,972
POWDER DUSTING DEVICE FOR ELECTROPHOTOGRAPHY
Kazuo Obuchi, Kanagawa, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan
Filed Nov. 20, 1967, Ser. No. 684,452
Claims priority, application Japan, Nov. 19, 1966, 41/76,042
10 Claims. (Cl. 118—637)



A powder dusting device for electrophotography comprising: a hopper, a reservoir interconnected to an exit of said hopper, a hopper gate disposed at the interconnection between said hopper and said reservoir, for controlling the level of a photoconductive powder delivered from the exit of the hopper to the reservoir, a rotating roller having a powder supply side disposed within the reservoir so that said supply side is dipped in the powder, thereby carrying a layer of powder forward over its outer surface,

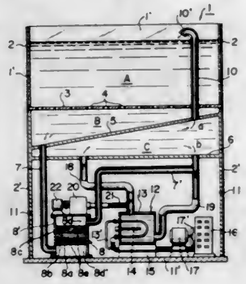
a doctor plate positioned with a gap between the lower end of the doctor plate and the surface of the roller on the powder supply side of the roller in order to control the amount of powder being carried over on the roller surface, a duct arranged below the top of the rotating roller on the side opposite the powder supply side to receive powder which falls under the influence of gravity from the surface of the roller as said roller rotates, an air supply conduit provided at the upper end of the duct, and corona discharge means provided at the lower end of said duct, whereby said powder is charged and uniformly dusted as a solid-gas sol onto an image carrier being moved at a constant speed and at a fixed distance below the outlet of said duct.

3,418,973

WATER-TANK FOR REARING FISHES

Shinichi Saito, % K. K. Saito-Shozo Shoten, 1–2, 2-chome, Marunouchi, Chiyoda-ku, Tokyo, Japan

Filed Nov. 3, 1966, Ser. No. 591,810
1 Claim. (Cl. 119—3)



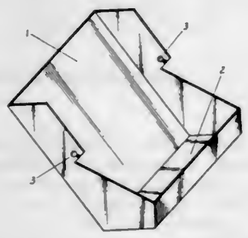
A water tank for rearing fish. An aquatic habitat chamber is divided from a debris collecting chamber by a perforated horizontal bottom wall, and the debris collecting chamber is divided from a water circulating and mixing chamber by an inclined separator. A discharge pipe extends from the separator through the water circulating and mixing chamber into a filter, and the discharge from the filter is connected to a water circulating pipe for circulating water in the water circulating and mixing chamber. An air compressor discharges air into the circulating pipe. A return pipe extends from the separator through the debris chamber and into the aquatic habitat chamber for returning filtered and aerated water thereto.

3,418,974

FEED TRAY FOR CAGES

Robert W. Reeves, Floyd, Tex. (Star Rte., Floydada, Tex. 79235)

Filed May 5, 1966, Ser. No. 555,926
2 Claims. (Cl. 119—18)



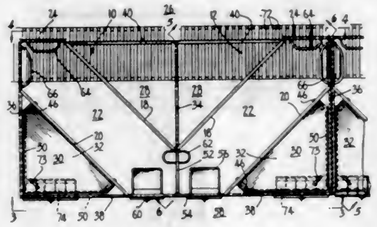
A combination feed chute and tray open at top and front with a support and pivot point intermediate of the top and bottom thereof.

3,418,975

FARROWING PIG PEN

Eva L. Smith, Mayfair Flats, Bignold Ave., Bendigo, Victoria, Australia

Filed Aug. 8, 1966, Ser. No. 570,857
Claims priority, application Australia, Aug. 23, 1965, 63,070/65
12 Claims. (Cl. 119—20)



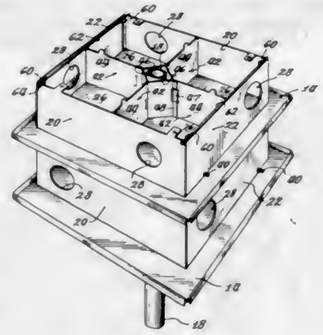
A square or rectangular pen for a farrowing sow including a pair of internal walls spaced from each other and extending from one corner of the pen to the opposite corner so as to define a sow crate between the internal walls, and a dunging area and creep area for piglets in the triangular areas, formed by the internal walls with the adjacent external walls.

3,418,976

BIRDHOUSE

Arthur E. Vail, Griggsville, Ill., assignor to Trio Manufacturing Company, Griggsville, Ill., a corporation of Illinois

Filed Dec. 6, 1966, Ser. No. 599,619
5 Claims. (Cl. 119—23)



A four-sided birdhouse including at least one tier divided into a plurality of nesting compartments. Said one tier including a floor, outer wall structure comprised of, a first pair of spaced parallel wall panels fixedly attached to said floor, and a second pair of parallel wall panels hingedly attached between and to the opposite ends of said fixedly attached panels, inner wall structure associated with said outer wall structure to divide the space enclosed thereby into four nesting compartments. The inner wall structure being comprised of a plurality of identically

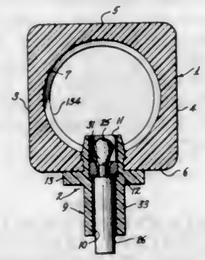
shaped structural elements, each having a planar wall portion serving as a common wall for adjacent compartments, and unitary male and female type connecting means on the inner portion thereof; whereby when assembled, the female type connecting means of one of said elements receives the male type connecting means of the element disposed on one side thereof, while the male type connecting means of said one element is received by the female type connecting means of the element disposed on the opposite side thereof. An entrance aperture in each of said hingedly and affixedly attached wall panels, said apertures being located so that an entrance to a nesting compartment is on each of the four sides of the birdhouse, thus assuring that the paths of arrival and departure of the birds to their respective nesting compartments do not interfere. In addition, where a multi-tiered arrangement is employed, the entrance apertures in the wall panels of the adjacent tiers on the same side of the house being offset with respect to each other to further ensure that paths of arrival and departure of the birds do not inerfere.

3,418,977

POULTRY WATERING DEVICES

James B. Godshalk, Yardley, Pa., assignor to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 30, 1966, Ser. No. 561,899
6 Claims. (Cl. 119—72.5)



A poultry watering device which includes a generally rigid valve body member insertable through a port in a relatively resilient elongated conduit through which water can flow. The valve body includes an outwardly directed flange and shoulder portion which cooperate with the material of the conduit to maintain the valve body within the port. A through passage extends axially through the valve body and a generally frusto-conical valve seat is provided in the intermediate portion of the valve body. A movable valve unit is provided within the through passage, including an elongated valve stem and a valve element having a frusto-conical surface at substantially the same angle as the valve seat. The axial length of the valve element surface substantially exceeds the axial length of the valve seat to assure that said surface can readily and continuously engage against said seat to block water flow from the conduit through the through passage. A lower member or weight attaches to the valve stem to normally hold the valve element in closed position, and advantageously, the valve element surface is formed of an elastomeric material and the valve seat is formed of a generally rigid material, so that any particle which gets trapped therebetween will be more or less enveloped by the elastomeric material to prevent leakage between the valve seat and the valve element. When a fowl wishes to drink from the valve, it can readily push the lower member upwardly with its beak to unseat the valve element and thereby permit water flow from the conduit and through the through passage.

3,418,978

DISTORTING CONTACT LENS FOR ANIMALS

Irvin L. Wise, Santa Rosa, and Lester M. Hall, Merced, Calif., assignors to Vision Control, Inc., a corporation of California

Filed Nov. 30, 1966, Ser. No. 597,973
9 Claims. (Cl. 119—97)



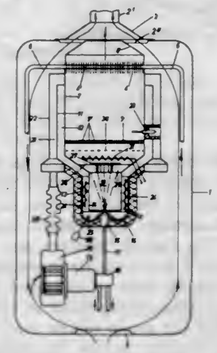
A distorting contact lens for animals, especially fowl, is injection-molded through a gate passing through a protrusion in the concave surface of the mold which forms the outwardly convex optic portion of the lens and a central depression to cause distortion at the optical axis, air being discharged from another part of the mold cavity. As thus formed, the margin of the lens is smooth. The lens includes an inwardly recessed optic portion to be spaced from the cornea to provide a chamber which receives the nictitating membrane which normally underlies the bearing portion.

3,418,979

INSTANTANEOUS WATER HEATER HEATED BY A VAPORISED OIL BURNER

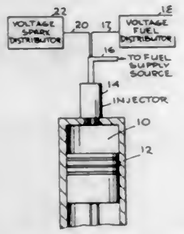
Horst Reichmann, Wuppertal-Elberfeld, Germany, assignor to Joh. Vaillant KG., Remscheid, Germany

Filed Sept. 6, 1967, Ser. No. 665,893
Claims priority, application Germany, Sept. 6, 1966, V 31,882; July 26, 1967, V 34,147
12 Claims. (Cl. 122—367)



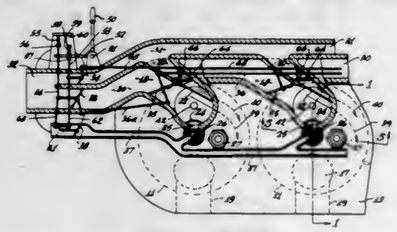
An instantaneous water heater including a vaporised oil burner in which combustion air for the burner is fed thereto through an annular space surrounding a heating shaft in which combustion takes place and in which are mounted water flow tubes associated with a set of fins, the passage of the air through the annular space providing both preheating of the air and cooling of the heating shaft wall.

3,418,980
FUEL INJECTOR-IGNITOR SYSTEM FOR INTERNAL COMBUSTION ENGINES
Glendon M. Benson, Danville, Calif., assignor to Physics International Company, San Leandro, Calif., a corporation of California
Original application Sept. 1 1965, Ser. No. 484,404. Divided and this application May 11, 1967, Ser. No. 649,397
11 Claims. (Cl. 123—32)



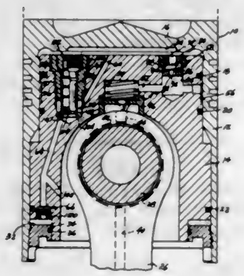
A pump made of piezoelectric material is provided suitable for use as a fuel injector and which has structural provisions to additionally function as a spark plug, if required.

3,418,981
INTERNAL COMBUSTION CHAMBER AND PROCESS UTILIZING A DIFFUSED MIXTURE AND AUXILIARY AIR
Ernest A. von Seggern, 1051 E. Angeleno, Burbank, Calif. 91501, and Henry E. von Seggern, Rte. 2, Box 1910, Escondido, Calif. 92025
Continuation-in-part of application Ser. No. 601,480 Dec. 13, 1966. This application Nov. 14, 1967, Ser. No. 682,942
10 Claims. (Cl. 123—75)



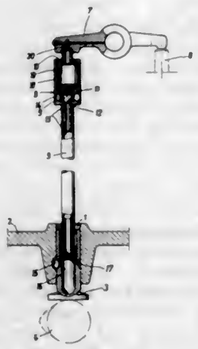
An engine of the spark ignition type, with throttled and carbureted fuel supply, is provided in which heated auxiliary air is added to the combustion substantially during the time of maximum temperature and pressure in the engine cycle. The fuel-air mixture and the auxiliary air are held separately in the engine in stratified and adjoining relationship from the time of induction until ignition, and after ignition a substantial portion of the fuel-air mixture is burned before the air is mixed into the burning mixture. The fuel mixture is also stratified with respect to residual exhaust gases. Means for obtaining and maintaining stratification include: variable flow restricting and velocity increasing means in the induction system in close proximity to the intake valve; flow directing means to produce an organized circulation of fuel-air mixture about the length axis of the cylinder during the intake and compression cycles; means for independently introducing auxiliary air along the axis of circulation; means for concentrating the fuel mixture just prior to ignition; means for holding said fuel-air mixture and said auxiliary air separate for a brief period after ignition; and means for mixing said auxiliary air with said ignited fuel-air mixture at about the time of maximum temperature and pressure in the combustion chamber.

3,418,982
VARIABLE COMPRESSION RATIO PISTON ASSEMBLY
William J. Waugaman, Grosse Pointe Farms, Mich., assignor to Continental Aviation Engineering Corporation, a corporation of Virginia
Filed July 20, 1967, Ser. No. 654,804
8 Claims. (Cl. 123—78)



A two-part variable compression ratio piston is provided with an upper and a lower variable volume chamber adapted to contain an incompressible fluid such as oil from the lubrication system of the engine and interconnected to automatically regulate the compression ratio of the engine to maintain a predetermined maximum combustion chamber pressure by moving one of the parts relative to the other.

3,418,983
AUTOMATICALLY HYDRAULICALLY ADJUSTING PLAY-EQUALIZATION ELEMENT FOR THE VALVE CONTROL IN PISTON ENGINES
Hans-Jürgen Sossna, Ingolstadt, Germany, assignor to Motomak Motorenbau Maschinen- und Werkzeugfabrik, Konstruktionen G.m.b.H., Ingolstadt (Danube), Germany, a corporation of Germany
Filed Oct. 6, 1966, Ser. No. 584,711
Claims priority, application Germany, Oct. 7, 1965, M 66,871
2 Claims. (Cl. 123—90)

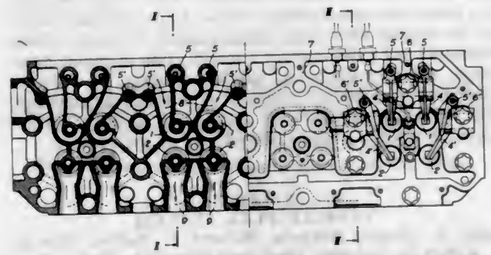


An automatically hydraulically adjusting play-equalization element for valve control in piston engines, which element consists of two longitudinally slidable telescopically

members, one of which cooperates with the pushrod and the other cooperates with the valve rocker, the two members enclosing between them a pressure chamber connected by means of a check valve with an antechamber which is provided with pressure oil flowing from the end of the hollow pushrod through the said pushrod to the valve rocker. A leakage duct is provided at the telescopic face of the members to permit the passage of leaking oil to circumvent the upper wall of the pressure chamber in order to lubricate the valve rocker.

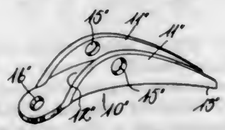
These play-equalization elements act to eliminate the free motion play occurring in the valve control rods which, for example, can develop due to abrasion or heat expansion. The action of this type of play-equalization element consists in that the telescoped parts forming the play equalization element are disposed in the valve control rods in a longitudinally slidable, counteracting manner. Their automatic, hydraulic adjustment to a free valve play of zero is achieved in that oil is supplied between the two parts forming the play-equalization elements, particularly oil from the circulation of the lubricant for the engine and the pressure oil travels through a check valve from the antechamber and forces the two element members apart until all free motion in the control rods is equalized. When the pressure chamber formed by these two members is completely filled with oil, an equalization element results, which forms a rigid coupling, which, however, is capable at any time of equalizing any degree of play occurring in the pushrods.

3,418,984
INTERNAL COMBUSTION ENGINE
Othmar Skatsche, Graz, Austria, assignor to Hans List, Graz, Austria
Filed Dec. 20, 1966, Ser. No. 603,276
Claims priority, application Austria, Oct. 12, 1966, A 9,569/66
3 Claims. (Cl. 123—90)



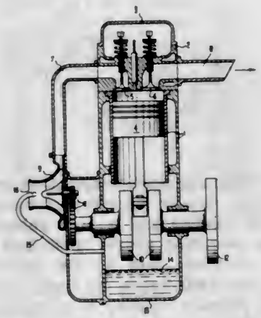
An internal combustion engine having two intake valves and two exhaust valves for each cylinder arranged in a row along the side of the engine and having a camshaft for operating the valves with separate cams for each valve and a push rod and rocker arm for each valve actuated each by one cam of the camshaft.

3,418,985
ROCKER ARM FOR INTERNAL COMBUSTION ENGINES
Kazuo Hirose. 9 Tajima, Urawa-shi, Saitama-ken, Japan
Filed Sept. 1, 1967, Ser. No. 665,705
1 Claim. (Cl. 123—90)



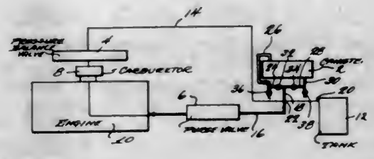
A valve rocker arm for internal combustion engines formed from a single stamped sheet of metal having a base of a uniform arc from end to end with a pair of parallel side walls extending upwardly from one end of the base, and having bearing apertures formed in the side walls adjacent the apogee of the arc of the side walls, with a threaded receiving bore formed in the base extension of the side walls.

3,418,986
METHOD AND APPARATUS FOR PREVENTING INLET VALVE WEAR OF SUPERCHARGED INTERNAL COMBUSTION ENGINES
Hans O. Scherenberg Stuttgart-Heumaden, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 25, 1966, Ser. No. 530,032
Claims priority, application Germany, Feb. 26, 1965, D 46,619
5 Claims. (Cl. 123—119)



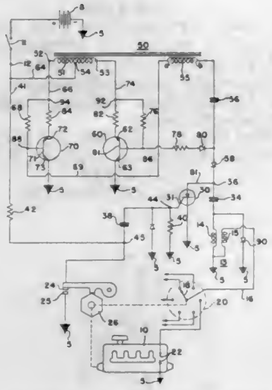
A method and apparatus for preventing the impact wear of the inlet valve in supercharged internal combustion engines equipped with poppet valves. Oil dispersed in the air of either the crankcase or cylinder head chamber containing the valve operating mechanisms is connected to the inlet of the supercharger, the supercharger pressure line or immediately adjacent to the inlet poppet valve to coat the valve and prevent wear. A small blower driven by either the cam shaft or crankshaft may be provided to move the air and dispersed oil therein.

3,418,987
CO-CURRENT PURGE
George R. Stoneburner, Coraopolis, Pa., assignor to Pittsburgh Activated Carbon Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 27, 1967, Ser. No. 656,387
8 Claims. (Cl. 123—136)



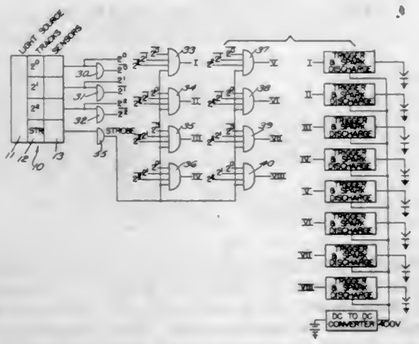
An evaporative loss control device for automobiles is modified to provide an initial air purge in a co-current direct for a short time during which the hydrocarbon is redistributed in the adsorbent bed. Then the purge direction is changed to counter-current direction for the remainder of the purge cycle. This process gives a more uniform desorption than an all counter-current purge. The preferred adsorbent is activated carbon.

3,418,988
IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINES
Dale K. Lewis and Ora R. Hudson, Santa Barbara, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 27, 1966, Ser. No. 568,174
7 Claims. (Cl. 123—148)



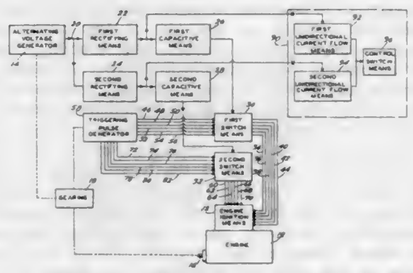
A capacitor discharge ignition system including an ignition capacitor, a step-up transformer having a center tapped primary winding and a high voltage secondary winding and a switching silicon controlled rectifier for establishing a discharge path for the ignition capacitor through the primary winding of the ignition coil. The center tap of the primary winding is connected to battery potential and the end terminals thereof are connected to ground through respective normally "off" transistors. In response to current flow from the battery through the switching silicon controlled rectifier as it is switched conductive in timed relationship with the engine, one of these transistors is biased conductive to complete an energizing circuit for one-half of the center tapped primary winding. The magnetic flux produced by this current flow induces a high potential in the secondary winding of the transformer for charging the ignition capacitor.

3,418,989
ELECTRONIC IGNITION SYSTEM
Harvey F. Silverman, 101 N. Broadway, East Providence, R.I. 02916
Filed May 17, 1967, Ser. No. 639,116
2 Claims. (Cl. 123—148)



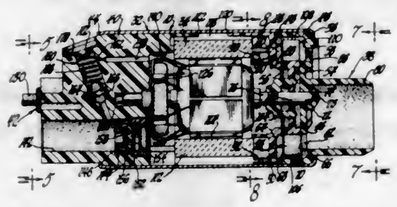
A position encoder feeds a gate decoding circuit which has as an output a set of timed and distributed low level pulses. These pulses feed, for example, a switching circuit whereby a high energy voltage pulse is induced in the secondary of the transformer at the same repetition that rate as the timed and distributed low level pulses.

3,418,990
IGNITION SYSTEM ISOLATION CIRCUIT FOR INTERNAL COMBUSTION ENGINES AND THE LIKE
Albert W. Lindell, Jr., Columbus, Miss., assignor to American Bosch Arma Corporation, Columbus, Miss., a corporation of New York
Filed June 1, 1967, Ser. No. 642,952
11 Claims. (Cl. 123—148)



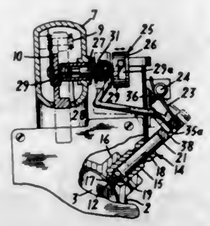
An ignition system isolation circuit for internal combustion engines employing means for generating pulses and at least two capacitive means charged by the pulses, the capacitive means being connected to engine fuel ignition means by switch means, which are actuated for permitting discharging of the capacitive means in synchronism with engine operation. The means for generating pulses for charging the two capacitive means is connected to control switches by diodes to isolate the two capacitive means from one another while connecting each capacitive means to common control switches. The control switches are actuatable to complete a circuit to provide shut down of the engine when any control switch is closed, either manually or by detection of a malfunction in engine operation. Capacity-discharge ignition systems on different engines are connected together by a diode arrangement for providing simultaneous shut down through control switches upon a malfunction of any of the engines.

3,418,991
VEHICLE FUEL SYSTEM
John E. Shultz, Davison, Richard P. Ballou, Howell, Robert B. Gelenius, Flint, and Harold A. Haven, Fenton, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 12, 1967, Ser. No. 645,150
25 Claims. (Cl. 123—179)



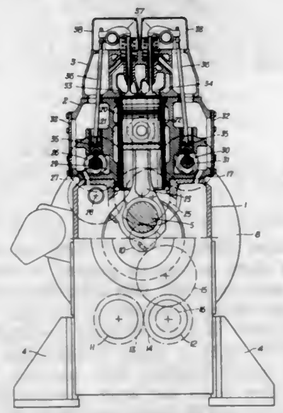
A vehicle fuel system incorporating a fuel tank suspended fuel pump assembly having a peripheral fuel pump and a permanent magnet DC motor of the disk commutator type coaxially aligned within an elongated housing. The housing and a fuel level sender unit are both suspended by an outlet conduit from a tank access opening so that the peripheral pump's inlet is near and the housing's longitudinal axis is aligned with the tank bottom. The outlet conduit serves also as a ground conductor both for the motor operating circuit and for the sending unit.

3,418,992
DECOMPRESSION CONTROL FOR INTERNAL COMBUSTION ENGINE
Albert E. Anderson, Greenwich, Albert K. Newman, Noroton Chris Schou, Greenwich, and James A. Ransom, Byram, Conn., and Walter Gorski, Armonk, N.Y., assignors to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed July 19, 1967, Ser. No. 654,446
10 Claims. (Cl. 123—182)



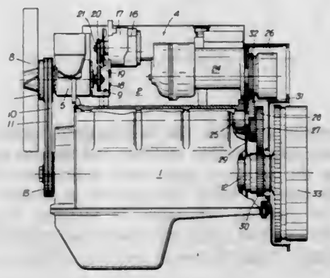
To facilitate starting, an internal combustion engine is provided with a decompression port located at a selected distance from the top of the cylinder so as to decrease compression during cranking of the engine. The port is controlled by a valve which is normally closed and which preferably comprises a ball shaped valve member pressed against an annular valve seat. A unitary locking element holds the engine throttle control member in selected position for starting and also holds the decompression valve open. As soon as the engine starts, actuation of the throttle control member releases the locking element and thereby results in the automatic closing of the decompression valve.

3,418,993
SINGLE-CYLINDER EXPERIMENTAL ENGINE
Andreas Scheiterlein and Othmar Skatsche, Graz, Austria, assignors to Hans List, Graz, Austria
Filed Apr. 12, 1967, Ser. No. 630,413
Claims priority, application Austria, Apr. 20, 1966, A 3,735/66
4 Claims. (Cl. 123—195)



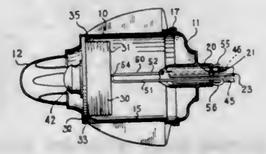
A single-cylinder internal-combustion-engine as an experimental engine having a crankshaft and case with the case carrying an interchangeable cylinder block and head. The crankcase has bearing supports and a camshaft is mounted in any one of the bearing supports. An ignition device is provided with a drive shaft mounted selectively in any one of the bearing supports and at least one drive shaft is selectively located in any one of the bearing supports with at least one drive shaft provided for an auxiliary machine.

3,418,994
INTERNAL COMBUSTION ENGINE WITH CYLINDERS ARRANGED IN V-CONFIGURATION
Fritz Freyn, Graz, Austria, assignor to Hans List, Graz, Austria
Filed June 13, 1967, Ser. No. 645,678
Claims priority, application Austria, June 23, 1966, A 6,014/66
1 Claim. (Cl. 123—195)



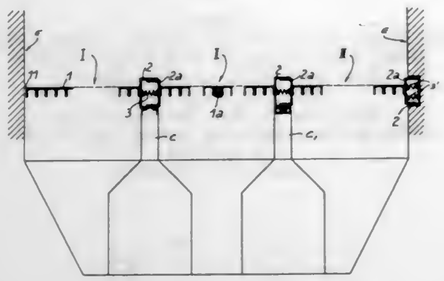
An internal combustion engine with cylinders arranged in V-configuration and having a plurality of auxiliary machines located in the V-space between the cylinders, with a first group of such machines forming a structural unit and driven by a belt from the front end of the crankshaft and a second group of auxiliary machines located in the V-space and driven by a gear drive from the rear end of the crankshaft.

3,418,995
NOISEMAKING PROJECTILE TOY
Isaac Heller, 2080 Arrowood Drive, Scotch Plains, N.J. 07076
Filed Feb. 11, 1965, Ser. No. 431,838
10 Claims. (Cl. 124—27)



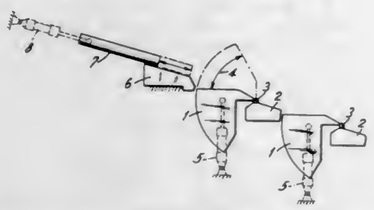
1. A noisemaking projectile to be mounted upon and fired from a firing device and capable of creating noises after projection therefrom, said projectile including an elongated projectile body, said body having a longitudinal axial bore formed therein, an air-actuated bellows-type noisemaker disposed within said axial bore, a first position of said air-actuated noisemaker, a second position of said air-actuated noisemaker, said second position beng the normal position thereof, a plunger means associated with said air-actuated noisemaker for moving said air-actuated noisemaker from said second to said first position, said means being positioned so that it presses against said firing device and thereby to move said air-actuated noisemaker from said second position to said first position when said projectile is mounted upon said firing device.

3,418,996
INDUSTRIAL FURNACE
Johannes Josef Martin, Montsalvatstr. 14, Munich 23, Germany
Filed Feb. 28, 1967, Ser. No. 619,276
15 Claims. (Cl. 126—152)



A composite grate for use in industrial furnaces, comprising relatively movable sections and springs or weights for urging the sections apart and against an enclosure, such as the furnace walls. The springs or weights yield in response to thermal expansion of sections. By tending to move the sections apart, the springs or weights prevent the formation of gaps between and around the sections of the grate.

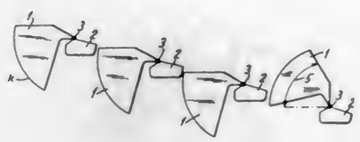
3,418,997
REFUSE BURNING GRATE PARTICULARLY DESIGNED FOR THE COMBUSTION OF WET REFUSE
Richard Holstein, Denkendorf, and Herbert Voigt, Esslingen, Germany, assignors to Haniel & Lueg G.m.b.H., Dusseldorf-Grafenberg, Germany
Filed Mar. 16, 1967, Ser. No. 623,610
Claims priority, application Germany, Mar. 16, 1966, H 58,816
8 Claims. (Cl. 126—176)



A refuse burning grate is divided into a pre-drying zone, a main combustion zone and a burning-out zone. The feeding zone includes one or more feed sections each having a rectilinearly reciprocable pusher. The main combustion zone includes plural oscillatable grate sections arranged serially in the direction of fuel conveyance, and stationary bridging sections may be interposed between the oscillatable grate section. The bridging sections may also be mounted for movement relative to the oscillatable grate sections, being spring biased so as to move away from the associated grate section to release any jamming.

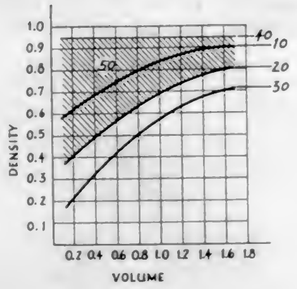
The burning-out zone following the main burning zone may be provided with resiliently biased bridging grate sections arranged between the oscillatable grate sections in this zone. As an additional feature, the fuel feed zone may include at least one feed section including a pusher which is rectilinearly reciprocable, arranged before the pre-drying zone. The pre-drying zone, including at least one feed section, may also serve as a fuel feed zone.

3,418,998
COMBUSTION GRATE PARTICULARLY DESIGNED FOR BURNING REFUSE SUCH AS GARBAGE
Richard Holstein, Denkendorf, and Herbert Voigt, Esslingen, Germany, assignors to Haniel & Lueg G.m.b.H., Dusseldorf-Grafenberg, Germany
Filed Mar. 16, 1967, Ser. No. 623,741
Claims priority, application Germany, Mar. 16, 1966, H 58,815
5 Claims. (Cl. 126—176)



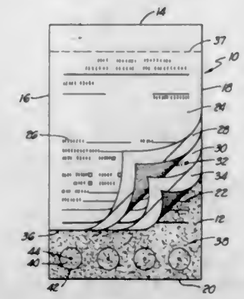
A combustion grate, particularly designed for burning refuse, including garbage, includes relatively oscillatable grate sections arranged in series in the direction of fuel conveyance and each having a circular sector profile converging to a narrow restricting edge. The axis of oscillation of each section is coincident with the narrow restricting edge and forms the axis of cylindrical trunnions or the like oscillatably supporting the section. This axis, and the narrow constricting edge, are contiguous with the succeeding grate section so that there is no relative movement between each grate section, at its narrow restricting edge, and the surface of the suceeding grate section.

3,418,999
METHOD OF SWALLOWING A PILL
Donald W. Davis, 7038 N. Beach Drive, Milwaukee, Wis. 53217
Filed Feb. 12, 1964, Ser. No. 344,413
3 Claims. (Cl. 128—1)



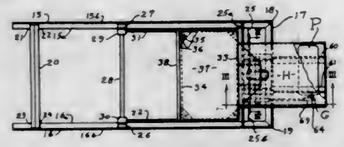
The invention relates to overcoming the difficulty experienced by some persons of gagging or choking while swallowing medicinal pills. This difficulty is overcome by providing pills having a density of less than 1.0 so that such pill will tend to float on water. In swallowing such pill the person takes a single swallowable amount of water in the mouth together with such pill, keeping the lips closed, then bows the head downwardly and forwardly while keeping the water and pill in the mouth, and then easily swallows same while the head is held in such downwardly bowed position without experiencing gagging or choking.

3,419,000
CARD FOR MEDICAL TESTING AND METHOD OF MAKING THE SAME
Robert E. Phillips, P.O. Box 1102, Studio City, Calif. 91604
Filed Oct. 4, 1965, Ser. No. 492,677
8 Claims. (Cl. 128—2)



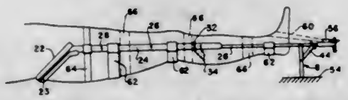
A card for medical testing is disclosed which is formed of an absorbent paper. The card has a line of compressed and charred card material defining an area and a hole for sighting purposes located within the area. During use the hole is employed in locating the area with respect to a blood source so that the area may be applied to it. Upon such application blood is absorbed by the card material and the line inhibits the migration of the blood out of the area.

3,419,001
MOTOR OPERATED EXERCISING DEVICE FOR THE FEET
James F. Woods, R.R. 1, Peck, Kans. 67120
Filed June 30, 1965, Ser. No. 468,296
4 Claims. (Cl. 128—25)



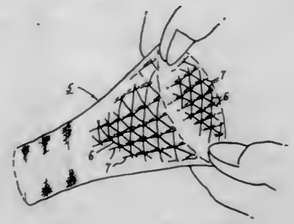
A power driven device for exercising the feet and having a base member with a pair of foot supporting elements pivotally mounted at one end and resting on a pair of cams at the other end which cams are individually adjustable about their axes. The cams are rotated by power means to raise and lower the foot supporting elements.

3,419,002
TRACTION DEVICE
Carmen Santosus, Sea Cliff, N.Y., assignor to Pre-Cast Safety Splint, Inc., Sea Cliff, N.Y., a corporation of New York
Filed Dec. 13, 1965, Ser. No. 513,368
9 Claims. (Cl. 128—85)



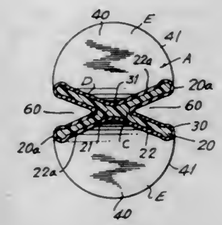
A splint for mending broken bones or limbs which includes a pair of extensible side arms which are connected at one end by an adjustable arcuate member and at the other end by a stanchion member, the arcuate member made of a pair of telescoping tubular members with tightening means to maintain the two members at an adjustable set position, the arcuate member being removably enclosed within a padded casing to enable its removal.

3,419,003
STRETCH BANDAGE
John Krauss, Jamaica Estates, and Richard J. Barbu, Lindenhurst, N.Y., assignors to Markbar Corporation, Garden City, N.Y., a corporation of New York
Filed Oct. 26, 1966, Ser. No. 594,349
3 Claims. (Cl. 128—157)



1. A stretch bandage comprising a fabric in tubular form, said fabric having circumferential threads with elastic cores and loosely woven chain threads wrapped on said circumferential threads and directed longitudinally of said bandage, said fabric being universally stretchable.

3,419,004
RESPIRATORY DEVICE
Robert A. Berman, 501 Cedar Hill Road, Far Rockaway, N.Y. 11691
Filed Aug. 31, 1966, Ser. No. 576,334
4 Claims. (Cl. 128—208)



1. A respiratory device for insertion in the mouth and pharynx, comprising a curved, elongated, extruded plastic body of flat X-shaped cross-section, with beaded ends and a telescoping outer portion having laterally extending means contacting the lips.

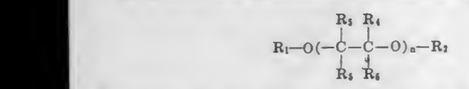
3,419,005
APPLICATOR TUBE
Albert W. Lewing, Monson, Mass.; Third National Bank of Hampden County administrator with the will annexed of the estate of said Albert W. Lewing, deceased, assignor to Tampax Incorporated, a corporation of Delaware
No Drawing. Filed Apr. 19, 1966, Ser. No. 543,508
12 Claims. (Cl. 128—263)

A paper catamenial tampon applicator tube having a surfactant wetting agent in an amount in the order of

0.1% to 1.2% by weight of the tube and distributed throughout the tube in the paper and/or the glue of the tube. Through the use of an unexpectedly small addition of a wetting agent, the applicator tube is readily wettable to soften and delaminate into a condition effective to facilitate disposal in a toilet. The addition of mineral filler to bring the specific gravity of the tube above 1 enhances the effectiveness of this small amount of wetting agent.

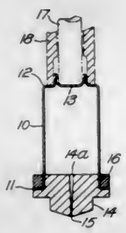
3,419,006
NOVEL DRESSING AND USE THEREOF
Paul A. King, Warwick, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 8, 1966, Ser. No. 570,773
21 Claims. (Cl. 128—268)

1. A novel transparent dressing comprised of a layer of a hydrophilic polymeric gel, said gel being comprised of at least one crosslinked polymer of the formula:



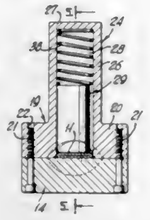
wherein R_1 and R_2 are selected from the group consisting of hydrogen, alkyl radicals and alkyl substituted aryl radicals, and wherein R_3 is hydrogen when R_4 is selected from the group consisting of hydrogen, methyl, phenyl and vinyl radicals, R_4 is hydrogen when R_3 is selected from the group consisting of hydrogen, methyl, phenyl and vinyl radicals, R_5 is hydrogen when R_6 is selected from the group consisting of hydrogen, methyl, phenyl and vinyl radicals, and R_6 is hydrogen when R_5 is selected from the group consisting of hydrogen, methyl, phenyl and vinyl radicals, and n is greater than one.

3,419,007
AMPOULE FOR USE WITH A NEEDLELESS HYPODERMIC INJECTOR
Douglas Stanley Love, Thornton Heath, Surrey, England, assignor to Express Injector Company Limited, Brighton, Sussex, England, a British company
Continuation-in-part of application Ser. No. 95,718, Mar. 14, 1961. This application Feb. 11, 1964, Ser. No. 344,150
Claims priority, application Great Britain, Feb. 18, 1963, 6,532/63; Jan. 31, 1964, 4,169/64
10 Claims. (Cl. 128—272)



An ampoule for use with a needleless hypodermic injector having: (1) a ductile, thin-walled metallic shell with a closed end and an open outwardly extending flanged outlet, (2) a plug inserted into said open shell outlet having a discharge orifice and an outwardly extending flange facing the corresponding flange of the shell and limiting entrance therein, and (3) a retaining ring fitting around the shell above the shell flange so that it grips the shell between ring and plug and makes it possible to introvert the shell by application of mechanical pressure.

3,419,008
MAGNETICALLY ACTUATED VALVE CLAMP FOR URETHRA CONTROL
Paul J. Plishner, 6 Manitou Court, Westport, Conn. 06880
Filed Feb. 24, 1966, Ser. No. 529,810
6 Claims. (Cl. 128—346)



An urethra control device comprises a base and a cylinder mounted on and confronting the base, the device being positioned with the base and cylinder on opposite sides of the urethra. A plunger having an elongated permanent magnet slideably engages the cylinder and is spring-urged toward the base normally to pinch or clamp the urethra to a closed position. A hand manipulated permanent magnet brought toward the cylinder attracts the plunger selectively to open the urethra.

3,419,009
VENTED SURGICAL DRAINAGE TUBE WITH FLUSHING PROTECTIVE VALVE
Richard E. Ericson, Barrington, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed May 9, 1966, Ser. No. 548,452
18 Claims. (Cl. 128—349)

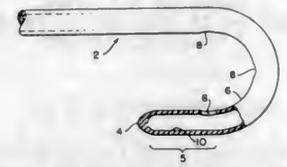


1. In a surgical drainage tube for use in conjunction with the draining of fluids from body cavities through a drainage channel in the tube, said tube having a first opening therein through which the fluid may pass into said channel and a second opening therein spaced from said first opening through which the fluid may pass from said channel, the improvement in combination therewith comprising an air channel communicating with the drainage channel, said air channel having an air filter and valve means positioned within said air channel, providing a passageway therethrough communicating with the drainage channel, said valve means capable of passing air therethrough from the filter to the drainage channel and preventing the passage of body fluids in the reverse direction from said channel to said filter.

3,419,010
CATHETER
Donald E. Williamson, Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed Jan. 17, 1966, Ser. No. 521,209
2 Claims. (Cl. 128—350)

A ventricular catheter which may be inserted into a position within the ventrical to conduct away fluid without clogging consists of a flexible, resilient tubular body

terminating in a tip portion which is itself normally curved in the shape of a hook, with drainage perforations situ-

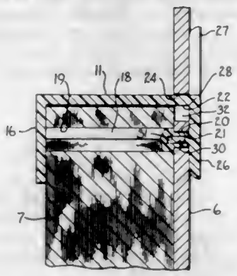


ated on the inside of the hook. A stylet, preferably of smaller diameter and having a roughened surface inserted into the hook causes it to straighten for insertion.

ERRATUM

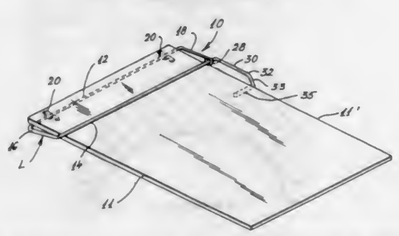
For Class 128—484 see:
Patent No. 3,419,895

3,419,011
CALENDAR PAD SECUREMENT MEANS
Harrison Coleman Norris, Pewaukee, Wis., assignor to Columbian Industries, Inc., a corporation of Wisconsin
Filed Jan. 16, 1967, Ser. No. 609,528
5 Claims. (Cl. 129—23)



A calendar pad is secured to a plate-like base by means of a canopy having top, side and front walls. Posts extend rearwardly from the front wall portions of the canopy through holes in the calendar pad to support the latter. The canopy is cantilevered on the base by hooks projecting from its rear edge through the base, and is locked to the base by tabs flatwise overlying the rear of the base and the rear ends of the posts and fastened to the posts.

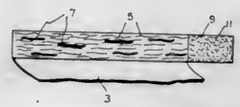
3,419,012
CLAMPING DEVICE
Glenn G. Stoddard, Oak Creek, Wis., assignor to Glenn G. Stoddard, Sydney M. Eisenberg, and Frank Marciniak, Milwaukee, Wis.
Filed Apr. 12, 1967, Ser. No. 630,427
1 Claim. (Cl. 129—35)



The disclosure describes a clamping device applied to clip board. The device includes a one-piece clamping member made of springy wire. The wire is formed into

generally rectangular looped configuration to define a lever, torsion bar and material retainer, torsion restrainers, keeper for the lever, support-bearing for the torsion bar and lever, and a tie bar-shaft. Support bearings are also provided for mounting the clamping member to a board.

3,419,013
SMOKING ARTICLE
Edward J. Calhoun, 578 Hunt Lane, Manhasset, N.Y. 11030, and Karoly G. Pinter, 1626 S. Jefferson Davis Parkway, New Orleans, La. 70125
Continuation-in-part of application Ser. No. 520,892, Jan. 17, 1966. This application Aug. 17, 1967, Ser. No. 661,282
The portion of the term of the patent subsequent to Apr. 25, 1984, has been disclaimed
8 Claims. (Cl. 131—15)

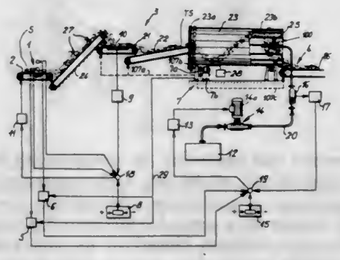


A cigarette or similar smoking article wherein a portion of the tobacco has been replaced by incorporating shreds of a velvet-like sheet of glass micro-fibers within the tobacco medium. The employment of the glass fiber shreds within the tobacco medium allows for a reduction of tars and nicotines in a proportion greater than the proportion of glass fibers which replaces the tobacco in the smoking article. Additionally, a mineral paper, e.g., fiber glass paper, is employed as the tubular casing in a cigarette or similar smoking article.

3,419,014
RECONSTITUTED TOBACCO
Raymond Joseph Moshy, Westport, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,573
8 Claims. (Cl. 131—17)

A reconstituted tobacco composition having 2,(4'-thiazolyl) benzimidazole as a fungicide.

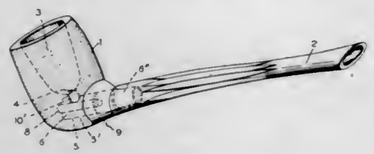
3,419,015
METHOD AND APPARATUS FOR MIXING ADDITIVES WITH TOBACCO
Waldemar Wochnowski, Hamburg, Germany, assignor to Hauni-Werke Korber & Co., K.G., Hamburg-Bergedorf, Germany
Filed Dec. 29, 1966, Ser. No. 605,899
Claims priority, application Germany, Jan. 14, 1966, H 58,240
20 Claims. (Cl. 131—138)



Method and apparatus for mixing tobacco particles with liquid additives, particularly with casing or flavor-

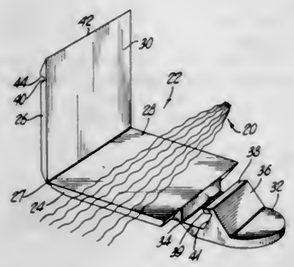
ing solutions. A tobacco stream is withdrawn from a fluctuating supply of tobacco particles at a lower first speed when the supply is depleted to the lower limit and at a higher second speed when the supply is replenished to the upper limit of a predetermined range. The quantity of tobacco in the supply is measured, and the result of such measurement is utilized to change the speed at which the stream is withdrawn as well as to regulate the admission of additives into successive increments of the travelling stream.

3,419,016
SMOKING PIPES
Oskar Gustav Adolf Lundblad, Juringe Alle 8, Segeltorp, Sweden
Filed Nov. 14, 1966, Ser. No. 600,683
8 Claims. (Cl. 131—225)



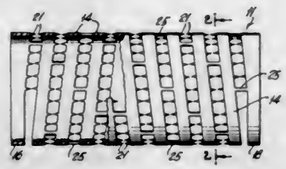
A pipe having a bowl and a stem connected to the bowl. The bowl has a smoke channel at the bottom thereof extending parallel to the longitudinal axis of the bowl and a hole extending at right angles to the channel. A smoke-guiding, elongated sleeve is positioned in the hole and is connected to the stem. The stem is provided with a smoke channel. An axially directed groove is provided in the wall of the hole and an axially directed guide and support member is on said sleeve to be inserted into said axially directed groove.

3,419,017
METHOD AND APPARATUS FOR STRAIGHTENING HAIR
Nathan L. Solomon, Englewood, N.J., and Samuel Steek, Wilmington, Del., assignors to Solo Products Corporation, Englewood, N.J., a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,664
4 Claims. (Cl. 132—7)



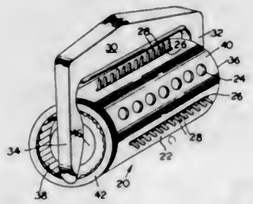
A method and apparatus for straightening human hair by treating strands of the hair with a softening agent and then applying a transverse compressive force to the treated strands by a press having hard flat surfaces. The press has two surfaces hinged at one end with a clamp arm pivotally mounted to apply a hair strand collapsing compressive force intermediate of the ends of the surfaces.

3,419,018
FLEXIBLE HAIR CURLING DEVICE
Nathan Solomon, P.O. Box 550, Englewood, N.J. 07631
Filed Oct. 23, 1965, Ser. No. 503,315
5 Claims. (Cl. 132—40)



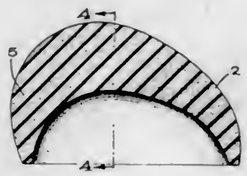
A longitudinally extendible one-piece plastic curler having a helical strand defining a cylindrical surface. A series of circumferentially spaced teeth extend longitudinally from the strand with their axes parallel to the axis of the curler. Each such tooth faces but is not joined to the consecutive helix for forming a yieldable curl supporting surface of the curler.

3,419,019
HAIR CURLERS
Ernest Hoffmann and Siegbert Otto Wagner, Omaha, Nebr., assignors to Rayette-Faberge, Inc., New York, N.Y., a corporation of Minnesota
Filed Dec. 6, 1965, Ser. No. 511,597
12 Claims. (Cl. 132—41)



A hair curling device, having an elongated generally cylindrical hollow outer body with comb teeth protruding therefrom and having improved structural components for selective protraction and retraction of the comb teeth. The comb teeth are arranged in apertures, extending through the hollow outer body, and the apertures and the comb teeth are parallel with the longitudinal axis of the device.

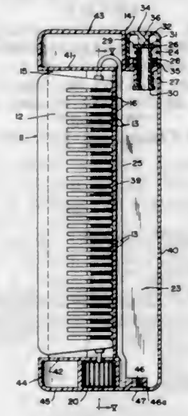
3,419,020
SUBSURFACE HAIR ELEVATOR
John L. Courtney, Brookfield, Wis. (17798 Overlook Circle, Lake Oswego, Oreg. 97034)
Filed June 9, 1967, Ser. No. 644,947
2 Claims. (Cl. 132—54)



A subsurface hair elevator comprising a caplike body of porous, non-slippable, lightweight material, the interior of which is formed to provide an elongated recess conform-

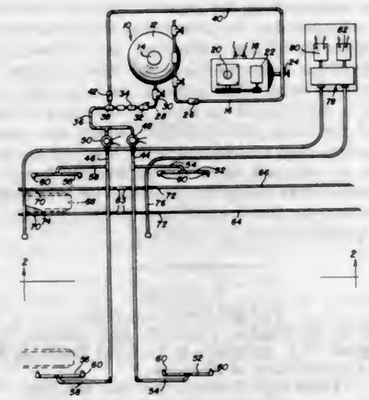
ing to the contour of a wearer's head, with the front wall portion of the elevator being thick and including an upwardly extending portion, tapered rearwardly to a back wall portion of less thickness; the thick front wall likewise tapering from the top downwardly to a marginal edge and the entire mass of material being readily penetrable throughout its structure by hair fasteners.

3,419,021
DEVICE FOR USE WITH A COMB
Dorothy Ann Ruffin, 1103 Stagecoach Road SW., Albuquerque, N. Mex. 87112
Filed May 23, 1966, Ser. No. 552,063
7 Claims. (Cl. 132—112)



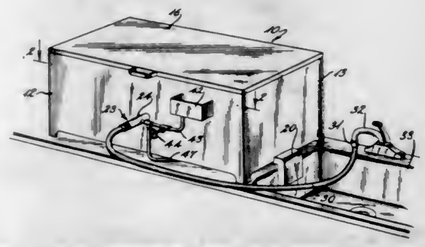
Device for use with a comb including a case into which a comb is inserted with manually operable means for controlling application of liquid to the teeth of the comb from a chamber disposed generally parallel to the comb.

3,419,022
TIRE SIDEWALL CLEANING MACHINE
Glen R. Youngren, Sr., and Glen R. Youngren, Jr., Galesburg, Ill., assignors to Sudzy's, Inc., a corporation of Illinois
Filed Aug. 3, 1966, Ser. No. 569,892
6 Claims. (Cl. 134—45)



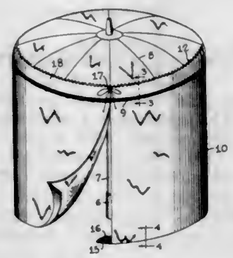
An assembly for disposition alongside the path of a wheel rolling over a support surface and including spray means with which the wheel is registrable, means operative to sense the presence of the wheel on the surface at a location spaced along the path from the point of registry of the wheel with the spray means and to actuate the spray means, after a predetermined delay, for a predetermined period of operation.

3,419,023
PORTABLE DISHWASHER
Joe M. Valdespino, 5023 Golf Club Parkway, Orlando, Fla. 32808
Filed Nov. 1, 1966, Ser. No. 591,178
3 Claims. (Cl. 134—101)



2. A dishwasher comprising a housing, means for supporting articles to be cleaned within said housing, header means mounted within said housing, a venturi type aspirator connected at one end to said header means and at the other end to a source of water under pressure, said aspirator having an inlet portion, a reduced throat and a discharge portion with an orifice providing communication between said discharge portion and the exterior of said aspirator, a reaction type rotor rotatably mounted on said header, means for discharging water from said header into said rotor means for discharging water from said rotor in a manner to cause rotation of said rotor, sump means in said housing, and conduit means operatively connecting said sump means with the orifice of said aspirator for recirculating water through the same.

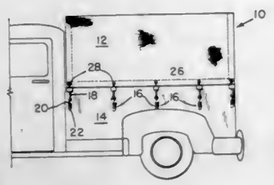
3,419,024
PORTABLE SHELTER
Bryan W. Nickerson, Jr., 200 Lore Ave., Hillcrest, Del. 19809
Filed Aug. 1, 1966, Ser. No. 569,507
7 Claims. (Cl. 135—2)



1. A shelter comprising, in combination, a support having a leg member and a branch portion mounted contiguous the top of said leg member, said branch portion including a periphery, a sheet-like apron hanging downwardly from said periphery, said apron having a top portion and a bottom portion, said top portion including a terminus, said terminus forming a perimeter smaller in

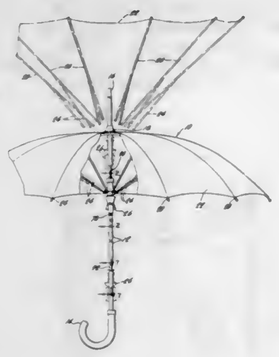
size than the size of the perimeter of the periphery of said branch portion whereby said top portion overlaps said periphery of said branch portion and is supported from the ground thereby, said apron and said branch portion coacting to provide a seal contiguous said overlap.

3,419,025
PROTECTIVE SLEEVE FOR TARPAULIN RIGGING
Brantley F. Kearns, 2227 S. Main St., High Point, N.C. 27263
Filed Dec. 13, 1966, Ser. No. 601,452
3 Claims. (Cl. 135—5)



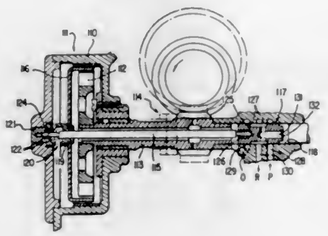
This invention relates to a protective sleeve for encapsulating and insulating rigging that is used to secure tarpaulins and the like in an article-covering position and preventing the rigging from rubbing or abrading directly against an exposed finished surface. The invention includes a novel attachment to the tarpaulin and a uniquely designed receiving slot through which rigging is releasably secured to a tarpaulin eyelet.

3,419,026
UMBRELLA
Wayne S. Evans, Jr., Huntingdon Valley, and Louis G. Tartaglia, Philadelphia, Pa., assignors to S. W. Evans & Sons, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 3, 1966, Ser. No. 531,402
7 Claims. (Cl. 135—20)



In a wind-proof umbrella including an umbrella shaft, a runner assembly having a bore extending therethrough so that it is slidable on the shaft and latch means on the shaft, the improvement comprising a localized deformation defining a non-yielding protrusion on the shaft whereby the maximum transverse dimension of the protrusion is greater than the cross section of the rest of the shaft, the protrusion adapted to create an increased frictional resistance between the runner assembly and the shaft. The localized protrusion is located above the latch means to signal the open position of the umbrella at which the runner assembly may be released to engage the latch. The runner assembly includes a runner body of tubular form made of an elastically deformable material having a collar portion having a bore slightly smaller than the largest transverse dimension of the shaft at the localized deformation, the main bore of the runner body being of a larger cross section to permit passage of the runner assembly thereover under extreme wind conditions thereby permitting reversal of the umbrella.

3,419,027
SPEED RESPONSIVE PRESSURE CONTROL DEVICE
Arwed von Koch, Stuttgart-Sonnenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 15, 1965, Ser. No. 432,626
Claims priority, application Germany, Feb. 20, 1964, D 43,683
16 Claims. (Cl. 137—47)

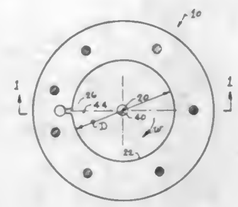


A pressure control slide valve assembly, especially for automatically-shifted motor vehicle transmissions, for producing a controlled pressure which varies linearly with the rotational speed, including a slide valve having a throttling surface, wherein the slide valve is acted upon by the control pressure itself and by a force which varies with the rotational speed, the latter being in the form of a torque of an eddy-current system, adjustable spring force provided to act in the same direction as the eddy-current induced torque to produce a minimum pressure at the slide valve or acting in a direction opposite to the torque to assure a response only above a minimum rotational speed, wherein the slide valve member itself or a sleeve surrounding the same is adapted to rotate and means are provided for converting the rotational movement imparted by the input into axial movement of a pushrod which activates the slide valve member, a further feature being that inclined surfaces are arranged between a bell-shaped member of the eddy-current system and the slide valve member, which are constructed as a one-way claw clutch, and roller bearings are arranged between the inclined surfaces still another feature of the present disclosure being the provision of a bearing member between the bell-shaped member of the eddy-current system and the slide valve member.

3,419,028
FLUID OSCILLATOR
Albertus E. Schmidlin, Caldwell, and Charles W. Bing, Irvington, N.J., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,210
5 Claims. (Cl. 137—81.5)

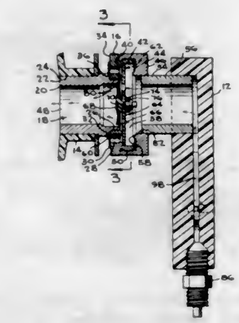
This invention provides a fluid oscillator comprising a peripheral wall having a longitudinal axis and having a radially inner surface with an inlet port facing radially

inwardly, and comprising a pair of end walls with respective axially inner faces together with said peripheral



wall forming a resonance cavity, and one of said end faces having a center portion with at least one outlet port facing axially inwardly.

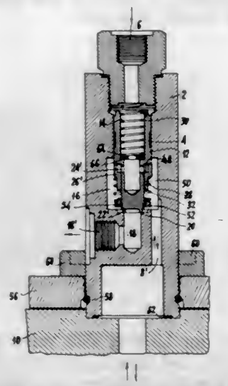
3,419,029
BREATHING VALVE ASSEMBLY
Henrik H. Straub, Mercer Island, Wash., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 27, 1967, Ser. No. 612,768
12 Claims. (Cl. 137—81.5)



A breathing valve assembly for use between a face mask and a fluid amplifier connected to a respirator which minimizes the expiration resistance, but provides a flow of expiration fluid to the fluid amplifier to prevent premature switching of the breathing into the mask until the completion of the expiration cycle.

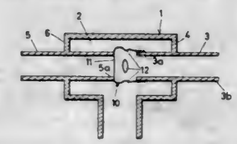
3,419,030
FAST EVACUATION VALVE
Jean Louis Gratzmuller, 66 Blvd. Maurice Barres, Neuilly-sur-Seine, France
Filed Nov. 8, 1965, Ser. No. 506,806
Claims priority, application France, Nov. 20, 1964, 995,682
5 Claims. (Cl. 137—102)

A fast evacuation valve for a hydraulic control jack wherein a chamber interposed in the jack feed conduit is sub-divided by a piston into first and second compartments connected to the pressure fluid inlet conduit and jack. An evacuation conduit communicates with the second compartment and an evacuation valve connected to the piston controls its orifice. The piston has passage means permitting communication between the compartments controlled by a non-return valve allowing fluid flow only from the supply to the jack. This latter valve is a ring concentric with the piston slidable on the ex-



terior of a portion between the piston head and evacuation valve.

3,419,031
BREATHING VALVE
Holger Hesse, Skovtoftebakken 19, Virum, Copenhagen, Denmark, and Frantz Hansen, Copenhagen, Denmark, said Hansen assignor to said Hesse
Filed Mar. 11, 1966, Ser. No. 533,639
Claims priority, application Great Britain, Mar. 15, 1965, 10,911/65; Apr. 21, 1965, 16,833/65
12 Claims. (Cl. 137—102)

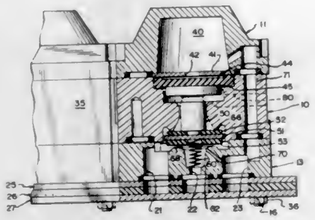


A breathing valve having a resilient valve element in which opposed inlet and outlet conduits terminate in mutually opposed spaced annular inlet and outlet seats. The valve element is a resiliency expansible hood in which an open end is provided. The valve element is sealingly attached around the inlet seat. Upon expansion of the hood a top portion of the valve element opposite the open end closingly contacts the outlet seat. At least one part is provided through the wall of the valve element outwardly of the top portion such that when the hood is expanded the part is closed and, when the hood is contracted, the part is opened.

3,419,032
DIFFERENTIATOR VALVE FOR FLUID LOGIC CIRCUITS
Karl A. Brandenberg, Hayward, Calif., assignor to Aro Corporation, a corporation of Ohio
Filed July 8, 1966, Ser. No. 563,747
6 Claims. (Cl. 137—102)

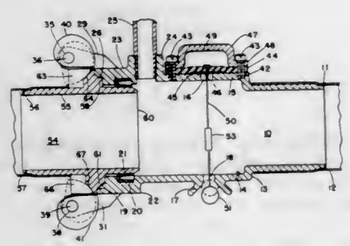
1. A pneumatic device for translating an input pressure pulse of a first duration into an output pressure pulse of shorter duration comprising, in combination:
- a housing provided with an inlet port, an outlet port, and an exhaust port,
- means for applying said input pulse to said input port,
- a three-way valve within said housing for providing a passage between said inlet port and said outlet port when said valve is in a first position and for providing a passage between said outlet port and said exhaust port when said valve is in a second position,
- an enlarged chamber within said housing,

a constricted passageway connecting said chamber and said inlet port for providing a measured fluid flow into said chamber whenever said input pressure pulse is applied to said inlet port,



spring means for holding said valve normally in said first position, and means responsive to the magnitude of pressure in said chamber for transferring said valve from said first position to said second position to terminate fluid flow from said inlet port to said outlet port and to vent said output port through said exhaust port to terminate the output pressure pulse.

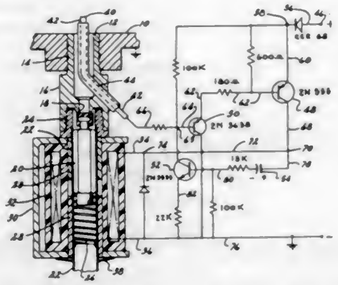
3,419,033
CLOSURE AND DRAINAGE VALVE
Elliot Shohan, 4828 Mountain View, San Bernardino, Calif.
Filed May 15, 1967, Ser. No. 638,260
11 Claims. (Cl. 137—107)



An automatic valve having a drainage outlet extending outside the valve body with a closure member seatable in the drainage outlet and having a pressure responsive element that is located in the body diametrically opposite the drainage outlet. The closure member is connected to the pressure responsive element by a flexible suspension that also supports a flow obstruction unit within the valve body. The flow obstruction unit becomes shifted when water flows through the valve body pulling the closure member into seated position and when pressure develops in the valve body the pressure responsive element moves outwardly holding the closure member in seated position. Turning off the water at the source terminates its flow and the pressure ceases to act on the pressure responsive element causing the closure member to unseat and opening the drainage outlet.

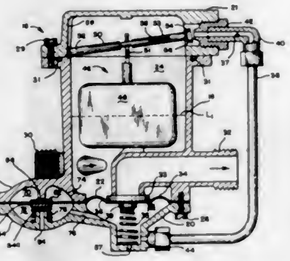
3,419,034
AUTOMATIC LIQUID DRAIN MECHANISM
Atlee S. Hart, 22140 Stratford, Oak Park, Mich. 48237
Filed May 2, 1966, Ser. No. 546,899
3 Claims. (Cl. 137—172)

A device for automatically drawing an impurity from a tank such as water from a fuel oil tank. A threaded fitting screwed into a drain opening in the tank carries a solenoid operated drain valve and an electrical probe which extends through the fitting into the tank. An elec-



trical circuit actuates the valve to drain the impurity in in response to sensing of the impurity by an uninsulated tip portion of the probe located in the tank.

3,419,035
AIR ELIMINATION DEVICE FOR LIQUID TRANSPORT SYSTEM
Marvin E. Hartz, Milwaukee, Wis., assignor to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 25, 1965, Ser. No. 458,700
9 Claims. (Cl. 137—174)

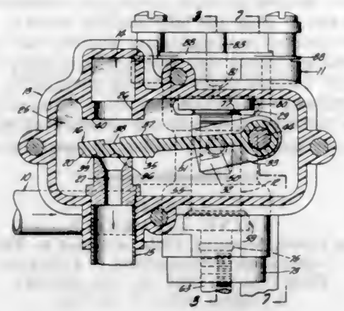


This disclosure relates to an eliminator which will pass system flow to a suitable metering device while exhausting air, or other unwanted media, from the system prior to passage through the metering device. A valve arrangement is provided which interrupts system flow in response to the presence of a predetermined quantity of air in the system and prevents continuance of system flow until the air has been adequately exhausted. The valve arrangement is supported in the main eliminator housing. In accordance with a further aspect of this disclosure, a high speed exhaust valve arrangement is included which becomes operative when the amount of air to be exhausted is greater than can be readily handled by the normal exhaust provisions. The high speed exhaust valve arrangement responds to the buildup in pressure at the normal exhaust which occurs when a greater than normal amount of air is to be exhausted.

3,419,036
VALVE ASSEMBLY
Irving A. Ward, Hacienda Heights, Calif., assignor to Modern Faucet Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Jan. 18, 1967, Ser. No. 610,167
12 Claims. (Cl. 137—218)

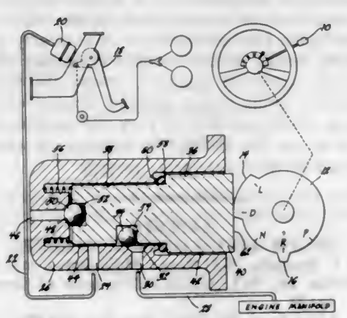
A valve assembly for use in a water closet including a shutoff valve for turning on and off the water from a water supply in response to the position of the water

closet float mechanism, and a transfer mechanism for diverting water from the shutoff valve to outlets for



respectively supplying water to the bowl and the tank of the water closet.

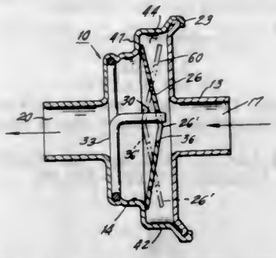
3,419,037
POWER PARKING BRAKE VACUUM RELEASE SWITCH
Thomas J. Griffen, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 504,025
3 Claims. (Cl. 137—351)



A valve for controlling the release of a vehicle parking brake is actuated by the selection of a transmission mode consistent with vehicle movement. The parking brake cannot be latched when such a mode is selected, but can be operated to impede vehicle movement.

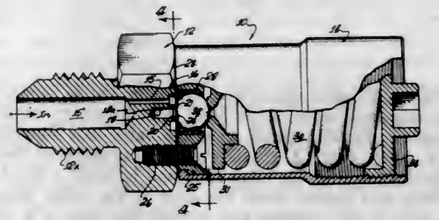
3,419,038
FLOW CONTROLLER
John H. Andresen, Jr., Rocky Point, N.J., assignor to John F. Baier, New York, N.Y.
Continuation-in-part of application Ser. No. 457,786, May 21, 1965. This application Oct. 19, 1966, Ser. No. 587,747
7 Claims. (Cl. 137—504)

1. A flow controller comprising a housing having an inlet and an outlet port and a controller element disposed intermediate said ports transversely of flow path therebetween, said controller element comprising a flexible member having a creased portion, said housing having a flange, said member having a marginal rim to engage said flange and to be maintained thereagainst by fluid pressure of predetermined degree while permitting flow between said marginal rim and said flange up to a pressure



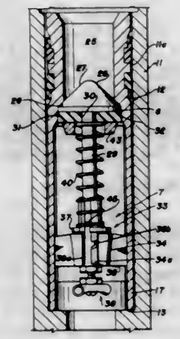
such that said marginal rim is pressed against said flange with sufficient force to close off said flow.

3,419,039
DIAPHRAGM RELIEF VALVE
Carl Eugene Monnich, Granada Hills, Calif., assignor to Sterer Engineering and Manufacturing Company, Los Angeles, Calif., a corporation of California
Filed Sept. 16, 1966, Ser. No. 580,089
2 Claims. (Cl. 137—510)



A high pressure relief valve has an annular valve seat around the inlet which is closed by contact with a metal diaphragm. Closing pressure from a spring is transmitted to the diaphragm by a novel arrangement which insures equalization of closing force and full seating of the diaphragm around the valve seat. All parts are metal, and the valve is adapted to operate at high pressures and high temperatures.

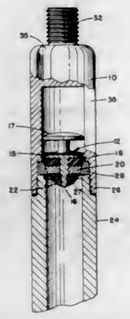
3,419,040
DRILL PIPE VALVE HAVING MEANS FOR RENDERING IT TEMPORARILY INOPERATIVE
Edward J. Thibodeaux, 2532 Fawnwood Road, Marrero, La. 70072
Filed Dec. 27, 1966, Ser. No. 604,934
3 Claims. (Cl. 137—515.7)



A drill pipe valve having an arrangement so that the valve may be temporarily locked in position away from

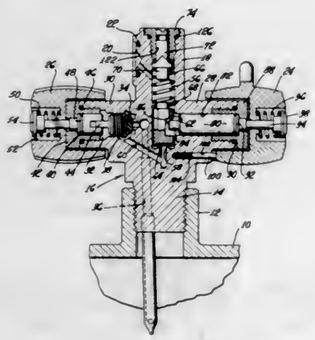
its seat as the drill pipe is lowered into the well bore to enable the drilling fluid to flow past the valve and fill successive joints of pipe as they are added into the well string and then lowered into the well bore.

3,419,041
PUMP VALVE
Earl R. Jennings, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,690
5 Claims. (Cl. 137—533.19)



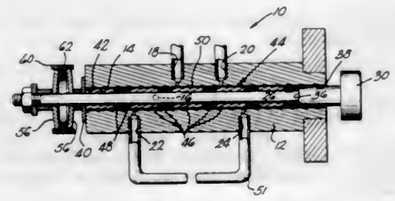
This application discloses a valve for use in pumps in pumping sand-laden fluids from well bores. It includes a single-surfaced, tapered, ring-like valve seat supported by a pump cage. A special valve is adapted to freely reciprocate within the valve cage and includes a disc-like resilient seal placed about the stem of the valve. Placed adjacent to the resilient seal around the stem is a hard seal. The outer peripheral surfaces of the resilient seal and the hard seal mate with the interior tapered surface of the valve seat. The resilient seal is of a greater diameter than the hard seal. If the hard seal is prevented from sealing, differential pressure across the valve compresses the resilient seal to form a fluid-tight seal with the valve seat.

3,419,042
RESERVE VALVE MECHANISM
Robert E. Roberts, Torrance, Calif., assignor to Sports Industries, Inc., Gardena, Calif., a corporation of California
Filed Nov. 14, 1966, Ser. No. 594,224
6 Claims. (Cl. 137—613)



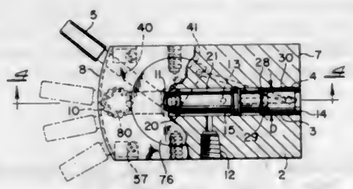
1. In self-contained breathing apparatus a reserve valve mechanism having an inlet cooperable with a supply tank, and having an outlet; means operative upon a reduction in pressure of the supply to interpose an operative restriction between said inlet and said outlet to provide a reserve signal to the user of the near exhaust of breathable gases; manual override means for removing said restriction and to place the inlet and the outlet in substantially unrestricted communication whereby the remainder of breathable gases in said supply tank is freely available to the user; and means for adjusting the value of the pressure reduction at which said restriction becomes operative whereby the user preselects the quantity of breathable gases in said supply tank following the reserve signal.

3,419,043
VALVE APPARATUS
Theodore Foote, Madeira, Ohio, assignor to The Bendix Corporation, a corporation of Delaware
Filed Dec. 15, 1966, Ser. No. 602,023
5 Claims. (Cl. 137—625.48



A valve apparatus is disclosed in which the stem sleeves and O-rings are positioned on a reciprocatable rod between a fixed abutment and an abutment which is movable towards the fixed abutment so as to axially compress the O-rings. Spring means on the rod applies a force to the movable abutment urging it toward the fixed abutment, and the spring means includes temperature responsive means which operates to vary the magnitude of the spring force on the O-rings in response to changes in valve temperature.

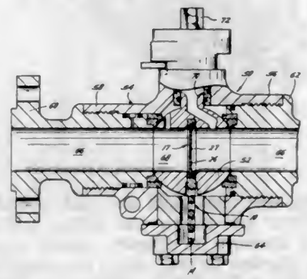
3,419,044
BATH LIFT CONTROL VALVE
William A. Daniels, 7031 Seven Hills Drive, and William A. Daniels, Jr., 942 Simich Drive, both of Seven Hills, Ohio 44131
Filed Sept. 29, 1965, Ser. No. 491,080
6 Claims. (Cl. 137—625.69)



A flow control valve including a housing having a stepped bore intersected axially therealong by a plurality of passages, and a valve spool axially slidable in said bore, said valve spool having a first portion of a diameter slightly less than the smaller diameter portion of the bore, and a second portion of a diameter approximately equal to the larger diameter bore portion. The smaller diameter bore portion has a plurality of axially spaced

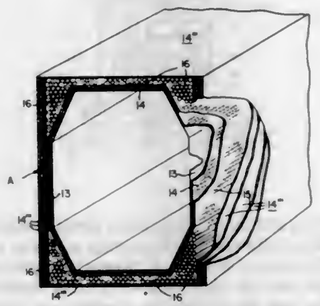
seals disposed therearound for selectively controlling the flow between the passages at various axial adjusted positions of the valve spool. A mounting clamp on the valve permits attachment to a plurality of different water spout configurations.

3,419,045
ORIFICE RETAINER ASSEMBLY
Howard M. King, Jr., Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed Mar. 6, 1967, Ser. No. 620,874
1 Claim. (Cl. 138—44)



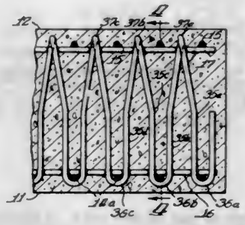
The present invention relates to an improved orifice plate retainer assembly. The assembly provides an improved seal between the orifice plate and the carrier plate against fluid moving in either direction, by locating a seal at the annular slot formed between the orifice and carrier plates, as well as between the sealing O-ring and carrier plate. The present invention further allows the use of a standard orifice plate.

3,419,046
BOOM APPARATUS
Fred D. Peterson, San Mateo, Calif., assignor to Peterson Products of San Mateo, Inc., Belmont, Calif.
Filed Sept. 26, 1966, Ser. No. 581,902
2 Claims. (Cl. 138—153)



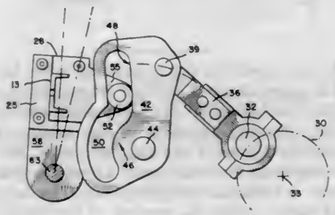
A multiple-sided tubular reinforced boom including in at least opposite sides thereof prestressed glass fiber strands. In a further embodiment, the strands are concentrated at the multiplicity of corners of the boom to provide added tensile and compressive strength.

3,419,047
REINFORCED CONCRETE PIPE
Paul L. Osweiler, Dayton, Ohio, assignor to Price Brothers Company, Dayton, Ohio, a corporation of Michigan
Filed Mar. 15, 1967, Ser. No. 623,392
8 Claims. (Cl. 138—175)



Reinforced concrete pipe having concentric steel cages is provided with steel stirrups extending from the inner cage outwardly beyond the outer cage over limited arcuate regions at the crown and invert. These stirrups extend at spaced intervals along the length of the pipe and each stirrup has the outer loop portion twisted so that the outer loop of a stirrup can pass between adjacent coils of the outer cage without interference. The invention here is an improvement upon earlier applications where stirrups stop short of the outer cage to permit the outer cage to be positioned over the inner cage and stirrup assembly. The reinforcing action of the new stirrups is enhanced over the earlier stirrup arrangement. The stirrups cannot be assembled on the inner cage unless the outer cage is in position about the inner cage. Thus, a stirrup will have to be handled on an individual basis and welded in position.

3,419,048
LOOM BATTENS AND CONTROLS
Marcel Claeys, 86 Cours Vitton, Lyon, France
Filed June 22, 1966, Ser. No. 559,621
Claims priority, application France, June 25, 1965, 46,157
3 Claims. (Cl. 139—188)

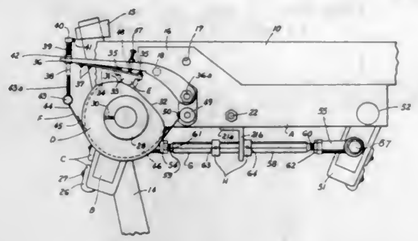


A main crankshaft causes oscillation of the batten around a secondary crankshaft which rotates at half the speed of the main crankshaft.

3,419,049
PICKER STICK CHECKING DEVICE
Broughton M. Cooper, Rte. 3, Taylors, S.C. 29687, and Joseph C. Cooper, Rte. 2, Simpsonville, S.C. 29681
Filed June 24, 1966, Ser. No. 560,227
8 Claims. (Cl. 139—162)

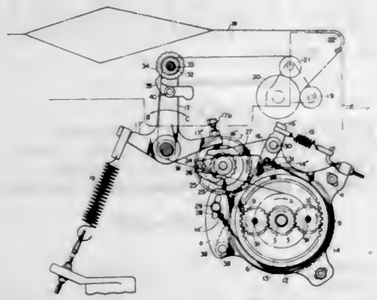
An improved checking device for a picker stick comprised of a pair of spaced links positioned to engage the picker stick in its flight wherein one of said links actuates

means for retarding the flight thereof comprised of a rotatable cam cooperating with a spring-biased strap member serving to tension the strap as it turns responsive



to the movement of the picker stick. Additionally, linkage means is provided between the links for moving the same in unison, whereby each of the links is in position to be actuated.

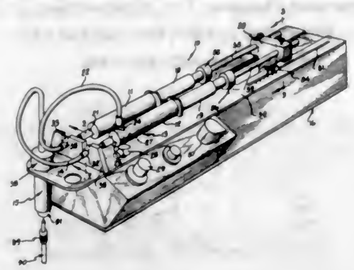
3,419,050
TAKE-UP ROLLER MECHANISM IN A WEAVING LOOM
Masaru Yoshida, Gifu, Japan, assignor to Toyoda Automatic Loom Works, Ltd., Kariya, Aichi Prefecture, Japan
Filed Jan. 11, 1967, Ser. No. 608,677
Claims priority, application Japan, July 7, 1966, 41/44,462
4 Claims. (Cl. 139—311)



A take-up apparatus for a weaving loom for a take-up roller. The apparatus has a power transmission mechanism for rotating the take-up roller and a cloth tension detecting means for detecting variation in the tension of the cloth being conveyed toward the take-up roller and adjusting means coupled to the brake band around a rotary body in the power transmission mechanism. The action of the adjusting means under the control of the tension detecting means adjusts the braking action of the brake band for stopping the operation of the power transmission mechanism when the tension becomes too large.

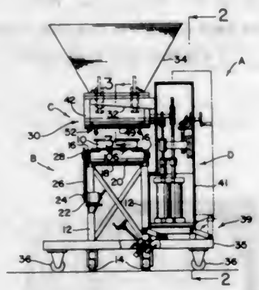
3,419,051
DENSITY GRADIENT SYSTEM
Bert M. Gustafson, 341 Princeton, Hoffman Estates, Ill. 60172; Lewis Malter, 7741 Davis, Morton Grove, Ill. 60053; and Robert P. Gustafson, 7935 W. Belmont, Elmwood Park, Ill. 60635
Filed Nov. 17, 1966, Ser. No. 595,199
9 Claims. (Cl. 141—69)

1. In a mechanism for mixing and delivering liquids, comprising the combination of a support, a syringe on said support for receiving a quantity of a first liquid, a second syringe on said support for receiving a quantity of a second liquid, a movable plunger in each of said first and second syringes for forcing fluid from the syringe with linear movement of the plunger in the syringe, a carriage connected to said plungers for simultaneously moving said plungers to force fluid from said plungers, a conduit in fluid communication with said first and second syringes, a mixing chamber forming a portion of said second syringe



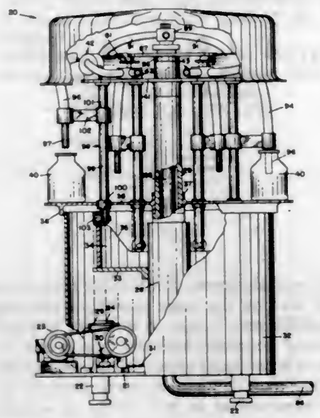
for receiving said first liquid and said second liquid, a magnetic stirrer for stirring and mixing said liquids in said mixing chamber, a delivery conduit connected to said mixing chamber through which the mixed liquid may leave the mixing chamber, a collector for receiving the mixed liquid from the delivery conduit, and a motor to drive said carriage at a controlled rate to force the plungers to push the liquids continuously from the syringes and through the mixing chamber to the collector.

3,419,052
AUTOMATIC DISPENSING APPARATUS
Richard Lewis Morine, Mentor, Ohio, assignor to Food Equipment Development Corporation, Mentor, Ohio, a corporation of Ohio
Filed Jan. 9, 1967, Ser. No. 607,936
15 Claims. (Cl. 141—102)



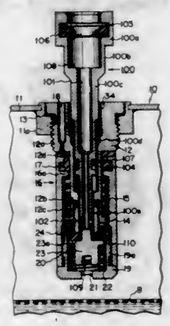
A dispensing system for dispensing predetermined quantities of a fluent material onto moving material receiving surfaces. The system includes a dispensing valve having a shut-off valve and an oscillated dispensing member. The shut-off valve and the dispensing member are actuated by air cylinders controlled by an electric timing circuit responsive to a sensing element which senses the approach of a material receiving surface. The timing circuit is adjustable and is arranged to cause the dispensing valve to be actuated any selected number of times at substantially any time interval following the sensing of the material receiving surface.

3,419,053
CONTAINER-FILLING MACHINE
Dale Tanner, 21 Academy Ave., Woodbury Heights, N.J. 08097
Filed May 23, 1966, Ser. No. 551,979
8 Claims. (Cl. 141—145)



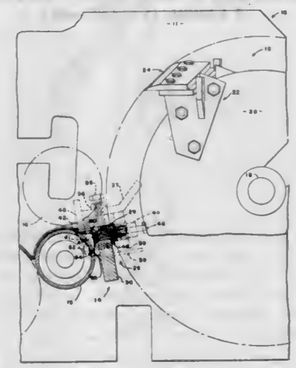
The instant disclosure relates to a filling machine wherein a conveyor moves about an endless path for carrying containers thereabout, and mounting means movable with the conveyor carries a plurality of nozzles for movement with the containers through a filling station. A plurality of cylinders having free pistons are movable with the conveyor and nozzles, and a plurality of valves are associated with respective cylinders for alternately connecting a source of fluid supply to the associated cylinder on each side of its piston for charging the cylinder, and on the other side of the piston for discharging the cylinder through its nozzle and filling a container.

3,419,054
FUEL CHARGE VALVE OF LIQUIFIED GAS FUELED LIGHTER
Kengo Tashiro, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kawaguchi-shi, Saitama-ken, Japan
Filed June 3, 1966, Ser. No. 555,072
Claims priority, application Japan, June 5, 1965, 40/33,058
4 Claims. (Cl. 141—293)



A fuel charge valve of a liquified gas fueled lighter includes a detachable stationary sleeve with a bore for fuel charging closed by a spring biased valve. A gas purge passage in the wall of the lighter outside the wall of the sleeve is closed by another biased valve on a movable sleeve. An apertured cap on the end of the movable sleeve supports the spring biasing the fuel charging valve. A stepped attachment adapts the bore of the sleeve to a fuel charging cylinder. The bias of the springs is such that the fuel valve opens before the gas purge valve.

3,419,055
SHEAR BAR MOUNTING
Bruce D. Schwalm, Leola, and Roger L. Risser, Elizabethtown, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 579,653
7 Claims. (Cl. 146—120)

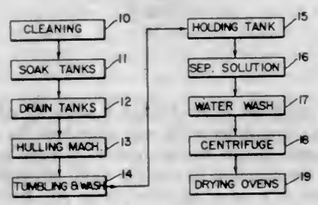


The invention relates to a shear bar adjustment and mounting assembly for use with the rotary cutter and knives on agricultural forage harvesters. The instant device provides an improved shear bar clamping unit having concave-convex universal type of adjustment means for maintaining the clamping forces perpendicular to the shear bar axis and for maintaining correct alignment of the shear bar with respect to its backing and to the rotary cutterhead.

ERRATUM

For Class 146—133 see:
Patent No. 3,419,896

3,419,056
METHOD FOR PEELING AND PROCESSING GRAIN
Magdy F. Girgis, 3121 Killarney Lane, Costa Mesa, Calif. 92626
Filed May 13, 1966, Ser. No. 549,938
4 Claims. (Cl. 146—221.6)



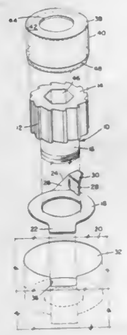
A method of peeling the hulls from sesame seeds is described and includes the steps of soaking the sesame grain in pure water a sufficient length of time to saturate

the seeds and inflate the seeds thereby softening the hull; rubbing the grain between opposed surfaces to peel off the hulls; depositing the hulls and seeds in a brine solution of density greater than that of pure water such that the hulls fall to the bottom and the seeds float to the top of the solution; and removing the seeds from the solution. The method also contemplates further steps of drying the seeds at graded temperatures between one hundred and one hundred and fifty degrees centigrade.

3,419,057
NUT AND BOLT LOCKING MEANS

Patrick J. Hogan, Mount Clemens, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 9, 1967, Ser. No. 644,903
3 Claims. (Cl. 151—48)

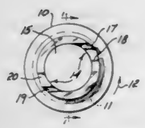


An apparatus for securing a nut and/or a bolt in a desired position and for retaining the nut and/or bolt in that position during extreme vibration and stress cycling. The invention also includes an unlocking spacer cup to be used with the nut/bolt lock for loosening the nut or bolt.

3,419,058
SET SCREW

Richard A. Walker, Warrington, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania

Filed Dec. 16, 1966, Ser. No. 602,205
6 Claims. (Cl. 151—70)

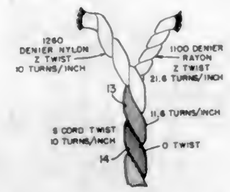


A cup point set screw having a plurality of transverse tooth cuts through its point wall edge into the cup wherein each tooth has its leading tooth cut edge tangent to a radius of the cup and its trailing tooth cut edge intersecting the cup at a point approximately 90° from the point of tangency of the leading tooth cut edge. As a result, the length differential of the leading and trailing tooth cut edges is maximized to provide a large resistance against loosening of the set screw and little resistance to seating of the set screw.

3,419,059
REINFORCEMENT ELEMENT

Arnold H. Bridge, Jr., Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed May 4, 1965, Ser. No. 453,056
8 Claims. (Cl. 152—359)



An improved elastomer reinforcing cord structure and method for making the same provide a plurality of continuous multifilament yarns of different physical properties so twisted together helically about one another in the cord as to have equal effiective moduli, defined as load at a predetermined elongation, particularly in the elongation range experienced in reinforcing an elastomeric article such as a tire in its normal use.

3,419,060
TEXTILE CORD MATERIAL AND PNEUMATIC TIRES MANUFACTURED THEREWITH

Ronald Stansfield Goy, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, London, England, a British company

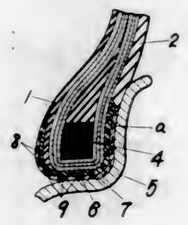
No Drawing. Filed Nov. 6, 1964, Ser. No. 409,598
Claims priority, application Great Britain, Nov. 19, 1963, 45,538/63
4 Claims. (Cl. 152—359)

A synthetic hot stretched textile filamentary cord wherein each filament thereof in the finished form of the cord has a denier which is greater than 10 thereby contributing superior resistance to buckling of the cord under axial compression loading.

3,419,061
TUBELESS TIRE

Ryuichi Morikawa, Sakai, Osaka, Narajiro Shibata, Ibaraki, Osaka, and Yoshiaki Takami, Suita, Osaka, Japan, assignors to The Toyo Rubber Industries Co., Ltd.

Filed Aug. 22, 1966, Ser. No. 574,099
4 Claims. (Cl. 152—362)



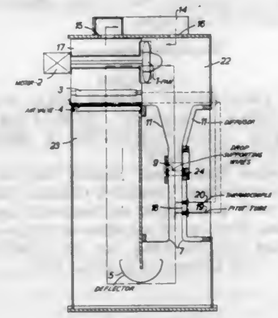
Chafing material for pneumatic tubeless tire adapted to be disposed around the bead portions of the tire, said chafing material comprising a woven fabric having warp and weft elements which are yarns consisting of from 2 to 50 filaments and having a twist which is less than 20

turns/10 cm., the yarn being embedded in, and the interstices of said yarn having therein, only an elastomeric high polymer material.

3,419,062
DRYING PROCESS

Cornelis Petrus Huysmans, Oss, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Aug. 27, 1965, Ser. No. 483,216
Claims priority, application Great Britain, Sept. 10, 1964, 37,104/64
9 Claims. (Cl. 159—47)

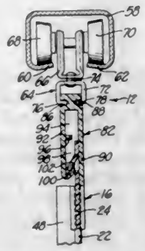


Liquid solutions and slurries are concentrated by depositing droplets thereof on a carrier-structure, preferably consisting of taut filaments and thereafter subjecting the droplets to drying conditions.

3,419,063
TOP CARRIER SYSTEM FOR DRAPERY PANELS

Donald E. Mock, Covina, and Joseph Banner, Whittier, Calif., assignors to Anjac Plastics, Inc., El Monte, Calif.

Filed Jan. 16, 1967, Ser. No. 609,422
5 Claims. (Cl. 160—199)

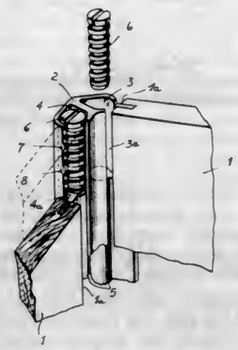


Drapery panels are panels which are hinged together on upright axes and are movable from an extended position where they close an opening to an accordian folded position away from the opening. The top carriers on these panels permit motion across the opening and permit the accordian folding action of the panels. The top carriers comprise hangers of uniform cross section so that they may be extrouded. The hangers are pivoted to overhead trolleys. The hangers are hinged together by means of hinges of uniform cross section and the hinges are secured into the hangers to permit the necessary accordian folding. This abstract is not considered to define the invention.

3,419,064
ARTICULATED STRUCTURE PARTICULARLY FOR PARTITIONS

Renzo Oddicini, Bologna, Italy
(Via Piana 17, Omegna, Novara, Italy)

Filed Dec. 12, 1966, Ser. No. 600,941
4 Claims. (Cl. 160—229)



This disclosure relates to a folding door structure, comprising joining sections, panel members with projecting bead-like rib portions and articulated to one another through said joining sections said joining sections being provided with longitudinal grooves at least partially open and defining a cavity opening designed to receive each one of said rib portions formed longitudinally on the edges of the panel members to be joined.

3,419,065
CAFE TRAVERSE ROD

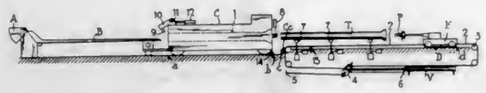
Kenneth M. Johnson, Kensington, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

Filed Apr. 26, 1966, Ser. No. 545,380
7 Claims. (Cl. 160—345)



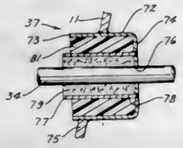
A cafe traverse rod having a cylindrical front wall and a longitudinally slotted vertical back wall with a plurality of curved ring glides disposed in non-concentric and non-touching relationship with the front wall of the rod and the upper free end thereof disposed to the rear of and below the top of the rod giving the appearance of a conventional cafe traverse rod. The glides have low friction slides mounted in the longitudinal slot and provide smooth non-wedging sliding action during the longitudinal manipulation of the draperies. Integral drapery hangers on the ring glides are vertically aligned with the rear wall with the curved portion of the glides extending rearwardly thereof to carry out the conventional cafe rod motif. A reversely bent integral portion of the ring glides connect the lower end of the ring gliden to the slides. Master carriers having plastic slides provided with a longitudinal slot through which the pull cord is adjustably threaded are provided with an integrally formed rearwardly projecting catch bridging the slot. The catch is connected to each slide by a necked down portion to form a breakaway section adapted to break away to remove the catch for converting the rod for one way operation without rethreading the cord.

3,419,066
CENTRIFUGAL CASTING MACHINE
Pierre Edouard Lorang, Nancy, France, assignor to Centre de Recherches de Pont-A-Mousson, a French body corporate
Filed Feb. 16, 1967, Ser. No. 616,614
Claims priority, application France, Mar. 10, 1966, 52,824
6 Claims. (Cl. 164—154)



Centrifugal casting machine comprising an extractor for extracting the cast pipe from the mould and a control device automatically controlling operation of the extractor, the control device comprising photoelectric cell means responsive to the presence of one pipe end in the mould and to the extraction of the other pipe end. If the extractor fails to extract the pipe, the photoelectric means cause the extractor to make further attempts at extraction. If the pipe breaks inside the mould the photoelectric means stop operation of the extractor to enable a manually-controlled extraction of the remaining piece of pipe.

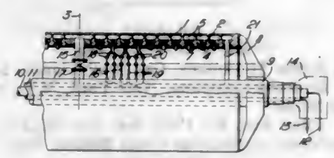
3,419,067
FLUID CARRYING CONDUIT INSULATOR
Everett R. Taggart, 5176 SE. 40th St., Des Moines, Iowa 50320
Original application Nov. 5, 1965, Ser. No. 506,522, now Patent No. 3,339,376, dated Sept. 5, 1967. Divided and this application Aug. 31, 1967, Ser. No. 674,688
1 Claim. (Cl. 165—47)



This invention relates to a condenser apparatus, the improvement going to effectively insulating one or more refrigerant-carrying conduits from the externally exposed walls of a condenser apparatus. The insulation is accomplished by embracing each conduit at its point of passage through a wall with first a packing material, and second a Styrofoam-type material, each annular blanket of material being separated from the other and from the wall by a solid tubular element.

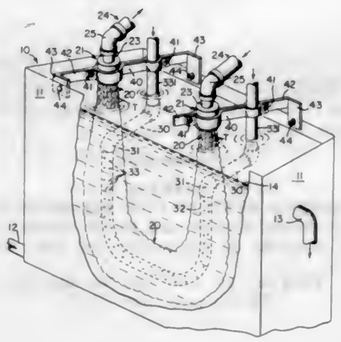
3,419,068
DRYING CYLINDERS FOR PAPER MAKING AND TEXTILE MACHINES
Hew McInnes Grierson, Beaconsfield, England, assignor to Wiggins Teape Research & Development Limited, London, England, a British company
Filed Sept. 30, 1966, Ser. No. 583,234
Claims priority, application Great Britain, Nov. 11, 1965, 47,953/65
10 Claims. (Cl. 165—89)

A drying cylinder for paper making and textile machines is cooled by the application of a heat exchange fluid to the interior of the periphery of the cylinder from a plurality of delivery conduits housed in the cylinder and each fitted with a valve to control the rate of fluid flow through the conduit. Valve-operating means movable lengthwise of the interior of the cylinder and actuated



from one end of the cylinder is selectively engaged with, or disengaged from, any one of the conduit valves and effects operation of the valve.

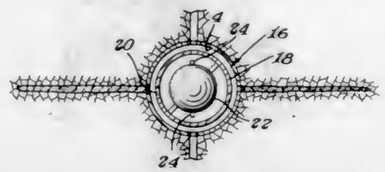
3,419,069
HEAT TRANSFER APPARATUS HAVING FLEXIBLE PLASTIC TUBULAR ELEMENTS ARRANGED IN A BRAIDED CONFIGURATION
Thomas Bernard Baker and Stanley Burton Levy, Wilmington, and Roland Frederick Ottolini, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,631
10 Claims. (Cl. 165—158)



A heat transfer apparatus having a casing member surrounding at least one bundle of flexible plastic tubular elements, a substantial portion of each bundle comprising a first group of tubular elements arranged in a given pattern and interlaced in a substantially uniform manner with a second group of tubular elements arranged in symmetrically opposed pattern to provide a coherent flexible bundle, stable in size, and having a predetermined degree of packing and predetermined resistance to fluid flow through said bundle exteriorly of said elements which predetermined characteristics cooperate to provide a good heat transfer characteristics for the apparatus.

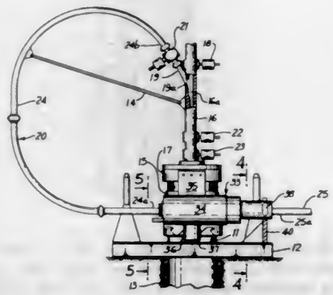
3,419,070
SELECTIVE PERFORATION AND DIRECTIONAL FRACTURING
Edward A. Ernst, Oklahoma City, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 516,038
10 Claims. (Cl. 166—5)

1. The method of perforating a subterranean formation penetrated by a wellbore in which at least one more-or-less vertical preexisting fracture exists therein emanating from the wellbore whereby perforations are created which extend at least some distance into the formation from the wellbore at an angle of between about 30° and 150° measured about the wellbore from a preexisting fracture, said method consisting essentially of (1) introducing a plugging agent selected from a class consisting of settable plastic and hydraulic cement compositions into said preexisting fratcure until communication with the wellbore is substantially closed off, at least the last portion of the plugging agent containing radioactive



tracer material; (2) removing any excess plugging agent from the wellbore; (3) lowering down the wellbore a radiation sensitive detector and a perforating means, said detector indicating the location of said radioactive tracer material and rotating said perforating means about the vertical axis of the wellbore to such position that the direction of discharge of said perforating means is located at a point of low radiation concentration, (4) discharging said perforating means to create perforations penetrating the formation at an angle from the point of emanation of a preexisting fracture.

3,419,071
UNDERWATER WELLHEAD APPARATUS
Leonard E. Williams, Jr., and David L. Gruller, Houston, Tex., assignors to Cameron Iron Works, Inc., Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 419,442, Dec. 18, 1964. This application June 21, 1967, Ser. No. 647,880
22 Claims. (Cl. 166—.6)



Remotely operated apparatus for connecting and disconnecting two sections of a flow line for an underwater well. One section of the flow line has one end connected to the wellhead and the other end connected to a piston located in a housing mounted on the wellhead. This section is curved sufficiently to permit the piston to move the end attached to it axially. Located adjacent and in axial alignment with the movable end of the first section is one end of the other section of the flow line. Fluid pressure supplied from the surface can act on either side of the piston and move the end of the flow line section attached to it into and out of engagement with the adjacent, axially aligned end of the other section to connect and disconnect the two flow line sections.

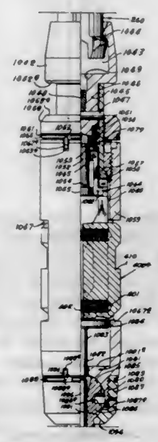
3,419,072
CONSOLIDATION OF SUBTERRANEAN FORMATIONS
George P. Maly, Newport Beach, Gerould H. Smith, Santa Ana, George G. Bernard, Fullerton, and John R. Fox, Corona Del Mar, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Oct. 6, 1966, Ser. No. 584,660
24 Claims. (Cl. 166—33)

A method for consolidating incompetent clay-containing earth formations with a resin-forming material that is injected into the formation and then hardened by the action of a curing agent or catalyst subject to adsorption by the clay whereby adsorption of the catalyst is inhibited by first contacting the formation with a cationic surfactant prior to injection of the resin-forming material. The formation is preferably contacted with an amount of cationic surfactant sufficient to satisfy the ion-exchange capacity of the clay.

3,419,073
METHOD FOR CONSOLIDATING SUBTERRANEAN FORMATIONS
Fred A. Brooks, Jr., Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
No Drawing. Filed Aug. 3, 1967, Ser. No. 658,034
11 Claims. (Cl. 166—33)

A method for consolidating an incompetent formation surrounding a borehole wherein an aliphatic alcohol containing from five to ten carbon atoms per molecule is injected into the formation and a resin is thereafter employed to bond the formations solids in place.

3,419,074
WELL TOOLS
Norman F. Brown, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,594
47 Claims. (Cl. 166—46)

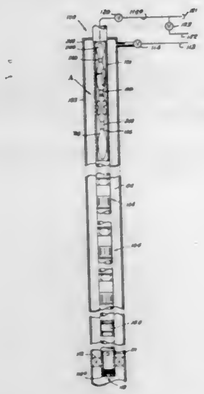


1. Apparatus for installing and removing well tool means in a flow conductor including sliding sleeve valve means having sleeve means movable between open and closed positions and means for releasably locking well tool means within said sleeve valve means, comprising: first seal means slidable in said flow conductor; first sleeve shifting means connected with said first seal means for moving said sleeve means in a first direction; detent means connected with said first sleeve shifting means for releasably holding said apparatus against movement

within said flow conductor; second sleeve shifting means connected with said detent means for moving said sleeve means in a second direction; second seal means slidable in said flow conductor connected with said second sleeve shifting means; and well tool support means connected with said second seal means for holding a well tool means during installation and removal of said tool means in said flow conductor.

43. A method of installing devices in a well having a tubing string, a plurality of locking nipples in said tubing string, each nipple having a selective seat for one of said devices, comprising: the steps of inserting a train of said devices in said tubing string, pumping a fluid into said tubing string above said train to move said train down said tubing string to a lower position below the locking nipples, reversing the flow of fluid in the tubing string to move said train up said tubing string and seat and latch each device in the selective locking nipple in which it will seat until all of said devices are seated in their locking nipples.

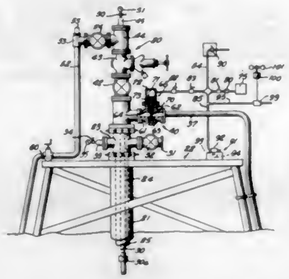
3,419,075
WELL TOOLS
Norman F. Brown, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 556,594, June 10, 1966. This application June 27, 1966, Ser. No. 560,623
65 Claims. (Cl. 166—46)



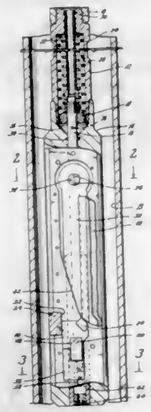
Apparatus operable in a flow conductor by fluid pressure for actuating movable members in said conductor, including engaging means for engaging said movable members, means for controlling actuation of said engaging means, means for detecting movement of said movable members and means for disengaging said engaging means from said movable members; movable means comprising slidable sleeve valve means controlling lateral port means; and a train of tools for operating said engaging means for actuating said movable means.

3,419,076
SURFACE CONDITION RESPONSIVE SUB-SURFACE SAFETY VALVE SYSTEM
Phillip S. Sizer and Larry K. Spencer, Dallas, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Aug. 12, 1965, Ser. No. 479,170
9 Claims. (Cl. 166—53)

A surface reactive valve system for increasing flow of fluids from well flow passages to activate a subsurface safety valve in said well and to reduce pressure in the flow conductor of the well, and means is provided responsive to pressure temperature, attitude, fluid flow and other physical conditions for opening a pressure releasing valve in a relief line for reducing the pressure in the flow conductor upstream of said safety valve. The reduction in pressure increases the flow rate through the well flow passage, and the safety valve closes in response to the increased flow.



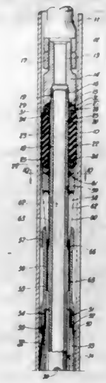
3,419,077
WELL CUTTING TOOL
Lawrence Sanford, 3317 W. 11th St., Houston, Tex. 77008
Filed Nov. 22, 1966, Ser. No. 596,183
10 Claims. (Cl. 166—55.8)



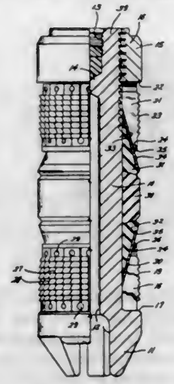
A well cutting tool adapted to cut a casing in a well bore and having a body and at least one cutting arm pivotally mounted to the side of the body and including means to transmit cutting forces directly between the body and the cutting arm.

3,419,078
PUMP ANCHORS
Dixon T. Harbison and James A. Burns, Fort Worth, Tex., assignors to Harbison-Fischer Manufacturing Co., Fort Worth, Tex., a corporation of Texas
Filed Nov. 29, 1965, Ser. No. 510,330
3 Claims. (Cl. 166—138)

A well pump anchor having a packing means and having means for preventing overly secure setting of the anchor in the wellbore which would make its removal difficult or maybe impossible and also having means for preventing jamming of the anchor in the wellbore as it is being removed by reason of the upper end of the resilient packing sleeve encountering paraffin or some other obstruction in the wellbore and being unintentionally expanded and stuck in the wellbore by being forced downwardly.



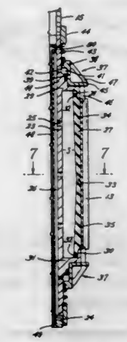
3,419,079
WELL TOOL WITH EXPANSIBLE ANCHOR
James H. Current, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Oct. 23, 1965, Ser. No. 503,503, now Patent No. 3,371,716, dated Mar. 5, 1968. Divided and this application Sept. 27, 1967, Ser. No. 683,752
2 Claims. (Cl. 166—206)



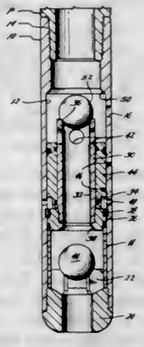
Apparatus for use in locking the normally retracted parts of a well packer in expanded positions in a well bore, including an inner member having a buttress thread form on its outer periphery, an outer member having a helical groove therein, and the resilient, helically arranged lock means engaging said thread form and movably disposed in said groove.

3,419,080
ZONE PROTECTION APPARATUS
Maurice P. Lebourg, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Oct. 23, 1965, Ser. No. 503,471, now Patent No. 3,389,752, dated June 25, 1968. Divided and this application Sept. 8, 1967, Ser. No. 680,594
4 Claims. (Cl. 166—207)

One embodiment of an apparatus which is illustrative of the present invention includes a body member carrying an inflatable elastomer sleeve and an impermeable expansible liner which surrounds said sleeve and which is attached on said body member by hydraulically movable devices. In response to fluid pressure, said devices can be released from engagement with said liner whereupon inflation of said sleeve will effect expansion of said liner into sealing contact with the well bore wall.



3,419,081
WELL CEMENTING DEVICE
Wayne F. Nelson, Waxahachie, Tex., assignor to Koehring Company, Waxahachie, Tex., a corporation of Wisconsin
Filed Mar. 15, 1967, Ser. No. 623,467
10 Claims. (Cl. 166—225)

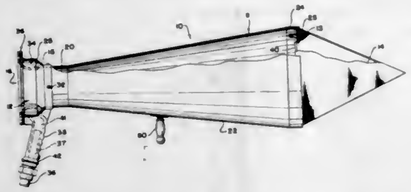


A cementing device adapted to be connected to a well pipe for use in a well bore having a releasably held pressure responsive sleeve valve which when released, allows circulation to flow out through the cement ports and the lower portion of the device and prevents flow inwardly through the cement ports.

3,419,082
PORTABLE FOAM NOZZLE
James Francis O'Regan, Bertil Anders Lundberg, and Walter John Mussoni, Worcester, Mass., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Continuation of application Ser. No. 560,985, June 27, 1966, which is a continuation of application Ser. No. 443,761, Mar. 12, 1965, which is a continuation-in-part of application Ser. No. 358,771, Apr. 10, 1964. This application Mar. 16, 1967, Ser. No. 623,779
3 Claims. (Cl. 169—15)

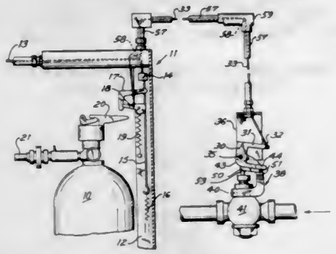
The disclosure pertains to a fire protection nozzle for generating high expansion foam in which an elongated tubular barrel has a long, diverging, longitudinal section

and a shorter throat section of restricted diameter adjacent one end. An annular array of jets in the restricted throat section are directed into the tubular barrel in such a fashion as to induce a flow of air therethrough. A



mesh or sieve across the opposite end of the tubular barrel has openings therein of a size capable of being filmed over by the foam solution and foam is generated as the air escapes through the openings.

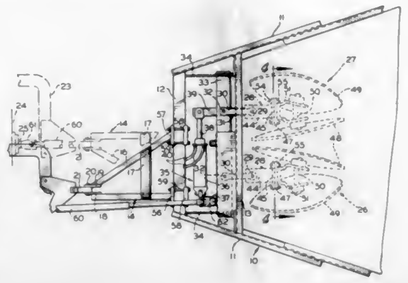
3,419,083
CABLE CAM SHUTOFF MECHANISM
Roger R. Cholin, Old Stone Hill Road, Pound Ridge, N.Y. 10576, and Kenneth E. Guest, 43 Bainbridge Ave., Thornwood, N.Y. 10594
Filed May 10, 1967, Ser. No. 637,544
5 Claims. (Cl. 169—26)



In abstract, this invention relates to cable operated dry powder fire extinguishing apparatus used to put out fires such as occurring in restaurants using deep fryers. The device of this invention primarily relates to a novel cam operated shutoff device to close the fuel gas line in the event of a fire. It also relates to the use of this device to produce a novel overall cable apparatus wherein a cooking oil fire melts a fusible link secured to a spring loaded hammer block retaining steel cable to thereby actuate by a hammer like blow a valve on a tank of dry powder fire extinguishing chemicals to disperse said chemicals onto the oil fire. The overall cabled apparatus of this invention includes a separate secondary spring loaded cable coacting with the first cable containing said fusible link, so that operation of the fusible link first cable means as by melting of the link, in turn operates the secondary cable having the novel cam means located at its end and coacting with the cooking gas shutoff valve.

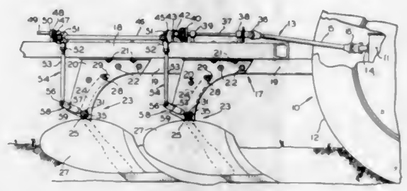
3,419,084
ROOT CROP HARVESTER
Arthur G. Barows, Downers Grove, Edward W. Parrish, Westmont, and Robert C. Miner, Clarendon Hills, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,594
5 Claims. (Cl. 171—58)

Two pairs of downwardly and rearwardly converging puller wheels for beets and other root crops are provided for digging beets in separate rows, wherein the crops are relatively widely spaced and the angular relationship to the vertical is the same for the wheels of each pair. Means are provided for revolving the wheel support for each pair about a longitudinal axis to optionally dispose the inner wheel of the pair vertically while attaining the angle of



convergence of the wheels to narrow the spacing between the earth-penetrating edges of the adjacent pairs and accommodate the puller wheels to narrower crop row spacing.

3,419,085
VIBRATOR FOR PLOW
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,799
5 Claims. (Cl. 172—40)

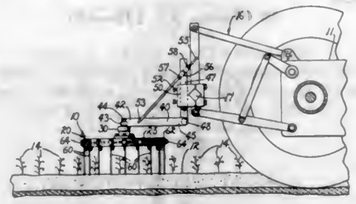


1. In an implement adapted for attachment to a tractor having power operated means, a tool frame connected to the tractor in draft receiving relation, earth working tool means, means mounting the tool means on the frame including pin means carried by the tool means, said frame having a slot therein to receive said pin means accommodating limited reciprocatory movement of the tool means relative to the frame, a rock arm pivotally mounted on the frame having one end operatively frictionally engageable with said tool means, and means operatively connecting said rock arm to said tractor power operated means to rock said arm in an arc about its pivot to reciprocate said pin means in said slot.

3,419,086
WEEDING AND MULCHING DEVICE
Edmund C. Giusti, 1046 T St., Fresno, Calif. 93721, and Royce O. Stevens, P.O. Box 66, Kerman, Calif. 93630
Filed Aug. 2, 1965, Ser. No. 476,595
1 Claim. (Cl. 172—523)

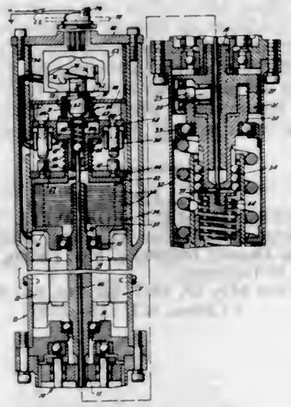
A weeding and mulching device for rows of plants providing a circular support frame mounted for rotation in a substantially horizontal plane about a substantially vertical axis and disposed above such a row in laterally

overlapping relation to the row including a plurality of resiliently flexible earth engaging fingers peripherally depending from the frame with each finger having a coiled portion disposed in a plane radially extended from said



axis of the support frame in underlying engagement therewith for stabilizing and permitting controlled flexing of the fingers during their successive movement laterally outwardly and inwardly through the row of plants.

3,419,087
TORQUE CONTROLLED ELECTRIC NUT-RUNNER WITH SOLENOID BRAKE
Lester A. Amtsberg, Utica, and William K. Wallace, Barneveld, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 30, 1967, Ser. No. 627,053
16 Claims. (Cl. 173—12)



A torque controlled nut-running tool operated by an electric motor and having control switch mechanism arranged to function in response to a disengaging clutch action upon delivery of a maximum controlled torque by the tool to the work to cut off power to the motor and to simultaneously cause a solenoid operable disc brake to brake the motor to a stop.

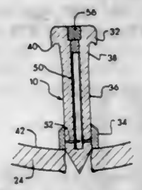
3,419,088
APPARATUS FOR PERFORATING WELLS
Richard H. Gray, Houston, Tex., assignor to Gramar Company, Houston, Tex., a corporation of Texas
Filed July 7, 1967, Ser. No. 651,887
7 Claims. (Cl. 175—4.51)

Apparatus for orienting a through-tubing perforating gun in a multiple completion well for perforation of the well casing without damage to the tubing strings, comprising a pair of vertically spaced side kickers on the gun having releasable arms for outward extension within the casing and switch means actuated only upon a predetermined outward extension of the arms correlated to the diameter of the casing so that the switch means cannot be actuated if the gun is either within or



interfers with a tubing string, the switch means and release means for the arms being connected in series with one another and the gun so that the second side kicker cannot be released until the arm on the first side kicker is fully extended and the gun cannot be fired until the arms of both side kickers are fully extended.

3,419,089
TRACER BULLET, SELF-SEALING
Alexis A. Venghiattis, Weston, Conn., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,588
5 Claims. (Cl. 175—4.57)



1. A projectile for use in a bullet well perforating apparatus for firing a projectile inside a well casing, said projectile comprising:

a projectile formed of a well-casing-piercing nose portion designed to penetrate the well casing,

a forward cylindrical portion extending rearward of the nose portion,

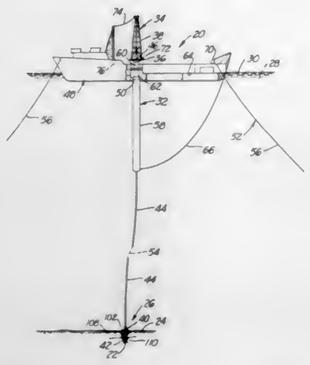
a rear cylindrical seal-forming portion of a greater diameter than the forward cylindrical portion, and

an annular malleable seal member surrounding the forward end of the forward cylindrical portion whereby upon the annular malleable seal member contacting the inner wall of the well casing, it remains stationary against the inner wall and when the rear end forming portion of the projectile contacts the seal member, the malleable material flows into the perforation forming a seal between the projectile and the perforation.

3,419,090
OFFSHORE DRILLING SYSTEM

William G. Van Dorn, La Jolla, Calif., assignor of twenty-five percent to John G. Carter, ten percent to Ralph A. Bard, Jr., ten percent to Harold B. Smith, and five percent to William L. Klevans

Filed July 18, 1966, Ser. No. 565,848
21 Claims. (Cl. 175—7)

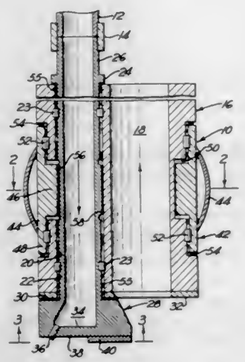


An offshore drilling system for drilling wells at submerged locations having a spar buoy arrangement easily transportable to and stabilized above a submerged location so as to be virtually unaffected by surface waves or swells, the spar buoy arrangement being operable by itself or in conjunction with a floating vessel or platform and connected to the submerged location through a flexible conductor tubing which accepts the equipment necessary for drilling into the submerged location.

3,419,091
METHOD AND APPARATUS FOR DRILLING WELLS WITH ECCENTRIC JET DRILLS

Gerald H. F. Gardner, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Mar. 30, 1967, Ser. No. 627,232
19 Claims. (Cl. 175—67)

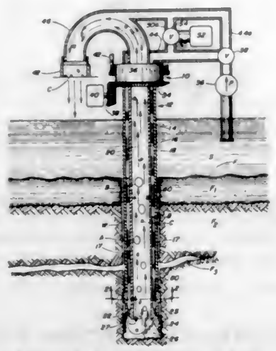


Method and apparatus for drilling earth boreholes by means of high pressure jets of an abrasive-laden slurry wherein the drill head is substantially smaller than the diameter of the hole, is mounted off-center with respect to the axis of the hole, and is caused to rotate eccentrically within the hole.

3,419,092
WELL DRILLING METHOD

Wayland D. Elenburg, Wichita Falls, Tex., assignor to Walker-Neer Manufacturing, Inc., Wichita Falls, Tex., a corporation of Texas

Continuation-in-part of application Ser. No. 574,054, Aug. 22, 1966. This application Apr. 6, 1967, Ser. No. 628,958
10 Claims. (Cl. 175—69)

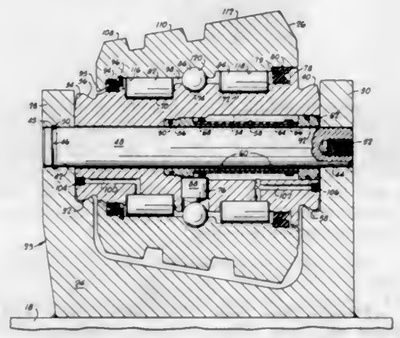


A well drilling method using dual drill pipe with drilling fluid being circulated down through the annulus between the pipes and up through the inner tube, carrying cuttings and cores to the surface. Circulation is started by pumping fluid down both passages until increase in pressure indicates penetration to a relatively non-porous formation. Gas may be pumped down the inner tube to lighten the liquid head before regular circulation is commenced. Circulation up through the hole annulus is restricted mechanically and/or by introducing a heavy static fluid to balance the light circulating fluid which, since confined to the pipe, flows at a high rate. Air may be introduced into the inner pipe fluid to increase the difference in the static head of the fluid columns within the pipe.

3,419,093
CUTTER ASSEMBLY FOR WELL TOOLS

Carl L. Lichte and William M. Conn, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed May 29, 1967, Ser. No. 641,998
9 Claims. (Cl. 175—228)

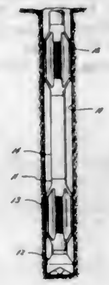


A cutter assembly adapted for use on a well drilling bit or the like and including a cutter member rotatably mounted on a support carried by the bit. The cutting assembly having a chamber formed therein that is substantially filled with a lubricant. The chamber also has a portion of the wall thereof formed by a flexible member that flexes in response to pressure in the well to very the volume of the chamber, whereby the lubricant in the chamber is maintained at a pressure substantially equal to the pressure surrounding the cutter assembly.

3,419,094
DRILL STRING STABILIZER

Roy A. Bobo, Houston, Tex., assignor to Reed Roller Bit Company, Houston, Tex., a corporation of Texas

Filed June 17, 1966, Ser. No. 558,344
1 Claim. (Cl. 175—325)

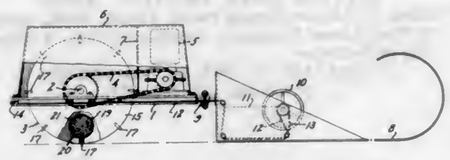


A stabilizer or guide for a deep well drilling string on which there are provided means near the bit to control the rate of change of hole direction angle or of holding such rate of deviation from the vertical to a minimum during drilling and avoid spiralling of the bore hole. The stabilizer or stabilizers are constructed so that the ratios or areas of the return passageways with respect to the size of the stabilizer are in some predetermined relation to the size of the stabilizer and the flutes or the passageways have depths such that a good hydraulic radius is maintained and maximum stiffness of the stabilizer is afforded.

3,419,095
VEHICLE PROPULSION MEANS FOR USE OVER SNOW

Carl E. Hood, Paonia, Colo.
(P.O. Box 7, Darrouzett, Tex. 79024)

Filed Nov. 8, 1966, Ser. No. 592,779
5 Claims. (Cl. 180—6)

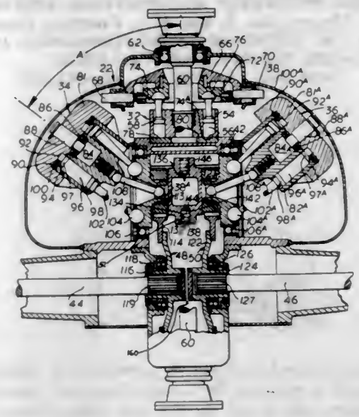


Vehicle propulsion means, including a relatively cylindrical reel-like rotor for driving travel upon a vehicle-supporting surface, such, for example, as a surface covered with snow, ice or other compactible material, such rotor having as operative parts thereof a plurality of radially-offstanding annularly spaced driving blades each carrying an individually yieldable cushioning element extending axially of the rotor and so dimensioned as to substantially fill the spaces between the blades, these cushioning elements serving, due to their constant flexing, to free the rotor of any material having a tendency to impact therein, to add buoyancy and to improve traction and mobility.

3,419,096
LOW FRICTION HYDROSTATIC TRANSAXLE

Joseph L. Zagotta, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 2, 1967, Ser. No. 672,180
17 Claims. (Cl. 180—6.48)

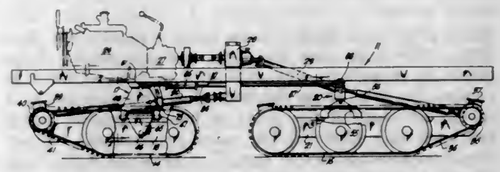


A hydrostatic transaxle unit for use in a motor vehicle to replace a transmission and differential in the drive mechanism. The transaxle unit includes a variable displacement pump and a pair of hydrostatic axial piston type motor units for driving the vehicle axle drive shafts through countershaft gearing connected between the motor units and the axle drive shafts. In order to minimize friction losses, the various components have unique bearing mountings. The orientation of the hydrostatic motor parts are such to cause driven units to be acted upon by both radially and axially directed components of piston force. The radial components generate the desired torque, the axial component is an undesirable force that is normally supported through some bearing means by the housing thus generating a so-called friction horsepower. Here the motor units are mounted so their axial components counteract and are separated by a thrust bearing means to allow a differential speed, and the pump of the transaxle is positioned and constructed so that its drive shaft may be extended rearwardly for coupling to and driving a pair of tandem wheels through a second transaxle.

3,419,097
SINGLE FRAME TRACKED CARRIER

William Bruce Nodwell, R.R. 4, Banff Highway, and John Minto Boyd, 635 Sifton Blvd., both of Calgary, Alberta, Canada

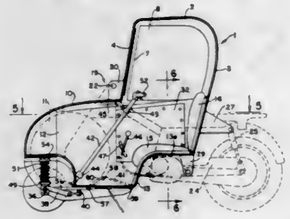
Filed Mar. 21, 1966, Ser. No. 539,251
Claims priority, application Canada, Oct. 15, 1965, 943,038
5 Claims. (Cl. 180—9.46)



A single frame tracked carrier having front and rear track assemblies. The front track assembly is mounted on the frame by a connecting head providing freedom of

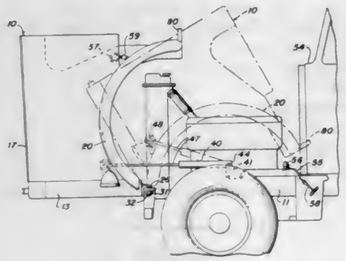
movement about yaw, pitch and roll planes. The rear track assembly is mounted on the frame by a connecting head which provides freedom of movement in yaw and pitch planes only. A drive shaft is connected to each track assembly.

3,419,098
THREE-WHEELED AUTOMOTIVE VEHICLE
Fred T. Mayers, Rte. 5, Box 16A, Courtney Road, Glen Allen, Va. 23060, and Ralph L. Dombrower, Jr., 7309 W. Franklin St., Richmond, Va. 23226
Filed Dec. 13, 1966, Ser. No. 601,362
8 Claims. (Cl. 180—25)



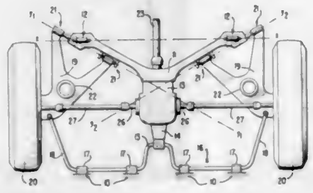
A three-wheeled automotive passenger or delivery vehicle which is powered by a motorcycle of conventional construction and driven by the rear wheel thereof, and which requires no substantial mechanical changes in the motorcycle.

3,419,099
TRUCK HOOD
George U. Brumbaugh, Palo Alto, Larry S. Sherman, Castro Valley, and Hideo Furiya, Hayward, Calif., assignors to Pacific Car and Foundry Company (Peterbilt Motors Company Division), Renton, Wash., a corporation of Washington
Filed Nov. 7, 1966, Ser. No. 592,490
15 Claims. (Cl. 180—69)



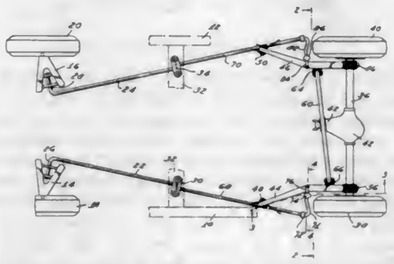
A tilt hood for trucks and automobiles having assist means for helping a man to lift the hood manually. The front end of the hood is pivoted by a pair of tubular rubber covered bushings that are secured to the frame and a pair of leaf spring members around the bushings and secured to the hood. A pair of pneumatic cylinders are pivotally attached to the frame, while the pistons each have a hollow tube with a rod telescoped inside for free sliding movement between fixed limits. The rods are pivotally secured to a forward part of the hood. The pneumatic pressure is limited to an amount slightly less than that sufficient to raise the hood, and the stroke of the piston is enough to give assistance to manual force in raising the hood from the normal driving position to a locus just short of the point of balance beyond which the hood falls forward. The assist pressure will support the hood substantially at a position to which it has been raised. A bleed valve enables venting of the assist or support pressure for gravity return of the hood to its normal driving position. The rod limits the amount of motion of the hood past the balance point, when the hood is pulled beyond that point, and a spring gives a shock-absorbing cushion to the rod when the hood drops down forward. Other features enable adjustment of the pivot bushings relative to the frame, enable guided and shock-absorbing closure of the hood, and give access to the oil and water without having to raise the full hood.

3,419,100
WHEEL SUSPENSION OF DRIVEN WHEELS, ESPECIALLY OF THE REAR WHEELS OF A MOTOR VEHICLE
Kurt Enke, Fellbach, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 6, 1966, Ser. No. 577,468
Claims priority, application Germany, Sept. 8, 1965, D 48,148
23 Claims. (Cl. 180—73)



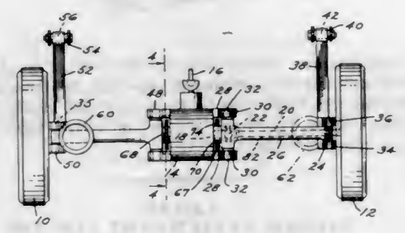
A suspension for the rear driven wheels of a motor vehicle wherein the axle gear housing is rigid with an auxiliary frame pivotally mounted to the vehicle superstructure about a horizontal cross axis, and the wheels are spring suspended by means of wheel guide members pivotally mounted to the auxiliary frame about inclined axes, respectively. A torsion rod is rotatably mounted with respect to the vehicle superstructure, drivingly connected at its center to and for movement with the auxiliary frame, and drivingly connected at its ends to and for movement with the wheel guide members, respectively in such a manner that the reaction moment occurring at the axle gear housing during the drive of the wheels produces a torque opposite the lowering or dipping moment of the vehicle superstructure depressing the rear end of the vehicle body during starting or accelerating of vehicle.

3,419,101
INTERCONNECTED VEHICLE SUSPENSION HAVING REAR TRAILING ARMS
William D. Allison, Grosse Pointe Farms, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 23, 1967, Ser. No. 625,355
10 Claims. (Cl. 180—73)



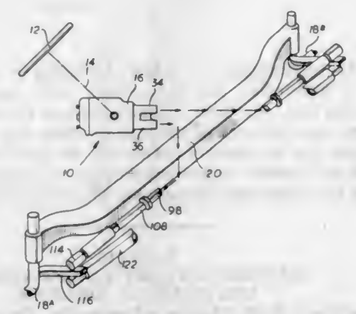
A vehicle suspension system having a pair of driving wheels, an axle housing and a pair of trailing suspension arms connecting the housing to the vehicle chassis. A transverse balancing lever is pivotally connected to the differential portion of the axle housing and to the suspension arms. The lever is angled to the axis of the axle housing in order to balance torque reaction and equalize traction between the driving wheels during acceleration.

3,419,102
INDEPENDENT REAR SUSPENSION SYSTEM FOR A MOTOR VEHICLE
Achille C. Sampietro, Bloomfield Hills, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,734
9 Claims. (Cl. 180—73)



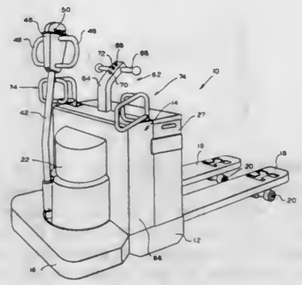
An independent rear suspension system for a motor vehicle in which the differential housing is supported on resilient members that permit limited rotation of the differential about a transverse axis. Rotation of the differential about that axis caused by driving torque is resisted by articulated links that surround the drive shaft and extend laterally to a connection with longitudinally extending trailing arms that are formed of leaf springs.

3,419,103
STEERING MECHANISM
Russell G. McMillen, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,893
5 Claims. (Cl. 180—79.2)



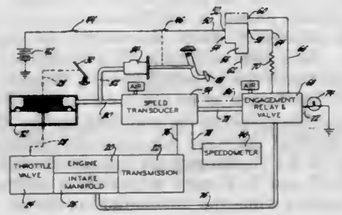
A steering mechanism for a vehicle having a steering control unit positioned remotely from the vehicle axle. The steering control unit which is both hydraulically and mechanically actuated is operatively connected to the wheels of the vehicle by a flexible motion transmitting means which includes flexible tubing and rollers therein for transmitting motion between the control unit and the vehicle wheels.

3,419,104
OPERATOR SIDE GUARD FOR USE WITH AN INDUSTRIAL TRUCK
Ronald L. Messenger, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 5, 1966, Ser. No. 599,183
8 Claims. (Cl. 180—82)



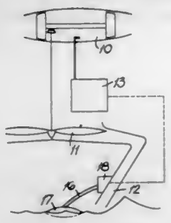
An operator side guard for use with an industrial truck alongside which the operator may walk or on which the operator may ride. The truck includes a handle which may be swung from side to side to steer the truck and moved to a vertical position to apply the truck brake. The guard is connected to the truck for pivotal movement about a vertical axis so that when the handle is moved to the vertical position from a substantially horizontal position at one side of the truck the guard will pivot out of the path of the handle when engaged by it.

3,419,105
VEHICLE ROAD SPEED CONTROL SYSTEM
Norman R. Hagler, Flint, Earl W. Pierce, Grand Blanc, and Joseph F. Doerr and William J. Johnston, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 5, 1966, Ser. No. 584,605
4 Claims. (Cl. 180—108)



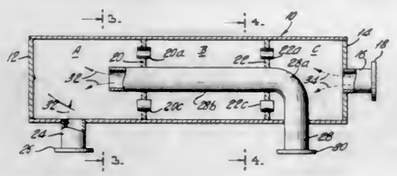
A vehicle road speed control system having a servomotor controlling the engine throttle valve, the servomotor being controlled by a speed error responsive valve which in turn is controlled by actual vehicle speed and a desired vehicle speed setting. A clutch is held in the released position while the system is inactive and is clutched to a vehicle speed sensor when the system is activated to cause the speed error responsive valve to control the servomotor to maintain actual vehicle speed substantially at the desired vehicle speed.

3,419,106
HOVER HEIGHT CONTROL APPARATUS FOR AIR CUSHION VEHICLES
Owen Napier Lawrence, Great Alne, near Alcester, and Geoffrey Albert Long, Sutton Coldfield, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 12, 1966, Ser. No. 564,581
3 Claims. (Cl. 180—119)



Hover height control apparatus for an air cushion vehicle comprising a probe arranged to engage with the surface over which the hovercraft is travelling, and a control device on the vehicle to which the probe is connected, and which is capable of producing a signal in response to deviations in the height of the vehicle, said signal being applied to power means whereby the height of the hover of the vehicle can be varied.

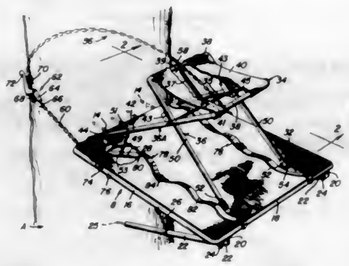
3,419,107
MANIFOLD MUFFLER ARRANGEMENT
Charles M. Jozepaitis, Bridgeport, Conn., assignor to The Nash Engineering Company, South Norwalk, Conn., a corporation of Connecticut
Filed July 3, 1967, Ser. No. 650,741
7 Claims. (Cl. 181—40)



A combined manifold and muffler arrangement for interconnecting the inlet or discharge ports of a pump or an engine wherein the communication passages and chambers normally present to muffle sounds are utilized to permit the passage of fluids or mixtures of fluids flowing through the pump or engine. The manifold-muffler arrangement includes at least a mixing chamber separated from an outlet chamber by a wall extension transversely to the longitudinal axis of the manifold-muffler. Several discharge ports or inlets are directed to the mixing chamber, and one of the discharge ports extends through the transverse wall and is located substantially centrally in the shell member while the attenuating means are located in surrounding relationship to said conduit in the transverse wall.

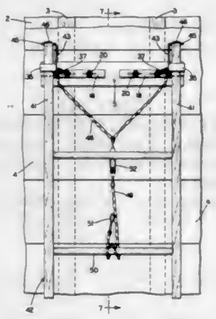
3,419,108
PORTABLE TREE STAND
Freddie L. Mobbs, P.O. Box 141, Greenbrier, Ark. 72058
Filed Oct. 19, 1966, Ser. No. 587,790
6 Claims. (Cl. 182—129)

A portable stand for use by a hunter when waiting on game and using, as the case may be, a bow and arrow or a gun. It comprises a screen-covered frame having spikes capable of being embedded in the trunk of a tree. This frame has a load-binder-type sling which is looped and bound around the tree's trunk. It is also provided with depending stabilizing props or legs. A folding camper's-type leg-supported stool is cooperatively joined to and, when



erected for use, resides atop the platform. Complemental self-contained strap means is provided in a manner that the complete stand can be harnessed and carried on the hunter's back. This stand is safe and comfortable and affords effective visibility.

3,419,109
LADDER ATTACHMENT FOR USE WITH ALUMINUM SIDING
Donald G. Costlow, 5146 Camp Road, R.D. 5, Ravenna, Ohio 44266; Steve Csanyi, 7815 Madison Ave., Cleveland, Ohio 44102; and James Csanyi, 2166 W. 104th St., Cleveland, Ohio 44102
Filed July 21, 1967, Ser. No. 655,054
8 Claims. (Cl. 182—214)

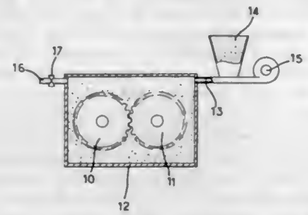


An attachment for ladders including a pressure bar with rubber-like pad for contact with the siding, and having two adjustable brackets thereon for receiving the upper end portions of the rails or stiles of a ladder, with means for temporarily connecting the same to the upper end of a ladder to prevent damage to aluminum siding, and two removable wings upon the pressure bar.

3,419,110
METHOD OF DRY-LUBRICATING MECHANICAL DEVICES
Jean-Loup Polti, Chambon-Feugerolles, France, assignor to Centre Stephanois de Recherche Mecanique, Hydromecanique et Frottement, a corporation of France
Filed Feb. 14, 1967, Ser. No. 616,100
Claims priority, application France, Feb. 14, 1966, 49,479
10 Claims. (Cl. 184—1)

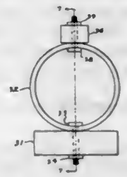
Method of dry lubrication of mechanical elements, without liquid, oil and grease, comprising placing said

elements in an atmosphere into which is injected a very fine dust of alkali metals and alkaline-earth metal salts



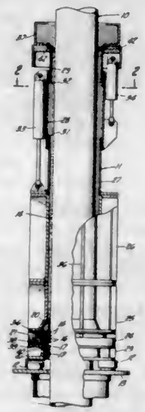
consisting of the radicals S, Se, Te, F, Cl, Br, I, P, CN, CO_3.

3,419,111
PLURAL LOAD VISCOELASTIC DAMPING DEVICE
David I. G. Jones, Dayton, and John P. Henderson, Fairborn, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 24, 1966, Ser. No. 589,141
2 Claims. (Cl. 188—1)



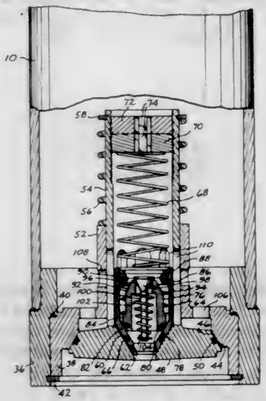
To dissipate energy in a structure, which vibrates in a plurality of modes, an inertial mass is connected to the vibrating structure by means of a viscoelastic material.

3,419,112
METHOD AND APPARATUS FOR LOWERING CASING INTO A BORE HOLE
Marvon A. Smith, Ventura, Calif., assignor to Reliance Engineering & Development Co., Tehachapi, Calif., a corporation of California
Filed Mar. 8, 1967, Ser. No. 621,539
7 Claims. (Cl. 188—67)



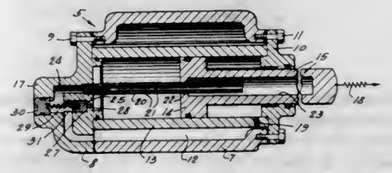
A layer of sand or other granular material is confined in the annular space between a supporting collar and a casing to be lowered into a bore hole. The sand is allowed to move downward under control out of the lower end of the annular space, thereby permitting the casing to descend by gravity.

3,419,113
BOOM SNUBBING DEVICE AND CONTROL VALVE THEREFOR
Lewis A. Shelley, 3725 SE. Holgate Blvd., Portland, Oreg. 97202
Filed Apr. 14, 1967, Ser. No. 630,898
5 Claims. (Cl. 188—96)



The inner end of the elongated inner tube of a pair of telescoping tubes forming an extensible hydraulic boom snubbing cylinder, carries a control valve assembly of four substantially concentric spring loaded valves. The largest valve opens to transfer hydraulic fluid quickly from the inner tube to the outer tube as the boom is lowered; the smallest valve opens to meter fluid slowly from the outer tube to the inner tube as the boom is elevated; the next to smallest valve opens with the smallest valve when the boom is elevated at a faster rate; if the boom elevation is still faster the next to smallest valve closes against the next to largest valve and the smallest valve dampens the boom elevation rate; and if the boom elevates with uncontrolled speed the next to largest valve opens to relieve the hydraulic pressure in the inner tube.

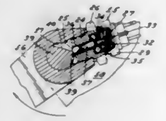
3,419,114
HYDRAULIC ACTION DEVICES WITH INERTIA INSENSITIVE SNUBBING CIRCUIT
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Continuation of application Ser. No. 523,426, Jan. 27, 1966. This application Sept. 18, 1967, Ser. No. 668,716
7 Claims. (Cl. 188—97)



A hydraulic action device such as a buffer, actuator, and the like, comprises means defining a working chamber

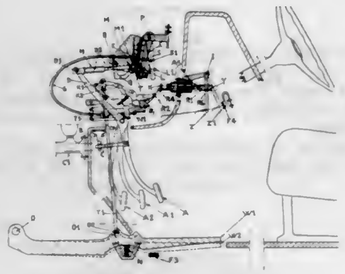
from which hydraulic fluid is arranged to be displaced through a passage by a member such as a piston, wing-shaft vane, and the like operative under substantial load variables, and a valve is referenced directly to the working chamber independently of the passage to control the passage for effecting a substantially uniform rate of deceleration of the member irrespective of load, force or inertia.

3,419,115
STARTER SAFETY SWITCH ON CLUTCH PEDAL
Theodore L. Glenn, Troy, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 11, 1967, Ser. No. 637,823
4 Claims. (Cl. 192—.02)



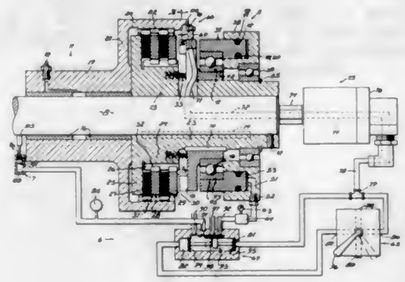
A starter safety switch of the cam operated type is mounted on the clutch pedal and is actuated by a stationary cam adjacent the pedal to interrupt the circuit from the start switch to the starter solenoid and prevent operation of the starter except when the clutch is disengaged. In the preferred form, the clutch pedal is provided with a bore receiving the stationary clutch pedal shaft, the starter safety switch is received within a bore intersecting that bore, and the cam for operating the switch is formed on that portion of the shaft covered by the pedal.

3,419,116
DEVICE FOR OPERATING THE CONTROL OF BOTH BRAKE AND ACCELERATOR OF AN AUTOMOBILE BY SINGLE PEDAL
Vittorio Panto, Piazza Spirite Sante 4, Catania 95131, Italy
Filed Nov. 16, 1966, Ser. No. 594,755
Claims priority, application Italy, Dec. 14, 1965, 27,625/65
3 Claims. (Cl. 192—3)



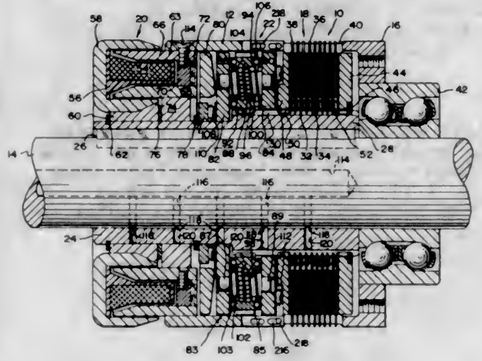
A device for operating the brake and the accelerator of an automobile by a single foot-pedal moving in the same direction, the first part of the movement of the pedal from its position of rest corresponding to the accelerating phase and the second part of its movement, after disconnection of the accelerator, corresponding to the braking phase; the disconnection of the accelerator, occurring at the start of the braking phase, being brought about by a main interrupter operated by the movement of a movable floor-board pivotably mounted on an axle and forming a part of the floor of the automobile; the movable floor-board is provided with resilient means keeping it normally upwards but being capable of being pressed downwards; it is placed under the foot of the driver who operates the single pedal in such a way that it can be kept pressed down by the weight of the foot when the driver, pressing on the pedal to accelerate, keeps his heel resting naturally on the movable floor-board; when the driver begins to press the single pedal right to the bottom in order to brake, because of the natural raising of his heel, the movable floor-board rises upward under the action of the resilient means and operates the main interrupter which controls the means for disconnecting the accelerator; the device is further provided with a secondary safety interrupter designed to automatically disconnect the accelerator at the end of the first part of the movement of the pedal even without the raising of the movable floor-board, so that the single pedal operates only the brake in the case of a break-down of the main interrupter; the device is also provided with first linking means connecting the movable floor-board with the main interrupter and with second linking means connecting the main interrupter with the accelerator and controlled by the main interrupter; said first and second linking means being so constructed as to operate the main interrupter and disconnect the accelerator from the start of the upward movement of the movable floor-board, initiated towards the end of the first part of the movement of the single pedal; it is further provided with third linking means between the pedal and the secondary interrupter.

3,419,117
OVERLOAD RELEASED PNEUMATIC CLUTCH WITH BRAKE
William A. Conway, Cincinnati, Ohio, assignor to The Conway Clutch Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 2, 1966, Ser. No. 591,463
9 Claims. (Cl. 192—15)



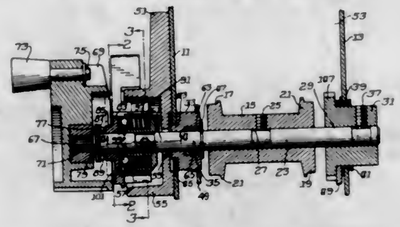
A torque responsive pneumatic clutch and control system which comprises at least two friction discs drivingly connected to driven and driving members, and a pneumatic motor for moving the discs into and out of driving engagement. The control system includes a pressure relief valve mounted upon one of the driving or driven members and a cam for actuating the valve connected to the other member. In the event of relative slippage between the two discs and consequently the driving and driven member, the pressure relief valve is actuated and opened. Opening of the presure relief valve triggers a control system which then moves the discs out of driving engagement and moves the pressure relief valve out of alignment with the actuating cam.

3,419,118
ELECTROMAGNETICALLY ACTUATED CLUTCH
Charles M. Allaben, Jr., Ithaca, N.Y., assignor, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,499
12 Claims. (Cl. 192—35)



Electromagnetically actuated, force augmented, clutch of the disc pack type.

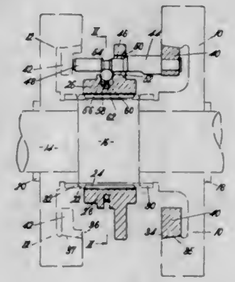
3,419,119
FRAMING CLUTCH MECHANISM
Edward R. Prelletz, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed June 17, 1966, Ser. No. 558,332
9 Claims. (Cl. 192—48.3)



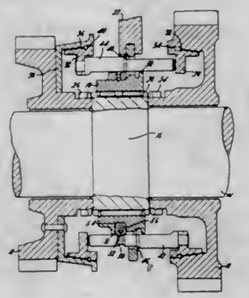
Disclosed for a stripfilm projector is a framing mechanism for precisely registering a frame of a stripfilm for projection. An indexing mechanism intermittently advances the stripfilm the height of a frame. The framing mechanism cooperates by a friction clutch with a shaft assembly associated with the indexing mechanism, which clutch normally remains in frictional engagement with a clutch housing, but is releasable therefrom by manual control means to engage and adjust the shaft assembly less than the height of a frame for registration of a film frame for projection upon each subsequent indexing operation of the indexing mechanism.

3,419,120
TRANSMISSION SYNCHRONIZING CLUTCH WITH BALK PINS THAT ARE CIRCUMFERENTIALLY BIASED
Thomas Charles Felix Stott, Harpenden, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,822
Claims priority, application Great Britain, July 1, 1965, 27,843/65
9 Claims. (Cl. 192—53)

The disclosure shows a transmission synchronizing clutch having a shift collar splined to a shaft for rotation therewith and relative axial movement from a disengaged position to a synchronized position and thereafter to an engaged position in which positive clutch teeth elements on the shift collar and a gear rotatably mounted on the shaft are engaged to effect a positive drive between the gear and the shaft. The shift collar is yieldably connected to balk pins by a detent ball and annular detent groove in the balk pins which yieldably hold the balk pins for movement with the shift collar from the disengaged position to the synchronizing position in which the balk pins move the synchronizing clutch cone members on the balk pin and on the gear together for synchronization. The detent ball and groove also biases the balk pins circumferentially from a non-inhibiting position permitting free relative movement between the shift collar and balk pin to an inhibiting position limiting relative movement of the shift collar and the balk pins when the shift collar is in the disengaged position and prior to movement to the synchronizing position.



3,419,121
POSITIVE-CLUTCH COUPLING ARRANGEMENTS HAVING SYNCHRONIZER MECHANISMS AND CYLINDRICAL BEARING MEANS
Thomas Charles Felix Stott, Harpenden, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,331
Claims priority, application Great Britain, Jan. 6, 1966, 591/66
9 Claims. (Cl. 192—53)

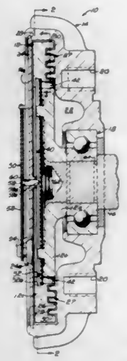


Separate synchronizer rings of a double-acting positive-clutch coupling arrangement for a change-speed transmission mechanism each have a cylindrical bearing surface immediately adjacent one or other, or both, axial ends of their frusto-conical synchronizer surface; each cylindrical surface co-operates with a corresponding cylindrical surface on another member, to control the radial position of the respective synchronizer ring.

3,419,122
FLUID COUPLING WITH FLOW CONTROL MEANS

Lavern R. Connelly, Marshall, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 12, 1966, Ser. No. 578,667
8 Claims. (Cl. 192—58)

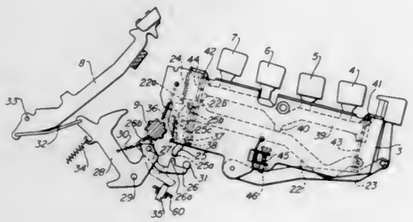


Disclosed herein is a fluid coupling including an input member mounted for rotation within an output member. A reservoir is formed within the input member to hold a fluid shear medium. Valve means is mounted on the input member for controlling a flow of the fluid shear medium between the reservoir and a shear space between the input and output members in response to a condition within the reservoir. Wiper members are provided for regulating a flow of the fluid medium from the shear space to the reservoir in response to a condition within the shear space.

3,419,123
PORTABLE ELECTRIC TYPEWRITER

Andreas Salzberger, Frankfurt am Main, and Rolf Freyburg, Berlin, Germany, assignors, by mesne assignments, to Willy Feiler Zahlund Rechenwerke G.m.b.H., Berlin, Germany

Continuation of application Ser. No. 607,317, Jan. 4, 1967. This application July 11, 1967, Ser. No. 652,628
Claims priority, application Germany, Apr. 6, 1966, F 48,869
10 Claims. (Cl. 197—17)

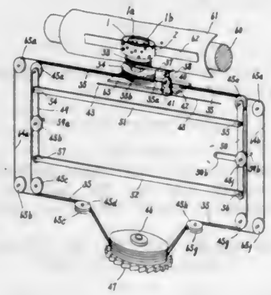


This invention relates to a portable electric typewriter characterized by an association of keyboard mechanism, drive train and power roll, type bar and case shift supporting and drive mechanism so located and arranged as to permit the typewriter carriage to be sufficiently rearwardly located to provide a substantially flat low silhouette machine without appreciably increasing the height and front to rear dimensions over those of manual portable typewriters; more particularly it relates to the above described arrangement having a modular keyboard mechanism characterized by triggers for rapidly dependably effecting engagement of relatively simple drive mechanisms with said power roll; and specifically it relates to the hereinabove machine arrangement having a drive train characterized by a resiliently suspended motor to eliminate shock and vibration and to minimize noise incident to the intermittent loading of said power roll.

3,419,124
CABLE POSITIONED TYPE DRUM PRINTER

Toshiro Sawaki, Takasaki, Japan, assignor to Oki Electric Industry Company Limited, Minato-ku, Tokyo, Japan

Filed June 7, 1967, Ser. No. 644,236
Claims priority, application Japan, Dec. 21, 1966, 41/83,260
5 Claims. (Cl. 197—53)

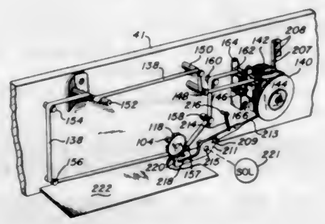


The present invention discloses a printer wherein the vertical direction or rotating direction of a type carrier is selected by a selecting wire which is positively driven by a positive driving mechanism.

3,419,125
RIBBON CONTROL APPARATUS

George R. Spaleny, Dayton, Ohio, assignor to The Standard Register Company, Dayton, Ohio, a corporation of Ohio

Original application Jan. 19, 1966, Ser. No. 521,699, now Patent No. 3,361,242, dated Jan. 2, 1968. Divided and this application Sept. 5, 1967, Ser. No. 665,585
6 Claims. (Cl. 197—165)



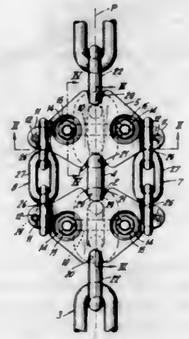
Apparatus for winding, for unwinding, and for automatically controlling reversal of direction of movement of a ribbon carried by the spools in a typewriter, or printer, or the like. The ribbon is carried by a pair of spools

which are substantially coaxial or in adjacent relationship. The winding and unwinding of each spool is accomplished by unidirectional rotary drive means.

3,419,126
CONNECTING DEVICE FOR CONVEYOR CHAINS AND THE LIKE

Ernst Braun and Gert Braun, Essen-Heisingen, Germany, assignors to Halbach & Braun, Wuppertal-Barmen, Germany, a corporation of Germany

Filed Feb. 21, 1967, Ser. No. 617,635
Claims priority, application Germany, Sept. 29, 1966, H 60,614
9 Claims. (Cl. 198—1)



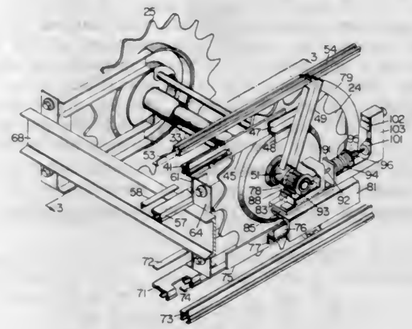
A connecting device for reinforcing an openable scarf-type link interconnecting the chain ends of an endless conveyor chain for single-chain bucket, flight, scraper and apron conveyors of the type used to transfer coal, ore and other heavy bulk material, which comprises a pair of rigid yoke bodies each attached to a respective terminal link of one of the chain ends and having respective pairs of lateral formations or lobes extending transversely to the chain, the rigid yokes or bodies being generally coplanar, and at least one flexible element (i.e., a pair of connecting or reinforcing chains) bridging these yoke bodies with a flexibility permitting normal articulation of the links. The connecting chains extend parallel to the openable link of opposite sides thereof and each having a respective end link receiving one of the lobes of the respective yokes and at least one further link interconnecting the end links of each of these securing chains. The yokes are formed with recesses at their opposite longitudinal sides for receiving the penultimate link of each chain end and the openable connecting link with freedom of relative movement; central projections of the yokes are received within the terminal link of the chain end to which they are attached by U-bolts coplanar with these projections.

3,419,127
TENSION CARRIAGE FOR PASSENGER CONVEYORS

Herman Rudolph Yost, Lincoln Park, N.J., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey

Filed July 11, 1966, Ser. No. 564,239
10 Claims. (Cl. 198—16)

A tension carriage for passenger conveyors including a pair of driving chains which pass around a pair of idler sprockets each rotatably mounted on a shaft but rigidly fastened together by a sleeve surrounding the shaft, in which a pinion on each end of the shaft is engaged and

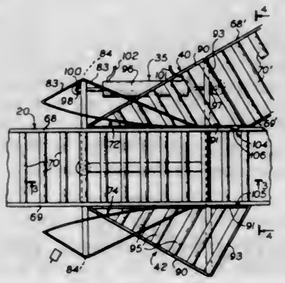


supported by a fixedly mounted rack and which includes a pair of springs urging the shaft in a direction to tighten the chains.

3,419,128
CONVEYOR SYSTEM

Roy F. Leonard, 521 Roosevelt Ave., River Vale, N.J. 07675

Filed Oct. 7, 1966, Ser. No. 585,049
9 Claims. (Cl. 198—31)



This sorting apparatus includes an assembly having deflectors that can be located on opposite sides of a basic conveyor for deflecting articles from the conveyor. The deflector assembly is not part of the basic conveyor and it can be located at any selected location along the basic conveyor where a sorting station is desired. The deflectors are connected together under the conveyor for operation in unison and they can be used in combination with branch conveyors located on one or both sides of the basic conveyor at the sorting station.

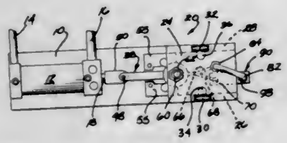
3,419,129
DEVICE FOR ORIENTING PARTS AND THE LIKE

Erwin W. Knoth, Grand Rapids, Mich., assignor to Crampton Manufacturing Company, Grand Rapids, Mich., a corporation of Michigan

Filed Mar. 16, 1967, Ser. No. 623,714
12 Claims. (Cl. 198—33)

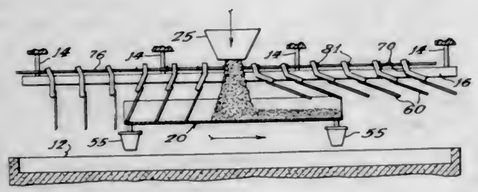
The device of the invention comprises a reciprocating shuttle means having a chamber in which a stud or like

part is deposited at the starting point in the path of movement of the shuttle means. The shuttle means carries the part deposited in its chamber to one of two terminal locations, where the part is removed from the shuttle means chamber. The particular one of these two terminal locations to which the shuttle means travels is determined by the particular orientation of the part carried by the shuttle means, i.e., whether a selected end of the part (such as a dog point) is oriented upwardly or downwardly. This particular end of the part is selected as the one having the smaller diameter, and the shuttle means chamber is of a size such that one end of the part must protrude outwardly therefrom. Guideways are provided on each side of the shuttle means chamber for engaging this smaller end of the part, but these guideways are each of a size to engage only the aforesaid smaller end



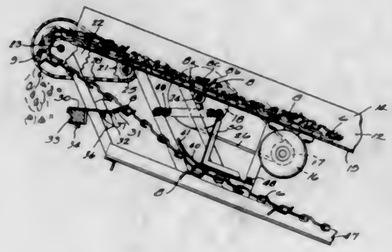
of the part. The two guideways extend in the same general direction, i.e., that of the shuttle means travel, but they diverge from each other and each terminates at a different point. The shuttle means itself is free to follow either guideway, and it does follow the particular guideway with which the smaller end of the part carried by the shuttle means is engaged. Consequently, parts removed from the shuttle means chamber at one terminal location will be pointed a first particular way, whereas parts removed from the chamber at the other terminal location will be pointed in the opposite direction; in either event, however, the parts will be uniformly oriented at their particular terminal location. The invention also includes a device for integrating the two streams of oppositely oriented parts from the two terminal locations, so that a single final output stream is provided in which all parts are oriented in the same manner.

3,419,130
SHUTTLE TYPE ANIMAL FEEDER
Robert G. Ferris, Harvard, Ill., assignor to Starline, Inc., a corporation of Illinois
Filed June 6, 1967, Ser. No. 643,982
6 Claims. (Cl. 198—67)



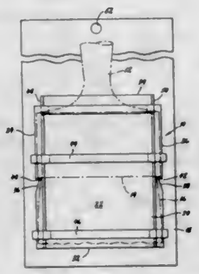
A shuttle type animal feeding apparatus including a trough that receives material thereon at a central supply station, and which is reciprocable back and forth over an animal feeding station and beneath first and second sets of pivoted sweep member at opposite sides of the supply station which discharge material from opposite ends of the trough to the feeding station. Control means is provided for selectively disabling each of the sets of sweep members, so that the amount of feed being discharged from each end of the trough can be varied and controlled.

3,419,131
FLIGHT CLEANER FOR MATERIAL STACKER
Paul Patz, Pound, Wis. 54161
Filed July 13, 1967, Ser. No. 653,266
2 Claims. (Cl. 198—229)



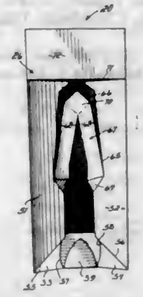
A device for cleaning the flights or paddles of a material stacker to thereby prevent accumulation or buildup of material on the paddles or flights of a paddle type conveyer used for stacking material in a pile.

3,419,132
PACKAGE FOR PAINT BRUSHES OR THE LIKE
Gerard P. O'Connell, 2039 Westfield St., West Springfield, Mass. 01089
Filed Nov. 6, 1967, Ser. No. 680,875
7 Claims. (Cl. 206—15.1)



This invention is concerned with the packaging of paint brushes or the like for display and, at the same time, protection of the brush. According to this invention, a resilient, sleeve-like package is provided for the containment of the brush, which is adapted to slide over the brush and releasably lock in a position covering the bristles and ferrule. The locking is not permanent, so that the package may be removed without mutilating the package, and subsequently reused. The locking feature of the package is provided by one or more indentations in the sleeve which lock, or catch, in a certain portion of the brush as the brush is inserted into the package.

3,419,133
SHADOW BOX CARTON HAVING ARTICLE SUPPORT
Orison W. Stone, Valley Cottage, N.Y., assignor to R. A. Jones & Company, Inc., Covington, Ky., a corporation of Kentucky
Filed Apr. 10, 1967, Ser. No. 629,656
15 Claims. (Cl. 206—45.14)

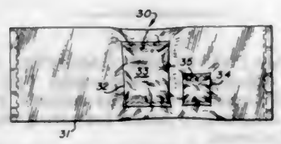


A shadow box carton having a front panel from which are formed shadow panels and a flexible article support.

ERRATUM

For Class 206—47 see:
Patent No. 3,419,258

3,419,134
FOAMABLE PACKAGE AND METHOD FOR FORMING CELLULAR FOAM
Martin E. Fitts, 3073 Markingdon Ave., San Jose, Calif. 95127
Continuation of application Ser. No. 463,845, June 14, 1965. This application July 8, 1966, Ser. No. 563,921
9 Claims. (Cl. 206—47)



Two or more components of a chemical plastic foaming system, such as resinous component and an activator component, are sealed into an inner pouch in which they are separated by some rupturable partition. The inner pouch is enclosed within an outer pouch having a volumetric capacity substantially equal to the expanded foam generated by the components within the inner pouch after intermixing.

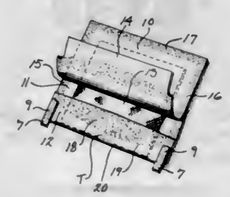
3,419,135
SCREW CLIP OR THE LIKE INCLUDING HEADLESS SCREWS WITH CYLINDRICAL BORE DRIVING MEANS
Elliott Millner, 16 Wildwood Road, Hartsdale, N.Y. 10530
Filed Oct. 26, 1965, Ser. No. 505,295
2 Claims. (Cl. 206—56)

A plurality of externally threaded headless screws of uniform major and minor diameters throughout the length thereof being joined together in a clip or in stack form. Each of the screws is provided with a cylindrical bore



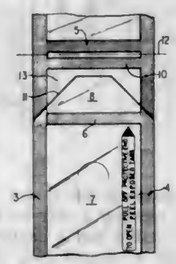
at one end thereof adapted to receive a tapered driver in frictional engagement.

3,419,136
PACKAGE FOR FLAT ARTICLES SUCH AS SURGICAL SPONGES
Robert H. Pratt, Milwaukee, Wis., assignor to Pratt Manufacturing Corp., Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 29, 1967, Ser. No. 664,078
3 Claims. (Cl. 206—63.2)



A package having a bottom panel of sheet material on which a flat article such as a surgical sponge is placed, said bottom panel having a fold portion folded upwardly over a portion of the article and sealed at its side edges to the bottom panel, there being a top panel covering said article and having an edge projecting beyond the folded edge of the bottom panel, at least one of said panels being formed of heat-sealable film, and the top panel being heat sealed to the sides and upper edge of the bottom panel by a U-shaped heat seal outline and being sealed to the fold portion of the bottom panel.

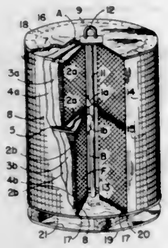
3,419,137
CLOSED-END PEEL PACKAGE
George A. Walck III, Somerville, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Nov. 14, 1967, Ser. No. 682,923
5 Claims. (Cl. 206—63.2)



A package for sterile packaging of articles between upper and lower webs of sheet material sealed together around the enclosed articles, unsealed ends of the webs being provided for peeling apart the webs to make available the contents, and extensions of the unsealed ends being sealed together to keep the inner surfaces of said

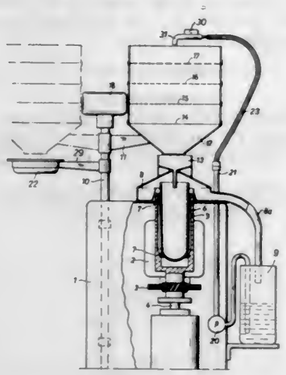
ends clean up to the moment of use, the extensions being readily removable, as by tearing, to free the ends for peeling.

3,419,138
PACKING PACKAGED GOODS
Robert Halsberghe, Kortrijk, Belgium, assignor to Trefileries Leon Bekaert, Pvba, Zwevegem, Belgium, a corporation of Belgium
Filed Nov. 15, 1966, Ser. No. 594,437
Claims priority, application France, Nov. 18, 1965, 38,857
17 Claims. (Cl. 206—65)



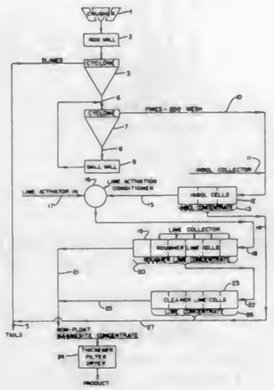
Cylindrical wire netting enveloping packaged objects arranged in substantially cylindrical piles and transversally stiffening said piles.

3,419,139
APPARATUS FOR ANALYZING FRESH CONCRETE
Ralph Agthe, Nyon, Switzerland, assignor to Spindel-, Motoren- und Maschinenfabrik A.G., Uster, Zurich, Switzerland
Filed Apr. 28, 1965, Ser. No. 451,395
Claims priority, application Germany, Apr. 28, 1964, S 90,822
6 Claims. (Cl. 209—10)



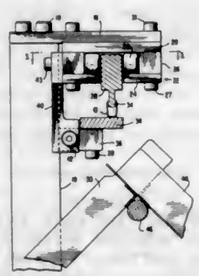
Apparatus for carrying out a wet screen anlaysis of fresh concrete, by treating a mix of fresh concrete and washing liquid. A casing has a centrifugal spindle with driving means and a centrifuging cup is removably mounted in driving engagement with the spindle. A screen support holds a plurality of screens of different mesh size in superposed relationship as a pile above the centrifuging cup with the finest mesh screen forming the bottom screen. The mesh size of the different screens increases from the bottom screen towards the top screen. The screens are removable and means are provided for directing the effluent from the finest mesh screen into the centrifuging cup. The washing liquid overflowing from the centrifuging cup during rotation thereof is collected and vibrator means imparts vibratory motion to the screens on the screen support.

3,419,140
SELECTIVE FLOTATION OF DOLOMITE AWAY FROM MAGNESITE
Tage Loumann Book Jepsen, Gabbs, Nev., assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed May 11, 1966, Ser. No. 549,308
11 Claims. (Cl. 209—12)



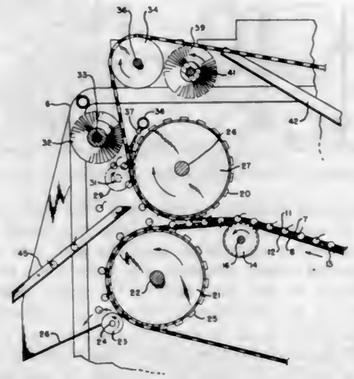
Froth flotation treatment of magnesite ores containing calcite and dolomite. Impurities are float separated from ore in a first stage. Cleaned ore conditioned with lime activator agent and passed through a second multistage flotation in which a collector reagent for calcite and dolomite is stage added in starvation amounts to float off portions of the calcite and dolomite content at each stage with magnesite content passing through stages as nonfloated concentrate residue.

3,419,141
SORTING MACHINE FOR C-SHAPED ARTICLES
Howard H. Aiken, Fort Lauderdale, Fla., James T. Marsh, Leonardtown, Md., and Allan I. Parvin, Clifton, N.J., assignors to Aiken Industries, Inc., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,344
10 Claims. (Cl. 209—73)



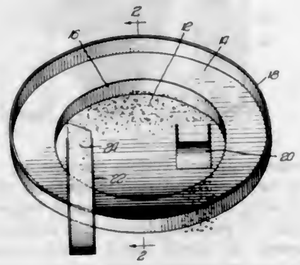
A sorting machine for sorting C-shaped articles according to the gap between the open legs of the article utilizes a sorting bar varying in dimension from one end to the other. The articles are strung onto one end of the sorting bar and then stepped along the bar by a walking beam arrangement while being allowed to hang at each increment of movement along the bar. When the gap between the open legs of the C-shaped article is greater than the decreasing dimension of the bar, the article drops into a sorted article receptacle. The sorting bar is horizontal and the sorted articles are stepping by reciprocation of the bar and oscillation of a supporting table in synchronism.

3,419,142
CHERRY STEMMING AND SORTING MACHINE
William E. Baker, El Cerrito, and Charles L. Urrere, Oakland, Calif., assignors to Atlas-Pacific Engineering Company, a corporation of California
Filed Mar. 29, 1967, Ser. No. 626,793
4 Claims. (Cl. 209—108)



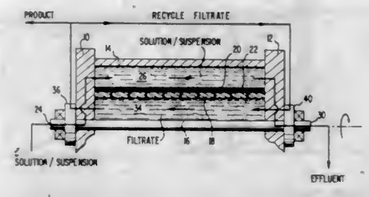
Stemmed and unstemmed cherries are fed in bulk to a device which includes two apertured belts which cooperate to carry the cherries about spaced rotatable pulleys and drums. One of these belts and drums serves to remove some of the stemmed cherries from the mass while the other belt and drum cooperate selectively with auxiliary means to remove the stems from cherries passing about that drum.

3,419,143
APPARATUS FOR SEPARATING MATERIALS
Cass B. Levi, Pittsburg, Kans., assignor to The McNally Pittsburg Mfg. Corp., Pittsburg, Kans., a corporation of Kansas
Filed Dec. 17, 1965, Ser. No. 514,490
3 Claims. (Cl. 209—481)



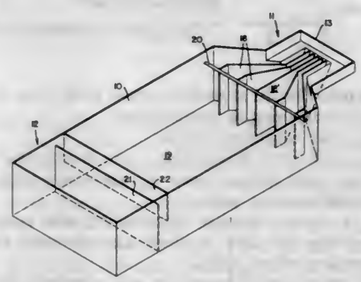
Apparatus for separating granular material into relatively coarse and fine particles has an inclined rotatable disc having a central portion with an encircling wall to provide an included angle of about ninety degrees. The granular material within the included angle is agitated by rotation of the disc to cause rolling and tumbling resulting in segregation and stratification according to size. The fines settle to the bottom and are carried to the high part of the inclined disc for removal whereas the coarse particles which work to the top are discharged over the encircling wall in the area of the low portion of the inclined disc. The split between the separated fractions can be varied by varying the angle of inclination of the disc and its speed of rotation, or by adjusting the specific location of the chute for removing the fines, or by a combination of all three.

3,419,144
METHOD OF NON-CYCLIC FILTRATION UTILIZING BOUNDARY LAYER HEAT TRANSFER
Morgan G. Huntington, Box 81, Woodfield Road, Galesville, Md. 20765
Filed Apr. 25, 1967, Ser. No. 633,593
9 Claims. (Cl. 210—78)



A method of non-cyclic pressurized filtration which utilizes heat transfer across a membrane and combined centrifugal force to cause radial convective forces in solution/suspension at a boundary layer on the membrane surface and thereby prevent a concentration in the boundary layer allowing more rapid and efficient filtration through the membrane. Heat transfer is accomplished by recycling filtrate at a temperature different from the solution/suspension and in countercurrent flow. Radial acceleration is applied by rotating an assembly containing the membrane, filtrate and solution/suspension.

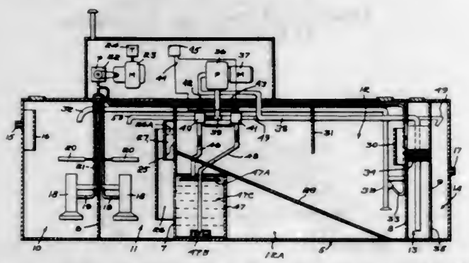
3,419,145
SEPARATION TANK AND METHOD
Joseph W. de Celis, San Francisco, Calif., assignor to De Laval Turbine Inc., Millbrae, Calif.
Filed June 10, 1966, Ser. No. 556,694
5 Claims. (Cl. 210—84)



Apparatus and method for separating two fluids, one of which is a separable composite of two or more fluids, such as the separation of a first oil from a second oil-water emulsion. The apparatus provides a rectangular separation tank with baffles at the inlet end to guide input fluid occupying a smaller cross-sectional area relative to the tank's cross-sectional area into the main body of the

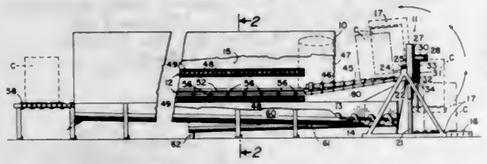
tank so as to avoid short circuiting of the fluid while passing through the tank. The separation method involves regulation of the fluid flow rate through the separation tank so as to create an amount of turbulence large enough to avoid separation of the emulsion, but not so great as to prevent gravitational separation of the first oil from the second oil-water emulsion.

3,419,146
SEWERAGE TREATMENT PLANT
James Koulovatos, P.O. Box 345, Brunswick, Maine 04011
Filed Oct. 16, 1967, Ser. No. 675,660
16 Claims. (Cl. 210—138)



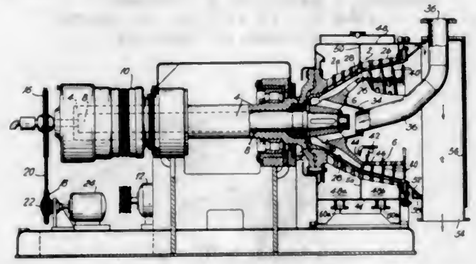
Sewerage treatment plant including means to aerate and comminute the effluent and means to chlorinate the then treated effluent together with means to pump the chlorinated effluent through a filter before its discharge from the plant and periodically to utilize the chlorinated effluent to backwash the filter and to deliver the backwash to the first means.

3,419,147
APPARATUS FOR REMOVING GREASE FROM CANS AND DRUMS
Denis P. Corby, San Jose, Calif., assignor to Crown By-Products Co., San Jose, Calif., a corporation of California
Filed July 18, 1966, Ser. No. 566,156
8 Claims. (Cl. 210—152)



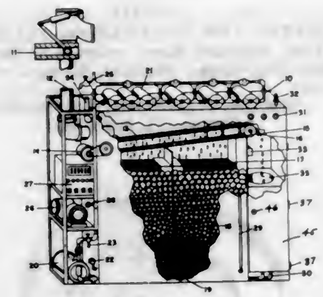
1. Apparatus for removing grease from cans, drums and the like comprising in combination:
(a) a can receiving dumper,
(b) a conveyor for receiving cans in inverted condition from said dumper and for conveying them along a predetermined path,
(c) a steam chamber surrounding said conveyor for heating the cans as they are conveyed along said predetermined path,
(d) steam jets disposed in said chamber for ejecting jets of steam into the inverted cans for impingement against the inner walls thereof for removing grease therefrom, and
(e) means below said conveyor for receiving the contents of such cans comprising
a screw feed including a trough having a perforated bottom for moving solids to a point of discharge, and
a sump trough below the perforated bottom of said screw feed for receiving grease and fluids therefrom.

3,419,148
CONTINUOUS-TYPE CENTRIFUGAL MACHINE
Toshia Niwa, Osaka, and Saburo Oishi, Takatsuki, Japan, assignors to Hitachi Shipbuilding and Engineering Co. Ltd., Osaka, Japan
Filed Oct. 23, 1967, Ser. No. 677,321
Claims priority, application Japan, Oct. 22, 1966, 69,891/66
8 Claims. (Cl. 210—213)



Continuous separation of a slurry into liquid and solid phases is accomplished by providing the basket or bowl of the inventive centrifugal machine with two adjoining frustoconical screen elements, the apex angle of the element closer to the feed end of the screw being larger than that of the other screen element, a continuous blade being provided so as to vary the thickness of a layer of the solid phase at the demarcation line between the screen elements, preferably only in the area of the screen element closer to the discharge end.

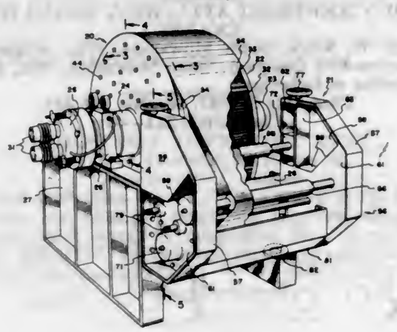
3,419,149
SEWAGE REMOVAL PLANT
Robert D. Allen, 379 Niles-Cortland Road SE., Warren, Ohio 44484
Filed Feb. 3, 1966, Ser. No. 524,702
4 Claims. (Cl. 210—262)



1. A waste treatment system comprising,
a screen member supported in inclined relation,
a filter having coke disposed therein below said screen,
a plurality of polishing cartridges connected in series,
inlet means to admit liquid waste containing gross solids and entrained solids to said screen whereby said gross solids are screened from said waste and said liquid and entrained solids pass to said coke filter,
means to conduct said liquid from said coke filter to said polishing cartridge filters,

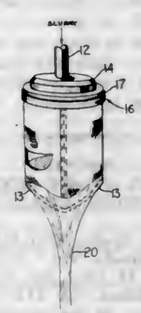
and means to remove said gross solids from said screen, said screen comprises a mesh belt, spaced pulleys are provided supporting said belt, and drive means connected to one of said pulleys to drive said belt, said drive means and pulleys comprising said means to remove said gross solids from said belt.

3,419,150
DRUM FILTER OF MOLDED CONSTRUCTION
Steven S. Davis, Bountiful, Utah, assignor to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Sept. 21, 1967, Ser. No. 669,431
5 Claims. (Cl. 210—401)



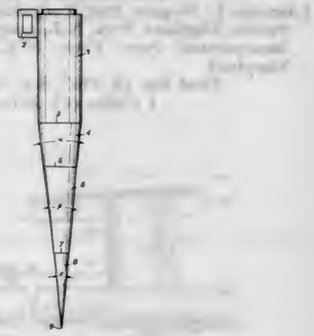
A rotary drum vacuum filter in which the drum comprises a cylindrical portion made up from molded arcuate sectors with molded headers closing the end, the molded headers have hubs and/or trunnions as well as necessary piping. For conversion of the filter to endless belt operation a simplified molded attachment is provided.

3,419,151
STRAINER BAG CONSTRUCTION
Edward A. Smith, Glenville, and Arthur C. Wrotnowski, Greenwich, Conn., assignors to American Felt Company, Glenville, Conn., a corporation of Massachusetts
Filed Nov. 15, 1966, Ser. No. 594,619
1 Claim. (Cl. 210—460)



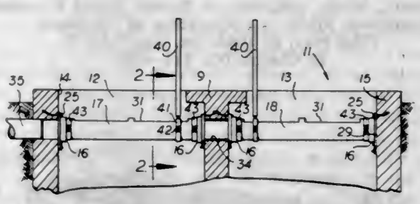
A strainer bag made of fabricated flat felt, the bag having an open end and a rounded bottom to provide a substantially stress-free strainer bag when it is operating as a strainer. Also the bag may have an outer retainer jacket which is larger than the original circumference of the bag.

3,419,152
CENTRIFUGAL PURIFIER
Jean-Claude Ramond, Rueil-Malmaison, France, assignor to D.I.P.A., Paris, France, a company of France
Filed Sept. 18, 1967, Ser. No. 668,621
Claims priority, application France, Sept. 22, 1966, 77,279
5 Claims. (Cl. 210—512)



Centrifugal purifier for separating impurities contained in a suspension of a solid, granular or fibrous product, in a liquid phase of the type comprising a cylindrical chamber, with a helical feed tube, to which chamber is joined a conical chamber at the base, in which this conical chamber is made up of a plurality of conical sections with differing apex angles.

3,419,153
SCUM REMOVER
Henry G. Herwig, Chalfont, Pa., assignor to FMC Corporation, a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,778
3 Claims. (Cl. 210—525)



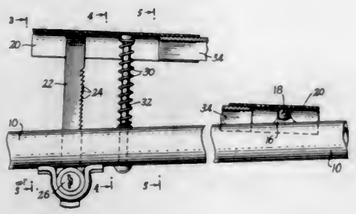
Bearing means for supporting and mounting a material removing trough within a tank adapted for containing a liquid from which floating material is to be removed. A bearing means is disposed on each of the opposed end portions of the trough and adjustably secured to opposite wall portions of the tank. Each bearing means includes a cylindrical body portion having a bore formed with an inwardly projecting spherical bearing surface to permit misalignment of the longitudinal cylinder axis of the trough with the cylinder axis of the bore. Flange portions extend radially outwardly from the body portion and are formed with downwardly opening slots adapted to adjustably engage bolts extending from and mounted on the tank walls for securing the bearing means to the tank walls. An adjustment mechanism, including an L-shaped bracket having a threaded aperture formed in one leg thereof and a screw threaded into the aperture for engag-

ing an abutment member associated with the flange, cooperates with one of the wall mounted bolts to cause vertical adjusting movement of the bearing means in response to vertical movement of the threaded screw to permit proper horizontal alignment of the trough within the tank.

3,419,154
HANGER BAR LOCK

Laurence L. Shapiro, East Rockaway, N.Y., and Vincent Parillo, Highland Park, N.J., assignors to Bond Stores, Incorporated, New York, N.Y., a corporation of Maryland

Filed Jan. 18, 1967, Ser. No. 610,112
1 Claim. (Cl. 211—7)



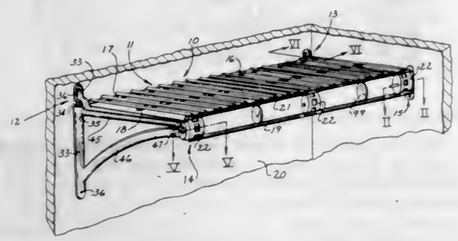
A security device comprising a bar which supports a plurality of garmet hangers and an elongated guard rail pivotally supported on the bar into and out of engagement with the garment hangers.

The pivot point is at one end of the bar and a locking device is disposed at the other end. A compression spring connecting the rail to the bar is mounted between the pivot and the locking device. The guard rail has an internal cavity within which is disposed a V-shaped support member.

3,419,155
STORAGE UNIT

John W. Black, Prairieville Township, Barry County, and Ronald W. Lindsey, Gun Plains Township, Allegan County, Mich., assignors to Pemco Wheel Company, Kalamazoo, Mich., a corporation of Michigan

Filed Nov. 21 1966, Ser. No. 595,878
10 Claims. (Cl. 211—90)

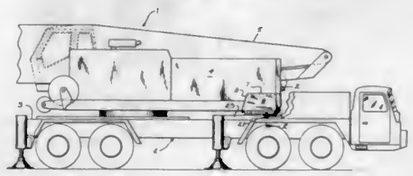


This invention relates in general to a storage unit and, more particularly, to a type thereof comprising an article-supporting deck and means for removably mounting said deck upon upright wall means. In this embodiment, the storage unit is fabricated substantially completely from metal parts, the majority of which are rod form. The unit comprises a deck having a plurality of spaced cross-rods supported upon spaced lengthwise rods, the rear one of which is mounted upon an upright wall by rear brackets which preferably permit pivotal movement of the deck around its rearward edge at least between a substantially horizontal position and a substantially vertical position depending from the rearward edge of the deck. The frontward edge portion of the deck is supported upon and between front brackets which are either mounted upon an adjacent side wall or upon the frontward end of a frontward projection on the rear bracket. In one form, the front brackets can be easily disconnected from the deck to permit pivotal movement of the deck in installations where such movement is desired. Alternatively, the same front brackets can be fixedly attached to the deck so that disconnection requires damage to or distortion of the connecting parts, whereby the unit is theftproof.

3,419,156
COUNTERWEIGHT ATTACHING MEANS FOR CRANES

George W. Mork, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware

Filed May 5, 1967, Ser. No. 636,449
3 Claims. (Cl. 212—49)



This disclosure relates to means for removably attaching a counterweight at the lower rear edge of the revolving frame of a truck mounted crane or the like. The top surface of the counterweight is provided with parallel, upwardly opening, inverted T-shaped grooves which open rearwardly through the counterweight and which slidably receive the crossbars of inverted T-shaped hangers, the counterweight being suspended from the hangers. The hangers have vertical legs that extend above the counterweight, and there are two pairs of rearwardly extending mounting bracket ears on the frame. When the hangers are at the forward ends of the grooves the legs are received between respective ears, and transverse pins extending through openings in the legs and ears mount the hangers, and therefore the counterweight, on the frame. To dismount the counterweight, hydraulic jacks on the bed of a carrier vehicle are used to raise the counterweight slightly to allow the transverse pins to be removed and then to lower the counterweight to the bed. The hangers are then slid rearwardly out of the grooves so that the frame is able to rotate past the counterweight without interference.

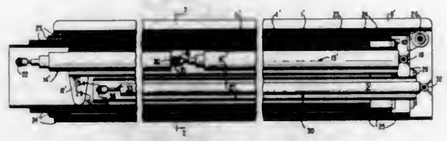
3,419,157
BOOMS HAVING THREE SECTIONS, FULLY EXTENSIBLE WITH AXIALLY CONNECTED RAMS

Rupert J. Brady, 7201 Pyle Road, Bethesda, Md. 20034

Filed Apr. 25, 1967, Ser. No. 633,510
3 Claims. (Cl. 212—55)

An extensible boom, of the telescopic type for cranes, having at least three boom sections connected for extension and retraction by a pair of multiple section hydraulic rams connected in substantially end-to-end relation interior of the boom sections. Both of the rams are supported by a common member connected with the boom mid-section and extending longitudinally thereof whereby the boom fly-section telescopes over said member and said pair of rams, in the retracted position.

A four section version of the boom includes a third double-acting ram connected between two of the boom sections and interior thereof, disposed substantially parallel with the pair of rams, whereby the boom fly-section

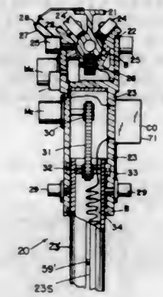


in the retracted position telescopes over all three rams, thereby providing a four section telescopic boom in which all sections are hydraulically extensible and in which there is only a slight variation in the vertical cross-section dimension between all adjacent boom sections.

3,419,158
ADJUSTABLE MACHINERY JOINT

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Original application Jan. 14, 1963, Ser. No. 251,411, now Patent No. 3,260,375, dated July 12, 1966, which is a continuation-in-part of application Ser. No. 477,467, Dec. 24, 1954. Divided and this application Oct. 22, 1965, Ser. No. 501,177
1 Claim. (Cl. 214—1)



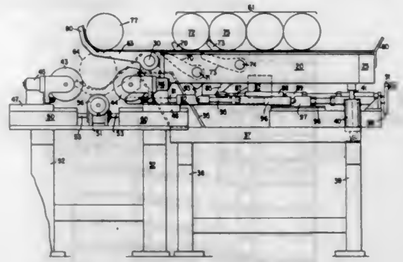
An adjustable machinery joint is provided which is applicable in the construction of various production machines and article manipulators. Power-operated means is provided for relatively moving the components or assemblies secured to the joint for performing predetermined operations during a manufacturing or article transfer cycle. Means are provided for predeterminately moving the joint assemblies with respect to each other and locking said assemblies when they are predeterminately located to prevent further movement thereof during the operation of a device associated with at least one of said assemblies. In this manner, variable forces which may be applied to the joint may be prevented from uncontrollably moving or shifting the assemblies secured to the joint.

3,419,159
BAR LOADING APPARATUS

Robert L. Schaller, Camillus, Donald L. Towne, North Syracuse, and Eli Culich, Liverpool, N.Y., assignors to Sundstrand Corporation, Belvidere, Ill., a corporation of Illinois

Filed Dec. 30, 1966, Ser. No. 606,100
5 Claims. (Cl. 214—1)

A bar loader for handling bars varying in diameter over a substantial range. Restraining and stop levers are movable by power means above the plane of the supply rack. Each power means is adjustable to vary the up position



of the levers for the accommodation of bars of different diameters.

3,419,160
BAR FEEDING APPARATUS FOR AN AUTOMATIC LATHE

Shiro Azuma, 615 Josuiminamicho, Kodaira, Tokyo, Japan

Filed July 17, 1967, Ser. No. 653,817
10 Claims. (Cl. 214—1.2)



Bar feeding apparatus for feeding bar material, one by one, to an automatic lathe, by the aid of a pusher rod or feed bar which may be provided at its leading end with a frictionally engaging head adapted to fit into a recessed hole in the tail end of the bar material. A bar supporting block and bar stopping mechanism are provided to cooperate in advancing the pusher rod until one bar is frictionally interconnected therewith, returning the stopping mechanism to its inoperative position to allow the pusher rod to advance the one bar for machining in the lathe, re-activating the stopping mechanism to force the scrap end of the one bar against the supporting block, temporarily holding the scrap end until further return movement of the pusher rod, and forcibly disconnecting the pusher rod from the scrap end of the one bar, which can then be discarded. The procedural steps are repeated during continuous operation of the automatic lathe.

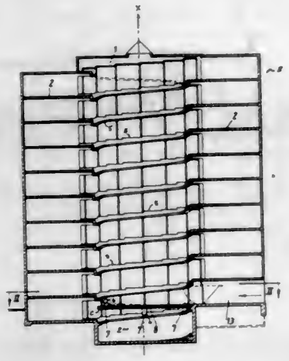
3,419,161
ELEVATOR AND BUILDING ARRANGEMENT

Carl Heinrich Hagel, 24 Eintrachtstrasse, Dortmund 46, Germany

Filed Mar. 25, 1965, Ser. No. 442,645
Claims priority, application Austria, Apr. 13, 1964, A 3,186/64
2 Claims. (Cl. 214—16.1)

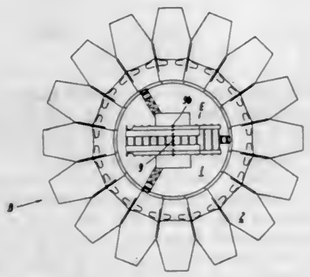
An elevator structure wherein a rotatably driven carriage is guided on a stationary, vertical helical track for movement along the axis thereof to position a load carrier at a selected elevation, the load carrier being independ-

ently rotatable relative to the carriage to assume a given angular orientation upon arrival at such elevation and to



reduce centrifugal forces due to carriage rotation and acting upon objects carried by the load carrier.

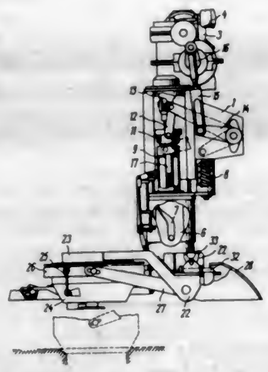
3,419,162
HELICAL ELEVATOR AND STORAGE BUILDING ARRANGEMENT
Carl Heinrich Hagel, 24 Eintrachtstrasse, Dortmund, Germany
Continuation-in-part of applications Ser. No. 442,645, Mar. 25, 1965, and Ser. No. 594,826, Nov. 16, 1966. This application June 7, 1967, Ser. No. 644,270
Claims priority, application Germany, Apr. 13, 1964, A 3,186
11 Claims. (Cl. 214—16.1)



This specification describes a novel elevator means comprising a load-supporting member pivotally mounted on an undercarriage. The undercarriage is supported on a helical track through outwardly extending arms which grasp the track through a three-wheel combination. Means are described to put a load onto or take such load off the elevator. A building arrangement particularly suited to use as an automobile parking garage is described in combination with the helical elevator.

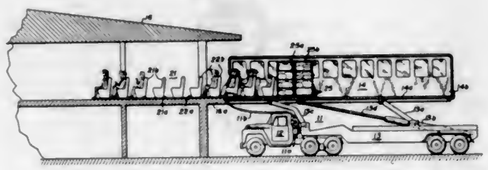
3,419,163
COKE OVEN CHARGING MACHINE HAVING COVER REMOVAL AND CLEAN OFF MEANS
Nikolai Grigorievich Kostochka, Slavjansk ul., P. Popovicha 11, Donetskaya Oblast, U.S.S.R.
Filed June 15, 1966, Ser. No. 557,710
2 Claims. (Cl. 214—18)

A machine having a mechanism for removal and installation of covers of charging hatches of coke ovens; including a body of a horizontal reduction gear and a funnel on which is mounted a mechanism for removing charge. A telescopic device is provided for directing the



charge from the bunker of a coal-charging wagon into the oven, the telescopic device being cantilever-mounted on the horizontal reduction gear body.

3,419,164
METHOD AND APPARATUS FOR HANDLING AIRCRAFT PASSENGERS, BAGGAGE AND FREIGHT
Robert A. O'Neill, 128 Echo St., Santa Cruz, Calif. 95060
Filed Jan. 12, 1966, Ser. No. 520,276
11 Claims. (Cl. 214—38)

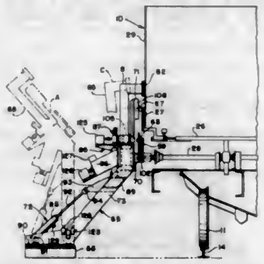


A palletized package member supported by fluid pressure transports passengers and baggage between a terminal and a craft which the passengers are to board. When in position aboard the craft, the fluid pressure is released and the package member forms the seats in the craft, with the passengers therein. The package members are transported between the terminal and the craft on a transport vehicle whose body portion is movable in an arc-like motion to mate with different levels of openings in the terminal and on the craft.

3,419,165
APPARATUS AND SYSTEM FOR OPERATING RAILROAD CAR DUMPER DOORS
Karl Haditsch, Seven Hills, Ohio, assignor to McDowell-Wellman Engineering Company, a corporation of Ohio
Filed June 1, 1966, Ser. No. 554,380
18 Claims. (Cl. 214—44)

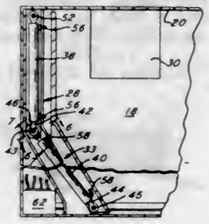
There is provided an apparatus, and a system employing such apparatus, for opening and closing material discharge doors on wheeled, material laden cars, said apparatus including door operating means carried by the car, means for actuating said door operating means separate

from the car, and means for positioning the actuating means into operating engagement with the door operat-



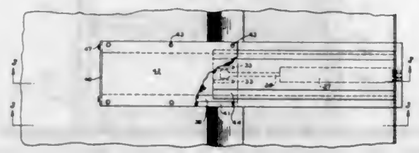
ing means, and illustrated by its embodiment in a railway dumper car.

3,419,166
COMPACTION UNIT
Charles E. Jones, 1040 S. Trooper Road, and William H. Riley, 2315 Springview Road, both of Norristown, Pa. 19401
Filed June 27, 1966, Ser. No. 560,453
9 Claims. (Cl. 214—82)



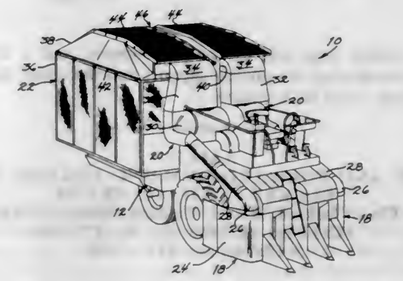
A compaction unit which may be mounted on a vehicle or may be used separate and apart from a vehicle. The unit is provided with an opening in a side thereof near the front end thereof. Refuse, garbage or the like is entered through the opening which is adapted to be compacted by a compaction blade operatively mounted in the unit and movable lengthwise therein. A pair of hydraulic cylinders are mounted in the forward end of the compaction unit. One of the cylinders is substantially vertical while the other is mounted on a diagonal with respect to the vertically mounted cylinder. The cylinders cooperate with an inclined track to move the compaction blade into desired positions.

3,419,167
REFUSE PACKER CONSTRUCTION
Henry Peter Rosaia, Daly City, Calif. (% Henry Rosaia Truck Bodies, 415 S. Canal Ave., South San Francisco, Calif. 94080)
Filed May 31, 1966, Ser. No. 553,786
6 Claims. (Cl. 214—83.3)



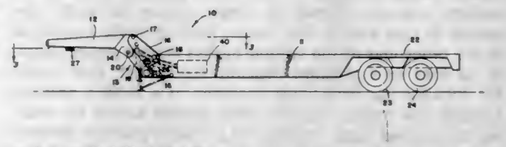
An improvement on Patent No. 2,996,203 on a refuse packer has a floor with downward-rearward slope at the forward loading compartment, an upward-rearward slope at the location of the gate, and a downward-rearward slope at the rear of the packing mechanism. This arrangement has the effect of rolling the refuse as it climbs the ramp, thereby compacting the mass. An improved track structure for the ram guides is disclosed.

3,419,168
COTTON HARVESTER
Perry T. Isbell and Robert S. Brace, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 578,076
9 Claims. (Cl. 214—83.28)



A cotton harvester having a pair of harvesting units, an independent conveyor for each unit, and a basket for receiving cotton from both conveyors and having grate sections aligned with the discharge of respective conveyors and each grate section having individually adjustable portions for controlling the cleaning, the flow, and the deposition of the cotton within the basket.

3,419,169
POWER ACTUATED FOLDING GOOSENECK TRAILER
Clayton James, Elk Point, S. Dak., assignor to Load King Trailer Company, Elk Point, S. Dak., a corporation of South Dakota
Filed Dec. 30, 1966, Ser. No. 606,163
7 Claims. (Cl. 214—506)

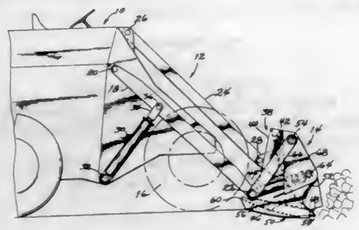


A parallel link folding gooseneck trailer having an arrangement for raising and lowering the platform with or relative to the bed. The arrangement includes an extensible link extending downwardly from the parallel links and a rigid rod connecting the bed to the lower end of the extensible link. Power means for operating the extensible and retractable link may comprise a hydraulic power source mounted on the bed.

3,419,170
ATTACHMENT FOR TRACTOR LOADER
Karl Salna and Carl C. Baker, Mundelein, Ill., assignors to International Harvester Company, a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,861
2 Claims. (Cl. 214—767)

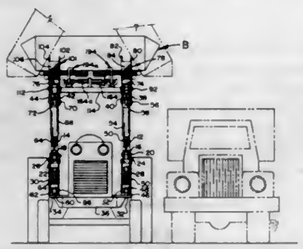
A tractor loader material handling attachment having a digging bucket with a front section pivotally supported

on a back section. A hydraulic ram connected between the back section and the front section at a point between



the cutting edge and the pivotal support, and a bracket interconnecting the pivotal support and the connection of the ram to the back section.

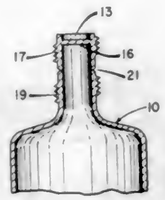
3,419,171
SIDE AND FORWARD DUMPING LOADER WITH BUCKET CLAPPING MEANS
Elmer Isaksen, Rte. 1, Cushing, Minn. 56443
Filed Sept. 15, 1966, Ser. No. 579,626
9 Claims. (Cl. 214—768)



The disclosure relates to a side and forward dumping loader including first and second bucket cradle means connected to a boom, a bucket, a first extendable member pivotally connected at one end to the bucket and pivotally connected at the other end to the first bucket cradle means adapted to fold to a position beneath the bucket, a second extendable hinge member pivotally connected at one end to the bucket and pivotally connected at the other end to the second bucket cradle means adapted to fold to a position beneath the bucket, first means for locking the first hinge member in a folded position beneath the bucket together with second means for locking the second hinge member in a folded position beneath the bucket. Also first means for releasing the first hinge locking means together with second means for releasing the second hinge locking means and a single hydraulic means connected to the boom means centrally thereof and said bucket centrally thereof for tilting the bucket on one of said first and second hinge members when the other hinge member is locked.

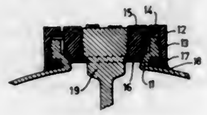
3,419,172
CLOSURE SYSTEM FOR CONTAINERS
Headie O. Lee, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Dec. 14, 1967, Ser. No. 690,614
5 Claims. (Cl. 215—32)

An improved closure system for dispensing containers is disclosed. The container is provided with a relatively long neck having on it a double set of threads. In the outer portion of the neck, there is a permanent hermetic seal and the neck is scored between the two sets of threads. When the container is to be opened, a first end of the double-ended cap provided by this system is screwed



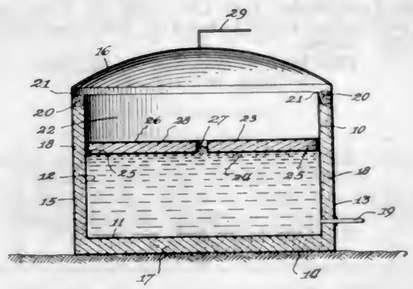
tightly onto the outer set of threads on the neck of the container thereby causing the neck to break along the score line. Reclosure of the container is accomplished by screwing the second end of the double-ended cap onto the lower set of threads on the neck.

3,419,173
PRESSURE VESSEL MADE OF PLASTIC, ESPECIALLY A BEER CASK
Marius Alphonsus Johannes Verlinden, Landrestraat 1061, The Hague, Netherlands
Filed Oct. 6, 1966, Ser. No. 584,791
Claims priority, application New Zealand, Oct. 12, 1965, 143,119
3 Claims. (Cl. 220—5)



A pressure vessel in which end caps are mounted on a container to form an elongated barrel shape for the vessel, the container being constituted of plastic material. An aperture is formed at one end of the container and a closure is provided at the aperture which is adapted for a dispensing device to enable removal of the contents.

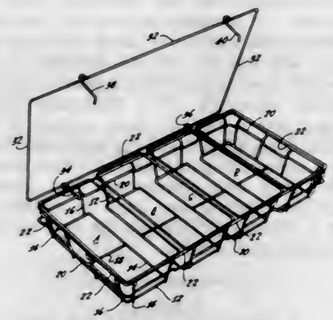
3,419,174
METHOD AND APPARATUS FOR LIQUEFIED GAS STORAGE
Gerald E. Engdahl, Glen Ellyn, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed July 18, 1963, Ser. No. 295,975
12 Claims. (Cl. 220—9)



1. An enclosed cryogenic storage tank comprising an insulated bottom with a substantially vertical insulated

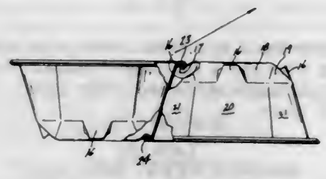
wall projecting upwardly therefrom around the periphery of the bottom, a noninsulated metal roof projecting to the wall and completely covering the space surrounded by the wall, said roof having a vapor opening an insulated floating cover inside the tank, said cover having a surface shape complementary to the interior of the tank in horizontal section with the peripheral edge of the cover being adjacent the wall surface inside the tank to permit free vertical movement of the cover while floating on, and covering substantially the total surface of, a cryogenic liquid when placed in the tank, and an opening in the tank for filling the tank with a cryogenic liquid.

3,419,175
BAKING PAN FRAME
Philip R. Laughlin, Santa Ana, and Earl L. Betts, Long Beach, Calif., assignors to Banner Metals, Inc., Compton, Calif., a corporation of Ohio
Filed June 26, 1967, Ser. No. 648,714
3 Claims. (Cl. 220—19)



A baking pan frame is disclosed herein which is capable of supporting, for example, a plurality of disposable flexible foil-like bread pan sections, which are firmly held in place in the frame when it is clamped down on their rims, and which are protected by the frame. The frame is releasable to permit the pan sections to be removed after they have been used and replaced by other unused pan sections.

3,419,176
CONTAINER
Donald E. Lipfert, Woolwich, Maine, and Frank J. Daniels, Baldwin, and Willfred Goldschmidt, Syosset, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Sept. 12, 1967, Ser. No. 667,130
6 Claims. (Cl. 220—23.4)



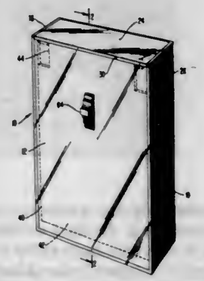
The present disclosure teaches a novel container characterized in that a plurality of these containers are adapted to be nested when empty and a plurality of the containers are adapted to be assembled in interlocking relationship when covered.

3,419,177
ELECTRICAL PANELBOARD FRONT WITH KNOCKOUTS AND SUPPORT FOR OVERLOAD DEVICES
Harold H. Downs and Harris I. Stanback, Lexington, Ky., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Aug. 28, 1967, Ser. No. 663,665
3 Claims. (Cl. 220—24.3)



An end one of the knockouts in a row of knockouts in a panelboard front is omitted and an opening bordered at one edge by an inturned flange provided in its stead. The flange is engaged by a side wall of an end one of a row of overload responsive devices in the panelboard to insure that all of the devices are perpendicular to the back wall of the panelboard.

3,419,178
CIGARETTE SERVER
Wendell H. Swartz, 3000 Holiday Drive, Fort Lauderdale, Fla. 33316
Filed Jan. 4, 1968, Ser. No. 695,675
5 Claims. (Cl. 220—36)

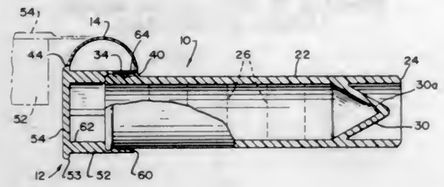


Carrying case for cigarettes or the like formed of an open ended rectangular container having a displaceable closure flap pivotally mounted on the open end thereof and displaceable intermediately a fully open and a fully closed position by selective displacement of an internally disposed actuating slide.

3,419,179
CAPTIVE CAP SPECIMEN VIAL
Fritz Deuschle, St. Augustine, Fla., and Robert Edward Reiss, Richmond Heights, Mo., assignors to Brunswick Corporation, a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,206
9 Claims. (Cl. 220—38.5)

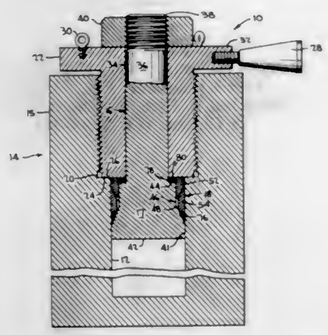
A container for single-handedly aseptically collecting and processing samples by techniques which include centrifugation and/or micro pipetting. The container is a

transparent integral one-piece, non-wettable, plastic structure including a graduated parabolic vial portion and a cap portion joined by a tether strap. The cap can be closed over the vial upon bending the tether strap. Snap-



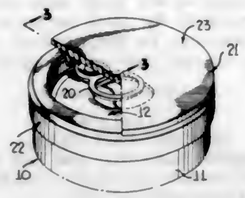
lock beads are provided on the cap and vial for lock sealing the container. The cap can be placed on the vial without lock sealing, leaving the vent groove in the cap wall open for sterilization of the container.

3,419,180
CLOSURE ASSEMBLY FOR HIGH-PRESSURE, HIGH-TEMPERATURE VESSELS
Horace J. Homrig and Robert B. Emery, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Dec. 7, 1966, Ser. No. 599,870
4 Claims. (Cl. 220—46)



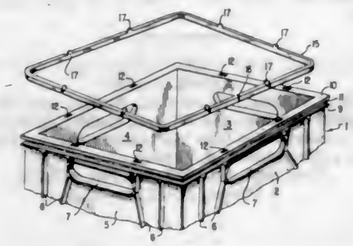
A closure assembly for pressure vessels having a follower member which is exposed to the pressure in the vessel and which is movable outwardly to expand a seal ring positioned between a tapered shoulder on the follower and an abutment on the closure body. The outer cylindrical surface of the seal ring engages a smooth cylindrical wall in the vessel to establish a seal between the closure assembly and the wall of the vessel. An abutment and a stop ring are positioned on the follower to engage a shoulder on the closure body when the follower has moved axially a sufficient distance to stress the seal ring to the elastic limit of the material in the ring. The closure assembly also includes a slip ring positioned between the seal ring and the closure body which cooperates with a tapered shoulder on the follower to urge the seal ring outwardly into engagement with the smooth wall of the vessel. At the same time, the slip ring is compressed radially inwardly into sealing relation with a cylindrical surface on the follower. The seal ring has an annular skirt positioned adjacent the follower shoulder, so that fluid pressure in the vessel acting on the skirt tends to urge the skirt to expand outwardly, thereby improving the seal between the seal ring and the wall of the vessel.

3,419,181
SCORE GUARD OVERCAP FOR FULL OPEN ENDS
Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 7, 1967, Ser. No. 681,181
11 Claims. (Cl. 220—54)



This disclosure relates to an overcap for full open easy opening containers. The overcap includes a rim which is telescoped over and interlocked with the usual seam between the container end and the container body. The overcap also includes a panel which is releasably interlocked with the rim. The rim includes an inner ring portion which rests against the end panel of the container end radially outwardly of a weakening line formed therein and with a radially inner surface of the inner ring portion being aligned with the weakening lines whereby when a removable panel portion is torn from the end panel, the inner ring portion will also function as a guard for the resultant raw edge. In addition, the rim serves as a fulcrum to facilitate the final tearing out of the removable panel portion.

3,419,182
REINFORCED MILK CRATE
Richard F. Gildart, Montebello, Calif., assignor to Rehrig Pacific Company, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 530,467, Feb. 28, 1966. This application June 2, 1967, Ser. No. 643,289
9 Claims. (Cl. 220—73)

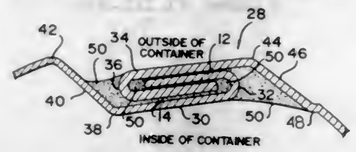


This invention is to a plastic bottle crate with integral reinforced sides and a non-integral metallic ring held by two integral flanges at the top of the crate.

3,419,183
BONDED METAL SIDE SEAM
Nick S. Khoury, Worth, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 14, 1965, Ser. No. 455,810
10 Claims. (Cl. 220—77)

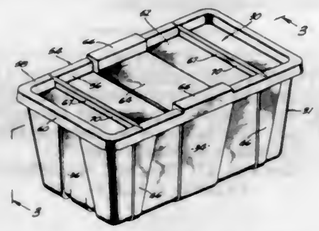
This disclosure has to do with tubular members in general, and more particularly container bodies incorporating a side seam. One of the features of the side

seam is that it is tilted radially inwardly from the general outline of the container body so as to resist cleavage. Also, the side seam is of the double hook type and is sealed with an adhesive of the thermoplastic type. In order to increase the strength of the side seam, it is continuously beaded transversely thereof for a major por-



tion of its length. In addition, at the base of each flange, which is normally found at the end of the container body, the seam is provided with a transverse bead to hold the seam together during the flanging of the container body and the formation of the usual double seam with a container end.

3,419,184
CONTAINER LID WITH ENCAPSULATED REINFORCING MEMBERS
Donald J. Asenbauer, Whittier, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 504,030
12 Claims. (Cl. 220—97)



1. A reinforced lid for a container having a bottom wall, upstanding side and end walls, and aligned notches extending into the upper edges of two opposite upstanding walls, said lid comprising:

a wall member bounded by a parametrical rim defining a channel opening to the underside of said lid for receiving the upper edges of said upstanding container walls;

said rim having an upper wall, portions of which are disposed substantially in a common plane generally parallel to said wall member for seating contact with the upper edges of said upstanding container walls;

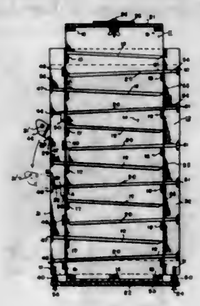
a reinforcing member secured to and extending across said wall member;

the ends of said reinforcing member projecting across said channel at opposite sides of said wall member for direct seating contact with the upper edges of said opposite container walls; and

said projecting ends of said reinforcing member being disposed below said plane and located for seating engagement in said container notches.

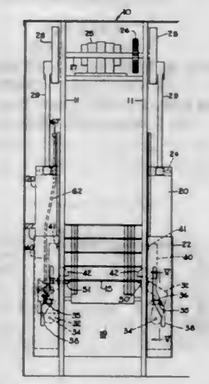
3,419,185
STORAGE STRUCTURE WITH RECIPROCATING GRAVITY-FED EXTENSION RAILS
Scott L. Beesley, 464 West 5560 South, Murray, Utah 84107
Filed Oct. 3, 1967, Ser. No. 672,511
4 Claims. (Cl. 221—176)

Alternately sloping rails gravity feed rows of cans to vertically reciprocating rail extensions having holdback means. In the raised positions the rail extensions receive cans and in the lower positions hold back the upper row



of cans while transferring previously received cans to the lower rails.

3,419,186
ARTICLE DISPENSER
William W. Cease, Fredonia, N.Y., assignor to Cease Central, Inc., Dunkirk, N.Y.
Filed Apr. 5, 1967, Ser. No. 628,596
6 Claims. (Cl. 221—221)

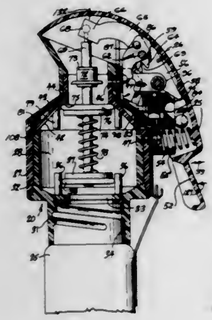


Dispensing apparatus for a stack of containers including a pair of support members at opposite sides of the apparatus for supporting the stack by engaging opposite sides of the lowermost container with lifting means for engaging a container above the lowermost container to move the remainder of the stack upwardly from the lowermost container and with at least one of the support members laterally retractable to permit the lowermost container to fall to a dispensing position with the remainder of the stack lifted therefrom.

3,419,187
DEVICE FOR MEASURING, REGISTERING AND POURING
Peter P. Bazarnic, P.O. Box 24, Willoughby, Ohio 44094
Continuation of application Ser. No. 544,664, Apr. 12, 1966, which is a continuation of application Ser. No. 393,317, Aug. 31, 1964. This application Nov. 14, 1967, Ser. No. 683,031
17 Claims. (Cl. 222—36)

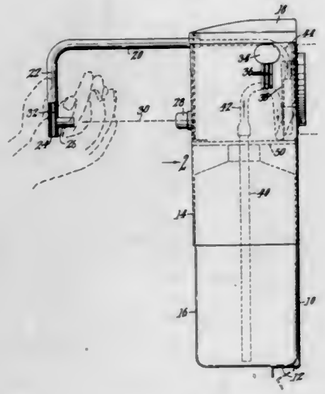
A bottle attachment for measuring, registering, and pouring liquids from the bottle. The attachment includes a lower portion which is sealed into the neck of the bot-

tle and a body portion forming a measuring chamber having an inlet and an outlet. Valves mounted upon a reciprocable shaft inside the measuring chamber are operable to control the passage of liquid through the inlet



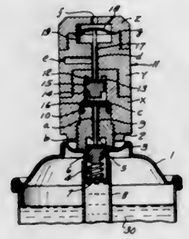
and outlet. An actuator pivotally mounted on the body controls movement of the reciprocable shaft and is coupled to a counting mechanism for registering the number of times the device is actuated.

3,419,188
DISPENSER
Beverly R. L. Matchett, 65 Belknap St., Dover, N.H. 03820
Filed Feb. 13, 1967, Ser. No. 615,691
10 Claims. (Cl. 222—52)



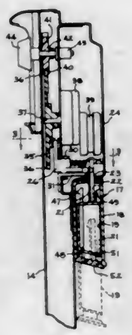
1. A dispenser comprising a support, means forming a spout having an orifice, means forming a passage leading through the spout to the orifice from a container of material to be dispensed, and a lamp member and cooperating photosensitive cell member in close association with said spout, the beam from the lamp member being in a position wherein it is interrupted by the hands of a user of the dispenser placed to obtain material from said orifice, means to drive material from the container through the passage to the orifice, and means for energizing said last-named mains in circuit with said members and operable upon interruption of the beam, one of said members being located on said spout.

3,419,189
DEVICE FOR AUTOMATICALLY AND INTERMITTENTLY SPRAYING PRESSURIZED PRODUCTS
Taisho Iketani, 41—6, 4-chome Nogata, Nakano-ku, Tokyo-to, Japan
Filed Aug. 21, 1967, Ser. No. 662,167
6 Claims. (Cl. 222—54)



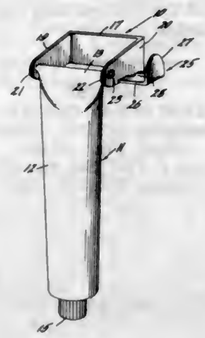
A device for spraying product including liquefied gas from a container, wherein a bimetal member of peculiar shape is placed under the action of absorbing heat of vaporization by the liquefied gas released into the air and the internal pressure of the liquefied gas is utilized so that opening and closing operation of the valve is automatically carried out to perform intermittent spraying operation of the contained substance.

3,419,190
TREATING AGENT DISPENSING MEANS FOR AUTOMATIC WASHING MACHINE
Melvin R. Kauffman, Louisville, and George T. Sholtes, Fern Creek, Ky., assignors to General Electric Company, a corporation of New York
Filed Oct. 27, 1966, Ser. No. 589,992
4 Claims. (Cl. 222—70)



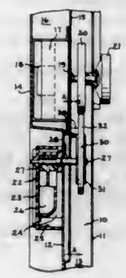
Improved treating agent dispensing means for an automatic washing machine of the type having a wash chamber access door pivotal between a horizontal open position and a vertical closed position. The means comprise a hollow housing having an opening which faces downwardly when the access door is on its closed position. The detergent is held in a drawer-like container that is mounted for sliding movement through the housing opening. Means are provided for retaining the container substantially totally within the housing until they are released by cam means operated by a sequence control device within the access door, whereupon the force of gravity slides the container to a dispensing position substantially totally outside the housing.

3,419,191
DISPENSING ASSEMBLY
Hilary D. Bunger, Weston, Conn. (193 Main St., Westport, Conn. 06880)
Filed June 8, 1967, Ser. No. 644,702
7 Claims. (Cl. 222—93)



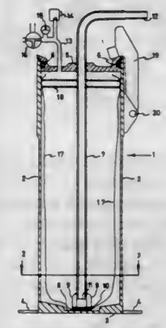
An assembly of a tube and a fixed bracket for holding the tube, in which the bracket has two outwardly-extending arms formed with apertures in which the seam end of the tube is rotatably held so that the tube can be moved while held by the bracket between upright and downward positions.

3,419,192
TREATING AGENT DISPENSER FOR AUTOMATIC WASHING MACHINE
Jerry O. Wrightenberry, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed June 12, 1967, Ser. No. 645,214
10 Claims. (Cl. 222—166)



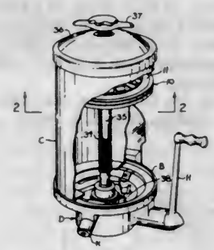
A mechanism for tightly closing and positively opening a treating agent dispensing device of the type including a cup pivoted in a side-opening housing on the inner face of a wash chamber door of an automatic washing machine by a door-journaled shaft. The mechanism includes a cup shaft-attached cam having a lead surface intersecting and declining from a lobe surface, and a cam-following latching lever pivoted on the door on an axle spaced from the cup shaft. The lever is interconnected to the cam by a tension spring and has a cam follower which is slidable along both the cam surfaces. When the follower is slidably engaged with the cam lead surface it is yieldably urged therealong by the spring to rotate the cup to a closed position substantially totally inside the housing. Unless the follower is slidably engaged with the cam lead surface, the spring yieldably urges the cup to rotate to an open position substantially wholly outside the housing.

3,419,193
METHOD OF AND APPARATUS FOR DISPENSING FLUENT MATERIALS
Iain G. H. Stewart, North Rand, Transvaal, and Michael S. Hunt, East Lombardy, Transvaal, Republic of South Africa, assignors to African Explosives and Chemical Industries Limited, Johannesburg, Transvaal, Republic of South Africa
Filed Oct. 18, 1966, Ser. No. 587,567
Claims priority, application Republic of South Africa, Oct. 22, 1965, 65/5,702
2 Claims. (Cl. 222—183)



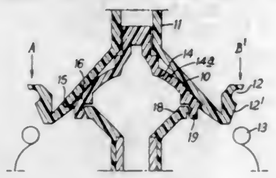
Method and apparatus for dispensing fluent material from a container wherein the container, with its top open, is enclosed in an open-topped vessel, the vessel is sealed in fluid-tight manner by means of a removable top closure member and pressure fluid is then admitted into the vessel against the top of the material in the container, the material being thus forced into the inlet end of a discharge conduit positioned near the bottom of the container for discharge. The method and apparatus are particularly useful for dispensing a slurried blasting explosives mixture into boreholes.

3,419,194
LIQUID-SOAP DISPENSER
Jerome Lippman, 275 N. Portage Path, Akron, Ohio 44303, and Henry J. Orr, 2834 Vincent St., Cuyahoga Falls, Ohio 44221
Filed Sept. 25, 1967, Ser. No. 670,312
25 Claims. (Cl. 222—390)



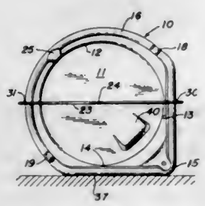
Liquid-soap dispenser having screw-operated piston for pressurizing and dispensing liquid soap from cylindrical container, has annular gasket of elastic material normally loosely held between relatively fixed plate on operating screw, and movable plate axially movable relatively of fixed plate, permitting yielding manipulation of the gasket for selective easy movement of piston axially into or out of the container. With the piston mounted in the container, pressure of soap against movable plate clamps gasket against fixedly held plate, to compress the gasket and thereby expand the same radially outwardly into strong fluid-sealing engagement with container wall.

3,419,195
CONTAINER AND CLOSURE ASSEMBLY
Louis Assalit, 20 Rue des Colonies, Marseille, France
Continuation-in-part of application Ser. No. 491,736, Sept. 30, 1965, now Patent No. 3,348,742. This application Oct. 10, 1966, Ser. No. 585,626
Claims priority, application France, Oct. 26, 1965, 21,167
6 Claims. (Cl. 222—402.1)



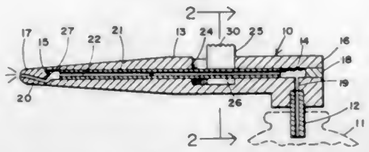
The invention provides an aerosol container and valve closure assembly comprising a toroidal rim on the container, a concentrically nested multielement dished closure assembly having at its periphery a first frusto-conical surface, one outer edge of which is of lesser diameter than the diameter of the opening of the container and the other outer edge of which is of greater diameter than the opening of the container, thereby forming a first outer ramp converging toward the center of the container, and complementary shoulder and recess formations provided one on the periphery of the closure adjacent the edge of greater diameter of the first frusto-conical surface and the other on the toroidal rim of the container; and a central opening along the axis of said closure provided with a second inner frusto-conical surface forming a second inner ramp diverging toward the center of the container which engages a valve carrying body to be seated therein, and complementary shoulder and recess formations provided one on the inner frusto-conical closure surface and the other on the corresponding valve body surface, whereby said closure may be fitted into said container opening by forcing said first frusto-conical surface past said rim, and said valve body may be fitted into said closure by forcing said body against said second frusto-conical surface, with resilient deformation of said closure in each instance, until a shoulder seats into a recess and is firmly retained therein by resilience of the deformed closure.

3,419,196
PLASTIC PAIL WITH BAIL HAVING TWO INTERCHANGEABLE POSITIONS
Robert D. Moore, Los Angeles, Calif., assignor to Carnation Company, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,468
4 Claims. (Cl. 222—465)



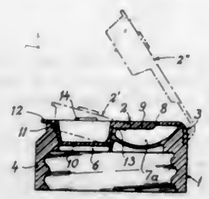
In a plastic pail molded to provide a bottom, a side wall, and a top rim having first bail-receiving receptacles diametrically opposite each other and dividing the pail into two halves of equal volume on opposite sides of the diameter connecting said receptacles, the side wall on one side of the diameter being generally semicircular, the side wall on the other side of the diameter defining two generally flat mutually perpendicular sides meeting at a corner, a bail with its ends rotatably mounted into the first receptacles, the new provision of a second set of bail receiving receptacles also diametrically opposite each other and so located that when the bail is held vertically it is parallel to one of the two generally flat sides, the bail being interchangeable between the two positions represented by said two sets of receptacles.

3,419,197
HAIR SPRAY DEVICE
Anthony Battaglia, 455 NW. 202nd Terrace, Miami, Fla. 33169
Filed Oct. 6, 1967, Ser. No. 673,387
5 Claims. (Cl. 222—485)



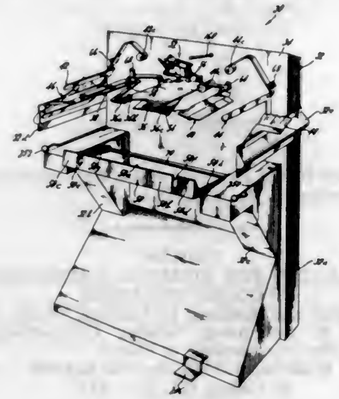
A hair spray device capable of spraying a hair treating fluid under pressure to the exposed portions of the hair as in conventional hair spray devices and to the remaining portion of the hair forming the foundation of a hair styling having a discharge orifice at the forward end of the spray device and a plurality of matching openings in the side walls of the spray device and of a tubular member that is slidably positioned in the spray device whereby in one position of the tubular member the matching openings will be out of alignment and spray will be emitted forwardly of the spray device, and when the matching openings are in alignment, the forward discharge orifice will be blocked off and the fluid under pressure will be discharged through the matching openings in a spray laterally of the spray device to impinge on the strands of hair along their full length thereof.

3,419,198
COVERING CAP WITH CLOSABLE OPENING FOR BOTTLE OR OTHER CONTAINER
Gunnar Nimrod Pettersen, Askim, Norway
Filed Sept. 19, 1966, Ser. No. 580,257
Claims priority, application Norway, Sept. 20, 1965, 159,760
14 Claims. (Cl. 222—541)



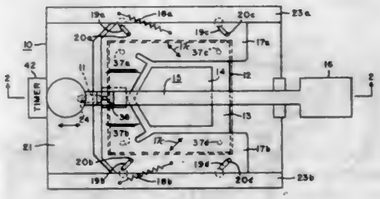
A plastic cap including a fastening portion for attachment to a bottle mouth and a cover. The cover is connected to the periphery thereof by flexible hinge means having a neutral position when the cover is open. Such portion has an outlet member remote from the hinge, and the cover a closing portion matching the outlet with frictional contact. A cover arm extends over the fastening portion from the closing portion to a point adjacent the hinge. By applying pressure to the arm when the cover is closed, the cover tilts about a fulcrum remote from the hinge releasing the frictional contact. Upon pressure release, the hinge swings the cover to open position.

3,419,199
SHIRT FOLDING MACHINE AND METHOD
Frank C. Lornitzo, Pawtucket, R.I., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,007
28 Claims. (Cl. 223—37)



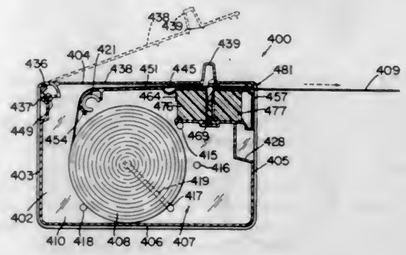
1. A machine for folding a shirt including a collar, a shirt body having a tail portion and sleeves comprising a support, a body form on said support having a leading edge and opposite sides edges and adapted to receive a board therein over which said shirt is draped with the collar facing upwardly and about which said shirt is folded, tail-folding means, means mounting said tail-folding means for movement through a tail-folding sequence from a retracted position to a tail-folding position wherein said tail-folding means folds said tail portion about said leading edge of said body form, first and second sleeve-folding means disposed in clearance positions at opposite sides of said body form and spaced outwardly from the side edges thereof, first and second body-folding means disposed in draping positions at opposite sides of said body form and respectively arranged intermediate the adjacent side edge thereof and the adjacent sleeve-folding means, said sleeves of said shirt being adapted to be draped over said body-folding means and extending downwardly between the adjacent body-folding and sleeve-folding means, means mounting said sleeve folding means for movement from said clearance positions to sleeve-folding positions beneath said body form with said sleeves being respectively folded about said body-folding means, means operable in response to initiation of a shirt-folding cycle for moving said tail-folding means through said tail-folding sequence, means operable in timed relation to the movement of said tail-folding means out of said tail-folding position in said tail-folding sequence for moving said sleeve-folding means into said sleeve-folding position, means mounting said body-folding means for movement from said draping positions to body-folding positions beneath said body form with the opposite side portions of said shirt body and said folded tail portion being folded about said opposite side edges of said body form, and means operable in timed relation to the movement of said sleeve-folding means into said sleeve-folding positions for moving said body-folding means into said body-folding positions.

3,419,200
FABRIC CREASING AND PRESSING MACHINE
Salvatore J. Aramini, Merrick, N.Y., assignor to Trufast Products Inc., a corporation of New York
Filed Oct. 13, 1966, Ser. No. 586,469
11 Claims. (Cl. 223—38)



A fabric blank creasing and pressing machine including a frame having an aperture for receiving the blank and clamping means for clamping the blank in place. Folding means is provided for folding the blank and pressing means for heating and pressing the folded blank. Moving means is provided for operating the folding and pressing means and a timer, responsive to the operation of the folding means, is provided to maintain the elements in their respective operating positions for a preselected interval of time.

3,419,201
DISPENSER AND CUTTER AND THE LIKE
Richard N. Brandon, 183 Homewood Ave. SE., Warren, Ohio 44483
Filed Apr. 18, 1966, Ser. No. 543,099
4 Claims. (Cl. 225—93)

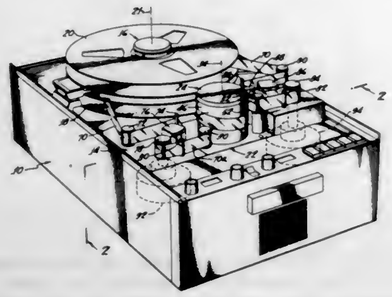


A household wrap dispenser which cuts the wrapping material by movement of an outer wall of the dispenser. Cooperating clamping surfaces on the movable outer wall and an inner wall clamp the wrapping material on opposite sides of a fixed cutter and then move the material relative to the fixed cutter to cause the material to be severed.

3,419,202
DUAL CAPSTAN CONTROL SYSTEM
Alexander R. Maxey, Newark, Calif., assignor to Westel Company, San Mateo, Calif., a copartnership of Westel Incorporated, Westel Associates and Westel California Investors, San Mateo, Calif., all corporations of California
Continuation-in-part of application Ser. No. 537,222, Mar. 24, 1966. This application Dec. 29, 1967, Ser. No. 700,316
8 Claims. (Cl. 226—25)

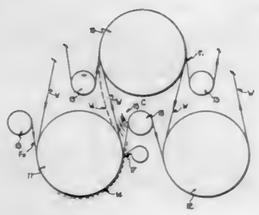
Disclosed is a supply capstan and a take-up capstan for engaging and moving magnetic recording tape about

a recording drum. The capstans are rotary coupled together by a pliant mechanical linkage, in the form of a flexible belt having physical elasticity characteristics which approximate those of recording tape extending between the capstans, or in the form of fluid coupling which damps rotary movement of one capstan out of phase relative to



the other. Each capstan has a drive motor; and, a central system senses tension errors in the tape extending about the drum and applies differential signals to the motors so as to increase the torque supplied by one motor while decreasing that supplied by the other to minimize and/or correct the errors.

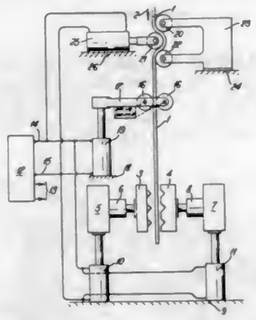
3,419,203
HIGH SPEED PAPER MAKING MACHINE
John W. Amend, Jr., Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 20, 1967, Ser. No. 624,342
12 Claims. (Cl. 226—97)



This invention discloses an apparatus and method for preventing edge flutter of web like materials while such material is processed through a machine in generally unsupported spans. The apparatus is in the form of a fluid nozzle which forces a stream of high velocity fluid onto a web carrying member thereby disrupting and removing a layer of surface air carried by said carrying member into the general vicinity of the supported web span.

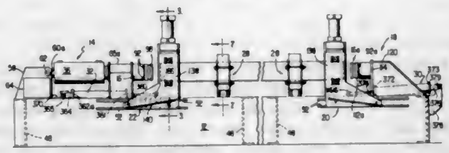
3,419,204
WEB-FEEDING DEVICES
David T. N. Williamson, Deptford, London, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Feb. 28, 1966, Ser. No. 530,565
Claims priority, application Great Britain, Mar. 5, 1965, 9,542/65
14 Claims. (Cl. 226—124)

A device for feeding a continuously-moving web into an intermittently-operating apparatus, comprising drive rollers giving a continuous drive to the web and means for reciprocating the drive rollers so as to alternately



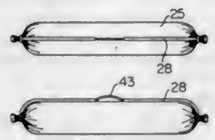
increase and reduce the speed of the web in synchronism with operation of the apparatus.

3,419,205
APPARATUS FOR FORMING REINFORCED WOODEN MEMBERS
John C. Jureit and Benjamin H. Kushner, Miami, Fla., assignors to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed July 8, 1966, Ser. No. 563,908
30 Claims. (Cl. 227—152)



A machine for reinforcing and preventing and repairing splitting in the ends of elongated lumber elements, such as railroad ties, including a pair of carriages movably mounted on a support with each carriage carrying a press for supporting and clamping an end of the elongated lumber element. The carriages are movable into positions wherein the presses can clamp the element and are also movable in such a manner as to permit movement of the lumber element along its longitudinal axis. An additional press assemblage is provided for embedding the teeth of connector plates in the ends of the lumber element while they are clamped by the presses.

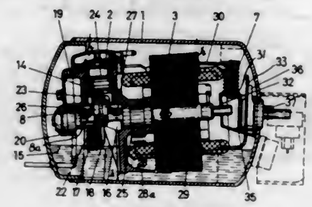
3,419,206
TUBULAR FOOD PACKAGE WITH TEAR STRIP
Shozo Omori, 44 Shimo Negishi-cho, Taito-ku, Tokyo, Japan
Filed Oct. 31, 1967, Ser. No. 679,354
Claims priority, application Japan, Nov. 11, 1966, 41/74,122, 41/74,123, 41/103,986, 41/103,987
4 Claims. (Cl. 229—66)



A tubular food package having a tear strip sealed thereto and extending the length thereof, with part of said

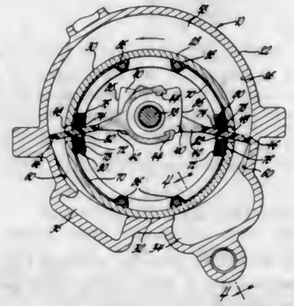
length of the strip remaining unsealed for the ease of tearing the package open. In a modified form, the above unsealed portion of the strip is centrally sealed to the package itself. In another modification, said unsealed portion is partly incised to give free ends on pulling the strip. A method for producing such packages is also described.

3,419,207
SMALL HERMETIC COMPRESSOR
Rudolf Hintze, Bernardstrasse 100, Offenbach (Main), Germany
Continuation of application Ser. No. 423,264, Jan. 4, 1965. This application Sept. 13, 1966, Ser. No. 579,177
14 Claims. (Cl. 230—58)



A motor and compressor unit having a common shaft with a first axis is mounted in a tubular housing having a second axis intersecting the first axis so that the larger compressor stator is spaced from the housing the same minimum distance as the smaller motor stator.

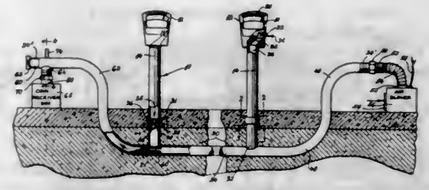
3,419,208
FLUID FLOW CONTROL MECHANISM
Lee M. Brewer, Hans Engelhardt, and Robert P. Rohde, Saginaw, and John F. Yonker, Frankenmuth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,367
8 Claims. (Cl. 230—157)



A vane pump supplies air for injection into the exhaust gases of an internal combustion engine. In the pump, the rotor has an internal liner for supporting the vane bearing shoes, the vane blades are molded about counterweighted hubs, and the rotor drive hub is proportioned to pass through the drive shaft bearing opening in the stator end wall.

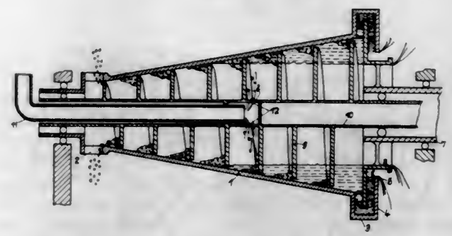
3,419,209
COIN COLLECTION SYSTEM FOR MULTIPLE PARKING METER STATIONS
Ben Munn, % APF Inc., 315 E. 91st St., New York, N.Y. 10028
Filed July 24, 1967, Ser. No. 655,649
9 Claims. (Cl. 232—1)

The disclosure describes a fluid pressure system for collecting coins deposited in parking meters. Each meter is mounted on a hollow post connected to a conduit through which a free movable plug is driven pneumatically, or hydraulically or by vacuum. Coins fall into the con-



duit and are driven by the plug to a coin collection receptacle. The plug is driven by air or water pressure created by an air blower or pump at one end of the conduit.

3,419,210
FULL-ENVELOPE CENTRIFUGE WITH DISCHARGE SCREW
Fritz W. Schneider, Schwerte (Ruhr), and Ingo G. Stohlmeier, Reinbek, near Hamburg, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed Aug. 9, 1965, Ser. No. 478,053
3 Claims. (Cl. 233—7)

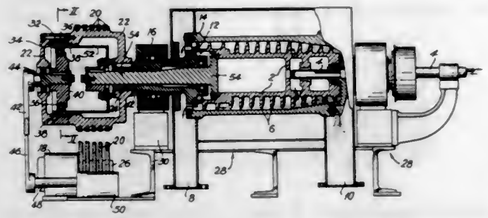


A full-envelope centrifuge which comprises a substantially conically shaped centrifuge drum mounted for rotation about its longitudinal axis and constituting the setting chamber for the centrifuged goods. A discharge screw of substantially complementary conical shape is disposed in and mounted for rotation relative to the centrifuge drum. The latter has lateral exit openings at the narrow end thereof, which openings are adapted to remove the solid particles of the centrifuged goods. A first overflow weir is disposed at the wide end of the centrifuge drum and adapted to remove the lighter portion of the centrifuged goods. A second overflow weir is disposed at the wide end of the centrifuge drum. A circulation channel operates at a large diameter of the centrifuge and provides communication between the second overflow weir and the setting chamber, and the level of the heavier liquid portion is disposed outside of the setting chamber operated by the discharge screw.

3,419,211
CENTRIFUGAL MACHINE WITH DIFFERENTIAL DRIVE
Masuichi Yasuda, Toyonaka, Akira Yokogawa, Osaka, Hiroyuki Ito, Fuse, and Toshio Niwa, Osaka, Japan, assignors to Hitachi Shipbuilding and Engineering Co. Ltd., Osaka, Japan
Filed Oct. 23, 1967, Ser. No. 677,320
9 Claims. (Cl. 233—7)

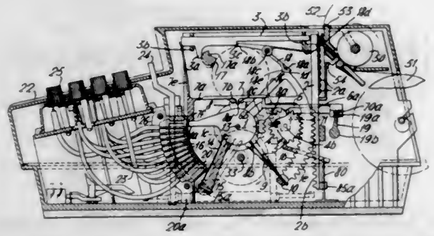
The difference in rotational velocity between the basket or bowl and the screw of the inventive centrifugal machine is provided by a combination of a drive cylinder

acting as a power input for the bowl, a circular spline secured to the cylinder, and a flexible, elliptical spline disposed inside of and in partial mesh with the circular



spline, the former being connected to the screw shaft. The drive mechanism replaces the conventional intricate planetary gearing, the source of repeated disturbances.

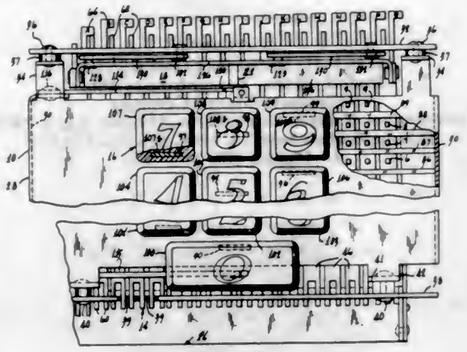
3,419,212
CALCULATING MECHANISMS FOR CALCULATING MACHINES
Tibor Arvai, Paris, France, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 27, 1967, Ser. No. 626,284
Claims priority, application France, Mar. 28, 1966 55,722
16 Claims. (Cl. 235—60)



A calculating machine of the ten key type is provided in which a pin carriage upon receiving data from the keyboard progressively escapes. Data reading sectors are provided to read the data and transfer same to an accumulator. A carry storage mechanism is provided mounted on the same shaft as the data reading sectors. A cam shaft is arranged to be rotated by drive means and cams thereon are effective to cycle the accumulator for motion in a linear path between the data reading sectors and the carry storage mechanism. Reading of data and transfer of carries are effected by actuating means comprising integrally formed leaf springs cut in the form of a comb and rocked from the main cam shaft. Carries are read from the accumulator and transferred to the carry storage mechanism by similar integrally formed leaf spring cut in the form of a comb.

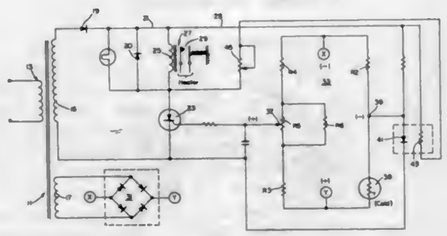
3,419,213
PIN AND PIN-SETTING ASSEMBLY
Thomas Bilinski, Jr., 209 Oakland Place, North Wales, Pa. 19454, and Jared M. McGowan, 2622 Swede Road, Norristown, Pa. 19403
Filed June 29, 1967, Ser. No. 650,049
14 Claims. (Cl. 235—60)

An assembly for machines upon which a multi-digit number is to be impressed includes, for each digit, a pin block having pins 0 through 9. Keys are depressible to actuate correspondingly valued pin-setting bars. Each bar extends across the several blocks to set a corresponding pin disposed in the path of the bar when the block carrying that pin is operatively positioned. Setting a pin of a block releases a code bar that shifts the block to a final



inoperative position. A projection on the block so shifted moves the next following block from a starting inoperative to an operative position.

3,419,214
TEMPERATURE REGULATING SYSTEM
Egils Evalds, Ardmore, Pa., assignor to Athena Controls Incorporated, a corporation of Pennsylvania
Filed Feb. 6, 1967, Ser. No. 614,269
9 Claims. (Cl. 236—78)

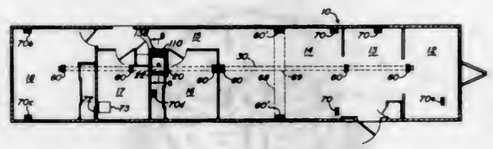


The present invention provides a circuit for controlling the heat generated by a controllable heat generator. A typical bridge circuit is employed with a temperature sensitive element in one leg thereof. A principal switching element is controlled by the bridge, and the bias required to operate said switching element is offset by the circuit so that the bridge operates as a balanced bridge. In addition the circuit provides a means to vary the offset as the bridge approaches its null point so that the switch is turned off in anticipation of the bridge reaching the null point.

3,419,215
MOBILE HOME HEATING SYSTEM
Daniel P. Riedel, Brookville, Ohio, assignor to Vindale Corporation, Brookville, Ohio, a corporation of Ohio
Filed Sept. 28, 1966, Ser. No. 582,737
10 Claims. (Cl. 237—28)

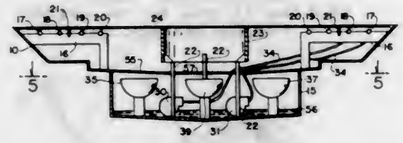
A heating system for mobile homes in which a furnace is sound-isolated from the interior of the home by being positioned within a substantially air-tight closet. The heat-

er directs heated air downwardly into a plenum chamber for flow through conduits in an enclosed basement. Cold air registers in the floor open into the basement. A cold air return opening is formed in the closet in front of the heater and admits return air from the basement into the heater. Cold air registers are positioned in the clothes closets to prevent dampness. The basement return air



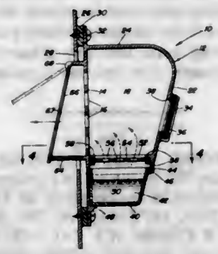
circulation prevents freezing of the pipes, and maintains a dry basement area. Combustion air is admitted into the furnace through an enclosed inlet passageway, and outside air may be admitted into the basement through another passageway. The system results in a slightly pressurized home interior to reduce drafts and air leaks at doors and windows.

3,419,216
DEVICE PROVIDING FOUNTAIN FOR DANCE PERFORMANCE THEREIN
Leon Lamorie Angelastro, 1417 Grand Concourse, Bronx, N.Y. 10452, and Maria Elena Beltempo, 218 Berriman St., Brooklyn, N.Y. 11208
Filed July 27, 1967, Ser. No. 656,407
7 Claims. (Cl. 239—20)



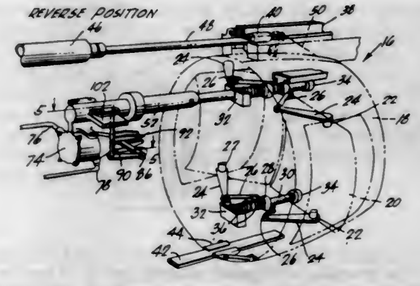
A recirculating fountain having a bowl, means spraying water upward from the bowl, and a dance platform on the bowl containing apertures through some of which water is sprayed upward and through all of which falling water drains back into said bowl.

3,419,217
AIR FRESHENER DEVICE
John D. White, 2010 Drexel St., Apt. 101, Hyattsville, Md. 20783, and John L. Bailey, 1200 James St., Baltimore, Md. 21223
Filed Mar. 24, 1967, Ser. No. 625,773
12 Claims. (Cl. 239—58)



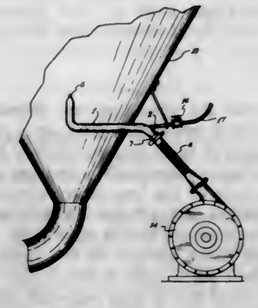
A dispensing container is described which has a removable drawer for vaporizable material. An apertured slide plate separates the drawer from a chamber and serves to selectively valve the quantity of vapors arising into the chamber. Mounted to air ducting systems, inlet and outlet ports to the chamber permit an airflow therethrough which mixes with the vapors. An airflow operated gate positioned in the outlet port closes when airflow ceases and thus confines the vapors to the chamber and retards evaporation of the material except when it is required. A sail arrangement is alternatively provided to operate the gate when it is on the inlet port.

3,419,218
THRUST REVERSER
Mark R. Campbell, La Mirada, and Lyle A. Wright, Seal Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Feb. 23, 1967, Ser. No. 617,888
4 Claims. (Cl. 239—265.37)



This invention relates to an apparatus for reversing the propulsion of gas discharge aircraft engines. The reversing apparatus of this invention has a self-contained mechanical power source for the reversing bucket operation which may be operated with or without the engine operating. The inventive apparatus also includes a fail-safe means to insure positioning of the reverser in the non-operating position if, during flight, any failure occurs which would prevent such movement.

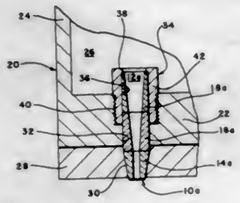
3,419,219
CRYSTAL COLLECTING APPARATUS INCLUDING ASPIRATION NOZZLE
Roberto Pla Inchausti, Rocas 151, Jardines de Pedregal, Mexico
Filed Oct. 7, 1966, Ser. No. 585,053
Claims priority, application Mexico, July 28, 1966, 90,236
3 Claims. (Cl. 239—417.3)



Apparatus particularly adapted for recovering crystallized material ejected from an aspiration nozzle confined in a housing in which pressurized air is directed through an outer rigid conduit and coaxially around an inner feed

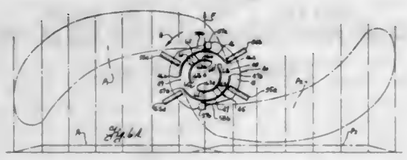
pipe having a coaxial insulating chamber formed by a coaxial plastic inner hose, in which a tubular nozzle element threadedly engages in the plastic inner hose and is confined by a rigid ring circumposed about the hose within the end of the feed pipe, and the nozzle element includes radial openings disposed above a reduced diameter outlet at the terminal end of the outer conduit.

3,419,220
NOZZLES FOR ABRASIVE-LADEN SLURRY
Robert J. Goodwin, Oakmont, and Joseph L. Pekarek and Paul W. Schaub, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 30, 1966, Ser. No. 597,941
7 Claims. (Cl. 239—591)



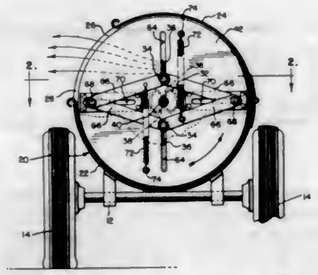
The invention comprises a nozzle made of two or more different materials, arranged in tandem, so that a section of the nozzle subjected mostly to a particular type of wear can be made of a particular material more highly resistant to that type of wear. Means are disclosed to lock the nozzle in a drilling bit.

3,419,221
MATERIAL SPREADING AND MIXING APPARATUS
Clas O. F. Fyrk, Rockford, Ill., assignor to Swenson Spreader & Mfg. Co., Lindenwood, Ill., a corporation of Illinois
Filed July 15, 1965, Ser. No. 472,243
22 Claims. (Cl. 239—656)



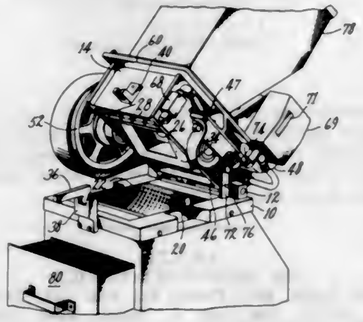
An apparatus for spreading and blending particulate materials in which material is fed from a hopper at a controlled rate onto an inner area of a rotary broadcast member and stationary material flow dividers are provided at the upper surface of the broadcast member to divide the material deposited on the broadcast member into separate streams as the material travels outwardly toward the impellers at the outer margin of the broadcast member. Several different particulate materials can be fed into the flow dividers, and the several materials are each divided and delivered to the impellers in separate streams each containing a blended mixture of the several materials. The material feed means is arranged to enable selective feeding of one or the other or both of several different particulate materials to the broadcast member.

3,419,222
MATERIAL UNLOADER
Jacob H. Lepp and Roy Ayranto, Grimsby, Ontario, Canada, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 7, 1966, Ser. No. 585,029
7 Claims. (Cl. 239—681)



A mobile tank type manure spreader including a rotatable beater for throwing material from the tank. The beater includes a pair of radially disposed axially extending carriers each mounting a plurality of radially extending fingers. The carriers are interconnected for radial movement in unison both outwardly and inwardly in response to centrifugal force.

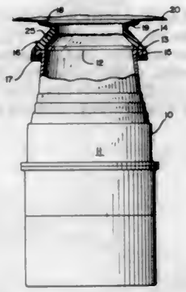
3,419,223
GRANULATORS
Nelson H. Morin, Chestnut Hill Road, Millville, Mass. 01529
Filed Dec. 23, 1966, Ser. No. 604,394
7 Claims. (Cl. 241—73)



A granulating machine for cutting various materials by the action of rotary blades co-acting with stationary blades in a cutting zone and in which the material which has been reduced to predetermined particle size flows out of the cutting zone through a curved screen generally concentric with the axis of rotation of the rotary blades.

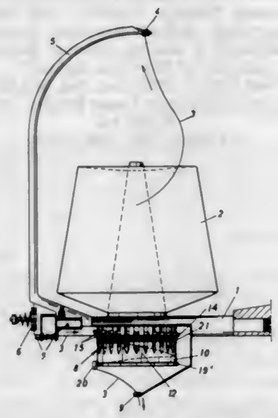
3,419,224
FOOD WASTE DISPOSER
Russell J. Mlinar, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,215
8 Claims. (Cl. 241—285)

1. A food waste disposer communicating with a sink opening having rim means to receive food waste through said opening, comprising: a disposer hopper having an entrance opening defined by rim means; and a resilient tubular conduit and mount connecting said rim means of the sink and said rim means of the hopper to support the hopper and provide enclosed fluid flow means from said sink to said hopper, said conduit having a first stiff annular section at one end sealingly engaging and supported by



said sink opening rim means, a second stiff annular section at the opposite end sealingly engaging said entrance opening rim means and supporting said hopper, and a flexible shock absorbing section intermediate said ends.

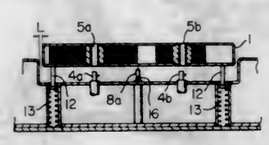
3,419,225
DEVICE FOR STORING YARN FOR THE IMMEDIATE NEED OF YARN OF KNITTING MACHINES
Karl Isac Joel Rosén, Villagatan 39–41, Ulricehamn, Sweden
Filed Apr. 27, 1967, Ser. No. 634,179
Claims priority, application Sweden, Mar. 22, 1967, 39,994/67
8 Claims. (Cl. 242—47.12)



The present invention relates to a device at knitting machines for holding a yarn reserve ready for the immediate yarn need in knitting machines such that the yarn is fed with a very small practically constant tension to the knitting place irrespective of the remaining quantity of yarn on the yarn cone.

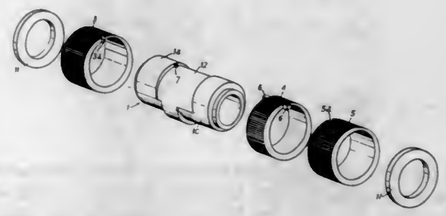
3,419,226
TAPE RECORDER
Masaaki Sato, Hachiohji-shi, Tokyo, Japan, assignor to Olympus Optical Co., Inc., Tokyo, Japan
Filed Oct. 17, 1966, Ser. No. 587,204
Claims priority, application Japan, Oct. 21, 1965 40/85,757, 40/85,758
3 Claims. (Cl. 242—55.13)

Tape recorder for use with a thin flat rectangular box-like shaped tape cartridge. The tape recorder has a thin flat housing having a loading recess in the upper surface of said housing opening out of the housing transversely of the thickness thereof and suitably sized to receive a cartridge therein. Tape driving shafts, a capstan shaft and guide shafts extend upwardly from within the recess being adapted to fit into corresponding holes in the cartridge for cooperation therewith when the cartridge is loaded in the loading recess in a direction transverse to the thickness of the cartridge. Means are provided to locate the cartridge horizontally prior to the engagement of said driving



shafts, capstan shaft and guide shafts with the corresponding holes of the cartridge when the cartridge is placed in the loading recess. Means are also provided which are engageable with the cartridge for releasably holding the cartridge in a properly loaded position after the cartridge is depressed into the loading recess. The arrangement assures not only easy and quick loading of the cartridge in the loading recess but also quick detachment of the cartridge from the tape recorder.

3,419,227
DEVICE FOR LOCKING A HOLLOW CORE TO A DRIVE SHAFT
Gottfried W. L. Werkmeister, 64 Drax Ave., London SW. 20, England, and Reginald J. McCarthy, 20 Poole Road, London E. 9, England
Filed Dec. 20, 1966, Ser. No. 603,280
3 Claims. (Cl. 242—72)

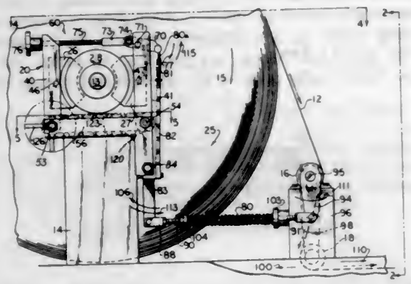


A device for locking a hollow core to a drive shaft comprising axially aligned rings which can turn on eccentrics adapted to be connected to said drive shaft, said rings when turned in one direction moving radially into driving engagement with the inside of a hollow core supported thereon, and when turned in an opposite direction moving inwardly radially towards a concentric core-release position.

3,419,228
WEB TENSIONING APPARATUS
Charles A. Harless, Fort Worth, Tex., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,810
13 Claims. (Cl. 242—75.43)

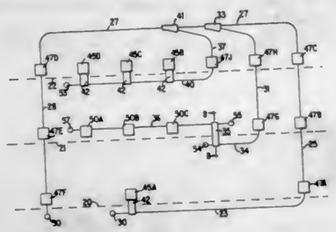
A web tensioning apparatus for tensioning a web being fed from a rotatable roll stand comprises a brake drum which is operatively connected with the web roll. Brake shoes frictionally engage the brake drum to effect a braking thereof and an actuating mechanism is operatively connected with the brake shoes for effecting movement of the brake shoes into frictional engagement with the

brake drum. The brake shoes are adjustable axially of the web roll to effect alignment of the brake shoes with the brake drum by a plurality of members which are movable axially to effect axial movement of the brake shoes.



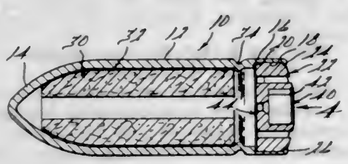
An actuating mechanism which effects movement of the brake shoes into frictional engagement with the brake drum includes a flexible link. The brake shoes are pivotally connected to side walls of a U-shaped brake shoe carrier for pivotal movement relative thereto.

3,419,229
PNEUMATIC TUBE SYSTEM
Peter F. Crosby, Cazenovia, N.Y., assignor to Diebold Incorporated, Canton, Ohio, a corporation of Ohio
Filed Nov. 14, 1966, Ser. No. 594,175
10 Claims. (Cl. 243—19)



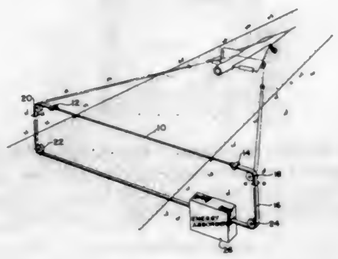
A plurality of sending and receiving stations are spaced along a tube line, the line extending through a casing at each station. The tube line has an opening for the lateral insertion and discharge of carriers into and from the tube line in each casing. Air pressure is applied to opposite ends of the tube line and each casing has remotely operated means for venting the casing to atmosphere.

3,419,230
NOZZLE
Robert Mainhardt, Diablo, and Robert C. Mawhinney, Castro Valley, Calif., assignors to MB Associates, San Ramon, Calif., a corporation of California
Filed Apr. 14, 1966, Ser. No. 542,603
6 Claims. (Cl. 244—3.23)



A gyroscopically stabilized miniature rocket projectile having nozzles each of which comprises a longtiudinal orifice and a slot flaring rearwardly to one side thereof to create a lateral pressure differential tending to spin the projectile.

3,419,231
AIRCRAFT ARRESTING SYSTEM
John J. McDermott, Springfield, Pa., and Charles S. Thompson, Vincentown, N.J., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,969
4 Claims. (Cl. 244—110)



An aircraft arresting system has a pendant comprising a woven tape of synthetic fibers wrapped about itself to provide an elongated line of substantially circular cross-section.

3,419,232
ANTI-DRAG ARRANGEMENTS FOR AERIAL AND OTHER MOVING BODIES
Morgan Bernard McStay, Lisburn, and John Gilmore Sloane, Carryduff, Belfast, Northern Ireland, assignors to Short Brothers & Harlan Limited, Belfast, Northern Ireland, a company of Northern Ireland
Filed Feb. 6, 1967, Ser. No. 614,255
Claims priority, application Great Britain, Feb. 21, 1966, 7,449/66
3 Claims. (Cl. 244—119)

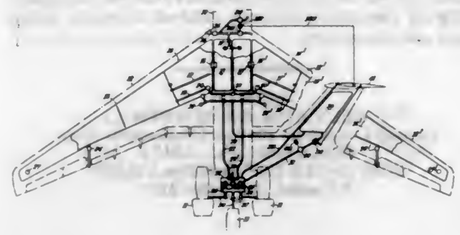


A craft for moving through a fluid having a surface, which produces at least a single flow separation line with a trailing vortex which creates a drag, with a fairing mounted on the craft so as to displace and interfere with the vortex thereby reducing the drag. The surface may be a flattened upsweep undersurface of an aircraft and the fairing a vertically displaced, flat, sharp edged, triangular strake.

3,419,233
AIRCRAFT FUEL SUPPLY ARRANGEMENTS
John Wotton, Weybridge, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company
Filed Jan. 30, 1967, Ser. No. 612,586
Claims priority, application Great Britain, Jan. 31, 1966, 4,247/66
8 Claims. (Cl. 244—135)

An aircraft fuel supply arrangement in an aircraft having at least one propulsion engine in which the fuel

is forced outwardly and rearwardly in the wing tanks so that the center of gravity is moved aft as the fuel is consumed from the wing tanks. Thereafter the fuel in a



rear tank is consumed when the center of gravity has moved sufficiently far aft to counterbalance the aftward movement of the fuel in the wing tanks to thereby maintain the center of gravity in the optimum position.

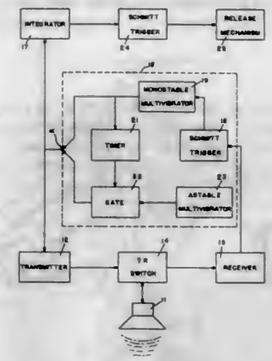
3,419,234
AIRCRAFT RESCUE SYSTEM
Alfred G. Poirier, 7960 W. Tropicana St., Miramar, Fla. 33023
Filed Sept. 19, 1967, Ser. No. 668,801
10 Claims. (Cl. 244—137)



The invention is an aircraft rescue system for transferring passengers from a damaged aircraft to a rescue aircraft in midair. The rescue aircraft is specially equipped to control a damaged aircraft and to allow intercoupling of the two aircraft, for transfer of passengers. Specifically, the two aircraft have coupling structure for coupling the damaged aircraft and the rescue aircraft together in flight. The coupling structure may include magnets and interlocking tracks which become engaged with each other during the rescue operation. Also included is a control system for controlling the damaged aircraft from the rescue aircraft, the control system including a boom extendable from the rescue aircraft and connectable to an autopilot system of the damaged aircraft to establish electronic communication and control paths between two aircraft. The aircraft have openings interconnectable to allow transfer of personnel from the damaged aircraft to the rescue aircraft, and the rescue aircraft has a conveyance such as steps or an escalator extendable through the openings for transfer purposes. Provisions are made for sealing the passageway formed by the openings so that pressurization may be maintained in the two aircraft.

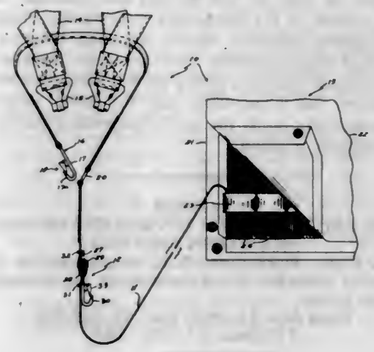
3,419,235
ACOUSTIC CONTROL APPARATUS
John W. Wood, Jr., 326 Lexington St., Waltham, Mass. 02154
Filed June 12, 1967, Ser. No. 645,118
16 Claims. (Cl. 244—138)

An acoustic control apparatus which reduces the descent rate of a parachute retarded falling load at a predetermined distance above an approaching surface. The apparatus either releases a portion of the descending load or fires retarding retrorockets in response to measure-



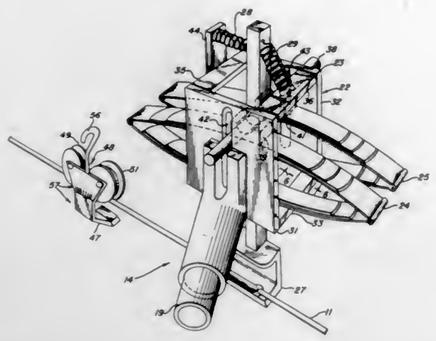
ment of a predetermined time interval between sound energy transmission and corresponding echo reception.

3,419,236
PERSONNEL LOWERING DEVICE
Alphons P. Weber, 1325 Mayapple Ave., Dayton, Ohio 45432
Filed Nov. 9, 1967, Ser. No. 681,646
3 Claims. (Cl. 244—151)



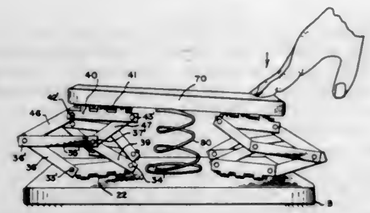
An emergency lowering line for rescuing parachuting aircrewmen and other parachutists marooned in tall trees or other high places is slidably positioned in a lowering and braking device that includes an open frame with a snap hook on one end attached to the parachute harness, a pair of bail members on its opposite ends, a fixed transverse bar member, and a slidably mounted transverse bar member adjustable on the frame relative to the fixed bar member. The lowering line is stowed in the parachute pack with a free end of the line being guided by the pair of bail members and reeved through the transverse bar members, and then attached to the parachute risers. The slidable bar member is automatically movable against the lowering line to brake and control its slidable movement through the lowering device frame and the lowering line itself may be manually manipulated to further control the rate of descent of the marooned parachutist.

3,419,237
SHOCK ABSORBING APPARATUS
Erik A. Lindgren, 4700 N. Ashland Ave., Chicago, Ill. 60640
Filed Nov. 21, 1966, Ser. No. 595,867
11 Claims. (Cl. 248—54)



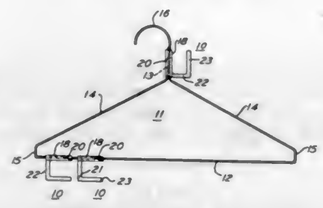
An apparatus for cushioning the impact to the support of a suspension cable upon which a load conveyor is adapted to run. The apparatus comprises a framework supported by a plurality of ground-engaging legs, the framework having bottom, side and top portions. A cable suspending means is provided including a transverse pinion or guide member, and the side portions of the framework are slotted to cooperate with the guide member in controlling the vertical movements of the cable suspending means. A pair of leaf springs are mounted on the bottom portion of the framework, and bearing means on the leaf springs pivotally receive the guide member. The leaf springs thus resiliently hold the guide member in a linearly central position, and a second spring means acting between the framework and the cable suspending means resiliently holds the cable suspending means in a pivotal central position.

3,419,238
PARALLEL PLATFORM LINKAGES FOR SHOCK ISOLATION SYSTEMS
John F. Flory, Morristown, N.J., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 21, 1967, Ser. No. 648,536
9 Claims. (Cl. 248—163)



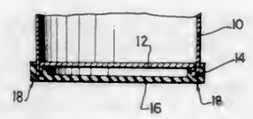
Constraint of rotational motion between a base and a movable platform is effected by a linkage system wherein a set of links of essentially equal length is connected at one end to the base and at the other end to a floating plate, and wherein a second set of links is attached at one end to said floating plate and at the other end to said movable platform, all connections being universal joints. In a variation of the system, two or more linkage units are comprised of parallelograms, one parallelogram having an element hinged to said base, the other having an element hinged to said platform, the two parallelograms having an element in common, and all elements having pivotal end connections.

3,419,239
BELT AND TIE HOLDER
Elwood I. Ginther, 1666 E. Cheltenham Ave., Philadelphia, Pa. 19124
Filed Oct. 25, 1967, Ser. No. 678,049
3 Claims. (Cl. 248—215)



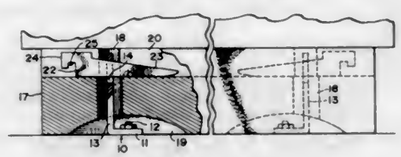
A belt and tie holder which is detachably secured to a wire clothes hanger and which has a split tubular portion engaging part of the hanger and a supporting portion having angularly disposed bar portions for carrying belts and ties.

3,419,240
GARBAGE CAN PROTECTOR
William V. Santic, 64—09 56th Road, Maspeth, N.Y. 11378
Filed Apr. 5, 1967, Ser. No. 628,662
1 Claim. (Cl. 248—350)



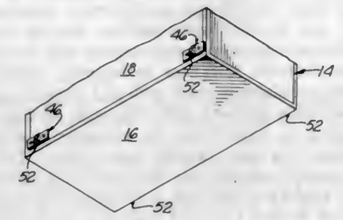
Garbage collectors normally throw garbage cans down against pavements and the like while collecting garbage thus damaging the can. I provide a protector adapted for detachable engagement with the bottom of the can be protect same from damage during the garbage collection process.

3,419,241
CONCEALED FASTENING FOR SEAT ENDS
Douglas E. Way and Hammond A. Berry, Booneville, Miss., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Nov. 23, 1966, Ser. No. 596,578
4 Claims. (Cl. 248—361)



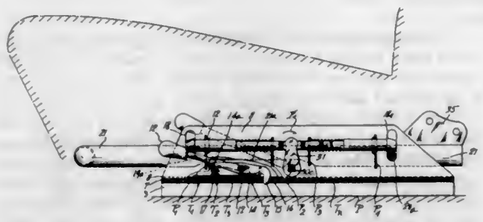
A pew has an end panel resting upon the floor and having a pair of vertical passages receiving upright blades secured to the floor and provided with vertical slots. In the panel there is a transverse key slot extending through the vertical passages and preferably through the panel and tapered wedges extend through each end of the slot and engage the slots of the blades. The panel is provided with a base of reduced cross section with the upper panel portion extending over and partially concealing the ends of the key slot.

3,419,242
CAMPER HOLD-DOWN DEVICE
Forrest D. Gossett, Orange, Calif. (1905 Jacalene, Anaheim, Calif. 92802)
Filed Aug. 29, 1967, Ser. No. 664,187
6 Claims. (Cl. 248—361)



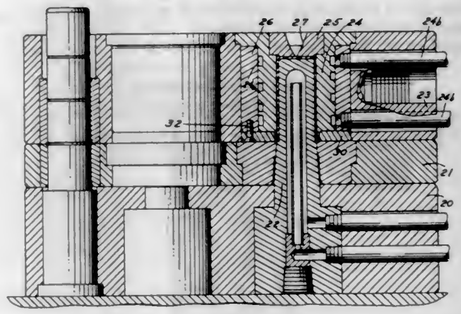
Structures are shown for holding a body such as a camper body upon a vehicle bed such as the bed of a pickup truck in such a manner that the body is securely locked in place upon the bed so that it cannot be undesirably removed from the bed. Each of these structures constitutes a holding means having a holder adapted to be secured permanently to the bed and a headed projection secured to the body so as to be capable of being inserted in the holder to which it corresponds when the body is located upon the bed. The holder is preferably provided with lock means for engaging the headed projection so as to prevent its movement with respect to the holder. A plurality of such holding means are preferably used at a number of points on the vehicle bed and on the body.

3,419,243
SYSTEM FOR SETTING THE HEIGHT OF SEATS IN AUTOMOTIVE VEHICLES
Joseph Gabriel Berthier, Levallois-Perret, France, assignor to Tubauto, Levallois-Perret, France, a French company
Filed Nov. 21, 1966, Ser. No. 595,823
Claims priority, application France, Dec. 17, 1965, 42,767
6 Claims. (Cl. 248—394)



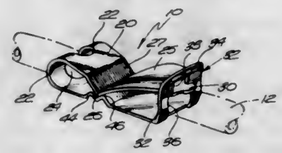
An economical and easily-fabricated automotive vehicle seat adjustable both longitudinally and in slope. A seat frame includes a plurality of laterally-extending stub shafts which engage vertically-extending slots in two side plates and spring-biased plungers lock each stub shaft in place in a respective slot. A crank which reciprocates the plungers allows the stub shafts to be raised or lowered in the slots to determine the height and the slope of the seat. The side plates are longitudinally adjustable along floor-mounted rails to adjust the longitudinal position of the seat.

3,419,244
PLASTIC VIAL MOLDING APPARATUS
Peter Hedgewick, Windsor, Ontario, Canada, assignor to Reflex Corporation of Canada Limited, Windsor, Ontario, Canada, a corporation of Canada
Filed Aug. 19, 1966, Ser. No. 573,600
6 Claims. (Cl. 249—79)



6. In an apparatus for making a plastic container or the like comprising a generally cylindrical body with a bottom wall and an open end and a plurality of circumferentially spaced outwardly extending radial projections on the outer surface of the cylindrical portion thereof adjacent the open end, the combination comprising
a mold having a generally cylindrical cavity defining the outer surface of the cylindrical portion of the plastic container,
a cavity ring surrounding the open end of said mold,
said mold having an axially extending wall in contact with the inner surface of said cavity ring,
said wall having a free edge with portions thereof axially cut away throughout the radial thickness of said wall to define spaces into which plastic will flow to form the radial projections on the container,
and a core cooperating with said mold and having an outer surface defining the inner surface of the cylindrical portion of the container.

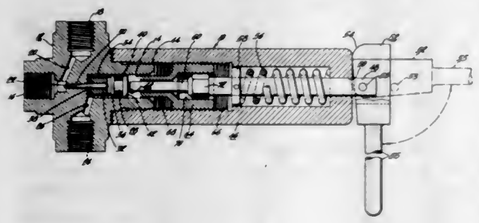
3,419,245
TUBE CLAMP
Joseph Scola, Providence, R.I., assignor to Vargas Manufacturing Co., Providence, R.I., a corporation of Rhode Island
Filed Nov. 29, 1965, Ser. No. 528,318
3 Claims. (Cl. 251—10)



A clamp for use with a flexible tube defined by a one-piece member that is mounted on the tube and that includes a base portion, to one end of which a clamping

element is joined in pivotal relation and to the other end of which a locking portion is joined, the locking portion having a first opening formed therein that recevies a tongue formed on the end of the clamping element, the tongue being held in position by engagement thereof with a shoulder that is formed on the locking portion by the first opening and a reduced opening communicating therewith, an extension being joined to the tongue and being receivable in said reduced opening when a second clamping position of the clamping element is required.

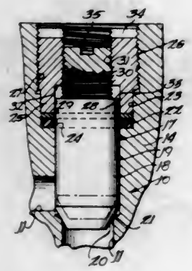
3,419,246
TOGGLE VALVE
Lester D. Burgess, Cinnaminson, N.J., assignor to Lif-O-Gen, Inc., Lumberton, N.J., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,824
6 Claims. (Cl. 251—205)



A toggle-actuated valve providing fluid metering control, the valve including a spring-biased valve assembly closable by toggle actuation of the valve stem and including a stop member slidably overlying the stem for selectively limiting outward movement of the valve assembly upon opening of the toggle, the stop member being threadedly mounted in the valve and rotatable with the stem to permit axial adjustment thereof by rotation of the toggle.

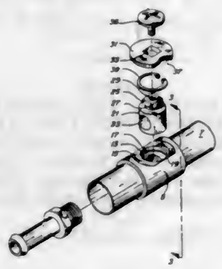
The present invention relates generally to fluid control valves of the toggle-actuated type and relates more particularly to a toggle valve which combines a fluid metering mechanism operable by the single toggle control to adjust fluid flow through the valve.

3,419,247
VALVE FOR FLUID PRESSURE DEVICE
Joseph I. Bosi, Rockford, Ill., assignor to Hydro-Line Manufacturing Co.
Filed Aug. 26, 1964, Ser. No. 392,259
6 Claims. (Cl. 251—214)



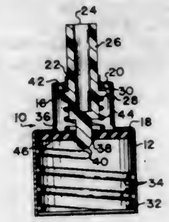
1. In a fluid pressure device, the combination of a body having a cylindrical internally threaded bore extending inwardly from an exterior surface of the body, a first counterbore aligned axially with and extending inwardly from said bore and providing a smooth cylindrical wall, a second counterbore extending inwardly from and aligned axially with said first counterbore and providing a smooth cylindrical internal wall, means on said body defining a circular valve seat concentric with said second counterbore and spaced from said first counterbore, an elongated cylindrical valve element having one end portion threaded externally and its other end portion of smooth cylindrical external contour telescoping closely and guided within said second counterbore and extending from said valve seat along and axially beyond the remote end of the second counterbore and into said first counterbore, a ring of resilient sealing material seated in the bottom of said first counterbore and telescoping closely with said interior wall of the first counterbore and said smooth other end portion of said element, a hollow cylindrical plug having one end portion threaded into said bore and formed with internal threads receiving said threaded end portion of said element and its other end portion of reduced thickness telescoping closely with said second counterbore wall and said smooth end portion of said valve element, said other end portion of said plug applying an axial force to compress said resilient ring and force the same radially into sealing engagement with said second counterbore wall and said smooth end portion of said valve element, a back-up ring interposed between said sealing ring and said plug to transmit said axial compression force to the sealing ring, and shoulders formed on the interior of said plug and on said element and facing axially to engage each other and limit axial movement of the element away from said seat.

3,419,248
VALVE
Donald T. Berger, Santa Cruz, Calif., assignor to Arro Vacuum Inc., a corporation of California
Filed Mar. 23, 1966, Ser. No. 536,864
1 Claim. (Cl. 251—309)



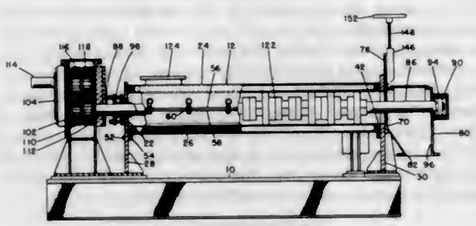
A valve coupling disclosed herein comprises a one piece valve body having a central cylindrical portion, a reduced cylindrical portion extending axially from one end and a cylindrical skirt extending axially from the other end. A bore extends axially through the valve body and has one end which is threaded opening into the skirt which houses an adapter. The central portion has a large cylindrical opening extending therein from the side thereof and forming a valve seat and a plug fitting into the seat. The plug has an opening therethrough which upon rotation opens and closes the valve. The plug has a disc-like handle secured to one end substantially tangential to the outer surface of said central cylindrical portion. The disc-like handle has a diameter substantially equal to that of said central cylindrical portion.

3,419,249
DISPENSING VALVE
Edward Noyack, Seymour, and Edwin L. Terrill, Naugatuck, Conn., assignors to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Feb. 1, 1967, Ser. No. 613,226
4 Claims. (Cl. 251—339)



A valve for a small fluid container, where the valve is adapted to dispense a limited amount of fluid from the container into the palm of the hand of the user, wherein the valve comprises an elongated stem with its ends spaced from and guided by apertured transverse body wall portions, and having an intermediate flanged valve head.

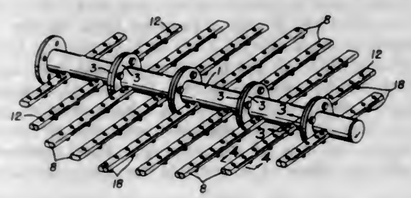
3,419,250
CONTINUOUS MIXER DISCHARGE CONTROL
Ambrose Kirk Brennan, Jr., Thomasville, Pa., assignor to Read Corporation, York, Pa., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,408
2 Claims. (Cl. 259—41)



Discharge control means disposed between the open delivery end of a horizontal mixer casing and a discharge housing in which the shafts of a pair of material mixing and advancing elements extend through the mixer casing and discharge housing. The discharge control means includes plate means formed and cooperating with a slide plate to form an effective seal for the discharge opening in the plate means against the pressure of the advancing material in a lowered position of the slide plate.

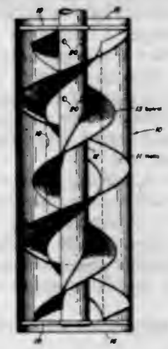
3,419,251
DISTRIBUTOR
John S. Eckert, Silver Lake, Ohio, assignor to U.S. Stoneware, Inc., Tallmadge, Ohio, a corporation of Massachusetts
Continuation-in-part of application Ser. No. 465,489, June 21, 1965. This application Oct. 19, 1966, Ser. No. 592,248
3 Claims. (Cl. 261—40)

Apparatus for distributing liquid, having a conduit with pressure-regulating orifices spaced therealong, and a section of hollow tube of larger diameter than the orifice, connected to the output side of the orifice to reduce the velocity of the liquid before discharge, and valve means



movable in response to pressure changes in said conduit to control flow through said orifices.

3,419,252
FLUID SCRUBBER
Lawrence B. Knudsen, Middletown, and Aman D. Munjee, South Orange, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed June 15, 1965, Ser. No. 464,029
4 Claims. (Cl. 261—79)



Apparatus for contacting a fluid with a gas and more especially to a device for scrubbing gases wherein the gases pass upwardly through a scrubber comprising a tubular member having a ribbon-like helix secured to its inner wall and an axial support-member having a ribbon-like spiral secured to its outer wall, said spiral overlapping said helix and both the spiral and helix having a downward slope.

3,419,253
SUPPORT PLATE
John S. Eckert, Silver Lake, Ohio, assignor by mesne assignments, to U.S. Stoneware Inc., a corporation of Massachusetts
Continuation of application Ser. No. 208,180, July 2, 1962, which is a continuation of application Ser. No. 803,430, Apr. 1, 1959. This application Nov. 8, 1965, Ser. No. 512,258
1 Claim. (Cl. 261—96)

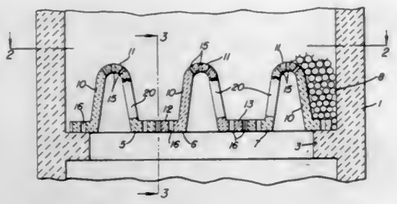
1. A treating tower having

(a) a gas inlet and liquid outlet in the lower region thereof and a liquid inlet and gas outlet in the upper region thereof,

(b) a support member for packing which member is mounted in the tower on the wall thereof between the gas and liquid inlets,

(c) said packing support member comprising a plurality of parallel arched members each having a horizontally disposed base member extending from each side of each arch, each base member having openings therein to permit the flow of liquid therethrough, said support member forming a support over the entire cross section of the tower,

(d) said arched members each having inclined side walls converging upwardly toward respective crowns thereof, said side walls each having upwardly extending, relatively narrow, elongated slots therein staggered on each side of each arch to provide for the upward flow of gas therethrough and said crowns each having openings therein, the area of each opening in the crowns and in each base member being less than the area of each slot, said slots terminating above the tops of the respective base members a sufficient distance to provide for the collection of



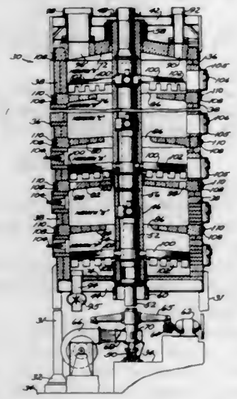
liquid on the base members, the openings in each member being arranged in parallel longitudinal rows and being staggered with each opening in one row in line with each slot in the adjacent wall of the arch and located between the slots of the adjacent side wall, there being twice as many openings in each row in the crown as there are slots in one wall of the arch, each arch being taller than it is wide at its widest portion, and

(e) a plurality of packing elements in said tower supported upon said support member,

(f) said arched members being positioned contiguously with respect to one another and providing an upwardly widening space between the side walls of adjacent arch members, above the underlying base members,

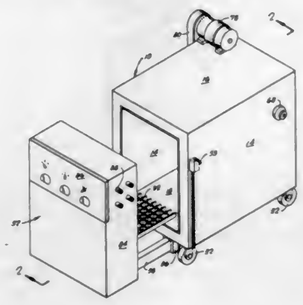
(g) said space being filled with a plurality of said packing elements.

3,419,254
HIGH TEMPERATURE MULTIPLE HEARTH FURNACE STRUCTURES
Charles F. von Dreusche, Jr., Ramsey, N.J., assignor to Nichols Engineering & Research Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 613,832
18 Claims. (Cl. 263—26)



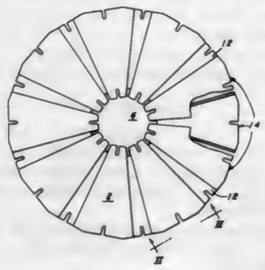
Multiple hearth furnace with air ducting inside center shaft and rabble arms; insulative arrangements comprising a fibrous layer and solid outer layer secured to rabble arms and center shaft; ceramic rabble teeth formed separate from rabble arm; hearth brick free of "glass formers"; and canopy-type shields covering surrounding butt-straps.

3,419,255
MOVABLE OVEN ASSEMBLY
Alfred B. Carel and Gerald Perkins, Jr., Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Jan. 10, 1967, Ser. No. 608,383
20 Claims. (Cl. 263—6)



An oven assembly which is useful in scientific laboratories, and in pilot plant facilities. The oven is of two-part construction in which one of the parts is movable relative to the other, and functions, when in one position, as a cover sealing an opening in the other part of the oven. The oven is preferably a forced draft type in which the part having the opening therein contains baffle means which forms an air flow channel. The movable part of the oven carries instrumentation for controlling operations conducted within the oven. The movable part of the oven is adapted to detachably support large laboratory process apparatus, and is geometrically configured so that when it is moved away from the second part of the oven, the apparatus supported thereon becomes accessible from at least three sides. When the movable part of the oven is moved into juxtaposition to the second part to cover the opening in the latter part, the apparatus supported on the movable part is enclosed within the oven.

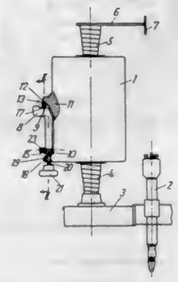
3,419,256
GAS CIRCULATING SEPARATOR
Harold E. Hobe and Frank Kennedy, Johnstown, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Nov. 30, 1966, Ser. No. 597,917
10 Claims. (Cl. 263—47)



A separator for use between stacked coils of steel strip within an annealing cover, the separator permitting circulation of atmosphere gas. The separator is fabricated

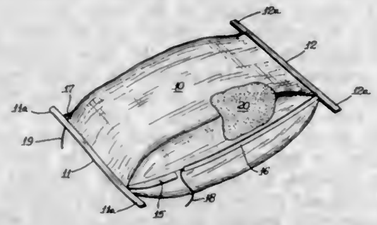
from a plurality of identical flanged steel segments in a manner to provide strength, adequate coil supporting area and direct gas to strip contact.

3,419,257
MOUNTING ARRANGEMENT FOR CUTTING TORCH OF OXYACETYLENE CUTTING MACHINE
Georg Röder, Frankfurt am Main-Fechenheim, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 20, 1966, Ser. No. 580,726
7 Claims. (Cl. 266—23)



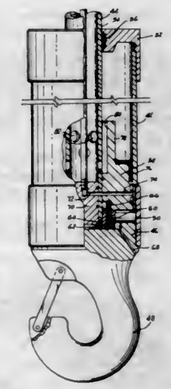
1. An adjustable arrangement for mounting a vertically-adjustable torch support and housing on the upper carriage of an oxyacetylene cutting machine, said arrangement comprising an upwardly disposed groove upon said upper carriage, a downwardly disposed groove upon said upper carriage below and substantially parallel to said upwardly disposed groove, a pair of downwardly disposed supporting elements upon a wall of said housing, said downwardly disposed supporting elements being arranged at substantially the same level for engagement in said upwardly disposed groove, an adjustable projecting element attached to said wall of said housing a distance below said downwardly disposed supporting elements sufficient to receive said grooves therebetween, and said adjustable projecting element having sufficient movement for receiving said upwardly and downwardly disposed grooves between said downwardly disposed supporting elements and said adjustable projecting element and for inserting said projecting element into said downwardly disposed groove to retain said housing upon said upper carriage in cooperation with said downwardly disposed elements engaged in said upper groove.

3,419,258
PACKAGE FOR DRY READY-MIX MATERIALS
John Proctor Ritchie, Wichita, Kans., assignor to Ritchie Brothers Construction Co., Wichita, Kans., a partnership
Continuation-in-part of application Ser. No. 625,546, Mar. 23, 1967. This application Feb. 5, 1968, Ser. No. 703,105
4 Claims. (Cl. 266—47)



An elongated package for dry ready-mix material includes a waterproof flexible container for holding the mix, a folding spout at one corner of the container, a bellows in each side of the container, a tear strip for each bellows fastening the edges thereof together in a contracted position for shipment, and a rip cord secured along each tear strip. When the rip cords are pulled through their tear strips, the container is allowed to expand for receiving water through its spout to prepare the mix for use. Ribs are sewn to the top and bottom of the container for sealing it, and they extend about six inches beyond the sides of the bag. The package is particularly adapted for a dry cement mix which is combined with water in the expanded container just prior to use. The extensions of the top and bottom ribs are used as handles in mixing the contents.

3,419,259
APPARATUS FOR CARRYING OUT WELL DRILLING OPERATIONS FROM FLOATING STRUCTURES
Lafayette E. Gilreath, Houston, Tex., assignor to Offshore Engineering Corporation, a corporation of Delaware
Filed Mar. 3, 1966, Ser. No. 531,411
3 Claims. (Cl. 267—1)

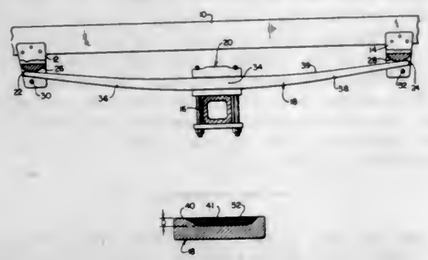


Suspension mechanism for supporting a drilling string from a floating platform to allow the platform to move vertically under the influence of wave action while maintaining the string in engagement with the bottom of a well bore during a well drilling operation. The invention includes extensible mechanism of the cylinder and piston type connected to the string and platform to yieldingly support the string and means for varying the pressure of fluid applied to the cylinder and piston in response to changes in the weight of the drilling string during the progress of the drilling operation to maintain the weight applied to the drilling bit substantially constant. The mechanism also embodies means for maintaining the piston and cylinder constantly lubricated by continuously supplying lubricant to the external surface of the piston and the surrounding internal surface of the cylinder.

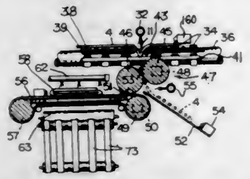
3,419,260
WEAR RESISTANT LEAF SPRING
Louis J. Hrusovsky, Bloomfield Hills, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 566,968, July 21, 1966. This application June 5, 1967, Ser. No. 643,558
5 Claims. (Cl. 267—47)

A vehicle spring leaf having desirable spring characteristics and having a central mounting section and opposite ends adapted for sliding bearing engagement with hard

wear surfaces on a vehicle frame has at one side localized surface regions extending across the width of that one side at the spring leaf ends for engagement with the wear surfaces with a central limited width portion only of each of the surfaces regions hardened to a limited predetermined depth to provide surface wear resistance without adversely affecting the desirable spring characteristics of the remainder of the spring leaf including the edge portions of the surface regions and the opposite side of the spring leaf.



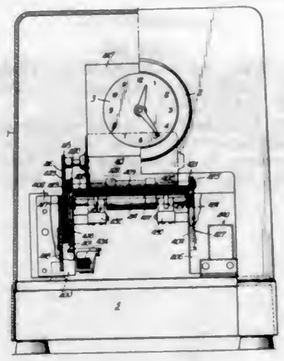
3,419,261
FOLDER FOR OPTIONAL QUARTER FOLD OR FRENCH FOLD
Robert L. Sjostrom, Boca Raton, Fla., assignor to Sjostrom Automations, Inc., Boca Raton, Fla., a corporation of Florida
Continuation of application Ser. No. 373,601, June 1, 1964, which is a continuation-in-part of application Ser. No. 291,323, June 28, 1963. This application Sept. 12, 1966, Ser. No. 578,888
5 Claims. (Cl. 270—69)



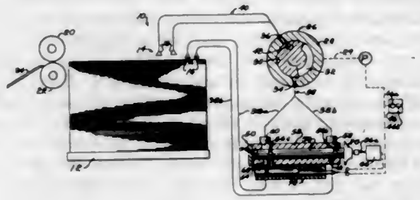
A textile folding machine for successively folding flexible sheets with a French fold or, alternately, a quarter fold. A horizontally oriented, endless conveyor belt means carries successively fed sheets for folding over an opening between the longitudinally aligned with the belts of the endless conveyor. Means force a sheet downwardly between adjacent belts into a longitudinally extending three-roll, folding mechanism which successively effects parallel folds in the sheets. A twice-folded sheet is then carried to a transverse folding mechanism by another horizontally oriented conveyor means in which a cross fold is formed by forcing the folded sheet downwardly between the conveyor belts of the second conveyor means into the nip of a pair of folding rolls. A switch is provided to permit bypassing of one of the folding operations in the three-roll folding arrangement.

3,419,262
CARD FEED MECHANISM
Leonard M. Davis, Fair Lawn, N.J., and Dolph Gobel, Great Neck, N.Y., assignors to Shaw-Walker Co., Muskegon, Mich., a corporation of Michigan
Filed Sept. 10, 1964, Ser. No. 395,474
9 Claims. (Cl. 271—3)

A mechanism for feeding a properly oriented card completely into a computer and out of manual reach, for holding the card in that position during an operating cycle of the computer initiated by the card, for ejecting the card at the end of the cycle, and for ejecting an improperly oriented card without initiating a cycle of the computer.

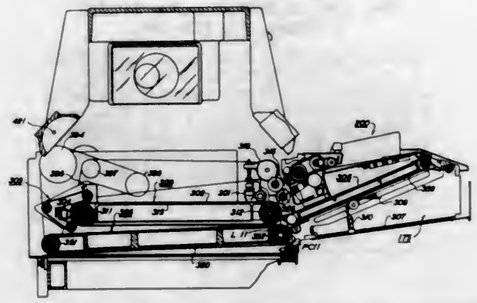


3,419,263
SHEET FEEDER
William H. Weidman, Maple Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 22, 1967, Ser. No. 648,077
17 Claims. (Cl. 271—26)



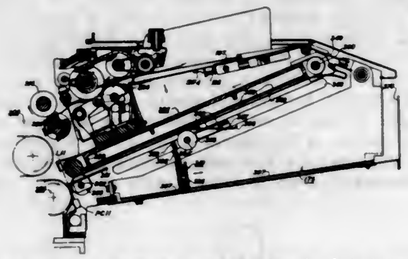
The control for the sheet feeder includes a valve means which operates to control the application of vacuum from a rotary timing valve to sheet feeding apparatus. The rotary timing valve is in communication with a vacuum pump and interrupts and applies vacuum to the sheet gripping means of the sheet handling apparatus in a timed sequence corresponding to the sequence of operation of the sheet feeder. The valve means is connected between the rotary valve and the sheet gripping means and includes a valve member which is movable between an open position in which the rotary timing valve is in vacuum connection with the sheet gripping means of the sheet feeder and a closed position wherein communication is blocked. During operation of the feeder the rotary timing valve is continuously rotated and the sheet feeding can be interrupted by moving the valve member to its closed position. The valve member is vacuum responsive and can only be moved to its closed position when the timing valve is not applying a vacuum to the sheet gripping means so that the feeding operation cannot be interrupted in the middle of a cycle. The valve means further includes a vacuum operated electrical switch which opens and prevents energization of a solenoid which moves the valve member to its open position when the timing valve is in its vacuum applying phase of its cycle of operation.

3,419,264
DOCUMENT HANDLING SYSTEM
John F. Gardner, Penfield, Martin H. Lustig, Rochester, and Adalbert A. Lux, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,801
5 Claims. (Cl. 271—68)



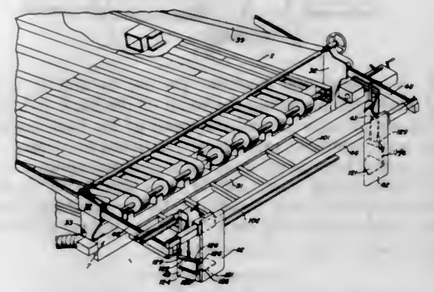
A document transport system wherein fed documents are electrostatically tacked to a light, highly reflective transport belt which, in an exposure zone, is held flat against the ported surface of a vacuum manifold. As the document leaves the exposure zone, it is detacked from the surface of the first transport and advanced in an opposite direction on a second transport by means of vacuum and moving belts. When the document leaves this second transport, it enters a stacker transport of the vacuum-moving belts design where it is appropriately stripped off to settle face down in a stacker tray. Adjustable with stripper fingers there is a backing assembly in the stacker which rides on the stacker tray to restrain the stacked documments from sliding away from the front of the tray where they are readily accessible to the operator.

3,419,265
DOCUMENT STACKER APPARATUS
Robert L. Greco, Penfield, and Gerard C. Wright, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,802
8 Claims. (Cl. 271—86)



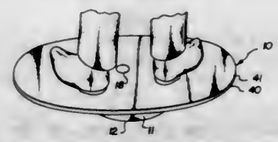
A document transport system wherein fed documents are electrostatically tacked to a light, highly reflective transport belt which, in an exposure zone, is held flat against the ported surface of a vacuum manifold. As the document leaves the exposure zone, it is detacked from the surface of the first transport and advanced in an opposite direction on a second transport by means of vacuum and moving belts. When the document leaves this second transport, it enters a stacker transport of the vacuum-moving belts design where it is appropriately stripped off to settle face down in a stacker tray. Adjustable with stripper fingers there is a backing assembly in the stacker which rides on the stacker tray to restrain the stacked documents from sliding away from the front of the tray where they are readily accessible to the operator.

3,419,266
SHEET ACCUMULATOR DEVICE FOR AUTOMATIC SHEET STACKERS
Merrill D. Martin, 2 Mall Court, Oakland, Calif. 94611
Filed Feb. 20, 1967, Ser. No. 617,400
11 Claims. (Cl. 271—86)



In automatic sheet stackers of the type shown in Patent No. 2,901,250, issued Aug. 25, 1959 to Geo. M. Martin, the sheets are discharged from the end of the conveyor frame, the discharge end of which frame is swung upwardly in a straight line so as to drop the discharged sheets on the top of the stack evenly. In an improvement on that type of machine shown in U.S. Patent No. 3,321,202, issued May 23, 1967, to Merrill D. Martin, there is provided a bracket pivoted at each end of the conveyor frame, and being turned in proportion to the change of angularity of the conveyor frame thereby to maintain a constant attitude relatively to the ground or to the stack. On each bracket there are also supported adjustable corner guide abutments spaced from the ends the conveyor frame against which the sheet abuts so as to be accurately located with respect to the stack. The improvement of the present application consists of supporting catcher fingers on a cross frame between and on said brackets so that the catcher fingers can be withdrawn into an out of the way position beneath the conveyor frame. A system of gears and racks on the support for the catcher fingers is operated by pneumatic devices for moving the catcher fingers simultaneously into position to catch and support the discharged sheets. There is also pivoted a catcher plate in each guide abutment swingable into and out of position in registry with the level of the catcher fingers to support the corners of the sheets. The catcher plates are also operated by pneumatic devices, which latter are timed with the stacker controls for raising and lowering the discharge end of the conveyor frame.

3,419,267
ROCKING LOCOMOTION APPARATUS
Karl H. Stolle, Crofton, British Columbia, Canada
Filed Jan. 3, 1967, Ser. No. 606,880
6 Claims. (Cl. 272—1)



A rocking locomotion apparatus having a tiltable platform upon which the user stands, said platform being provided with means for signalling when the user is over-

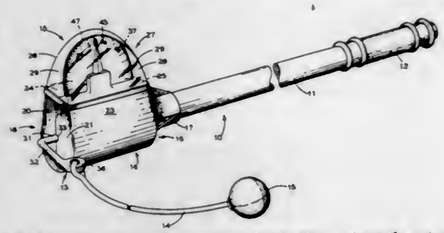
balancing the platform during locomotion and therefore is not operating the apparatus very skillfully.

3,419,268
IN-BED EXERCISER AND/OR CUSHION
Joseph Bellet, 234 W. 48th St., New York, N.Y. 10036
Filed Dec. 22, 1964, Ser. No. 424,166
3 Claims. (Cl. 272—57)



1. A cushion and exerciser for use by elderly people and adults for reshaping the small of the back and developing the muscles around the small of the back comprising: a substantially cylindrical relatively hard and rigid core, a first layer of relatively soft material concentrically surrounding said core, and at least one other layer of relatively soft material concentrically surrounding said first layer, each layer being under more compression than the next adjacent layer which covers it.

3,419,269
SKIPPING TOY AND EXERCISER WITH COUNTER MEANS
Michael Saffer, 135—05 Coolidge Ave., Jamaica, N.Y. 11435
Filed Nov. 1, 1967, Ser. No. 679,892
4 Claims. (Cl. 272—74)



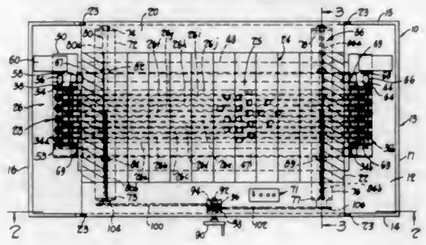
A skipping toy and exerciser including a handle adapted to be held in a substantially vertical position, with a cord extending from one end of the handle for swinging movement radially in a horizontal plane in response to movement of the handle in a curved path, together with counter means for registering the number of revolutions of the swinging cord.

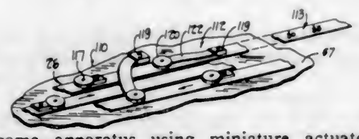
3,419,270
MULTIPLE ROPE JUMP ROPE
Samuel Eppy, New York, N.Y. (65 Lincoln Blvd., Long Beach, N.Y. 11561)
Filed Dec. 21, 1966, Ser. No. 603,560
6 Claims. (Cl. 272—75)



1. A multiple rope jump rope, of the character described, comprising a pair of handles and a plurality of parallel, spaced, inelastic ropes removably and adjustably connected at one end to one of said handles and removably and adjustably connected at the opposite end to the other of said handles.

3,419,271
GAME APPARATUS WITH MAGNETICALLY ACTUATED GAME PIECES
Stephen D. Waskosky, 1748 E. 38th St., Cleveland, Ohio 44114
Filed Apr. 22, 1966, Ser. No. 544,550
5 Claims. (Cl. 273—94)

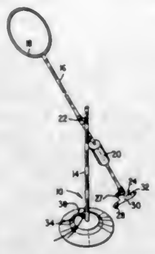




A game apparatus using miniature actuated game pieces that are moved across a playing surface by indirect manual control through magnets supported on endless belts beneath the playing surface, which belts can be moved together in a sideways or transverse direction from the longitudinally-driven direction of the belts. The game pieces are mounted on bases having upwardly sloping frontal areas so that by magnetic attraction the pieces appear to assume a running or crouching position.

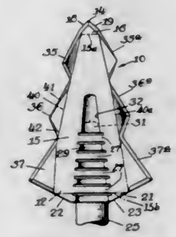
3,419,272
OSCILLATORY TARGET AND MOTION IMPARTING MEANS
Charlie D. Miller, 141 Mosley Drive, Syracuse, N.Y. 13206, and Arthur C. O'Hara, 4939 South Ave., Syracuse, N.Y. 13215
Filed Aug. 15, 1966, Ser. No. 572,333
2 Claims. (Cl. 273—105.2)

1. A moving target device comprising a base member; a support connected to the base member; an elongated rod pivotally mounted to the support; a target secured to the elongated rod, and means for imparting continuous to-and-fro or swinging movement to the rod to cause the target to traverse a substantially arcuate path of a predetermined length, said means including a resilient member secured to said rod and having an upper and a lower surface, a first downwardly bent end section, and a second upwardly bent end section secured to the rod, a continuously rotating roller initially engaging a surface



of the resilient member by deflecting an end section thereof in the direction of its bend to impart upward arcuate movement to the member, the parts being so arranged that the roller engages the opposite surface of the resilient member by deflecting the other end of the member in the direction of its bend as the resilient member moves downwardly in its arc of travel thereby imparting upward arcuate movement to the resilient member in a direction reverse to that initially imparted.

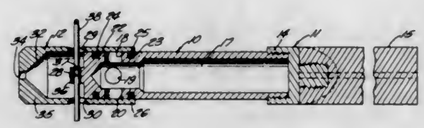
3,419,273
HUNTING ARROWHEAD WITH OFFSET CUTTING EDGES
Stanley P. Rudzinski, 1156 S. Lombard Ave., Oak Park, Ill. 60304
Filed May 4, 1965, Ser. No. 453,115
3 Claims. (Cl. 273—106.5)



A hunting arrowhead with a diverging body having a series of triangular projections of increasing size from front to rear on each edge of the body which projections are variously bent from the plane of the body to present a series of cutting edges which make separate incisions and wedge open such incisions.

3,419,274
MATERIAL DISCHARGE PROJECTILE
Patrick MacDonald Tabor, Sierra Madre, Calif., assignor to Mercox, Inc., Pasadena, Calif., a corporation of California
Filed May 2, 1966, Ser. No. 546,874
8 Claims. (Cl. 273—106.5)

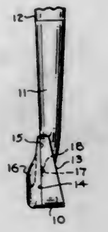
A projectile which may be fired by a suitable weapon and which contains and discharges a material, such as dye or tear gas. The projectile includes a body member containing the material, a tail fin, and a nose member. The body member and nose member both have apertures there-



in which become aligned upon predetermined relative movement of these two members to allow the discharge of material.

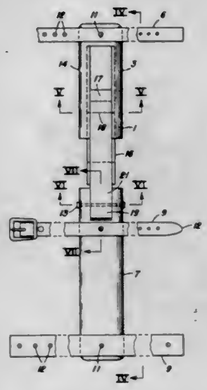
3,419,275
PUTTER HEAD WITH MAGNETIC WEIGHT ADJUSTING MEANS
Joseph R. Winkleman, 3980 Highland Drive, Mogadore, Ohio 44260
Filed Oct. 23, 1965, Ser. No. 503,256
4 Claims. (Cl. 273—171)

Golf putter has weight-adjusting plate for complemental magnetic attachment to rear face of putter head, and complementally interengageable means on plate and head retains plate against turning with respect to head. Plate has irregular cross-sectional shape disposing light and



heavy thicknesses of plate predeterminately in relation to point of impact of ball with respect to putting face of putter head when plate is properly attached to same.

3,419,276
GOLFER'S ARM BEND INDICATOR
Sante J. Poggioli, Little Neck, N.Y., assignor to Sandspa Corporation, a corporation of Delaware
Filed June 27, 1967, Ser. No. 649,322
4 Claims. (Cl. 273—183)

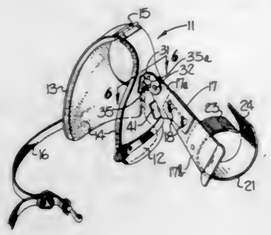


A training device for use by a golfer to correct bending of the elbow of his lead arm. A two-piece device is connected across the elbow. Relative motion between the pieces allows bending of the elbow so that the golfer's normal swing will neither be confined nor restricted. On relative motion in response to a bending of the elbow, an audible ball and socket sounding device announces to the golfer that this elbow has bent.

3,419,277
GOLFER'S ARM POSITIONING DEVICE COMPRISING ELBOW BEND RESTRAINING MEANS
Clarence B. Martin, P.O. Box 8277, Greenville, S.C. 29604
Filed May 31, 1966, Ser. No. 553,958
8 Claims. (Cl. 273—189)

A device for guiding the leading arm of a golfer during the backswing portion of a club swing, in order to assure that proper coordination is obtained. Restraint is imposed against bending of the leading arm at the elbow upon the

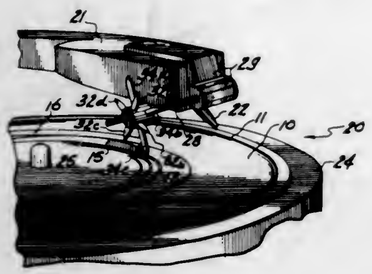
leading arm reaching the top of the backswing, while the elbow is free to bend during a normal follow-through. Movement of the leading arm against the torso in a rearward direction is restrained in order to assure coordination of a turning movement of the torso with movement of the leading arm.



3,419,278
CONTINUOUSLY RECYCLING MESSAGE TRANSMITTING SYSTEM

Jack S. Wiener, 1725 N. Wells St., Chicago, Ill. 60614

Filed Oct. 24, 1965, Ser. No. 504,698
13 Claims. (Cl. 274—13)



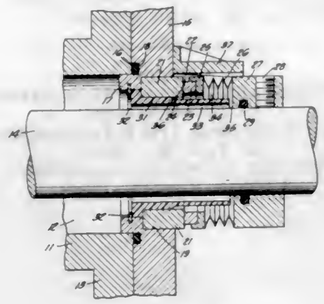
A self-contained continuously recycling phonograph system including a phonograph arm having a playback stylus and a recycling stylus attached thereto, and a phonograph record with spiral recorded and spiral recycling grooves that are spirally wound in opposite directions. Cam members are disposed at opposite ends of the recycling groove and are adapted to be engaged by the recycling stylus for moving the playback stylus out of the recorded groove at the end thereof and into the recorded groove at the beginning thereof.

3,419,279
MECHANICAL SEALS

Herbert E. Tracy, Alhambra, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Feb. 9, 1967, Ser. No. 614,839
11 Claims. (Cl. 277—22)

As a cooling method and means for a mechanical seal for a hot water pump shaft, the provision of a bellows type seal, having its seal faces located in a chamber outside the pump stuffing box, through which chamber pump fluid reaches and lubricates the seal faces, and which chamber is formed primarily by the bellows, an insulated annular shaft sleeve having an opening to the chamber, and a seal face. The bellows acts as a heat dissipating cooler element.

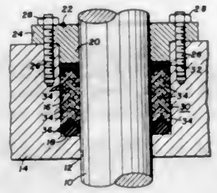


A stationary air scoop creates air turbulence directed against the outside of the bellows to promote heat dissipation.

3,419,280
PRELOADED FLUID PACKING ASSEMBLY AND MALE ADAPTER

John H. Wheeler, P.O. Box 10823, Dallas, Tex. 75207

Filed Mar. 22, 1965, Ser. No. 441,526
10 Claims. (Cl. 277—123)



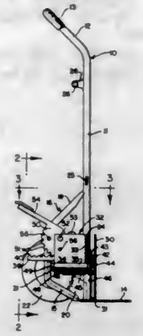
A preloaded fluid packing assembly and male adapter for preloading the packing assembly which includes one or more sealing rings disposed in an annular gland having an end wall and a gland ring for longitudinally pressing the packing. The adapter ring includes an integral ring sized to fit in the gland, a sealing ring having one face conforming generally to the face of the adjacent sealing ring, and a plurality of circumferentially spaced, resilient, radially formed projections integral with the ring.

3,419,281
HAND TRUCK WITH PUSH PLATE

Milan Boyanich, Sr., 41 Fontaine Drive, Cheektowaga, N.Y. 14225

Filed Nov. 6, 1967, Ser. No. 680,728
9 Claims. (Cl. 280—47.29)

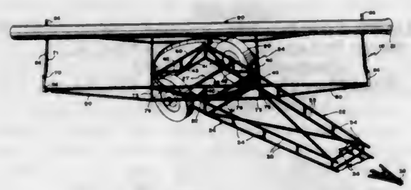
The hand truck is of the type having a handled upright frame with rear wheels, a forwardly projecting horizontal bottom load carrying tongue and an upright push plate above and normally at the back of the tongue for disengaging the tongue from under a package being deposited. The improvement is in the simplified mechansim for actuating the push plate as being a casing attached to the rear of the frame and preferably also to the axle, supporting, preferably by a bottom wear plate, a fore-and-aft rack pivoted to the rear of the push plate and the casing also supporting a gear segment journalled in the casing side walls, meshing with the rack and actuated by an arm. A helical return spring connects the back of the push plate with the back of the casing and maintains engagement of a stop between the front of the rack and the back of the push plate and which stops downward movement of the bottom of the push plate when the latter becomes vertical.



3,419,282
PIPE TRAILER MEANS WITH TURNTABLE STRUCTURE

David W. Toews, Montezuma, Kans. 67867

Filed Aug. 1, 1966, Ser. No. 569,273
4 Claims. (Cl. 280—63)

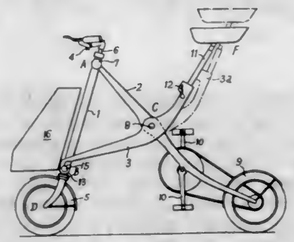


This invention is a trailer means adapted to be towed by a vehicle having a support frame means; a turntable means connected to the support frame means for rotatable movement; locking means to secure the support frame means to the turntable means in a given rotational position; and loader means connected to the turntable means providing a simplified means of loading material on the trailer means. More specifically, connecting means are provided for attaching a rotatable turntable means to a frame means providing lateral and vertical stability thereto.

3,419,283
FOLDING BICYCLES

David Edward Newland, Richmond, England (76 Ivy Park Road, Sheffield 10, England)

Filed Aug. 15, 1966, Ser. No. 572,353
Claims priority, application Great Britain, Aug. 17, 1965, 35,305/65
13 Claims. (Cl. 280—278)

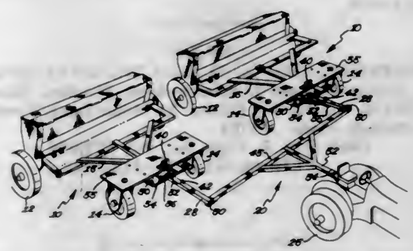


A folding bicycle having three frame members lying in the plane of the wheels and intersecting with each other at three intersections. The members are pivoted together at two of the intersections and detachably mounted at the third intersection.

3,419,284
TANDEM HITCH

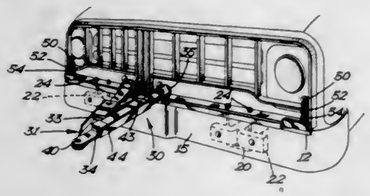
Kerry W. Tibbals, 335 17th Ave. N., Apt. 5, Hopkins, Minn. 55343

Filed Feb. 23, 1967, Ser. No. 617,988
4 Claims. (Cl. 280—412)



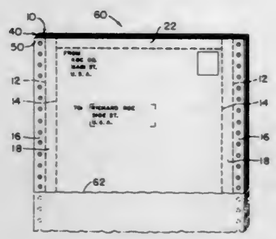
This invention relates to an improved tandem hitch for agricultural implements having their own wheel supports for full stability. The improved hitch is comprised of an elongated structure having depending portions at the extremities of the same. Pivot structures at the ends of the depending portions connect the hitch to the implement and permit pivotal movement of the hitch relative to implements when the implements are placed in a tandem or trailing position. A latch on the implement and on the hitch holds it in a raised position. The depending portions of the hitch are also pivotally connected to the remaining portions of the hitch which carries a draw bar, the pivot axes of the last named pivotal connection being normal to those at the extremities of the hitch and connected to the implements. This simplified structure permits movement of implements in a side-by-side relationship for working purposes and in a tandem relationship for transporting purposes.

3,419,285
TOWING HITCH
Earl P. Morehouse and Marvin L. Johnson, both of Bristol, S. Dak. 57219
Filed May 2, 1967, Ser. No. 635,463
9 Claims. (Cl. 280—446)



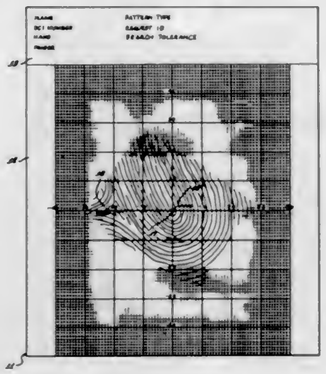
A towing hitch for mounting on a vehicle bumper on the upper surface of the same so as not to project beyond the profile of the bumper when in a stored position and including a base member attachable to the vehicle frame or bumper and positioned on the upper surface of the bumper and mounting a pair of pivoted towing arm assemblies, each assembly including a universal type pivot member for pivoting the towing arm assembly for horizontal and limited vertical movement. The towing arm assemblies are each formed of a pair of sliding parts, one of which mounts at one extremity of the cooperating coupling member and has an upstanding flange on the opposite extremity of the same. This part is positioned in a channel or box shaped portion on the second part to be slidable therein with the upstanding flange of the first part providing an obstruction which engages the upper surface of the channel portion to limit relative movement between the parts. The free extremity of the second part of the towing arm assembly provides the coupling end of the towing arms. The towing arm assemblies permit relative movement of their parts so that the arms will align, that is shorten or lengthen in a turning movement to provide a positive direction of pull from the towing hitch and proper trailing of the implement being towed.

3,419,286
BUSINESS FORM AND MAILING ENVELOPE
G. David Noonan, 25 Ricker Road, Newton, Mass. 02158, and John J. Flinter, 11 Maple Lane, Framingham, Mass. 01701
Filed Sept. 2, 1966, Ser. No. 577,076
4 Claims. (Cl. 282—11.5)



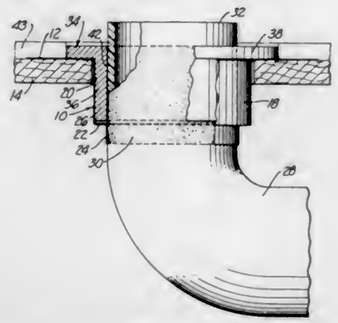
A combined mailing and return envelope comprises a bottom sheet forming one face of both an outer and an inner mailing envelope, a top sheet forming the second face of the outer envelope, and an intermediate sheet forming the second face of the inner envelope and containing a detachable invoice portion extending laterally across the envelope from side to side. The sheets are glued together at selected portions to form a unitary packet and are scored adjacent the side and top edges to provide the recipient with a means of quickly and neatly opening the packet for access to its contents.

3,419,287
FINGERPRINT CLASSIFICATION BY COORDINATE SYSTEM
Donald D. Rudie, Washington Township, Westwood, N.J., assignor to System Development Corporation, Santa Monica, Calif.
Filed Dec. 8, 1965, Ser. No. 512,397
5 Claims. (Cl. 283—7)



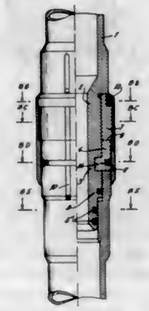
A method and system of fingerprint classification which locates one of the core and delta of a fingerprint in a standardized location in a coordinate system and the other in a standardized direction therefrom, determines the coordinates of the minute characteristics of the fingerprint in the coordinate system and records the coordinates of the minute characteristics to uniquely identify the fingerprint. It enables the recording of the characteristics of large numbers of fingerprints by Cartesian or like coordinates in a machine store or file, such as in a computer which may be programmed for rapid search for identity and matching.

3,419,288
STABILIZER FOR POLYMER COMPOSITION PIPE
Duane D. Logsdon, 31461 Alta Vista St., Redlands, Calif. 92373
Filed Mar. 27, 1967, Ser. No. 626,263
1 Claim. (Cl. 285—58)



A stabilizer for polymer composition pipe is disclosed. The stabilizer is flanged so that it can be secured on a floor, is recessed to accept a closet flange and is necked down to be secured to the polymer composition soil pipe. With securement of the closet to the closet flange, and securement of the closet flange to the soil pipe and the soil pipe to the stabilizer of this invention, together with the securement of the stabilizer to the floor, a rigid and secure connection is accomplished.

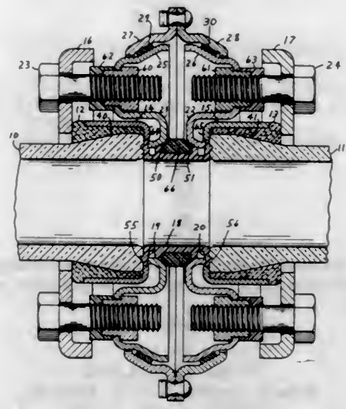
3,419,289
TOOL-JOINTS FOR DRILLING STRINGS
Ioan Lari, Cimpina, Rumania, assignor to Ministerul Petrolului, Bucharest, Rumania
Continuation-in-part of application Ser. No. 398,643, Sept. 23, 1964. This application Oct. 19, 1967, Ser. No. 676,585
Claims priority, application Rumania, Sept. 27, 1963, 46,988
3 Claims. (Cl. 285—178)



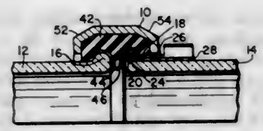
An elliptic-cylindrical tool joint for a drilling string, which includes a pin and box. The pin member is provided with an axial bore and is provided on its outer periphery with: a first cylindrical cross-section, a second ellipsoidally shaped cross-section, contiguous to the first cross-section, a third cylindrical cross-section, contiguous to the second cross-section, and a fourth cylindrical cross-section, contiguous to the third cross section. The pin member is adapted to be inserted into a matingly shaped bore of the box member, which includes: a first ellipsoidally shaped bore portion, adapted to receive said second cross-section, a second cylindrical bore portion, contiguous to the first bore portion and third cylindrical cross-section having, respectively, a lateral opening and recess, through which blocking means are inserted and are maintained in position by suitable biasing means. This threadless joint can be easily assembled or disassembled by simply, respectively, positioning or removing the blocking means.

3,419,290
PIPE COUPLING
Donald R. Campbell, Painted Post, George Fallos, Horseheads, and Anthony R. Zine, Jr., Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 340,358, Jan. 27, 1964. This application Nov. 17, 1965, Ser. No. 508,339
6 Claims. (Cl. 285—223)

A pipe coupling in which a flexible gasket having a rigid ring fixed thereto is held against the respective ends of the joined pipe section. The ends of the pipe section flare outwardly, and annular wedge-shaped inserts are located between the pipe ends and cylindrical bands surrounding the pipe ends. The inserts extend outwardly from the annular bands in a direction away from the pipe ends, and the clamping means bear against the exposed ends of the inserts. The respective clamping means are resiliently connected to one another.



3,419,291
PIPE COUPLING
William H. Tomb, Peter E. Wesel, and Anthony R. Zine, Jr., Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 30, 1967, Ser. No. 612,659
15 Claims. (Cl. 285—233)

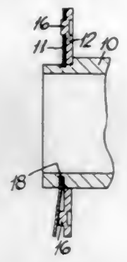


A pipe coupling in which an annular bead-like adaptor member is held around the end of an unbeaded cylindrical section of glass pipe by means of a metal band bonded to the outer surface of the pipe and interlocking with the adaptor member. The metal band is bonded to the glass by a composite adhesive medium which includes circumferentially oriented glass fibers and a heat-shrinkable material. A second metal band maintains a flexible gasket around the adaptor member.

3,419,292
MEANS FOR RETAINING A PLATELIKE PART UPON A SHAFT OR THE LIKE
Pierre Henri Peltret, New Southgate, London, and Denis Wheatley, New Malden, England, assignors to C.A.V. Limited, London, England
Filed Jan. 17, 1967, Ser. No. 609,944
Claims priority, application Great Britain, Feb. 24, 1966, 8,125/66
1 Claim. (Cl. 287—52.07)

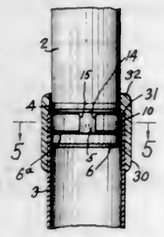
A platelike part having a substantially polygonal aperture therein is retained upon a complementary end portion of a shaft by means of a retaining piece which is provided with an aperture complementary to the shape of the end portion of the shaft, the retaining piece being

placed upon the shaft and moved angularly so that portions thereof are presented to portions of the shaft, the shaft being provided with a groove to permit of such



angular movement, and the retaining piece being retained in this position thereby to secure the platelike part upon the shaft.

3,419,293
TUBE COUPLING
Robert Conrad, 1531 N. Rose St., Burbank, Calif. 91505
Filed Mar. 6, 1967, Ser. No. 620,880
1 Claim. (Cl. 287—58)

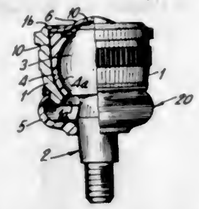


The present device is for locking telescopic tubes in relative positions of extension. In its simplest embodiment, two telescopic tubes are contemplated, the inner of said tubes carrying a cylindrical plug having an eccentric hub portion surrounded by a curved groove. A collet or split collar formed of suitable material such as nylon surrounds the hub. The collet or split collar has the same eccentricity as the eccentricity of the hub portion of the plug and the collet or split collar is formed to have two friction shoes joined at one end by a thin web, the opposite ends being separable. When either telescopic tube is rotated clockwise or counterclockwise relative to the other tube, one of the shoes of the collet is moved into engagement with the other tube to lock the two tubes in adjusted position, the collet being held against axial movement by being confined in the curved groove.

3,419,294
UNIVERSAL JOINT HAVING MOVABLE BEARING PARTS MADE OF A NON-RUSTING MATERIAL AND NON-MOVABLE PARTS COATED WITH A NON-RUSTING MATERIAL
Jürgen Ulderup, Bergstrasse, Lemforde-Hannover, Germany
Filed Jan. 19, 1967, Ser. No. 610,345
Claims priority, application Germany, Mar. 31, 1966, U 12,564
8 Claims. (Cl. 287—87)

The invention deals with a universal joint in which the hinge pin has a hemispherical or ball-shaped end which rides in a housing having a bearing box which is similarly contoured to permit universal movement of the hinge pin by sliding of the ball relative to the bearing box surface. A feature of the construction is that all of the moving parts, for example the bearing box and the ball head of the hinge pin as well as the inner wall of the housing, are made of a rust-proof material. Such a material may advantageously comprise stainless steel, bearing metals, preferably in a sintered form, plastics and possibly also ceramic materials. The other parts of the joint, for example the outer part of the housing, the housing cover, are provided on their exterior surfaces with a thin coat of a rust-preventing material.

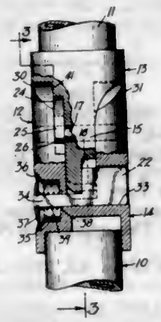
In accordance with another embodiment of the invention, the hinge-pin is made of a frusto-conical configuration and an annular bearing body is fitted over the hinge pin and it includes a hemispherical outer surface which is in sliding engagement with the internal bearing surface defined by a bearing box retained within the housing. In this construction a thin coat of rust-preventing material



is provided over the surface of the hinge pin and over the interior surface of the housing and the cover.

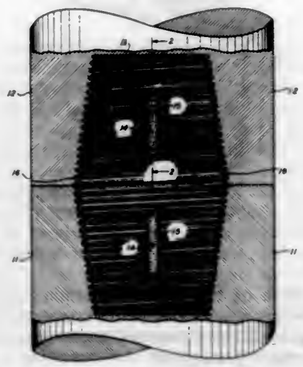
In another embodiment the hinge pin is made with a partial spherical end having a collar against which is positioned an annular body or calotte. The hemispherical end of the hinge pin is pressure loaded by a resilient ring member or bearing box member. Since this bearing element is also affected by the sliding movement of the hinge pin, it has a bearing surface similar to the bearing surfaces of the bearing box on the interior of the housing and the annular body around the hinge pin and it is made of a rust-proof material, preferably an elastic plastic or a bearing metal with a porous structure. The bearing metal with the porous structure is advantageously provided with a suitable lubricant in order to increase the sliding capacity. The inner wall of the housing and the inner surface of the cap are provided with a rust-preventing material coating.

3,419,295
HINGE COUPLING UNIT FOR TILTABLE UMBRELLA
Samuel N. Small, Valley Stream, N.Y., assignor to Alfred G. Cohen and Paul Weiss, Flushing, N.Y.
Filed Mar. 18, 1966, Ser. No. 535,506
5 Claims. (Cl. 287—99)



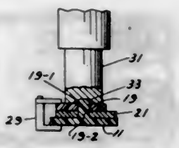
This invention relates to tiltable umbrellas, wherein a top pole of an umbrella post is swingable into several tiltable positions and, further, where the pole is coupled with the post through the medium of a hinge coupling unit having manually controlled means for retaining the tiltable pole in at least three positions, with ability to move the tiltable pole in two other positions. A further object is to provide a hinge coupling unit, wherein the tilted pole can be quickly and easily manually moved from tilted positions to the upright locked position.

3,419,296
ELECTRODE CONNECTING PIN AND ASSEMBLY
Harold E. Cook, St. Marys, Pa., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 542,094, Apr. 12, 1966. This application Jan. 11, 1967, Ser. No. 608,681
4 Claims. (Cl. 287—127)



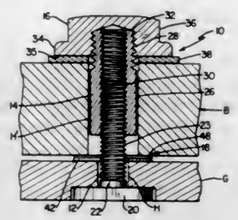
A threaded connecting pin for the assembly of carbon or graphite electrodes in which pitch is retained in slots cut in the threaded surfaces of the pin to melt and carbonize in the thread clearance spaces to cement the connecting pin to the respective electrodes.

3,419,297
SELF-ADJUSTING ASSEMBLY AND METHOD FOR FORMING SAME
Gerald Diepenhorst, Romulus, and Marvin O. Fletemier, Plymouth, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,846
5 Claims. (Cl. 287—189.36)



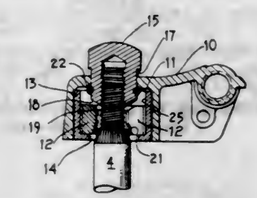
A method for fastening a thermoplastic object having a projecting stud thereon to a metal part which comprises placing said metal part on the side of said thermoplastic object bearing said stud positioning upon said metal part a thermally compensating spring, upsetting the end of said stud with heat and pressure and forming a rivet-like head thereon extending over the shank of said stud thereby forming an assembly wherein said metal part and said spring are positioned between said thermoplastic object and said head, heating at least a portion of said stud shank while said thermoplastic object, said metal part and said spring are held in said assembly, cooling said head, cooling said stud shank, and controlling the tightness of said assembly at the temperature of assembly by thermally induced stress in said stud; and an assembly prepared by such method.

3,419,298
JOINT INCLUDING TELESCOPING BOLT ASSEMBLY
Kenneth S. Worley, Fort Collins, Colo., assignor to Telescopic Bolt Company, Fort Collins, Colo., a corporation of Colorado
Filed Nov. 28, 1966, Ser. No. 597,280
5 Claims. (Cl. 287—189.36)



A telescoping bolt assembly facilitates installation of a closet bolt through utilization of a series of bolt members extending upwardly through bolt openings from the blind side of a flange mounted in the floor and partially into aligned bolt openings in the base of the closet bolt, and a corresponding series of telescoping sleeve members are inserted downwardly through each bolt-receiving opening in the base portion for threaded engagement with the upper ends of the bolts. An upper cap threadedly engages the upper exposed end of each sleeve to tighten the bolt assembly and fasten the members together, and a locking member serves to secure the bolts against rotation when the upper caps are tightened on the sleeves.

3,419,299
WIPER ARM
John R. Oishei, Buffalo, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.
Filed Feb. 14, 1955, Ser. No. 487,964
13 Claims. (Cl. 287—253)

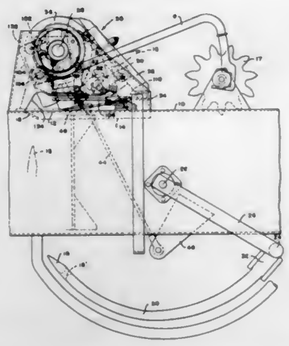


1. A windshield wiper carrying arm for mounting on an oscillatory shaft having a serrated shoulder and an adjoining threaded end, said wiper carrying arm having a mounting head formed with a shaft receiving chamber having a smooth clutch wall, an expansible series of rigid clutch shoes independently operated and having smooth active faces engaging the smooth clutch wall, shoe-confining means supporting the shoes within the chamber, said shoes having one end interlockingly connected to the serrated shoulder, and a clamping nut engaged with the threaded end of the shaft and effectively engaging the other ends of the clutch shoes to thereby cause said clutch shoes to expand and exert a radial force against the smooth inner wall when said clamping nut is tightened.

3,419,300
TWINE FINGER FOR KNOTTER MECHANISM OF BALER

Edwin B. Nolt, New Holland, and Richard R. Eby, Ephrata, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 661,033
11 Claims. (Cl. 289—13)

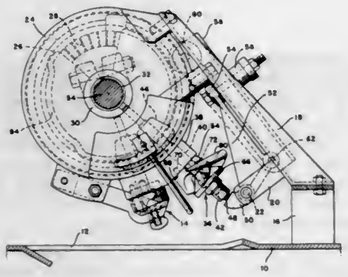


Knotter mechanism for a baler employing twine to form securing loops thereof around a bale, the knotter mechanism including a knotter unit and clamping unit arranged to cooperate to tie into a knot the ends of a loop of twine extending around said bale, a twine needle arranged to extend one end of such loop of twine around said bale and into the region of the knotter and clamping units, and means to operate all said items of said mechanism in tying relationship, in combination with a twine finger movable into engagement with the ends of said loop of twine incident to being tied and having a notch therein terminating in an eye therein to receive said ends of said loop initially to maintain the same in position to be positively engaged by the knotter unit, and a latch is pivotally connected to said finger adjacent said notch and being operable subsequently to said first movement to insure positive pulling of the tied ends of the loop of twine from the bill hook of said knotter unit when said finger is restored to inoperative position.

3,419,301
TWINE CLAMP MEANS FOR KNOTTER OF BALER

Richard R. Eby, Ephrata, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 660,969
7 Claims. (Cl. 289—13)

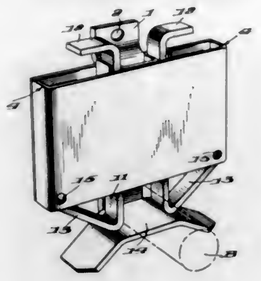


A knotter having relatively stationary and movable clamping members in which the stationary member is provided with an axial bore in which a shaft rotates to support the movable clamping member, said stationary member having a discharge opening extending substantially radially outward from said bore to provide an escape for twine particles migrating from between said members and one side of said notch being sharpened to form a cutting edge to facilitate discharge of such particles from said clamping members.

3,419,302
GATE LATCHES

Fred Frey and Ernst Frey, both of Rte. 2, Quarryville, Pa. 17566

Filed July 20, 1966, Ser. No. 566,497
3 Claims. (Cl. 292—189)

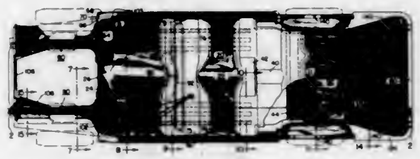


A gate latch of box-like construction made of sheets of metal having spaced side plates connected together by a pair of guide strips interposed therebetween and forming an upright passageway for receiving a latch bar slidably mounted in the passageway, the lower end of the bar being turned laterally and up into the box-like structure, forming a cam surface to be deflected by a bolt on the gate, which may ride over a ramp plate. The latch may be made either single or double so as to latch in either one direction or both opposite directions.

3,419,303
LOWER BODY CONSTRUCTION FOR AUTOMOBILES

Walter S. Eggert, Jr., Huntingdon Valley, and Henry W. Wessells III, Paoli, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 17, 1967, Ser. No. 616,818
9 Claims. (Cl. 296—28)



This disclosure pertains to the construction of a lower body construction or platform unit for automobiles, comprising integrated frame, floor and related components which can be operated as a self-contained independent automotive unit adapted to take a completed upper body unit.

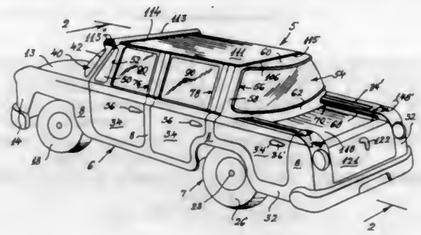
ERRATUM

For Class 296—91 see:
Patent No. 3,419,897

3,419,304
AUTOWAGON

Vito Sangimino, 268 Bay 20 St., Brooklyn, N.Y. 11214

Filed Jan. 16, 1967, Ser. No. 609,474
12 Claims. (Cl. 296—99)

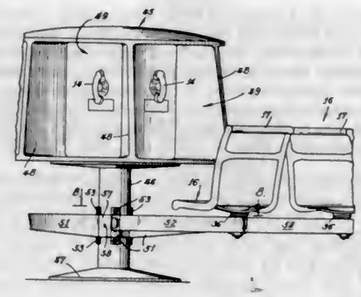


This is a convertible type automobile, which may be termed an autowagon which generally comprises a chassis, side body housing, a windshield structure at the front of the housing and a rear window structure slidably connected to the inner sides of the housing and slidable fore and aft to adapt the vehicle for different style body types. A rollable top cover is supported at one location as upon the windshield structure or upon spaced top supports extended upwardly from the sides of the body and laterally extendable to receive the sides of window sash raised from the doors disposed therebetween. The top covers are pulled to any extent depending upon the areas to be covered thereby. The body style can be made not only from any of the standard body styles of automobiles but into a station wagon and pickup truck. The styles include four door sedan, limousine, brougham type bodies. Inner windows can be pulled upwardly from the seat back portions by the top cover supports and are provided with means for securing the sides of the cover to the extended sides of the body housing.

3,419,305
BOOTH WITH CANTILEVER-MOUNTED SPRING-BACK SEAT

Joseph G. Baran, Northbrook, Ill., assignor, by mesne assignments, to Acoustics Development Corporation, Northbrook, Ill., a corporation of Illinois

Filed Jan. 25, 1967, Ser. No. 611,602
9 Claims. (Cl. 297—157)

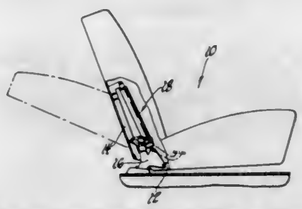


A telephone booth is provided with one or more cantilever-supported seats. Each seat has a back and is pivotally mounted with springs and stops to normally position the seat for easy entry and permit rotation of the occupied seat to a position for use of the telephone.

3,419,306
SEAT POSITIONING MECHANISM

Robert I. Homier, Farmington, and Raymond C. Posh, Livonia, Mich., assignors, by mesne assignments, to Lear Siegler Inc., Santa Monica, Calif., a corporation of Delaware

Filed Dec. 8, 1966, Ser. No. 600,156
11 Claims. (Cl. 297—375)

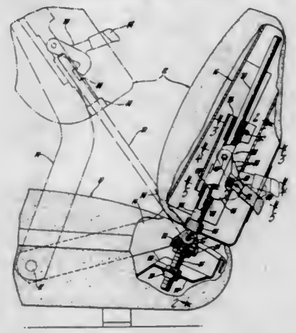


A positioning mechanism including a housing with a rod slidably disposed for movement into and out of the housing. A sleeve is disposed in sliding engagement with the rod for movement only axially along the rod. The sleeve is keyed to the housing so that the sleeve cannot rotate about the axis of the rod relative to the housing or relative to the rod. The sleeve has a surface which is inclined at an acute angle with the longitudinal axis of the rod. A plurality of discs are disposed about the rod and are normally biased into a canted position where they are in frictional gripping engagement with the rod, the discs being biased into the canted position by the inclined surface of the sleeve. The sleeve is in turn forced against the discs by a spring which is disposed between the sleeve and the end of the rod. There is also included a control lever which is pivotally connected to the housing and extends through an opening in the housing to engage the discs to move the discs out of the canted position to allow the rod to move in either direction relative to the housing. When the discs are in the canted position, the rod may be forced into the housing to move the discs out of the canted position against the biasing action of the spring. Thus, when the positioning mechanism is attached to a seat assembly, the seat back frame may be moved from a reclining position toward the upright position without manually moving the control lever into engagement with the discs.

3,419,307
FRONT SEAT BACK LOCK AND ADJUSTING MEANS

Victor H. Strobush, St. Louis Park, Minn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 19, 1967, Ser. No. 676,469
5 Claims. (Cl. 297—379)



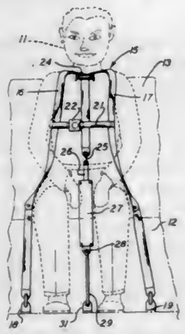
A locking device for holding a foldable seat back in an upright position characterized in that the device in-

cludes an elongated rod having the lower end thereof supported by the seating portion for pivotal movement about a transverse axis. Support means are fixed with the seat back for telescopingly receiving the upper end of the rod and a latch is pivotally connected to the seat back and normally biased into engagement with the rod. A notch formed in the rod is adapted to accommodate the latch and thereby hold the seat back in an upright position.

3,419,308
LIMITED MOTION DEVICE FOR SHOULDER HARNESSES AND THE LIKE

Edward W. Apri, 998 Lehigh St., Altadena, Calif. 91001

Filed Apr. 3, 1967, Ser. No. 628,078
7 Claims. (Cl. 297—386)

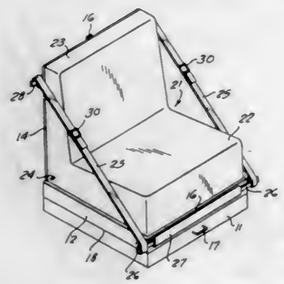


An inertia device for use with restraint straps wherein a slider carrying an acceleration-sensitive detent is movable in an anchored track that has detent-arresting teeth or apertures along the path of the slider. The slider pivotally mounts the detent with spring or weight bias that resists pivot motion of the detent into engagement with the detent-arresting teeth, so that slow motion of the restraint strap fastened to the slider is permitted, while fast acceleration is arrested.

3,419,309
COLLAPSIBLE SEAT

Ving Smith, 2 Agar Ave., New Rochelle, N.Y. 10801

Filed July 20, 1967, Ser. No. 654,818
6 Claims. (Cl. 297—456)

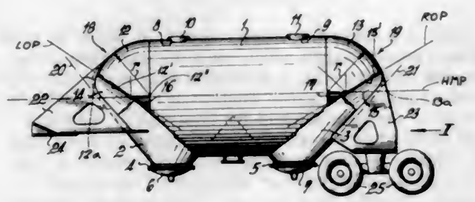


Box comprising bottom wall, upstanding walls, and hinged cover, contains a deflated cushion. When cover is swung open, cushion can be inflated to form a seat surface and a back. Straps extending between cover and upstanding walls limit movement of cover so that it can support cushion back. Length of straps adjustable to vary position of back. Additional hinged panels and cushion portions may form arms of seat. Box can be latched closed, and has handle for transport of collapsed seat.

3,419,310
PRESSURE-RETENTIVE RECEPTACLE, ESPECIALLY FOR BULK-CARRYING VEHICLES

Fritz Gramlich, Mosbach, Baden, Germany, assignor to Firma Ludwig Spitzer Sen. Fahrzeugwerk KG., Mosbach, Baden, Germany, a company of Germany

Filed Apr. 20, 1967, Ser. No. 632,248
Claims priority, application Germany, July 23, 1966, S 104,983
10 Claims. (Cl. 298—8)



Pressure-retentive receptacle (e.g. for bulk-carrying vehicles) having a right-circular central cylinder and a pair of quarter-spherical end members welded to and smoothly merging with the central member, the quarter-spherical end members being obliquely cut away and having a lower edge inclined obliquely outwardly from the center of curvature of this quarter sphere and the intersection of the horizontal median longitudinal plane of the receptacle with the surface of the quarter sphere: a bow-shaped member is welded to this lower edge of the respective quarter-spherical shell member and to the corresponding downwardly converging conical outlet duct, and has a greater curvature in the vertical plane than that of the quarter-spherical shell member. The quarter-spherical shell member has a radius of curvature identical with that of the central member; the bow-shaped member extends approximately rectilinearly in continuation of the respective outlet duct to the respective lower edge of the quarter-spherical shell and merges smoothly therewith.

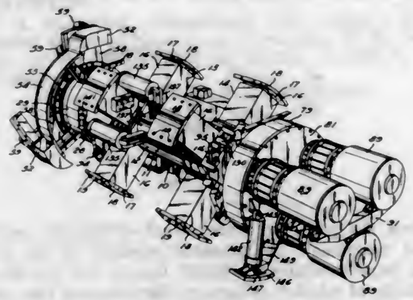
3,419,311
HYDRAULIC CIRCUIT FOR HOLDING AND PUSHING CYLINDERS OF TUNNELING MACHINE

Victor J. Scaravilli, Beechwood, and Charles J. Delisio, Lyndhurst, Ohio, assignors to S & M Constructors, Inc., Bedford Heights, Ohio, a corporation of Ohio

Original application Apr. 11, 1966, Ser. No. 541,673, now Patent No. 3,383,138, dated May 14, 1968. Divided and this application Dec. 4, 1967, Ser. No. 712,311
2 Claims. (Cl. 299—31)

A tunneling machine having a support frame anchorable in a tunnel bore by four independently hydraulically actuated support feet at each of two axially spaced zones which provide the only anchoring of the support frame in the tunnel and by individual movement selectively position the axis of the support frame with respect to the axis of the tunnel. An elongated movable frame is carried on the support frame by two axially spaced sets of articulated torque arm assemblies which position the movable frame radially with respect to the support frame and transmit torque between the movable frame and the support frame. A cutter head is mounted on the front end of the movable

frame by a large thrust bearing and a cutter head support plate is insulated from the remainder of the movable frame by a layer of elastomeric material to absorb and dampen shock transmission between the cutter and the bearing. The cutter head is rotatably driven by an elongated shaft which extends from the cutter head axially through the movable frame to a drive motor assembly at

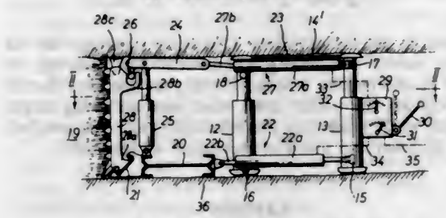


the rear end of the machine. At its rear end the movable frame has selectively operable support feet which allow the movable frame to be supported by its own support feet and the cutter head, while the support frame is advanced along the tunnel by the reversible push cylinders interconnecting the support frame and the movable frame to provide the necessary thrust to the cutter head.

3,419,312
PLANER GUIDE ARRANGEMENT FOR EXTRACTION OF MINERAL IN LONGWALL MINING OPERATIONS

Günther Dommann, Lunen, Westphalia, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Lunen, Westphalia, Germany, a corporation of Germany

Filed May 31, 1967, Ser. No. 642,541
Claims priority, application Germany, June 15, 1966, G 47,169
10 Claims. (Cl. 299—32)

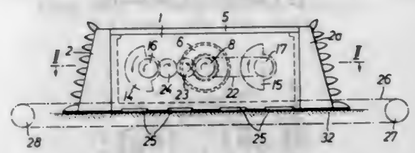


Planer guide arrangement for use in longwall mining operations in setting the angle of attack of a vertically extending mining machine, e.g. planer, at the mine face, including a main prop chock extensible for roof support and retractable for advancement which pivotally carries corresponding transverse upper and lower extensible and retractable linear urging means, e.g. double-acting piston-cylinder means, and vertically interconnected, e.g. via a pivotally positioned extensible and retractable vertical preliminary pit prop, longitudinal upper and lower guide tracks for the mining machine which are operatively interconnected correspondingly to the upper and lower urging means, whereby to urge via said urging means the upper and lower tracks toward the mine face alternately and/or simultaneously to adjust the angle of the mining machine with the mine face and/or advance the tracks as new layers of mineral, such as coal, are exposed at the mine face or to advance via said urging means the prop chock, with appropriate individual control of the preliminary prop and chock extension and retraction to effect such adjustment and/or advance.

3,419,313
COAL CUTTER WITH VIBRATORY DRIVE

Hüseyin Ulusal, deceased, late of Altlunen, Westphalia, Germany, by Nuriye Ulusal, heir, Altlunen, Westphalia, Germany, assignor to Gewerkschaft Eisenhütte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany

Filed May 5, 1967, Ser. No. 636,554
Claims priority, application Germany, May 12, 1966, G 46,875
9 Claims. (Cl. 299—34)

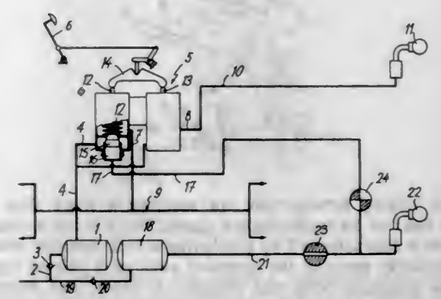


Vibration cutter including cutter body having cutting tools at the longitudinal ends thereof for engaging extractively a mine face in a longitudinal direction along which such body is conducted, and a vibration generator on the cutter body including two unbalanced flywheels arranged, e.g. via an electric motor drive, for synchronous rotation in opposite directions on horizontally disposed parallel shafts extending substantially transversely of such longitudinal direction and mounted rotatably on the cutter body, one or both flywheels being limitedly freely rotatable with respect to the corresponding shaft therefor in the direction of rotation, whereby during flywheel rotation vibrations are produced in the cutter body predominantly in the longitudinal cutting direction and in the direction opposite thereto but at an angle, e.g. acute angle, to the mine floor.

3,419,314
BRAKING SYSTEMS FOR TRACTORS AND TRAILERS

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society

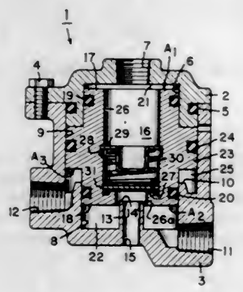
Filed Nov. 28, 1967, Ser. No. 686,134
Claims priority, application France, Dec. 15, 1966, 87,606
2 Claims. (Cl. 303—7)



This invention relates to braking systems for a tractor and trailer unit of the kind that comprises a main tank to contain fluid under pressure for feeding a distributor having a distributor valve and at least two outputs connected respectively to a braking circuit of the trailer and to a braking circuit of the tractor and a secondary tank to directly feed a reserve circuit of the trailer by means of a decoupling valve preceded by a closing valve. In accordance with the invention, a take-over pipe is connected between said decoupling valve and said closing valve and the take-over pipe feeds a jack having a moving

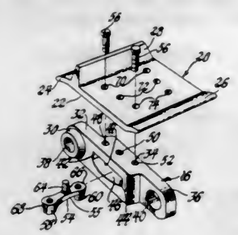
member which acts on the distributor valve in the direction opposite that of the action of a brake-actuating member, such as a brake pedal.

3,419,315
CONTROL VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,143
12 Claims. (Cl. 303—71)



A control valve for normally effecting the application of fluid pressure supplied thereto to the emergency chamber of a spring set brake cylinder and also responsive to a control fluid pressure metered thereto for isolating the supplied fluid pressure and effecting a metered reduction of the applied fluid pressure.

3,419,316
TRACK SHOE ASSEMBLY
Janis Mazzarins, Macedonia, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,319
6 Claims. (Cl. 305—54)



A locking arrangement for securing a track shoe to the links of an endless track chain. The locking arrangement is characterized by employing a lock member which threadably receives the threaded ends of a pair of track shoe retaining bolts and includes a dowel that extends into the shoe for absorbing shear forces.

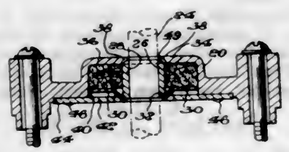
3,419,317
SLIDE ASSEMBLIES FOR EXTENSION TABLES
Henry Mutchnik and Melvin Mutchnik, both of 5804 Gist Ave., Baltimore, Md. 21215
Filed Aug. 9, 1967, Ser. No. 659,442
6 Claims. (Cl. 308—3.6)

The invention is concerned with a slide assembly adapted to be affixed to the underside of an extension table to permit one or more additional table leaves to be inserted between the extensible sides of the table for support on at least a pair of laterally displaced slide assemblies. Each slide assembly is formed solely of two reciprocable sheet metal slides, which may be stamped economically from relatively thin gauge metal without any waste of material and without need for any costly assembly procedures and operations. The special contours which are imparted to the slides make possible the easy relative reciprocation between them without jamming while at the same time giving rise to a tightness in fit



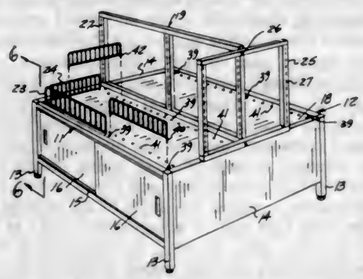
between the parts to render them inseparable against lateral movement. The stamped contours of the slides which impart maximum strength thereto and provide for the limits of relative movement therebetween also make possible a reduction in the length and width of the stampings from which the slides are produced. This results in a saving of over 20% in material, with a consequent corresponding reduction in cost of the units.

3,419,318
BEARING CONSTRUCTION
Earl F. Harter, Lutherville, Md., assignor to The General Industries Company, Elyria, Ohio, a corporation of Ohio
Filed June 10, 1965, Ser. No. 462,908
1 Claim. (Cl. 308—132)



There is disclosed herein a bearing structure for an electric motor comprising a spherical type bearing retained at one end by a socket having an aperture therein for receiving the motor shaft, said aperture being larger than the shaft projecting therethrough and being notched at its periphery to allow recirculation of lubricant.

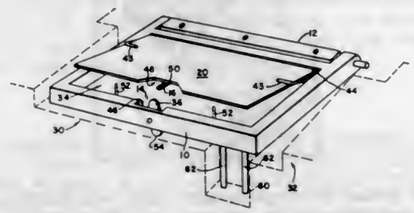
3,419,319
MODULAR DISPLAY TABLE
Sydney W. Jentzen, Bloomfield Hills, Mich., assignor to Jentzen-Miller Company, Madison Heights, Mich.
Filed Aug. 7, 1967, Ser. No. 658,892
7 Claims. (Cl. 312—257)



A modular display table with front and rear frames on legs and end panels, with angular and straight slots

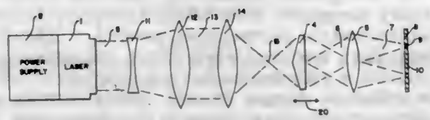
in the panel end flanges interlocked with headed screws on the frames, and top and bottom decks, each with end flanges containing straight and angular slots interlocked with headed fasteners on said panels.

3,419,320
DEVICE FOR PREVENTING DAMAGE TO RADIOACTIVE SOURCES IN LEAD-FILLED TRAYS OR DRAWERS
Paul H. Bedrosian, Montgomery, Ala., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare
Filed Aug. 29, 1967, Ser. No. 664,027
9 Claims. (Cl. 312—352)



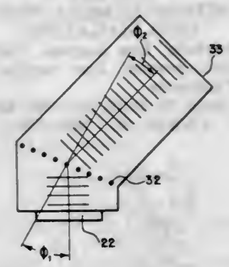
The disclosure relates to a mechanical safety device having a rectangular metal frame which is hinged to a bar along one long side thereof. On the opposite side of the frame is provided a pivoted, spring-loaded cam unit which, when held in the cocked position, lies within the open space of the frame and does not protrude above the upper plane of the frame member to which it is attached. The cam is locked by a pin which fits into a notch on the side of the cam. This pin is part of a spring-loaded cover unit which is hinged, by removable pins, to the frame at its side opposite the cam. When the cover is in locked position, it lies in the horizontal plane and is flush with the upper surface of the frame. In operation, the frame is attached by the hinged bar to a lead-filled tray or drawer in the area holding radioactive sources such as needles. When the sources lie properly within the tray or drawer, the safety device, with the cover closed against the frame, can be lowered on them and the drawer can be closed. If any of the sources protrude above the top of the drawer, the source will strike the cover from the bottom thereof causing the pin on the cover to disengage the cam which will then spring into position such that it will prevent the frame of the device from resting completely on the tray. With the frame so elevated by the sprung cam, the drawer cannot be closed thereby avoiding accidental damage to the sources.

3,419,321
LASER OPTICAL APPARATUS FOR CUTTING HOLES
Richard B. Barber, Toledo, Ohio, and Lloyd G. Cross and William G. Prince, Ann Arbor, Mich., assignors to Lear Siegler, Inc.
Filed Feb. 24, 1966, Ser. No. 529,798
1 Claim. (Cl. 350—8)



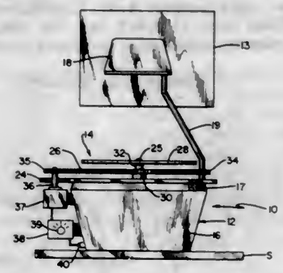
Basically, the instant invention provides an optical means for cutting holes of large diameter. A relatively large diameter ring of intense energy is focused onto a workpiece to effectively blank out large diameter openings. This blanking operation is accomplished by collimating the intense light energy of a laser and focusing it onto an axicon. The axicon will effect formation of a ring of light energy which in turn is focused onto the workpiece by a lens.

3,419,322
ULTRASONIC TRANSDUCER MATCHING FOR BRAGG REFLECTION SCANNING
Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,798
8 Claims. (Cl. 350—161)



Light-beam scanning angles obtainable from light-sound interaction are increased by introducing dispersion of the sound waves. In one general approach, the sound waves are passed through a fixed grating or otherwise through a medium which is dispersive by reason of its character. In another general approach, vibrational dispersion is obtained by launching a longitudinal wave in response to either a shear wave or an extensional wave.

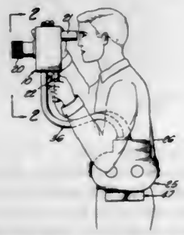
3,419,323
EYE TESTING AND TRAINING APPARATUS INCORPORATING OPTICAL PROJECTOR AND RELATIVELY ROTATABLE TARGET TEMPLATES
Robert E. Lookabaugh, P.O. Box 267, Lincoln, Nebr. 68501
Filed Aug. 5, 1963, Ser. No. 299,882
5 Claims. (Cl. 351—2)



1. A vision testing and training apparatus comprising a light projection unit including an upwardly directed light source and optical means for projecting light from said light source upon a viewing surface, a pair of image-producing templates being opaque to light and having light-transmitting patterns formed on each template, means for supporting said templates for independent rotation transversely across and in centered relation to the path of light from said light source and in superimposed relation to one another, said supporting means including a vertical stepped spindle centered with said light source and a pair of horizontally disposed transparent platforms removably and rotatably mounted on the stepped portions of said spindle

for supporting the respective templates, said light-transmitting patterns cooperating to produce a light image upon the viewing surface by restricting the passage of light from said light source through intersecting light-transmitting patterns one of said platforms being manually adjustable, and motor drive means, including speed control means, engageable with the other platform to rotate one template with respect to the other template to selectively and successively vary the points of intersection of said light-transmitting patterns whereby to vary the location and character of light images produced upon the viewing surface.

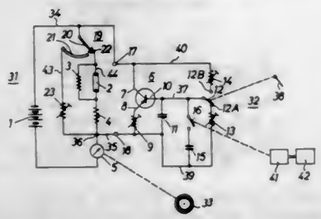
3,419,324
MOTION PICTURE CAMERA WITH REMOTE FILM MAGAZINE
Robert E. Gottschalk, Los Angeles, Calif., assignor to Panavision, Incorporated, Los Angeles, Calif., a corporation of California
Filed Aug. 23, 1965, Ser. No. 481,566
1 Claim. (Cl. 352—75)



A hand-held motion picture camera is provided with a remote film magazine having power driven supply and take-up reels, and a pair of flexible hoses extend from the magazine to the camera, each hose having a circular opening so that the film may travel from the supply reel through one of the hoses to the camera and back through the other hose to the take-up reel, with only the edges of the film contacting the hoses

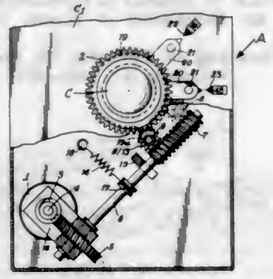
---

3,419,325
MOTION PICTURE CAMERA FADE-IN AND FADE-OUT CONTROL ARRANGEMENT
Helmut Mayr and Richard Pelte, Munich, Germany, assignors to Agfa-Gevaert A.G., Leverkusen, Germany
Filed Sept. 21, 1965, Ser. No. 488,995
Claims priority, application Germany, Sept. 25, 1964, A 47,163
16 Claims. (Cl. 352—91)



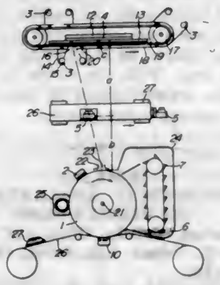
An arrangement in motion picture cameras for producing controlled fade-in and fade-out of a picture. The diaphragm of the motion picture camera is coupled to an electro-mechanical instrument which is current sensitive. A photo-resistor exposed to the light prevailing at the object being photographed determines the current through the electro-mechanical instrument. The opening of the diaphragm is thereby made a function of the prevailing light intensity. Fade-in and fade-out of a picture are produced by gradually varying the current through the electro-mechanical instrument.

3,419,326
MOTION PICTURE CAMERA PROVIDED WITH EXPOSURE CONTROL DEVICE AND FILM SPEED SELECTOR
Gerhard Börner, Musberg Kreis Boblingen, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed Oct. 21, 1965, Ser. No. 499,216
Claims priority, application Germany, Nov. 14, 1964, Z 11,175
10 Claims. (Cl. 352—141)



A motion picture camera provided with exposure control means comprising a photoelectrically controlled motor driven adjustable diaphragm with a speed reduction gearing between the motor and a diaphragm adjusting ring. The camera is also provided with a film speed or picture frequency adjusting member which is connected with said speed reduction member to effect an adjustment of said diaphragm adjusting ring independently of said motor to a position in which the diaphragm aperture corresponds to the selected film speed.

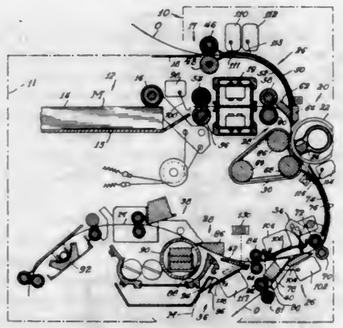
3,419,327
XEROGRAPHIC REPRODUCING APPARATUS
Mitsuru Oikawa, Tokyo, Makoto Tanaka, Musashino-shi, Kazuyoshi Kawafune, Tokyo, and Keiji Yoshida and Hisashi Yamanaka, Kawasaki-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed June 29, 1966, Ser. No. 561,515
Claims priority, application Japan, July 9, 1965, 40/55,833
2 Claims. (Cl. 355—8)



1. Xerographic reproducing apparatus comprising a rotary xerographic drum having a periphery formed with an electrostatic photosensitive material, a light source, a lens, and a corona charging means, said apparatus being operable in such fashion that said periphery of said drum is uniformly charged by said corona charging means, thereafter an original object is illuminated with a light from said light source, and the light reflected from said original object is focused by said lens and projected onto the periphery of said rotary drum to sensitize said periphery and to thereby form an electrostatic latent image

thereon, thereafter a toner is sprinkled onto the surface of said xerographic drum carrying said electrostatic latent image to develop said image, subsequently the resulting developed image carried on the periphery of said xerographic drum is transferred onto a sheet of paper, and thereafter said transferred image on the paper is settled by heat-melting, characterized by the provision of: a plurality of light source means with slit, each light source means with slit comprising a light source, a reflector and a slit, each being attached to an endless belt driven to travel around the opposite surfaces of an original object supporting member; a fixed slit disposed close to the periphery of said rotary xerographic drum to be exposed to light and facing said periphery; and a plurality of lenses attached to an endless belt, said belt being driven to travel between said original object supporting member and said fixed slit, said plurality of light sources with slit, said fixed slit and said plurality of lenses and light source means being driven synchronously.

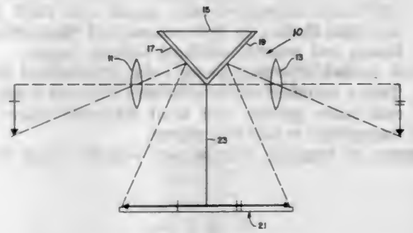
3,419,328
IMAGING OF LITHOGRAPHIC MASTERS
John P. Klosky, Euclid, and Robert L. Carper, Eastlake, Ohio, assignors to Addressograph Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,305
11 Claims. (Cl. 355—106)



Coordinated advance of a sheet to be copied, termed an "original" and a potential electrostatic master, through an exposure station and then to a separation station. Fail-safe electrical sensors determine the presence of the original in a safe return station, and abort all sheets from the process path in the absence of safe arrival of the original. The original to be copied triggers a sensor to start a master moving into a coordinated path with the original through an exposure station. The master is extended slightly beyond the lead edge of the original and therefore is caught by a swinging finger separating device to lift the master into a process path and allow the original to drop into a path leading to the machine exterior.

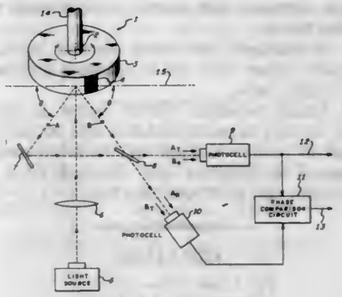
3,419,329
COMBINED OPTICAL ATTITUDE AND ALTITUDE INDICATING INSTRUMENT
Arthur W. Vogeley and Alfred J. Meintel, Jr., Yorktown, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 2, 1964, Ser. No. 335,441
4 Claims. (Cl. 356—72)

This invention relates to optical instrumentation to facilitate take-off and landing of aircraft or space vehicles on planetary surfaces and serving as a primary or backup onboard instrumentation system to present vehicle alti-



tude and attitude information on a screen located on the vehicle instrument panel and viewable by the pilot or other occupants of the vehicle.

3,419,330
DIFFRACTION GRATING ANGULAR RATE SENSOR
Joseph R. Schneider, Larchmont, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 446,042
6 Claims. (Cl. 356—106)

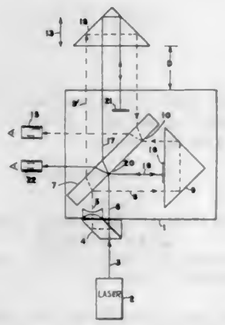


A device for sensing the peripheral velocity of a rotating disc equipped with a diffraction grating tape fixed to the edge of the disc. A laser beam is directed at the diffraction grating tape and two beams diffusely reflected from the tape are heterodyned in a photocell to produce a first beat note. The frequency of the beat note represents disc velocity. A second photocell and beam splitter are used to produce a second beat note which is phase compared with the first beat note to determine the sense of rotation of the disc.

3,419,331
SINGLE AND DOUBLE BEAM INTERFEROMETER MEANS
George Diehr, Babylon, N.Y., assignor to OPTOmechanisms, Inc., Plainview, N.Y.
Filed Aug. 30, 1965, Ser. No. 483,486
2 Claims. (Cl. 356—106)

1. Single and double beam interferometer means, comprising:
a base, a source of first beam energy,
a corner cube reflector movably mounted,
a fixedly mounted first beam splitter on said base adapted to split said first beam into second and third beams,

a fixedly mounted corner cube on said base,
a first mirror mounted on a portion of the face of said fixedly mounted corner cube,
a fixedly mounted second beam splitter on said base, positioned to receive said second and third beams and split them into said second and third reference beams and second and third variable beams,
said second reference beam being transmitted to said fixedly mounted corner cube and reflected to said second beam splitter, and third reference beam being transmitted to said first mirror,
means to transmit said second variable beam to said

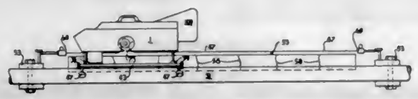


movable corner cube and to receive it from said movable corner cube,
means to compare said second variable beam with said second beam,
means to transmit said third variable beam to said movable corner cube and to receive it from said movable corner cube,
second fixedly mounted mirror means to return said third variable beam to said movable corner cube and means to receive it from said movable corner cube,
and means to compare said received third variable beam with said third reference beam.

ERRATUM

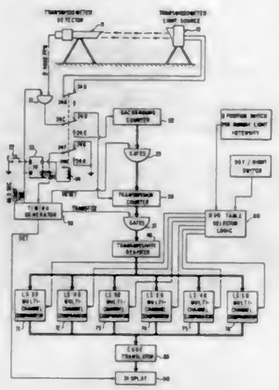
For Class 356—110 see:
Patent No. 3,419,898

3,419,332
APPARATUS FOR GEOLOGICAL CORE-LOGGING AND THE LIKE
Neilson Rudd, Mount Vernon, Ill., assignor to Geo-Engineering Development Co., Mount Vernon, Ill., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,784
14 Claims. (Cl. 356—162)



1. Photographic apparatus for continuously photographing elongate extents of material and indexed tape extending along support means; comprising a housing, gliding means supporting the housing on the supporting means for movement along the material and tape, said housing having a first viewing opening to provide a field of view of the material and the tape, said housing having a second opening, a film magazine supported on the housing and including a first synchronous motor drive for continuously moving a film strip past said second opening, means in the housing for lighting portions of the material and tape through said first opening, means including a lens in the housing to form a path for light reflected from said field of view through said openings and to said film strip, said lens focusing an image of the material and tape through the second opening and on said film strip, a second synchronous motor drive carried by the housing and engaging the tape to move the housing continuously on the support means and along the material and tape, said first and second motor drives being synchronized to effect a certain ratio of speed of the housing along the material with respect to the speed of the film strip past said second opening, said lens having an optical center located in said path to divide the path into a first length extending from a plane in the field of view of the material and tape to said optical center and a second length extending from said optical center to said film strip, said first and second lengths being in a ratio substantially equal to the ratio of said speed of the housing to said speed of the film strip.

3,419,333
RUNWAY VISUAL RANGE COMPUTER SYSTEM
Robert T. Towner, Ellicott, Md., assignor to Industrial Research Associates, Inc., Baltimore, Md., a corporation of Maryland
Filed Sept. 1, 1965, Ser. No. 484,397
10 Claims. (Cl. 356—205)

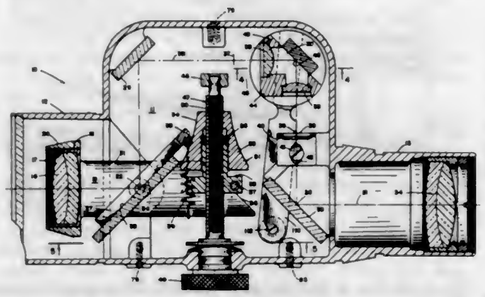


This invention provides a visual range in hundreds of feet visibility for those conditions of runway illumination covered in tables for varying conditions by presenting a transmissivity measurement as a count of light received in a fixed interval of time less a background count in a like interval, with means comparing the count to a count range set out in a selected table of values stored for that condition. A visual range of like numerical value is obtained from widely differing ambient light measurements by selection for comparison therewith of that appropriate one of six standardized stored tables specified for use under specified lighting conditions.

3,419,334
TELESCOPIC BOW SIGHTING DEVICE HAVING A FOLDED SIGHT PATH AND A MOVABLE OBJECTIVE AND SIGHTING AXIS DEFLECTOR
George M. Hubbard, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,395
9 Claims. (Cl. 356—254)

1. In a telescopic bow sighting device, mounting mechanism for its folded optical system comprising:

a housing characterized by walls forming a central compartment, and aligned front and rear tubular extensions formed on opposite sides thereof and leading thereinto,
an objective lens carriage which is located in said front tubular extension,
means cooperatively formed on said carriage and housing for pivotally mounting said carriage for swinging motion in a vertical plane about a horizontal axis which intersects the axis of said lens,
mirror mounting means for mounting a first flat mirror obliquely of said lens axis in coincidence with with said horizontal axis for pivoting movements thereabout in said vertical plane,
means in said compartment operatively constructed on



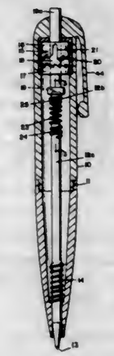
both said carriage and said mirror for moving coincidentally the mirror through half the angle that said carriage is moved whereby the reflected axial rays from the mirror always remain vertical and elevational adjustments of said device are effected,
means for mounting in said compartment a second and a third flat inclined mirror to form the folded axis portion in optical alignment to receive the vertical rays,
means for mounting a sighting reticle in alignment with said folded axis portion at a focal plane of said system, and
means for mounting an eyepiece in the rear tubular extension of said housing in optical alignment with and focused upon said reticle.

3,419,335
DRAFTING DEVICE
Edward Bok, Falls Church, Va., assignor to Dike, Inc., Washington, D.C., a corporation of the District of Columbia
Filed Jan. 12, 1968, Ser. No. 697,433
8 Claims. (Cl. 401—48)



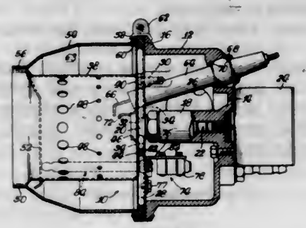
A drafting pen or drawing instrument of the type embodying holder, an ink reservoir supported in the holder and a drafting pen tip communicating with the reservoir and extending outwardly of the holder. Structural innovations include a support pin supported co-extensively with the drafting pen and enabling a pivoting of the entire assembly independently of the pen tip.

3,419,336
BALL POINT PENS
Norbert A. Kirk, 3915 N. Pine Grove Ave., Chicago, Ill. 60613
Filed July 18, 1966, Ser. No. 565,807
4 Claims. (Cl. 401—111)



A barrel containing a projectable and retractable ink cartridge and also containing a projection-retraction mechanism separate and spaced from the inner end of the cartridge. A compression spring is interposed between the inner end of the cartridge and the projection-retraction mechanism to urge the cartridge outwardly and permit controlled inward movement thereof under application of writing pressure.

3,419,337
FLAME DETECTOR CONTROL MEANS FOR A BURNER ASSEMBLY
Gordon J. Fairbanks, Indianapolis, Ind., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed July 28, 1967, Ser. No. 656,917
3 Claims. (Cl. 431—77)

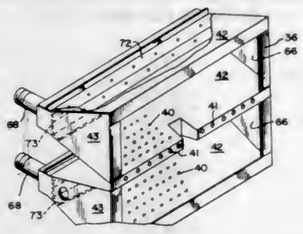


A control device which comprises switch means actuatable by temperature responsive flame detector means and which is mounted at the combustion air intake end of an air-fuel mixer casing of a burner assembly.

3,419,338
BURNER CONSTRUCTION
William R. Dirk and Clifford D. Peterson, Marshalltown, Iowa, assignors to Lennox Industries Inc., a corporation of Iowa
Filed Apr. 27, 1967, Ser. No. 634,375
5 Claims. (Cl. 431—181)

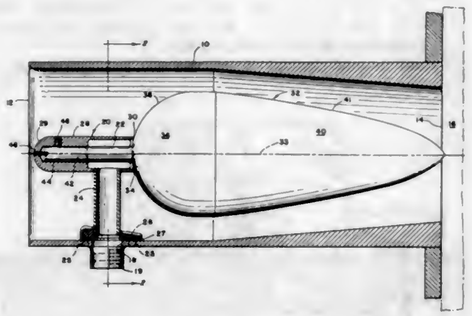
An improved burner for use in a gas-fired furnace having a W-shaped internal configuration when viewed in

cross-section that decreases the operational noise level on ignition and combustion as compared with conventional cone-type burners and which is less sensitive to manufacturing tolerances. The burner is comprised of a pair of adjacent V-shaped recesses defined by outwardly diverging perforated walls. Air enters the recesses through the perforations in the walls. Fuel enters the apex of each recess and is distributed along the length of each recess for mixture with air.



3,419,339
INSPIRATOR ASSEMBLY
Robert E. Schreter, Lebanon, and Melvin J. Parker, Palmyra, Pa., assignors to Hauck Manufacturing Company, Lebanon, Pa., a corporation of New York
Filed Feb. 8, 1967, Ser. No. 614,709
12 Claims. (Cl. 431—284)

An inspirator assembly is provided which is short, compact, efficient in entraining air in gas supplied under relatively low pressure and which prevents both blowout of the flame and flashback of the flame into the assembly. The assembly includes a housing, a duct, and a guide member with the duct and guide members being mounted in the housing. The discharge end of the duct and the upstream end of the guide member are designed to create a "Coanda effect" on the gas being discharged from the duct. The "Coanda effect" causes an efficient entrainment of air into the gas at relatively low pressure and without the need for a blower or other air driving mechanism. The downstream end of the guide member is a parabolic shaped diffuser which prevents the formation of wakes or turbulence which could cause flashback of the flame, and which permits the air-gas mixture to decrease its velocity pressure and attain static pressure regain in a relatively short distance, thus preventing the flame from blowing off.



CHEMICAL

3,419,340
INGRAIN DYEING OF SYNTHETIC FIBERS WITH A FURFURAL SOLUTION OF INGRAIN DYES
Julian J. Hirshfeld and Byron A. Sample, Jr., Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 19, 1965, Ser. No. 473,183
14 Claims. (Cl. 8—32)

1. A process of ingrain dyeing synthetic fibers selected from the class consisting of acrylic and polyester comprising reacting in situ furfural with a chemical selected from the class consisting of aromatic amines, resorcinol and phloroglucinol.

3,419,341
POWDERS AND PASTES OF METALLISABLE DYESTUFFS
Georges Kopp, Mont-Saint-Aignan, and Rene Raymond Julien Vittecoq, Oissel, France, assignors to Etablissements Kuhlmann, Paris, France
No Drawing. Filed June 9, 1964, Ser. No. 373,834
Claims priority, application France, June 11, 1963, 937,700
13 Claims. (Cl. 8—42)

Aqueous pastes of metallizable dyestuffs containing essentially water, a water soluble mordant, the metal of which has an atomic number between 24 and 28, inclusive, and a metallizable dyestuff having at least one acid group, the pH of said pastes being below 7 and the particles of which being of a size not greater than 5 microns.

3,419,342
PROCESS FOR DYEING POLYPROPYLENE FIBERS CONTAINING A NICKEL PHENOLATE OF A BIS(p-ALKYLPHENOL) SULFONE
Albert S. Matlack, Hockessin, Del., assignor to Hercules Incorporated, a corporation of Delaware
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,629
7 Claims. (Cl. 8—46)

1. The process of producing dyed stereoregular polypropylene fibers which comprises contacting, at elevated temperature, filamentary material made of stereoregular polypropylene containing a nickel phenolate of a bis(p-alkylphenol) sulfone with an orthonitrosophenol.

3,419,343
METHOD FOR COLORING CELLULOSE TEXTILE FIBERS WITH DYESTUFFS CONTAINING PENDANT THIOSULFATE GROUPS
Charles D. Weston, Charlotte, and William S. Griffith, Mount Holly, N.C., assignors to Martin-Marietta Corporation, a corporation of Maryland
No Drawing. Filed May 28, 1965, Ser. No. 459,933
2 Claims. (Cl. 8—54.2)

A method for coloring textile fibers comprising the steps of applying an aqueous composition comprising water and dye having per dye molecule at least one pendant thiosulfate group selected from the group consisting of $—SSO_3Na$, $—SSO_3K$ and $—SSO_3NH_4$ to textile fibers selected from the group consisting of cotton, regenerated cellulose, polyamide and polyacrylic; applying to the fibers an aqueous solution comprising Na_2S_{2-4}; and washing the fibers with water.

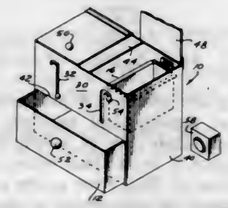
3,419,344
FATLIQUORING WITH TETRAKIS (HYDROXYALKYLENE) PHOSPHONIUM HALIDE AND AN ORGANIC PHOSPHATE ESTER AND LEATHER FLAMEPROOFED THEREBY
Richard N. Jones, Reading, Mass., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Apr. 20, 1966, Ser. No. 543,783
11 Claims. (Cl. 8—94.23)

1. A process for fireproofing skins comprising treating skins with tetrakis (hydroxyalkylene) phosphonium halide and a fat-liquor composition containing a phosphate ester whereby the skins become resistant to flaming and "afterglow."

3,419,345
NEUTRALIZATION OF HYDROPHILIC GEL FIBERS OF A CELLULOSE DERIVATIVE
Esperanza Guandique Parrish, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 148,066, Nov. 27, 1961. This application May 4, 1966, Ser. No. 547,455
8 Claims. (Cl. 8—137.5)

A method for neutralizing acidic or alkaline structures of freshly formed highly swellable hydrophilic gel fibers of a cellulose derivative produces a saft, pliable highly absorbent product. Neutralization is accomplished by intimately contacting the freshly formed unswollen fiber with an aqueous concentrated buffered salt solution, e.g., contacting with an aqueous solution of from 15 to 30% by weight of sodium sulfate containing a disodium hydrogen phosphate buffer.

3,419,346
STERILIZING DEVICE
Harry P. H. Nicholas, 25—126 121st St., Flushing, N.Y. 11354
Filed May 27, 1965, Ser. No. 459,196
6 Claims. (Cl. 21—87)



A device particularly suited for the sterilization of hair curling instruments in beauty parlors. The device includes an open-topped tank containing a perforated holder for articles to be immersed in a sterilizing solution within the tank, means connected to the holder for displacing it between upper (drainage) and lower (immersion) positions within the tank and automatic means for retaining the holder in the lower position for a given period of time and for then displacing it to the upper position.

3,419,347
METHOD OF PREPARING ANHYDROUS MAGNESIUM HALIDES
Ulrich W. Weissenberg, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,519
10 Claims. (Cl. 23—91)

A method of preparing anhydrous magnesium halides by adding a substantially anhydrous monohydric alkanol of 2–5 carbon atoms to a methanol solution of the magnesium halide, trans-solvating by removal of at least part of the methanol, adding a cyclic ether of 5–6 carbon atoms and decomposing the diligand so formed.

3,419,348
SEPARATION OF METALS
Clarence James Hardy, Wantage, and Brian Orlando Field, Abingdon, England, assignors to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Apr. 16, 1964, Ser. No. 360,440
Claims priority, application Great Britain, Apr. 22, 1963, 15,726/63
4 Claims. (Cl. 23—102)

A process for the separation of certain metal compounds of a required metal from a mixture containing several metals or compounds comprises forming a volatile nitrate, nitrite, nitrato- or nitrosyl-compound of the required metal and separating it from non-volatile compounds of other metals by a distillation process.

3,419,349
PROCESS FOR THE MANUFACTURE OF CATENARILY CONDENSED AMMONIUM-PHOSPHATES AND AMMONIUM-METAL-PHOSPHATES
Hans Adolf Rohlfs and Heinz Schmidt, Wiesbaden-Biebrich, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany
No Drawing. Filed Jan. 15, 1965, Ser. No. 425,944
33 Claims. (Cl. 23—107)

This invention relates to a thermal process for the production of a certain class of definite and determinable polyphosphates, namely, catenarily condensed ammonium- or ammonium-metal polyphosphates. The reaction most advantageously takes place at temperatures between 110 and 450° C. and in conformity with one aspect of the invention, between two types of reactants, namely, (A) and (B) wherein (A) is (I) an ammonium orthophosphate, (II) a metal acid phosphate, or (III) at least (I) or (II) in combination with phosphoric acid; and (B) is a class of nitrogen-containing organic compounds typified by urea and compounds related thereto. Reactants (A) and (B) are mixed in proportions which provide a desired atomic ratio of nitrogen to phosphorus in the reaction mixture not greater than 5:1 and the reaction is continued until a desired atomic ratio of nitrogen to phosphorus is obtained in the condensed polyphosphate. In conformity with a modified aspect of the invention, a nitrogen-containing compound other than urea or urea-phosphate is reacted with (A) phosphoric acid alone or (B) a combination of phosphoric acid with (B_1) ammonium phosphates, (B_2) urea, (B_3) a urea-phosphoric acid adduct, or (B_4) a mixture of (B_1) to (B_3).

3,419,350
CONVERSION OF AMMONIUM ALUMINOSILICATE TO HYDROGEN ALUMINOSILICATE
Leonard C. Drake, Wenonah, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,645
5 Claims. (Cl. 23—111)

1. A method for producing crystalline hydrogen aluminosilicate from crystalline ammonium aluminosilicate which comprises heating the latter in the presence of an ozone-containing gas to a temperature between about 200 and about 500° F., thereby substantially completely converting said ammonium crystalline aluminosilicate to crystalline hydrogen aluminosilicate.

3,419,351
VAPOR PHASE PROCESS FOR THE CONVERSION OF METAL HALIDES INTO THEIR OXIDES

Hans Zirngibl, Duisburg, Walter Gutsche, Krefeld-Bocum, and Walter Weidmann, Duisburg-Mundelheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Aug. 21, 1963, Ser. No. 303,544
Claims priority, application Germany, Sept. 4, 1962, F 37,743
2 Claims. (Cl. 23—140)

Metal halides are converted into their oxides by reacting the halide vapors with oxygen, oxygen-containing gases or steam. The selected mixture is introduced into a reaction zone and the reaction is initiated by an auxiliary flame produced from an oxygen-containing combustible gas mixture. Heat is thereafter supplied to the reacting mixture by superimposition of the flame with a corona discharge or by producing high frequency alternating currents.

3,419,352
PROCESS FOR PRODUCING ALPHA ALUMINA MONOHYDRATE

Jerry Anthony Acciarri and William Charles Ziegenhain, Ponca City, Okla., and Donald L. Ziegler, Denver, Colo., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

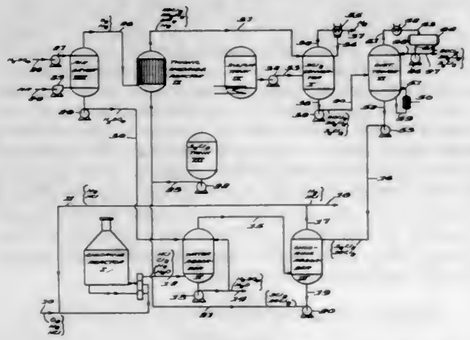
Filed Dec. 2, 1964, Ser. No. 415,260
3 Claims. (Cl. 23—143)

Aluminum alkoxide is hydrolyzed with water containing at least 0.25 weight percent ammonia, and a resulting aqueous phase containing alumina is subjected to solvent extraction; better separation of alumina and alcohol products, and lower product losses result.

3,419,353
PRODUCTION OF THIONYL CHLORIDE FROM HYDROGEN CHLORIDE, SULFUR, AND OXYGEN

Endre Horvath, Chicago, and Emmett H. Burk, Jr., Glenwood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed July 29, 1966, Ser. No. 568,968
8 Claims. (Cl. 23—203)



Thionyl chloride is prepared by a series of steps including oxidizing hydrogen chloride with oxygen to produce a mixture containing hydrogen chloride, chlorine and water. The mixture is dried to obtain an essentially anhydrous mixture containing chlorine and hydrogen chloride. The chlorine of the mixture is reacted with sulfur monochloride to form sulfur dichloride and hydrogen chloride is removed from the sulfur dichloride-containing reaction product. Separated hydrogen chloride is recycled to the hydrogen chloride oxidation step. About 30 to 70% of the sulfur dichloride of the sulfur dichloride-containing reaction product is oxidized to form thionyl chloride and the essential balance of the sulfur dichloride is reacted with sulfur to form sulfur monochloride. The thionyl chloride is recovered by distillation and the sulfur monochloride product is passed to the chlorine-sulfur monochloride reaction step.

3,419,354
METHOD FOR PRODUCING SILICON HYDRIDES

Abe Berger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

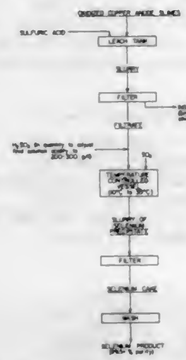
No Drawing. Filed Dec. 23, 1965, Ser. No. 516,075
6 Claims. (Cl. 23—204)

Silicon hydrides are made from silicon halides by treating the latter with an alkali metal hydride and zinc metal or a zinc halide in the presence of a sulfone reaction medium. The sulfone is selected from the class consisting of cyclopolymethylenesulfones and diorganosulfones.

3,419,355
RECOVERY OF HIGH PURITY SELENIUM FROM SELENIUM-BEARING SOLUTIONS CONTAINING METALLIC IMPURITIES

Paul von Stein, Salt Lake City, Utah, assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Dec. 17, 1964, Ser. No. 419,150
5 Claims. (Cl. 23—209)



Commercial grade selenium is precipitated by the addition of SO_2 to metallurgical solutions containing selenium and other metals such as tellurium. The temperature of the solution is maintained between 10 to 35° C. during the addition of SO_2. Prior to the addition of SO_2, the free acid content of the solution is adjusted to at least the equivalent of 200 grams per liter of sulfuric acid.

3,419,356
PROCESS FOR CONTROLLING RUBBER HARDNESS PROPERTIES OF CARBON BLACK

Merrill E. Jordan, Walpole, and William G. Burbine, Whitman, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Apr. 13, 1966, Ser. No. 542,197
8 Claims. (Cl. 23—209.4)

The present invention provides a method for controlling the rubber hardness properties of carbon blacks. Broadly, the method comprises the injection of phosphorous, in elemental or compound form, into a carbon forming reaction zone. Practice of the invention is of particular value when there is additionally charged into the reaction zone an alkali metal additive. Accordingly, in a preferred embodiment of the invention, there is utilized a combination of alkali metal and phosphorous in order to achieve a dual purpose: (1) a desirable depression in the modulus properties, and (2) maintenance of good rubber hardness properties of the product black.

3,419,357
PROCESSES FOR MANUFACTURING IODINE OF VERY HIGH PURITY

Jürgen Tillack, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

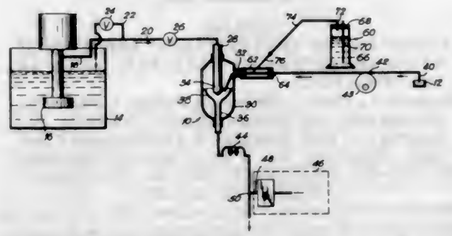
Filed Feb. 1, 1967, Ser. No. 613,148
Claims priority, application Germany, Feb. 10, 1966, N 28,027
3 Claims. (Cl. 23—216)

Oxygen and oxygen containing compounds are removed from iodine by passing the iodine over hot tungsten and removing the free iodine by fractional sublimation.

3,419,358
AUTOMATIC ANALYSIS APPARATUS AND METHOD

William J. Smythe, Rye, and Morris H. Shamos, New York, N.Y., assignors to Technicon Corporation, a corporation of New York

Filed Oct. 19, 1965, Ser. No. 497,679
6 Claims. (Cl. 23—230)

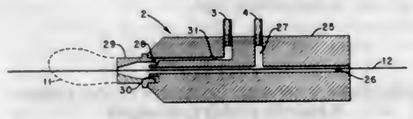


A large ratio dilution system for an automatic analysis system includes an aspirator vacuum pump which produces a vacuum by the entrainment of gas by a diluent liquid jet, and which has an adjustable input flow of diluent liquid, an aspirator input for the sample liquid to be diluted, and means for adjusting the vacuum pressure at the aspirator input.

3,419,359
FLAME IONIZATION DETECTOR

Norman G. Anderson and Richard H. Stevens, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 8, 1965, Ser. No. 470,652
4 Claims. (Cl. 23—253)



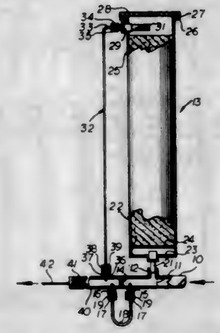
An improved flame ionization system is provided for the continuous analysis of carbon in submilligram and submicrogram size solid and liquid samples. The sample to be analyzed is deposited on a wire of noble metal which is passed axially through the jet opening of a horizontally fed flame jet assembly. All volatile products from the sample are swept into the combustion zone of the flame by an inert carrier gas flow in close time synchrony with the less volatile components remaining on the wire.

3,419,360
CHEMICAL FEEDER DEVICE

Stanley F. Rak, Mundelein, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware

Filed Feb. 9, 1967, Ser. No. 614,992
2 Claims. (Cl. 23—272.7)

A chemical feeding apparatus for the continuous addition of a small quantity of a chemical solution to a stream of liquid by diverting a small proportion of the liquid stream through a container having a solid granular chemical therein; the liquid dissolving the chemical for a solution and recombining the chemical solution with the main liqud stream through a capillary intersecting the

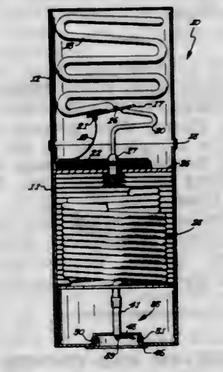


main stream at a point downstream of a flow restricting device for the main stream of liquid.

3,419,361
HYDROGEN GENERATING SYSTEM

Francis H. Bratton and Harold I. Reynolds, Northfield, Minn., assignors to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota

Filed Nov. 15, 1965, Ser. No. 507,748
9 Claims. (Cl. 23—281)



1. Means for generating hydrogen upon application of heat to a self-sustaining reactant system comprising a thermally reactant blend of controllably exothermically and endothermically decomposable compounds, each being decomposable to liberate hydrogen gas and including:

(a) an exothermically decomposable compound decomposable to liberate nascent hydrogen as a reaction product together with,

(b) an endothermically decomposable compound decomposable to liberate nascent hydrogen as a reactant product, the arrangement being such that said reactant blend decomposes at a predetermined controllable self-sustaining rate.

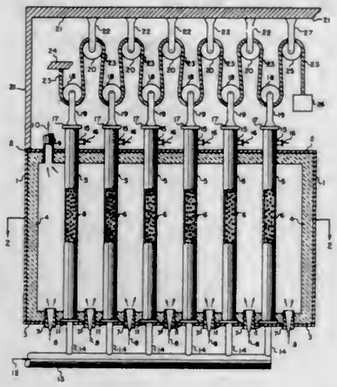
3,419,362
FLUID HEATER

Alexander Chevion, Riverdale, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed June 25, 1965, Ser. No. 466,984
15 Claims. (Cl. 23—288)

A system is provided for maintaining uniform tension

on each of a plurality of tubes in a fluid heater. A first pulley is connected to each tube, and a fixed second pulley is provided in proximity to two adjacent first pulleys. A connecting cable extends alternately below each first pulley and above each second pulley, and the cable is maintained under tension, so that the tubes are continuously maintained in tension when the furnace container of the fluid heater is at an elevated temperature.



ERRATUM

For Class 23—302 see:
Patent No. 3,419,899

3,419,363
SELF-LUBRICATING FLUORIDE-METAL COMPOSITE MATERIALS

Harold E. Sliney, Parma, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed May 1, 1967, Ser. No. 635,972
5 Claims. (Cl. 29—182.1)

A self-lubricating bearing and sealing material for use in a chemically reactive environment. A porous metal is impregnated with barium fluoride-calcium fluoride eutectic for use in high temperature applications.

3,419,364
COMPOSITE SILVER AND COPPER ARTICLE

Michael J. Pryor, Hamden, and Joseph Winter, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Original application June 24, 1965, Ser. No. 466,647, now Patent No. 3,372,468, dated Mar. 12, 1968. Divided and this application Sept. 1, 1967, Ser. No. 695,297
5 Claims. (Cl. 29—183.5)



A composite alloy having a core consisting essentially of from 10 to 70% silver and the balance copper clad with a surface layer consisting essentially of a silver copper alloy matrix wherein the matrix is at least 91% silver with the balance copper, said matrix containing discrete islands in an amount less than 5% of the cladding and wherein these islands contain less than 8% silver.

3,419,365
PETROLEUM DISTILLATES CONTAINING BUTADIENE-STYRENE COPOLYMERS

William L. Streets, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,614
9 Claims. (Cl. 44—62)

A hydrogenated butadiene-styrene random or block copolymer is added in small proportion to a hydrocarbon liquid or petroleum distillate to improve its pour point and/or render it more resistant to thermal degradation. The composition which is suitable for use as a fuel is prepared from at least one of a gasoline, a jet fuel, a diesel fuel and a heating oil by adding thereto 0.005–0.5 weight percent approximately of hydrogenated butadiene-styrene copolymer.

3,419,366
ALKOXYLATED QUATERNARY AMMONIUM SALTS OF ESTERS OF SALICYLIC ACID AS MICROBICIDES

Elizabeth L. Fareri, Pittsburgh, Robert J. McGuire, Monroeville, and Edward Mitchell, Valencia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,666
8 Claims. (Cl. 44—63)

Alkoxylated quaternary ammonium salts of esters of salicylic acid are used as microbicides in hydrocarbon oil.

3,419,367
MOTOR FUEL CONTAINING OCTANE IMPROVER

George W. Eckert, Wappingers Falls, and Howard V. Hess, Glenham, N.Y., assignors to Texaco Inc., a corporation of Delaware

No Drawing. Filed June 27, 1958, Ser. No. 744,929
13 Claims. (Cl. 44—66)

1. A hydrocarbon fuel in the gasoline boiling range containing a tetraalkyl lead antiknock agent, at least 5 volume percent of high octane components selected from the group consisting of olefinic hydrocarbons, aromatic hydrocarbons, and mixture thereof and an anhydride of a gasoline-soluble saturated hydrocarbyl monocarboxylic acid in an amount sufficient to further improve the octane rating of said hydrocarbon fuel.

3,419,368
THERMALLY STABILIZED HYDROCARBON LIQUID COMPOSITIONS

Arnold M. Leas, Ashland, Ky., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

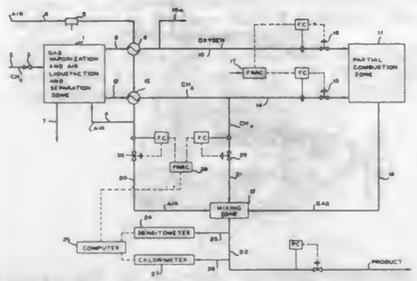
No Drawing. Continuation-in-part of application Ser. No. 275,865, Apr. 30, 1963. This application Jan. 23, 1967, Ser. No. 610,764
15 Claims. (Cl. 44—70)

A hydrocarbon liquid composition, particularly useful as a jet fuel, including a major proportion of a hydrocarbon liquid and a minor proportion of the combination of ethylene glycol monobutylether acetate and an alkanol ester of citric acid, such as tributyl citrate, acetyl tributyl citrate, and triethylhexyl citrate, an N,N-salicylidene alkyldiamine, such as N,N-salicylidene propane diamine, or N,N-disalicylidene ethane diamine, and mixtures of such esters and diamines. The composition may also include a conventional de-icing additive, a conventional antioxidant or a mixed polyamine jet fuel additive.

3,419,369
MANUFACTURING TOWN GAS FROM LIQUEFIED NATURAL GAS

Carl S. Kelley, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 19, 1965, Ser. No. 441,261
7 Claims. (Cl. 48—196)



The heating value and specific gravity of liquefied natural gas are adjusted for town gas use by vaporizing the liquefied natural gas by indirect heat exchange with air, which is partially liquefied and separated into an oxygen-rich stream; passing a portion of the vaporized natural gas and the oxygen-rich stream to a combustion zone wherein they are burned to produce an intermediate gas; and passing the intermediate gas to a mixing zone wherein controlled amounts of the remaining vaporized natural gas and air are added to produce a product having predetermined B.t.u. and specific gravity values.

3,419,370
METHOD OF PRODUCING A PHOTOCHROMIC GLASS AND RESULTING ARTICLE

William H. Cramer, Corning, and Harmon M. Garfinkel, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,164
10 Claims. (Cl. 161—1)

2. The method of forming a surface layer exhibiting excellent photochromic properties on a glass body which comprises:

(a) providing a glass body consisting essentially, as analyzed in weight percent on the oxide basis, of about 50–65% SiO_2, 7–14% Al_2O_3, 15–22% B_2O_3, 5–15% R_2O, where R_2O consists of the alkali metal oxides 0–5% Li_2O, 0–5% K_2O, and 5–15% Na_2O, and at least one halide in the indicated proportion selected from the group consisting of 0.2–3% Cl, 0.1–3% Br, and 0.1–4% I, the total amount of said halides not exceeding about 5%, the sum of the SiO_2, Al_2O_3, B_2O_3, R_2O, and halide components constituting at least 95% by weight of the glass;

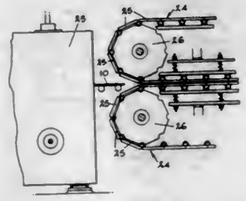
(b) contacting a surface of said glass body with at least one silver-containing material selected from the group consisting of silver and stable silver compounds at a temperature ranging from about 100° C. below the strain point of the glass to about 100° C. above the softening point of the glass; and

(c) maintaining this temperature for a sufficient length of time to effect an exchange of silver ions for alkali metal ions in at least the surface of the glass and to cause a reaction of the silver ions with the halide ions present in the glass to precipitate silver halide crystals.

3,419,371
TEMPERING GLASS BETWEEN ROUGHENED GLASS CONTACTING SURFACES

Glen J. Lehr, Oregon, Waldemar W. Oelke, Rossford, Thomas B. O'Connell, Toledo, and Alfred E. Badger, Maumee, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed July 12, 1965, Ser. No. 470,999
13 Claims. (Cl. 65—114)

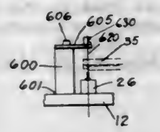


A method and apparatus for tempering glass sheets wherein the sheets are cooled by contacting them with bodies of relatively high thermal conductivity which have been roughened to specified RMS microinch roughness values. Ranges of surface roughness and glass preheat temperatures are given for sheet and plate glass in various thicknesses to obtain various degrees of temper.

3,419,372
WORK HOLDER FOR ALIGNING AND SEALING A BEADED WIRE ELEMENT INTO A GLASS TUBE

David I. Cropp, Meadville, Chalmer C. Jordan, Saegertown, and Robert W. Lingo, Meadville, Pa., asignors to Glass-Tite Industries, Inc., Providence, R.I., a corporation of Rhode Island

Continuation of application Ser. No. 359,242, Apr. 13, 1964. This application June 29, 1967, Ser. No. 650,136
1 Claim. (Cl. 65—146)



An assembly machine for assembling wires to glass tubes made up of a rotating turret having peripherally spaced wire holders on it. An arm connected to the machine and having a wire holder on it to hold a wire while the wire is being carried to the turret by the arm. A permanent magnet for orienting the wire supported above a loading station on the turret. The permanent magnet being supported in a position to attract the wire from the arm and hold the wire in fixed position at the loading station for subsequent movement to a wire holder.

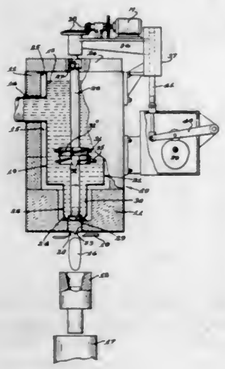
3,419,373
PUMPING VANE TYPE GLASS FEEDER

Ralph E. Gould and George A. Simmons, Jr., both of Toledo, Ohio, assignors to Owen-Illinois, Inc., a corporation of Ohio

Continuation-in-part of application Ser. 404,230, Oct. 16, 1964. This application Oct. 25, 1967, Ser. No. 691,077
3 Claims. (Cl. 65—180)

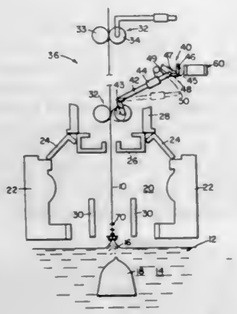
Mixing and feeding of molten glass in the form of gobs wherein the weight of successively produced gobs is closely controlled. A stirring mechanism composed of a series of circumferentially spaced, arcuate flanges joined to a central, rotating shaft so that glass is drawn toward the center of the mechanism and immediately below the first set of flanges, a second set of arcuate flanges are connected to the shaft in the opposite sense that they cause

the glass to move outwardly from the center of the mechanism. This produces an horizontally glass shearing zone



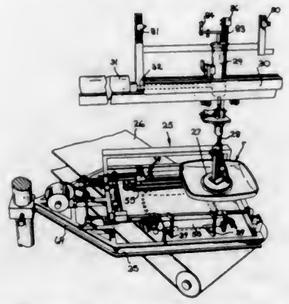
therebetween. Down-pumping vanes on the outside of the flanges create an annular, downwardly moving column of glass in surrounding relationship to the shear zone to provide an additional shearing action and create a downward force or pressure within the feeder which is related to the speed of rotation of the stirring mechanism.

3,419,374
DETECTING RIBBON FORMATION ABNORMALITIES IN DRAWING GLASS SHEETS
Wendel Offenbacher, St. Laurent, Quebec, and Leo Bill Kowai, Beaurepaire, Quebec, Canada, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa.
Filed June 24, 1964, Ser. No. 377,575
Claims priority, application Canada, Nov. 7, 1963, 888,552
1 Claim. (Cl. 65—160)



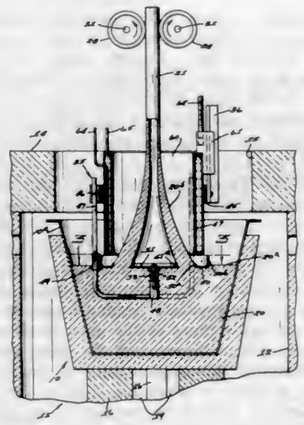
Apparatus for detecting abnormalities in a ribbon of glass being drawn by draw rolls from a molten bath comprising speed sensing rollers engaging the edges of the glass and effecting actuation of electrical circuit means thereby to cause additional draw rolls to engage the glass sheet thereby to prevent the ribbon from breaking and dropping back into the bath. The edge rollers are located within the region of deformability of the glass and, in addition to sensing a slowing down of the draw speed of the ribbon, also are capable of detecting a narrowing or necking down of the ribbon.

3,419,375
APPARATUS FOR SUPPORTING AND GLAZING GLASS ARTICLES
Arthur C. Meiresonne, Columbus, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 7, 1965, Ser. No. 453,967
9 Claims. (Cl. 65—181)



This application discloses apparatus for flame-glazing the mold or seam line of a glass television face plate. The glazing station is located proximate to the molding station so that the face plate may be glazed while it still retains much of its latent heat. The face plate is transferred to support means at the glazing station by means of a transfer device comprising a suction head attached to a vertically reciprocable rod of a fluid cylinder, the cylinder being reciprocable in a horizontal direction between the molding and glazing stations. At the glazing station the article is glazed by spaced, opposed reciprocable line burners while the article is supported along each of an opposed pair of sides by at least a pair of arms attached to a common shaft. After the glazing cycle is completed, the support arms are rotated downwardly in unison out of their supporting position to drop the article upon the upper reach of a transfer conveyor for transfer to a subsequent processing station.

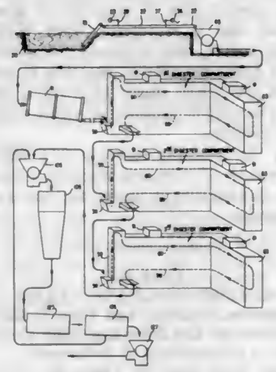
3,419,376
APPARATUS FOR PRODUCING GLASS ROD AND TUBING
Lewis M. Austin, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation of applications Ser. No. 105,404, Apr. 25, 1961, and Ser. No. 418,383, Dec. 8, 1964. This application Jan. 6, 1967, Ser. No. 613,713
2 Claims. (Cl. 65—192)



This invention relates to improved apparatus for continuously drawing molten glass in cylindrical form such

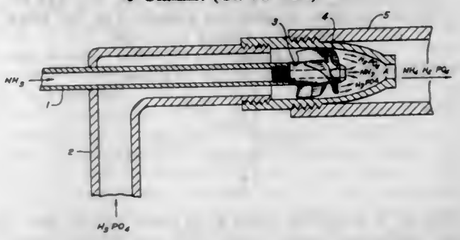
as tubing or rod by an updrawing process, the apparatus being capable of operation fully independently of the molten glass containing receptacle. The glass-contacting surfaces of the apparatus are comprised of noble metal.

3,419,377
METHOD FOR TREATING ORGANIC AND INORGANIC WASTE MATERIAL
Lawrence E. Redman, Phoenix, Ariz., assignor, by mesne assignments, to Garbage Service Company, Inc., Phoenix, Ariz., a corporation of Arizona
Original application Feb. 9, 1962, Ser. No. 172,300, now Patent No. 3,246,954, dated Apr. 19, 1966. Divided and this application Apr. 7, 1965, Ser. No. 446,299
4 Claims. (Cl. 71—9)



1. A process for composting fermentable organic and inorganic waste material which comprises:
grinding said materials to produce particles of substantially uniform size;
mixing said ground particles within a temperature-controlled atmosphere while adding preheated liquid thereto to produce a temperature-controlled mass while initiating fermentation thereof;
delivering said temperature-controlled mass into one end of an elongated enclosure;
forming and shaping said mass for fermentation thereof while moving said mass towards the other end of said enclosure, then simultaneously aerating and agitating said mass with the addition of moisture thereto;
reforming said mass within said enclosure to permit the free circulation of air through and about said mass while moving same within the enclosure;
agitating and aerating said mass by fluffing and breaking same up to produce new areas for fermentation thereof at a rate determined by the fermentation temperature of said mass;
reforming said mass within said enclosure to permit the free circulation of air through and about said mass while moving same within the enclosure;
agitating and mixing said mass to relocate and rearrange the particles to produce new areas for fermentation thereof;
forming and shaping said mass for fermentation thereof while moving said mass towards the other end of said enclosure;
further agitating and aerating said mass at a rate determined by the fermentation temperature of said mass until said mass is fermented to a desired degree; and
discharging said treated mass.

3,419,378
METHOD OF PRODUCING MONOAMMONIUM PHOSPHATE BY REACTING PHOSPHORIC ACID AND AMMONIA UNDER PRESSURE
Tommy Carter Kearns, Homewood, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 1, 1965, Ser. No. 444,595
6 Claims. (Cl. 71—34)



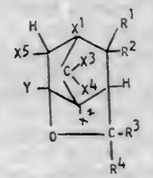
A method is disclosed for forming monoammonium phosphate by reacting phosphoric acid and ammonia. The phosphoric acid is introduced into the reaction zone under a pressure of at least 50 p.s.i.g. The ammonia is under sufficient pressure to be maintained in the liquid state. The resulting compound is impelled through space in such a manner as to solidify and form a granular product.

3,419,379
PROCESS FOR COATING FERTILIZER PARTICLES WITH MAGNESIUM AND CALCIUM PHOSPHATES AND SULFATES AND THE RESULTING PRODUCT
Charles D. Goodale and John A. Frump, Terre Haute, Ind., assignors to Commercial Solvents Corporation
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,642
14 Claims. (Cl. 71—60)

A method of producing water-resistant, solid discrete fertilizer particles by separately coating the particles with an acidic inorganic material having dessicating properties, such as superphosphoric acid, SO_3, oleum and mixtures thereof, and an alkaline material such as calcium or magnesium compounds which react with the acid material to produce a salt in situ on the particles. Calcium and magnesium sulfates and phosphates are preferred. Coatings can also be provided from ammonia and sulfuric acid or SO_3 vapors. Variation of the amount of coating formed on the fetrilizer particles provides an anti-caking fertilizer or a slow release fertilizer.

3,419,380
TRICYCLIC KETALS AS HERBICIDES
Paul E. Hoch, Youngstown, and George B. Stratton, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 413,947, Nov. 25, 1964. This application Nov. 26, 1965, Ser. No. 510,025
11 Claims. (Cl. 71—88)

A method for controlling plant growth, utilizing a tricyclic ketal of the formula



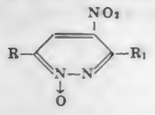
in which the X's are hydrogen, halogen or an organic radical; Y is a nucleophilic radical; and the R's represent an organic radical.

3,419,381
CONTROLLING WEEDS IN SUGAR BEETS AND GRAMINACEOUS CROPS WITH PYRIDAZINE DERIVATIONS

Jacques Desmoras, Orly, and Pierre Jacquet, Thiais, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,866
Claims priority, application France, Apr. 20, 1964, 971,551, Patent 1,411,030
13 Claims. (Cl. 71—92)

Pyridazine derivatives of the formula:



where R is lower alkyl and R_1 is lower alkoxy, are valuable herbicides useful, inter alia, for killing weeds in crops of beets and grains.

3,419,382
CONTROL OF CACTI

William Harry Culver, Bryan, Tex., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 584,108, Oct. 4, 1966. This application Mar. 21, 1967, Ser. No. 624,717
6 Claims. (Cl. 71—128)

Chemical means for the control of undesirable cactus plants which comprises killing cacti by contacting them with hexafluoroarsenic acid or its salts.

3,419,383
PRODUCING PULVERULENT IRON FOR POWDER METALLURGY BY MULTISTAGE REDUCTION

Harry R. Hatcher, Crown Point, Ind., and Charles R. Harr, Johnstown, Pa., assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,545
11 Claims. (Cl. 75—.5)

1. In a process for producing pulverulent iron adapted for compaction by powder metallurgy wherein a particulate iron oxide-containing ferruginous material is reduced with a reducing agent in a reaction zone having a nonoxidizing atmosphere, some agglomeration of the resulting iron product takes place, and said ultimate resulting iron product is ground to a fine state, the improvement which comprises: reducing said material in a plurality of stages, and grinding said material intermediate two of said stages, at least one stage subsequent to the grinding having a reducing atmosphere.

3,419,384
PREPARATION OF ALKALI METAL DISPERSIONS

Alan Rembaum and Robert F. Landel, Altadena, Calif., assignors to California Institute Research Foundation, Pasadena, Calif., a corporation of California

Filed Feb. 14, 1966, Ser. No. 527,331
8 Claims. (Cl. 75—66)

1. The method of obtaining finely divided alkali metal, comprising in combination the steps of

contacting an alkali metal other than lithium with a solution of an alkyl substituted aromatic organic compound in an organic solvent that is capable of dissolving said compound and is essentially inert with respect to the alkali metal, said organic compound when so dissolved being capable of reacting with the alkali metal to form a radical anion with stoichiometric solution of alkali metal, the equilibrium constant of said reaction being inversely temperature dependent within a predetermined temperature range, said aromatic compound and alkali metal being incapable of side reactions within said temperature range,

reacting the alkali metal and said solution at a first temperature in the lower portion of said range to dissolve alkali metal,

raising the resulting solution to a second temperature in the upper portion of said range to precipitate alkali metal therefrom and thereby form a dispersion and recovering the precipitated alkali metal from the solution.

6. The method of producing a dispersion of finely divided alkali metal, comprising in combination the steps of

contacting an alkali metal other than lithium at a temperature approximating —60° C. with a solution of an aromatic organic compound, selected from the group consisting of lower alkyl substituted N-carbazoles and lower alkyl substituted biphenyls, in an organic solvent that is capable of dissolving said compound and is essentially inert with respect to the alkali metal, said aromatic compound when so dissolved being capable of reacting at said temperature with the alkali metal to form a radical anion with stoichiometric solution of alkali metal and without side reactions,

and raising the resulting solution to a temperature of approximately 0° C. to precipitate alkali metal essentially quantitatively therefrom and thereby form said dispersion.

3,419,385
MAGNESIUM-BASE ALLOY

George S. Foerster, Midland, and John B. Clark, Detroit, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 22, 1964, Ser. No. 405,862
12 Claims. (Cl. 75—168)

1. The magnesium-base alloy which comprises by weight from 0.2 to 10 percent of yttrium, an alloying constituent selected from the group consisting of from 0.1 to 6 percent of zinc and from 0.5 to 2 percent of silver and the balance substantially magnesium.

3,419,386
POWDER METALLURGICAL PROCESS FOR MAKING AN ELECTROLYTIC CAPACITOR ANODE

Harry W. Holland, Fairview Park, and Walter F. Helvey, Cleveland, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation of application Ser. No. 388,268, Aug. 7, 1964. This application Mar. 9, 1967, Ser. No. 622,001
8 Claims. (Cl. 75—201)

A process for producing a sintered anode for an electrolytic capacitor from powdered anode metal having carbon and oxygen contents of less than 500 p.p.m. and from 1,000 to 5,000 p.p.m., respectively. A carbon containing material is added to the powder before sintering in amounts sufficient to remove during sintering the oxygen content in excess of an amount of from 1,000 to 1,500 p.p.m.

3,419,387
PROCESS OF MAKING HIGH LOADED UO_2-COLUMBIUM CERMETS

Emanuel Gordon, New Haven, Conn., and Nathan Fuhrman, Shrub Oak, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 24, 1967, Ser. No. 656,986
3 Claims. (Cl. 75—206)

A process for producing UO_2-columbium cermets having ceramic phase loadings of over 70 volume percent, comprising coating UO_2 spheres sequentially with wax, then with columbium powder, applying a pressure to the coated spheres to form a compact, heating the compact to a temperature of less than 900° C. to dewax the compact, thereafter heat sintering the compact.

3,419,388
SINTERED TITANIUM COATING PROCESS

Gregory Arutunian, Detroit, Mich., assignor to the United States of America as represented by the Secretary of the Army

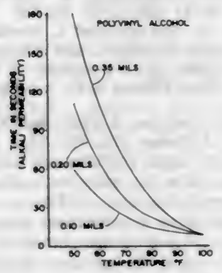
Filed Apr. 11, 1967, Ser. No. 630,483
1 Claim. (Cl. 75—208)

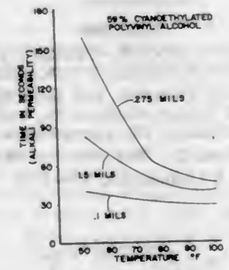
This invention provides a novel method of applying a thick, machineable layer of corrosion resistant titanium to a ferrous substrate. The method comprises the steps of applying a layer of an oxygen and nitrogen free hard-facing metal compound powder to the substrate to be coated and applying pressure to the surface of the hard-facing metal compound powder layer via a pressure block or other suitable means while heating the entire combination in a nonreactive atmosphere to a temperature sufficient to yield pure metal and easily dispersed gases from the decomposition of the hard-facing metal compound. In the preferred embodiment, the hard-facing metal consists of titanium and its compound consists of titanium hydride.

3,419,389
CYANOETHYLATED POLYVINYL SPACER LAYERS FOR IMAGE-RECEIVING ELEMENT

Howard C. Haas, Arlington, and Henry S. Kolesinski, Burlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,657
12 Claims. (Cl. 96—3)





9. In a multicolor diffusion transfer process which comprises the steps of developing an exposed photosensitive element comprising a plurality of layers including blue-sensitive, green-sensitive and red-sensitive silver halide gelatin emulsion layers mounted on a common support, said blue-sensitive, green-sensitive and red-sensitive silver halide emulsion layers being contiguous to yellow, magenta and cyan dyes, respectively, each of said dyes being silver halide developing agents, by permeating said photosensitive element with an aqueous alkaline processing composition having an initial pH of not less than about 12; immobilizing said yellow, magenta and cyan dyes as a result of development; forming thereby an imagewise distribution of mobile yellow, magenta and cyan dye, as a function of the point-to-point degree of exposure of said element, transferring, by imbibition, at least a portion of each of said imagewise distributions of mobile dye to a superposed image-receiving element comprising a plurality of essential layers including, in sequence, a support layer; a polymeric alkali acceptor layer; a permeable polymeric layer comprising a cyanoethylated polyvinyl alcohol; and an alkaline solution dyeable and permeable polymeric layer; to provide to said dyeable polymeric layer a multicolor dye image; transferring, by imbibition, subsequent to substantial transfer image formation, at least a sufficient portion of the alkali of said processing composition through each of said permeable polymeric layers to said polymeric alkali acceptor layer to provide thereby a reduction of the pH of said composition and then separating said image-receiving element from said superposed relationship.

3,419,390
ELEMENTS AND DEVELOPERS FOR COLOR PHOTOGRAPHY UTILIZING PHENOLIC COUPLERS CONTAINING AN AMINOALKYL GROUP ON THE COUPLING POSITION

Homer W. J. Cressman and John R. Thirtle, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 452,932, May 3, 1965. This application Oct. 4, 1965, Ser. No. 492,904
13 Claims. (Cl. 96—55)

Cyan dye-forming phenolic and naphtholic couplers having an aminomethyl substituent attached to the active carbon of the couplers are used to advantage in color photography to form nondiffusible cyan dye images in color photographic elements because of their high coupling reactivity and very low density of unwanted color fog that is formed by color development.

3,419,391
SILVER HALIDE COLOR PHOTOGRAPHY UTILIZING MAGENTA-DYE-FORMING COUPLERS

David V. Young, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 24, 1965, Ser. No. 458,455
13 Claims. (Cl. 96—56.5)

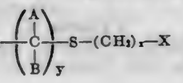
4-pyrazolin-5-one magenta dye-forming couplers having an aryloxy group substituted on the active methylene group in the coupling position of the coupler have good coupling reactivity and other valuable properties and are advantageously used in color photography as couplers incorporated in photographic elements or in color developer solutions.

3,419,392
THIOETHER SILVER HALIDE DEVELOPMENT ACCELERATORS

John Martin Thompson, Eccles, England, assignor to Ilford Limited, Ilford, Essex, England, a British company

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,055
Claims priority, application Great Britain, Feb. 24, 1965, 7,994/65; Jan. 5, 1966, 500/66
8 Claims. (Cl. 96—66.3)

Process of developing a silver halide latent image in the presence of a compound of the general formula:

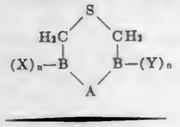


3,419,393
CYCLIC THIOETHER SILVER HALIDE DEVELOPMENT ACCELERATORS

John Martin Thompson and Alan Charles Farthing, Eccles, England, assignors to Ilford Limited, Ilford, Essex, England, a British company

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,105
Claims priority, application Great Britain, Feb. 24, 1965, 7,995/65
5 Claims. (Cl. 96—66.3)

Process of developing a silver halide latent image in the presence of a compound of the general formula:



3,419,394
LIGHT SENSITIVE LITHOGRAPHIC PLATE OF A WATER SOLUBLE DIAZO COMPOUND AND A HYDROPHILIC FILLER MATERIAL

Frederick O. Bach, Villa Park, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Nov. 18, 1964, Ser. No. 412,099
8 Claims. (Cl. 96—75)

A light sensitive lithographic plate formed of a base sheet having a surface which is hydrophobic, ink receptive and water repellent, and a coating directly on the surface formulated of a finely divided hydrophilic inorganic filler and a light sensitive resin forming diazo compound which is converted to a water insoluble resinous binder upon exposure to light whereby, when the plate is exposed, the hydrophilic filler in the exposed portions becomes bonded by the diazo resin to the underlying hydrophobic surface to define the water receptive hydrophilic portion of the plate while the diazo compound and filler in the unexposed portions are washed from the plate to expose the underlying hydrophobic ink receptive surface as the imaged portion of the lithographic plate.

3,419,395
LIGHT-SENSITIVE MATERIAL WITH INCORPORATED DEVELOPER

Anita von König, Helmut Mäder, Hans Ulrich, and Edith Weyde, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 9, 1965, Ser. No. 447,084
Claims priority, application Germany, Apr. 25, 1964 A 45,878
10 Claims. (Cl. 96—95)

This invention relates to a light-sensitive photographic material which contains developers having methane phosphonic acid groups, which developers are incorporated in the photographic silver halide emulsion layers or in adjacent layers. The emulsion can be developed by contact with aqueous alkali or by heat treatment, and can be used in conventional or diffusion transfer processes.

3,419,396
PRINT-OUT EMULSIONS AND PROCESS

Henri Roger Pierre Chateau, deceased, late of Maisons-Alfort, France, by Jacqueline Chateau, administratrix, Maisons-Alfort, France, and Marie-Claude Marcelle Gadet and Jacques Jean Louis Pouradier, Maisons-Alfort, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 4, 1964, Ser. No. 409,008
Claims priority, application France, July 1, 1964, 980,285
4 Claims. (Cl. 96—108)

Photographic emulsions comprising cuprous iodide wherein the silver halide of said emulsion consists essentially of silver iodide, and methods for processing said emulsions. In one aspect this emulsion provides a novel print-out emulsion.

3,419,397
SILVER HALIDE PEPTIZERS

Stewart H. Merrill and Ernest J. Perry, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,160
3 Claims. (Cl. 96—114)

The precipitation and emulsification step in making silver halide grains for photographic silver halide emulsions is carried out in presence of a peptizing agent which is a polymer comprising 40 to 100 mole percent of acrylyl or methacrylyl histidine; the remaining monomer units may consist of acrylic acid or methacrylic acid. Preparation of several preferred copolymers is described.

3,419,398
LIQUID FOOD PRODUCT AND PROCESS FOR PREPARING SAME

Maynard Murray, Wilmette, Ill., assignor to Creative Chemistry, Inc., Glen Ellyn, Ill., a corporation of Illinois

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,728
6 Claims. (Cl. 99—28)

Preparation of a clear dairy-product food by acidifying whey with citric acid, adding tannic acid to precipitate the higher molecular weight lactalbumins, separating gelatinous albuminous substances therefrom and recovering a liquid lacteal serum as the clear dairy product.

3,419,399
PROCESS FOR FORMING A COFEE DOUGH AND DRYING SAME

Ernest L. Earle, Jr. and Howard J. Bowden, New City, Francis J. Civille, Brooklyn, and Alonzo H. R. Feldbrugge, New York, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 518,996
4 Claims. (Cl. 99—71)

Frozen, aqueous, liquid particles are kneaded with dry soluble coffee to raise the moisture content of the dry coffee to between 9.5% and 12.5% at a temperature below 140° F. to form a continuous dough phase, and the dough is dried to a moisture content of between 1% and 4% while keeping the product temperature below 140° F.

3,419,400
PACKAGING FOODS—PRODUCTION OF OXYGEN-FREE PACKAGES

Lewis J. Hayhurst, Glenview, and John M. Ramsbottom and Joseph B. Craine, Chicago, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 22, 1965, Ser. No. 501,935
6 Claims. (Cl. 99—171)



A product is protected against oxygen-induced deterioration by packaging the product in a gas impermeable container with an agent which generates hydrogen on contact with water, water and a water-synthesis catalyst so that the hydrogen can react with any free oxygen present.

3,419,401
HOLLOW SHIRRED MEAT CASING STICK

Edward A. Matecki, Evergreen Park, Ill., assignor to Union Carbide Corporation, a corporation of New York

Filed Mar. 2, 1965, Ser. No. 436,584
4 Claims. (Cl. 99—176)



A hollow shirred meat casing stick is closed at one end by a portion of the casing material which is inturned and implanted in the bore of the stick. The closure, while effective to block the passage of meat emulsion, has a passage which is pervious to humid air or conditioning gas to adjust the moisture content of the casing material.

3,419,402
PROCESS OF PREPARING A FREEZE-DRIED GELLED PRODUCT

Maurie Laskin, Milwaukee, Wis., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Nov. 21, 1967, Ser. No. 684,613
6 Claims. (Cl. 99—199)

Process for preparing a freeze-dried product containing a gelling agent by freezing a monolithic shape of the desired product at atmospheric pressure and subsequently dehydrating it to less than 4% by heating at reduced pressures of less than 1.5 millimeters of mercury.

3,419,403
HIGH INDEX OF REFRACTION GLASS COMPOSITIONS

Charles E. Searight, Ezra M. Alexander, and John R. Ryan, Jackson, Miss., assignors to Cataphote Corporation, Toledo, Ohio, a corporation of Ohio

Filed Mar. 18, 1963, Ser. No. 265,888
3 Claims. (Cl. 106—47)

1. A high refractive index glass composition consisting essentially of a vitreous fusion product of a mixture of titanium oxide and barium peroxide in the molar ratio greater than 2.0 and up to 2.2, and wherein the titanium ion is present, preponderantly, as TiO_6^{-8}.

2. A high refractive index glass composition consisting essentially of from about 60% to about 100% by weight of a vitreous fusion product of a mixture of titanium oxide and barium peroxide in the molar ratio of from about 0.9 to about 2.2 from about 0 to about 40% by weight of at least one oxide selected from the group consisting of bismuth oxide and antimony oxides, from 0 to about 6% by weight of at least one alkali metal oxide of the group consisting of lithium, sodium and potassium oxides and from about 0.2 to about 12% by weight of at least one oxide selected from the group consisting of silicon dioxide, boric oxide, phosphoric oxide and germanium dioxide, and wherein the titanium ion is present, preponderantly, as TiO_6^{-8}.

3,419,404
PARTIALLY NITRIDED ALUMINUM REFRACTORY MATERIAL

George W. Mao, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed June 26, 1964, Ser. No. 378,370
7 Claims. (Cl. 106—65)

2. A refractory composite material comprising a mass of partially nitrided fine aluminum flakes, said flakes having aluminum cores and aluminum nitride shells, and fiber-like appendages extending from said flakes and being joined to and entwined with the appendages of adjacent particles to interlock the particles into an integral mass.

3,419,405
STARCH COMPOSITION COMPRISING SOURING AGENTS AND SURFACTANTS

Robert M. Lang, Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

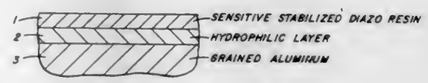
No Drawing. Filed May 8, 1967, Ser. No. 636,647
9 Claims. (Cl. 106—211)

A starch composition having enhanced flowability, consistency and stability contains starch, souring agents and surfactants.

3,419,406
COATING COMPOSITIONS

James F. Houle and Gilden R. VanNorman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 347,931, Feb. 27, 1964, now Patent No. 3,342,601, dated Sept. 19, 1967. This application Aug. 4, 1967, Ser. No. 658,559
5 Claims. (Cl. 106—287)



Aqueous solutions of complexes of titanium compounds render substrates hydrophilic, for example, a solution resulting from the addition of hydrogen peroxide, phosphoric acid and tetraisopropyl titanate to water when coated on an aluminum support renders the support hydrophilic.

3,419,407
BINARY AZEOTROPES

John A. Riddick, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed June 8, 1964, Ser. No. 373,572
12 Claims. (Cl. 106—311)

Binary azeotropic compositions of 2-nitropropane with 1-pentanol, ethoxy ethylene glycol, n-hexane, cyclohexane, n-heptane, methyl cyclohexane, n-octane, 2,2,4-trimethylpentane, n-nonane, ethyl benzene, and perchloroethylene.

3,419,408
PHOTOGRAPHIC VIEWING SCREEN PREPARED FROM A LENTICULATED POLYESTER FILM

Larry Gerald Curtis and Parker J. Trent, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 8, 1965, Ser. No. 512,554
6 Claims. (Cl. 117—10)

1. A screen for three-dimensional viewing of photographs which comprises a transparent substrate coated with a suitable film having a lenticulated surface, said film consisting essentially of a polyester prepared from neopentyl glycol, isophthalic acid, and adipic acid in molar proportions of 1 glycol:0.7–0.95 isophthalic acid:0.05–0.3 adipic acid.

3,419,409
PROCESS FOR COATING

Conrad J. Dettling, York, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 331,982, Nov. 14, 1963. This application Apr. 3, 1967, Ser. No. 628,160

9 Claims. (Cl. 117—18)

The invention disclosed herein is an improved process for forming a uniform coating of an organic polymeric resin which comprises immersing an article to be coated in a fluidized bed and rotating the article in order to coat all surfaces of the article with the coating material.

3,419,410
METHOD FOR TREATING POLYESTER FILM

Victor M. Kumin, Newton Highlands, and Carlos M. Samour, Wellesley Hills, Mass., assignors, by mesne assignments, to The G. T. Schjeldahl Company, Boston, Mass., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 360,093, Apr. 15, 1964. This application June 5, 1967, Ser. No. 643,360

6 Claims. (Cl. 117—25)



A shaped article such as a film, foil, ribbon, or fabric, composed at least in part of crystalline polyethyleneterephthalate, is exposed to the action of chlorosulfonic acid or 85% sulfuric acid, after which it is quenched, as in water. This causes a white, opaque, spongy deposit of amorphous polyethyleneterephthalate to be formed on the surface of the article. This spongy amorphous deposit is sensitive to the vapors of certain organic solvents, which cause it to recrystallize to a substantially transparent condition. If the recrystallization is carried out in the presence of a modifying second substance, such as a finely-divided solid, the modifying material is encapsulated into the surface of the film.

3,419,411
METHOD FOR THE TRANSFER OF DEVELOPED ELECTROSTATIC IMAGES USING A LATTICE FORMING SUBSTANCE

Robert J. Wright, Tranmere, South Australia, Australia, assignor to Research Laboratories of Australia Pty. Limited, North Adelaide, South Australia, a corporation of Australia

No Drawing. Continuation-in-part of aplication Ser. No. 307,009, Sept. 6, 1963. This application Apr. 20, 1967, Ser. No. 632,184

1 Claim. (Cl. 117—37)

A superior method of developing electrostatic images is achieved by incorporating, in a wet developer, a lattice-forming substance which presents branched molecules affording an interlaced structure in the developer which locks the pigment particles in place and prevents the spreading thereof. Examples of the lattice-forming substance are paraffin wax, ethyl cellulose and rubber modified polystyrene.

3,419,412
PROCESS FOR COATING WITH EPOXY COMPOSITIONS

William C. Morris, Chagrin Falls, and Ronald J. Baran, Chardon, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,093

12 Claims. (Cl. 117—38)

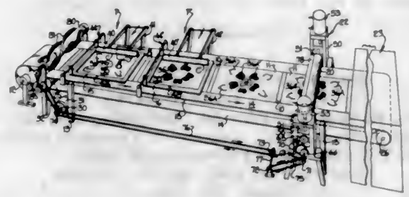
This invention comprises an organic composite coating on glass or other substrate, and the process of preparation, in which the coating is a mixture of pigment, a permanent carrier such as an epoxy resin, and a fugitive vehicle or carrier, the composite coating being deposited on the substrate at a temperature higher than that of the substrate, thereafter driving off the fugitive vehicle and curing the coating by heating at a temperature higher than that of the composite coating at the time of application, preferably the epoxy resin having a melting point of 75–85° C. and an epoxide equivalent of 550–700.

3,419,413
METHOD OF COLORING PILE FABRICS

Felix A. Euforbia, Greensboro, N.C., assignor to Foremost Screen Print, Inc., Stokesdale, N.C., a corporation of Delaware

Filed Oct. 28, 1965, Ser. No. 505,516

5 Claims. (Cl. 117—38)



Method of effecting the coloring of very thick pile materials to substantially the base of the piles for obtaining depth of colorant comparing favorably with predyed pile yarns and wherein the method includes screen printing a design onto the face of the pile fabric with the design being undersize as compared to the final design desired and wherein the printed design is thereafter moved through a pair of squeeze rolls to drive the colorant substantially throughout the depth of the pile while effecting lateral spreading of the colorant to obtain the final design of a predetermined size.

3,419,414
WEAR-RESISTANT REPELLENT-FINISHED ARTICLE AND PROCESS OF MAKING THE SAME

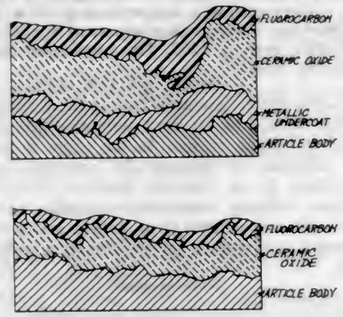
Harold R. Marks, Kent, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Continuation-in-part of application Ser. No. 453,367, May 15, 1965. This application Aug. 29, 1966, Ser. No. 575,888

9 Claims. (Cl. 117—70)

To a metallic plate-type body such as of a metal bonding tool or a cooking utensil is aplied a wear underlayer containing ceramic oxide over which is applied an overlayer of antiadherent fluorcarbon polymer resin. The underlayer may include a metallic undercoat beneath the ceramic oxide. The underlayer is flame-sprayed, providing a minutely-rugged exterior to anchor the overlayer

sprayed as an aqueous suspension. Initially, or after slight wear, the overlayer is sporadically interrupted by



a multiplicity of outcroppings of the wear underlayer to provide a wear-resistant repellent finish.

3,419,415
COMPOSITE CARBIDE FLAME SPRAY MATERIAL

Ferdinand J. Dittrich, Bellmore, N.Y., assignor to Metco Inc., a corporation of New Jersey

No Drawing. Filed Sept. 29, 1964, Ser. No. 400,203

30 Claims. (Cl. 117—100)

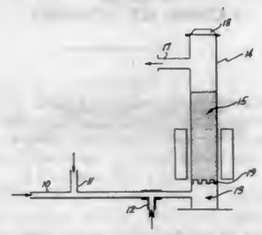
A flame spray material such as a powder or wire in the form of a composite containing a refractory carbide and at least 5% by weight based on the molecularly bound carbon in the carbide of excess carbon in a form capable of reacting with the metal of the refractory carbide at flame spray temperatures to form a carbide, the excess carbon preferably being present in amount of about 10–100% by weight based on the molecularly bound carbon. The composite may also be formed of metal capable of forming a refractory carbide and of carbon in a form capable of reacting with this metal to form a carbide. Preferred refractory metals are tungsten, tantalum, zirconium, titanium, molybdenum, chromium, niobium, hafnium, silicon, and boron and the composites are preferably in the form of a powder having the refractory carbide or metal as a core and the excess carbon as a coating. While the excess carbon is preferably in a reactive form of free carbon, the same may also be present in a compound which will decompose at flame spray temperatures to liberate such carbon, as for example, in the form of an organic binder.

3,419,416
PREVENTION OF CAKING IN HIGH TEMPERATURE FLUIDIZATION PROCESSES

Walter Batiuk and Charles H. Jung, Seattle, and Frank W. Morgan, Enumclaw, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Nov. 18, 1964, Ser. No. 411,972

3 Claims. (Cl. 117—106)



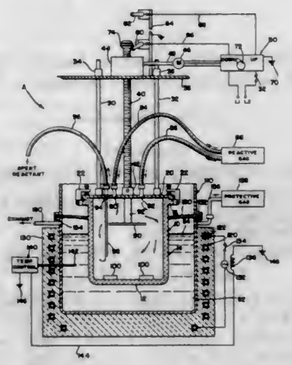
In a high temperature fluidization bed containing silicon particles used for siliconizing metals introduced therein, a method for preventing the agglomeration of the silicon particles by introducing air, oxygen, nitrogen, or a mixture thereof, or a solid material which yields oxygen or nitrogen, and reacting the gas with the silicon particles to partially coat the particles with an antifriction coating.

3,419,417
APPARATUS AND METHOD OF GROWING A CRYSTAL FROM A VAPOR

Edmund N. Curcio, South Orange, N.J., assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 1, 1966, Ser. No. 524,306

5 Claims. (Cl. 117—106)



1. A method of growing a crystal formed from a vapor of crystal producing material, said method comprising the following steps:

(a) placing a substrate seed in a refractory chamber at a given position;

(b) providing a bath of molten metal;

(c) maintaining said bath at a selected temperature;

(d) bringing said bath around said chamber and substantially above said given position;

(e) introducing vapor of said crystal producing material into said chamber;

(f) maintaining said bath around said chamber until the heat of said bath causes said vapor to grow a crystal onto said seed; and,

(g) then removing said molten metal bath from around said chamber at least in the area of said given position.

3,419,418
METHOD AND APPARATUS FOR SPOT COATING METAL SHEET

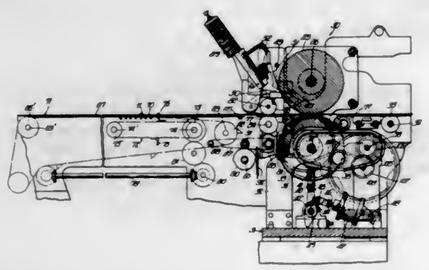
Burton L. Gamble, Hinsdale, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed May 17, 1965, Ser. No. 456,213

7 Claims. (Cl. 117—111)

A method and apparatus for spot coating thin metal sheets for use in fabricating metal end closures for cans wherein a coating roll is employed which is of special construction with an engraved screen pattern which eliminates waste of the coating material and allows for accurate placing of the desired pattern with an uncoated seam area at the margins of each of the closures when the latter are cut from the sheet. The coating roll is plated with a copper sheath having a Knoop hardness substantially greater than the normal hardness of plated copper and a thin coat of

chrome is applied after engraving the pattern thereon. The sheets are brushed and vacuumized before printing and



the apparatus includes a control feature which insures that there is no impression when no sheet is fed.

3,419,419

NICKEL-PLATING BATH FOR THORIUM

Ralph R. Wright, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Feb. 19, 1965, Ser. No. 445,865
1 Claim. (Cl. 117—130)

A chemical reduction bath for nickel-plating thorium having a pH of 9.0 to 9.5 and containing 0.05–0.15 mole per liter nickelous sulfate, 0.3 to 0.6 mole per liter ammonium sulfate, 0.05 to 0.30 mole per liter succinic acid, 0.1 to 0.4 mole per liter sodium acetate, and 0.2 to 0.5 mole per liter sodium hypophosphite.

3,419,420

MAGNETIC COATING COMPOSITIONS

Frederick A. Stahly and Wesley Dale Humphriss, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,336
13 Claims. (Cl. 117—138.8)

A magnetic recording tape having a coating of magnetic oxide particles bound by a poly (vinyl butyral) resin adsorbed to the oxide particles in a ratio of 10 to 70 or more milligrams of binder per gram of oxide. The resin should contain 5 to 17% poly (vinyl alcohol). Advantageously, the ratio of magnetic oxide particles to binder is between 2 and 10 to 1. The coating is prepared by forming a dispersion comprising a thixotropic solution of the resin, a nonpolar solvent, and the magnetic oxide particles, subjecting the dispersion to shear forces to decrease its viscosity, coating the resulting thinned dispersion onto a tape base, and allowing the thixotropic dispersion to again become viscous while the solvent evaporates.

3,419,421

HEAT SEALABLE POLYVINYLIDENE CHLORIDE FILM COATED WITH FATTY ACID SALT

Frank E. Eastes, Simpsonville, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,468
8 Claims. (Cl. 117—138.8)

A coating for vinyl polymer films comprising an alkali metal salt of fatty acid having 12–22 carbon atoms per molecule, inclusive, improves the heat seal strength of the films.

3,419,422

PAPER SIZED WITH AN ISOCYANATE-MODIFIED SILICONE

Enrico J. Pepe, Kenmore, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 307,003, Sept. 6, 1963. This application Jan. 27, 1966, Ser. No. 523,257
4 Claims. (Cl. 117—155)

Treated fibrous material having on at least the surface portion thereof of an isocyanate-modified silicone compound and being present on the paper in an amount at least sufficient to enhance the resistance of the paper to wetting by an aqueous medium, which isocyanate-modified silicone compound contains the isocyanate therein directly bonded to an organo group which in turn is bonded to silicon of the silicone by a carbon to silicon bond.

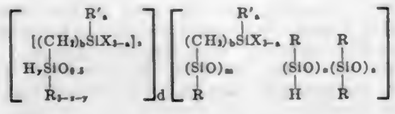
3,419,423

ADDUCTS OF SILICON HYDRIDE POLYSILOXANES AND HYDROLYZABLE SILANES HAVING ALKENYL RADICALS USEFUL FOR RENDERING SUBSTRATES WATER REPELLENT

George J. Quaal, Springfield, Mass., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 9, 1964, Ser. No. 402,959
24 Claims. (Cl. 117—161)

A process of treating a substrate with a siloxane copolymer and thereafter curing the treated substrate to provide water repellency. The substrates can include fabrics, paper, glass, wood, leather and masonry products, among others. The siloxane copolymer has a general formula



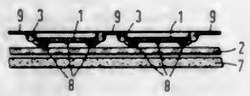
where R and R' are each alkyl, halogenated alkyl, phenyl or haloegnated phenyl, X is —OR'', chlorine atoms, $—NR''_2$, $—O(CH_2)_cOR''$, —OOCH, or —OOCR'', R'' is alkyl, c is 1 to 3, a is 0 to 2, b is 2 to 4, m is 2 to 90 mol percent of the silicon atoms, n is 10 to 98 mol percent of the silicon atoms, z is 0 to 88 mol percent of the silicon atoms, $n+m+z$ is 6 to 2000, d, x and y are each 0 to 2, and $x+y$ is 0 to 2.

3,419,424

METHOD OF INFLUENCING THE SURFACE PROFILE OF SEMICONDUCTOR LAYERS PRECIPITATED FROM THE GAS PHASE

Hermann Steggewentz and Kurt Schlüter, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany

Filed Aug. 10, 1965, Ser. No. 478,564
Claims priority, application Germany, Aug. 21, 1964, S 92,746
6 Claims. (Cl. 117—201)



1. The method of producing a crystalline semiconductor layer of predetermined profile on a crystalline substrate

by thermal decomposition of a gaseous compound of said semiconductor material and precipitation on said substrate which is heated to above the decomposition temperature of said gaseous compound, which comprises placing a solid ring, having an inner diameter approximately equal to that of said substrate, which is disc-shaped, has a thickness of about 1 mm. and consists of inert material in the precipitation path of the semiconductor material adjacent to, and spaced from, a given portion of the surface of said substrate, and reducing by the proximity of said body to said given surface portion the amount of semiconductor material precipitating onto said portion.

3,419,425

METHOD OF SELECTIVELY REMOVING POWDERED GLASS

Ernest E. Conrad, Clinton Corners, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 499,912
9 Claims. (Cl. 117—212)

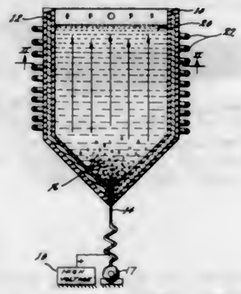
A glass film is provided on a surface by first coating the surface with a layer of powdered glass. A mask having predetermined openings therein is then placed over the powdered glass layer and a halogenated hydrocarbon and an inert gas is applied to the mask to remove the portions of the powdered glass exposed through such openings. The mask is then removed and the powdered glass is fired to fuse it to a glaze pattern.

3,419,426

SONIC WASHER

Charles E. Wood, Fort Walton Beach, Fla. (4581 Willow Road, Salt Lake City, Utah 84117)

Filed May 4, 1964, Ser. No. 364,865
6 Claims. (Cl. 134—1)



Articles are washed in cold water into which electrically charged air bubbles are introduced at very high or ultrasonic speeds. The bubbles are electromagnetically caused to oscillate at high speeds.

3,419,427

METHOD OF CLEANING SOILED ARTICLES

Eugene V. Plock, Louisville, Ky., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,123
5 Claims. (Cl. 134—4)

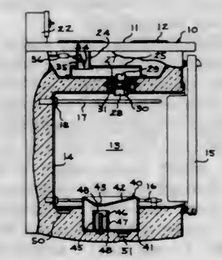
Cleaning soiled articles by applying a liquid to the article and subjecting the article, soil and liquid to a temperature at or below the freezing point of the liquid, thereby breaking the bond between the soil and the article by expansion of the freezing liquid.

3,419,428

METHOD OF LOOSENING FOOD SOIL FROM WALLS OF DOMESTIC OVEN

Stanley B. Welch, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Nov. 9, 1964, Ser. No. 409,688
2 Claims. (Cl. 134—22)



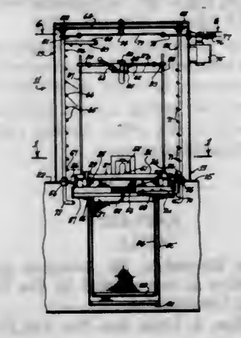
This invention is incorporated with a baking oven having an access door for closing the oven. Special heating means are provided for raising the temperature within the oven above normal cooking temperatures to a range between about 550° F. and 650° F. Food soil and grease spatter tend to accumulate on the walls forming the oven cavity during the various cooking operations. An important method step in the present invention is to raise the oven temperature above the normal cooking temperatures so as to thoroughly bake-on the grease. The oven is provided with a catalytic oxidation unit adjacent the oven exhaust vent which operates to degrade the smoke, odors and vapors generated during the over-temperature, bake-on operation. Then the oven is allowed to cool down to about room temperature. Next, the oven exhaust vent is closed and with the oven door also closed, the oven cavity is substantially sealed. Finally, a mixture of ammonia gas and steam is introduced into the oven to condense upon the relatively cool walls forming the oven cavity. This treatment tends to loosen the oven soil to a point where it can easily be removed from the oven.

3,419,429

METHOD AND APPARATUS FOR CLEANING ENGINE BLOCKS AND THE LIKE

Emil Zadron and Alton S. Kenmonth, Los Angeles, Calif., assignors, by direct and mesne assignments, to Jet-Clean Company, Beverly Hills, Calif., a limited partnership

Filed July 12, 1965, Ser. No. 471,037
8 Claims. (Cl. 134—33)



A method and apparatus for cleaning engine blocks, comprising rotating the engine block while simultaneously spraying a cleaning fluid thereagainst through oscillating spraying devices located on opposite sides of the

block. The spraying devices respectively spray fluid upwardly and downwardly against the block, and, during each complete revolution of the block, they oscillate a number of times which is not a whole number. Further, the spraying devices oscillate in opposite directions, so that one moves clockwise while the other moves counterclockwise, and vice versa. The foregoing relationships result in impingement of cleaning fluid on every internal and external surface of the block.

The cleaning fluid is recirculated and a filtering system removes foreign material, fines being retained in the fluid for their abrasive cleaning effect. A recirculating pump discharges part of its output into the reservoir to continually agitate the fluid therein to keep foreign matter in suspension and to prevent foaming of any soaps which may be formed. Part of the pump output is delivered to the spraying devices through a heater in the reservoir to apply the fluid to the block at a high temperature while maintaining the fluid delivered to the intake of the pump at a lower temperature to minimize cavitation problems.

3,419,430
ELECTRICAL ENERGY DEVICE CONTAINING POLYELECTROLYTE GEL SEPARATOR
Alan S. Michaels, Lexington, Mass., assignor to Amicon Corporation, Cambridge, Mass., a corporation of Massachusetts
No Drawing. Continuation-in-part of application Ser. No. 340,499, Jan. 27, 1964. This application Sept. 26, 1966, Ser. No. 581,721
The portion of the term of the patent subsequent to June 6, 1984, has been disclaimed
10 Claims. (Cl. 136—26)

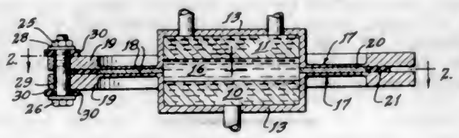
Electrical energy producing device having opposed electrodes, between and in contact with which is a solid mass of aqueous electrolyte and a gel made from two ionically associated polymers, one having anionic groups attached to a polymeric structure, the other having cationic groups attached to a polymeric structure, the aqueous electrolyte within the solid mass being the sole water and electrolyte present in the device.

3,419,431
POLYELECTROLYTE GEL SEPARATOR AND BATTERY THEREWITH
Alan S. Michaels, Lexington, Mass., assignor to Amicon Corporation, Cambridge, Mass., a corporation of Massachusetts
No Drawing. Continuation-in-part of application Ser. No. 340,499, Jan. 27, 1964. This application Sept. 26, 1966, Ser. No. 581,722
The portion of the term of the patent subsequent to June 6, 1984, has been disclaimed
10 Claims. (Cl. 136—26)

Electrical energy producing device having opposed electrodes in aqueous electrolyte and a separator between electrodes, which separator is made from two ionically associated polymers, one having anionic groups attached to a polymeric structure, the other having cationic groups attached to a polymeric structure.

3,419,432
SEAL
James C. Hesson, Riverdale, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 4, 1966, Ser. No. 518,742
4 Claims. (Cl. 136—83)

A regenerating EMF cell having two molten metals separated by a molten fused salt electrolyte is contained in a pair of complementary housings with a pair of flanges having a thin portion adjacent the housing and a thick portion spaced from the housing. A ceramic insulating ring is located between the thin portions of the flanges and a rubber gasket is located between the thick

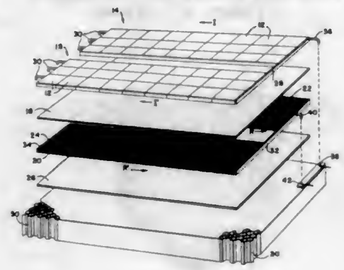


portions of the flanges. Any molten salt which flows between the thin portions of the flanges is frozen because of heat loss through the flanges and does not continuously corrode the insulating rings.

ERRATUM

For Class 136—86 see:
Patent No. 3,419,900

3,419,433
SOLAR CELL AND CIRCUIT ARRAY AND PROCESS FOR NULLIFYING MAGNETIC FIELDS
Luther W. Slifer, Jr., Lanham, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 13, 1966, Ser. No. 551,182
13 Claims. (Cl. 136—89)



1. In a device of the type having a plurality of thin waferlike electrically conductive elements arranged in a given array defining a thin primary electrical current flow path, means for reducing the magnetic field produced by electric current flow through said primary flow path, said means comprising:

a thin waferlike electrically conductive member dimensioned so as to define a secondary electrical current flow path substantially identical with said primary flow path;

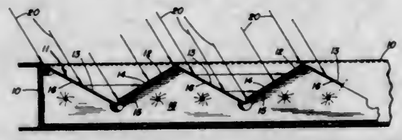
mounting means supporting said secondary electrical current flow path in closely spaced alignment with said primary electrical curent flow path; and

conductive means connecting said primary flow path and said secondary flow path to create an electrical current flow in said secondary flow path when an electrical current flows though said primary flow path which electrical current flow in said secondary flow path is in an opposite direction from the direction of electrical current flow in the primary flow path and substantially nullifies the magnetic field created by said electrical current flow in said primary flow path.

13. A method of substantially nullifying the induced magnetic field caused by the passage of sheet electrical current in a given direction through a circuit of thin waferlike conductive elements arranged in a given flow path configuration said method comprising:

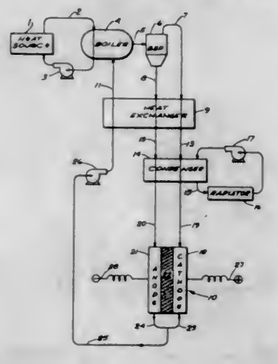
causing a reverse sheet current to flow through a flow path having the same thin configuration as said given configuration and closely spaced in aligned array with said given flow path so that the magnetic fields induced by each of said sheet currents effectively nullify each other.

3,419,434
SOLAR CELL ASSEMBLIES
Edgar Warren Colehower, Baltimore, Md., assignor to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed July 21, 1964, Ser. No. 384,086
5 Claims. (Cl. 136—89)



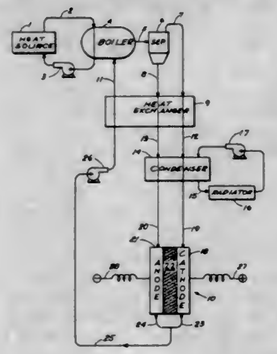
A metal sheet is formed in stair-like, or zig-zag corrugations, defining two sets of parallel webs. The surfaces of one set of webs are covered with solar cells in heat transferring relationship. The surfaces of the other set of webs are reflective for reflecting incident radiation onto the solar cells. Heat from the solar cells is transmitted through the metal sheet and radiated from the reflective surfaces of the other set of webs. The reflective surfaces may be given a coating that is transparent to radiant energy within the useful range of the solar cells but that is highly emissive to radiant energy outside that range.

3,419,435
ENERGY CONVERSION PROCESS AND APPARATUS
Howard L. Recht, Northridge, and Donald E. McKenzie, Woodland Hills, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 444,976
2 Claims. (Cl. 136—100)



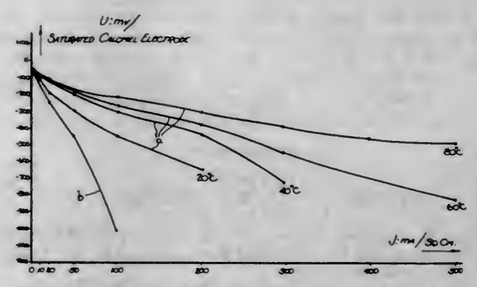
A sodium-amalgam galvanic cell operative at a temperature below about 500° C. and a process for converting heat to electricity utilizing this cell. The sodium-amalgam anode of the cell contains between 35 and 40 atom percent sodium, the sodium-amalgam cathode of the cell contains between 0.1 and 1 atom percent sodium, and a porous ceramic matrix which separates the anode and cathode amalgams contains a fusible electrolyte which is a ternary salt mixture of eutectic composition consisting essentially of, in mole percent, 58±1 sodium cyanide, 30±1 sodium iodide, and 12±1 sodium fluoride.

3,419,436
POROUS MATRIX FOR GALVANIC CELL
Howard L. Recht, Northridge, and Marlowe L. Iverson, Simi, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 444,956
7 Claims. (Cl. 136—100)



A porous matrix-electrolyte element for use in a sodium amalgam galvanic cell. The element consists of a porous beryllium oxide matrix which contains therein a ternary or quaternary sodium salt system, preferably a fusible ternary salt mixture of eutectic composition consisting essentially of, in mole percent, 58±1 sodium cyanide, 30±1 sodium iodide, and 12±1 sodium fluoride.

3,419,437
METALLIC CATALYST ELECTRODE AND METHOD OF ITS MANUFACTURE
Margarete Jung, Nieder-Eschbach im Taunus, and Hans H. von Doehren, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed July 20, 1964, Ser. No. 383,609
Claims priority, application Germany, July 18, 1963, V 24,328
12 Claims. (Cl. 136—120)



1. In a process of producing a highly catalytically active electrode which contains at least two catalytically

active metals, one of which is silver, said metals being sintered with a metal skeleton powder to an electrode body, the steps which comprise;

coprecipitating a mixture of reducible metal compounds from a solution containing soluble salts of at least two catalytically active metals,

adding to said solution prior to the termination of the coprecipitation said metal skeleton powder,

reducing said mixture under a reducing atmosphere to a mixture of particles of at least two catalytically active metals, of which at least one is pyrophoric,

treating said mixture of particles of metal catalysts with water until it is non-pyrophoric, and

molding and sintering said mixture of particles which comprises the catalytically active metals and said metal skeleton powder into an electrode body.

2. In a process of producing a highly catalytically active electrode which contains at least two catalytically actively metals, one of which is silver, said metals being sintered with a metal skeleton powder to an electrode body, the steps which comprise;

coprecipitating a mixture of reducible metal compounds from a solution containing soluble salts of at least two catalytically active metals,

reducing said mixture under a reducing atmosphere to a mixture of particles of at least two catalytically active metals, of which at least one is pyrophoric,

treating said mixture of particles of metal catalysts with water until it is non-pyrophoric, and

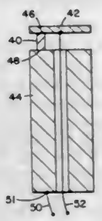
molding and sintering the resulting mixture of particles which comprises the catalytically active metals and said metal skeleton powder into an electrode body, said metal skeleton powder being combined with the metallic catalyst mixture prior to molding and sintering.

3,419,438

HEAT FLUX MEASURING DEVICE

Robert D. Stottle, Huntsville, Ala., assignor to Heat Technology Laboratory, Inc., Huntsville, Ala., a corporation of Alabama

Filed May 25, 1964, Ser. No. 369,984
9 Claims. (Cl. 136—230)



A heat flux measurement device having a metallic target of relatively high ratio of exposed area to thickness connected through a low thermal conductivity material to a heat sink. Electrical readings representative of heat flux experienced by the disc are available across two output leads connected to the disc and heat sink, respectively.

3,419,439

CONTROL OF EXCESS CHROMIUM IN MALLEABLE IRONS

Price B. Burgess, Albion, Mich., assignor to Malleable Research and Development Foundation, Dayton, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,098
5 Claims. (Cl. 148—3)

Ferritic malleable iron is produced from a white iron having 0.05 to 0.25% chromium, 0.003 to 0.05% aluminum, 0.0015 to 0.03% boron, actual manganese less 1.7 times the sulfur content of not more than 0.2%, 1.4 to 2% silicon, 2.0 to 3.0% carbon, in the range of 0.175% copper, not more than 0.18% phosphorus, and not more than 0.1% molybdenum. By compensating for the inhibiting amount of chromium with aluminum and boron in the amounts specified, with silicon and manganese in the range indicated, it is possible to use conventional annealing cycles rather than varying the cycle for each heat in order to compensate for the interfering amount of chromium. By the process herein described, ferritic malleable having nodule counts in the range of 75 to 250 nodules per square millimeter is obtained. Various cycles and procedures are described as well as physical data as to the resulting ferritic malleable.

3,419,440

SOLID COMPOSITION FOR THE PICKLING OF STAINLESS STEELS AND ALLOYS WITH A HIGH CONTENT OF CHROME

Paolo Rinaldo, Venice, and Roberto Trupiano, Mestre, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Continuation of application Ser. No. 297,968, July 26, 1963. This application Apr. 13, 1967, Ser. No. 630,773
7 Claims. (Cl. 148—6.15)

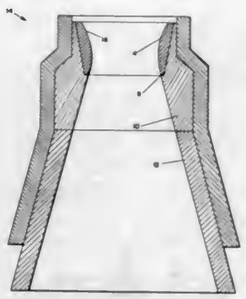
1. A process for pickling bodies of stainless steels and alloys of high chromium content wherein the bodies are heat-treated at a temperature in the range of about 20° to 70° C. in a bath formed by a dilute aqueous solution of a composition consisting essentially of 50% to 99.5% by weight of ammonium bifluoride and 50% to 0.5% by weight of an alkali acid phosphate, in an amount of said composition such that the fluoride ion concentration in said solution ranges between substantially 0.5 and 8% by weight.

3,419,441

TUNGSTEN OXIDE COATED ROCKET MOTOR THROAT INSERT

Patrick V. McAllister, Salt Lake City, and James D. McGregor, Logan, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,738
4 Claims. (Cl. 148—6.3)



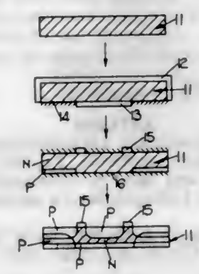
A process is disclosed of producing an oxidized tungsten rocket motor throat insert. A tungsten insert is oxidized by heating in air and those parts to be exposed to rocket exhaust gases are coated with a mixture of epoxy resin and polysulfide resin. The parts not coated with resin are treated to dissolve the tungsten oxide coating.

3,419,442

SEMICONDUCTOR DEVICES

Charles Peter Cockshott, Coventry, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Apr. 26, 1966, Ser. No. 545,284
Claims priority, application Great Britain, May 5, 1965, 18,903/65
3 Claims. (Cl. 148—187)



1. A method of forming a three-layer semi-conductor slice, comprising the following steps:

(i) masking a portion of one face of a slice of one conductivity type and covering the remainder of said one face with a first impurity of the opposite conductivity type;

(ii) subjecting the slice to a diffusion process and removing the mask;

(iii) then masking a portion of the opposite face and covering the remainder of said opposite face and at least those portions of said one face of the slice not covered by the first impurity with a second impurity of said opposite conductivity type, the second impurity having a slower rate of penetration than the first impurity; and

(iv) subjecting the slice to a further diffusion process to cause the first impurity to diffuse completely through the slice only in the regions originally covered by the first impurity, so that a three layer slice is produced with all three layers terminating on one face of the slice.

3,419,443

HYDRAZINE CONTAINING EXPLOSIVE COMPOSITIONS

Michel E. Maes, Bellevue, Wash., assignor to Explosives Corporation of America, Issaquah, Wash., a corporation of Washington

No Drawing. Filed Apr. 17, 1967, Ser. No. 631,123
31 Claims. (Cl. 149—1)

Explosive compositions characterized by a nominally liquid condition and a very high detonation velocity, and with low freezing point, low viscosity and low impact sensitivity characteristics, said explosive composition comprising as essential ingredients an at least principally hydrazinium oxidizer salt (e.g., hydrazinium nitrate and mixtures thereof with hydrazinium perchlorate), hydrazine, and ammonia, and comprising as optional additives various compatible desensitizers, gelling agents, wetting agents, self-sterilizing components, freezing point depressants, low gas producing substituents, and waterproofing agents. Also presented are modes of preparation of the compositions, involving either premix of the ingredients, or mixing thereof in place at the situs of use. Relative proportions by weight of the essential ingredients are as follows: $N_2H_5NO_3$, from about 40% to about 92%; $N_2H_5ClO_4$, from 0% to about 40%; N_2H_4, from about 6% to about 15%; and NH_3, from about 2% to about 15%. Optionally, minor proportions of the nitrate and perchlorate salts can be metallic salts.

3,419,444

THICKENED AQUEOUS INORGANIC NITRATE SALT-NITROPARAFFIN EXPLOSIVE COMPOSITION SENSITIZED WITH AN AIR ENTRAPPING MATERIAL

Joseph J. Minnick, Marion, Ill., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed May 3, 1967, Ser. No. 635,681
17 Claims. (Cl. 149—2)

A thickened slurry explosive which contains an inorganic nitrate oxidizing salt, a nitroparaffin, e.g., nitromethane, nitroethane, 1-nitropropane, 2-nitropropane, and 2,2-dinitropropane, water, a sensitizer, e.g., a non-explosive, finely divided air-entrapping material, and a thickening agent. Said explosive composition is useful in small bore hole blasting operations.

3,419,445

COMPOSITE PROPELLENT COMPOSITIONS CONTAINING ROUNDED OXIDIZER PARTICLES OF A MAXIMUM SIZE OF 100 MICRONS

Michael Markels, Jr., Alexandria, Va., assignor to The Susquehanna Corporation, a corporation of Delaware

No Drawing. Filed July 20, 1960, Ser. No. 44,227
20 Claims. (Cl. 149—19)

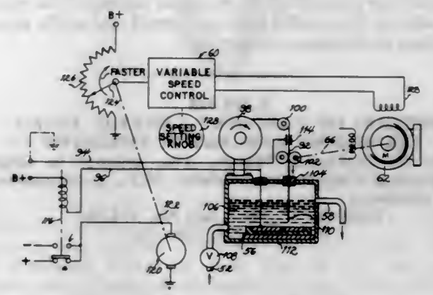
1. In composite propellent compositions comprising an insoluble solid inorganic oxidizer salt dispersed in an organic fuel matrix, the improvement in which at least about 5% by weight of the total oxidizer salt consists essentially of particles having rounded contours and a maximum size of about 100 microns.

3,419,446

METHOD AND MEANS FOR CONTINUOUS CONTROL OF ETCHING RATE

Robert C. Benton, State College, Pa., assignor to Chemcut Corporation, a corporation of Pennsylvania

Filed Feb. 15, 1965, Ser. No. 432,475
17 Claims. (Cl. 156—3)



1. In the etching of metal simultaneously from a succession of articles, arranged in a continuous series through the etching zone of an etcher, the improved steps comprising:

setting the articles in movement at a given rate of speed over a path in the etcher leading through and past the etching zone;

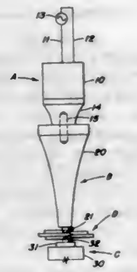
feeding a portion of a continuous control element of metal into a path of exposure to the etchant of the etcher whereby, under sustained attack of the etchant, the etchant dissolves the metal of the control ele-

ment until a point of discontinuity is reached as a measure of the each rate strength of the etchant;

sensing the point of discontinuity in comparison with the point at which the discontinuity is attained corresponding to a reference rate of attack; and

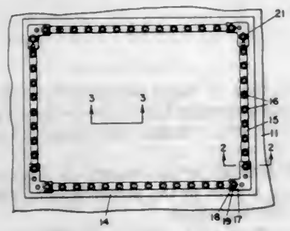
automatically adjusting the movement of the articles in a speed decreasing direction in response to sensing that the point of discontinuity is being reached at a point corresponding to a rate of attack slower than the reference value.

3,419,447
METHOD AND APPARATUS FOR BONDING TOGETHER TWO THERMOPLASTIC SHEETS BY ULTRASONIC ENERGY
Eugene E. Hewitt, Walkerton, Ind., assignor to Uniroyal, Inc., a corporation of New Jersey
Filed Mar. 22, 1965, Ser. No. 441,794
16 Claims. (Cl. 156—73)



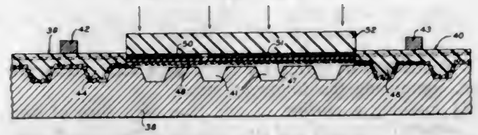
A method of and apparatus for bonding thermoplastic sheets to one another wherein adjacent marginal regions of the sheets are overlapped to form an area of double thickness and this area is then passed between a pair of ultrasonically vibrating tools. The tools compress and heat an intermediate portion of said area and are constructed and arranged to concurrently (1) transpose the sheets into a common plane, (2) bond the sheets to one another in said intermediate portion, and (3) cut off a pair of unbonded edge portions of the marginal regions at the opposite sides of the bonded portions thereof and at the opposite faces of the sheets, respectively.

3,419,448
METHOD OF PATCHING CERAMIC LINED EQUIPMENT AND PATCH THEREFOR
Travis R. Dickinson, Mobile, Ala., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,396
9 Claims. (Cl. 156—94)



7. A method of covering a damaged portion of a ceramic lined wall of a piece of material handling equipment, comprising filling the damaged portion of the wall with a patching cement which is unaffected by the material being handled by the equipment, covering the damaged portion of the wall and a portion of the surrounding ceramic lining with a gasket of thin sheet material which is flexible and resilient and which is unaffected by the material being handled in the equipment, placing a gasket clamp of a rigid material which is unaffected by the material being handled and which is in the form of a closed figure and having at least two depending edges over the gasket adjacent the periphery thereof, and securing said gasket clamp to the wall of the equipment for clamping the gasket tightly against the ceramic lining around the damaged portion of the wall.

3,419,449
METHOD OF MAKING TRANSMISSION BELTS
Panfillo A. Di Valerio, Ardmore, Pa., William A. Skura, Audubon, N.J., and John E. O'Donnell, Warminster, Pa., assignors to Uniroyal, Inc., a corporation of New Jersey
Filed Aug. 2, 1965, Ser. No. 476,433
12 Claims. (Cl. 156—159)



1. A method of making an endless transmission belt comprising the steps of: providing a plurality of discontinuous belt sections, each of said sections comprising a rubber body portion with spaced teeth extending transversely thereof and a plurality of tension cords embedded longitudinally in said body portion, the ends of said cords extending outwardly from the ends of said body portion; aligning the ends of said belt sections so that the outermost tooth on each end of each section is spaced a predetermined distance from the outermost tooth on an adjacent section and so that the opposed pairs of corresponding cords overlap; removing portions of said cord ends in a staggered pattern so that said opposed corresponding cords no longer overlap and so that the total length of each pair of said corresponding cords approximates said predetermined distance; embedding said cord ends in rubber to form an endless rubber body portion; and forming spaced transverse teeth on said body portion between said outermost teeth.

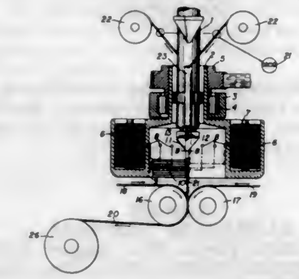
3,419,450
PROCESS FOR BONDING RUBBER TO SHAPED POLYESTER STRUCTURES
Henry R. Krysiak, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 6, 1964, Ser. No. 409,580
9 Claims. (Cl. 156—330)

The process for bonding rubber to shaped structures of polyesters which comprises coating the structure with an aqueous medium containing a specific epoxylated novolak resin, a rubber latex, and a resorcinol-formaldehyde resin; heating the coated structure; and then applying and curing a layer of rubber on the coated structure.

3,419,451
METHOD AND APPARATUS FOR MAKING MULTICOMPONENT NONWOVEN FABRIC
Emilian Bobkowicz, 1155 Dorchester Blvd., W. Suite 905, Montreal 2, Quebec, Canada
Filed Apr. 23, 1965, Ser. No. 450,444
14 Claims. (Cl. 156—161)

Multicomponent nonwoven fabric is produced by extruding from a die a curtain of warp resin filaments which

are then stretched to provide molecular orientation, simultaneously helically and continuously winding by means of a rotating frame a plurality of weft yarns around these warp filaments, which weft yarns, in order to achieve regular spacing, first pass in the notches of serrated strips running along the edges of said curtain of

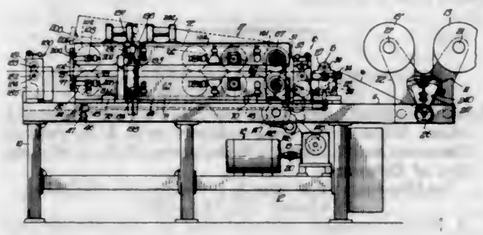


warp filaments, and lamination and consolidation of the obtained warp-weft construction are effected by a pair of pick-up pressure rolls which are driven at a higher speed than the extrusion rate of the warp filaments and thus also accomplish the stretching and resulting molecular orientation of the latter.

3,419,452
PROCESS FOR BONDING RUBBER TO POLYESTER STRUCTURES
Henry R. Krysiak, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 6, 1964, Ser. No. 409,558
6 Claims. (Cl. 156—328)

The process for bonding rubber to polyester structures which comprises coating the structure with an aqueous medium containing dispersed solids of a specific epoxylated novolak resin, a stated proportion of a polypeptide, and a synthetic butadiene/styrene/vinyl pyridine terpolymer latex, heating the coated structure to dry and cure the coating; and then applying and curing the rubber on the coated structure.

3,419,453
MACHINE FOR FORMING CONTAINERS FROM THERMOPLASTIC WEBS OR TUBING
Albert A. Levenson, Jr., Worth, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 27, 1963, Ser. No. 333,846
18 Claims. (Cl. 156—513)



A bag fabricating machine which comprises a means for advancing a flattened tubular web between opposed runs of horizontally disposed endless chain conveyors which carry co-operating transversely extending sealing bars and gripper bars, the latter being operated to hold bag forming sections of the web between longitudinally spaced points and also to grip the same intermediate such points and advance portions of each bag section so as to relieve longitudinal tension in said portions while the seals are formed therein by the sealing bars. The machine includes mechanism for perforating the bag material at longitudinally spaced intervals and a flying splice apparatus.

3,419,454
METHOD OF MAKING AND REINFORCING DECORATIVE POLYESTER RESIN PRODUCTS
Alfred Hoffman, Goncourt St., D'Anjon, Quebec, Canada
Filed Aug. 14, 1964, Ser. No. 389,554
3 Claims. (Cl. 161—5)



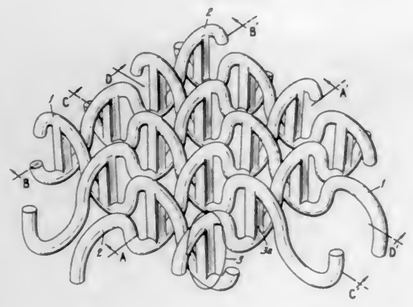
A product and method of making decorative building products including forming and hardening of a transparent plastic material and thereafter reinforcing said material with a cementitious material.

3,419,455
MOLDED DECORATIVE ARTICLE
Arthur H. Roberts, Brooklyn, N.Y.
(12 Lynnwood Drive, Westbury, N.Y. 11590)
Continuation-in-part of applications Ser. No. 22,002, Apr. 13, 1960, Ser. No. 455,764, May 14, 1965, Ser. No. 475,989, July 30, 1965. This application Jan. 28, 1966, Ser. No. 523,778
15 Claims. (Cl. 161—7)



This invention relates to composite rigid decorative articles of manufacture and processes for their manufacture. The articles comprise a hollow outer shell component and an inner rigidifier component. The shell component is a premolded pliable plastic which has an access opening. The rigidifier component is a rigid cellular plastic positioned behind the inner walls of the shell component and is integrally formed therewith. Vinyl chloride in polymerized and plasticized state illustrates suitable materials for forming the shell component. Rigid polyurethane foams illustrate a suitable rigidifier component. In a favored embodiment the rigidifier component forms a second cavity. Such joint cavity may be reinforced by an ancillary reinforcing element, such as a flexible epoxy resin and a flexible polyester resin, among others. The wall thickness of the shell component ranges advantageously from about 15½ to about 250 mils. In the manufacturing process one of the favored embodiments is to foam in place in the hollow shell component in layers, thereby, in most cases, eliminating the need for reinforcing molds during the foaming step.

3,419,456
MOLDED FABRIC
Alvan H. Tenney, New York, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 43,085, July 15, 1960. This application Mar. 25, 1964, Ser. No. 354,591
3 Claims. (Cl. 161—72)



A molded flexible fabric including interlaced strands interlocked by pivotal columns at overlapping cross points.

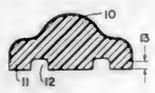
3,419,457
LAMINATED STRUCTURE WITH FORMER ELEMENT
Desmond Harold Bleasdale, 12 Griffin Road, North Curl Curl, New South Wales, Australia
Filed Aug. 6, 1965, Ser. No. 477,839
Claims priority, application Australia, Aug. 10, 1964, 47,949/64
6 Claims. (Cl. 161—102)



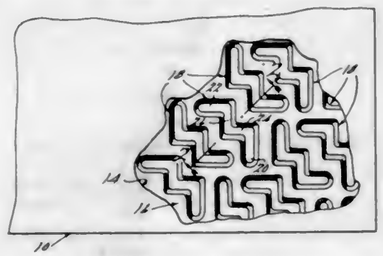
This invention provides for more economical construction of ribbed laminated structures in which a composite structure is made from two layers of reinforced plastic one elevated from the other in a pattern of ribs formed by laying the sceond layer upon a former sheet having the desired pattern of ribs impressed therein between rows of holes through which the second layer is bonded to the first.

3,419,458
DECORATIVE EXTRUDED PLASTIC STRIPPING AND LAMINATED PRODUCTS INCLUDING THE SAME
Charles Brooks and Thomas Sutton, Brooklyn, N.Y., assignors to Cee Bee Mfg. Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed May 7, 1964, Ser. No. 365,840
4 Claims. (Cl. 161—121)

The disclosure describes extruded plastic stripping for decorative application purposes having a reinforcing cover which will terminate short of the bottom of the side walls with the die enclosing said strip having its edges extending beyond the edges of the cover, but terminating short of the bottom of the strip. The bottom of the strip is provided with longitudinal recesses or valleys or grooves which receive any excess molten material resulting from said attachment. As a result, a more secure attachment is obtained and flashing is prevented.



3,419,459
PACKAGING MATERIAL
Ralph J. Haren, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed July 20, 1964, Ser. No. 383,845
7 Claims. (Cl. 161—134)



A packaging material for making boxes comprises a sheet of container grade paperboard and a support sheet of extensible paperboard secured to it and provided with an array of overlapping, bend resisting, W-shaped indentations that form air cells that resist crushing.

3,419,460
POLYETHYLENE TEREPHTHALATE FILMS CONTAINING SURFACE PROTRUSIONS
George R. Ure, Mecklenburg, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware
No Drawing. Filed June 29, 1965, Ser. No. 468,126
22 Claims. (Cl. 161—162)

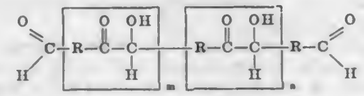
A process for the production of thermoplastic films and the product produced thereby, the process involving the dispersion of minor amounts of inert particles throughout said film whereby a film having protusions ranging from about 2 to about 100 millimicrons from the non-protruded base is obtained.

3,419,461
POLYMERIC LAMINATE AND ARTICLE COVERED THEREWITH
John C. Gebhard, Jr., West Chester, Pa., and Edward J. Mead, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 2, 1966, Ser. No. 546,522
15 Claims. (Cl. 161—184)

A thermoformable material that is also durable and weatherable and, hence, useful as a protective coating for exposed exterior building parts is composed of a laminate of a thin polyvinyl fluoride film bonded to a relatively thick base sheet of a filled copolymer. The copolymer is composed of a hydrocarbon monomer having the formula $R—CH=CH_2$, R being hydrogen or a lower alkyl radical and an alpha,beta-ethylenically unsaturated carboxylic acid having 3–8 carbon atoms. The filler is 10–60 weight percent of an amphoteric oxide.

3,419,462
BENZOIN-TYPE COPOLYMERS AND GLASS FABRIC LAMINATES THEREOF
Rudolf Wehr, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Dec. 4, 1963, Ser. No. 328,099. Divided and this application Nov. 28, 1967, Ser. No. 701,506
3 Claims. (Cl. 161—198)

This invention relates to benzoin-type copolymers having the structure



where R can be as defined in Formula 1, in which the recurring units *m* and *n* can contain unlike R groups. The benzoin-type copolymers have utility as coatings and can be cross-linked for bonding together layers of glass fabric.

3,419,463
ADHESION OF POLYESTER TO RUBBER
William D. Timmons, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Nov. 12, 1965, Ser. No. 507,533
11 Claims. (Cl. 161—231)

A method of adhering polyester materials to rubber comprising coating the polyester with an alkyl ester of an aromatic or haloaromatic acid and applying a conventional adhesive, then applying the rubber and curing.

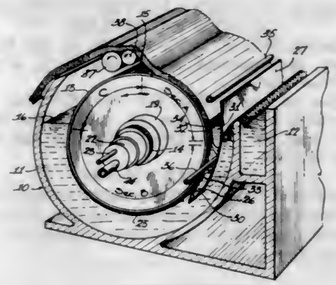
3,419,464
ADHESION OF POLYESTER TO RUBBER
William D. Timmons, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Nov. 12, 1965, Ser. No. 507,586
11 Claims. (Cl. 161—231)

A method of adhering polyester materials to rubber comprising coating the polyester with a polyhalogenated aromatic hydrocarbon and applying a conventional adhesive then applying the rubber and curing.

3,419,465
SAPONIFIED ROSIN SOLUTION OF A VINYL POLYMER AND METHOD OF SIZING PAPER THEREWITH
Iwao Maruta, Yawata-machi, Japan, assignor to Kao Soap Company, Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,735
2 Claims. (Cl. 162—168)

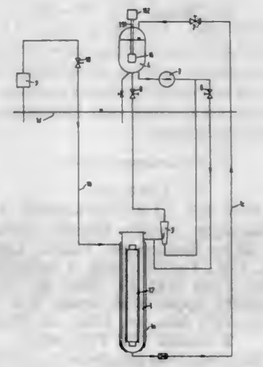
An aqueous composition for use in engine sizing paper, suitable for use in high concentration at low temperatures, is prepared by dissolving a water-insoluble vinyl polymer selected from the group consisting of polyvinyl acetate, water-insoluble partially saponified derivatives of polyvinyl acetate, acetalized polyvinyl alcohols, polymers of dodecyl acrylate, polymers of methyl methacrylate, and water-insoluble copolymers of vinyl acetate with a member selected from the group consisting of vinyl pyrrolidone, acrylic acid amide, sodium acrylate and maleic anhydride, the water-insoluble vinyl polymer being dissolved in a saponified rosin solution and being present in an amount from 5 to 200 parts by weight per 100 parts by weight of the saponified rosin.

3,419,466
METHOD AND APPARATUS FOR WASHING PULP
Ola Sepall, Quebec, Quebec, Canada, assignor to Anglo Paper Products Limited, Quebec, Quebec, Canada
Filed Oct. 12, 1964, Ser. No. 403,004
2 Claims. (Cl. 162—204)



A method and apparatus for washing pulp wherein the pulp is formed into a sheet on a traveling screen, the improvement which comprises moving the screen with the pulp sheet thereon through a continuous body of wash liquid to submerge therein a portion of the screen and pulp sheet while simultaneously creating a difference in pressure across the submerged portion of the screen and pulp sheet to cause a flow of wash liquid through the screen and sheet.

3,419,467
METHOD OF AND APPARATUS FOR LOCATING ENVELOPE-TUBE DAMAGE AT INDIVIDUAL NUCLEAR FUEL ELEMENTS IN A REACTOR CORE
Rolf Holzer, Heinz Stehle, Franz Schubert, Robert Weber, and Erich Klar, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany
Filed Oct. 24, 1965, Ser. No. 504,943
Claims priority, application Germany, Mar. 31, 1965, S 96,296
8 Claims. (Cl. 176—19)



Method of locating envelope-tube damage of individual nuclear fuel elements in a reactor core includes coarsely checking respective multi-element regions of the core for occurrence of damage to thus detect any suspicious core region, individually and sequentially removing the fuel elements from the suspicious region and inserting them into a pressure vessel for testing the respective fuel elements, rinsing each element in the testing vessel with water and repeatedly changing pressure and temperature

of the water in the testing vessel and measuring the concentration of fission products contained in the water. Apparatus for carrying out the above-mentioned method includes means for repeatedly changing the pressure and temperature of the water in the testing vessel.

3,419,468

EXTRUDED GRAPHITE MATRIX CONTAINING COATED PARTICLES

Mark J. Smith, Wilson, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 539,836, Apr. 4, 1966, which is a division of application Ser. No. 304,194, Aug. 23, 1963. This application July 6, 1967, Ser. No. 653,300

1 Claim. (Cl. 176—69)

A nuclear fuel rod of heterogeneous composition and predetermined length consisting of nuclear fuel particles with unbroken coatings distributed throughout an extruded graphite matrix.

3,419,469

PRODUCTION OF CARBOXYLIC ACIDS BY MICROBIOLOGICAL OXIDATION OF HYDROCARBONS

Arthur E. Humphrey, Drexel Hill, Pa., and Richard L. Raymond, Wilmington, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Dec. 8, 1965, Ser. No. 512,543

10 Claims. (Cl. 195—28)

Improved yield of carboxylic acids by the fermentation of hydrocarbons is obtained by carrying out the fermentation in the presence of an anion exchange resin. The carboxylic transformation product is recovered from the resin.

3,419,470

11-MICROBIOLOGICAL HYDROXYLATION OF STEROIDS IN PRESENCE OF DIMETHYLSULFOXIDE

Alejandro Zaffaroni, Atherton, Calif., and Carlos Casas Campillo, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,872

Claims priority, application Great Britain, Mar. 15, 1965, 10,791

12 Claims. (Cl. 195—51)

1. In the process for producing 11-hydroxylated steroids by incubating the corresponding 11-desoxy steroid with a microorganism capable of effecting said hydroxylation or with the enzymes produced thereby, the improvement comprising conducting said incubation in the presence of dimethylsulfoxide.

3,419,471

PREPARATION OF ALBUMIN-FREE LYSOZYME

Yoshitaka Matsuoka, Yoshio Hidaka, Masayuki Yoshizawa, and Akira Hashimoto, Tokyo, Japan, assignors to Eisai Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,838

Claims priority, application Japan, Apr. 19, 1965, 40/22,707; June 16, 1965, 40/35,505

7 Claims. (Cl. 195—66)

1. Process for preparing albumin-free lysozyme, which comprises desalting an aqueous solution of crude lysozyme or its salts containing albumins and inorganic salts as impurities, adjusting the pH of the desalted solution to 6.0–10.5 and the ionic strength of the desalted solution to not more than 0.5 by the addition of buffer solution and filtering said solution by using a material selected from the group comprising of anion exchange celluloses and anion exchange dextrans as a filtering material, adsorbing said albumins on said filtering material and obtaining albumin-free lysozyme as filtrate.

3,419,472

PROCESS FOR PREPARING STREPTOKINASE-RICH MATERIAL

Pentti Kasper Silteri, Dallas, Tex., and Richard Douglas Mills, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Oct. 24, 1960, Ser. No. 64,655, now Patent No. 3,226,304, dated Dec. 28, 1965. Divided and this application Sept. 20, 1965, Ser. No. 488,752

The portion of the term of the patent subsequent to Dec. 28, 1982, has been disclaimed

18 Claims. (Cl. 195—68)

1. A one-cycle adsorption-elution process for preparing streptokinase-rich material from relatively impure sources thereof which consists in the steps of

(a) adsorbing crude streptokinase on a cellulose amine anion exchanger and

(b) desorbing purified streptokinase therefrom by means of elution,

said preceding steps taking place in the presence of a phosphate buffer system having a pH value of not less than about 5.8 and not more than about 8.5, a temperature of not less than 0° C. and not more than 10° C., and a molarity of not less than about 0.005 and during said adsorbing step of not more than about 0.1 and during said desorbing step of not more than about 0.4, and recovering the streptokinase-rich material from the eluate.

3,419,473

CONTINUOUS PHASED CULTURING OF CELLS

Peter S. S. Dawson, Saskatoon, Saskatchewan, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company of Canada

Continuation-in-part of application Ser. No. 437,734, Mar. 8, 1965. This application Nov. 22, 1967, Ser. No. 689,231

18 Claims. (Cl. 195—104)

A method of improving or maintaining the phasing of cells in a cell culture by growing the cell culture at a predetermined rate in a nutrient medium which is present in an amount sufficient only for the cells in the cell culture to complete their cycle and at the doubling time of the cell culture i.e. the time when from 70 to 90% of the cells are on the point of dividing, adding further cell culture medium to at least a portion of the cell culture such that the cells have sufficient medium for completion of a further cycle.

3,419,474

METHOD OF COKING AND CLASSIFYING PARTICULATE MATTER BY FLUIDIZATION

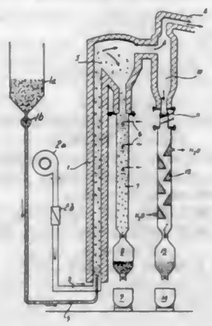
Werner Peters, Langacker 5, Wattenscheid-Hontrop, Germany, and Kurt-Christian Traenckner, Grosser Schirnkamp 15, Essen-Steele, Germany

Filed July 9, 1964, Ser. No. 381,586

Claims priority, application Germany, Sept. 24, 1963, B 73,630; Dec. 5, 1963, B 74,544

11 Claims. (Cl. 201—4)

A coking method, comprising the steps of introducing into the lower portion of an elongated upright tubular reaction vessel a suspension in a hot gas of coal particles adapted to be coked, the hot gas serving as substantially the sole source of heat for coking the coal particles, so as to form in the reaction vessel a stream consisting of the particles dispersed in hot gas and upwardly passing throughout substantially the entire length of the tubular reaction vessel in such a manner as to cause during the upward passage of the stream through the tubular reaction vessel coking of the coal particles and formation of a hot combustible gas thus converting the upwardly flowing stream during passage of the latter through the tubular reaction vessel into a suspension of coked particles in combustible gas, withdrawing the suspension from the upper portion of the tubular reaction vessel, and



separately recovering from the withdrawn suspension the coke and the combustible gas thereof.

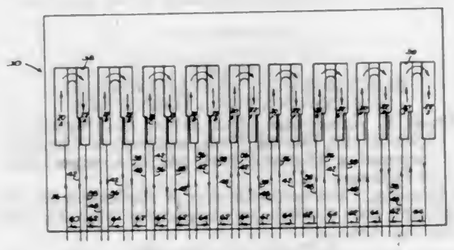
3,419,475

HIGH CHAMBERED COKE OVEN STRUCTURE

Linwood G. Tucker, Pittsburgh, and Elliott Preston, Glenshaw, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Sept. 1, 1964, Ser. No. 393,512

5 Claims. (Cl. 202—143)



This disclosure relates to a hairpin flue type high chambered coke oven structure. The heating chambers have a plurality of aligned vertical flues with high and low burners in each flue. The flues are arranged in interconnected pairs for flow of combustion gas from one flue into the adjacent interconnected flue through an opening in the partition wall separating the interconnected flues. Division walls separate the pairs of interconnected flues from adjacent pairs of interconnected flues. There are vertical supply passageways extending upwardly to each high and low burner from a gas distribution system located below the base of the flues that are arranged to supply fuel gas to the high and low burners of one of the interconnected flues. There are transverse passageways connecting the vertical supply passageways so that the first portion of the waste combustion gas is admixed with the fuel gas being supplied to one of the burners of the interconnected pair of flues and a second portion of the waste combustion gas is admixed with the fuel gas being supplied to one of the burners of a separate non-connected flue on the opposite side of the division wall. With this arrangement, waste combustion gas is circulated between flues separated by a division wall.

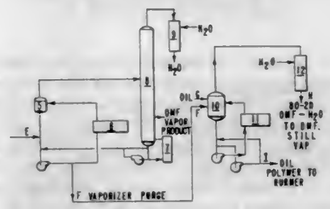
3,419,476

PROCESS FOR RECOVERING LIQUID CARBOXYLIC ACID AMINE SOLVENT FROM AQUEOUS SOLUTION THEREOF CONTAINING ACETYLENIC POLYMERS BY FLASH DISTILLATION WITH A HYDROCARBON OIL

Ronald Leo Hagedorn, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 11, 1967, Ser. No. 630,120

6 Claims. (Cl. 203—52)



Process of recovering liquid carboxylic acid amide solvent from an aqueous solution thereof containing acetylenic polymers comprising contacting said aqueous solution with a hot high-boiling hydrocarbon oil to substantially flash distill said solvent and water, recovering said amide, said polymers after said contacting maintaining a single phase in said oil.

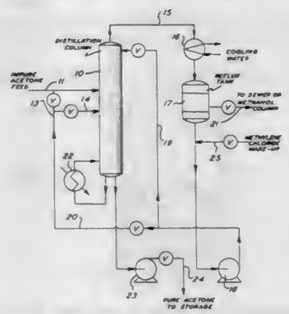
3,419,477

PROCESS FOR PURIFYING ACETONE BY AZEOTROPIC DISTILLATION WITH AN ALKYLCHLORIDE

Manlio M. Mattia, Ridley Park, Pa., assignor to Day & Zimmermann, Inc., Philadelphia, Pa., a corporation of Maryland

Filed Nov. 2, 1967, Ser. No. 680,156

4 Claims. (Cl. 203—67)



A method for purifying acetone containing less than ten weight percent of water and methanol which comprises azeotropically distilling such impure acetone with either methylene chloride or propyl chloride as an entraining agent.

3,419,478

AZEOTROPIC DISTILLATION OF A N,N-DIMETHYLACETAMIDE-ACETIC ACID MIXTURE USING A SATURATED ALIPHATIC HYDROCARBON

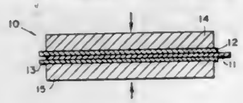
Emmette F. Izard, Kenmore, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 13, 1966, Ser. No. 601,355

5 Claims. (Cl. 203—70)

Mixtures of N,N-dimetnylacetamide (DMAC) and acetic acid are separated by azeotropic distillation using certain aliphatic hydrocarbons, such as nonane.

3,419,479
ANODIC PRINTING FOR DETECTING DEFECTIVE SITES IN VALVE METAL OXIDE FILMS
Gerhart P. Klein, Manchester, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,897
13 Claims. (Cl. 204—1)

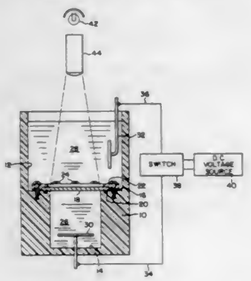


This is a method for detecting and recording defect sites in metals having an oxide film on the surfaces thereof. The metal has a surface or surfaces thereof coated with an indicator means consisting essentially of about 1 to about 20 g./liter of potassium iodide, about 0 to about 30 g./liter of borax, about 10 to about 50 g./liter of starch, and about 10 to about 60 g./liter of agar-agar in water. The indicator means is contacted with means for recording variations in the indicator means. A current flows through the defects, if any, in the oxide film causing a variation in the indicator means, at the sites of current flow. The variation in the indicator means is recorded by the recording means.

ERRATUM

For Class 204—10 see:
Patent No. 3,419,901

3,419,480
ANODIC OXIDATION
Paul F. Schmidt, Allentown, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 12, 1965, Ser. No. 439,163
1 Claim. (Cl. 204—15)



This invention sets forth a method of forming doped oxide films on both sides of a silicon wafer by bringing different electrolytes in contact with opposite sides of the wafer and by establishing a potential between electrodes in the electrolytes grow a doped oxide coating on first one surface and then the other.

3,419,481
ELECTROLYTE AND PROCESS FOR ELECTROPLATING BLACK CHROMIUM AND ARTICLE THEREBY PRODUCED
John B. Nelson, Jr., Chardon, Ohio, assignor to Diamond Shamrock Corporation, a corporation of Delaware
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,075
7 Claims. (Cl. 204—51)

1. A composition of matter for use in the electro-deposition of black, chromium-containing deposits which is an aqueous solution consisting essentially of from about 60 grams per liter to saturation of chromic anhydride, a fluoride-containing catalyst in an amount sufficient to supply from about 0.03 to about 1 gram of fluoride in solution per liter, an inorganic nitrogen-containing compound in an amount sufficient to supply the equivalent of from about 0.35 to about 3.5 grams of (NO_2) radical per liter, said aqueous solution being substantially completely free of sulfate ions.

3,419,482
ELECTROLYTIC METHOD FOR PREPARING POLYAMIDES
Heinrich Gilch, Krefeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 24, 1966, Ser. No. 529,629
Claims priority, application Germany, Mar. 26, 1965 F 45,648
8 Claims. (Cl. 204—62)

1. A method for preparing synthetic linear polyamides which comprises polymerizing a lactam having at least seven ring members or mixtures thereof at the cathode of an eletcrolytic cell in the presence of an alkali metal salt and a co-catalyst at temperatures of between 130° C. to about 270° C.

3,419,483
TWO STAGE ELECTROLYTIC AND CHEMICAL PROCESS FOR ALPHA-OLEFIN CONVERSION TO ALIPHATIC ACIDS
Gunner E. Nelson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 28, 1964, Ser. No. 340,782
5 Claims. (Cl. 204—79)

Acids are produced from alpha olefins without chain length degradation by performing a two stage oxidation, the first in an electrolytic stage, the second stage selective to completion of the initial oxidation to the acid state.

3,419,484
ELECTROLYTIC PREPARATION OF SEMICONDUCTOR COMPOUNDS
Frank E. Ammerman, Ann Arbor, and Donald J. Schindehette, Detroit, Mich., assignors to Chrysler corporation, Highland Park, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 292,487, July 2, 1963. This application Mar. 23, 1966, Ser. No. 536,624
8 Claims. (Cl. 204—86)

An electrodeposition process for directly preparing antimonide, arsenide, telluride semiconductor compounds. The process comprises placing into simultaneous solution as cations the two or more elements which comprise the compound to be synthesized. One of these elements is one of the semi-metals of tellurium, arsenic or antimony and the other element any substance which has a deposition potential less noble than that of the semi-metal when both elements are in solution. The solution is then supplied with electrons with the result that the desired compound is formed and deposited on the electron source.

3,419,485
ELECTROPOLISHING PLATINUM IN A MOLTEN BATH OF POTASSIUM THIOCYANATE AND POTASSIUM CYANIDE
Robert Seegmiller and James K. Gore, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed June 3, 1966, Ser. No. 555,931
4 Claims. (Cl. 204—140.5)

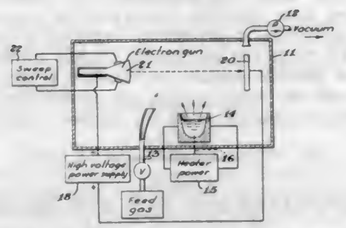
1. A method of electropolishing platinum to a brilliant mirror finish comprising electrically biasing platinum

anodically in a molten solution consisting essentially of potassium cyanide and potassium thiocyanate, said solution being at a temperature in the range of 200°–320° C. and the current density being between 1–5 amp/sq. In.

3,419,486
PHOTOCHEMICAL PRODUCTION OF β-CHLOROETHANE SULFOCHLORIDE
Walter Schenk, Bad Durkheim, and Hans Stanger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 28, 1964, Ser. No. 385,787
Claims priority, application Germany, Aug. 8, 1963, B 73,048
5 Claims. (Cl. 204—162)

Production of β-chloroethane sulfochloride by reacting ethane, sulfur dioxide and chlorine in a molar ratio of SO_2:ethane of 1:1 to 1.5:1 and of Cl_2:ethane of 2:1, in an inert solvent and under high-energy radiation, e.g. rays of a wavelength of 200–500 microns, preferably at a temperature of −5° C. to +20° C. Hydrogen chloride gas is preferably introduced at the beginning of the reaction in an amount of 0.01 to 10 mole percent with reference to the ethane. The β-chloroethane sulfochloride product can be converted to vinylsulfonic acid or vinyl sulfonic acid esters which are useful monomers, e.g., for the production of ion exchange resins when copolymerized with styrene.

3,419,487
METHOD OF GROWING THIN FILM SEMICONDUCTORS USING AN ELECTRON BEAM
William B. Robbins, Cambridge, Mass., and Edward L. Kern, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Jan. 24, 1966, Ser. No. 522,580
3 Claims. (Cl. 204—164)



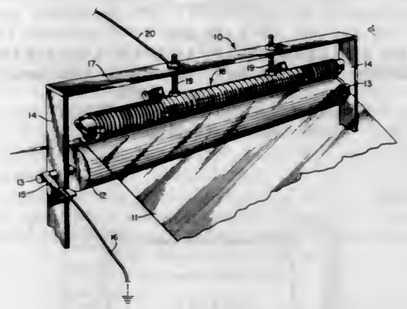
1. A method of forming on a substrate thin films of semiconductor materials consisting of at least one intermetallic compound selected from the class consisting of cadmium sulfide, cadmium selenide, cadmium telluride, zinc sulfide, zinc selenide, zinc telluride, gallium antimonide, gallium arsenide, indium antimonide, and indium arsenide which comprises:

depositing a layer of the metallic element of said intermetallic compound selected from the class consisting of cadmium, zinc, gallium, and indium on said substrate,

3,419,488
ELECTRO-DEPOSITION OF PAINT USING AN ION EXCHANGE MEMBRANE
Brian Alfred Cooke, Chalfont St. Peter, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,771
Claims priority, application Great Britain, Apr. 8, 1964, 14,538/64
7 Claims. (Cl. 204—181)

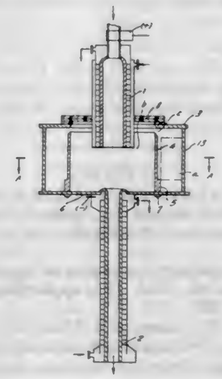
A process of electro-deposition of a film-forming material by passing an electric current through an aqueous dispersion of the material between an article to be coated and another electrode. The other electrode is separated from the aqueous dispersion or solution by an ion-exchange membrane selectively permeable to ions attracted to the other electrode.

3,419,489
CORONA TREATING APPARATUS HAVING AN ELECTRODE WITH AN ADJUSTABLE WIDTH
John T. Delaney, Jr., Pattenburg, N.J., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed May 3, 1966, Ser. No. 547,287
6 Claims. (Cl. 204—312)



6. In the apparatus of claim 2 wherein means is provided to mount said electrode in a fixed position relative to a second electrode.

3,419,490
REACTOR FOR ACETYLENE PRODUCTION FROM HYDROCARBON GASES BY ELECTROCRACKING IN DIRECT CURRENT
Nicolae Petrescu and Leo Knall, Bucharest, Rumania, assignors to Ministerul Industriei Chimice, Bucharest, Rumania, a firm
Continuation-in-part of application Ser. No. 418,818, Dec. 16, 1964. This application July 18, 1967, Ser. No. 654,207
Claims priority, application Rumania, Jan. 20, 1964, SN 47,414
10 Claims. (Cl. 204—323)



This invention relates to a novel improved reactor for acetylene production from hydrocarbon gases by electrocracking them by means of a direct current.

The reactor of the invention comprises a preferably cylindrical chamber through which the hydrocarbon gases, which are used as a raw material, pass at high speeds. A pair of vertical electrodes extends from opposite sides

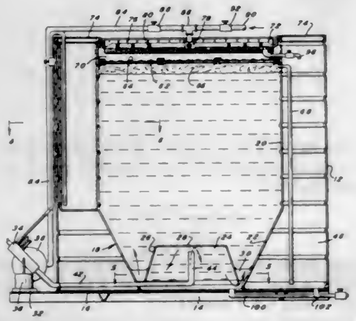
of the cylindrical chamber. An electric arc is formed between these electrodes during operation of the device and is discharged into the hydrocarbon gases, thereby converting at least a portion of these gases into acetylene. The upper electrode of the device is supported on the cylindrical chamber by, at least, one layer of insulating material having no refractory characteristics. A cylindrical jacket is vertically, adjustably mounted on the lower horizontal wall of the cylindrical chamber. An annular opening is formed between the upper edge of the cylindrical jacket and the upper horizontal wall of the chamber. A slide valve is mounted in the gas inlet pipe of the reactor for adjusting the gas flow thereto.

3,419,491

WATER TREATMENT APPARATUS AND METHOD

Matthew A. Messa, 604 Cedarbrook Apartments, Wyncote, Pa. 19095

Filed Oct. 23, 1965, Ser. No. 503,567
12 Claims. (Cl. 210—20)



Water treatment apparatus and method is disclosed including an upflow clarifier in which a floc blanket will be provided. The floc blanket is prevented from being upset and removed along with tilted water by contact with a porous medium which defines the upper limit of the floc blanket and additionally performs a filtering action. The clarifier is surrounded by a collection chamber which communicates with the clarifier at a location adjacent but below the porous medium. Means are provided for continuously removing clarified water from the sludge collection chamber. A coagulant and a pH correction chemical are introduced into the water at the bottom of the upflow clarifier.

3,419,492

DESALINIZATION OF AQUEOUS SOLUTIONS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 376,561, June 19, 1964. This application Sept. 5, 1967, Ser. No. 665,226
8 Claims. (Cl. 210—32)

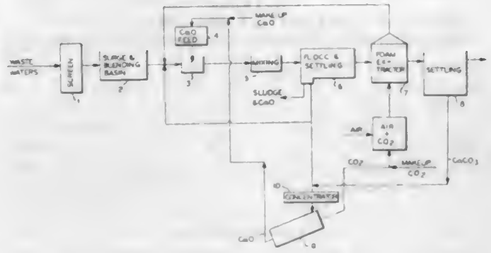
A composition for use in a processing scheme designed to separate water from an aqueous salt solution—e.g. sea water. The compounds are water-insoluble polymers of aliphatic and/or aromatic, ethylenically unsaturated amino acids which are cross-linked with a ketone and/or an aldehyde. The acid-acting radical of the amino acid is selected from the group of sulfonic and carboxyl, and is substituted on a carbon atom separted from the carbon atom bearing the amino group by not more than five intervening carbon atoms. Preferred compositions are those polymers which are cross-linked by formaldehyde and/or acetole—i.e. an aromatic ethylenically unsaturated carboxylic amino acid cross-linked by acetole.

3,419,493

RECLAIMING WATER FROM TEXTILE MILL WASTE WATERS

James C. Pangle, Jr., Danville, Va., assignor to Dan River Mills, Incorporated, Danville, Va., a corporation of Virginia

Filed Dec. 22, 1966, Ser. No. 603,965
7 Claims. (Cl. 210—44)



Process for treating textile mill waste waters which contain a variety of dyestuffs, a variety of wetting and scouring agents, a variety of finishing chemicals and catalysts, a variety of dyeing assistants, a variety of sizing materials and caustic soda. Lime is mixed with the waste waters to adsorb impurities followed by settling out a major portion of the lime and adsorbed impurities as sludge and aerating the effluent with a gas containing air and carbon dioxide to produce a foam which is removed, broken and recycled to the waste waters. The effluent from the foam is held in a quiescent zone, allowing carbon dioxide to escape and calcium carbonate to precipitate, resulting in reclaimed water. The sludge and precipitated calcium carbonate are burned to provide calcium oxide which is recycled for mixing with the waste waters and carbon dioxide and other gaseous materials which are recycled to the aerating zone.

3,419,494

OIL-IN-WATER EMULSION AND METHOD OF MAKING SAME

Ford C. Teeter, Palos Heights, Ill., and Delbert Lee, Hammond, Ind., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 380,946, July 7, 1964. This application Mar. 6, 1967, Ser. No. 620,636
15 Claims. (Cl. 252—34.7)

A water-dispersible, pre-emulsified fluid composition is made from about 30 to 60 weight percent of an oil having a viscosity at least about that of kerosene, about 1 to 7 weight percent of an alkanol amide (e.g., diethanol amide of oleic acid), about 1 to 8 weight percent of a fatty acid salt (e.g., ammonium oleate), about 35 to 60 weight percent of water and viscosity-reducing amounts of a mineral acid, mineral acid salt, lower fatty acid or lower fatty acid salt, e.g. acetic acid, the ratio of the oil to the amide being about 5 to 20:1 and the total amount of the amide plus the fatty acid salt employed being about 3 to 15 weight percent. The fluid composition can be made by blending the amide with about 10 to 50 percent of the total amount of the oil and about 0.25 to 10 weight percent, based on the composition, of the fatty acid, adding an aqueous solution of base (e.g., ammonium hydroxide) followed by the addition of the balance of the oil, the water in increments and the viscosity reducer.

3,419,495

EXPANDED SILICA INSULATION MATERIAL

Helmut H. Weldes, Havertown, and David I. Netting, Springfield, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,210
7 Claims. (Cl. 252—62)

An improved, rigid, inorganic, weather-resistant, nonflammable, siliceous insulation material, which can be formed at low cost by the controlled expansion and gelation of an acidic silicic acid sol using a gelation accelerator and a foaming agent to form the cellular or forameniferous structure. The density, pore size and strength can be controlled over a wide range by simple variations in the composition and treatment and almost any desired shape can be obtained by using molds or the product may be formed directly as a continuous coating on pipes.

3,419,496

GARNET COMPOSITIONS

Avénir Vassiliev, Jean Nicolas, and Mieczyslaw Hildebrandt, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

No Drawing. Filed Mar. 31, 1965, Ser. No. 444,437
Claims priority, application France, Apr. 22, 1964, 971,828
4 Claims. (Cl. 252—62.57)

Garnet compositions having a resistivity higher than in known materials of this kind thus reducing considerably the dielectric losses. In these compositions are introduced paramagnetic ions Fe and Mn, in molecular proportions defined by the general formula

$$3[(1-x)Y_2O_3 \times Gd_2O_3]5(1-\epsilon)Fe_2O_3 yMnO_2$$

where

$$0.3<x<0.6$$
$$0.005<\epsilon<0.020$$
$$0.1<y<1$$

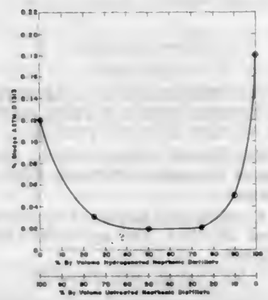
in mole proportion. These garnet compositions are used in "non-reciprocal devices" such as isolators, phase shifters, or circulators for ultra-high frequency electromagnetic waves.

3,419,497

ELECTRICAL INSULATING OIL

Albert G. Rocchini, Oakmont, and Charles E. Trautman, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,660
10 Claims. (Cl. 252—63)



The invention relates to an electrical insulation oil, resistant to oxidation and sludging, which consists essentially of blend of an untreated highly naphthenic lubricating oil distillate and a hydrogenated highly naphthenic lubricating oil distillate, said hydrogenated highly naphthenic lubricating oil distillate being produced by contacting a highly naphthenic lubricating oil distillate with hydrogen in the presence of a catalyst such as, for example, sulfides or oxides of molybdenum and at least two iron group metals. The amount of each oil in the composition may range from 1–99% by volume.

3,419,498

THERMALLY STABLE CELLULOSE PRODUCTS

Anthony J. Palumbo, Sharon, and James G. Ford, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed July 13, 1966, Ser. No. 564,766
7 Claims. (Cl. 252—63.7)

A thermally stabilized cellulosic insulation material for use in a transformer in the presence of air and a liquid dielectric and comprising a cellulosic paper having from about 0.02% to about 10% by weight, based on the total weight of the cellulosic paper, of at least one nitrogen-containing stabilizer selected from the group consisting of: acetamide, bis(hexamethylene) triamine, caffeine, dimethylglyoxime, hexamethylene phosphoric triamide, phthalimide, N-nitrosodiphenylamine, and trimethylamine borane.

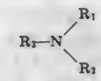
3,419,499

DEICER COMPOSITIONS

George Douglas Nelson, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 6, 1966, Ser. No. 548,052
14 Claims. (Cl. 252—70)

A particulate solid deicer composition is disclosed comprising tetrapotassium pyrophosphate and a water-soluble nitrogenous organic compound having a freezing point below 30° F. and represented by the formula



wherein R_1 and R_2 are each selected from the group consisting of hydrogen and lower alkyl and R_3 is selected from the group consisting of hydrogen, lower alkyl and



wherein R is selected from the group consisting of hydrogen and lower alkyl; the weight ratio of tetrapotassium pyrophosphate to said organic compound being at least about 3.5:1.

3,419,500

NOVEL PROCESS AND COMPOSITION

Edward Albert Rytter, Palisades Park, and Carl Robert Canter, Bloomfield, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,347
3 Claims. (Cl. 252—89)

Compositions containing ethylene oxide condensates and small proportions of water are disclosed. It has been found that from 7% to 25% water will cause liquefaction of ethylene oxide condensates, although the amount of water used is less than required to dissolve the ethylene oxide condensates.

ERRATUM

For Class 252—91 see:
Patent No. 3,419,902

3,419,501
METAL CLEANING COMPOSITION
Gert G. Levy, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
No Drawing. Filed May 10, 1965, Ser. No. 454,727
13 Claims. (Cl. 252—137)

A composition for removing rust and scale and which is especially adapted for cleaning the cooling system of internal combustion engines. The principal component of the composition is an alkali metal salt of a polyaminopolycarboxylic acid such as the tetrasodium salt of ethylenediaminetetracetic acid. The composition is a dry powder which is used in a less than 10 percent aqueous solution and at a pH in the range of 6 to 10.

3,419,502
PROCESS FOR DISPERSING SOLIDS IN AQUEOUS SYSTEMS
Theodore R. Newman, Oak Lawn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 400,921, Oct. 1, 1964. This application June 15, 1967, Ser. No. 646,337
8 Claims. (Cl. 252—180)

A process for dispersing and maintaining a dispersion of various solids that occur in surface waters. In the process, a particular hydrolyzed polyacrylonitrile polymer is added to the water. It is essential that the hydrolyzed polyacrylonitrile polymer be of low molecular weight. The molecular weight of the polymer should be no greater than 40,000. The use of low molecular weight hydrolyzed polyacrylonitrile polymers provides much improved results over the use of other suspension or dispersion materials as well as over high molecular weight acrylonitrile polymers of this type.

3,419,503
ACTIVATING A COMPOSITE CATALYST WITH HCl PRIOR TO A CARBON CHLORIDE TREATMENT
Joseph P. Giannetti, Allison Park, Alfred M. Henke, Springdale Township, Allegheny County, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed June 30, 1966, Ser. No. 561,710
9 Claims. (Cl. 252—441)

A composite catalyst of alumina and a hydrogenating metal is treated initially with hydrogen chloride and then treated with a carbon chloride, such as CCl_4, $CHCl_3$, CH_2Cl_2, CCl_2F_2, etc. to increase the halogen content of the catalyst. The catalyst activated by these steps provides a highly active, low temperature isomerization catalyst.

3,419,504
NOVEL SUBSITITUTED 1,3,5-TRIAZATRIPHOSPHORINES AND PROCESS FOR THEIR POLYMERIZATION
Gerald J. Klender, Bloomingdale, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Filed July 13, 1964, Ser. No. 382,385
18 Claims. (Cl. 260—2)

6. The condensation polymerization process comprising reacting at a temperature of at least 250° C. at least one species of hexa-substituted 1,3,5-triazatriphosphorine wherein from 3 to 4 of the substituents on each nucleus are blocking groups selected from the class consisting of phenyl groups, phenoxy groups and dialkylamino groups in which each alkyl group contains from 1 to 4 carbon atoms, and wherein the remaining substituents on each nucleus are selected from the class consisting of halo groups selected from the class consisting of chloro and bromo radicals and alkoxy groups each containing from 1 to 4 carbon atoms, the mole ratio of said halo groups to said alkoxy groups present in the starting material being in the range of from 1:2 to 2:1, and the mole ratio of halo groups to 1,3,5-triazatriphosphorine nuclei and the mole ratio of alkoxy groups to 1,3,5-triazatriphosphorine nuclei in the starting material each being at least 1:1, whereby alkyl halide is eliminated to form a polymer joined by P–O–P linkages between phosphorus atoms of adjacent triazatriphosphorine nuclei.

3,419,505
POLYMERIZATION PROCESS EMPLOYING A MODIFIED IRON COORDINATION CATALYST
William E. Marsico, Dallas, Tex., assignor to Columbia Carbon Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 400,543, Sept. 30, 1964. This application Aug. 18, 1965, Ser. No. 480,787
19 Claims. (Cl. 260—2)

A description is provided of the preparation of highly active homogeneous iron coordination catalysts by the interaction of a hydrocarbon soluble ferric compound, an aluminum alkyl and a phosphorus ester having at least one phosphinic hydrogen group. The use of such catalysts is illustrated by the homopolymerization of 1,2-alkylene oxides and conjugated dienes and the interpolymerization of conjugated dienes with alpha-olefins, alpha-unsaturated nitriles or alkylene oxides.

3,419,506
PRESSURIZED COMPOSITION FOR APPLYING FOAMED DRESSINGS
Robert J. Gander, Whitehouse, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
No Drawing. Filed Feb. 28, 1963, Ser. No. 261,824
10 Claims. (Cl. 260—2.5)

Protective film coverings or dressings for wounds are prepared by dispensing for a pressurized container a composition comprising a highly viscous solution-suspension of a film-forming vinyl acetate polymer or alkyl acrylate polymer and from 10 to 50% by weight of a finely divided filler selected from the group consisting of nonfibrous particles of less than 10 microns particle size and fibrous particles of no more than 0.025 inch. The polymer is dissolved in a propellent such as a halogenated aliphatic hydrocarbon while the filler is suspended in said propellent. The composition has a viscosity at normal room temperature of at least 1000 centipoises.

3,419,507
HOT-PRESS WATER-RESISTANT AMINO ALCOHOL ESTER INTERPOLYMER LATEX-BASED ADHESIVE FOR VARIOUS SUBSTRATES
Frederick Le Roy Brown, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 140,238, Sept. 25, 1961. This application July 15, 1965, Ser. No. 472,305
11 Claims. (Cl. 260—8)

This application is concerned with adhesive compositions consisting essentially of a mixture of a water-dispersible, finely divided proteinaceous or carbohydrate filler and a cationic latex composed of an amino alcohol ester of an unsaturated carboxylic acid and at least one interpolymerizable comonomer.

3,419,508
CELLULOSE SURFACES AND METHOD OF TREATING
Maurice E. Grenoble, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,234
9 Claims. (Cl. 260—18)

Cellulose surfaces are treated with a stable but rapid curing abhesive composition comprising a silanol chain-stopped silicone fluid, a methylhydrogen siloxane fluid, an organotin compound, such as dibutyl tin dilaurate, and a titanate ester, such as tetrabutyl titanate.

3,419,509
MERCURY COMPOUNDS AS CATALYSTS FOR THE POLYURETHANE REACTION
Joseph T. Willett, Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,195
3 Claims. (Cl. 260—18)

When employed as catalysts for the polyurethane reaction, certain mercury compounds such as bis(phenyl mercury) dodecenyl succinate and bis(t-butyl mercury) dodecenyl succinate have been found to initially retard the reaction and thereafter, when the reaction commences, to provide a fully-cured product in a short period of time.

3,419,510
CARBOXYL-TERMINATED URETHANE-CONTAINING POLYESTERS AND COATING COMPOSITION DERIVED THEREFROM
Stephen F. Hudak, Minneapolis, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,750
10 Claims. (Cl. 260—18)

Carboxyl terminated polyesters useful in preparation of coatings based upon epoxidized fatty esters are prepared by reacting a polyisocyanate with an excess of polyol to form a hydroxy terminated prepolymer which is then reacted with excess polycarboxylic acid yielding a product with an acid value of at least 50. Solvent based admixtures of this product with epoxidized oils yield coating compositions having improved potlife.

3,419,511
PLASTICIZED POLYVINYL CHLORIDE COMPOSITIONS CONTAINING AN ACRYLONITRILE-BUTADIENE RUBBER AND FLEXIBLE, OIL RESISTANT FILMS AND SHEETS PRODUCED THEREFROM
Albert C. Condo, Newton Square, Pa., and William E. Mendham, Lyndeborough, N.H., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed July 19, 1965, Ser. No. 473,182
8 Claims. (Cl. 260—22)

This invention relates to a polyvinyl chloride composition containing an acrylonitrile-butadiene rubber having about 20 weight percent bound acrylonitrile and a liquid polyester plasticizer of adipic acid and 1,3-butylene glycol. These polyvinyl chloride compositions have a unique combination of outstanding low temperature properties coupled with high oil extraction resistance.

3,419,512
ANAEROBIC CURING COMPOSITION
William Arthur Lees, Chandlers Ford, and John Richard Swire, Southampton, England, assignors to Borden, Inc., a corporation of New Jersey
No Drawing. Filed Dec. 23, 1965, Ser. No. 516,111
5 Claims. (Cl. 260—29.7)

This invention relates to anaerobic adhesive compositions containing an acrylic monomer, an organic peroxide having a half-life greater than 5 hours at 100° C. (excluding hydroperoxide), an ionic substance which is capable of dissociating in water and has a dissociating constant greater than 10–6 and water. The composition is characterized by rapid cure in the absence of oxygen and enhanced unwinding torque values.

3,419,513
THERMOPLASTIC RESINS PLASTICIZED WITH ESTERS OF TRICYCLO-(4,2,2,$0^{2,5}$) - DEC-7-ENE-3,4,9,10-TETRACARBOXYLIC ACIDS
Dale R. Dill, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 18, 1967, Ser. No. 676,086
9 Claims. (Cl. 260—31.8)

This invention relates to the use of esters of tricyclo-(4,2,2,$0^{2,5}$)-dec-7-ene-3,4,9,10-tetracarboxylic acid dianhydride as plasticizers for thermoplastic resins.

3,419,514
AIR DRYING FOOD RELEASE COATING
Ronald O. Hadlock, Greensboro, N.C., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,847
8 Claims. (Cl. 260—33.4)

1. A cured coating, suitable for food release, prepared by curing a composition consisting essentially of a mixture of:

(a) from 30 to 70% by weight of a phenylmethylpolysiloxane having a silicon-bonded hydroxyl content of at least 3% by weight, a phenyl to silicon ratio of at least .3 and a total phenyl and methyl to silicon ratio from 1.2 to 1.7 inclusive,

(b) from .1 to 15% by weight of

$$RO(\underset{\displaystyle R'}{\underset{|}{C}}HCH_2O)_{\overline{2}}H$$

where R is an aliphatic hydrocarbon radical of from 1 to 4 inclusive carbon atoms, and R′ is an alkyl radical of from 1 to 2 inclusive carbon atoms,

(c) from 1 to 15% by weight of a methylpolysiloxane fluid having at least 2% by weight silicon-bonded hydroxyl groups, and

(d) from 20 to 65% by weight of methyltriacetoxysilane, all percentages being based on the combined weights of (a), (b), (c) and (d).

3,419,515
ANHYDROUS POLYMER DISPERSIONS AND PROCESS OF PREPARING SAID DISPERSIONS
Claude J. Schmidle, Hudson, Ohio, and George L. Brown, Swampscott, Mass., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 88,631, Feb. 13, 1961, Ser. No. 88,632, Feb. 13, 1961, and Ser. No. 758,892, Sept. 4, 1958. This application Mar. 17, 1965, Ser. No. 440,590
4 Claims. (Cl. 260—33.6)

The present invention is concerned with addition polymer compositions that are particularly adapted for use as coating and impregnating compositions. It is particularly concerned with the production in a hydrocarbon medium of a dispersion of an addition polymer in the form of finely divided particles which are insoluble in the medium but dispersed therein in a condition of stability, especially against a mechanical action by a hydrophobic polymeric dispersing agent consisting essentially of a component of polymeric size formed of a polymeric precursor which is soluble in the medium and a component formed of polymerized monomer molecules of essentially similar chemical constitution to that of polymerized monomer molecules in the dispersed addition polymer to render this

latter component preferentially soluble in the dispersed polymer, the precursor being a hydrocarbon-soluble polymer of at least 70% by weight of at least one vinyl ester of an aliphatic acid having 6 to 18 carbon atoms.

3,419,516

DEEP SECTION CURE SILICONE RUBBER

Larry Joe Tarno, Flint, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,298
2 Claims. (Cl. 260—37)

Room-temperature curing siloxane rubber compositions which cure in sections deeper than one-half inch are made by mixing.

(1) a hydroxyl-endblocked diorganopolysiloxane,

(2) as a crosslinker a polyfunctional organosilicon compound containing the reactive group SiON=X,

(3) a silica having a surface area of at least 50 $m.^2/g.$ and having a water content of at least 3% by weight which silica was prepared by coagulating a silicate from a water solution and thereafter converting the silicate to silica, and

(4) a condensation catalyst.

A specific example would be a mixture of a hydroxyl-endblocked dimethylpolysiloxane,

$$C_2H_5Si[ON{=}C(CH_3)(C_2H_5)]_3$$

Hi-Sil 233 and dibutyltin diacetate.

3,419,517

REINFORCED POLYAMIDES AND PROCESS OF PREPARATION THEREOF

Ross M. Hedrick, St. Louis, and William R. Richard, Jr., Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of application Ser. No. 284,375, May 31, 1963. This application June 24, 1966, Ser. No. 560,247
40 Claims. (Cl. 260—37)

1. A reinforced polymeric composition comprising a polyamide and at least about 25% by volume of an inorganic filler material having a length to diameter ratio of up to about 25 to 1, said material having been treated with an organosilane coupling agent of the formula

$$X_a{-}\overset{Y_b}{\underset{|}{Si}}{-}[R_c{-}Z]_c$$

where X is a hydrolyzable group capable of reaction with a hydroxyl group, Y is hydrogen or a monovalent hydrocarbon group, R is an alkylene group having from 1 to about 20 carbon atoms, Z is a group capable of reaction with a polyamide, n is an integer from 0 to 1, a is an integer from 1 to 3, b is an integer from 0 to 2, c is an integer from 1 to 3 and the sum of $a+b+c$ equals 4.

3,419,518

SELF-EXTINGUISHING MOLDING MATERIAL BASED ON PROPYLENE POLYMERS

Dieter Mahling, Heinz Mueller-Tamm, and Hubertus Seibt, Ludwigshafen (Rhine), Ludwig Zuern, Mannheim, and Emil Scharf, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 31, 1963, Ser. No. 284,320
Claims priority, application Germany, June 8, 1962, B 67,609
4 Claims. (Cl. 260—41)

1. A self-extinguishing thermoplastic polymer composition comprising polymers of ethylenically unsaturated monomers composed of at least 70 mol percent propylene, said polymers having a molecular weight between 100,000 and 2,000,000 and containing (A) from 0.2 to 10% by weight of antimony trioxide and (B) 1 to 13% by weight of a brominated cycloalkane containing from 6 to 12 carbon atoms in the ring, containing 45 to 93% by weight of bromine, with reference to the weight of said brominated cycloalkane, and having a boiling point above 200° C. at atmospheric pressure, the combined weight of (A) and (B) amounting to 2 to 15% by weight of said composition.

3,419,519

METHACRYLIC RESIN-VINYLIDENE CHLORIDE RESIN COMPOSITIONS AND METHOD OF PRODUCTION THEREOF

Hitoshi Abe and Kiyokazu Imai, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed Dec. 7, 1964, Ser. No. 416,617
Claims priority, application Japan, Dec. 10, 1963, 38/66,265, 38/66,266; Dec. 19, 1963, 38/68,277
6 Claims. (Cl. 260—41)

Vinyl chloride-vinylidene chloride copolymer containing 10 to 50% by weight of vinylidene chloride is dissolved in monomeric methyl methacrylate forming a syrup containing 3 to 50% by weight of the copolymer and at least 30% by weight of the methacrylate monomer. This syrup is polymerized in the presence of a suitable polymerization initiator with the production of a transparent non-flammable resin product.

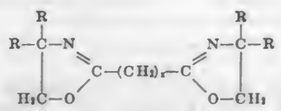
3,419,520

PRODUCT AND METHOD FOR VULCANIZATION OF RUBBER

Arthur W. Campbell, Terre Haute, Ind., and Bobby D. La Grone, Monroe, La., assignors to Commercial Solvents Corporation, a corporation of Maryland

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,482
24 Claims. (Cl. 260—41.5)

A method for vulcanizing rubber and the rubber vulcanizate composition produced thereby, wherein the vulcanization is carried out in the presence of physical property-enhancing amounts of a compound of the formula:



where R is hydrogen, lower alkyl or lower hydroxyalkyl and x is an integer from 2 to 8.

3,419,521

PROCESS FOR VULCANIZING RUBBERS IN PRESENCE OF THIOPHOSPHORYL DISULFIDES

Gerald Scott and Derek Williams, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation of application Ser. No. 406,907. Oct. 27, 1964. This application Sept. 15, 1967, Ser. No. 668,258
Claims priority, application Great Britain, Feb. 23, 1960, 6,314/60
13 Claims. (Cl. 260—41.5)

Bis(dialkylthiophosphoryl)disulphides and the corresponding dicycloalkyl, diaryl and diaralkyl compounds are used in conjunction with conventional sulphur-containing accelerators and sulphur for the vulcanisation of natural and sulphur-curable rubbers. An increase in activity of the conventional accelerator is obtained, leading to improved properties of the vulcanisate and shorter times of cure, as well as a reduced tendency to premature vulcanisation.

3,419,522

NONGRAYING, NONYELLOWING POLYTETRAFLUOROETHYLENE MOLDING POWDER

Peter N. Plimmer, Parkersburg, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,191
4 Claims. (Cl. 260—45.75)

A nonyellowing, nongraying polytetrafluoroethylene molding powder that is white when observed by transmitted light can be produced by modifying non-graying polytetrafluoroethylene molding powder by the incorporation into the molding powder of from 2–110 parts of a metal salt selected from the group of metal salts consisting of calcium nitrate, strontium nitrate, barium nitrate, lead nitrate, potassium nitrate, barium chlorate and barium perchlorate.

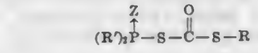
3,419,523

THIOFORMYLDIPHENYLTHIOPHOSPHINATES AND POLY-α-OLEFIN COMPOSITIONS CONTAINING THEM

Sheldon Herbstman, Spring Valley, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 23, 1965, Ser. No. 504,190. Divided and this application Dec. 5, 1967, Ser. No. 705,253
14 Claims. (Cl. 260—45.85)

Solid light resistant compositions comprising an α-olefin polymer of from 2 to 10 carbon atoms and a thioformyldiphenylthiophosphinate stabilizer of the formula:



wherein R is selected from the class consisting of alkyl of from 1 to 20 carbon atoms, phenyl, naphthyl and benzyl, R′ is an aromatic hydrocarbon radical selected from the class consisting of phenyl, naphthyl, chlorophenyl, lower alkylated phenyl and lower alkoxyphenyl and Z is a chalcogen selected from the class consisting of sulfur and oxygen. Heat resistant compositions are also encompassed by the addition of a dialkyl 3,3′-thiodipropionate, each alkyl group having from 4 to 18 carbon atoms.

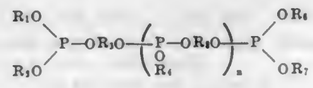
3,419,524

POLYPHOSPHITES AS STABILIZERS FOR HYDROCARBON POLYMERS

Millard S. Larrison, Livingston, N.J., assignor to Weston Chemical Corporation, New York, N.Y., a corporation of New Jersey

No Drawing. Original application Jan. 4, 1965, Ser. No. 423,393, now Patent No. 3,375,304, Mar. 26, 1968. Divided and this application Sept. 8, 1967, Ser. No. 666,477
19 Claims. (Cl. 260—45.95)

Compounds are prepared having the formula



where R_1, R_2, R_4, R_6 and R_7 are carbocyclic aryl, R_3 and R_5 are a member of the group consisting of polyalkylene glycol, alkylidene bisphenol, hydrogenated alkylidene bisphenol, and a ring halogenated alkylidene bisphenol from which the two terminal hydrogens have been removed and n is an integer of at least 1. The compounds are useful as stabilizers for hydrocarbon polymers.

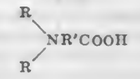
3,419,525

CURING OF EPOXIES WITH AN AMINE-SUBSTITUTED ACID

David Aelony, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Jan. 17, 1967, Ser. No. 609,748
13 Claims. (Cl. 260—47)

Compositions comprising compounds of the formula



and epoxy resins. A representative compound is prepared by condensing dimethylamine with methyl acrylate and hydrolyzing the resulting product. The compounds react rapidly with the epoxy resins at elevated temperatures and yet are used to prepare mixtures or B-stage resins which are relatively stable at room temperature.

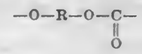
3,419,526

HIGH MOLECULAR WEIGHT THERMOPLASTIC POLYCARBONATES

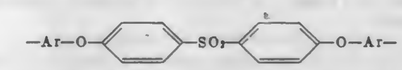
Hermann Schnell, Krefeld-Urdingen, Ludwig Bottenbruch, Krefeld-Bockum, Gerhard Darsow, Krefeld-Urdingen, and Kurt Weirauch, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengeselschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 2, 1967, Ser. No. 644,441
Claims priority, application Germany, June 4, 1966, F 49,397
8 Claims. (Cl. 260—49)

Polycarbonates having high second order transition temperatures and containing the repeating unit



wherein from about 20% to about 100% of the radicals R is a radical having the formula



wherein Ar is the same or different, substituted or unsubstituted arylene, arylene ether, diarylene alkane, diarylene and the like radicals, the remainder of the radicals R being the same or different, substituted or unsubstituted alkylene, cycloalkylene or Ar, and a method for preparing them.

3,419,527

METHOD OF PREPARING PHENOLFORMALDEHYDE RESINS EMPLOYING AN ORGANIC SOLVENT TO DISSOLVE THE PHENOL

Modest Sergeevich Akutin, Lena Anastasievna Rodivilova, and Svetlana Lvovna Gershkokhen Moscow, U.S.S.R., assignors to Gosudarstveny Nauchno-Issledovatelsky Institute Plasticheskikh mass, Moscow, U.S.S.R.

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,159
3 Claims. (Cl. 260—57)

A method of preparing a quick-hardening, novolac-type phenolformaldehyde resin in the presence of a hydrochloric acid catalyst. The formaldehyde and hydrochloric acid catalyst in a water solution are added to the phenol in an organic solvent solution. The reaction is preferably performed at 70–80° C. and goes to completion in a relatively short period of time. The resin precipitates and is separated from the solvents and dried. The resulting resin has a low free-phenol content and a high hardening rate. Molding compositions based on the resulting resin also have increased thermal stability.

3,419,528
PROCESS FOR PREPARING MODIFIED POLYOXYMETHYLENES

Hans Dieter Hermann, Klemens Gutweiler, and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 6, 1964, Ser. No. 387,991
Claims priority, application Germany, Aug. 9, 1963, F 40,459
6 Claims. (Cl. 260—67)

A process for preparing polyoxymethylene homopolymers and copolymers modified by incorporation of an aromatic compound directly in the polymer chain.

3,419,529
STABILIZATION OF OXYMETHYLENE COPOLYMERS

Joseph D. Chase and Peter P. Gesting, Corpus Christi, Tex., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Sept. 29, 1964, Ser. No. 400,192
2 Claims. (Cl. 260—67)

Disclosed herein is an improved process for the preparation of stabilized oxymethylene copolymers. In accordance with the teaching of this specification a ground mixture of oxymethylene polymer and a hydrolysis medium is heated to hydrolysis conditions and then hydrolized during a conveying step.

3,419,530
PREPARATION OF MACROMOLECULAR POLYOXYMETHYLENES

Meindert Tiessens, Geleen, and Hubertus J. Vroomans, Beek, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed July 30, 1965, Ser. No. 476,142
Claims priority, application Netherlands, Aug. 1, 1964, 6408845
12 Claims. (Cl. 260—67)

A process for the preparation of macromolecular polyoxymethylenes by polymerization of monomeric formaldehyde is disclosed, using an inert liquid distributing agent and a metal salt catalyst dissolved in a distributing agent.

3,419,531
FLUORINE-CONTAINING POLYFORMALS

Floyd D. Trischler, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 3, 1966, Ser. No. 554,959
8 Claims. (Cl. 260—67)

This patent describes a novel fluorine-containing polymeric polyformals having the repeating unit

$$—O—CH_2—O—CH_2—(CF_2)_n—CH_2—$$

wherein n is an integer of from about 3 to about 6 prepared by reacting trioxane with a diol having the formula

$$HO—CH_2—(CF_2)_n—CH_2—OH$$

These polymeric polyformals are useful directly for impervious coatings on metals and the like.

3,419,532
POLYHALOGENOUS POLYURETHANE PRODUCTS

Donald R. Jackson, deceased, late of Southgate, Mich., by Ruth H. Jackson, special administratrix, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Jan. 2, 1964, Ser. No. 335,433
4 Claims. (Cl. 260—77.5)

1. A polyurethane composition having improved fire resistance comprising the reaction product of:

(I) an organic polyisocyanate and

(II) an active hydrogen-containing polyhalogenous polyhydroxy ether produced by reacting together

(1) an alkylene oxide containing three to four carbon atoms, inclusive, and having an alkyl group attached to a carbon atom of the oxirane ring, said alkyl group having a maximum of two carbon atoms and two chlorine atoms bonded to the same terminal carbon atom, and

(2) a member selected from the group consisting of

(a) alkylene oxides having no more than one halogen atom on a single carbon atom,

(b) polyhydroxy initiating compounds having a maximum of eight hydroxy groups, and

(c) mixtures thereof,

said polyhalogenous polyhydroxy ether (II) being characterized by the presence of pendent polyhalogenous alkyl groups having a maximum of two carbon atoms, and having two chlorine atoms bonded to the same terminal carbon atom, and

(III) an effective amount of a catalyst for promoting the reaction between said polyisocyanate (I) and said ether (II).

3,419,533
POLYURETHANE PLASTICS

Dieter Dieterich, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,123
Claims priority, application Germany, Dec. 28, 1964, F 44,826
6 Claims. (Cl. 260—77.5)

Plastics containing sulfonium sulfur groups which are prepared by reacting an active hydrogen containing compound with an organic polyisocyanate, at least one of which contains sulfide sulfur atoms which have either been partially alkylated before the reaction or which are subsequently at least partially alkylated. The plastics are substantially free of unpleasant odors. The plastics are suitable for coatings, films, filaments, foils, photographic layers, sizing agents, impregnating leather, binding dyestuff pigments, and hair dressings.

3,419,534
POLYMERS FROM POLYMERIZED UNSATURATED MATERIALS AND URETIDONE DIMERS

Isaac Goodman and John Edward Martin, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 7, 1966, Ser. No. 563,391
Claims priority, application Great Britain, July 13, 1965, 29,627/65
6 Claims. (Cl. 260—77.5)

Cross-linkable compositions comprising a copolymer of ethylene and an ethylenically unsaturated carboxylic acid amide, preferably acrylamide and methacrylamide and a uretidone dimer of an organic polyisocyanate. The compositions are shaped by a process which involves heating to a temperature at which the polymer is in the fluid state, shaping and subsequently heating the shaped article at 150° to 200° C.

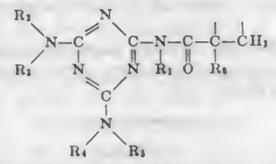
3,419,535
ACYLATED MELAMINE DERIVATIVES

Peter Schlumbom, Therwil, Basel-Land, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 255,651, Feb. 1, 1963. This application Jan. 19, 1966, Ser. No. 521,553
Claims priority, application Switzerland, Feb. 6, 1962, 1,431/62
11 Claims. (Cl. 260—88.1)

1. A polymer consisting essentially of

(a) repeating units of the formula



wherein

R_1 is a member selected from the group consisting of hydrogen and R_2;

each of R_2, R_3, R_4 and R_5, independently, is a member selected from the group consisting of alkyl with maximally 18 carbon atoms, alkenyl with at least 3 and maximally 18 carbon atoms, lower alkoxy-lower alkyl, cyanoethyl, cycloalkyl of from 5 to 7 ring carbon atoms, a lower alkyl-cycloalkyl radical with 5 to 7 ring carbon atoms and a total of 6 to 10 carbon atoms, trifluoromethyl-phenyl, an unsubstituted (mono-nuclear carbocyclic aryl)-aliphatic radical with from 7 to 10 carbon atoms, an unsubstituted mono-nuclear carbocyclic aromatic radical, and each of the 2 last-mentioned members substituted with a member selected from the group consisting of lower alkyl, chloro, bromo, fluoro, lower alkoxy;

or one or both of the pairs R_2+R_3 taken together, and R_4+R_5 taken together, represents a bi-valent radical selected from the group consisting of tetramethylene, pentamethylene, hexamethylene and ethyleneoxy-ethylene,

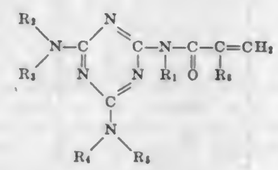
R_6 is a member selected from the group consisting of hydrogen and alkyl with maximally 3 carbon atoms,

with the proviso that at least one of R_1 and R_6 is hydrogen, and

(b) from 0 to 95% by weight, calculated on the total weight of the polymer, of repeating units which are each a divalent radical obtained from an ethylenically unsaturated co-monomer selected from the group consisting of styrene, chlorostyrene, bromo styrene, fluorostyrene, methylstyrene, ethylstyrene, cyanostyrene, trifluoromethylstyrene, an alkyl ester of acrylic acid and an alkylester of methacrylic acid, in each of which alkyl has maximally 9 carbon atoms, acrylonitrile, methacrylonitrile, vinylidene chloride, vinylidene cyanide, vinyl halide, a vinyl lower alkanoate and vinyl benzoate,

by opening of the ethylenic double bond thereof.

7. A compound of the formula



wherein

R_1 is a member selected from the group consisting of hydrogen and R_2;

each of R_2, R_3, R_4 and R_5, independently, is a member selected from the group consisting of alkyl with maximally 18 carbon atoms, alkenyl with at least 3 and maximally 18 carbon atoms, lower alkoxy-lower alkyl, cyanoethyl, cycloalkyl of from 5 to 7 ring carbon atoms, a lower alkyl-cycloalkyl radical with 5 to 7 ring carbon atoms and a total of 6 to 10 carbon atoms, trifluoromethylphenyl, an unsubstituted (mono-nuclear carbocyclic aryl)-aliphatic radical with from 7 to 10 carbon atoms, an unsubstituted mono-nuclear carbocyclic aromatic radical, and each of the 2 last-mentioned members substituted with a member selected from the group consisting of lower alkyl, chloro, bromo, fluoro, lower alkoxy, cyano, and nitro;

or one or both of the pairs R_2+R_3 taken together, and R_4+R_5 taken together, represents a bi-valent radical selected from the group consisting of tetramethylene, pentamethylene, hexamethylene and ethyleneoxy-ethylene, and

R_6 is a member selected from the group consisting of hydrogen and alkyl with maximally 3 carbon atoms, with the proviso that at least one of R_1 and R_6 is hydrogen.

3,419,536
POLYMERS CONTAINING POLYCYANOTETRAHYDROFURAN RINGS AND THE PREPARATION THEREOF

William Joseph Linn, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Sept. 28, 1962, Ser. No. 227,070, now Patent No. 3,317,567, dated May 2, 1967. Divided and this application Mar. 30, 1967, Ser. No. 626,922
13 Claims. (Cl. 260—85.1)

Modification of unsaturated polymers by reaction of a polycyanoethylene oxide with 1–50% of the unsaturation at temperatures of 80–250° C. Molded objects and films can be produced from the modified polymers.

3,419,537
DICYANOACETYLENE POLYMERS

Alan Rembaum, Altadena, Calif., and Arnold W. Henry, Akron, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,058
3 Claims. (Cl. 260—85.5)

Copolymers of dicyanoacetylene and vinylidene compounds are made by mixing the two materials, preferably in a solvent such as tetrahydrofuran in the presence of an initiator which preferably is a free radical initiator such as azo-bis-isobutyronitrile. The mixture is preferably deaerated then sealed at subatmospheric pressure and heated between about 40° C. and 70° C. for 10 to 30 hours.

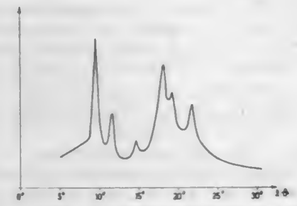
3,419,538
PROCESSES FOR THE PRODUCTION OF HIGHLY CRYSTALLINE POLY(VINYL ALKYL ETHERS)

Giulio Natta, Giorgio Mazzanti, and Gino Dall'Asta, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Continuation of application Ser. No. 303,568, Aug. 21, 1963. This application Oct. 2, 1967, Ser. No. 672,401
Claims priority, application Italy, Aug. 22, 1962, 16,780/62
11 Claims. (Cl. 260—91.1)

Vinyl alkyl ethers are polymerized to solid, high molecular weight, highly crystalline polymers which have iso-

tactic structure, by means of catalysts which are fluorides, mixed fluorides-chlorides or mixed fluoride-bromides of



transition metals belonging to Groups IV–B—VI–B or VII of the Mendelyeev Periodic Table.

3,419,539

METHOD OF PRODUCING CIS-1,4 POLYBUTADIENE

Kenichi Ueda, Hidetoshi Yasunaga, Koei Komatsu, and Jun Hirota, Yokkaichi-shi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,682
Claims priority, application Japan, Mar. 18, 1965, 40/15,575
9 Claims. (Cl. 260—94.3)

A method for producing polybutadiene of high cis-1,4 content by polymerizing butadiene in the presence of a hydrocarbon solvent, an inert atmosphere and a catalyst at a temperature between —50° and 150° C. The catalyst is a mixture of an aluminum halide and a nickel oxide of the formula Ni_xO_y, wherein x is 1 or 2, y is in the range of 1 to 3 and the ratio of y to x is 1–1.5:1, but excluding a ratio of 1:1.

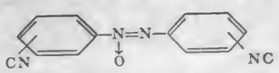
3,419,540

—N=N— GROUP-CONTAINING ISONITRILES

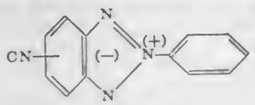
Uwe Fetzer and Ivar Ugi, Leverkusen, Günter Untersten-höfer, Opladen, and Ingeborg Hammann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 18, 1965, Ser. No. 456,835
Claims priority, application Germany, May 24, 1964, F 42,940
10 Claims. (Cl. 260—143)

1. Azo group-containing isonitriles of the formula



9. Azo group-containing isonitriles of the formula



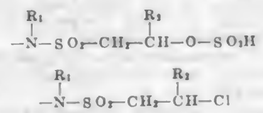
3,419,541

PROCESS FOR PREPARING MONOAZO DYESTUFFS

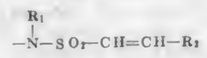
Rudolf Kühne and Fritz Meininger, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt, am Main, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 256,247, Feb. 5, 1963. This application July 28, 1964, Ser. No. 385,772
Claims priority, application Germany, Feb. 8, 1962, F 35,973
The portion of the term of the patent subsequent to Feb. 8, 1983, has been disclaimed
3 Claims. (Cl. 260—162)

Process for the manufacture of reactive monoazo dyestuffs containing as reactive groupings at least one of the groupings



or



in which R_1 represents lower alkyl or benzyl, R_2 represents hydrogen or lower alkyl, wherein monoazo dyestuffs in which R_1 is hydrogen are reacted with an alkylating agent. The dyestuffs obtained thereby are suitable for the dyeing or printing of cellulose, protein, polyamide and polyurethane fibers.

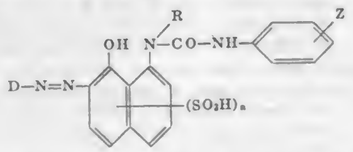
3,419,542

AZO DYESTUFFS CONTAINING A UREIDO GROUP

Fritz Meininger, Frankfurt am Main, and Helmut Steuernagel and Heinrich Frölich, Kelkheim (Taunus), Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,081
Claims priority, application Germany, Sept. 24, 1964, F 44,046
10 Claims. (Cl. 260—195)

Azo-dyestuffs having the general formula



wherein D represents a radical of a diazo component, R represents hydrogen or lower alkyl, n stands for 1 or 2 and Z represents a reactive group, and complex metal compounds of the aforesaid azo-dyestuffs wherein the radical D contains a substituent capable of being metallized in ortho-position to the azo-linkage useful in dyeing cellulose textiles with high tinctorial strength, purity of shade, good light fastness and resistance to washing.

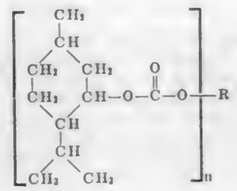
3,419,543

CARBONATE ESTERS OF FLAVORANTS

James D. Mold, Andrew G. Kallianos, and Frank A. Shelburne, Durham, N.C., assignors, by mesne assignments, to Liggett & Myers Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 1, 1964, Ser. No. 400,918, now Patent No. 3,332,428, dated July 25, 1967. Divided and this application Feb. 23, 1967, Ser. No. 635,277
14 Claims. (Cl. 260—234)

This invention relates to mixed carbonate esters of menthol and a polyhydroxy compound having the following general formula:



These novel compounds may be incorporated in small amounts in tobacco and upon ignition of the tobacco the compounds decompose thereby releasing free menthol into the smoke stream.

3,419,544

NOVEL PREPARATION OF 1,2,3,5-TETRA-ACYL-β-D-RIBOFURANOSES

Herbert Witzel, Marburg (Lahn), Hans Karl Maurer, Mannheim-Waldhof, and Hans-Gunter Gassen, Arnsberg, Germany, assignors to Zellstofffabrik Waldhof A.G., Mannheim-Waldhof, Germany, a corporation of Germany

No Drawing. Filed Oct. 28, 1966, Ser. No. 590,194
Claims priority, application Germany, Oct. 29, 1965, Z 11,838; Oct. 14, 1966, Z 12,473
8 Claims. (Cl. 260—234)

Process for the preparation of 1,2,3,5-tetraacyl-β-D-ribofuranoses in a simple manner.

3,419,545

PROCESS OF PREPARING 7-HALO-2-DIMETHYL-AMINO - 5-PHENYL-3H-1,4-BENZODIAZEPINE 4-OXIDES

Sheldon Farber, Morristown, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed May 29, 1961, Ser. No. 113,152
4 Claims. (Cl. 260—239)

1. A method of preparing 7-halo-2-dimethylamino-5-phenyl-3H-1,4-benzodiazepine 4-oxide which comprises treating a solution of 6-chloro-2-chloromethyl-4-phenyl-azoline 3-oxide in an inert solvent with dimethylamine at a temperature between —10° C. and —50° C.

3,419,546

BICYCLIC AND TRICYCLIC ISONITRILES

Uwe Fetzer and Ivar Ugi, Leverkusen, Hans Knupfer, Bergisch-Neukirchen, Johann Albrecht Renner, Leverkusen, and Ferdinand Grewe, Burscheid, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 9, 1965, Ser. No. 470,880
Claims priority, application Germany, July 9, 1964, F 43,388
24 Claims. (Cl. 260—239)

Bicyclic and tricyclic isonitriles having the general formula B—A—N≡C in which A is a direct bond between the radical B and the nitrogen of the isonitrile group, phenylene, or a C_{1-8} aliphatic radical such as alkylene and alkylidene, or such alkylidene which is substituted with phenyl or chlorophenyl; and B is a cyclic member such as bicyclic aliphatic having 4 to 7 members in each individual ring, such bicyclic aliphatic containing a nuclear nitrogen atom, at least one and at most two nuclear carbonyl groups, and/or at least one and at most six chloro substituents, tricyclo heptane, tricyclo decane, tricyclic decene, or such tricyclo decene containing a nuclear nitrogen atom, at least one and at most two nuclear carbonyl groups, and/or at least one and at most six chloro substituents; which may be produced by reacting the corresponding formamide with a water-eliminating acyl halide in the presence of an acid-binding agent; and which possess, alone or in the form of compositions with dispersible carrier vehicles, acaricidal, fungicidal and insecticidal properties.

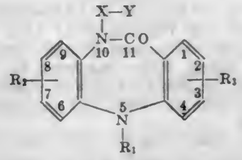
3,419,547

CERTAIN 10-BASICALLY SUBSTITUTED-5H-DI-BENZO[b,e,][1,4]DIAZEPINE COMPOUNDS

Jean Schmutz, Muri, near Bern, and Fritz Hunziker, Bern, Switzerland, assignors to Dr. A. Wander, S.A., Bern, Switzerland, a corporation of Switzerland

No Drawing. Continuation-in-part of application Ser. No. 57,141, Sept. 20, 1960. This application Feb. 5, 1962, Ser. No. 171,245
Claims priority, application Switzerland, Sept. 22, 1959, 78,518
21 Claims. (Cl. 260—239.3)

1. A compound selected from the group consisting of: (A) the substituted 5H-dibenzo[b,e][1,4]diazepine derivatives of the formula



wherein R_1 is selected from the class consisting of hydrogen, methyl and ethyl; —X—Y is a basic radical wherein X is a hydrocarbon chain containing between 2 and 3 inclusive carbon atoms, and Y is selected from the class consisting of dialkylamino having between 2 and 4 inclusive carbon atoms, piperidino, pyrrolidino, N-(lower alkyl)-2-piperidyl, morpholino, 1-piperazinyl, 4-(lower alkyl)-1-piperazinyl, 4-(hydroxy-lower alkyl)-1-piperazinyl, and 4-(methoxy-lower alkyl)-1-piperazinyl and R_2 and R_3 are selected from the class consisting of hydrogen, chlorine, methyl, ethyl, methoxy, ethoxy, trifluormethyl, methylmercapto, and ethylmercapto; (B) the non-toxic therapeutically useful quaternary ammonium salts of (A); and (C) the non-toxic therapeutically useful acid addition salts of (A) and (B).

3,419,548

AMINO AZACYCLOALKANONES

Karl Gätzi, Basel, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed July 8, 1965, Ser. No. 470,623
Claims priority, application Switzerland, July 13, 1964, 9,205/64
15 Claims. (Cl. 260—239.3)

3-sec- and 3-tert-aminoazacycloalkan-2-ones having 6 to 8 ring carbon atoms and their acid salts have fungicidal activity. Compositions containing these compounds are fungicides and methods for combatting fungi involve the use of these compounds.

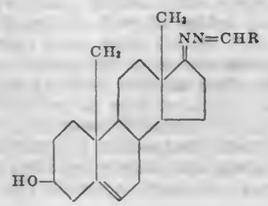
3,419,549

3β-HYDROXYANDROST-5-EN-17-ONE AZINES

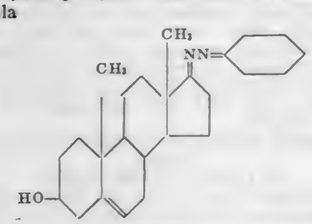
Robert W. Hamilton, Wilmette, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,670
6 Claims. (Cl. 260—239.5)

1. A compound of the formula



wherein R represents lower alkyl, cyclohexyl, phenyl, chlorophenyl, naphthyl, or pyridyl; or a compound of the formula



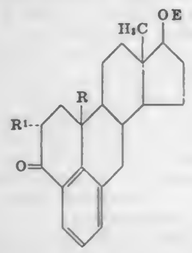
3,419,550

PENTACYCLIC STEROID INTERMEDIATES AND METHOD OF PREPARING THE SAME

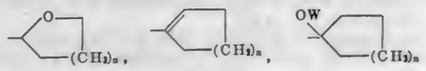
Alberto Ercoli, Milan, and Rinaldo Gardi, Carate Brianza, Milan, Italy, assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Aug. 19, 1966, Ser. No. 573,490
Claims priority, application Italy, Aug. 23, 1965, 18,856/65
18 Claims. (Cl. 260—239.55)

16. A benz[d,e]androstane of the formula:



wherein R is selected from the group consisting of hydrogen and methyl; R^1 is selected from the group consisting of hydrogen, fluorine and methyl; and E is selected from the group consisting of the following groupings:



in which *n* is one of the integers 1 and 2 and W is selected from the group consisting of methyl and ethyl.

3,419,551

METHOD OF PREPARING 5-(INDOLYL-3-METHYLENE)-HYDANTOIN

Yoshioki Komachiya Seiji Suzuki, and Setsuji Sakurai, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 286,908, June 11, 1963. This application May 18, 1964, Ser. No. 368,409
Claims priority, application Japan, May 17, 1963, 38/24,446
16 Claims. (Cl. 260—240)

The hydrogenation of nitriles in a liquid acidic medium in the presence of a nickel catalyst produces higher yields of aldehyde and smaller amounts of other hydrogenation products (alcohol, amine) when small amounts of lead are simultaneously present in the catalyst or in the medium. The phenylhydrazone of β-(5-hydantoyl)-propionaldehyde is thus prepared from 5-cyanoethylhydrantoin, and is converted to 5-(indolyl-3-methylene)-hydantoin in good yields by indol condensation in a 0.01 to 0.5 normal solution of a strong acid, thereby providing a tryptophan synthesis starting with readily accessible raw materials.

3,419,552

PREPARATION OF SUBSTITUTED DIHYDROBENZOTHIADIAZINE-1,1-DIOXIDES

Calvert W. Whitehead and John J. Traverso, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 102,385, Apr. 12, 1961. This application Sept. 30, 1964, Ser. No. 400,570
5 Claims. (Cl. 260—243)

1. The process of preparing 3,4-dihydrobenzothiadiazine-1,1-dioxides which comprises mixing a member of the group consisting of RCHO+ammonia,



and RCH=NH, wherein R is a member of the group consisting of hydrogen, C_1–C_5 alkyl, C_2–C_5 alkenyl, C_3–C_8 cycloalkyl, C_3–C_8 cycloalkyl-substituted C_1–C_5 alkyl, C_5–C_8 cycloalkenyl, C_5–C_8 cycloalkenyl-substituted C_1–C_5 alkyl, C_7–C_{12} bicycloalkyl, C_7–C_{12} bicycloalkyl-substituted C_1–C_5 alkyl, C_7–C_{12} bicycloalkenyl, C_7–C_{12} bicycloalkenyl-substituted C_1–C_5 alkyl, halo-substituted C_1–C_5 alkyl, and monocyclic aryl-substituted C_1–C_5 alkyl, with 5-chloro-2,4-bis(sulfamoyl)fluorobenzene in an inert solvent, and maintaining the resulting mixture at autogenous pressure until a substantial quantity of substituted 3,4-dihydrobenzothiadiazine-1,1-dioxide has been formed.

3,419,553

FLUORINATED PHENOTHIAZINE COMPOUNDS

Jack Bernstein, Harry L. Yale, and Kathryn A. Losee, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 25, 1966, Ser. No. 552,692
7 Claims. (Cl. 260—243)

This invention relates to novel 10-(amino alkyl) fluorinated phenothiazines which are useful as antibacterial agents.

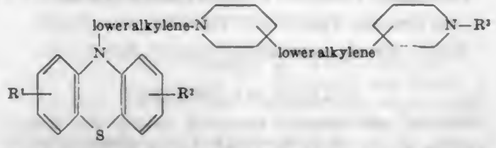
3,419,554

N-[(1-SUBSTITUTED PIPERIDYL)ALKYLPIPERIDINO-ALKYL] DERIVATIVES OF N-CONTAINING HETEROCYCLIC COMPOUNDS

Jack Bernstein, New Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 3, 1966, Ser. No. 554,986
8 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of a base of the formula



and a pharmaceutically acceptable non-toxic salt thereof, wherein R^1 and R^2 are each selected from the group consisting of hydrogen, halogen, alkyl having from 1 to 3 carbon atoms, hydroxyalkyl having from 1 to 3 carbon atoms, and trifluoromethyl; R^3 is selected from the group consisting of hydrogen, lower alkyl having from 1 to 3 carbon atoms, hydroxy-lower alkyl having from 1 to 3 carbon atoms, alkanoyloxy-lower alkyl wherein the alkanoyloxy group contains from 7 to 12 carbon atoms and the alkyl group contains 2 to 3 carbon atoms, alkanoyloxy-lower alkoxy lower alkyl wherein the alkanoyloxy group contains 7 to 12 carbon atoms and the lower alkoxy and lower alkyl groups each contain 2 to 3 carbon atoms, wherein the lower alkylene groups contain from 2 to 3 carbon atoms, and wherein the alkylenedipiperidine moiety is selected from the group consisting of 2,2′-lower alkylenedipiperidino and 4,4′-lower alkylenedipiperidino.

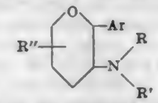
3,419,555

2-ARYL-TETRAHYDROPYRAN-3-AMINES

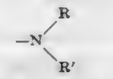
Herndon Jenkins, Richmond, Va., assignor to A. H. Robins Company Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,010
25 Claims. (Cl. 260—247.2)

1. An aryltetrahydropyranamine selected from the group consisting of (1) compounds of the formula:



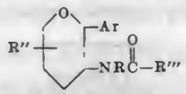
wherein Ar is selected from the group consisting of phenyl, lower-alkylphenyl, hydroxyphenyl, lower-alkoxyphenyl, halophenyl, trifluoromethylphenyl, and naphthyl,
wherein



is selected from the group consisting of amino, N-lower-alkylamino, N,N-dilower-alkylamino, N-phenyllower-alkylamino, 2-morpholinoethyl, N-(hydroxylower-alkyl)-amino, N,N-di(hydroxylower-alkyl)-amino, N-lower-alkyl-N-(hydroxylower-alkyl)-amino, and a saturated monocyclic heterocyclic radical having up to a maximum of twelve carbon atoms and having up to a maximum of two hetero atoms in the ring and selected from the group consisting of morpholino, N-oxazolidinone, piperidino, pyrrolidino, and piperazino, and
wherein R″ is selected from the group consisting of hydrogen and lower-alkyl, and
(2) non-toxic pharmaceutically acceptable acid addition and quaternary ammonium salts thereof.

13. N-(2-morpholinoethyl)-2-phenyltetrahydropyran-3-amine dihydrochloride monohydrate.

20. A compound having the formula:



wherein R is selected from the group consisting of hydrogen, lower-alkyl, phenyllower-alkyl, lower-cycloalkyl, and hydroxylower-alkyl,
wherein Ar is selected from the group consisting of phenyl, lower-alkylphenyl, hydroxyphenyl, lower-alkoxyphenyl, halophenyl, trifluoromethylphenyl, and naphthyl,
wherein R″ is selected from the group consisting of hydrogen and lower-alkyl, and
wherein R‴ is selected from the group consisting of lower-alkyl, lower-alkoxy, phenyllower-alkyl, amino, N-lower-alkylamino, N,N-dilower-alkylamino, phenylamino, diphenylamino, cycloalkylamino, dicycloalkylamino, phenyllower-alkylamino, and di(phenyllower-alkyl)amino.

3,419,556

PRODUCTION OF CYANOMELAMINE

Siegfried Wolfram Schubert and Johann L. Makart, Visp, Switzerland, assignors to Lonza Ltd., Gampel (Canton of Valais), Basel, Switzerland

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,308
Claims priority, application Switzerland, Oct. 6, 1964, 12,920/64
3 Claims. (Cl. 260—249.6)

Tetrameric cyanogen halide is reacted with an excess of aqueous ammonia solution to replace the $N{=}C(Hal)_2$ group by a NH—C≡N group whereby also all the other halogen atoms are replaced by NH_2 groups.

3,419,557

PRODUCTION OF FLUORUBIN AND SUBSTITUTION PRODUCTS THEREOF FROM DIAMINOQUINOXALINES

Werner Deuschel and Wolfgang Vilsmeier, Ludwigshafen (Rhine), and Guenther Riedel, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 20, 1961, Ser. No. 160,942
Claims priority, application Germany, Dec. 29, 1960, B 60,672
5 Claims. (Cl. 260—250)

A process for production of fluorubins by heating diaminoquinoxalines is described.

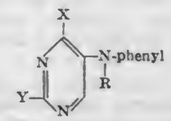
3,419,558

METHOD OF MAKING 5-ANILINO URACILS

Agostino V. Perrotta, Bronx, N.Y., assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,883
Claims priority, application Great Britain, Nov. 19, 1964, 47,131/64
2 Claims. (Cl. 260—256.4)

This invention is directed to a method of preparing compounds of the formula



which comprises the reaction between 5-aminouracil or a 5-N-alkylaminouracil with the appropriate aniline or N-R-aniline in the presence of mineral acid. The compounds produced by this invention are useful as intermediates and may be converted to compounds which act as antimalarials and as bactericides.

3,419,559

5-SUBSTITUTED-2-OXAZOLIDINONES

Carl D. Lunsford and Marvel L. Fielden, Richmond, Va., assignors to A. H. Robins Company, Inc., Richmond, Va., a corporation of Virginia

No Drawing. Filed Apr. 29, 1965, Ser. No. 451,970
21 Claims. (Cl. 260—268)

2-oxazolidinones which are substituted in the five position by an ethyl or propyl chain having attached thereto a six or seven-membered heterocyclic ring which in turn is substituted by phenyl, substituted phenyl, quinolyl, or pyridyl, and pharamaceutically acceptable acid addition salts thereof. The compounds are primarily useful as transquilizers.

3,419,560

1-AMINOALKYL 2-ARYL INDANES AND TETRAHYDRONAPHTHALENES

Jack Bernstein, New Brunswick, John Krapcho, Somerset, and Chester Turk, Elizabeth, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 454,962, May 11, 1965. This application Oct. 23, 1965, Ser. No. 504,122
8 Claims. (Cl. 260—268)

1-aminoalkyl-2-aryl indanes, tetrahydronaphthalenes, indanols and napthols are described. The compounds are analgesic.

3,419,561

2,3,4,4a,5,6,10b-HEPTAHYDRO-1-OXAPHENANTHRIDINES AND PRODUCTION THEREOF

Herndon Jenkins, Richmond, Va., assignor to A. H. Robins Company Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,136

11 Claims. (Cl. 260—286)

2,3,4,4a,5,6,10b - heptahydro-1-oxaphenanthridines and non-toxic pharmaceutically acceptable acid addition salts thereof, optionally containing substituents in the 2, 5, and 9 positions, useful as sedatives, and production thereof by ring-closure of corresponding 2-phenyl tetrahydropyran-3-amines with formaldehyde and hydrochloric acid.

3,419,562

QUATERNARY AMMONIUM ACINITRO COMPOUNDS

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 352,675, Mar. 17, 1964. This application July 7, 1966, Ser. No. 563,387

1 Claim. (Cl. 260—286)

1. A quaternary ammonium compound having a quaternary cation selected from the group consisting of alkyl dimethyl benzyl ammonium, alkyl dimethyl ethylbenzyl ammonium and alkyl isoquinolinium, wherein the alkyl, in each instance, has 12 to 18 carbon atoms, and having an anion selected from the group consisting of mono-acinitrocyclohexane, 1-acinitrododecane, 2-acinitro-1-butanol, beta-acinitrostyrene and 1-nitro-10,11-undecyne.

3,419,563

PROCESS FOR PRODUCING 7-AMINO-CARBOSTYRILE DERIVATIVES

Hans Knupfer, Bergisch Neukirchen, Wolf-Dieter Wirth, Cologne-Stammheim, and Carl-Wolfgang Schellhammer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,206

Claims priority, application Germany, Apr. 9, 1965, F 45,778

9 Claims. (Cl. 260—288)

7 - amino - carbostyriles and a process for producing 7 - amino - carbostyriles by reacting corresponding 2-amino - 4 - nitrotoluenes with alkaline polysulfide solution and heating.

3,419,564

PRODUCTION OF BIS(1-ARYLUREIDO)-BENZENE-p- OR m-DICARBOXYLIC ACID DIALKYL ESTERS

Gustav Bock, Neustadt an der Weinstrasse, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,924

Claims priority, application Germany, Apr. 5, 1963, B 71,420

6 Claims. (Cl. 260—294.3)

Production of bis-(1-arylureido)-benzene-p- or m-dicarboxylic acid dialkyl esters by rearrangement of bis-isourea ethers of dihydroxy-benzene-p- or m-dicarboxylic acid dialkyl esters at elevated temperature, and the new bis-(1-arylureido)-benzene-p- or m-dicarboxylic acid dialkyl esters having fungicidal activity and useful as intermediates for the production of quinacridone dyes.

3,419,565

AZA-DIBENZOCYCLOHEPTENES

Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 275,237, Apr. 24, 1963. This application Sept. 19, 1966, Ser. No. 580,213

9 Claims. (Cl. 260—294.7)

This invention relates to 5-hydroxy-aza-dibenzocycloheptenes having a nitrogen containing radical attached at the 5-position thereof. These compounds are useful as intermediates in the preparation of useful antihistamines and are also useful as antihistamines themselves. These intermediates may be prepared by reacting a 5-keto-aza-dibenzocycloheptene with an organo metallic compound bearing an amino grouping, and subsequently hydrolyzing the complex thereby formed. The so formed compounds are transformed by dehydration to produce an exocyclically unsaturated compound which is useful as an antihistamine.

3,419,566

HYDROXY-ALKOXY, ALKYL QUATERNARY AMMONIUM SULFONES

Andrew Oroszlan, Elmhurst, and Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 8, 1962, Ser. No. 165,017

4 Claims. (Cl. 260—294.8)

1. A compound having the formula



wherein

R is a member selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl,

R′ is a member selected from the group consisting of hydrogen and lower alkyl,

Z is a bivalent organic radical selected from the group consisting of alkylene and phenalkylene,

n is 0 or 1, and

A is a quaternary ammonium group.

3,419,567

HERBICIDES

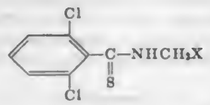
Johannes Wijma, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 294,726, June 12, 1963. This application Feb. 26, 1965, Ser. No. 435,736

Claims priority, application Netherlands, July 12, 1962, 280,889

8 Claims. (Cl. 260—294.8)

1. A compound of the formula:



wherein X is a member selected from the group consisting of hydroxy, alkoxy of 1 to 5 carbon atoms, the group



wherein R_1 and R_2 is each alkyl of 1 to 5 carbon atoms and R_1, R_2 together with N is pyrryl and pyridinium chloride.

3,419,568

DERIVATIVES OF 1,2,3,4-TETRAHYDRO-5H-PYRIDO[4,3b]INDOLES

Robert Phillip Johnson and John Paul Oswald, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 7, 1966, Ser. No. 599,695

6 Claims. (Cl. 260—294.9)

1,2,3,4-tetrahydro-5H-pyrido[4,3b]indoles having antidepressant and anti-psychotic activity.

3,419,569

INDOLE DERIVATIVES

Ulrich Renner, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,946

Claims priority, application Switzerland, Dec. 3, 1964, 15,658/64, 15,659/64

9 Claims. (Cl. 260—296)

The present invention provides therapeutically 3-lower-alkyl or (3-benzyl)-2,3,4,5-tetrahydro-1H-azepino[4,5-b] indoles and derivatives thereof. The said 2,3,4,5-tetrahydro-1H-azepino[4,5-b]indoles are advantageously prepared by reacting a hexahydro-4H-azepino-4-one with a di-aryl lower-alkyl hydrazine in an ice cooled alcoholic medium saturated with hydrogen chloride, removing the ammonium chloride as it forms, refluxing until the reaction is complete (approx. 2 hours) and recovering the desired 2,3,4,5-tetrahydro-1H - azepino[4,5-b]indole by conventional means. The compounds of this invention have strong antitussive activity and are indicated for inhibiting cough.

3,419,570

METHOD OF PREPARING 2,3-PYRIDINEDIOL

John Valdemar Brammer Petersen, Horsholm, and Niels Clauson-Kaas, Farum, Denmark, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,685

Claims priority, application Switzerland, Apr. 29, 1965, 5,938/65, 5,939/65, 5,940/65

16 Claims. (Cl. 260—297)

2,3-pyridinediol is prepared by reacting furfural in an aqueous medium with a chlorinating agent which yields from 1 to 1.5 moles of chlorine per mole of furfural, and with at least an equimolar amount of ammonia or an ammonium salt. 2,3-pyridinediol is also prepared by the reaction in an aqueous medium of furfural, chlorine or an agent releasing chlorine in an aqueous medium, sulfamic acid, and hydrolyzing the reaction mixture. The alkali metal salt of 3-hydroxy-2-oxo-1-(2H)-pyridine sulfonic acid is obtained as an intermediate by adding a substance that releases alkali metal, preferably sodium, cations by dissociation, and recovering by filtration.

3,419,571

METHOD FOR RELIEVING CORONARY INSUFFICIENCY

Frederick J. Di Carlo, Mountain Lakes, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,500

1 Claim. (Cl. 424—298)

A novel method for relieving coronary insufficiency by the administration of pentaerythritol lower nitrates.

3,419,572

RING SYNTHESIS OF HALO-SUBSTITUTED 1,2,5-THIADIAZOLES

Leonard M. Weinstock, Rocky Hill, and Barry Handelsman, Rahway, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,584

5 Claims. (Cl. 260—302)

3-halo- and 3,4-dihalo-1,2,5-thiadiazoles are prepared by reacting together an aminoacetonitrile and a sulfur halide. Mono-halo derivatives are obtained by employing sulfur monohalide as the sulfur halide and dihalo derivatives are obtained by employing sulfur dihalide as the sulfur halide. The latter reaction is carried out in the presence of free halogen.

3,419,573

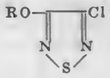
3-CHLORO-4-OXY-1,2,5-THIADIAZOLES, AND A PROCESS FOR PREPARING SAME

Leonard M. Weinstock, Rocky Hill, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,699

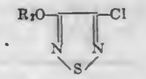
12 Claims. (Cl. 260—302)

1. A 1,2,5-thiadiazole compound having the formula



where R represents hydrogen, loweralkyl, loweralkenyl, loweralkoxyloweralkyl, hydroxyloweralkyl or benzyl.

8. The method for preparing a compound of the formula



where R_2 represents loweralkyl, loweralkenyl, loweralkoxyloweralkyl, hydroxyloweralkyl or benzyl, that comprises reacting 3-chloro-4-hydroxy-1,2,5-thiadiazole with a substance of the formula

$$R_2—Y$$

in the presence of a base selected from the group consisting of tertiary amines, alkali metal carbonates or alkali metal bicarbonates, where R_2 is as previously defined and Y is the anion of a strong acid.

3,419,574

4-CHLORO-2-BUTYNYL N-(2-BENZOTHIAZOYL) CARBAMATE

Thomas R. Hopkins and Joe W. Pullen, Overland Park, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Application Jan. 4, 1959, Ser. No. 786,674, now Patent No. 3,203,949, dated Aug. 31, 1965, which is a continuation-in-part of application Ser. No. 723,133, Mar. 24, 1958. Divided and this application May 6, 1965, Ser. No. 462,164

1 Claim. (Cl. 260—304)

New pesticides, particularly herbicides, are N-substituted 4-halo-2-butynyl carbamates, which are conveniently made by reacting a 4-halo-2-butynyl halocarbonate with a primary or secondary amine or by reacting a 4-halo-2-butyn-1-ol with an organic isocyanate.

3,419,575

NOVEL 2-AMINO-5-AMINOALKYL-THIADIAZOLES

Gerhart Rudolf Griss, Biberach (Riss), Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,183
Claims priority, application Germany, Mar. 26, 1964, T 25,922
4 Claims. (Cl. 260—306.8)

The compounds are 2-amino-5-aminoalkyl-thiadiazoles and non-toxic, pharmacologically acceptable acid addition salts thereof, useful as antitussives, analgesics and antipyretics in warm-blooded animals.

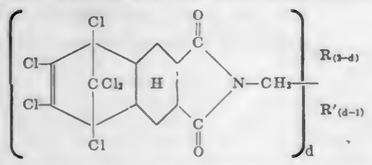
3,419,576

CYCLOALIPHATIC SUBSTITUTED 1,2,3,4,9,9-HEXACHLORO - 1,4,4a,5,6,7,8,8a - OCTAHYDRO-1,4 - METHANONAPHTHALENE - 6,7-DICARBOXIMIDES

Carleton W. Roberts, Midland, and Gale D. Travis, Shepherd, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,157
5 Claims. (Cl. 260—326)

The present invention is directed to a cycloaliphatic substituted dicarboxamide compound of the formula:



wherein R represents 2-(aminomethyl)cyclobutyl or 2-(cyclohexylamino)ethyl, R′ represents 1,2-cyclobutylene, and *d* represents an integer of from 1 to 2, both inclusive; and, where *d* represents 1, the corresponding hydrochloride salt. The products of the present invention are useful as agents to control the growth of plants.

3,419,577

ORGANIC PEROXIDES

Ernst Bieckert, Limburgerhof, Germany, and Rolf Kallischnigg and Klaus Gensel, Liestal, Switzerland, assignors to Knoll A.G., Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,748
Claims priority, application Germany, Feb. 1, 1963, K 48,824; Dec. 21, 1963, K 51,707
9 Claims. (Cl. 260—338)

Acyclic and cyclic organic peroxides with internal peroxide groups characterized by higher than usual thermal stability and lower than usual volatility.

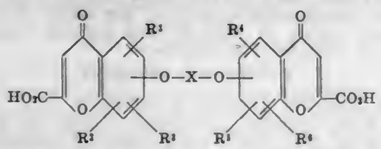
3,419,578

BIS-CHROMONYL COMPOUNDS

Colin Fitzmaurice and Thomas Brian Lee, Holmes Chapel, England, assignors to Fisons Pharmaceuticals Limited, Loughborough, England

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,281
Claims priority, application Great Britain, Mar. 25, 1965, 12,626/65; Dec. 9, 1965, 52,414/65
32 Claims. (Cl. 260—345.2)

Bis-chromonyl compounds of the formula:



and therapeutically acceptable salts, esters and amides thereof, wherein R^1, R^2, R^3, R^4, R^5 and R^6 are the same or different and each is H or halogen, lower alkyl, hydroxy, lower alkoxy, substituted lower alkyl or substituted lower alkoxy, and X is a saturated or unsaturated, substituted or unsubstituted, straight or branched polymethylene chain which may be interrupted by one or more carbocyclic rings or oxygen-containing heterocyclic rings, oxygen atoms or carbonyl groups, are useful as inhibitors of certain antigen-antibody reactions, being particularly useful for the relief and prophylaxis of asthma.

3,419,579

SYNTHESIS OF 2,3-DIHYDRO-2,2-DIMETHYL-7-BENZOFURANOL

Donald L. Towns, Trenton, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,268
10 Claims. (Cl. 260—346.2)

This specification discloses a process for the synthesis of 2,3 - dihydro-2,2-dimethyl-7-benzofuranol comprising:

(a) Reacting 2-hydroxyacetophenone with a methallyl halide to form 2-acetylphenyl methallyl ether,

(b) Rearranging and cyclizing 2-acetylphenyl methallyl ether to form 2,3 - dihydro-2,2-dimethyl-7-acetylbenzofuran,

(c) Oxidizing 2,3-dihydro-2,2-dimethyl-7-acetylbenzofuran to 2,3 - dihydro-2,2-dimethyl-7-acetoxybenzofuran, and

(d) Hydrolyzing 2,3 - dihydro-2,2-dimethyl-7-acetoxybenzofuran to 2,3 - dihydro-2,2-dimethyl-7-benzofuranol.

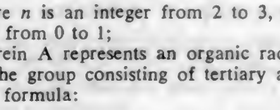
3,419,580

KETONE ACETALS AND ORTHOESTERS

William C. Kuryla, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 292,478, July 2, 1963. This application Apr. 2, 1965, Ser. No. 450,178
11 Claims. (Cl. 260—347.8)

4. A compound of the formula:

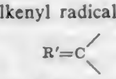


(1) where *n* is an integer from 2 to 3, and *m* is an integer from 0 to 1;

(2) wherein A represents an organic radical selected from the group consisting of tertiary alkyl radicals of the formula:



and secondary 1-alkenyl radicals of the formula:



wherein R is selected from the group consisting of alkyl and chloroalkyl, each containing from 1 to 4 carbon atoms, and R′ is selected from the group consisting of alkylidene and chloroalkylidene, each containing from 1 to 4 carbon atoms;

(3) wherein X is selected from the group consisting of —O—, and



wherein R″ is alkyl, of from 1 to 4 carbon atoms;

(4) wherein each R^2 individually is selected from the group consisting of hydrogen, alkyl of from 1 to 8 carbon atoms and monocyclic and bicyclic hydrocarbon aryl, alkaryl and aralkyl groups contain- 6 to 12 carbon atoms, and when taken with R^3 forms R^3 forms part of a saturated divalent chain which forms a heterocyclic ring containing X as the heterocyclic atom;

(5) wherein R^3 is selected from the group consisting of alkyl of from 1 to 6 carbon atoms, alkoxyalkyl and polyoxyalkylene, containing 2 to 4 carbon atoms in each alkylene unit, and when taken with any R^2 forms part of a saturated divalent chain which forms a heterocyclic ring containing X as the heterocyclic atom.

3,419,581

SEPARATION AND RECOVERY OF DIAROYLAMINOANTHRAQUINONES FROM THE REACTION OF DIAMINOANTHRAQUINONES AND AROYL HALIDES

Felix F. Ehrich, Westfield, and Edward E. Jaffe, Union, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,236
9 Claims. (Cl. 260—377)

Processes for producing diaroylaminoanthraquinone pigments and dyestuffs from an aroyl halide and a diaminoanthraquinone comprising (1) heating to a temperature in the range from 130° to 180° C. a mixture of the reactants in a liquid diluent having a boiling point above 130° C. and selected from the group consisting of saturated hydrocarbons and polyhalogenated aromatic hydrocarbons, (2) cooling the reaction mixture so-obtained to below about 20° C., (3) mixing the cooled reaction mixture with sulfuric acid having a concentration of 96 to 99%, whereby the diaroylaminoanthraquinone reaction product is dissolved in the sulfuric acid and forms therewith a phase separate from the diluent phase, (4) separating and recovering the sulfuric acid phase, (5) rapidly diluting said sulfuric acid phase with cold water, whereby the reaction product is precipitated in finely divided form, and (6) recovering the finely divided product.

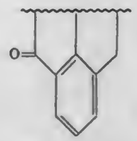
3,419,582

PENTACYCLIC STEROIDS AND PROCESS

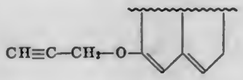
Alberto Ercoli, Milan, and Rinaldo Gardi, Carate Brianza, Milan, Italy, assignor, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Aug. 19, 1966, Ser. No. 573,452
Claims priority, application Italy, Aug. 23, 1965, 18,856/65
21 Claims. (Cl. 260—397.3)

1. A process for the preparation of a 3-keto benzo[d,e] steroid having in rings A and B of the steroid nucleus the structure:



which comprises heating a 3-propargyl enolether of the corresponding Δ^4-3-ketosteroid of the formula:



in an anhydrous organic medium at a temperature of from about 110 to about 180° C. and in the presence of a cyclodehydrogenation catalyst selected from the group consisting of palladium and platinum.

16. Benzo[d,e]pregnane-3,20-dione.

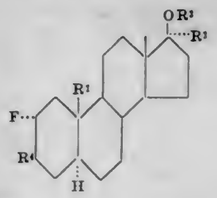
3,419,583

2α-FLUORO-DERIVATIVES OF THE ANDROSTANE SERIES

John Edwards and Howard J. Ringold, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Apr. 6, 1960, Ser. No. 20,239
Claims priority, application Mexico, June 1, 1959, 54,718
19 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



wherein R^1 is selected from the group consisting of hydrogen and methyl, R^2 is selected from the group consisting of hydrogen and aliphatic hydrocarbon radicals containing from 1 to 8 carbon atoms, R^3 is selected from the group consisting of hydrogen and a hydrocarbon carboxylic acyl group containing less than 12 carbon atoms and R^4 is selected from the group consisting of β-hydroxy, α-hydroxy and β-acyloxy in which the acyl group is that of a hydrocarbon carboxylic acid of less than 12 carbon atoms.

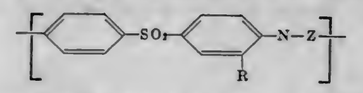
3,419,584

POLYMERIC COMPOUNDS AND METHODS FOR THEIR PRODUCTION

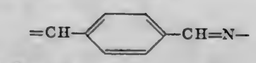
Edward F. Elslager and David B. Capps, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,311
7 Claims. (Cl. 260—397.6)

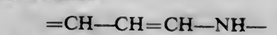
1. A pharmaceutically-acceptable polymeric compound composed of the recurring structural unit of the formula



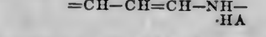
then enters the intersection but proceeds to leave the intersection in any direction other than the one to which the aircraft has been programmed.



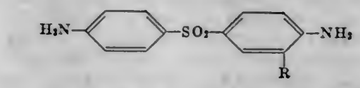
a unit of the formula



and a unit of the formula



where A is one equivalent of a pharmaceutically-acceptable anion; whenever prepared or produced by reacting a 4,4-sulfonyldianiline compound having the formula



with a member of the class consisting of terephthalaldehyde, malondialdehyde, 1,1,3,3-tetraethoxypropane, propargyl aldehyde, and propargyl aldehyde diethyl acetal in a solvent medium in the presence of a strong acid; where R is defined as above.

3,419,585

4'-METHYLSULFONYL-3-PHENYL-SALICYLANILIDES

Jack D. Early, Bethesda, Md., and John P. Chupp, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Oct. 13, 1965, Ser. No. 495,668. Divided and this application Oct. 3, 1966, Ser. No. 583,966

4 Claims. (Cl. 260—397.6)

4'-methylsulphonyl-3-phenylsalicylanilides are useful in destroying gastrapods, the class of animal life Gastropoda of the phylum Mollusca.

3,419,586

PRODUCTION OF C_{18} CYCLIC ACIDS IN AQUEOUS SOLVENT

Robert E. Beal, Elmwood, and Roger A. Eisenhauer, East Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 21, 1966, Ser. No. 544,088

1 Claim. (Cl. 260—405.6)

Commercial yields of linolenic-derived, monomeric C_{18} conjugated cyclohexadiene monocarboxylic acid isomers are obtained in a completely aqueous reaction medium by isomerizing and cyclizing linseed oil or methyl linolenate in excess alkali at a temperature of 295–300° C.

3,419,587

ZIRCONIUM COMPOUNDS

Samuel Edward Harson, Culcheth, near Warrington, England, assignor to Hardman & Holden Limited, Manchester, England, a British company

No Drawing. Filed May 17, 1965, Ser. No. 456,526

Claims priority, application Great Britain, May 20, 1964, 20,741/64

7 Claims. (Cl. 260—414)

Metal-organic compounds containing zirconium and one or more divalent metals are prepared by first reacting zirconyl carbonate with a monocarboxylic acid and then reacting with one or more divalent metals in powder form or in the form of oxides, hydroxides or carbonates and distilling to remove the water which is liberated. An alkyl phosphoric or phosphorous acid or a sulphonic acid may be added in addition to the carboxylic acid.

3,419,588

PROCESS FOR CONTINUOUSLY DEACIDIFYING GLYCERIDE OILS

Willem de Man, Hilversum, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Sept. 19, 1966, Ser. No. 580,390

Claims priority, application Germany, Oct. 30, 1965, U 12,074

7 Claims. (Cl. 260—425)

A process for continuously deacidifying or neutralizing a glyceride oil containing free fatty acids and other impurities while avoiding substantial emulsification and saponification which comprises flowing or moving a thin layer of the oil upon a horizontal or slightly inclined surface while spraying small droplets of an aqueous alkaline liquid thereon, maintaining the cocurrent flow or movement of the resultant substantially non-turbulent mixture until neutralization occurs and thereafter separating the resultant neutral oil from the resultant soap-containing and impurity-containing aqueous phase.

3,419,589

ORGANIC MOLYBDENUM COMPOUNDS CONTAINING SULFUR AND METHOD OF PREPARATION

Melvin L. Larson, Ann Arbor, and Fred W. Moore, Inkster, Mich., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,289

20 Claims. (Cl. 260—429)

A process for the preparation of molybdenum (VI) dialkyldithiocarbamate complexes and sulfurized derivatives thereof in substantially high yields by the dilute nitric acid acidification of alkali dialkyldithiocarbamates and alkali molybdates and the subsequent treatment thereof with hydrogen sulfide to form the sulfurized derivatives of the reaction product. These compounds have utility as additives for lubricants.

3,419,590

FLUORINATED ORGANOMERCURY COMPOUNDS

Fred William West, and John Thomas Gresham, Skillman, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,255

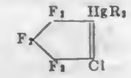
10 Claims. (Cl. 260—431)

Fluorinated organomercury compounds, useful in the construction of floated control instruments, have the formulae:

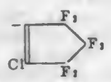




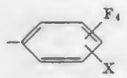
and



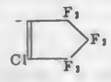
wherein R is selected from the group consisting of $-CH_3$, $-CF=CF_2$,



and



R_1 is selected from the group consisting of $-CH_3$, $-CF=CF_2$,



and



R_2 is selected from the group consisting of $-CH_3$, $-CF=CF_2$, and



and X is selected from the group consisting of chlorine, bromine, fluorine and $-HgCH_3$.

3,419,591

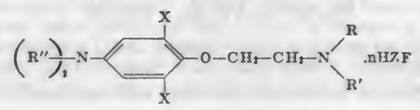
SUBSTITUTED PHENETIDINE SALT OF HEXAFLUOROARSENIC AND HEXAFLUOROPHOSPHORIC ACIDS

Hugh T. Harrison, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,757

4 Claims. (Cl. 260—440)

1. Compound of the formula



wherein each X independently represents chlorine, bromine, or iodine; R, taken singly, represents loweralkyl, R′, taken singly, represents hydrogen or loweralkyl, and R and R′, taken together, represent the divalent moiety $-(CH_2)_5-$, which, with the nitrogen atom, comprises a piperidine ring; R″ represents hydrogen or methyl; Z represents arsenic or phosphorus; and *n* represents an integer of from 1 to 2, both inclusive.

3,419,592

METHOD FOR MAKING ORGANOSILOXANE HYDRIDES

Abe Berger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,144

2 Claims. (Cl. 260—448.2)

A method is provided for making organosiloxane hydrides by reducing halogen atoms attached to silicon of a halogen-substituted organopolysiloxane. Selective reduction of the halogen atoms of the halogen-substituted organopolysiloxane is achieved with a trialkylboron catalyst utilized in combination with a sufficient amount of an alkali metal hydride.

3,419,593

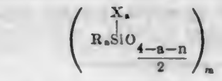
CATALYSTS FOR THE REACTION OF ≡SiH WITH ORGANIC COMPOUNDS CONTAINING ALIPHATIC UNSATURATION

David N. Willing, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

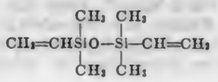
No Drawing. Filed May 17, 1965, Ser. No. 456,516

7 Claims. (Cl. 260—448.2)

A catalyst useful for the reaction between silicon bonded hydrogen atoms and aliphatically unsaturated bonds is the reaction product of chloroplatinic acid and an organosilicon compound having the formula



where R is a monovalent hydrocarbon or halohydrocarbon radical and at least one R contains terminal aliphatic unsaturation, X is a hydrolyzable group, *n* is 1.5 to 3, *m* is 1 to 20 and *a* is 0 to 2.5. An example of the organosilicon compound is



3,419,594

CONTINUOUS PROCESS FOR THE HALOGENATION OF TOLYLENE DIISOCYANATE

Herbert Felix McShane, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 8, 1966, Ser. No. 541,156

8 Claims. (Cl. 260—453)

A continuous process for the catalytic halogenation of toluene diisocyanate is now provided utilizing controlled conditions and a positively established main reaction zone. Ring halogenated toluene diisocyanate is recovered from the bottom of the said reaction zone.

3,419,595

FLUOROCARBON FLUOROALKANESULFONATES

Robert L. Hansen, Roseville, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,573

3 Claims. (Cl. 260—456)

Highly fluorinated sulfonate esters of highly fluorinated carbinols are provided which are very useful for substitution of the highly fluorinated carbinol groups on nucleophile. Exemplary of such compounds are 1,1-dihydroperfluoroalkyl perfluoroalkanesulfonates.

3,419,596

ARALIPHATIC ISONITRILES

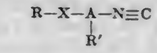
Uwe Fetzer, Leverkusen, Ulrich Eholzer, Cologne-Stammheim, Ivar Ugi, Leverkusen, Ingeborg Hammann, Cologne, and Günter Unterstenhöfer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 28, 1965, Ser. No. 467,711

Claims priority, application Germany, July 9, 1964, F 43,387

11 Claims. (Cl. 260—465)

Araliphatic isonitriles having the formula



in which A is C_{1-4} aliphatic, X is a C—C bond or —S—, and R and R′ each respectively is phenyl or chloro-, C_{1-4} alkyl- and/or C_{1-4} alkoxy-substituted phenyl, which possess biocidal properties, especially insecticidal, acaricidal and fungicidal properties, and which may be produced by conventional methods.

3,419,597

PRODUCTION OF ACRYLONITRILE

John W. Begley, Bloomfield, N.J., and Lyle W. Pollock, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 422,376, Dec. 30, 1964. This application Jan. 22, 1968, Ser. No. 699,456

12 Claims. (Cl. 260—465.3)

In a process for producing acrylonitrile by passing to a catalytic convertor hydrocyanic acid and acetylene formed by the action of a plasma stream on ammonia and a lower alkane hydrocarbon such as methane or ethane, the yield of acrylonitrile product is increased relative to the yield of nitrogen containing by-product such as succinonitrile, acetonitrile, and propionitrile, by passing at least a portion of the by-products from the catalytic converter to the plasma stream as quench. The yield of acrylonitrile is further increased by simultaneously passing portions of the by-products to the plasma stream and the catalytic convertor respectively.

3,419,598

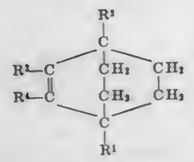
DERIVATIVES OF BICYCLO[2.2.2]OCT-2-ENE AND PROCESS OF PREPARATION

James C. Kauer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 377,132, June 22, 1964. This application June 2, 1965, Ser. No. 460,820

15 Claims. (Cl. 260—468)

1. The class of compounds having the formula



wherein one of R^1 and R^2 is selected from the group consisting of carboxy and lower alkoxycarbonyl and the other of R^1 and R^2 is a C_1–C_8 saturated aliphatic hydrocarbyl group, and R^3 and R^4 each is selected from the group consisting of hydrogen and a C_1–C_8 hydrocarbyl group free of aliphatic carbon-to-carbon unsaturation, with the proviso that at least one of R^3 and R^4 is hydrogen.

3,419,599

NOVEL TROPOLONE DERIVATIVES

John Krapcho, Somerset, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Dec. 26, 1962, Ser. No. 247,274, now Patent No. 3,326,963, dated June 20, 1967. Divided and this application Dec. 27, 1966, Ser. No. 604,555

3 Claims. (Cl. 260—473)

This disclosure relates to substituted phenyl derivatives of 6-hydroxy-7-oxo-1,3,5-cycloheptatriene - 1 - carboxylic acids and salts thereof. The compounds of this disclosure have been found to possess anti-microbial activity.

3,419,600

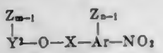
NOVEL NITRO- AND AMINO-ARYLALKOXY-HYDROQUINONES

Milton Green and Warren E. Solodar, Newton Center, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Apr. 15, 1964, Ser. No. 360,139

20 Claims. (Cl. 260—479)

9. A chemical compound of the formula:



wherein Ar is an aryl nucleus selected from the class consisting of benzene and naphthalene nuclei; each Z is selected from the group consisting of lower alkyl and chlorine groups; *m* is 1 to 4, inclusive; *n* is 1 to 5, inclusive; X is an alkylene group containing from 2 to 6 carbons; and Y is selected from the group consisting of para-diacyloxy phenyl and ortho-diacyloxy phenyl; said acyloxy groups being represented by:



wherein R is selected from the group consisting of lower alkyl and phenyl groups.

3,419,601

CYCLIC PROCESS FOR THE PRODUCTION OF METHYL METHACRYLATE

Charles Levi Isbell, Jr., Charleston, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,536

4 Claims. (Cl. 260—486)

Methyl methacrylate is produced by a cyclic process in which oleum, methanol and acetone cyanohydrin are reacted to form a mixture containing methyl methacrylate and ammonium sulfate; the methyl methacrylate is separated from the mixture and the ammonium sulfate portion is burned to form a gas containing sulfur dioxide which is oxidized to sulfur trioxide and is absorbed with concentrated sulfuric acid before being recycled back to the reaction mixture of ammonium sulfate and methanol.

3,419,602

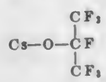
FLUORINATED ALKYL ESTERS OF ACRYLIC (TYPE) ACIDS

Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Sept. 21, 1964, Ser. No. 398,129, now Patent No. 3,384,628, dated May 21, 1968. Divided and this application Jan. 9, 1967, Ser. No. 623,483

9 Claims. (Cl. 260—486)

Alkali metal fluorocarbinolates, characterized by containing fluorine on the alpha carbon atom, are prepared by reacting a great variety of ketones and substituted ketones with an alkali metal fluoride. Typical example: Hexafluoroacetone is reacted with cesium fluoride to produce cesium heptafluoroisopropylate:



The fluorocarbinolates can be converted into fluorinated esters by reaction with an acid halide. By using an unsaturated halide in the reaction—for example, acryloyl chloride—the resulting esters can be made into homo- or copolymers which are useful in rendering textiles resistant to water, oil, and soils.

3,419,603

STABILIZATION OF WATER SOLUBLE ACETOHYDROXAMIC ACID SALTS

Stanley A. Lipowski, Livingston, and Charles A. Fetscher, Short Hills, N.J., assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,774

4 Claims. (Cl. 260—500.5)

Water soluble alkali metal salts of acetohydroxamic acid are stabilized by treatment with formic and acetic acids. For example, to still liquid potassium acetohydroxamate was added 10% by weight of glacial acetic acid. The stabilized salt was heated to 240° C. without exploding.

3,419,604

2-AMINO- OR -AMINO-ALKYLENE-SPIRO [CYCLOPROPANE-1,9'-FLUORENES] AND THE SALTS THEREOF

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,067

9 Claims. (Cl. 260—501.1)

Amino derivatives of spiro [cyclopropane 1,9'-fluorene] wherein the amino group may be primary, secondary or tertiary including cyclic amino and the fluorene ring may be halogen, trifluoromethyl, lower alkyl, lower alkoxy, lower alkylthio or lower alkylsulfonyl, have antidepressant and stimulant activity. The compounds are generally prepared via the spiro [cyclopropane-1,9'-fluorene]-2-carboxylic acids.

3,419,605

METHOD OF PREPARING KETO-MONOCARBOXYLIC ACIDS

Theodore C. Mead, Glenham, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,090

5 Claims. (Cl. 260—514)

A method of preparing keto-monocarboxylic acids via oxidizing alpha-hydrocarbon cyclohexanones in the presence of an alkali metal hydroxide or alkaline earth metal hydroxide in the presence of inert aqueous reaction solvent, then removing said solvent, acidifying the reaction mixture and recovering the keto acid which is useful in the preparation of keto acid esters of alkanols, and amides and N-substituted amides of the keto acids, the latter being useful as a detergent dispersant additive in lubricating oil.

3,419,606

4-(2-METHYLENEALKANOYL)PHENYLSULFINYL ALKANOIC ACIDS

John B. Bicking, Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 13, 1964, Ser. No. 367,199

2 Claims. (Cl. 260—515)

[4-(2-methylenealkanoyl)phenylsulfinyl]alkanoic acid products which may be substituted in the benzene ring by halogen, alkyl, alkoxy or by a 1,3-butadienylene chain; and the non-toxic salts, esters and amide derivatives thereof. The products are useful as diuretics in the treatment of conditions associated with edema.

The compounds of the invention are prepared via the reaction of a corresponding [4-(2 - methylenealkanoyl) phenylthio]alkanoic acid analog with a suitable oxidizing agent.

3,419,607

OXIDATION OF ACROLEIN OR METHACROLEIN WITH AN ANTIMONY-PHOSPHORUS-VANADIUM-OXYGEN CATALYST

Peter Hurst, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 11, 1964, Ser. No. 366,600

Claims priority, application Great Britain, May 21, 1963, 20,174/63

6 Claims. (Cl. 260—530)

There is provided a process for the manufacture of acrylic acid and methacrylic acid from acrolein and methacrolein by interacting the alkenals with oxygen in the vapor phase at between about 250 and 500 C. in the presence of a catalyst containing phosphorus, vanadium, antimony and oxygen. The catalyst may be supported on or mixed with conventional solids such as silica and in a static or fluidized state. The oxygen feed may be pure oxygen or air as such or diluted with an inert gas such as nitrogen or steam.

3,419,608

SPHERULITIC CRYSTAL AGGREGATE OF MONOSODIUM GLUTAMATES MONOHYDRATE AND METHOD OF PREPARING THE SAME

Yurio Kawamura, Tokyo, Taketoshi Ando, Kanagawa-ken, Kuniharu Takenouchi, Tokyo, Yoshiki Sakata, Kanagawa-ken, and Hiromasa Maruyama, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 331,896, Dec. 19, 1963. This application Mar. 16, 1965, Ser. No. 440,297

Claims priority, application Japan, Dec. 25, 1962, 37/57,494

6 Claims. (Cl. 260—534)

Spherulitic crystal aggregates of monosodium L-glutamate monhydrate are obtained by crystallizing monosodium L-glutamate from aqueous methanol containing 60–95% methanol by weight at a temperature at which the solution is supersaturated with the glutamate. The crystals quickly dissolve and are of uniform size when crystallized from 75–95% methanol.

3,419,609

PREPARATION OF ALKALI METAL SALTS OF NITRILOTRIACETIC ACID

John W. Sibert, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,837

7 Claims. (Cl. 260—534)

Method for preparation of an alkali metal salt of nitrilotriacetic acid, said method comprising adding a mineral acid-stabilized mixture of formaldehyde and hydrogen cyanide to aqueous alkali metal hydroxide and subsequently reacting the resultant reaction mass; said method being conducted in the absence of added ammonia.

3,419,610

PROCESS FOR POLYMERIZING FLUORINATED OLEFIN EPOXIDES

Stanley Temple, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,168

22 Claims. (Cl. 260—544)

Preparation of polyfluorinated ethers by reaction of a polyfluoroolefin epoxide with a tertiary salt of the structure R_fOM.

3,419,611

HYDRATED 1,3-DIAMINOADAMANTANES AND PREPARATION THEREOF

Robert E. Moore, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 29, 1965, Ser. No. 510,353

19 Claims. (Cl. 260—563)

Derivatives of adamantane or alkyladamantanes which are 1,3-diaminoadamantanes are prepared by hydrolyzing 1,3-diformamidoadamantanes in mineral acid of 5-80% strength and recovering the resulting diamino product by raising the pH above 9 to selectively precipitate the diamine in the form of hydrates.

3,419,612

MIXTURES OF 2,4- AND 2,6-LOWER ALKYL CYCLOHEXYLENEDIAMINES

James Martin Cross and Sidney H. Metzger, Jr., New Martinsville, and Clyde D. Campbell, Wheeling, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

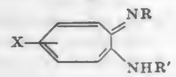
No Drawing. Original application June 1, 1964, Ser. No. 371,842. Divided and this application June 27, 1966, Ser. No. 578,920

6 Claims. (Cl. 260—563)

Mixtures of isomers of lower alkyl cyclohexylene diamines.

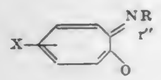
3,419,613
PROCESS FOR PREPARING TROPONEIMINES
Tetsuo Nozoe, Sendai, and Genshun Sunagawa, Nobuo Soma, and Yoshio Sato, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan
No Drawing. Filed May 26, 1965, Ser. No. 459,072
Claims priority, application Japan, May 30, 1964, 39/30,398
1 Claim. (Cl. 260—566)

A process for preparing 2-amino-troponeimine derivatives having the formula



(I)

wherein X is hydrogen, straight or branched lower alkyl or phenyl; R and R′ are each hydrogen, straight or branched lower alkyl, phenyl, phenyl substituted with chlorine, lower alkyl or lower alkoxy; or benzyl, provided that, when R and R′ are the same, R is hydrogen, straight or branched lower alkyl, phenyl or phenyl substituted with chlorine, lower alkyl or lower alkoxy and when one of R and R′ is hydrogen, the other is also hydrogen, which comprises reacting a compound having the formula



with R′–NH_2, wherein R″ is a lower alkyl group and R, R′ as well as X are as defined above. The products prepared in accordance with the invention are useful as dyes.

3,419,614
PREPARATION OF THIOLS AND THIOETHER COMPOUNDS
Richard C. Doss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 30, 1965, Ser. No. 491,876
6 Claims. (Cl. 260—583)

A process for increasing the yield of thiol compounds which comprises reacting ethylenically unsaturated compounds with hydrogen sulfide in the presence of sulfur and a basic material at a temperature of from 230–400° C.

3,419,615
PRODUCTION OF CYCLODODECANOL AND CYCLODODECANONE
Elroy J. Inchalik, Cranford, Isidor Kirschenbaum, Westfield, N.J., and Ralph M. Hill, London, England, assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 23,632, Apr. 21, 1960. This application Mar. 24, 1965, Ser. No. 442,480
6 Claims. (Cl. 260—586)

1. An improved process for the selective oxidation of cyclododecane to cyclododecanol and cyclododecanone which comprises reacting cyclododecane with an oxygen-containing gas containing approximately 7–21 mol percent oxygen in the presence of 2.0–6.5 wt. percent (based on cyclododecane) of a boric acid material selected from the group consisting of boric acid and boric oxide at temperatures of 155–170° C. for a time to obtain conversion of 5–25%, hydrolyzing and recovering cyclododecanol and cyclododecanone from the reaction products with a selectivity based on cyclododecane converted of at least 90%.

3,419,616
PREPARATION OF NINHYDRIN
Louis L. Wood, Washington, D.C., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Aug. 22, 1966, Ser. No. 573,847
5 Claims. (Cl. 260—590)

In abstract, this invention is directed to a process for preparing ninhydrin, comprising reacting a mixture of oximino-1,3-indandione, formaldehyde and aqueous acid and recovering the ninhydrin formed thereby, all as recited hereinafter.

3,419,617
ORGANIC CHEMISTRY
Richard C. Doss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of abandoned application Ser. No. 399,862, Sept. 28, 1964. This application June 7, 1965, Ser. No. 462,136
9 Claims. (Cl. 260—601)

Alpha - formyl sulfide or alpha,alpha - bis(hydrocarbylthio) aldehyde is formed by reacting alpha-halo aldehyde or alpha,alpha-dihalo aldehyde, respectively, with a thiol in the presence of pyridine and derivatives thereof.

3,419,618
PROCESS FOR PREPARING ACETALDEHYDE
Lothar Hirsch, Kelkheim, Taunus, and Lothar Hörnig, Günther Mau, and Therese Quadflieg, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Mar. 30, 1965, Ser. No. 444,055
Claims priority, application Germany, Apr. 16, 1964, F 42,629
5 Claims. (Cl. 260—604)

A process has been provided for preparing acetaldehyde from ethylene and oxygen, in presence of a catalyst, which comprises reacting a gaseous mixture containing ethylene and elementary oxygen in the presence of palladium (II) oxide as catalyst.

3,419,619
PROCESS FOR PREPARING PURE DIMETHYLSULFOXIDE
Alfons Söder and Wolfgang Hempel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Mar. 16, 1965, Ser. No. 440,319
Claims priority, application Germany, Mar. 26, 1964, F 42,439
2 Claims. (Cl. 260—607)

Industrial dimethyl sulfoxide is purified to a high degree of purity with aluminum oxide having an activity level (step) of I, available surface area from 50 to 300 sq. m./g., and a pH value above 6.5. The purification is conveniently carried out in a column or tube filled with the specified type of aluminum oxide.

3,419,620
2-ETHOXY-METHYL-4,6-DINITRO-PHENOL
Heinz-Manfred Becher, Richard Sehring, and Karl Zeile, Ingelheim am Rhein, Germany, assignors to C. H. Boehringer Sohn, Ingelheim am Rhein, Germany, a limited partnership of Germany
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,180
Claims priority, application Germany, Dec. 27, 1962, B 70,152; May 29, 1963, B 72,093
1 Claim. (Cl. 260—611)

1. 2-ethoxymethyl-4,6-dinitro-phenol.

3,419,621
HALOGEN CONTAINING ETHER COMPOSITIONS
Pauls Davis, Gibraltar, and Herwart C. Vogt, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed June 27, 1966, Ser. No. 560,796
4 Claims. (Cl. 260—615)

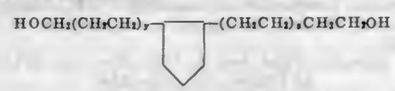
Halogen-containing ether compositions prepared by reacting allyl alcohol with halogenated epoxide containing from 3 to 4 carbon atoms and having an alkyl group attached to a carbon atom of the oxirane ring, said alkyl group having a maximum of 2 carbon atoms and containing at least 2 halogen atoms attached to the same terminal carbon atom in the presence of a catalyst.

ERRATUM

For Class 260—617 see:
Patent No. 3,419,903

3,419,622
DI(ω-HYDROXYALKYL) CYCLOPENTANES
Erich Marcus, Charleston, and Donald L. MacPeek, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Dec. 28, 1962, Ser. No. 247,828, now Patent No. 3,358,008. Divided and this application Mar. 20, 1967, Ser. No. 624,148
3 Claims. (Cl. 260—617)

This invention relates to the production of a member selected from the group consisting of 1-hydroxymethyl-2-hydroxyethylcyclopentane and di(ω-hydroxyalkyl)cyclopentane of the formula:



wherein y and z designate integers of from 0 to 8, at least one of which is a positive integer, by reacting 1,5-cyclooctadiene with an isoalkylaluminum, optionally growing the resulting polymer with ethylene, oxidizing the polymer, and then hydrolyzing the oxygenated polymer.

3,419,623
PROCESS FOR THE PRODUCTION OF 1-(o-CHLOROPHENYL)2,2,2-TRICHLOROETHANOL
Ivan C. Nordin, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Aug. 29, 1966, Ser. No. 575,550
4 Claims. (Cl. 260—618)

Process for the production of 1-(o-chlorophenyl)-2,2,2-trichloroethanol by reacting o-chlorobenzaldehyde with a trichloromethyl compound, such as chloroform or an amine adduct of chloral, in the presence of an alkali metal hydride and neutralizing the resulting product. The process product is useful as an intermediate in the preparation of 1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)ethane, a compound useful in the treatment of adrenocortical carcinoma.

3,419,624
NOVEL BISPHENOLS OF DICYCLOPENTADIENE
Robert J. Cotter, Bernardsville, Francis N. Apel, Nutley, and Louis B. Conte, Jr., Newark, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 24, 1964, Ser. No. 347,335
1 Claim. (Cl. 260—619)

1. Bisphenol reaction product obtained over an acidic cation exchanging resin by contacting dicyclopentadiene with at least a stoichiometric amount of phenol at a temperature of about 30° C. to 150° C.

3,419,625
FLUOROTRINITROMETHANE
Richard C. Doss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 6, 1961, Ser. No. 87,489
16 Claims. (Cl. 260—644)

1. Fluorotrinitromethane.

2. A method of preparing fluorotrinitromethane, which method comprises reacting tetranitromethane with an alkali metal fluoride in the presence of a polar organic solvent for said alkali metal fluoride and which is inert under the reaction conditions, and recovering said fluorotrinitromethane from the resulting reaction mixture.

3,419,626
CHLORO-SUBSTITUTED XYLYLENE DIBROMIDES
William J. Pyne, Painesville, and Henry Bluestone, University Heights, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,943
1 Claim. (Cl. 260—651)

This invention relates to novel ring-chlorinated ortho- and para-xylylene dibromides which are prepared by reacting with the aid of actinic radiation and at a temperature ranging from about 25° to 100° C., the corresponding ring-chlorinated xylene isomers with bromine. These chlorinated xylylene dibromide isomers exhibit significant pesticidal activity.

3,419,627
SEPARATION USING SILICA GEL
Hugh E. Keeling and Donald C. Tabler, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,835
2 Claims. (Cl. 260—652)

Monohalogen-substituted aliphatic hydrocarbons and polyhalogen-substituted aliphatic hydrocarbons are separated from each other and from unhalogenated hydrocarbons by selective adsorption on silica gel.

3,419,628
PROCESS FOR PREPARING FLUOROCARBON MONOMERS
Martin H. Kaufman and John D. Braun, China Lake, Calif., assignors to The United States of America as represented by the Secretary of the Navy
No Drawing. Filed Mar. 30, 1964, Ser. No. 355,970
1 Claim. (Cl. 260—653.3)

1. The method of preparing fluorine monomers which comprises:

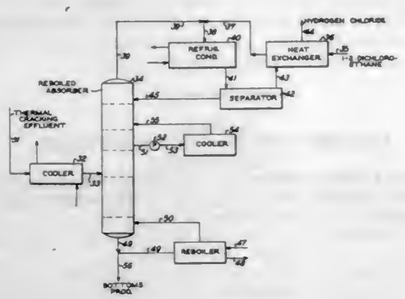
refluxing the alcoholic intermediate, prepared by hydrolysis of the product formed by the reaction of a member selected from the group consisting of dichlorotetrafluoroacetone, monochloropentafluoroacetone and hexafluoroacetone with a Grignard reagent, and

phosphorus pentachloride at a temperature of about 100° C. for about five days.

3,419,629
PREPARATION OF VINYL CHLORIDE
Brian J. Ozero, New York, N.Y., assignor to Halcon International, Inc., a corporation of Delaware
Filed Dec. 17, 1965, Ser. No. 514,508
7 Claims. (Cl. 260—656)

The invention is directed to an organic chemical process wherein an absorption operation is employed to remove at least one component of a vapor stream containing several components. In particular, the invention concerns an improved absorption technique for separating the vapor

effluent from the thermal cracking of 1,2-dichloroethane into an organic free hydrogen chloride stream and a hydrogen chloride free solution of mono-vinyl chloride in 1,2-dichloroethane. The characterizing feature of the inventive process resides in the saturation of the 1,2-dichloroethane absorption medium with hydrogen chloride prior to its utilization in the absorption operation. Practice



of the invention is attended by improved efficiency, obviation of temperature rise due to absorption of light components, minimization of the amount of absorption medium required, minimization of absorption pressure and reduction in the amount of cooling or refrigeration required for the absorption medium stream.

3,419,630

PROCESS FOR THE PRODUCTION OF SYMMETRICAL AROMATIC DERIVATIVES OF ETHYLENE

Helmut Mägerlein, Erlenbach am Main, Erhard Siggel, Seckmauern, Hans-Dieter Rupp, Erlenbach am Main, and Gerhard Meyer, Obernburg am Main, Germany, assignors to Glanzstoff A.G., Wuppertal, Germany

No Drawing. Filed Sept. 1, 1966, Ser. No. 576,553

Claims priority, application Germany, Sept. 2, 1965, V 29,248

8 Claims. (Cl. 260—668)

1. A process for the production of a symmetrically substituted aromatic monoolefin which comprises: reacting a triphenylphosphine compound of the formula $RCH{=}P(C_6H_5)_3$, wherein R represents an aromatic radical, with sulfur in an inert organic diluent and under an inert atmosphere at a temperature of about 60° C. to 150° C., and then separating the resulting aromatically-substituted monoolefin from the triphenylphosphine sulfide formed as a by-product.

3,419,631

SUBSTITUTED ADAMANTANE COMPOUNDS

John J. van Venrooy, Wyncroft, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Dec. 22, 1966, Ser. No. 603,760

17 Claims. (Cl. 260—668)

New hydrocarbo-substituted adamantane compounds are produced by a new process comprising reacting a halogen and/or hydroxyl bridgehead-substituted adamantane, or like-substituted alkyl adamantane, with a selected metal carbide to yield hydrocarbons possessing the adamantane nucleus with a substituent containing the benzyl nucleus attached to a bridgehead carbon atom.

3,419,632

THERMAL CRACKING METHOD OF HYDROCARBONS

Toru Sogawa, Ichikawa-shi, Shinpei Gomi, Nakoso-shi, and Kazuyuki Shiga, Yokosuka-shi, Japan, assignors to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Aug. 20, 1965, Ser. No. 481,176

Claims priority, application Japan, Aug. 24, 1964, 39/47,126

10 Claims. (Cl. 260—679)

Method for thermal cracking of hydrocarbons in a two-zone operation wherein overcracking and polymerization are avoided in the first zone by cooling said first zone by means of introducing a coolant, thereafter continuing the cracking step in a second zone which is then completely quenched at the end thereof.

3,419,633

POLYMERIZATION OF ACYCLIC MONOOLEFINS

Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,047

5 Claims. (Cl. 260—683.15)

Acyclic monoolefins are polymerized to polymers of low molecular weight using a catalyst formed from an alkali metal aluminum hydride and a halide of a Group II metal, preferably in the presence of an inert hydrocarbon diluent.

3,419,634

ORGANOPOLYSILOXANE POLYCARBONATE BLOCK COPOLYMERS

Howard A. Vaughn, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,920

14 Claims. (Cl. 260—824)

Compositions comprising organopolysiloxane-polycarbonate block copolymers having either terminal aliphatically unsaturated radicals, or block copolymers having terminal radicals free of aliphatic unsaturation which consis: essentially of organopolysiloxane blocks joined to polycarbonate blocks by silicon-carbon bonds. The compositions of the present invention can contain organic solvent, filler, etc., and can be used to make flexible windows for vehicles, substitutes for acrylic denture bases, etc.

3,419,635

ROOM TEMPERATURE VULCANIZING ORGANOPOLYSILOXANE-POLYCARBONATE COMPOSITIONS

Howard A. Vaughn, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,909

13 Claims. (Cl. 260—824)

Room temperature vulcanizing compositions are provided comprising organopolysiloxane-polycarbonate block copolymer having chemically combined organosilyl radicals with hydrolyzable radicals attached to silicon. The compositions of the present invention can be employed in roof coating applications, as sealants, etc.

3,419,636

BLENDS OF ALIPHATIC POLYAMIDES AND CYCLIC COPOLYAMIDES

Edward W. Pietrusza and Walter J. Zybert, Morristown, and Jack R. Pedersen, Parsippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,849

9 Claims. (Cl. 260—857)

Blends of nylon 6 or nylon 66 with from 10 to 60% by weight of a processable copolymer prepared by copolymerizing a mixture of at least 35 mol percent of a meta-substituted cyclic amino acid and at least 18 mol percent of a para-substituted cyclic amino acid or their N-acyl derivatives. These blends are more resistant to plastic flow under stress than unmodified nylons and thus are useful in the preparation of tire cord.

3,419,637

CHEMICAL-RESISTANT POLYESTER RESINS BASED UPON DICYCLOHEXANOLS AND NEOPENTYL GLYCOL-TYPE DIOLS

Earl E. Parker, Allison Park, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed June 30, 1966, Ser. No. 561,739

18 Claims. (Cl. 260—871)

Novel unsaturated polyesters which are chemically-resistant are formed by reacting a neopentyl glycol-type diol, a dicyclohexanol compound, and an ethylenically unsaturated dicarboxylic acid.

3,419,638

DYEABLE POLYPROPYLENE

John F. Fuzek, Elizabethton, Tenn., assignor, by mesne assignments, to Beaunit Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 14, 1962, Ser. No. 174,353

14 Claims. (Cl. 260—873)

4. The process of simultaneously imparting dye receptivity to polypropylene and substantially reducing the melt viscosity thereof which comprises adding to high melt viscosity polypropylene comprising at least about 85% by weight of isotactic macromolecules at least about one percent by weight based upon the weight of the polypropylene of a polyester selected from the group consisting of a polyalkylene terephthalate, a random co-polymer of ethylene terephthalate and ethylene isophthalate, and a poly(1,4-cyclohexylenedimethylene terephthalate), said polyester having a melt viscosity substantially lower than that of said polypropylene, and fusing said mixture to produce a homogenous polypropylene-polyester blend.

3,419,639

OZONE-RESISTANT COMPOSITION

Anthony V. Gentile, Waterbury, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,672

11 Claims. (Cl. 260—889)

A composition highly resistant to ozone attack is made by mixing:

(1) ethylene-propylene-non-conjugated diene terpolymer rubber ("EPDM")
(2) conjugated diene elastomer (e.g., SBR and/or NR), and
(3) certain N,N'-substituted p-phenylene diamines [e.g., N-phenyl-N'-cyclohexyl-p-phenylene diamine; N,N'-bis (1-methylheptyl)-p-phenylene diamine, etc.]

The composition is useful for making pneumatic tire sidewalls, footwear, coated fabric, etc.

3,419,640

ANTI-STATIC POLYSTYRENE-POLYBUTADIENE BLENDS

Gerlinde Bürklin, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

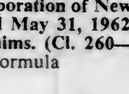
No Drawing. Filed Feb. 3, 1964, Ser. No. 342,271

8 Claims. (Cl. 260—892)

1. An antistatic polystyrene composition consisting of an impact-resistant polystyrene base having a polybutadiene component of up to 30% by weight, and an admixture of 2 to 10% by weight of the formula

$$R[(CH_2OCH_2)_xOH]_3$$

wherein $x \geqq 3$,



and $y \geqq 2$.

3,419,641

HOT MELT ADHESIVE COMPRISING AN AROMATIC-ALDEHYDE RESIN AND AN ETHYLENE-VINYL ACETATE COPOLYMER

Melvin E. Peterkin, Brookhaven, Pa., and Lewis W. Hall, Jr., Claymont, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Continuation-in-part of application Ser. No. 372,354, June 3, 1964. This application Mar. 18, 1966, Ser. No. 535,366

5 Claims. (Cl. 260—897)

A hot melt adhesive composition comprising 35 to 75 wt. percent of an aromatic hydrocarbon-aldehyde resin having a ring and ball softening point from 70 to 150° C. and from 25 to 65 wt. percent of an ethylene vinyl acetate copolymer containing 17 to 42 wt. percent vinyl acetate. A typical and exceedingly useful composition within this area is one made of 70% formolite type of resin having a ring and ball of 95° C. and 30% of an ethylene vinyl acetate copolymer having 33 wt. percent vinyl acetate. This composition and compositions similar thereto are capable of making corrugated paper board which has a number of advantages over corrugated paper board presently made from water based adhesives but which has essentially the same strength properties as conventional corrugated paper board.

3,419,642

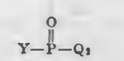
ESTERS OF PHOSPHORUS-CONTAINING ACID, HALOGENATED EPOXIDE, AND DICARBOXYLIC ACID

Charles W. McGary, Jr., South Charleston, and Percy L. Smith, Dunbar, W. Va., assignors to Union Carbide Corporation, a corporation of New York

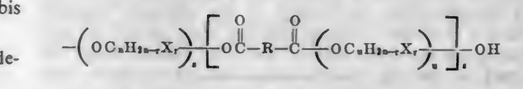
No Drawing. Filed May 31, 1962, Ser. No. 198,729

3 Claims. (Cl. 260—952)

1. An ester of the formula



wherin Y is of the group consisting of hydrogen and Q and wherein Q is a group of the formula



wherein n represents a number having a value of from 3 to 10, wherein r represents a number having a value of from 1 to 2, wherein X represents a halogen, wherein s represents a number having a value of from 1 to 20, wherein u represents a number having a value of from 1 to 20, wherein z represents a number having a value of from 1 to 10, and wherein R represents a member selected from the group consisting of alkylene, alkenylene, cycloalkylene, cycloalkenylene, arylene, and their halogenated derivatives, the said member having up to 10 carbon atoms.

3,419,643
PROCESS FOR THE PREPARATION OF PHOSPHONOHALOTHIONATES

Glenn R. Price, Chicago Heights, Ill., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 5, 1964, Ser. No. 409,310
15 Claims. (Cl. 260—973)

A process for the preparation of phosphonohalothionates of the formula:



wherein "hal" is a halogen other than fluorine, R is a hydrocarbon which can contain relatively insert substituents such as nitro, halo and cyano atoms, and R' is a lower alkyl. The process comprises reacting a compound of the formula:

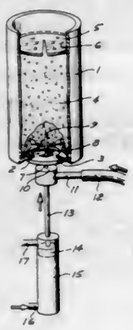
$$RP(S)(hal)_2$$

wherein R and "hal" are the same as above defined, with a primary or secondary lower aliphatic alcohol in the presence of a sterically hindered heterocyclic tertiary amine such as quinoline or amines having a pyridine nucleus substituted in the alpha position with 1 to 4 carbon alkyl or benzyl.

3,419,644
METHOD OF FILLING A TUBULAR PART WITH A SOLID, GRANULAR SUBSTANCE AND A LIQUID SUBSTANCE

Björn Rudolf Edman, Karlskoga, and Olof Öman, Valasen, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden

Filed Jan. 10, 1967, Ser. No. 608,358
Claims priority, application Sweden, Jan. 21, 1966, 760/66
3 Claims. (Cl. 264—3)



There is disclosed a method of charging or filling a tubular member with a mixture of a granular material such as nitrocellulose powder and a hardening liquid such as nitroglycerine. According to the disclosed method, there is provided a tubular member open on one end and having on the other end an inwardly directed flange defining an opening covered with a disc of an elastic self-sealing material adhered to the flange. This member is placed in an upright position with its open end facing upwardly and then filled from the top with the granular material to the desired level. Thereupon the desired volume of the liquid is injected into the tubular member from below by means of an injection tube inserted into the tubular member by piercing the self-sealing disc. Finally, the injection tube is withdrawn, the hole in the disc being automatically reclosed by the self-sealing property of the disc. If desired the top of the mixture can be covered with a perforated disc.

3,419,645
PROCESS FOR PREPARING FINELY POROUS, SHAPED CARBON BODIES

Gerhard Pietzka, Lorsbach, Taunus, and Alfred Pelz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

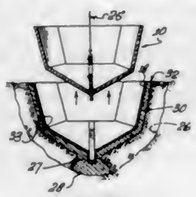
No Drawing. Filed Sept. 28, 1965, Ser. No. 491,047
Claims priority, application Germany, Oct. 3, 1964, F 44,128
8 Claims. (Cl. 264—29)

A process has been provided for preparing finely porous, shaped carbon bodies wherein coke and hard pitch are separately ground to a particle size of at most 1 mm., said pitch having a softening point of at least 100° C. The ground coke and pitch are mixed in a ratio of from 4:1 to 1:4 and the mixture is further ground until it passes substantially through a mesh screen having a mesh width of at most 150μ. The ground mixture is then mixed with a dispersion of colloidal graphite and the mixture of coke, pitch, and dispersed graphite is shaped at a pressure of from 20 to 300 kg./cm. such that no liquid is squeezed out from the pressed body. The pressed body is then dried and baked.

3,419,646
METHOD FOR MAKING AN EARTH PIT MOLD FOR A PLASTIC BOAT HULL

Robert L. Smith, 1331 33rd St., Bakersfield, Calif. 93301

Filed Sept. 13, 1966, Ser. No. 579,090
7 Claims. (Cl. 264—32)



1. A method for making a mold for reproduction in plastic construction of a prototype hull or the like, which method includes the steps of:

preparing a surface of said prototype hull with a coating of water-soluble mold release material;

depositing a mold liner layer of plastic material over said mold release coating;

attaching furring spacers to said plastic coating;

curing said liner coating;

attaching reinforcing means to said furring means;

suporting said prototype hull in an upwardly opening position in an earth pit having sides spaced away from the outer coated sides of said hull partly by suspension from above and partly by resting the lowermost surface of said hull in a pad of soft concrete in the bottom of said pit;

spraying a wet concrete mixture over the plastic coating, and said reinforcing and furring means, on the outer surfaces of said hull to make a rigid mold support structure in the form of a concrete shell integral with said liner layer;

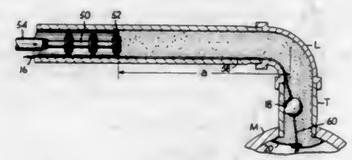
after said concrete shell has hardened, filling the space in said earth pit outside the shell with packed earth to firmly support said mold; and

introducing water between the outer surface of said prototype hull and said mold liner layer, to wash away said water soluble mold release material and permit the withdrawal of said prototype hull.

3,419,647
PLASTIC SEALING OFF OF PIPE

Hanford Z. Hight, Short Hills, Melvin M. Gallant, Orange, George W. Shannon, West Orange, and Jacob F. Loeffler, Point Pleasant, N.J., assignors to Bonded Products, Inc., Orange, N.J., a corporation of Illinois

Filed Jan. 24, 1966, Ser. No. 522,658
8 Claims. (Cl. 264—35)

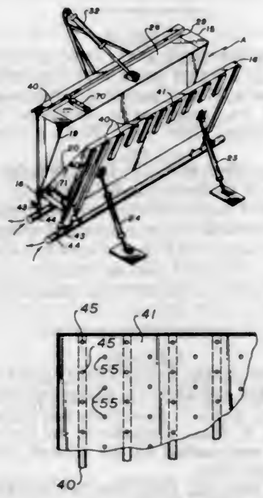


A backer of jointed leaves having a common pivot is pushed through a gas pipe beyond the end thereof into a gas main, and spread out over the inner end of the pipe to hold sealing material propelled along the pipe to seal off the gas main.

3,419,648
METHOD OF MOLDING POLYSTYRENE

Irby H. Leach, Napa, Calif., assignor, by mesne assignments, to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 18, 1965, Ser. No. 480,712
5 Claims. (Cl. 264—53)



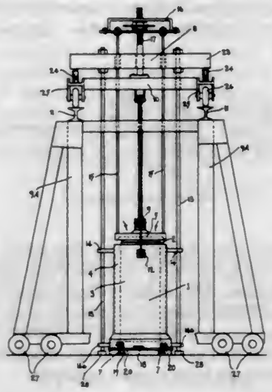
Expandable beads such as polystyrene are molded by steam employing pressure of the beads on the mold. Steam pressure is lowered and the molding cooled by drawing air through the steam system from openings in a fabric lined mold.

3,419,649
METHOD FOR MOULDING PIPES FROM CEMENTITIOUS MIXES

William D. Livingston, Box 6210, Nairobi, Kenya, and Ronald Frank King, Gordon Road, Thatcham, Berkshire, England

Filed Apr. 21, 1965, Ser. No. 449,805
Claims priority, application Great Britain, Apr. 27, 1964, 17,379/64
1 Claim. (Cl. 264—71)

A method of moulding pipe employing a cementitious mix and including the steps of assembling a pipe mould on a support surface, lifting the mould into a suspended position, supporting the mould in the suspended position while filling the mould with the cementitious mix and vibrating the mould while it is being filled, after the

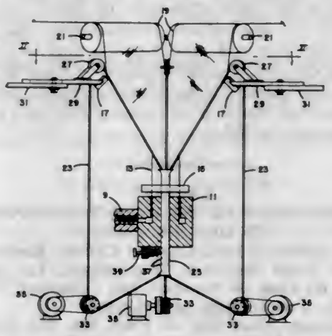


moulding of the pipe has been completed, placing the mould on a support plane and removing the mould from the pipe.

3,419,650
METHOD FOR MAKING THERMOPLASTIC FILMS

Daniel J. Ryan, Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Original application June 5, 1964, Ser. No. 372,909, now Patent No. 3,355,768, dated Dec. 5, 1967. Divided and this application June 8, 1967, Ser. No. 644,599
6 Claims. (Cl. 264—146)



A method for making oriented films in which an extruded tubing of thermoplastic material, which is at a temperature at which the molecules thereof may be oriented by stretching, is engaged only along its internal surface by movable means which are advanced along paths and at such rates of speed as to cause the tubing to be stretched and thus oriented at least along one of its longitudinal and transverse directions.

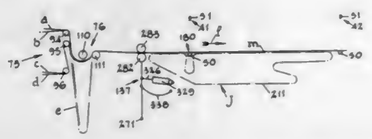
3,419,651
METHOD OF SHAPING THERMOPLASTIC SHEETS

Alfred H. Miller, Glenn Perry, and Lawrence C. Wheat, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Original application Oct. 21, 1964, Ser. No. 405,383, now Patent No. 3,341,889, dated Sept. 19, 1967. Divided and this application July 18, 1967, Ser. No. 672,661
8 Claims. (Cl. 264—160)

Method of shaping thermoplastic sheets for use as interlayers in laminated safety glass. A substantially con-

tinuous sheet of plastic is drawn from a source of supply over a substantially horizontal supporting surface and the free end thereof clamped in a fixed position. Lengthwise tension is then applied to the continuous sheet by exerting a rearward pull thereon from the clamped free end thereof, after which the sheet is clamped at a point



inwardly of the clamped free end and while maintained in tension, is cut to provide an individual sheet clamped at its opposite ends. The sheet is then supported vertically and conveyed first through a heating zone in which it is softened and shaped by sagging of the sheet in the plane of the sheet and then through a cooling zone in which the sheet is set in its shaped condition.

3,419,652
PROCESS FOR PRODUCING HIGHLY CRIMPED FIBERS

Masaichi Kubota, Atsushi Kawai, and Seiichi Omoto, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,784
Claims priority, application Japan, Sept. 10, 1963, 38/47,835
16 Claims. (Cl. 264—168)

A process for producing highly crimped viscose fibers which includes extruding a viscose containing at least 4% cellulose, and having a viscosity of from 100 to 1000 poises and a salt point of at least 16, into a coagulating bath containing zinc sulfate, formaldehyde and a small amount of sulfuric acid, stretching the thus formed fibers in an aqueous bath at a temperature of from 66° to 88° C. under substantially tensionless conditions, and relaxing the stretched fibers in an aqueous bath at a temperature of from 30° to 70° C.

3,419,653
PREVENTION OF FILAMENT TWINNING IN DRY SPINNING

Frederick Albert Briggs, Charles Clifford Ketterer, and Leander Adair Sherbeck, Waynesboro, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,332
8 Claims. (Cl. 264—204)

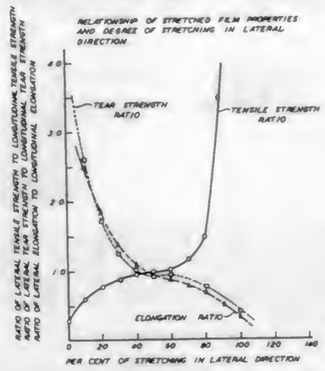
Solutions of synthetic polymers containing liquid polysiloxanes are dry spun to produce filaments. The polysiloxanes by reducing the tendency of the filaments to twin, i.e., prematurely coalesce, in the spinning cell permit closer hole spacing in the spinneret and consequently higher productivity.

3,419,654
PROCESS FOR MAKING IMPROVED FILMS FROM SAPONIFIED ETHYLENE-VINYL ACETATE COPOLYMERS

Teiichiro Chiba, Kazuo Hiramatsu, and Katsuaki Hirano, Kurashiki-shi, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama Prefecture, Japan, a corporation of Japan

Filed Nov. 25, 1964, Ser. No. 413,877
Claims priority, application Japan, Dec. 6, 1963, 38/65,492
6 Claims. (Cl. 264—210)

Films are prepared having a low degree of orientation and a high degree of strength and dimensional stability by stretching extruded saponified ethylene vinyl acetate copolymers in a lateral direction, i.e., at right angles to the direction in which the film is extruded, and subsequent to the stretching heat treating the film. The saponified



ethylene-vinyl acetate copolymer is the product obtained by saponifying more than about 90 mole percent of the vinyl acetate groups in a 30 to 70 mole percent ethylene and 30 to 70 mole percent vinyl acetate-ethylene copolymer.

3,419,655
TREATMENT OF INFLAMMATIONS BY ADMINISTERING A CYCLOLEUCYL COMPOUND

Harvey E. Alburn, West Chester, and Norman H. Grant, Wynnewood, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

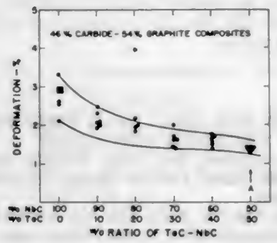
No Drawing. Filed Mar. 17, 1967, Ser. No. 623,839
5 Claims. (Cl. 424—305)

A process for treating inflammations in warm-blooded animals by administering a compound selected from a group of cycloleucyl compounds; e.g., 1-aminocyclopentanecarboxylic acid, 1-methylaminocyclopentanecarboxylic acid, and 1-aminocyclopentanecarboxylic acid, ethyl ester.

3,419,656
METHOD OF MAKING SOLID SOLUTION CARBIDE-GRAPHITE COMPOSITIONS

Robert E. Riley, Keith V. Davidson, and James M. Taub, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 12, 1967, Ser. No. 639,595
2 Claims. (Cl. 264—332)



The characteristics of a composite composed of graphite and metal carbide are improved by utilizing a solid solution carbide in the metal carbide-graphite composite.

3,419,657
IODOPANOIC ACID IN A HYDROGEL

Johannes C. Sanders, Laren, Netherlands, assignor to Dagra N.V., Diemen, Netherlands, a limited-liability company of the Netherlands

No Drawing. Filed June 23, 1964, Ser. No. 377,373
3 Claims. (Cl. 424—5)

The unpleasant taste of iodine-bearing radiopaque materials used for cholecystography is masked, and the resorption of the materials is improved by dispersing the same in a finely divided form in a hydrogel which is made more palatable by addition of sugar and flavoring agents. The method is applicable to iodopanoic acid, its salts, phenoiodol, and iodoethionic acid.

3,419,658
NONAQUEOUS AEROSOL FOAMS CONTAINING MINERAL OIL

Paul Amsdon Sanders, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,940
3 Claims. (Cl. 424—45)

An aerosol foam composition consisting essentially of:

(a) White mineral oil,

(b) From 1 to 10% by weight of at least one surfactant having the structure $RO(CH_2CH_2O)_nH$ wherein R is an aliphatic hydrocarbon radical selected from the group consisting of (1) saturated alkyl radicals of from 12 to 18 carbon atoms and (2) nonsaturated alkenyl radicals of from 12 to 18 carbon atoms, *n* is from 0 to 20; and

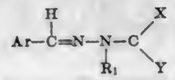
(c) From 5 to 50% by weight of an aerosol propellent selected from the group consisting of hydrocarbons and chlorofluorohydrocarbons, said propellent having a boiling point between −50° C. and +15° C.

3,419,659
SUN SCREENING METHODS

Sigmund C. Catino, Castleton, Albert F. Strobel, Delmar, and Norman Blumenkopf, Brooklyn, N.Y., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed July 8, 1964, Ser. No. 381,255
5 Claims. (Cl. 424—60)

A composition and process for protecting human skin against the effects of the burning rays of the sun, which composition comprises a compound of the formula:



wherein

(a) Ar represents a benzene ring devoid of water-solubilzing groups, nitro and more than 2 oxy groups,

(b) R_1 is selected from the group consisting of hydrogen and alkyl,

(c) X is selected from the atoms oxygen and sulfur,

(d) Y is selected from the class consisting of alkyl, amino, alkylamino, and XR_1;

in a dermatologically acceptable carrier, the compound being employed in an amount effective to protect the skin from the harmful effects of the burning rays of the sun.

3,419,660
INOCULANT FOR CATTLE OR THE LIKE

John P. Lannon, 3400 3rd St., Columbus, Nebr. 68601

No Drawing. Continuation-in-part of application Ser. No. 372,412, June 3, 1964. This application Nov. 30, 1966, Ser. No. 597,886
1 Claim. (Cl. 424—92)

1. In an inoculant for cattle, 6 to 24 parts of an antibiotic substance, 3 to 12 parts of a corticosteroid substance, 1 to 6 parts of an antihistamine substance, and 2.2 to 4.4 parts of a concentrated mixed bovine bacterin substance, said antibiotic substance consisting of one of penicillin, dyhdrostreptomycin, neomycin and terramycin, said corticosteroid substance consisting of an anti inflamatory prednisolone derivative, said antihistamine substance consisting of pyrilamine maleate, said concentrated mixed bovine bacterin substance consisting of an inactivated culture of 50% *Pasteurella multocida* types I, II and III, 30% Corynebacteria, 10% Streptococcus, 5% *Staphylococcus albus* and 5% *Staphylococcus aureus*.

3,419,661
ORAL CONTRACEPTIVE FOR BIRDS

William H. Elder, Columbia, Mo., assignor to The Curators of the University of Missouri, Columbia, Mo., a corporation of Missouri

Filed Jan. 13, 1964, Ser. No. 337,356
4 Claims. (Cl. 424—243)

1. A method of reducing fertility in birds comprising administering orally a hypocholesterolemic compound selected from the group consisting of 22,25-diazachloestanol dihydrochloride and 20,25-diazacholestenol dihydrochloride to the birds in an amount necessary to reduce fertility.

3,419,662
METHOD OF INHIBITING THE GROWTH OF BACTERIA AND FUNGI WITH TRIORGANOTIN OXIMES

Gustav Weissenberger, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Apr. 9, 1962, Ser. No. 185,797, now Patent No. 3,275,659, dated Sept. 27, 1966. Divided and this application May 24, 1965, Ser. No. 473,541
Claims priority, application Switzerland, Apr. 28, 1961, 5,058/61
6 Claims. (Cl. 424—245)

Method of inhibiting the growth of bacteria and fungi by applying to bacteria and fungi a sufficient amount to inhibit growth of a triorganotin oxime of the formula $R^1R^2C{=}N{-}O{-}SnR^3R^4R^5$.

ERRATUM

For Class 424—298 see:
Patent No. 3,419,571

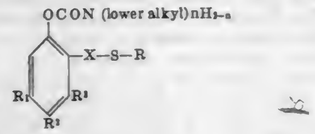
3,419,663
METHOD FOR THE CONTROL OF INSECTS USING THIOALKYLPHENYL CARBAMATES

Edward D. Weil, Lewiston, and Hans L. Schlichting, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Mar. 4, 1963, Ser. No. 262,376, now Patent No. 3,331,894, dated July 18, 1967. Divided and this application Dec. 1, 1966, Ser. No. 612,065
16 Claims. (Cl. 424—300)

There is provided a method for the control of insects,

comprising applying to the locus of said insects an insecticidal amount of the compound



wherein:

(a) *n* is an integer from 1 to 2;
(b) X is an alkylene group of from 2 to 8 carbon atoms;
(c) R^1, R^2, and R^3 are independently selected from the group consisting of hydrogen and lower alkyl;
(d) the sulfur atom is separated from the phenyl ring by at least two carbon atoms; and
(e) R is of 1 to about 20 carbon atoms and is selected from the group consisting of:
  (1) hydrocarbyl selected from the group consisting of alkyl, alkenyl, cycloalkyl, phenyl, naphthyl, alkylphenyl, benzyl, and arylalkyl; and
  (2) acyl selected from the group consisting of alkanoyl, benzoyl, thiobenzoyl, cyano, N-alkylcarbamyl, N,N-dialkylcarbamyl, n-alkylthiocarbamyl, N,N-dialkylthiocarbamyl, and O-alkylthiocarbonyl.

ERRATUM

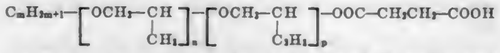
For Class 424—305 see:
Patent No. 3,419,655

3,419,664
COMPOSITIONS AND METHODS FOR TREATING PAIN WITH SUBSTITUTED UREAS
Wilhelm Frick, Pfeffingen, Basel-Land, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Original application Mar. 24, 1965, Ser. No. 442,537, now Patent No. 3,344,181, dated Sept. 26, 1967. Divided and this application Jan. 10, 1967, Ser. No. 620,202
Claims priority, application Switzerland, Mar. 26, 1964, 3,977/64
8 Claims. (Cl. 424—322)

Method of and composition for treating pain utilizing as the active ingredient N'-methyl- or N'-ethyl-N-(2-chloro-5-trifluoromethylphenyl)urea.

3,419,665
WATER-IN-OIL EMULSIONS CONTAINING MAGNESIUM SALTS OF A SUCCINIC ACID ESTER
Felix Lachampt, Franconville, Andre Viout, Paris, and Guy Vanlerberghe, Mitry-Mory, France, assignors to L'Oreal, Paris, France a corporation of France
No Drawing. Filed Sept. 29, 1965, Ser. No. 491,439
Claims priority, application France, Oct. 5, 1964, 990,354
6 Claims. (Cl. 424—365)

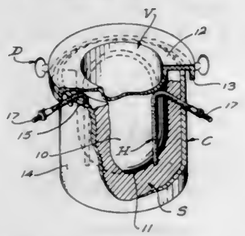
1. A water-in-oil emulsion comprising water, at least 20% oil and an emulsifying amount of at least one magnesium salt of a succinic acid ester of a polyoxyalkylene fatty alcohol having the formula:



in which *m* is an integer between 12 and 18 and *n* and *p* are numbers between 0 and 12 inclusive and the sum of *n* and *p* is between 2 and 12 inclusive.

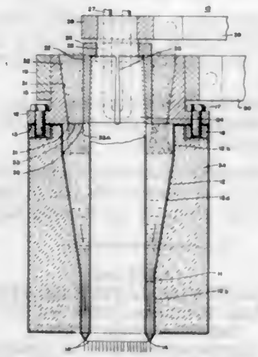
ELECTRICAL

3,419,666
ELECTRIC FURNACE
David W. Groom, 2262 E. Lake Sammamish Road SE., Issaquah, Wash. 98027
Continuation-in-part of application Ser. No. 430,715, Mar. 15, 1965. This application Dec. 29, 1967, Ser. No. 694,528
13 Claims. (Cl. 13—20)



An electric furnace unit including a container, a heat sink mass of metal having a melting point below and a vaporizing point above the operating temperature of the furnace within the container, a vessel within the container and within said heat sink mass and adapted to receive material to be heated and an electric resistance heater element within the container and heat sink mass and engaged about the exterior of the vessel to heat the vessel and heat the heat sink mass to a temperature above its melting point whereby said mass is molten and such that upon heat transfer from said mass to the container convection currents are established in the mass whereby said molten mass scrubs the exterior of the vessel for substantially total, uniform and continuous heat transfer between the mass and the vessel.

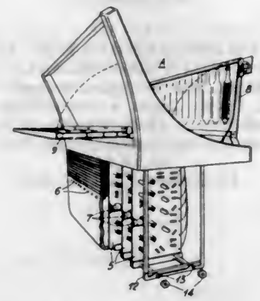
3,419,667
ELECTRIC FURNACE
Alfred Walz, Emmendingen, Germany, assignor to Sud-Chemie A.G., Munich, Germany
Filed Mar. 22, 1967, Ser. No. 625,153
Claims priority, application Germany, Mar. 25, 1966, W 41,224; June 1, 1966, W 41,713; June 10, 1966, W 41,774
15 Claims. (Cl. 13—23)



An electric furnace for melting materials includes a pair of coaxially arranged symmetrical electrodes defining

an annular space between them through which the materials to be melted are passed. To prevent sticking of the material in the sintering area the electrodes are maintained at a temperature above the sintering temperature of the material throughout their length of contact with the material. Where it is desired to form fibers and the like, the molten material may pass through diffuser nozzles supplied with heated air. If it is desired to form a common, flowing melt of material, the individual strings of molten material may be combined in a funnel-like structure.

3,419,668
ELECTRONIC ACCORDION WITH HINGED KEYBOARD AND CONTACT PLATE
Paolo Settimio Soprani, via Bainsizza 2, Ancona, Italy
Filed Aug. 16, 1965, Ser. No. 479,822
Claims priority, application Italy, Mar. 17, 1965, 2,458/65
1 Claim. (Cl. 84—1.17)



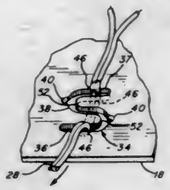
An electronic accordion incorporating inside thereof the circuitry for generating electric signals with frequencies corresponding to those requested by the singing keyboard and by the bass keyboard, the accordion being constructed to permit the player to use the same technique that is ordinarily used in playing conventional accordions, but with the possibility of using external amplifiers for signals generated inside the accordion itself. In the specific embodiment shown and described, there are also provided winding cores for the main frequency generators, a hingedly mounted register plate for convenient access to the circuitry, a hingedly mounted singing contact plate for convenient access to the generator connections, and a spring-retracted metal band for closing the bellows.

3,419,669
FLEXIBLE MOLD AND CABLE SPLICE
Zoltan B. Dienes, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,906
11 Claims. (Cl. 174—84)



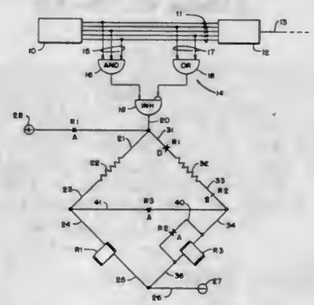
A sheet material comprising a liquid-retaining flexible film with two conformable adherent margins and a central thick crush-resistant open porous pad for folding around cable splice areas to provide an open-top envelope or mold for a self-hardening liquid encapsulating agent.

3,419,670
STRAIN RELIEF FOR LINE CORDS
Christian D. Schneider, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 28, 1966, Ser. No. 597,345
3 Claims. (Cl. 174—135)



A line cord strain relief for a radio cabinet comprising an S-shaped opening in the bottom wall thereof. The pliant line cord is conformed to a portion of the opening and looped about the two tabs formed by said opening to provide a firm connection for said cord which may not be dislodged by transverse movements.

3,419,671
TELEGRAPH TRANSMITTER CONTROL CIRCUIT
David J. Derenski, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,714
5 Claims. (Cl. 178—3)

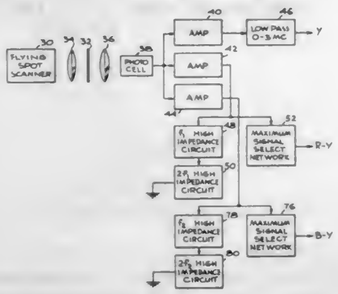


4. A transmitter control circuit including:
means for monitoring the output of a transmitter and for producing an output when a predetermined character is transmitted;
transmitter control means operated by the output of the monitoring means for disabling the transmitter;
normally disable signal receiving means actuated by the transmitter control means upon operation and, upon actuation, for receiving signals of at least two types;
shunting means activated by the signal receiving means upon receipt of a signal of a first type for setting up a shunting path for the transmitter control means and activated by the signal receiving means upon receipt of a signal of the second type for shunting the transmitter control means thereby reinitiating operation of the transmitter.

3,419,672
FILTER FOR ENCODING COLOR DIFFERENCE SIGNALS
Albert Macovski, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Dec. 30, 1965, Ser. No. 517,638
8 Claims. (Cl. 178—5.4)

The present invention is directed to a spatial filter for encoding a color image on a monochrome film or a televi-

sion camera, the filter consisting of alternate lines of colored and neutral material where the energy transmis-

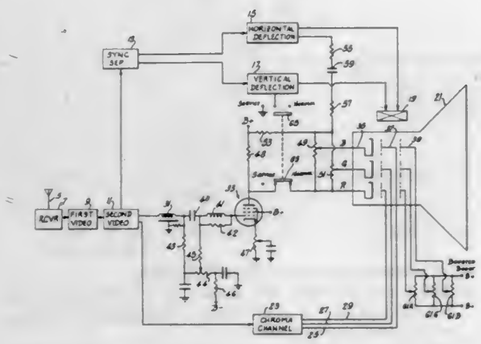


sion as seen by the film emulsion or the television camera is equal in the colored and neutral areas. The white areas of the scene will contain no line structure.

3,419,673
CONTROL APPARATUS FOR COLOR TELEVISION RECEIVERS

Derek Swaine, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 5, 1966, Ser. No. 540,394
6 Claims. (Cl. 178—5.4)



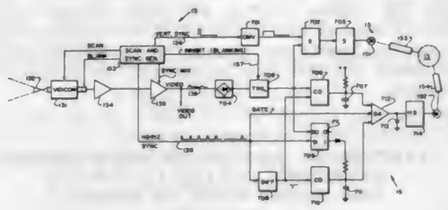
In a color television receiver circuit, a pulse signal is coupled to the cathodes of a color cathode ray tube to provide signal blanking during the scan retrace period and in combination with a DC potential source to provide a reference potential for "setting up" a color cathode ray tube upon interruption of an applied luminance signal.

3,419,674
IMAGE POSITIONING AND COUPLING CIRCUITS FOR TELEVISION CAMERA AND DISPLAY APPARATUS

Robert V. Burns, Markham, and Robert T. Cleary, Lockport, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Oct. 14, 1965, Ser. No. 495,840
10 Claims. (Cl. 178—6)

The position of a televised image on a CRT is controlled by apparatus which automatically positions the television camera in response to the position of the televised subject in relation to the boundaries of the televised scene. Provision is made to center the image horizontally and/or vertically, to ignore certain portions of a scene (e.g., a desk or chair at the lower portion of a scene) or incidental intrusions into a scene from the sides thereof. Provision is also made to couple video signals to

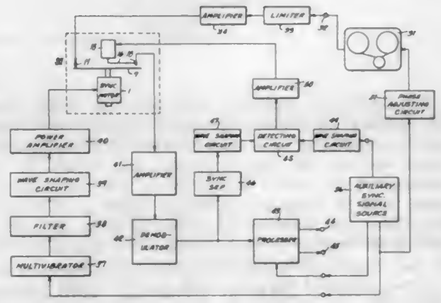


the display in response to a subject being introduced into the viewing area of a camera which is operating, but not as yet transmitting signals to an intended viewer.

3,419,675
SYSTEM FOR ELIMINATING JITTER FROM VIDEO SIGNALS

Nobutoshi Kihara, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed May 3, 1965, Ser. No. 452,467
Claims priority, application Japan, May 2, 1964, 39/24,942
11 Claims. (Cl. 178—6.6)



Apparatus for eliminating the jitter components from reproduced video signals are provided and comprise means for selectively varying the position of video signal reproducing means with respect to a video signal recording medium in accordance with jitter components in said video signals to reproduce signals having no jitter components.

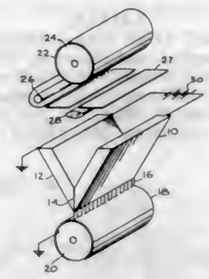
3,419,676
LINE SCAN PRINTER

Albert Macovski, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California

Filed July 20, 1965, Ser. No. 473,426
9 Claims. (Cl. 178—6.6)

An electrostatic transducer comprises a strip of photoconductive material having one end abutting one end of a strip of resistive material. A stylus has one end connected to the abutting ends and the other end in contact with paper. A ground plate is on the other side of the paper. A power supply is connected across the other ends of the photoconductive and resistive material. The other end of the photoconductive material is also grounded.

When the photoconductive material is fully illuminated no charge is deposited on the paper. As the illumination

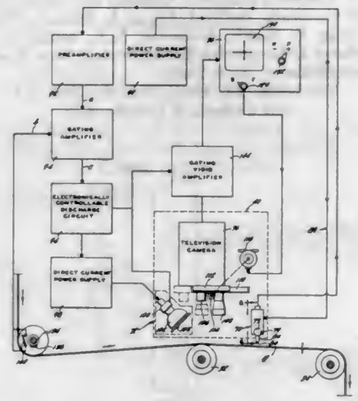


decreases there is a corresponding increase in charge deposited.

3,419,677
APPARATUS FOR MONITORING HIGH SPEED PROCESSES

Anthony M. Fiori, Philadelphia, Pa., assignor to John F. McCarthy, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 26, 1965, Ser. No. 443,025
3 Claims. (Cl. 178—6.8)

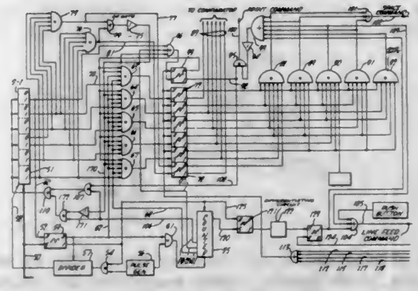


Sensing means scans a region of a periodically repeating pattern such as multi-color printing on a proper web and produces a control pulse upon the detection of a predetermined repeating part of the pattern within each repeat length. In response to the control pulse, a stroboscopic light source is energized to illuminate at least a selected portion within each repeat length of the pattern, such as a register mark. A television camera receives an image of the selected portion of the pattern when illuminated by the stroboscopic light. This image is reproduced on a television monitor, which is part of a closed television circuit. Preferably the image tube of the camera is provided with a high persistence coating so as to provide a sustained image. In preferred embodiments, switch actuator means actuates a trigger pulse switch once each repeat length of the pattern. By requiring coincidence of the control and trigger pulses the trigger pulses generated by this switch act to discriminate against signals which might otherwise produce unwanted energization of the stroboscopic light.

3,419,678
DATA PRINTING SYSTEM

Carmi Ariel, Hollywood, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California

Filed Apr. 26, 1965, Ser. No. 450,656
9 Claims. (Cl. 178—23)

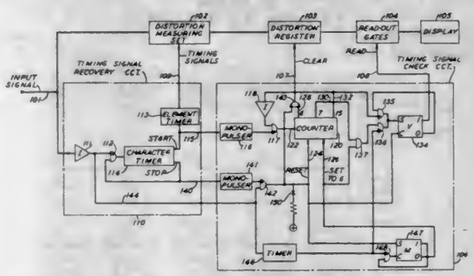


A data printer comprising a rotatable type wheel, a data register, a buffer register, and a pulse counter operable in response to registering of data by the data register to count pulses from a pulse source, the counter being effective upon the count of "1" to transfer data from the the data register to the buffer register, and effective upon the count of "2" to cause a printing operation, and effective at the count of "3" to clear the data register, and effective at a still higher count to cause line feeding of the paper.

3,419,679
START-STOP SYNCHRONIZATION CHECKING CIRCUIT FOR LONG TRAINS, SHORT TRAINS AND SINGLE START-STOP CHARACTERS

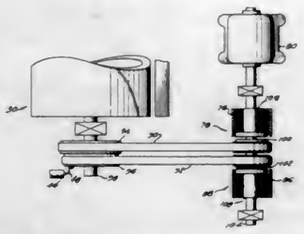
Peter Elvis, South Ozone Park, N.Y., and George P. Houcke, Tenafly, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed June 9, 1966, Ser. No. 556,472
6 Claims. (Cl. 178—53.1)



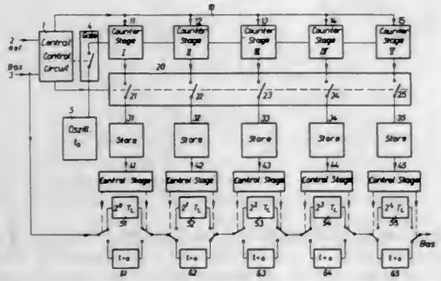
Receiver synchronization is checked by counting a predetermined number of received start-stop characters. Each start element initiates the timing of a data character and advances a counter one count. When the counter has been advanced to a predetermined count read-out gates are enabled, thus indicating that the timing signals are synchronized with the incoming signals. Loss of synchronism is indicated by the generation of a stop pulse by the timing circuit concurrently with the input of a spacing condition, which resets the counter. If a predetermined number of synchronized data characters is applied following a prolonged idle condition, the read-out gates are enabled by the counter that has advanced to its predetermined count. Loss of synchronism resets the counter. Likewise, if a prolonged idle condition is followed by a single data character followed by another prolonged idle condition, the read-out gates are enabled.

3,419,680
FACSIMILE PHASING SYSTEM
Frans Brouwer, Glencoe, and Dudley Gray, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed June 21, 1965, Ser. No. 465,389
12 Claims. (Cl. 178—69.5)



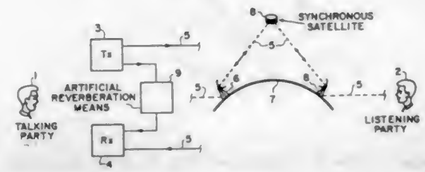
A phasing system for facsimile or the like by which phasing pulses from a remote transmitter are compared with locally generated pulses corresponding to the rotation of a scanning means in the receiver. A first driving means is provided for rotating the receiver scanning means at the standard frequency of the transmitter and a second driving means is provided for operating the scanning means at a frequency slightly different than the standard. The phase comparing circuit causes the scanning means to be driven by the different frequency drive means if the generated pulses do not coincide with the received phasing pulses and cause a shift to the standard frequency driving means when the pulses do coincide.

3,419,681
METHOD AND APPARATUS FOR EQUALIZING TIMING ERRORS IN SIGNALS CONTAINING PERIODIC COMPONENTS
Achim Bopp, Furtwangen, and Gerhard Krause, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany
Filed Mar. 16, 1965, Ser. No. 440,240
Claims priority, application Germany, Mar. 24, 1964, F 42,406
7 Claims. (Cl. 178—69.5)



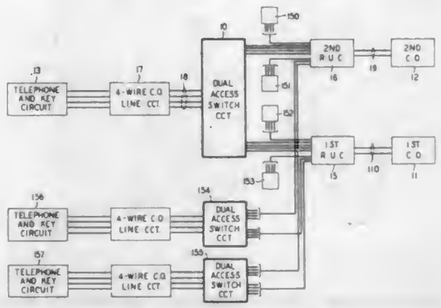
An arrangement for equalizing and correcting timing errors in signals containing periodic components as in television signals. The signal containing the repetitive or periodic components is compared in a digital comparator with a reference signal which has periodic components precisely spaced from each other uniformly in time. A comparator develops an error signal in digital form, indicative of the timing error in the original signal. This timing error is an indication of the variation of the period between successive components in the original signal. The original signal is applied to a variable delay in the form of a multistage counter circuit, and the delay is controlled in magnitude by the digital error signal. The control of the delay is such that the timing errors in the original signal becomes equalized or corrected so that a uniform period between successive components is attained.

3,419,682
LONG TRANSIT TIME TRANSMISSION SYSTEM
Gordon B. Thompson and Stuart H. Whitaker, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Jan. 17, 1966, Ser. No. 521,028
11 Claims. (Cl. 179—1)



A reverberation means added between a talking party's transmitting means and his receiving means in order to return to said talking party a reverberant representation of his speech thereby delaying his psychological acoustic receptiveness to the expected response from a listening party and also masking a certain amount of returned, delayed echo.

3,419,683
AUTOMATIC SUBSTATION TRANSFER SYSTEM
Henry J. Michael, Rumson, Charles E. Morse, Holmdel, Frank G. Oram, Belford, Edgar J. Roccati, Whippany, and John P. Smith, Holmdel, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 500,774
16 Claims. (Cl. 179—18)



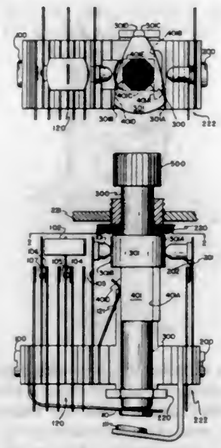
Access from a high-priority substation is arranged through two or more concentrators each connected to a different central office. All trunks-busy or out-of-service conditions on one concentrator will transfer the substation line to the other concentrator.

3,419,684
SEQUENTIAL SWITCHING ARRANGEMENTS
John M. Lord, Park Ridge, and Glenn E. Sterly, Carol Stream, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed June 4, 1965, Ser. No. 461,426
6 Claims. (Cl. 179—99)

A two-line telephone station having a single key, which operatively controls a cam to either of two rotary positions from a normal position, the first being a line holding and transfer position and the second being a transfer only position. The station circuit includes at least two oppositely

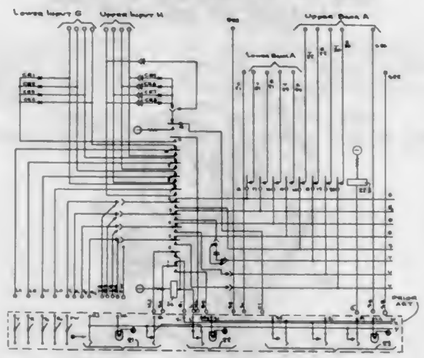
mounted cam-controlled contact sets and a holding bridge relay controlled by certain ones of these contacts.

The key cam has a long cam surface at one end and a short cam surface at the other end, so that upon rotation of the cam the two contact sets are operated in one order or



the other depending on the direction of rotation of the cam. In this manner the direction of actuation of the key determines whether the holding relay is permitted to operate and lock or not. An additional function may be provided by the use of a combination push-and-turn key.

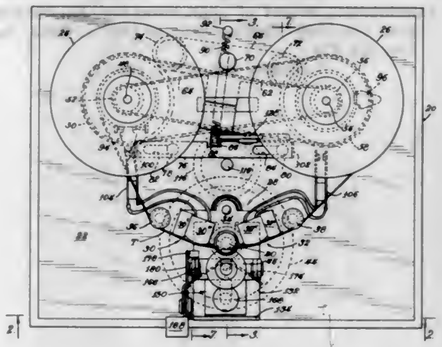
3,419,685
UNIVERSAL MULTIPLE ACCESS TELEPHONE TERMINAL
Mario Lilia, Kenosha, Wis.
(4401 Lee Highway, Apt. 27, Arlington, Va. 22207)
Filed Oct. 28, 1965, Ser. No. 505,577
1 Claim. (Cl. 179—99)



The present invention relates to a telephone adapter unit for increasing the line capacity of a standard six button, five line telephone set.

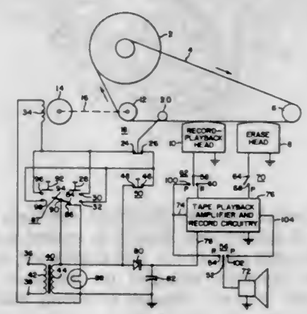
3,419,686
MULTI-TRACK BI-DIRECTIONAL TAPE RECORDER WITH UNI-DIRECTIONAL ACTUATED TRAVERSING TRANSDUCERS
Robert B. Rhoades, Coloma, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed May 28, 1964, Ser. No. 371,020
11 Claims. (Cl. 179—100.2)

A tape recorder having two offset alternately operative transducer heads across which magnetic tape is moved from one reel to a second reel to permit continuous recording in a series of tracks. Each reel has a tab which is released when the tape is unwound therefrom to actuate a slide positioned therebetween which operates mechanism to reverse the direction of the tape travel and also to switch operation from one head to the other. The slide also moves the two heads transversely of the tape after the tape has been scanned by both heads. This it obtains by means of a spring which is



resisted by the spaced lands of a rotary cam. The rotary cam operates by means of a pawl which engages the cam when the slide is moved in one direction but slides thereover when the slide is moved in the opposite direction. Movement of the tape is obtained by a motor driven capstan against which the tape is held by a pressure roller supported upon a yoke carried on a manually actuatable slide, the pressure roller yieldably urging the tape against the capstan when the slide is moved into its operating position.

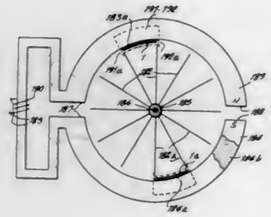
3,419,687
ENDLESS LOOP MESSAGE RECORDING APPARATUS WITH RESET AND INDICATING MEANS
James B. Stewart, North Brunswick, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1964, Ser. No. 402,197
9 Claims. (Cl. 179—100.2)



An audio message recording and retrieval system is disclosed which utilizes a continuous loop tape deck wherein a message of a predetermined length may be recorded on the continuous loop of recording tape. The system is operative to reset the loop of tape at the beginning of the previously recorded message and, with the presence of a message being indicated by, for example,

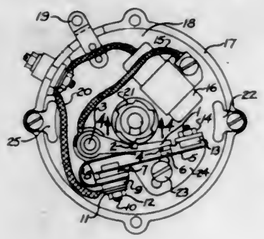
the illumination of an indicating lamp. The playback of the recorded message is effected by activating the tape deck with the indicating lamp being deactivated on the instigation of the retrieval of the message.

3,419,688
APPARATUS FOR RECORDING PERPENDICULAR MAGNETIC FIELDS IN TRANSVERSE TRACKS ON A MAGNETIC TAPE
R Lee Hollingsworth, 110 Fox Blvd., Massapequa, N.Y. 11758
Continuation-in-part of application Ser. No. 36,678, June 16, 1960. This application Dec. 4, 1964, Ser. No. 418,374
7 Claims. (Cl. 179—100.2)



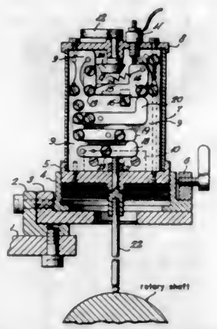
An apparatus for magnetically recording transverse the length of a tape. A rotating magnetic distributor with a plurality of arms is arranged axially of a pair of opposed semi-circular magnetic members. A tape is driven between the rotating distributor arms and one of the semi-circular members in such a manner that perpendicular magnetic fields are recorded in transverse tracks on the tape.

3,419,689
IGNITION DISTRUBUTOR STRUCTURE
John Jacob Steinke, 206 Anderson Road, Watchung, N.J. 07060
Filed May 1, 1967, Ser. No. 635,184
7 Claims. (Cl. 200—19)



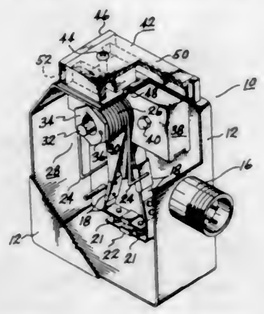
A motor vehicle ignition distributor having a pivot pin and a pair of spaced lugs located in spaced relationship to a rotatable cam mounted in said distributor, a rotatable breaker arm pivotally mounted on the pivot pin and bearing against the cam, through a rubbing block fixedly mounted on arm, the arm having a contact fixedly attached; a spring bearing against the rotatable breaker arm holding it against the rotating cam; a fixed spring contact assembly fixedly attached to one of the spaced lugs and electrically insulated therefrom, consisting of a spring steel element carrying an electrical contact point, the spring steel element being increasingly tensioned by the rotatable breaker arm during the contact phase and resting against an insulated stop in the return position.

3,419,690
VIBRATION MONITORS
Henry H. Garig, Norwood, La., (785 Robindale Road, Brownsville, Tex. 78520)
Filed Nov. 4, 1966, Ser. No. 592,051
7 Claims. (Cl. 200—61.45)



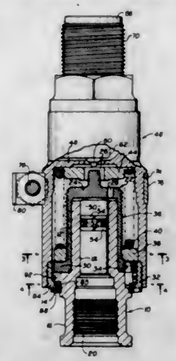
1. A vibration monitor for use with rotating machinery comprising a casing, a train of levers within said casing one above the other, and a push rod extending outwardly from said casing and adapted to have its extreme outer end to engage a rotatable machine part, the lowermost of said levers engaging the upper end of said push rod, the lower end of said casing being seated in a base ring provided with calibrations therearound, said base ring being fitted for vertical adjustment in a fixed base, the uppermost of said train of levers serving to close an electric circuit to the exterior of said casing when said push rod is pushed upwardly.

3,419,691
POSITION INDICATOR SWITCHES
David Stewart, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 23, 1966, Ser. No. 596,684
3 Claims. (Cl. 200—61.52)



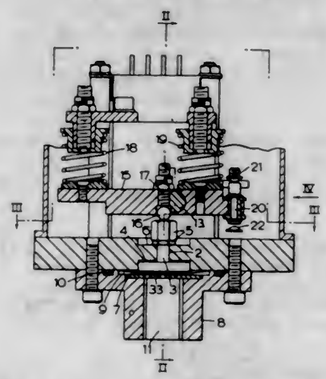
1. A vehicle position actuated switch comprising
(a) actuator means responsive to change of vehicle position;
(b) a plurality of movable electrical contacts having contact points, means whereby said contacts move relative to one another in response to said actuator means;
(c) insulation means in combination with said plurality of electrical contacts, means whereby when said vehicle tilts, said contact points slide apart on said insulation means to an open switch position, and when said vehicle is restored to its non-tilting position, said contact points slide on said insulation means to make electrical contact.

3,419,692
PRESSURE RESPONSIVE ACTUATOR WHEREIN A SPRING IS ADJUSTED BY ROTATION OF THE HOUSING TO CHANGE ACTUATION PRESSURE
Peter H. Palen, Lake Mohawk, N.J., assignor to Sigma-Netics, Inc., Mountain Lakes, N.J., a corporation of New Jersey
Filed Jan. 16, 1967, Ser. No. 615,036
11 Claims. (Cl. 200—82)



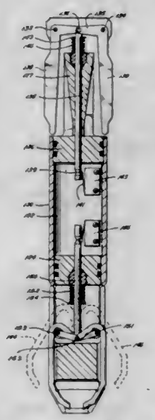
This invention is an actuator construction for operating an electric switch or other device in response to fluid pressure. It provides a simple and self-contained construction in which the working fluid enters the actuator through a post that serves as a guide for the movable element of the actuator. A spring which opposes the motion can be adjusted, to change the pressure at which the actuator operates, by rotating an outside housing; and the same spring that opposes the fluid pressure also holds the housing in a locked position so that adjustment of spring pressure cannot occur as the result of vibration or accidental brushing against the housing in a tangential direction.

3,419,693
CONTROL SWITCH FOR A FLUID PRESSURE SYSTEM
Percy Gould and Derek Firmager, Brighton, England, assignors, by mesne assignments, to Clifford Edwards Limited, Hove, Sussex, England, a corporation of Great Britain
Filed May 31, 1966, Ser. No. 564,458
Claims priority, application Great Britain, May 31, 1965, 23,138/65
4 Claims. (Cl. 200—83)



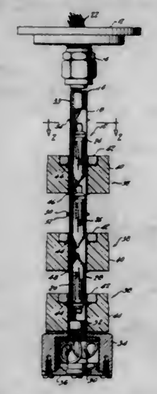
A pressure actuated control switch having a diaphragm exposed to the pressure to be controlled and connected to a movable contact movable between two stationary contacts. The contacts are connected in an electric circuit which has a signal terminal, the potential applied to the signal terminal changing when the movable contact moves into engagement with one of the stationary contacts after engaging the other stationary contact.

3,419,694
WELL TOOL UTILIZING A SWITCH MEANS RESPONSIVE TO BOTH PRESSURE AND THE WALL AREA SURROUNDING THE SWITCH
James B. Shore, Friendswood, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 13, 1967, Ser. No. 609,075
16 Claims. (Cl. 200—83)



A safety switch arrangement is provided for a string of tools to be pumped through the flow line of a well. The safety switch mechanism includes arm members which are released by hydrostatic pressure for outward extension. Upon positioning of the switch mechanism at a predetermined place in the flow line having a configuration allowing the switch arms to extend, a circuit is closed by such extension of the switch arms to actuate a tool in the string such as a perforating gun.

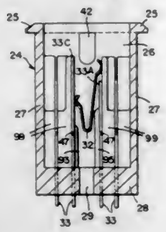
3,419,695
FLOAT SWITCH ASSEMBLY
Henry T. Dinkelkamp, Mount Prospect, and Marshall Miles, Wilmette, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Mar. 23, 1966, Ser. No. 536,708
3 Claims. (Cl. 200—84)



A thermostat and a plural switch arrangement located on an electrically insulated card positioned in a non-

magnetic tube for signalling respective levels of liquid in a reservoir. A float and magnet assembly are provided for each switch to control the respective switch in accordance with the liquid level, and a magnetic material is disposed in a predetermined position relative one of the switches. The magnetic material attracts and retains the respective magnet in the event the liquid carries the magnet into the vicinity of the magnetic material and prevents the magnet and float from falling under small or temporary liquid displacements to falsely operate the switch.

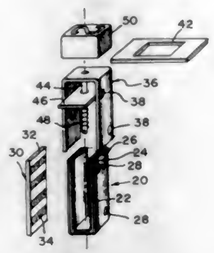
3,419,696
PUSH BUTTON SWITCH WITH BUTTON-ACTUATED CARRIAGE ADAPTED TO CARRY PLURALITY OF BLADES FOR SIMPLE AND COMPLEX SWITCHING ARRANGEMENTS
James R. Bailey, Chicago, and Robert J. Bokosky, Park Ridge, Ill., assignors to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1967, Ser. No. 622,760
18 Claims. (Cl. 200—159)



Compact multiple switch mechanism comprising a hollow housing, conductor strips forming stationary switch contacts supported in peripherally spaced contact seats in the housing, switch blades each comprising a medially bent electrical conductor having legs of unlike length and mounted each in position straddling the end of a corresponding longitudinally extending blade mounting rib positioned, on a push-button frame, for axial movement, between an adjacent pair of said stationary contacts, the housing being formed with cam ribs at and along the contact strips to selectively permit and prevent switching engagement of the legs of said blades with seat mounted contacts, as the push-button frame is shifted axially within the housing, each switch blade being adapted for assembly, with its long and short legs straddling its mounting rib, in either direction whereby to constitute the resulting switch either as normally open or normally closed, the arrangement providing one or more simple and complex switches, in a single unit, depending upon the presence or absence and orientation of the blade elements on their mounting ribs.

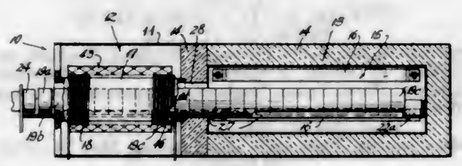
3,419,697
PUSH BUTTON UTILIZING TRANSMITTING AND RECEIVING MEANS COACTING WITH AN APERTURED SHIELD TO PROVIDE A CAPACITIVE COUPLING
Donald C. Gove, Manchester, Mass., assignor to Ikor Incorporated, Burlington, Mass., a corporation of Massachusetts
Filed Jan. 5, 1967, Ser. No. 607,563
13 Claims. (Cl. 200—181)

The following specification describes a switch in which a conductive transmission bar is connected to an input terminal and a plurality of discrete, conductive receiving strips are each connected to respective output terminals. The input terminal is intended to be connected to a source of a signal of changing potential. A manually engageable key in the form of an electrostatic shielding element is normally interposed between the transmission bar and receiving strips so as to prevent capacitive coupling of the signal from occurring between the transmission and receiving elements. The key is movable to a position at



which apertures in the key permit coupling and thus switching to occur. The key can, by virtue of the number and placement of apertures in it, directly encode the signal into a given numerical form defined by selective energization of the input terminals, and hence forms a basic element for a multiple key keyboard.

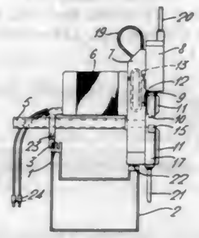
3,419,698
WORKPIECE HEATING OVEN
Albert Palmero, Wallingford, and Elmer W. Madsen, Bristol, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Sept. 21, 1965, Ser. No. 488,897
10 Claims. (Cl. 219—10.47)



An oven for heating a plurality of workpieces which includes an elongate passageway having an induction heating entrance portion and an ambient fluid heating exit portion with each portion capable of heating a plurality of workpieces and in which the injection of a cold workpiece in the passageway displaces out of the passageway an evenly heated workpiece.

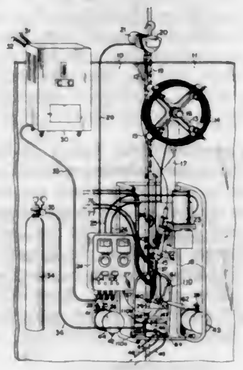
3,419,699
WELDING MACHINE FOR METAL GRIDS
Emil Denzler, Schlieren, Switzerland, assignor to H. A. Schlatter A.G., Schlieren, Switzerland
Filed June 24, 1965, Ser. No. 466,728
Claims priority, application Switzerland, June 29, 1964, 8,592/64
7 Claims. (Cl. 219—56)

A welding machine for welding wires into a grid which includes alternately arranged upper and lower welding units each supported for independent adjustable transverse movement on a frame, each of the units including a transformer, a welding press having electrodes on the front of the transformer, and a wire guide above and below the transformers of the lower and upper welding units



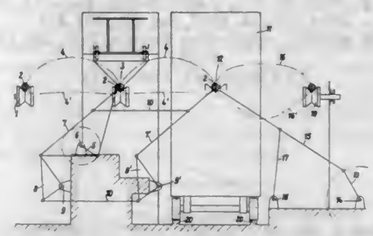
respectively with all of the wire guides and presses arranged in substantial horizontal alignment.

3,419,700
AUTOMATIC ELECTROGAS VERTICAL SEAM WELDING ARRANGEMENT
Takashi Tanigaki, Kelichi Ishimoto, and Katsumi Ishimoto, Yokosuka-shi, and Shimpei Iizuka, Yokohama-shi, Japan, assignors to Uraga Jukogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Aug. 8, 1966, Ser. No. 570,882
Claims priority, application Japan, Aug. 7, 1965, 40/47,856; Oct. 2, 1965, 40/60,049; Nov. 5, 1965, 40/89,573
6 Claims. (Cl. 219—126)



1. In an automatic A.C. electrogas vertical seam welding arrangement comprising a carriage assembly adapted for moving along an elongated vertical gap formed between a pair of stocks to be welded together, a wire electrode feeder carried by said carriage assembly, a welding torch carried by said carriage assembly and adapted for receiving an elongated wire electrode from said feeder, means carried by said carriage assembly for supplying a constant flow of protecting gas such as carbon dioxide to a welding spot selected in proximity of said assembly and in said gap, and a pair of chilling strips carried by said assembly and adapted for being kept in sliding and pressure contact with said welding stocks across said welding gap and at both sides thereof, a combination of a gas expansion chamber formed integrally with one of said strips and having a narrower inside opening and a wider outside opening, a transparent cover sheet closing said outside opening, and means for connecting fluidically the interior of said chamber with said gas supply means, said inside opening being positioned in close proximity of said welding point, said chamber thereby forming a viewing window for allowing the observation of welding sparks at the welding spot, when the welding process goes on.

3,419,701
APPARATUS FOR HEATING AND HOLDING THE TEMPERATURE OF LONG STOCK
Edgar Stengel, Wuppertal-Hahnerberg, and Jürgen Müller, Remscheid, Germany, assignors to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany
Filed Oct. 27, 1966, Ser. No. 589,889
Claims priority, application Germany, Dec. 29, 1965, A 51,198
1 Claim. (Cl. 219—156)



1. Apparatus for heating and holding the temperature of long stock prior to delivering the same to a hot-working station comprising:

a receiving station for the stock, a measuring and aligning station for the stock, a heating station including tracks and electrical resistance heating contact trucks mounted on the tracks, all serially spaced along a path;

a conveyor disposed adjacent to the heating station and adapted to receive the stock from the heating station;

a holding furnace in operative connection with the conveyor to receive stock on the conveyor;

first means for moving stock from the receiving station to the measuring and aligning station and thence to the heating station including two parallel sets of axially aligned rocker and extension linkages, the rocker and extension linkages of one set being linked to the transversely aligned rocker and extension linkages of the other set to maintain parallel alignment and operation, two parallel sets of axially aligned bearings, each rocker linkage being associated with a bearing, and means for commonly driving both sets of rocker and extension linkages, the driving means including a drive shaft, a set of cranks, and a set of clutches, each crank being operatively connected at one end to the drive shaft through a clutch and at the other end to a pair of transversely aligned rocker and extension linkages for driving the same, selected rocker and extension linkages adapted to be inactivated by disengagement of the corresponding clutches for inactivating rocker and extension linkages not required by the length of the stock, the rocker and extension linkages of one set adapted to move stock from the receiving station to the measuring and aligning station, and the rocker and extension linkages of the other set adapted to move stock from the measuring and aligning station to the heating station;

second means for moving stock from the heating station to the conveyor including a set of axially aligned rocker and extension linkages, a set of axially aligned bearings for the rocker linkages, and means for driving the set of axially aligned rocker and extension linkages, the driving means including a drive shaft, a set of cranks, and a set of clutches, each crank being operatively connected at one end to the drive shaft through a clutch and at the other end to a

rocker and extension linkage, selected rocker and extension linkages adapted to be inactivated by disengagement of the corresponding clutch for inactivating rocker and extension linkages not required by the length of the stock; and

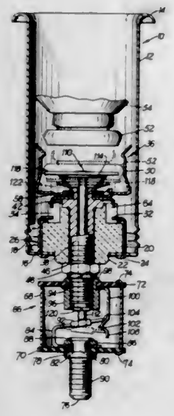
the bearings of the first and second moving means being positioned outside the track of the contact trucks.

3,419,702
GARMENT WITH ELECTRICALLY CONDUCTIVE HEATING ELEMENT
Michel F. Piel, 68 Ave. Ledru-Rollin, Paris 12, France
Filed Feb. 24, 1967, Ser. No. 618,411
Claims priority, application France, Feb. 28, 1966, 51,331
13 Claims. (Cl. 219—211)



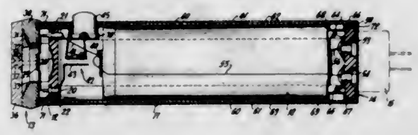
A garment includes a flexible electrically conductive heating element formed of a flexible dielectric tube filled with a conductive liquid.

3,419,703
ELECTRIC CIGAR LIGHTERS
Marcel Clarence Sicard, Cheshire, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 8, 1966, Ser. No. 570,969
6 Claims. (Cl. 219—265)



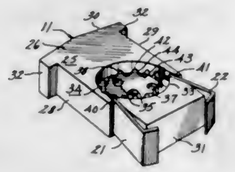
A thermostatically controlled electric cigar lighter for automobiles and the like, having an electric cigar lighter plug and socket with unitary current and heat responsive circuit breaker including a thrust-rod inserted therein. The circuit breaker is resettable from open to closed circuit condition by movement of the lighter plug and the thrust-rod.

3,419,704
BATTERY POWERED CIGARETTE LIGHTER
Seymour Hunt, Mount Pleasant Village, Bldg. 15–1B, Morris Plains, N.J.
Filed Sept. 21, 1966, Ser. No. 580,941
6 Claims. (Cl. 219—268)



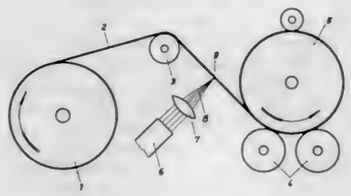
Pocket size electric cigarette lighters having a fine wire heating element drawing low wattage, and including a parabolic reflector for enhancing visibility of the heating element when energized by a battery.

3,419,705
HEATER FILAMENT FOR AN ELECTRICAL CIGARETTE LIGHTER
Walter H. Gordon, Jr., Asheboro, N.C., assignor to General Electric Company, a corporation of New York
Filed Oct. 7, 1966, Ser. No. 585,188
3 Claims. (Cl. 219—270)



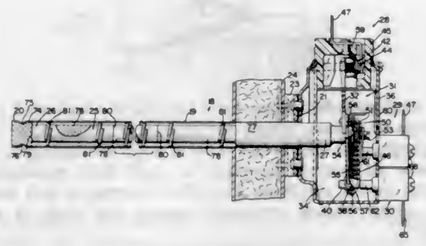
An electric cigarette lighter heater filament having a sinusoidal configuration including alternating ridges and valleys connected to each other along the entire length of the filament with the ridges and valleys disposed substantially in a common plane such that the tip of a cigarette first comes in contact only with the ridges when lighting of the cigarette is attempted. The heater filament may be formed of an alloy comprising from 0.5–4.0 percent aluminum, from 0.5–3.0 percent yttrium, from 20.0–95.0 weight percent chromium and the balance iron.

3,419,706
METHOD FOR CUTTING OF PAPER AND SIMILAR MATERIALS
Erich Lohrmann, Dusseldorf, Germany, assignor to Jagenberg Werke Akt.-Ges., Dusseldorf, Germany
Continuation of application Ser. No. 307,542, Sept. 9, 1963. This application Jan. 3, 1968, Ser. No. 695,526
Claims priority, application Germany, Sept. 25, 1962, J 22,431
4 Claims. (Cl. 219—384)



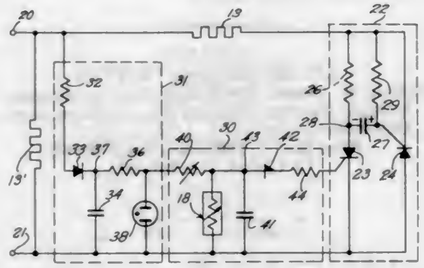
A method of cutting paper and similar materials by focusing at least one sharply clustered, high energy density, monochromatic light ray along a selected separation path of the paper to be cut and more particularly effecting relative movement between such light ray and the paper to be cut to determine such path.

3,419,707
ROD AND TUBE TEMPERATURE SENSOR FOR CONTROLLING THE HEATING MEANS OF AN OVEN OR THE LIKE
Henry F. Hild and Siegfried E. Manecke, Indiana, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,465
20 Claims. (Cl. 219—391)



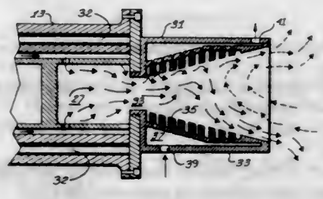
A rod and tube temperature sensing means for an oven wherein the free end of the rod operates a lever means that is adapted to control three different electrical switches, one of the electrical switches controlling the heating means of the oven during a normal cooking operation and a second electrical switch controlling the heating means during a high temperature burn-off cleaning operation of the oven whereas the third electrical switch controls a door latching mechanism to lock the oven door in its closed position during the high temperature burn-off cleaning operation.

3,419,708
ELECTRONIC HEAT CONTROL FOR DRYER
Anthony Niewyk, St. Joseph, James L. McConnell, Stevensville, and George H. Myers, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Apr. 6, 1966, Ser. No. 540,554
6 Claims. (Cl. 219—501)



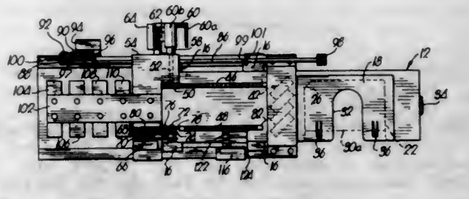
1. A temperature control device comprising: a source of alternating current voltage having a pair of current delivery lines; an electrically energized heating element having one end thereof connected to one line of said source; first and second electronic switching means connected in parallel to one another and in series with said heating element for connecting said heating element to the other line of said source through said first switching means during the positive half cycles from said source and through said second switching means during the negative half cycles from said source; converter means connected to the lines of said power source for changing a portion of the alternating current voltage to a direct current voltage; temperature responsive triggering means connected between said converter means and said first switching means for generating triggering signals from said direct current voltage of said converter means when the temperature generated by said heating element is less than the desired temperature, thereby rendering said first switching means conductive during the positive half cycles from said source; and means connected between said first and second switching means for rendering said second switching means conductive during the negative half cycle from said source immediately after conduction of said first switching means during the previous positive half cycle of said source, and for maintaining said second switching means nonconductive during the negative half cycles when said first switching means is nonconductive during the preceding positive half cycle.

3,419,709
BLACKBODY RADIATING DEVICE WITH A PROTECTIVE HOOD
Arthur G. De Bell, Woodland Hills, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,851
5 Claims. (Cl. 219—553)



A blackbody radiating device containing a heatable oxidizable body in a housing having an open end exposing said oxidizable body to ambient air. An opening in the wall of the housing to provide a flow of inert gas over the oxidizable body and a protective hood affixed to the open end of the housing so designed as to cool said inert gas when exiting from said open end **20** as to prevent egress of deleterious air into said housing.

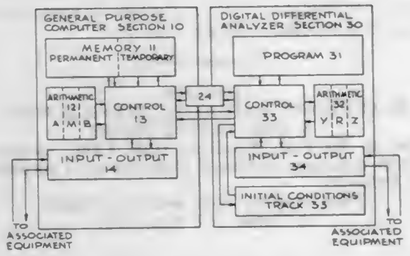
3,419,710
MAGNETIC CARD READER HAVING SEQUENTIAL INDICIA SENSING MEANS
Victor M. Mathews, Jr., Leawood, and Crayton D. Benton, Shawnee, Kans., assignors to MKC Electronics Corporation, Kansas City, Kans., a corporation of Missouri
Filed Apr. 2, 1965, Ser. No. 445,078
19 Claims. (Cl. 235—61.11)



In an information handling system, a card is employed bearing information in the form of magnetic indicia selectively disposed in certain of a total number of bit locations arranged on the card in columns and rows. A card

reader is provided having a read head assembly comprising a pair of spaced heads mounting a plurality of magnets and reed switches disposed with each magnet and its corresponding switch mounted on opposite heads in opposed relationship to each other. The card is carried by a tray that travels between the heads with the card oriented such that each magnet and switch scans a corresponding column of the card.

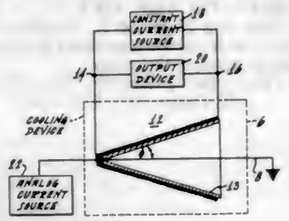
3,419,711
COMBINATIONAL COMPUTER SYSTEM
David R. Hunter, Canoga Park, Los Angeles, and Martin S. Kesselman, Encino, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed Oct. 7, 1964, Ser. No. 402,194
17 Claims. (Cl. 235—150.31)



5. A magnetic drum combinational computer system comprising:
a general purpose computer section including;
a plurality of magnetic tracks;
read and write heads cooperating with said magnetic tracks;
means for storing signals representing particular numbers and operations on selected tracks;
a logic and gating matrix having logic circuits;
general purpose computer section control means connected to said logic circuits and said first named means for enabling operations upon said signals;
a digital differential analyzer section including;
a plurality of memory tracks;
read and write means associated with said tracks;
a plurality of flip-flop circuits;
means for storing program-representing signals on selected tracks;
control means connecting said tracks, said read and write means and said flip-flop circuits to form a Y register, an R register and an overflow memory; and
said general purpose computer section control means further including means for selecting signals representing data words from memory tracks of said general purpose section and transferring said signals to selected positions in said Y register of said digital differential analyzer section.

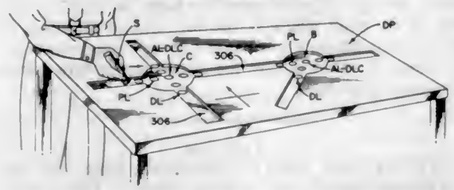
3,419,712
FUNCTION GENERATION AND ANALOG-TO-DIGITAL CONVERSION USING SUPERCONDUCTING TECHNIQUES
Milton W. Green, Menlo Park, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 797,404, Mar. 5, 1959. This application Nov. 29, 1962, Ser. No. 242,040
11 Claims. (Cl. 235—197)

1. Apparatus for generating a function of a variable quantity comprising: current responsive, magnetic field establishing means; means responsive to the variable quantity for supplying to said field establishing means a current having an amplitude which is proportional to the magnitude of said variable quantity; a body of superconductive material of uniform thickness having ends and being so spaced relative to said field establishing means that successive portions of different spacing along said body, between said ends, are driven from the superconducting to the normal state in succession as the current supplied to



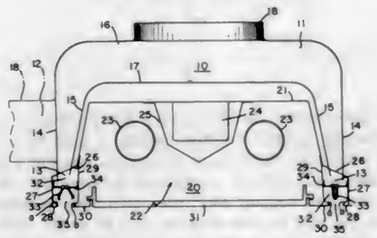
said field establishing means is successively increased over a range of values; means for maintaining said body at a temperature at which said body is superconducting in the absence of current supplied to said field establishing means; means supplying a constant current to said body; and output means connected across said ends of said body.

3,419,713
PANEL LIGHT MODULES
Edward P. Cheslock, Newtown Square, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed May 19, 1966, Ser. No. 551,308
14 Claims. (Cl. 240—1.2)



A panel light module, adapted to be employed with a display panel, for providing a visual display of traffic locations. The panel light module has an outer sleeve which surrounds a polyester encapsulated bulb, and which is constructed of a material having light reflective and heat dissipating characteristics.

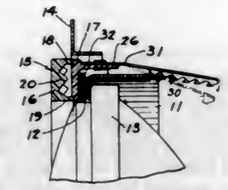
3,419,714
AIR HANDLING TROFFER
Richard G. Slauer, Forest Hill, W. Va., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 1, 1965, Ser. No. 510,768
2 Claims. (Cl. 240—9)



An air-handling lighting fixture, the lower longitudinal edges of which are provided with an air handling control

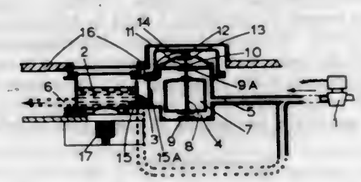
chamber and having a pair of linear control vanes disposed therein.

3,419,715
AUTOMOBILE REFLECTORS
Wallace A. Stanley, Bloomfield Hills, Mich., assignor, by mesne assignments, to Reflex Corporation of America, Troy, Mich., a corporation of Michigan
Filed May 9, 1966, Ser. No. 548,643
13 Claims. (Cl. 240—41.55)



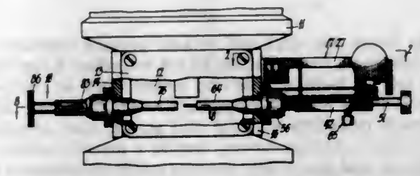
A reflector for use with a headlamp of an automobile wherein the headlamp has a bracket surrounding the headlamp. The reflector comprises a first substantially continuous ring of transparent material having a smooth outer surface and an inner surface formed with a plurality of reflecting prisms and a second ring of material joined and hermetically sealed to the first ring. A plurality of fingers are mounted in circumferentially spaced relation on the ring and project axially for engaging the bracket. Each of the fingers has serrations extending along opposite longitudinal edges thereof in order to engage the edges of the retaining bracket and accommodate retaining brackets of various axial dimensions.

3,419,716
DEVICE FOR MEASURING THE CONCENTRATION OF SUBSTANCES IN LIQUIDS
Eric B. Bell, West Byfleet, England, assignor to Saunders-Roe Developments Limited
Filed Sept. 2, 1964, Ser. No. 393,915
Claims priority, application Great Britain, Sept. 14, 1963, 36,272/63
5 Claims. (Cl. 250—43.5)



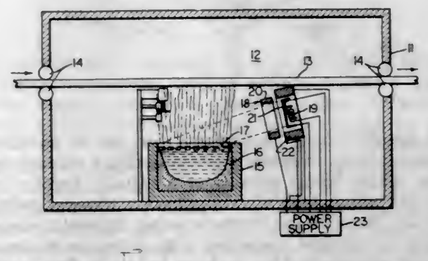
A device for measuring the concentration of substances in a liquid by nucleonic radiation is provided with a float means which ensures that the mass of liquid measured is of constant mass irrespective of its density. A mass of liquid is introduced between a radiation source and a radiation detector and the float functions to regulate the level of the liquid between same such that the mass of liquid introduced into the device for a given measurement will always be the same regardless of its density. In this manner, concentration measurements can be made by radiation techniques without error introduced by density variations.

3,419,717
MANIPULATOR FOR ACCURATELY POSITIONING SPECIMENS WITHIN AN ELECTRON MICROSCOPE OR AN ELECTRON DIFFRACTION CAMERA
John Cunningham Mills, Springvale, Victoria, Australia, Assignor to Commonwealth Scientific and Industrial Research Organization, Victoria, Australia, a body corporate.
Filed Dec. 9, 1965, Ser. No. 512,671
Claims priority, application Australia, Dec. 10, 1964, 52,809/64
10 Claims. (Cl. 250—49.5)



Manipulator for accurately positioning objects within an enclosure chamber and constructed to extend inside the chamber so as to be controlled by means positioned outside the chamber, and including means mounted for pivotal movement about a fixed axis; and first and second control means respectively, for imparting controllable pivoting movement to the support means and for imparting axial movement to the manipulator.

3,419,718
APPARATUS FOR MEASURING THE FLOW OF ELECTRICALLY NEUTRAL PARTICLES
Robert H. Hammond, San Diego, Charles H. Meyer, Jr., Del Mar, Bruce L. Gehman, San Diego, and Guy M. Kelly, La Jolla, Calif., assignors to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,935
11 Claims. (Cl. 250—49.5)



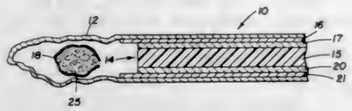
Apparatus is disclosed for measuring the flow of a beam of electrically neutral particles in an evacuated environment. The apparatus has a sensing device positioned at a station in the path of a portion of the beam for sensing its flow. A shield is disposed about the sensing device to prevent particles other than those in the portion of the beam directed to the sensing device from reaching the same and to shield the sensing device from electromagnetic radiation which may be present in the environment. A stripper is disposed proximate to the portion of the beam prior to the beam reaching the sensing station to produce a field for deflecting charged particles, such as electrons, which may also be present in the environment, to prevent them from reaching the sensing device. Further means may be disposed proximate the portion of the beam for intermittently blocking this beam portion prior to its reaching the sensing device so that the response thereof indicative of the beam flow may be separated from any background response.

3,419,719

X-RAY FILM PACK CONTAINING ABSORBABLE GAS AND MEANS FOR ABSORBING SAID GAS

Charles A. Goffe and Robert E. Stauffer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 19, 1965, Ser. No. 473,043
4 Claims. (Cl. 250—68)



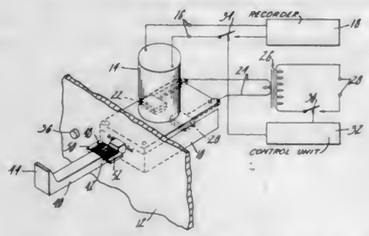
An X-ray film pack and process provide intimate contact between a sheet of material for recording X-ray radiation and an X-ray intensifying screen when an enclosure, filled with an absorbable gas and containing such X-ray radiation recording material and screen, also contains a rupturable container having therein a material which absorbs the said gas. When the rupturable container is ruptured, gas within the film pack is absorbed and atmospheric pressure forces the walls of the enclosure against the recording material and X-ray screen thereby causing desired intimate contact.

3,419,720

HOLDER FOR RELEASABLY SECURING A SHAPE-RETAINING DOSIMETER ELEMENT DURING READOUT

Anne L. Debye, Sudbury, and Bengt Bjarngard, Winchester, Mass., assignors, by mesne assignments, to Isotopes, Inc., Westwood, N.J., a corporation of California

Filed Sept. 7, 1965, Ser. No. 485,294
7 Claims. (Cl. 250—83)



A special holder is disclosed for use in securing a shape-retaining dosimeter element during a readout operation, which holder consists of a metallic support with side portions to releasably engage in a physical restraint opposite sides of the shape-retaining dosimeter element during the readout operation. The dosimeter element is inserted into the holder, and the holder is then inserted into a readout instrument. In one form, the holder includes an apertured screen to overlie the dosimeter element. In all cases, at least 50% of the surface of the dosimeter element facing the readout mechanism is exposed.

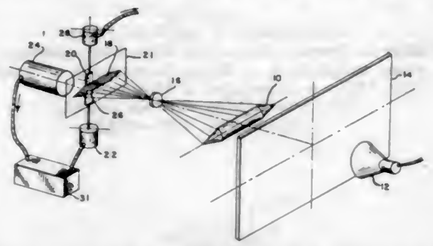
3,419,721

OBJECT LOCATING BY MEANS OF SENSING A LIGHT SPOT

Timothy Stephens, Burlington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 28, 1966, Ser. No. 590,260
7 Claims. (Cl. 250—202)

1. An optical position sensing system comprising a light source, a lens positioned to receive light from said light source, a screen positioned in the focal plane of said lens to receive thereon an image of a model interposed between said lens and said light source and whose movements are to be measured, an apertured plate movable in one direction in the focal plane of said lens, a photo detector for receiving light through said aperture the amount



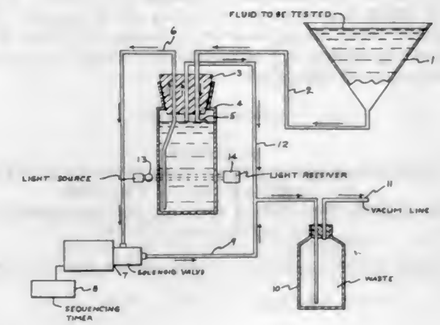
of light received by said detector being determined by the position of the edge of said image with respect to the position of said aperture, means for moving said apertured plate and therefore the position of said aperture to follow the edge of said image, said means being actuated by the amount of light received by said photo detector.

3,419,722

SPECTROPHOTOMETRIC APPARATUS FOR RAPID ANALYSIS HAVING DEFLECTION MEANS TO PREVENT VORTEX FORMATION

John E. Meikle, Salt Lake City, Utah, assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 22, 1965, Ser. No. 502,736
7 Claims. (Cl. 250—218)



1. Spectrophotometric analysis apparatus comprising fluid line means to introduce a fluid to be analyzed into a substantially transparent cuvette, deflection means for said fluid line means to prevent formation of a vortex or such disturbance in the fluid, overflow line means to automatically remove fluid above a predetermined level in said cuvette and drain line means to drain said cuvette when desired.

3,419,723

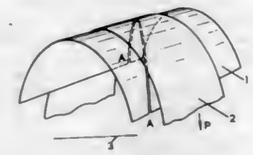
APPARATUS FOR CHECKING A WEB OF MATERIAL AS TO UNIFORMITY

Fedde Hendrik Germans, Enschede, and Pieter Rense Vos, Borne, Netherlands, assignors to Koninklijke Nederlandse Textiel Unie N.V., Hengelo, Netherlands, a corporation of the Netherlands

Filed Nov. 9, 1965, Ser. No. 508,192
Claims priority, application Netherlands, Nov. 12, 1964, 6413193
4 Claims. (Cl. 250—219)

1. An apparatus for checking a web of fabric as to uniformity, which comprises means providing a convex cylindrical guide surface having a straight generatrix for guiding the web of material to be checked across said

surface parallel to the generatrix thereof, a circular arcuate band-like zone of the guide surface transmitting light therethrough, a mirror positioned inwardly of the guide surface on the axis of said circular arcuate band-like zone, a light source positioned outwardly of the guide



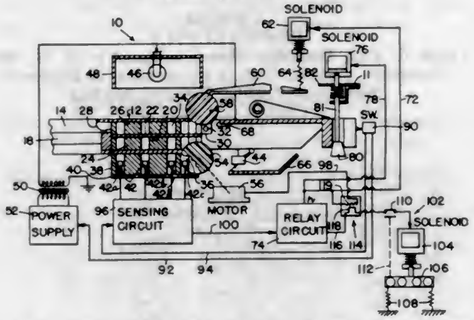
surface for passing light through the web and the circular arcuate band-like zone of the guide surface, means to rotate the mirror about the axis of the circular band-like zone, and a photo sensitive means disposed within the guide surface for receiving light reflected thereto by the mirror for sensing the light transmitting properties of the web to be checked.

3,419,724

RADIATION SENSITIVE CURRENCY ACCEPTOR WITH ESCROW

Jack E. Bayha, Chesterland, Ohio, assignor to Trans-Marine Corporation, Chesterland, Ohio, a corporation of Ohio

Filed Jan. 28, 1966, Ser. No. 523,699
7 Claims. (Cl. 250—219)



1. In a circuit for authentication of paper securities the combination of:

means to carry two securities of the same denomination into a testing area with the securities stacked one on top of the other in like juxtaposition,

means to project light onto one surface of the stacked securities,

a plurality of test photocells to view the light passage through randomly selected areas on the other surface of the stacked securities to be tested,

a first circuit receiving the output voltage from the test photocells to sense whether the light detected by the test photocells falls within predetermined levels to provide a signal when the paper security tested is authentic, and

means to payout and receive both securities where an authentic signal is received from the circuit.

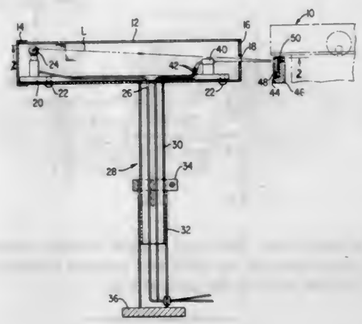
3,419,725

RADIATION SENSITIVE ELECTRONIC COUNTING SYSTEM

Raymond J. Dwyer, 4737 Secor Road, Toledo, Ohio 43623

Filed Oct. 23, 1965, Ser. No. 503,820
1 Claim. (Cl. 250—222)

The present invention relates to a counter, and more particularly to an electronic counting system employing a means for establishing a relatively wide field of light, the intensity of which is varied by a transient opaque ob-



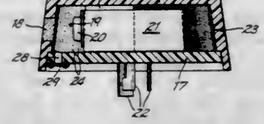
ject which varies the amount of light energy impinging on a photoelectric device, thereby effective to vary the output thereof.

3,419,726

OUTDOOR LIGHTING PHOTOCONTROL HAVING ADJUSTABLE SHADE

John C. Olsen, Racine, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Aug. 10, 1965, Ser. No. 478,692
2 Claims. (Cl. 250—237)



A photocontrol assembly for outdoor lighting fixtures including a generally opaque housing having a transparent window portion, a photocell within the housing having a light sensitive area facing the transparent window in the housing, and adjustable shade means between the interior surface of the housing and the photocell for adjusting the intensity of light falling on the photocell from the transparent window. The adjustable shade comprises an annular strip of pliable transparent material of progressively decreasing transparency rotatably movable within said housing to adjust the intensity of light reaching the photocell.

3,419,727

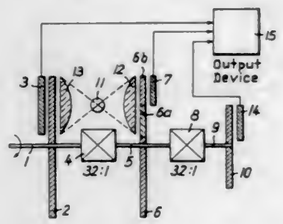
DEVICE FOR DIGITAL MEASUREMENT OF ANGULAR MOTION

Wolfgang Pabst, Neu Isenburg, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Mar. 9, 1965, Ser. No. 438,184
Claims priority, application Germany, Mar. 9, 1964, L 36,692, L 47,239
7 Claims. (Cl. 250—231)

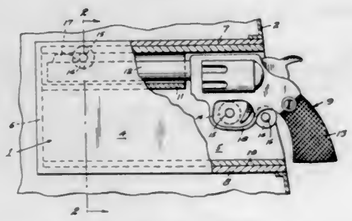
A device for measuring angular motion and rendering the measurement in digital form. The device includes a first code disc having a first band provided with a code pattern and a second transparent band provided either with transparent material or no material at all, and a second code disc having a band provided with a code pattern in substantial alignment with the second trans-

parent band of the first code disc. The device further includes a reduction gearing arrangement linking the first



and second code discs and a light source arranged to direct light through the first and second bands of the first disc and the band of the second disc.

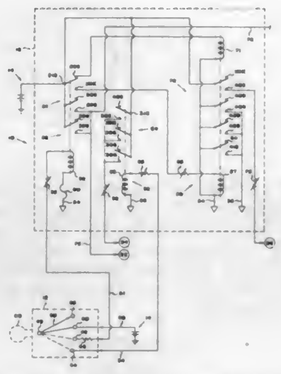
3,419,728
WEAPON HOLSTER
Curtis L. Wilson, Box 1094, Sierra Vista, Ariz. 85635
Filed Aug. 10, 1965, Ser. No. 478,777
2 Claims. (Cl. 307—9)



A holster that is attached to a vehicle with a plurality of electric solenoid operated plungers piercing the holster to lock a weapon therein. The plungers are withdrawn when a pushbutton switch is operated to release the weapon for use. The ignition switch, however, must be "on" before the pushbutton can close the circuit and operate the plungers. Hence, the operator must have an ignition key and know where the pushbutton switch is located before he can release the weapon for removal from the holster.

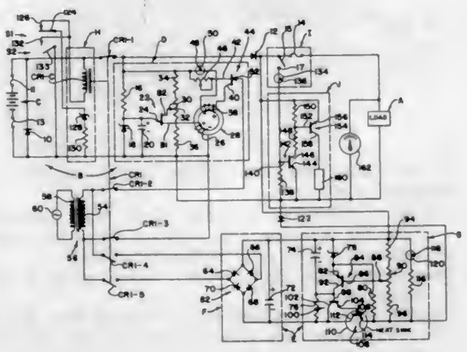
3,419,729
THEFT - PREVENTION IGNITION SYSTEM WITH ELECTRONIC VOLTAGE REGULATION FOR VEHICLES
Leslie A. Hall, Santa Clara, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 3, 1966, Ser. No. 570,041
13 Claims. (Cl. 307—10)

1. In an automative vehicle a theft-prevention system with voltage regulation, an ignition system including a battery, an ignition switch having a fixed resistor element and a first conductor connecting said battery to said ignition switch, a starter and high voltage coil, said high voltage coil having a primary and a secondary, lights and accessories for the vehicle, a voltage generation system for generating a voltage for charging the battery and maintaining the voltage thereof at a preselected level, and a relay actuator circuit the combination comprising first, second and third relays, each having a multi-contact latching arrangement, each of said latching arrangements being connected to said battery by a common connection, a second conductor connecting said fixed resistor of said ignition switch to an adjustable resistor connected in series with said first relay of said relay actuator circuit, a third conductor connecting said ignition switch to an adjustable resistor connected in series with said second relay of said relay actuator circuit, conductor means for connecting said relay activator circuit to said starter coil, said lights and accessories, and the primary of said high voltage coil of the ignition system of the



automotive vehicle, and means connected to said battery, said relay actuator circuit, and said voltage generation system for regulating the voltage supplies to the automotive vehicle.

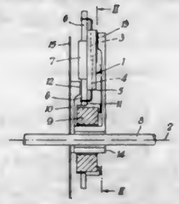
3,419,730
POWER SUPPLY
Floyd E. Cox, Franklin, Mass., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,942
6 Claims. (Cl. 307—66)



A direct current power supply having a primary source battery for supplying direct current to a load and a regulated secondary source alternating current voltage to direct current voltage inverter for automatically supplying the load when the battery voltage falls below a predetermined value. The primary source battery is connected in parallel circuit with an automatic battery charger, for maintaining the battery, both of which are normally connected across the terminals of the load. When the terminal voltage of the battery falls below a predetermined value, a normally energized relay connected across the battery terminals is de-energized and the battery and battery charger are disconnected from the load, and the regulated secondary source is connected across the terminals of the load. A fuse in series with the load is provided to limit the load current to a predetermined maximum value,

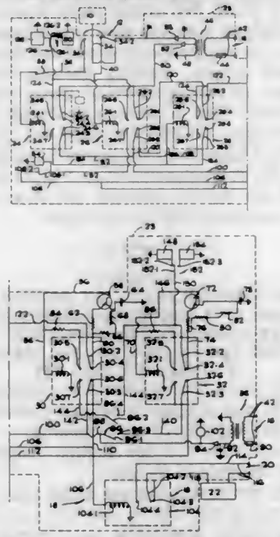
and a switch responsive to a failure of the fuse automatically energizes an alarm indicator to warn that the maximum value of the load current has been exceeded.

3,419,731
SWITCHING DEVICES
Desmond Wheable, Camberley, and Edward B. Stuttard, Wheathampstead, England, assignors to Hawker Siddeley Dynamics Limited, Hatfield, England, a company of Great Britain
Filed Jan. 4, 1966, Ser. No. 518,722
Claims priority, application Great Britain, Jan. 5, 1965, 423/65
9 Claims. (Cl. 307—115)



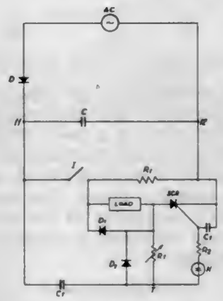
1. A switching device comprising a plurality of reed switches angularly disposed about an axis and each operable by means of a magnetic field to assume either one of a first and second condition, means associated with each switch to hold the associated switch in the second condition when so operated, and an electromagnet having an armature rotatable about said axis in proximity to said reed switches and energisable to change the condition of any one reed switch in proximity thereto.

3,419,732
ELECTRICAL CONTROL SYSTEM
Herbert John Lane, 105 Edenrus Flats, 119 Hamilton St., Pretoria, Transvaal, Republic of South Africa
Filed May 19, 1967, Ser. No. 643,795
Claims priority, application Republic of South Africa, May 20, 1966, 66/2,932
23 Claims. (Cl. 307—116)



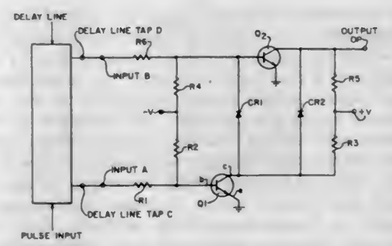
This invention relates to therapeutic apparatus for treating patients whose muscles or limbs have to be exercised. It includes exercising apparatus adapted for attachment to or operation by a patient for exercising his muscles or limbs, electrical switch means operatively connected to such exercising apparatus and to motivation apparatus. The electrical switch means is arranged to energize the motivation apparatus for as long as the exercising apparatus is operated correctly and in the required time intervals.

3,419,733
ELECTRONIC TIMING CIRCUIT
Stephen A. Hornung, James H. Stichweh and William R. Black, Louisville, Ky., assignors to K. M. White Company, Louisville, Ky., a corporation of Kentucky
Filed Sept. 22, 1965, Ser. No. 489,259
11 Claims. (Cl. 307—141)



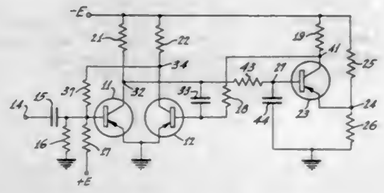
An electronic timing circuit includes an RC circuit coupled in series with a silicon controlled rectifier between a pair of DC source terminals. The junction of the resistor and capacitor in the RC circuit if coupled to the control electrode of the silicon controlled rectifier through a neon tube which acts as a threshhold device. The load is connected in series between one terminal of the DC source and that electrode of the silicon controlled rectifier connected to the series RC circuit.

3,419,734
TWO-INPUT PULSE SHAPING TRANSISTOR CIRCUIT
Edmund B. Daly, Addison, and Verner K. Rice, Jr., Lombard, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,894
1 Claim. (Cl. 307—268)



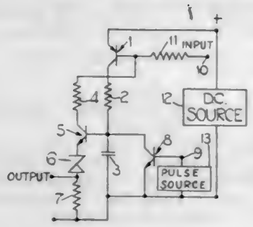
A two-transistor logic gate for use with a delay line to reform the pulses propagating therethrough. The base of the first transistor is connected to a first tap of the delay line and the second transistor is connetced to the cathode of a diode whose anode is connected to the collector of the first transistor. A second diode is connected with its cathode to the collector of the second transistor and its anode the collector of the first transistor. This second diode serves to shift the conductive state of the second transistor away from its saturated state upon the termination of the drive to its base.

3,419,735
MONOSTABLE MULTIVIBRATOR CONTROL
Harold G. Seer, Jr., Wilmington, Del., and Robert A. Dischert, Burlington, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,123
4 Claims. (Cl. 307—273)



A monostable multivibrator provides output pulses of predetermined duration in a predetermined time relation with corresponding pulses in a train of input pulses. The operating period of the multivibrator is determined by the time constant of a coupling circuit and by voltage supplied to the coupling circuit. The amplitude of the supplied voltage is responsive to the average duration of the output pulses and serves to maintain such duration substantially constant.

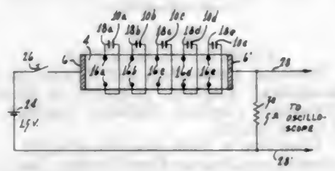
3,419,736
EXTERNALLY CONTROLLED CAPACITOR CHARGING AND DISCHARGING CIRCUIT
Peter Alfred Walsh, Hemel Hempstead, England, assignor to Rotax Limited, London, England
Filed Aug. 4, 1966, Ser. No. 570,313
Claims priority, application Great Britain, Aug. 31, 1965, 37,163/65
5 Claims. (Cl. 307—293)



An externally controlled capacitor charging and discharging circuit including a capacitor, charging means with which the capacitor can be charged from a source of supply at a rate dependent upon the magnitude of a control signal, switch means responsive to the voltage developed across the capacitor and arranged to switch on when said voltage attains a predetermined value, a resistor current flow through which is controlled by said switch means and across which an output voltage is developed, and further means arranged to discharge said capacitor at predetermined time intervals. Said further means also serves to switch off said switch means and thereby to interrupt the flow of current through said resistor and thereby cause the output voltage to fall to zero.

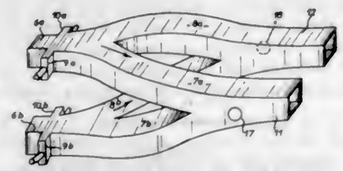
3,419,737
HALL EFFECT INDUCTIVE ELEMENT
Minoru Toda, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,291
6 Claims. (Cl. 307—309)

A Hall effect inductance device comprising a body of high mobility semiconducting material, two current supply terminals connected to the body defining a current axis, at least one pair of Hall electrodes connected to



the body and defining a voltage axis at right angles to the current axis, and an impedance which is capacitive only, connected across each pair of Hall electrodes.

3,419,738
HETEROGENOUS FLOW GENERATING DEVICE
Cyrille François Pavlin, Saclay, and Benjamin Jean Marcel Salmon, Suresnes, France, assignors to Bertin & Cie. Paris, France, a French company
Filed Oct. 18, 1965, Ser. No. 497,076
Claims priority, application France, Nov. 18, 1964 995,424
8 Claims. (Cl. 310—11)

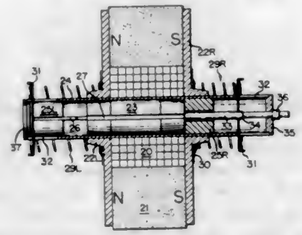


Magnetohydrodynamic generator plant designed to be traversed by a heterogeneous flow delivered by a device comprising two separate input pipes respectively and permanently fed with two fluids of different characteristics, and leading respectively to two fluid-actuating triggers from each of which two output pipes branch, one output pipe of one trigger merging with one output pipe of the other trigger into a junction pipe and the other two output pipes of said triggers merging likewise into a further junction pipe, said triggers being under the control of means actuating them in association though in phase opposition, whereby said different fluids are chopped up by the respective triggers into slices which are directed alternately into the corresponding output pipes and the slices of one fluid are inserted between the slices of the other fluid in the corresponding junction pipes.

3,419,739
ELECTROMECHANICAL ACTUATOR
Warner W. Clements, Los Angeles, Calif. (13435 Java Drive, Beverly Hills, Calif. 90210)
Filed Apr. 22, 1966, Ser. No. 544,447
8 Claims. (Cl. 310—15)

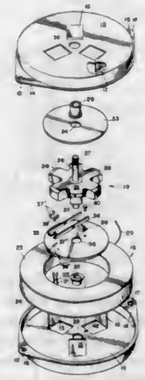
6. An electromechanical actuator, comprising:
a solenoidal coil adapted to be intermittently energized by current impulses of given polarity;
an armature mounted for limited lengthwise travel through the hole in the coil;
a torroidal permanent magnet magnetized in the axial direction and mounted to coaxially surround the coil;
two magnetically conductive pole members mounted to each substantially cover a respective end of the coil and magnet as assembled, said pole members each providing an axially located opening adapted to admit a respective end of the armature at a respective terminus of the permitted travel thereof,

thereby defining a variable-reluctance air gap between each end of said armature and a respective pole member;
means for magnetically shunting one or the other of the variable reluctance gaps, said means comprising an auxiliary armature at least partially constructed of magnetic material and mounted to be movable reciprocatively between two relative operational positions in each of which it provides a supplemental flux path between armature and pole member and is thereby magnetically held in position by virtue of the magnetomotive force generated by the permanent magnet except at such times as the coil is appropriately energized to produce a counteracting magnetomotive force;



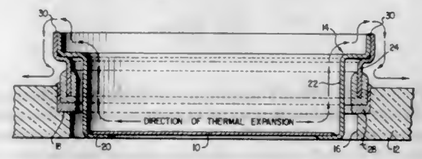
and biasing means responsive to the motions of the armature for yieldably urging the auxiliary armature into operational positioning to shunt the gap between armature and that pole member into which it is instantaneously inserted.

3,419,740
SELF-COMMUTATED DIRECT CURRENT MOTOR WITH PERMANENT MAGNET ROTOR
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,324
12 Claims. (Cl. 310—46)



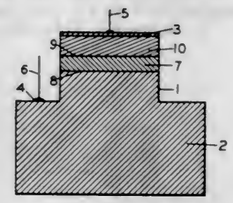
12. A motor comprising: a rotor having a plurality of radially and evenly spaced permanent magnet poles, said rotor being fixedly mounted on a shaft rotatably supported on said motor; a plurality of stator poles radially and evenly spaced about said rotor so as to provide a uniform air gap therebetween; field coil means for determining the polarity of said stator poles, said field coil means being disposed about said stator poles; commutator means for alternately changing the direction of current flow through said field coil means to thereby change the polarity of said stator poles, said commutator means comprising first and second brushes and a rotating means for alternately contacting said first and second brushes to a negative side of a direct current power source, said rotating means being fixedly mounted on said shaft; means for connecting said first and second brushes to said field coil means; and means for connecting said field coil means to a positive side of said direct current power source.

3,419,741
VACUUM SEAL FOR A THIN BERYLLIUM X-RAY WINDOW
Victor J. Legendre, Mountainside, N.J., assignor to Thomas Electronics, Inc., Passaic, N.J., a corporation of New Jersey
Filed Apr. 19, 1966, Ser. No. 543,712
7 Claims. (Cl. 313—59)



The invention pertains to a permanent vacuum-tight seal for beryllium windows used in X-ray apparatus. The sealing members allow for unequal expansion of parts without undue stress.

3,419,742
INJECTION-LUMINESCENT GaAs DIODES HAVING A GRADED P-N JUNCTION
Arno H. Herzog, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,598
2 Claims. (Cl. 313—108)

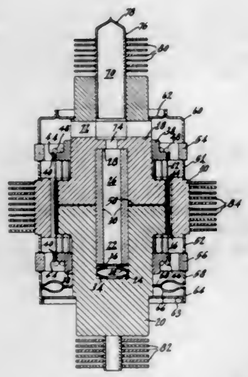


Injection-luminescent GaAs diodes are formed by a diffusion process whereby a substantially linear graded p-n junction is formed between an n-type conductivity region doped to a carrier concentration of from 10^{16} to 5×10^{18} atoms/cc. of an n-type dopant and a p-type radiative recombination region having a surface carrier concentration of about 4×10^{19} atoms/cc. of zinc. Alternatively, the diffusion process may be controlled to produce a radiative recombination p-type region having a lower p-n junction and an upper p^+-p junction having a zinc concentration of about 4×10^{19} atoms/cc. above which there is p^+-type conductivity region having a surface zinc impurity concentration of about 10^{20} atoms/cc.

3,419,743
ELECTRON TUBE HAVING A TENSIONED CATHODE

Donald B. Kaiser and Robert Roth, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Dec. 15, 1965, Ser. No. 513,957
6 Claims. (Cl. 313—278)

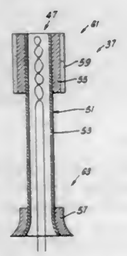


A power tube having two coaxial cylindrical metal blocks provided with spaced registering slots for receiving an elongated cathode filament. The filament is sufficiently long so that end portions thereof extend beyond the slots. Clamping rings are provided for closing the open ends of the slots. The end portions of the filament extending beyond the slots are melted to spherical shape having a larger cross sectional area than the space defined by the slots and the clamping rings, for confining the filament in the slots. Spring means urge the metal blocks apart thereby tensioning the filament and causing the spherical ends to bear against the clamping rings.

3,419,744
INTEGRAL LAMINATED CATHODE AND SUPPORT STRUCTURE

Donald R. Kerstetter, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Continuation of application Ser. No. 390,079, Aug. 17, 1964. This application Feb. 27, 1967, Ser. No. 619,073
3 Claims. (Cl. 313—346)

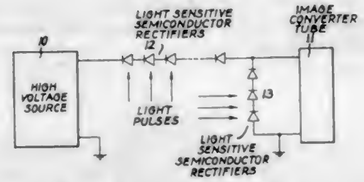


A laminated tubular core includes an inner lamina and first and second spaced outer lamina portions with a potentially emissive material layer affixed to the surface of the first spaced outer lamina portion to provide a cathode and the inner lamina and second spaced outer lamina portion formed to provide an attachable support structure.

3,419,745
ELECTRON-OPTICAL IMAGE-REPRODUCING SYSTEM WITH POWER SUPPLY VOLTAGE REGULATED ACCORDING TO AMBIENT LIGHT

Dieter Wenzel, Hamburg-Rissen, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed May 17, 1967, Ser. No. 639,076
Claims priority, application Germany, May 18, 1966, L 53,628
3 Claims. (Cl. 315—10)

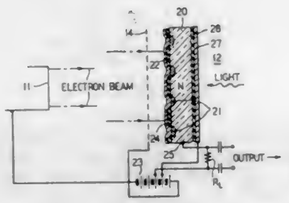


The power supply voltage applied to an electron-optical image-reproducing system is varied in accordance with ambient light intensity by means of a first group of light-sensitive rectifiers which are connected in series with each other and in series between the electron-optical image-reproducing system and the source of high voltage therefor, and a second group of light-sensitive rectifiers which are connected in series with each other, and the series circuit being connected in parallel with the electron-optical image-reproducing system and the source of high voltage therefor, with both groups of light-sensitive rectifiers being alternately illuminated by light pulses to vary the power supply voltage applied to the electron-optical image-reproducing system in accordance with the ambient light intensity.

3,419,746
LIGHT SENSITIVE STORAGE DEVICE INCLUDING DIODE ARRAY

Merton H. Crowell, Morristown, John V. Dalton, Oldwick, Eugene I. Gordon, Convent Station, and Edward F. Labuda, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed May 25, 1967, Ser. No. 641,257
7 Claims. (Cl. 315—10)

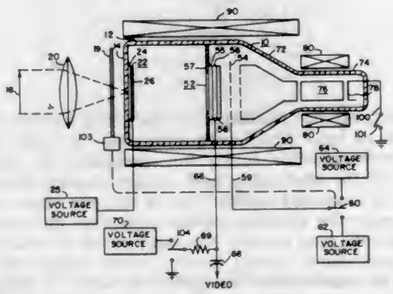


Television camera tubes having semiconductor diode array target structures scanned by an electron beam are provided with a semi-insulating layer contacting the separate diode regions and extending over an insulating layer between the diodes. The semi-insulating layer provides a time constant that is effective to prevent excessive charge buildup on the insulating layer from the electron beam while not substantially impairing the camera resolution, or equivalently the charge difference between neighboring diode junctions during the period of one frame. The semi-insulating layer can be a deposited material such as silicon monoxide, antimony trisulfide or cadmium sulfide or can be a silicon monoxide layer formed by heating at an interface between the insulating layer of silicon dioxide and an overlying layer of silicon, the silicon subsequently being at least partially etched away to isolate the diodes except for conduction through the semi-insulating layer. The diode junctions can be formed by diffusion through the overlying layer of silicon into the silicon substrate, in order to prevent formation of pinholes in the silicon dioxide insulating layer.

3,419,747
IMAGE COMPARISON

Martin Green, Elmira, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 16, 1965, Ser. No. 440,076
8 Claims. (Cl. 315—11)

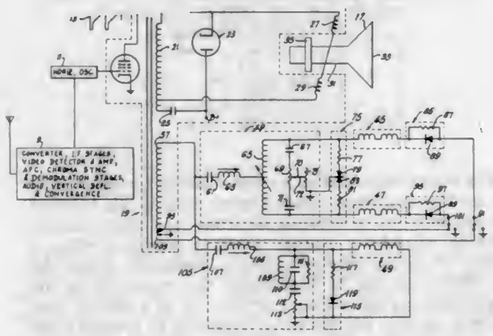


An image comparison system which utilizes a storage target onto which a first and second electron image are directed at different times to obtain a difference signal or image between the first and second image. The system utilizes a secondary electron conduction type storage target which permits the bombardment of the target by both the first and second electron images to be substantially of the same velocity and yet still permit the charging of the storage target in opposite directions. An electron scanning beam may be utilized to derive the difference in the two charge images from the storage target.

3,419,748
CONVERGENCE WAVEFORM-SHAPING CIRCUITRY

Charles B. Neal and Lawrence R. Poel, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 23, 1965, Ser. No. 516,040
9 Claims. (Cl. 315—13)

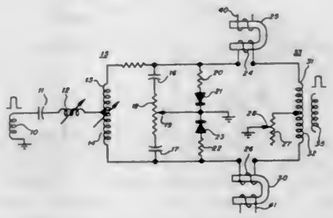


A gated-type impedance selectively couples at least one convergence coil winding directly and by way of a deflection system to circuit ground to provide an improved waveform shape of current flowing through the convergence coil winding and improved electron beam convergence in the cathode ray tube.

3,419,749
CONVERGENCE CIRCUIT

Bernard Gerstein, Hoffman Estates, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 29, 1966, Ser. No. 597,745
4 Claims. (Cl. 315—13)

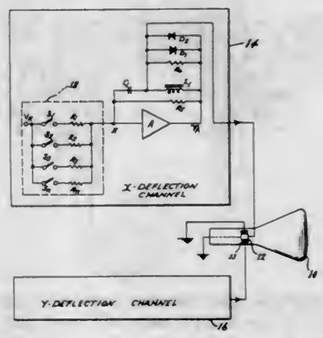


A red-green dynamic convergence network where the Left Side-Vertical Line resistance control is relocated to the series connection between the red and green pole piece horizontal windings.

3,419,750
CONSTANT RATE INCREMENTAL POSITIONING CIRCUIT FOR CRT X-Y PLOTTER DISPLAY

Louis I. Rothschild, Elkins Park, Pa., James V. Williamson, Palm Beach Gardens, Fla., and Michael N. Leeming, New York, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force

Filed July 28, 1965, Ser. No. 475,618
1 Claim. (Cl. 315—18)

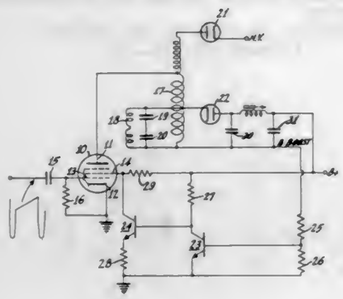


A deflection circuit for beam writing display tubes to provide a constant writing rate including an incremental summing means, an amplifier connected to the summing means, a damped oscillatory charging circuit for slow beam deflection in the writing mode and a pair of oppositely polarized diodes in parallel to permit rapid beam deflection when accessing a position from which to trace a line.

3,419,751
PROTECTION FOR HORIZONTAL DEFLECTION CIRCUITS

Ralph S. Hartz, Hazlet, and William S. Cranmer, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Aug. 11, 1966, Ser. No. 571,853
6 Claims. (Cl. 315—27)

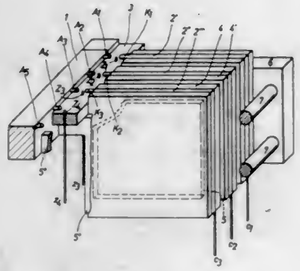


A television horizontal deflection circuit is provided with a protection circuit which derives a control voltage indicative of normal and abnormal deflection wave currents. A control amplifier responsive to a voltage indicative of abnormal deflection currents acts on the horizontal output tube to prevent excessive output tube current.

3,419,752
MULTIPLE SPARK PRINTER

Siegfried Schmidt, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 10, 1965, Ser. No. 486,448
Claims priority, application Germany, Sept. 11, 1964, P 35,048
7 Claims. (Cl. 315—35)

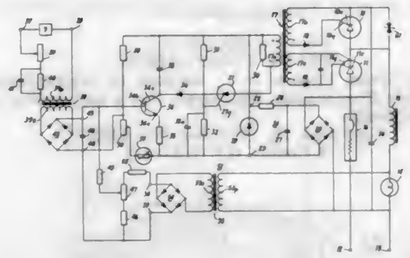


1. A multiple spark printer comprising means defining a plurality of spark gaps, each said spark gap including a pair of spark electrodes in spaced opposed relation, capacitor means coupled with each said pair of spark electrodes; said capacitor means comprising a first capacitor electrode sandwiched between a pair of dielectric members, said first capacitor electrode being connected with one said spark electrode, and a second capacitor electrode on each said dielectric member remote from said first capacitor electrode, said second capacitor elctrode being connected with the other of said spark electrodes, and lead-in conductor means coupled with said capacitor electrodes.

3,419,753
SOLID STATE DIMMER CONTROL CIRCUIT

William J. Schultz and Nicholas J. Kind, Yonkers, N.Y., assignors to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York

Filed June 30, 1966, Ser. No. 561,830
6 Claims. (Cl. 315—194)

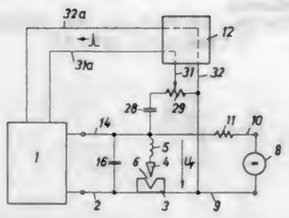


Silicon controlled rectifiers have the gating circuits connected to an input circuit with a transistor in series with the resistor capacitor circuit for controlling the phase relation of the alternating load current passing through the silicon controlled rectifiers by varying the phase relation between the initiating pulses applied by the control circuit and the load current. The input circuit is connected to a signal source having direct current output with a ripple. The amplitude of the ripple varies with the amount of the D.C. component and a variable potentiometer is provided to adjust the amount of control signal applied to a transformer for excluding the direct current and passing the controlled ripple to the transistor for adjusting the phase relation between the initiating current and the load current.

3,419,754
SPARK EROSION MACHINERY WITH SPARK CONTROLLING FEEDBACK CIRCUITRY SENSING GAP CONDITIONS

Hans Schierholt, Iserlohn, Germany, assignor to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany

Filed Jan. 13, 1966, Ser. No. 520,526
Claims priority, application Germany, Jan. 16, 1965, A 48,137
5 Claims. (Cl. 315—227)

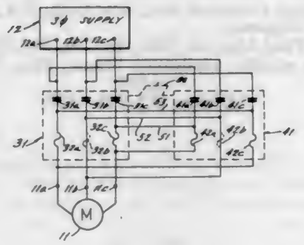


The invention relates to a control circuit for controlling the eroding discharge across a spark eroding gap between a workpiece and a working electrode in a spark erosion machine whereby a voltage surge is produced when a source of direct current causes a discharge across the gap which can not be maintained, the magnitude of the surge reflecting the presence or absence of a desired condition in the gap and the surge triggering an erosion pulse generator to cause an eroding discharge when the desired condition is present. In one embodiment, a serially connected capacitor and resistor are connected across the gap to produce the voltage surge when the discharge which can not be maintained occurs, the magnitude of the surge then being a function of the voltage across the gap at the time of discharge.

3,419,755
MANUAL REVERSING STARTERS FOR ELECTRICAL LOADS

Frank W. Kussy, Birmingham, Mich., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 6, 1967, Ser. No. 614,148
6 Claims. (Cl. 317—13)

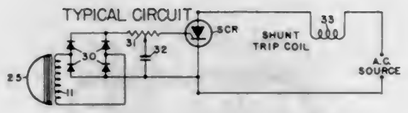


Manually operated starters for controlling a reversible motor are connected with the thermal overload sensing means of one starter in parallel with the thermal overload sensing means of the other starter. Thus, when either of these starters is closed, the thermal overload sensing means of both starters are subjected to the effects of current energizing the load. In this manner, the heating of the thermal overload means is always indicative of heating conditions at the load so that even if there is frequent alternate operation of these starters heating of the thermal overload sensing means will always be related to load heating so as to always protect the motor or load against damage.

3,419,756
GROUND FAULT RESPONSIVE SYSTEM FOR ELECTRIC POWER DISTRIBUTION APPARATUS

Robert A. Philibert, Rockville Centre, and Frank L. Browne, Wantagh, N.Y., and David M. Sanger, Livingston, and George A. Kirk, deceased, late of Ridge-Wood, N.J., by Stella Kirk, legal representative, Ridgewood, N.J., assignors to General Signal Corporation and O.Z. Electrical Manufacturing Co., Inc., New York, N.Y., both corporations of New York

Filed Mar. 11, 1966, Ser. No. 533,733
7 Claims. (Cl. 317—16)

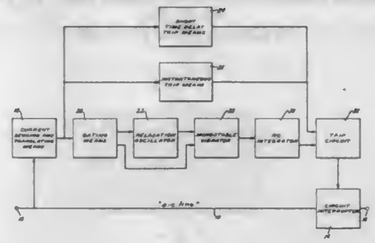


A ground fault detector having a magnetic pick up circuit which is of relatively low permeability to protect the controlled circuitry from extremely high voltages. Such detector is constructed to be mounted over an insert of insulating material between the two ends of spaced conduit sections with a strap of conductive cable connecting the spaced ends of the conduit sections outside of the pick up magnetic circuit of the detector.

3,419,757
OVERCURRENT PROTECTIVE MEANS

Floyd L. Steen, Lansdowne, Pa., assignor to General Electric Company, a corporation of New York

Filed Apr. 8, 1966, Ser. No. 541,278
6 Claims. (Cl. 317—36)



A static inverse-time-overcurrent protective circuit includes an integrator energized by electric pulses of constant amplitude but variable frequency and width, and a level detector connected to the integrator for operation when the cumulative periods of energization reach a predetermined sum. The source of pulses is so arranged that both their frequency and their width are modulated by overcurrent magnitude. As illustrated this source comprises a monostable multivibrator which produces a succession of fixed amplitude pulses of a duration that depends on the magnitude of overcurrent and of a frequency that corresponds to that of a relaxation oscillator which is operative at a frequency also determined by the overcurrent magnitude.

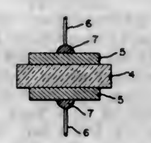
ERRATUM

For Class 317—123 see:
Patent No. 3,419,904

3,419,758
CERAMIC CAPACITOR COMPRISING SEMICONDUCTIVE BARIUM TITANATE BODY AND SILVER ALLOY ELECTRODES CONTAINING MINOR AMOUNT OF Cu, Ca OR Bi

Shigeru Hayakawa and Hiroshi Ikushima, Hirakata-shi, Tsuneharu Nitta, Kitakawachi-gun, Osaka-fu, Kaneomi Nagase, Kyoto-shi, Hiromitsu Taki, Sakai-shi, and Yoshio Lida, Hirakata-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Jan. 3, 1966, Ser. No. 518,466
3 Claims. (Cl. 317—230)

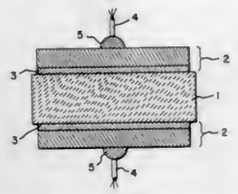


An electrode composition for a ceramic capacitor comprising a semiconductive barium titanate body, consists essentially of 90–99.5% by weight of Ag-Cu, Ag-Cd or Ag-Bi and 0.5–10% by weight of PbO and Bi_2O_3, the alloy containing 85 to 99% by weight of silver, has an enhanced capacity per unit area of capacitor. A method of manufacturing the capacitor is also disclosed by air-firing a combination of the ceramic body and applied silver pigment.

3,419,759
CAPACITOR COMPRISING FERROELECTRIC CERAMIC WITH OXIDIC SILVER ELECTRODES AND HETEROJUNCTION BARRIER LAYER BETWEEN ELECTRODES AND CERAMIC

Shigeru Hayakawa, Osaka-fu, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Jan. 4, 1966, Ser. No. 518,611
Claims priority, application Japan, Sept. 17, 1965, 40/57,593
4 Claims. (Cl. 317—230)

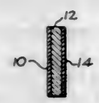


A heterojunction capacitor is provided which comprises a semi-conductive ferrorelectric ceramic body (e.g. barium titanate), metal (e.g. silver) pigment electrodes thereon, and a semiconductor heterojunction at the interface of the ceramic body and of the metal pigment electrodes, such heterojunction being constituted exclusively by oxidic metal pigment particles and acting as a barrier layer.

3,419,760
IONIC SOLID STATE ELECTROCHEMICAL CAPACITOR

Douglas O. Raleigh, Canoga Park, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 490,585, Sept. 27, 1965. This application June 9, 1967, Ser. No. 655,975
8 Claims. (Cl. 317—230)

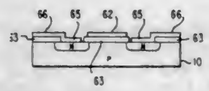


This disclosure describes a solid state electrochemical capacitor employing a cell combination: reversible solid electrode, solid ionic conductor, inert metallic conductor. Such combinations provide a double layer capacitance of several hundred microfarads per square centimeter and a capability for miniaturization and elevated temperature operation.

3,419,761
METHOD FOR DEPOSITING SILICON NITRIDE INSULATING FILMS AND ELECTRIC DEVICES INCORPORATING SUCH FILMS

William B. Pennebaker, Putnam Valley, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 11, 1965, Ser. No. 494,789
16 Claims. (Cl. 317—234)

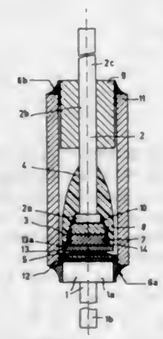


Solid state devices are formed in selected surface portions of a semiconductive substrate and include at least one pn junction extending to the substrate surface. A thin insulating layer of silicon nitride is located over the substrate surface and includes a pattern of openings providing electrical access to the solid state devices. Current carrying metallic layers are located over the silicon nitride layer and connected to such devices through such openings. Both the silicon nitride layer and the current carrying metallic layers extend in planes substantially parallel to the surface of the semiconductive substrate whereby a laminate-type structure is defined. In the preferred embodiment, an insulated-gate field effect transistor is shown wherein the gate insulating layer comprises silicon nitride.

3,419,762
HIGH-VOLTAGE SEMICONDUCTOR DIODE WITH CERAMIC ENVELOPE

Louis Lucas, Calvados, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 18, 1966, Ser. No. 535,374
Claims priority, application France, Mar. 20, 1965, 10,078
4 Claims. (Cl. 317—234)

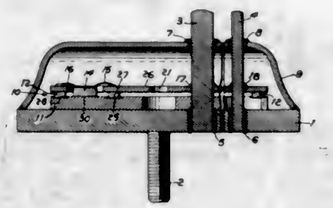


A high-voltage semiconductor diode having a hermetically-sealed ceramic envelope with leads at opposite ends. A semiconductor crystal is secured to one lead, and the other lead is secured to the envelope. A curved, resilient plate provides a good contact between the crystal and the other lead. An insulating bead secures the one lead to the envelope providing good heat insulation for the crystal while the bead is bonded to the envelope.

3,419,763
HIGH POWER TRANSISTOR STRUCTURE

Jacques Raymond Beaudouin, Palo Alto, Calif., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,621
9 Claims. (Cl. 317—234)

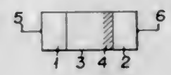


The subject matter of this invention is a support for high power semiconductor devices employing a mounting arrangement which introduces as little thermal and electrical resistance as possible between the semiconductor element proper and the external device connections.

3,419,764
NEGATIVE RESISTANCE SEMICONDUCTOR DEVICES

Takahiko Kasugai, No. 518 Futako, Kawasaki-shi, Japan, and Susumu Nojima, No. 211, 5-chome, Saginomiya, Nakano-ku, Tokyo, Japan

Continuation-in-part of application Ser. No. 266,858, Mar. 21, 1963. This application Dec. 12, 1966, Ser. No. 601,203
7 Claims. (Cl. 317—234)

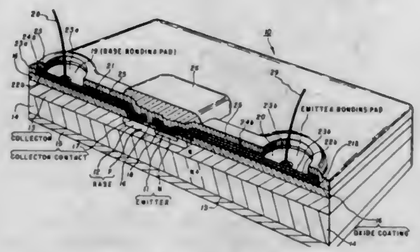


1. A negative resistance semiconductor diode comprising a high doped P^+ type semiconductor region, a high doped N^+ type semiconductor region, and an intermediate region interposed between said P^+ type and N^+ type regions and doped with predetermined metal impurities of Groups III and V in the Periodic Table to have a predetermined conductive type, said intermediate region being further doped with deep level impurities other than the Groups III and V doping elements in such a manner that the gradient of concentration of said deep level impurities decreases from the selected interjunction between said intermediate region and said selected high doped type semiconductor region toward the central portion of said intermediate region, and the concentration of said deep level impurities being greater than the concentration of said metal impurities of Groups III and V at a portion of said intermediate region adjacent said selected interjunction.

3,419,765
OHMIC CONTACT TO SEMICONDUCTOR DEVICES

Jack H. Clark, Garland, James H. Van Tassel, Dallas, and Graydon B. Larrabee and James F. Haefling, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 492,207, Oct. 1, 1965. This application June 1, 1967, Ser. No. 642,975
15 Claims. (Cl. 317—234)

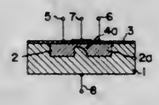


Disclosed is a multilayer system for making contacts and interconnections between regions on a semiconductor device. A multilayer contact is used which will adhere well to silicon oxide layers which may be on either side of the contact system.

3,419,766
METHOD OF PRODUCING INSULATED GATE FIELD EFFECT TRANSISTORS WITH IMPROVED CHARACTERISTICS

Minoru Ono, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Continuation-in-part of application Ser. No. 376,149, June 18, 1964. This application Aug. 31, 1966, Ser. No. 576,415
Claims priority, application Japan, June 24, 1963, 38/32,674
10 Claims. (Cl. 317—235)

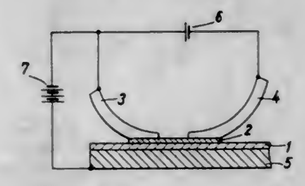


A method of making insulated gate type field effect transistors including a step of heat-treatment above 70° C. but at a temperature which will not damage the transistor while applying across the insulating film interposed between the gate electrode and the channel of the field effect transistor a direct current field whose magnitude varies uniformly along the channel. The transistor thus treated possesses a channel having a nonuniform conductance distribution when no operating voltage is impressed on the gate electrode.

3,419,767
CONTROLLABLE ELECTRICAL RESISTANCE

Reinhard Dahlberg, Heilbronn-Bockingen, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Dec. 8, 1966, Ser. No. 600,105
Claims priority, application Germany, Dec. 8, 1965, T 29,965
10 Claims. (Cl. 317—235)



A controllable electrical resistance in the form of a first layer made of semiconductor or insulating material, there being an electrically conductive layer on the resistance layer and two thermoelectric contacts on the electrically conductive layer and forming therewith a Peltier element. A voltage is applied to the contacts which causes those electrons that are not in thermal equilibrium with their surroundings to pass out of the one of the contacts through the electrically conductive layer and into the resistance layer, thereby to modulate the resistance thereof.

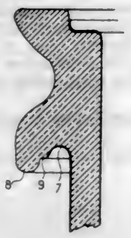
3,419,768
CERAMIC CAPACITOR

Jean Huc, Bagneres-de-Bigorres, France, assignor to Compagnie Generale d'Electro Ceramique, Paris, France

Filed July 20, 1967, Ser. No. 654,723
Claims priority, application France, July 20, 1966, 70,182
7 Claims. (Cl. 317—242)

A power ceramic capacitor comprising two metal layers deposited respectively on the outer and on the inner sur-

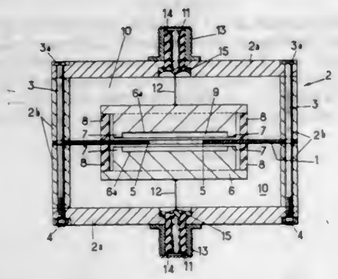
faces of a ceramic tube having radially extending end portions, the junction of said end portions with said outer surface being provided with a groove, which groove comprises a concave portion facing a part of said outer surface to form a sharp annular edge.



3,419,769
LOW CAPACITANCE CONDENSER FOR USE AS A SECONDARY STANDARD

Nissim Elnekave, Combs-la-Ville, and Marcel Colombeau, Paris, France, assignors to Laboratoire Central des Industries Electriques, Fontenay-aux-Roses, France

Filed Aug. 14, 1967, Ser. No. 660,496
Claims priority, application France, Aug. 30, 1966, 74,609
8 Claims. (Cl. 317—244)

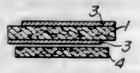


A new low capacitance condenser for use as a secondary standard of capacitance comprising a pair of circular axially spaced electrodes positioned on opposite sides of a metallic guard ring having a central aperature, and suspended on said guard ring by rings of a low-loss dielectric material, said electrodes, guard ring and dielectric rings being enclosed in a rigid sealed casing.

3,419,770
METALLIZED PAPER CONDENSERS

Akio Tomago, Ikeda-shi, and Masayasu Fukai, Suita-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 417,859, Dec. 14, 1964. This application Feb. 8, 1967, Ser. No. 622,863
2 Claims. (Cl. 317—258)

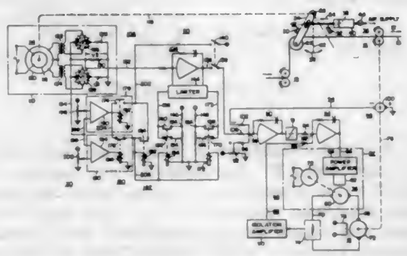


A metallized paper condenser formed from an insulating paper having electroconductive metal films vacuum deposited on both surfaces thereof. The metallized paper is wound with a second double-metallized paper, a single-metallized paper, or a nonmetallized paper in superposition on the first double-metallized paper.

3,419,771
TENSION MEMBER POSITION REGULATING SYSTEM UTILIZING A VARIABLE LIMITER

John M. Bentley, East Aurora, and Wesley H. Watson, Williamsville, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1966, Ser. No. 538,269
17 Claims. (Cl. 318—6)

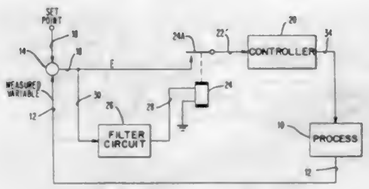


In a system wherein a swing roll position controller produces roll position error signal that is fed to a speed regulator, means is provided for initially limiting the output of the position controller to a small value regardless of roll position, and further means is provided for removing that limitation in response to the swing roll moving within close range of a reference position, whereby transition from "speed" to "position" modes is smoothly effected without severe transients.

3,419,772
PROBABILISTIC AND DETERMINISTIC FILTER FOR CONTROL SYSTEMS

Charles W. Ross, Hatboro, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 25, 1964, Ser. No. 399,216
14 Claims. (Cl. 318—18)

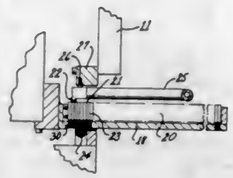


A control system in which the response of the manipulated variable to the error signal is modified when the error signal exceeds a predetermined limit for a predetermined time period or when the error signal as modified by its integral exceeds that limit and time period. In one arrangement, a plurality of limit values may be established with each having an associated time period while in another arrangement the time period may be a continuous function of the error signal. Thus, the response can be varied in several steps as the error signal increases

3,419,773
MACHINE TOOL POSITION SERVO INCLUDING A LINEAR ADJUSTABLE CAM FOR COMPENSATING LEAD-SCREW ERROR

James D. Black and Charles H. Winterbotham, Dayton, Ohio, assignors to The Bendix Corporation, a corporation of Delaware

Filed Jan. 27, 1965, Ser. No. 428,435
6 Claims. (Cl. 318—18)

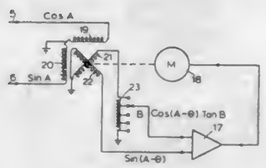


A device is disclosed for correcting a displacement signal to accurately conform to a corresponding actual displacement. A cam having an adjustable surface is carried on a slide of a machine which is driven by means such as a lead-screw and motor. A signal transducer provides an indication of distance travelled. A cam follower is attached to the transducer such that the transducer is rotated in response to the cam surface, thus adjusting or compensating the signal.

3,419,774
POSITION CONTROL SERVO MECHANISM USING A TRIGONOMETRIC FUNCTION GENERATOR

Frederick Walter Hartley, Hayes, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain

Filed Feb. 2, 1965, Ser. No. 429,858
Claims priority, application Great Britain, Feb. 7, 1964, 5,247/64
4 Claims. (Cl. 318—18)

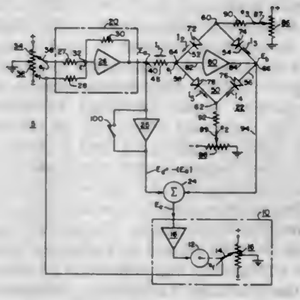


1. A position control servo mechanism including a resolver having first and second relatively movable parts each provided with two inductors in quadrature, means for producing and applying to the respective inductors on the first part alternating voltages respectively representing the sine and cosine of a first angle, means for deriving an output voltage from one of the inductors on the second part, and means for producing relative displacement of the resolver parts in response to the output voltage in a sense tending to reduce the output voltage, wherein the improvement comprises means for deriving a second output voltage from the other of the inductors on the second part, means for producing a fraction of the second output voltage, which fraction is dependent on a second angle, and means for adding the fraction of the second output voltage to the output voltage from the one of the inductors on the second part to modify the latter output voltage, whereby the relative displacement tends to that represented by the sum of the first and second angles.

3,419,775
ON-OFF AND PROPORTIONAL POSITION SERVO MOTOR CONTROL SYSTEM

Louis F. Kardos, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 12, 1965, Ser. No. 455,283
4 Claims. (Cl. 318—18)

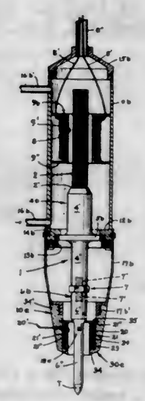


A closed loop position servomechanism including a linear channel and a switching channel is disclosed operative in a linear mode between adjustable positive and negative limits and in a switching mode in excess of these limits. The switching channel consists of an amplifier across one diagonal of a full wave diode bridge with variable positive and negative reference sources across the opposite bridge diagonal. The variable reference sources are provided so that the positive and negative limits of the switching channel may be independently adjusted.

3,419,776
DEVICES FOR SENSING AND INDICATING VARIATIONS IN FREQUENCY AND AMPLITUDE OF ACOUSTICALLY VIBRATED WORK MEMBERS

Claus Kleesattel, Forest Hills, Arthur Kuris, Riverdale, and Lewis Balamuth, New York, N.Y., assignors to Cavitron Corporation, a corporation of New York

Original application June 5, 1963, Ser. No. 285,629, now Patent No. 3,304,479, dated Feb. 14, 1967. Divided and this application June 15, 1966, Ser. No. 561,673
12 Claims. (Cl. 318—118)



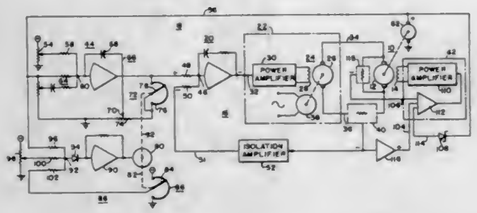
1. A vibrator assembly including in combination; a work performing vibrator unit which presents a transducer component and a work tool component designed to perform useful work which is rigidly joined to said transducer

component by a vibration transmitting component and which together provide a vibrator unit designed to vibrate at a predetermined resonance frequency when the transducer component is energized by a surrounding alternating magnetic field of corresponding frequency; a stationary casing containing said transducer component and a portion of the vibration transmitting component of said vibrator unit, means associated with said casing for supporting said vibrator unit at a node of longitudinal vibration thereof, and a high frequency alternating current winding contained within and supported by said casing and positioned in surrounding relation to said transducer component and operative when energized to establish an alternating magnetic field in surrounding relation to said transducer component whose frequency substantially corresponds to the resonance frequency of vibration of said work performing vibrator unit; and a device for sensing variations in the frequency and amplitude of vibration of said work performing vibrator unit when vibrated, said device including, an elongated magnetostrictive element fixed to said vibration transmitting component and extending substantially parallel thereto and whereby said element is vibrated at a frequency and amplitude of vibration of that region of the vibration transmitting component at which said element is fixed, a pick-up assembly adjacent said magnetostrictive element which includes a pick-up coil, and means for polarizing said magnetostrictive element, and means forming a tubular extension of said casing for containing and supporting said pick-up coil in telescoped position with respect to said magnetostrictive element and in spaced relation to said vibration transmitting component; said pick-up coil being operative to generate an electromotive force as induced therein by the vibrations of said polarized magnetostrictive element, whose magnitude varies in accordance with the variations in amplitude of vibration of the vibrator unit at the region thereof at which said magnetostrictive element is secured thereto.

ERRATUM

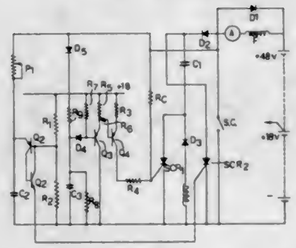
For Class 318—165 see:
Patent No. 3,419,905

3,419,777
SPEED REGULATING SYSTEM PROVIDING CONSTANT LOOP GAIN
Sabi J. Asseo, Buffalo, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 29, 1966, Ser. No. 538,270
4 Claims. (Cl. 318—338)



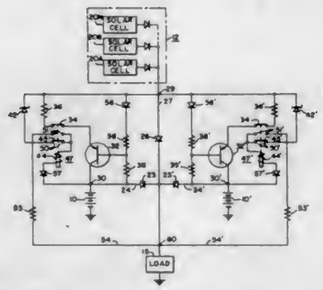
A speed regulating system for a DC motor is disclosed wherein the gain of a speed controller is increased as the motor speed increases above the base speed with the introduction of field weakening into the system. Also in the system the speed controller is operated as a pure integrator with actual speed feedback being provided thereto to eliminate overshoot in the actual speed condition.

3,419,778
PULSE CONTROLLED CIRCUIT FOR A BATTERY LOAD
Isaac David Gurwicz, Gateshead, England, assignor to Sevcon Engineering Limited, Gateshead, England
Filed Oct. 19, 1964, Ser. No. 404,864
Claims priority, application Great Britain, Oct. 23, 1963, 41,732/63
3 Claims. (Cl. 318—341)



A pulse generator circuit is inserted between the supply and the load. This allows the trigger of an "off" controlled rectifier to be connected to a source of triggering potential to fire the rectifier whenever a main "on" controlled rectifier is in the non-coducting position. Hence, the capacitor in the circuit is brought to full supply potential independently of any interruption of the charging current. This allows the circuit to regain control after shorting out the pulse circuit and provide smoothness of operation when control is regained.

3,419,779
SYSTEM FOR REMOVING A BAD BATTERY FROM CHARGING CIRCUIT
David W. Zehner, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1965, Ser. No. 478,321
15 Claims. (Cl. 320—6)



15. A power supply system comprising:
(a) a plurality of batteries each having a first and second terminal with the first terminal of each said battery being connected to a common circuit point;
(b) a power supply subject to on and off periods of operation;
(c) circuit means connected between said power supply and the second terminal of each said battery for
(1) supplying charging current to each said battery, and
(2) discontinuing said charging current upon the occurrence of certain predetermined conditions;
(d) a load having an input terminal;
(e) a plurality of diodes each having a first electrode connected to a respective one of said second terminals of said batteries and a second electrode commonly connected together; and

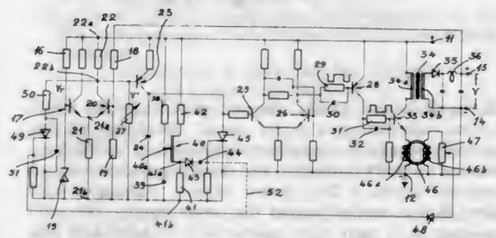
(f) said commonly connected electrodes of said diodes being connected to the input terminal of said load.

3,419,780
STATIC SYNTHETIC SINE WAVE INVERTER
Jules Paul Vergez, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,154
19 Claims. (Cl. 321—2)



Apparatus which produces a step approximated sine wave power from a D.C. power supply which generates a plurality of voltage levels corresponding to the step levels of one half cycle of the step approximated sine wave, including a reference level representing the zero level of the sine wave. The D.C. power supply includes a first voltage regulator for producing a substantially constant first voltage under varying load conditions. A ratio regulator coupled to the voltage regulator maintains the remaining voltage levels at predetermined percentages of the first voltage level whereby each of the voltage levels will be changed in a proportional amount due to changes in load conditions, thereby presenting an undistorted output waveform. The various voltage levels are selectively connected to a plurality of output terminals by means of a logic control circuit. The logic control circuit connects the various voltage levels to the outputs in a predetermined, repetitive sequence to produce a step approximated sine wave voltage between pairs of the output terminals.

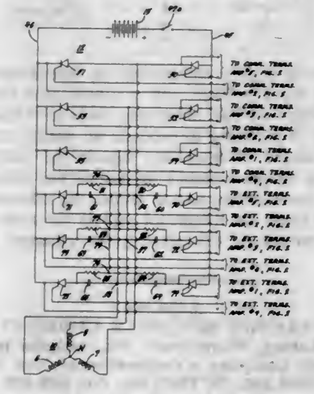
3,419,781
VOLTAGE REGULATING SYSTEMS
Jean Albert Louis Jullien-Davin, Valence, France, assignor to Crouzet, Valence, Drome, France, a French company
Filed May 25, 1966, Ser. No. 552,744
Claims priority, application France, May 29, 1965, 18,819
2 Claims. (Cl. 321—2)



A DC-DC pulse width modulated voltage regulating system includes a Schmitt trigger in the regulator circuit which controls the on-off time of the pulse width modulator.

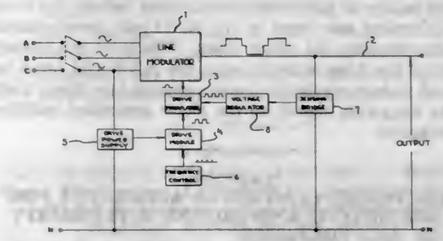
3,419,782
DIRECT CURRENT COMMUTATION SYSTEM FOR BRUSHLESS ELECTRICAL MOTORS
Leonard J. Sheldrake and Jerrold L. Mullen, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,473
7 Claims. (Cl. 321—5)

A commutating system for operating brushless type alternating current induction motors from a direct current potential source. The series combination of two silicon controlled rectifiers corresponding to each motor phase winding is connected in series across a direct current potential line. Also connected in series across the direct current potential line is an extinguishing silicon controlled rectifier, two extinguishing capacitors and another extinguishing silicon controlled rectifier corresponding to each series combination of commutating silicon controlled rectifiers. Connected across each capacitor pair is the series combination of two resistors having the junction between each pair connected together. The junction between each series connected commutating silicon controlled rectifier



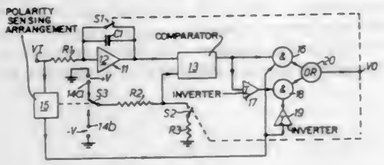
pair and the junction between the corresponding extinguishing capacitors are connected to a respective motor winding. With this arrangement, the capacitors are initially charged across the line with the correct polarity relationship to extinguish the corresponding commutating silicon controlled rectifier when the corresponding extinguishing silicon controlled rectifier is triggered conductive. Each extinguishing silicon controlled rectifier is extinguished by the charge supplied by the collapsing magnetic field in the motor winding placed upon the corresponding capacitor.

3,419,783
SYSTEM FOR SUPPLYING FREQUENCY CONTROLLED SINGLE PHASE VOLTAGE FROM VARYING POLYPHASE INPUT VOLTAGE
Donald Watson Bingley, Mechanicsburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 365,574, May 7, 1964. This application Sept. 14, 1967, Ser. No. 667,859
10 Claims. (Cl. 321—7)



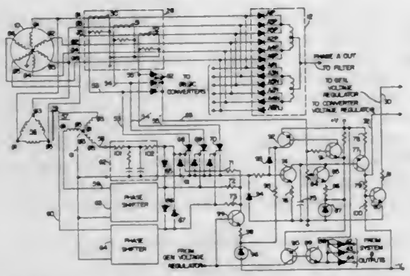
A frequency converter system for converting polyphase input voltage to single phase output with the frequency and voltage of the single phase output voltage being predeterminately controlled independently of the input polyphase voltage.

3,419,784
MAGNITUDE-TO-FREQUENCY CONVERTERS
Roger F. E. Winn, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Dec. 5, 1966, Ser. No. 599,221
5 Claims. (Cl. 321—8)



A circuit is shown comprising an integrator for integrating the input voltage, and a comparator for comparing the output of the integrator with a reference. The comparator is switched to produce an output at one level when the output of integrator equals the reference and immediately closes switches to reduce the output of the integrator towards zero and to reduce the reference. When the output from the integrator equals the reduced reference, the output of the comparator changes to a new level.

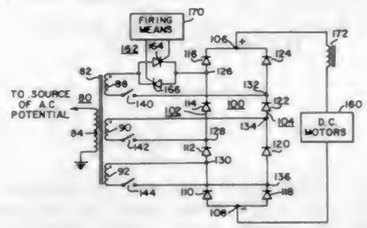
3,419,785
POWER FACTOR SENSITIVE CURRENT LIMIT
David L. Lafuze, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 16, 1967, Ser. No. 609,405
30 Claims. (Cl. 321—11)



The invention is a current limit circuit which may be used to protect a cycloconverter or a phase controlled rectifier system operating in the invert mode. The current limit provides protection whenever the system's power source current so lags power source voltage that the firing angle of the phase controlled rectifiers becomes retarded to the point that successful commutation is uncertain. The current limit utilizes a firing wave to mark the beginning of the region of potential commutation failure, the firing wave forming one input to and AND gate, power source current forming the other input. Whenever the current overlaps the firing wave in time, the AND gate turns on, normal system regulation is overcome and the firing angle of the triggering signals to the phase controlled rectifiers is advanced.

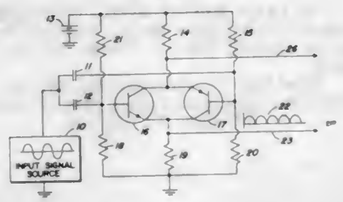
3,419,786
ELECTRICAL CONVERTER APPARATUS FOR RECTIFYING AND ADDING A PLURALITY OF A.C. VOLTAGES
Maxwell D. Brane, Wexford, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1966, Ser. No. 604,969
6 Claims. (Cl. 321—27)

This invention relates to static electrical converter apparatus of the type in which two or more single-phase, in-phase alternating current voltages are full-wave rectified and serially added. The converter includes but two leg portions, regardless of the number of voltages to be rectified, and requires only one more power diode in each leg of the converter than the number of voltages to be



rectified. The rectified voltages are serially added by connecting each of the alternating current voltages to the two legs of the bridge converter such that the insantaneous polarities of the input terminals are the same at alternate terminals across each leg of the converter.

3,419,787
SEMICONDUCTOR CIRCUIT FOR A-C TO D-C CONVERSION OR FREQUENCY MULTIPLICATION
Herbert K. Baehre, Costa Mesa, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 8, 1966, Ser. No. 570,921
2 Claims. (Cl. 321—43)

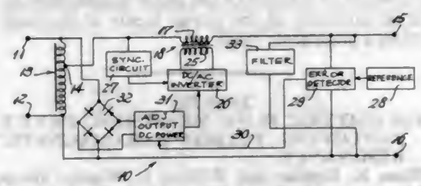


A circuit for A-C to D-C conversion or frequency multiplication comprising a series circuit consisting of first impedance means, the parallel combination of a PNP transistor and an NPN transistor, and second impedance means connected across a D-C power supply. Voltage divider means, also connected across the power supply, bias said transistors at or near their conductivity threshold. A pair of capacitors arranged in parallel couple an A-C input signal source to the base electrodes of the two transistors so that the said transistors are conductive during alternate half cycles of the input signal.

3,419,788
AUTOMATIC VOLTAGE REGULATOR
Joseph C. May, Cheshire, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Dec. 28, 1964, Ser. No. 421,561
7 Claims. (Cl. 323—6)

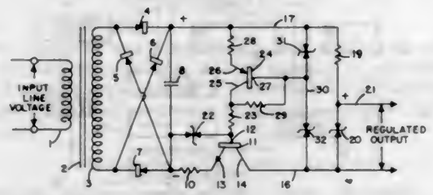
An automatic voltage regulator for producing a substantially constant A.C. output voltage by initially providing an intermediate voltage and algebraically adding

thereto an alternating voltage derived from a D.C. source and consisting of a stepped approximation of a sine wave



whose value, either in amplitude or phase, is varied as required to maintain the desired value of output voltage.

3,419,789
HIGH PRECISION DC VOLTAGE REGULATOR
Joseph R. Gately, Woodside, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Filed Apr. 9, 1966, Ser. No. 543,707
5 Claims. (Cl. 323—22)



A DC voltage regulator with two constant current Zener diode controlled transistor circuits. Each circuit controls the current to the other circuit in a reciprocal fashion. Self starting is provided.

3,419,790
ALTERNATING CURRENT VOLTAGE REGULATOR UTILIZING ELECTROMAGNETIC SWITCH MEANS, AN AUTOTRANSFORMER AND VOLTAGE SENSING MEANS
Darrold L. Guhn, Logansport, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Nov. 7, 1966, Ser. No. 592,656
3 Claims. (Cl. 323—43.5)

1. An alternating current voltage regulating system comprising:

first and second input terminals for connection to an alternating current voltage source having a variable potential;

a first output terminal connected to said first input terminal;

a second output terminal;

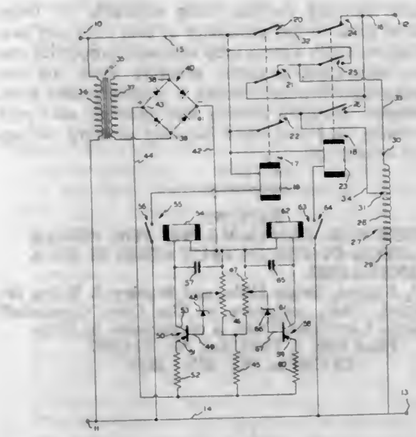
a voltage changing transformer having a winding, first and second winding terminals defining the ends of a first section of said winding, and a third winding terminal defining one end of a second section of said winding extends from said first winding terminal; said first winding section having a greater number of turns than does said second winding section;

a first electromagnetic contactor having a first operating coil, a normally closed first switch, a normally closed second switch, and a normally open third switch,

a second electromagnetic contactor having a second operating coil, a normally open fourth switch, a normally open fifth switch and a normally closed sixth switch;

a voltage sensing circuit connected to said input terminals and responsive to the potential applied to said input terminals, said voltage sensing circuit including a first control means connected to said first operating coil of said first contactor to energize the same when the potential applied to said input terminals exceeds a predetermined low value, said voltage sensing circuit including a second control means connected to said second operating coil of said second contactor to energize the same when the potential applied to said input terminals exceeds a predetermined high value greater than said predetermined low value;

first circuit means including said first switch connecting said third winding terminal of said transformer to said second input terminal and second circuit means including said second switch connecting said second winding terminal of said transformer to said second output terminal so that said transformer is connected in a step-up mode between said input and output terminals when said input potential is below said predetermined low value;



third circuit means including said third and sixth switches in series connection connecting said second input terminal to said second output terminal so that said input and output terminals are directly connected when said input potential is below said predetermined high value and greater than said predetermined low value;

fourth circuit means including said fourth switch connecting said second winding terminal of said transformer to said second input terminal and fifth circuit means including said fifth switch connecting said third winding terminal of said transformer to said second output terminal so that said transformer is connected in a step-down mode when said input potential exceeds said predetermined high value.

3,419,791
LEVEL DETECTOR FOR ELECTRIC CURRENT
Victor Mishkovsky, Ashland, N.J., assignor to General Electric Company, a corporation of New York
Filed Sept. 8, 1966, Ser. No. 577,966
6 Claims. (Cl. 323—44)

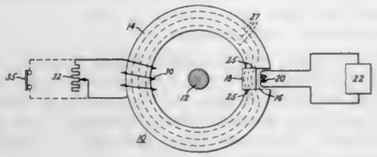
1. Means for developing a voltage pulse when the current flowing through a conductor reaches a predetermined level, comprising:

(a) a core of magnetic material surrounding said conductor and forming a path around said conductor for flux developed by current through said conductor,

(b) a coil having its turns substantially untraversed by flux passing through said core when the flux level is low,

(c) said core having a high permeability shunting portion forming a flux path shunting said coil and substantially preventing said coil from being traversed by flux passing through said core while said shunting portion is unsaturated,

(d) and means for directing a substantial portion of the flux in said core through a path traversing said coil when said high permeability shunting portion saturates,



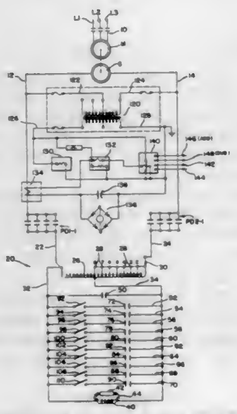
(e) said shunting portion being saturable on rising current prior to the remainder of said core and having substantially square loop magnetic properties that cause saturation to occur abruptly when the flux passing therethrough reaches a predetermined level, thereupon abruptly forcing flux through said path traversing said coil, thus inducing a sharp voltage pulse in said coil.

3,419,792

DEVICE FOR CONTROLLING THE POWER FACTOR IN THE OUTPUT CIRCUIT OF A GENERATOR

Robert J. Kasper, Seven Hills, and Stanley J. Ryba, Jr., Cleveland, Ohio, assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 1, 1966, Ser. No. 524,007
22 Claims. (Cl. 323—105)



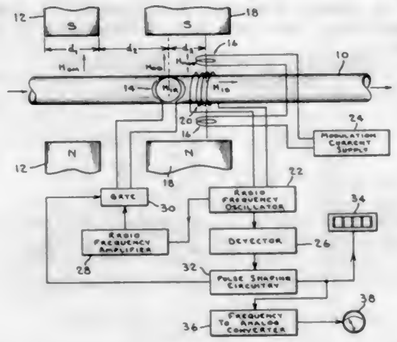
There is provided a device for maintaining within a preselected range the power factor in a load connected output circuit of a generator while the electrical characteristics of the load vary. A bank of separate capacitor branches are provided with a capacitor and a switch means, and a reversible motor sequentially, and in stepped fashion, operates each of these switch means to increase the number of branches electrically connected in the output when the motor rotates in a first direction and to decrease the number of branches electrically connected in the output when the motor rotates in the other direction. The direction of rotation of the motor is controlled by the deviation direction of the power factor of the load circuit from a preselected range.

3,419,793

VOLUMETRIC FLOW MEASURING DEVICE EMPLOYING PULSED PARAMAGNETIC RESONANCE

William K. Genthe and William H. Vander Heyden, Menomonee Falls, and Donald H. Strobel, Cedarburg, Wis., assignors to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 2, 1965, Ser. No. 445,117
10 Claims. (Cl. 324—.5)



This disclosure relates to a flowmeter employing nuclear magnetic resonance for detecting and metering the flow of fluid having a component with a nuclear magnetic moment. The fluid first passes through a magnetic field, by which a preferred alignment is given to the magnetic moment vectors of the nuclei. A bolus of the fluid is tagged, after being magnetized, by means of a tagging coil which is pulsed with RF energy to demagnetize the bolus. Shortly downstream from the tagging coil is disposed another RF coil with its axis in orthogonal relationship with the axis of the first RF coil and the direction of the magnetizing field, by which magnetic resonance of the fluid is induced, in order to detect the passage of the tagged bolus.

In one embodiment, the magnetizing field and the axis of the demagnetizing coil are perpendicular to the flow direction and the second RF coil is coaxial with it. In a second embodiment, the magnetizing field is coaxial with the flow direction, and the two RF coils are oriented with their axes perpendicular thereto.

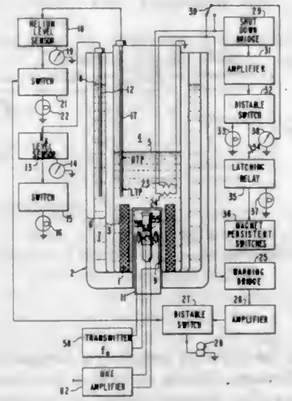
3,419,794

SUPERCONDUCTIVE MAGNET HAVING AN AUTOMATIC COOLANT LOW LEVEL WARNING AND SHUT DOWN MEANS

Harry E. Weaver, Jr., Portola Valley, and Floyd E. Kingston, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed May 5, 1966, Ser. No. 548,010
10 Claims. (Cl. 324—.5)

1. A superconductive magnet system including, means forming a superconductive solenoid magnet, means forming a cryostat enveloping said solenoid means and having a liquid coolant chamber for containing liquid coolant in which said solenoid means is immersed, liquid level sensing means disposed in said liquid coolant chamber of said cryostat for producing an output signal when the liquid coolant in said chamber has receded to a certain predetermined level, means responsive to the output signal for shutting down the solenoid and diverting the stored energy of said solenoid to a load external of said cryostat, whereby damage to said solenoid is prevented which might otherwise occur if said solenoid were allowed to undergo a superconducting to normal conductive state transition.

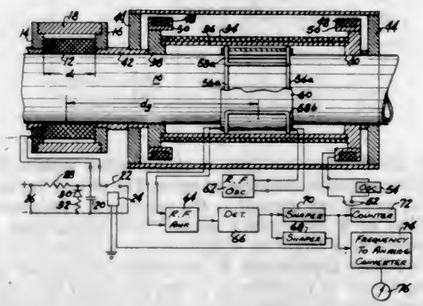


3,419,795

NMR FLOWMETER EMPLOYING PULSED MAGNETIZATION

William K. Genthe and William H. Vander Heyden, Menomonee Falls, and Donald H. Strobel, Cedarburg, Wis., assignors to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Continuation-in-part of application Ser. No. 485,842, Sept. 8, 1965. This application Aug. 3, 1966, Ser. No. 570,066
17 Claims. (Cl. 324—.5)



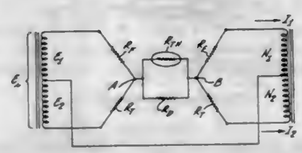
This disclosure relates to a flowmeter employing nuclear magnetic resonance for detecting and metering the flow of fluid having a component with a nuclear magnetic moment. The fluid first passes a tagging station at which a preferred alingment is given to the magnetic moment vectors of the nuclei within spaced boluses of the fluid by an intermittently operable high intensity unidirectional field. An R.F. coil, with its axis perpendicular to the direction of the intermittent field, is located shortly downstream from the tagging station. The R.F. coil is excited to induce nuclear magnetic resonance in the fluid, and the detection of the resonance identifies the passage of the tagged boluses.

3,419,796

COMPENSATED SALINOMETER

Neil L. Brown, San Diego, Calif., assignor to The Bissett-Berman Corporation, Santa Monica, Calif., a corporation of California

Filed Mar. 4, 1963, Ser. No. 262,396
3 Claims. (Cl. 324—30)



1. In combination for measuring the salinity of sea water,

a first winding constructed to be disposed in said sea water,

first means operatively coupled to said first winding for introducing to said winding a signal having particular characteristics,

a second winding constructed to be disposed in said sea water and magnetically and electrostatically shielded from the first winding for a coupled relationship to said first winding only through said sea water to obtain an induction in said second winding of a signal having characteristics dependent upon the salinity characteristics of said sea water,

second means operatively coupled to said second winding for providing an indication of the characteristics of the signal induced in said second winding, and

third means coupled electrically to said first and second windings for providing a compensation for variations in the temperature of said sea water in accordance with variations in the characteristics of the signal induced in said second winding, said third means including a first impedance constructed to be disposed in the sea water, said third means includes first and second bridges and wherein said first bridge includes said first winding and at least the first impedance and a second impedance and wherein said first impedance is constructed to be disposed in said sea water to provide variable characteristics in accordance with variations in the temperature of said sea water and wherein said second bridge includes said second winding and at least third and fourth impedances and wherein said first and second bridges are connected to each other, and wherein the third impedance is constructed to be disposed in the sea water.

3,419,797

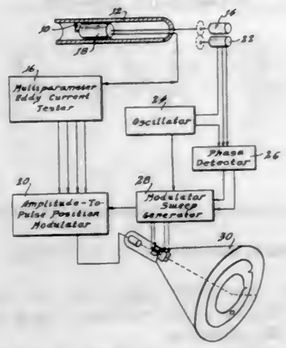
NONDESTRUCTIVE EDDY CURRENT TESTING DEVICE FOR TESTING METAL TUBING AND INSTANTANEOUSLY DISPLAYING THE CROSS SECTION OF SAID TUBING

Hugo L. Libby, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 21, 1966, Ser. No. 522,325
6 Claims. (Cl. 324—40)

1. An eddy current nondestructive testing device for testing metal tubing comprising a probe coil, means for rotating said probe coil with respect to a surface of said metal tubing, means for applying a multidimensional excitation current to said probe coil, means for expanding the received signal of said probe coil into individual components, each of said components representing an individual parameter of said tubing, an oscilloscope having a blanked radial sweep, means for rotating the radial sweep of said oscilloscope synchronously with the rotation of said probe coil, means synchronized with the radial sweep of said oscilloscope for sampling during the period of

each radial sweep of said oscilloscope each of said component signals to produce from each component signal a pulse having a time of generation proportional to the amplitude of the associated component signal, means for multiplexing said pulses generated during each radial

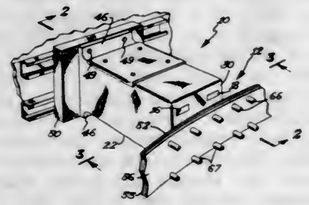


sweep of said oscilloscope and means for applying said multiplexed pulses to said oscilloscope to cause at the time position of said pulses unblanking of the radial sweep of said oscilloscope during which said multiplexed pulses were generated.

3,419,798
DISPLACEMENT SENSING TRANSDUCER USING HALL EFFECT DEVICES

William B. Walton, St. Paul, Minn., assignor to Clark Equipment Company, a corporation of Michigan

Filed Dec. 17, 1965, Ser. No. 514,556
15 Claims. (Cl. 324—45)



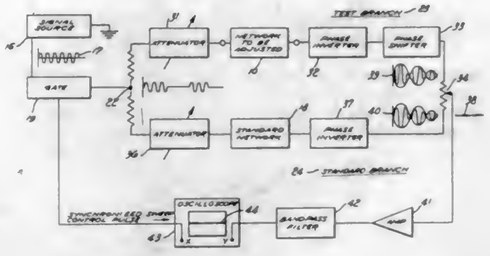
A pair of Hall effect sensors are positioned side by side and spaced from a permanent magnet strip having such a curvature that upon movement of either the sensors or strip, along a given axis, the flux linking one Hall effect sensor is increased and the flux linking the other sensor is decreased. The outputs of the Hall sensors are algebraically summed to produce an output signal related to the relative positions of the sensors and magnet strip. The magnet strip is adjustably mounted whereby the curvature thereof may be shaped as desired. A magnetic shunt is mounted on the magnet strip to provide a reference point.

3,419,799
SYSTEM FOR TESTING AND ADJUSTING ELECTRICAL FILTERS HAVING A SIGNAL BURST TRANSMITTING MEANS

Michael A. Papadeas, Andover, Mass., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 21, 1965, Ser. No. 489,021
11 Claims. (Cl. 324—57)

Means and a method for tuning a filter. The filter under test and a standard filter are connected in respective ones of parallel connected matched branched circuits. Both circuits are energized by predetermined bursts of sine wave cycles at the center frequency of the standard filter. Each branch includes a transformer respectively arranged whereby the transient output signals of the branches exhibit a reverse phase relationship with respect to each other. The output signals are supplied to a summing

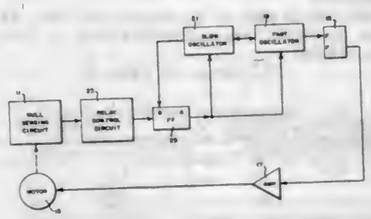


network. If the summed output is a straight line depicted on an oscilloscope, this is indicative that the filter under test matches the standard filter. A deviation from a straight line indicates the requirement of tuning the filter under test until a straight line is achieved.

3,419,800
GAUGING SYSTEM INCLUDING AUTOMATIC BALANCING AND STOPPAGE MEANS

Richard J. Levi, Closter, N.J., and John R. Montgomery, Trumbull, Conn., assignors to Electro-Autosizing Machine Corporation, Closter, N.J., a corporation of New Jersey

Filed Dec. 17, 1964, Ser. No. 419,001
9 Claims. (Cl. 324—61)



This specification discloses a classification system for classifying precision mechanical parts. The size of the mechanical part is represented as the value of a capacitance by means of a capacitance gauge. This capacitance is compared with a reference capacitance in a bridge circuit. The reference capacitance is incrementally stepped by stepping motor in response to pulses produced by a first oscillator which is synchronized with a second oscillator producing pulses at a slower rate. The pulse rate of the first oscillator is a multiple of the pulse rate of the second. The pulses of the second oscillator mark the boundaries of the classification zones into which the parts are to be classified. Means are provided to stop the oscillation of both the oscillators when the second oscillator produces a pulse after null has been detected by the bridge circuit. Accordingly, after null has been detected in the bridge circuit, the stepping motor will continue to increment the reference capacitance until the slower oscillator produces a pulse at which time it will stop. The position of the stepping motor can then be used to indicate the classification zone in which the size of the part being classified falls.

3,419,801
CAPACITANCE-TYPE MEASURING APPARATUS FOR FLUIDS IN A SUPER-CRITICAL STATE INCLUDING A DIODE LINEARIZATION NETWORK

Irving H. Cohn, New York, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Mar. 12, 1965, Ser. No. 439,253
3 Claims. (Cl. 324—61)

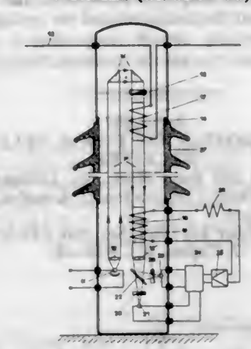


A capacitance-type measuring apparatus for fluids in a supercritical state which provides a signal proportional to the density of the fluid wherein an all-electronic signal condition converts the capacitance from a measuring transducer, which is a function of fluid density according to the Clausius-Mossotti relationship, into a D.C. signal output linearly proportional to the fluid mass. The equation is instrumented by means of a diode linearization network couped to a detector circuit which rectifies the output of a bridge summing circuit to provide a D.C. signal for telemetering and indicator operation.

3,419,802
APPARATUS FOR CURRENT MEASUREMENT BY MEANS OF THE FARADAY EFFECT

Yves Pelenc, la Tronche, and Georges Bernard, Grenoble, France, assignors to Etablissements Merlin & Gerin Societe Anonyme, Grenoble, France

Filed Apr. 11, 1966, Ser. No. 541,629
Claims priority, application France, Apr. 10, 1965, 12,789; Mar. 3, 1966, 51,961
4 Claims. (Cl. 324—96)

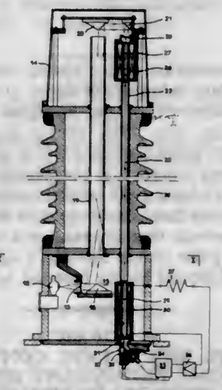


1. In a device for the measurement of an electrical current flowing in an aerial high-voltage conductor of the type comprising a device for modulating the intensity of a polarized light beam, a first Faraday effect device disposed in the vicinity of said conductor and including a first magneto-optically active body disposed to be traversed by said polarized light beam, first electrically conducting means excited by said current and creating a magnetic field in said first body to produce a rotation of the plane of polarization of said light beam, a second Faraday effect device located in the vicinity of the ground and comprising a second magneto-optically active body disposed to be traversed by the light beam emerging from said first body, second electrically conducting means excited by a compensating current and creating a magnetic field in said second body to produce a compensating rotation of the plane of polarization of said light beam in opposite direction to the direction of rotation produced in said first body, means including an electronic amplifier to produce said compensating current, optical dividing means to divide the polarized light beam emerging from said second body into two elementary light beams, a first photo-electric device collecting the light flux of the elementary light beam being transmitted by said dividing means, a second photo-electric device collecting the light flux of the elementary light beam being reflected by said dividing means, an electronic balancing device, said first and second photo-electric devices being electrically connected in opposition and to said balancing device, the output of said balancing device being connected to said amplifier.

3,419,803
APPARATUS FOR CURRENT MEASUREMENT BY MEANS OF THE FARADAY EFFECT

Yves Pelenc, La Tronche, and Georges Bernard, Grenoble, France, assignors to Etablissements Merlin & Gerin, Societe Anonyme, Grenoble, France

Filed Apr. 11, 1966, Ser. No. 541,630
Claims priority, application France, Apr. 10, 1965, 12,789; Mar. 3, 1966, 51,961
6 Claims. (Cl. 324—96)



1. A device for the measurement of an electrical current flowing in a high-voltage conductor by means of a device modulating the light flux of a polarized light beam, comprising a light emitting means for emitting a light beam, optical reflecting means dividing said light beam into a plurality of separate light beams and disposed in the vicinity of said high-voltage conductor, polarizing means producing the polarization of said separate light beams, a Faraday effect device for each separate light beam including a magneto-optically active body traversed by said separate light beam and electrically conducting means producing a magnetic field in said body, said conducting means being energized by said current flowing through said high-voltage conductor to magnetically rotate the plane of polarization of said separate light beam as a function of said current, optical guide means extending substantially between said high-voltage conductor and the earth for directing said separate light beams emerging from said Faraday effect devices from the latter to the earth surface and a photoelectric converting device for each of said polarized separate light beams emerging from said guide means for elaborating said separate light beam to produce an electrical signal which is characteristic for the degree of rotation of the plane of polarization of said separate light beam in said Faraday effect device and which is a function of the value of said current.

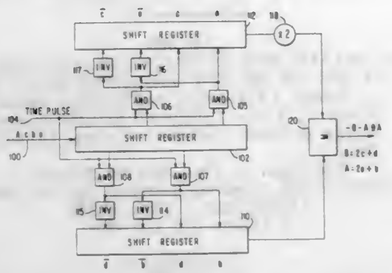
ERRATUM

For Class 324—98 see:
Patent No. 3,419,906

3,419,804
DATA TRANSMISSION APPARATUS FOR GENERATING A REDUNDANT INFORMATION SIGNAL CONSISTING OF SUCCESSIVE PULSES FOLLOWED BY SUCCESSIVE INVERSE PULSES

Etienne P. Gorog and Constantine Michael Melas, Antibes, France, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 12, 1965, Ser. No. 455,112
13 Claims. (Cl. 325—38)

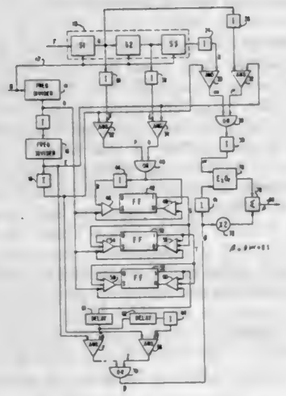


A data transmission device having the shifted spectrum of the redundant information signal at a maximum near the center frequency of the bandpass characteristic of the transmission line. This device has a pulse source whose non-zero outputs occur every T second and for less than .5T second where T is the period of the frequency $1/T$ equal to ½ bandwidth of the bandpass characteristic of a transmission line. The output of the pulse source is delayed .5T second, then inverted, and combined with the output of the pulse source forming a signal having a non-zero portion followed by the inverted non-zero portion.

3,419,805
BINARY TO MULTILEVEL CONVERSION BY COMBINING REDUNDANT INFORMATION SIGNAL WITH TRANSITION ENCODED INFORMATION SIGNAL

Constantine Michael Melas, Antibes, France, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 8, 1965, Ser. No. 494,224
Claims priority, application France, Oct. 16, 1964, 7,485
3 Claims. (Cl. 325—38)

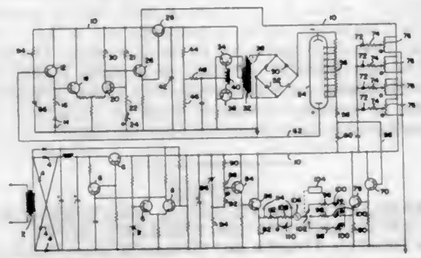


This invention relates to a data transmission encoding system whereby a serial binary data bit input is divided into two segments, each segment having two parts. The first part of each data segment is transition encoded such that a change in the signal level from that of the previous bit time period represents one possible binary bit value during a given time period and the same value as in the previous time period represents the other possible binary bit value. The second part of the data segment may be encoded the same as the first part or may be encoded as its binary bit value followed by its inverse binary bit value. The two encoded parts of each segment are then combined to form a single encoded output having a new representation for the input binary data.

3,419,806
DENSITOMETER

Edwin Gordy, 39 Woodgate Road, Tonawanda, N.Y. 14151

Filed Aug. 13, 1964, Ser. No. 389,302
3 Claims. (Cl. 328—2)

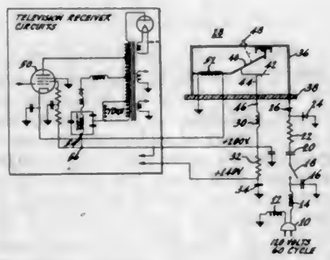


A densitometer comprises a photomultiplier tube, receiving power from a transistor oscillator, which is controlled by a circuit responsive to the photomultiplier anode current. The output is taken from the dynode circuit, and is logarithmically related to incident light intensity. A linearizing circuit comprising a plurality of biased diodes operates on the photomultiplier output.

3,419,807
CIRCUIT PROTECTION FOR A TELEVISION RECEIVER

Neal W. Hursh and John Stark, Jr., Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,079
7 Claims. (Cl. 328—8)

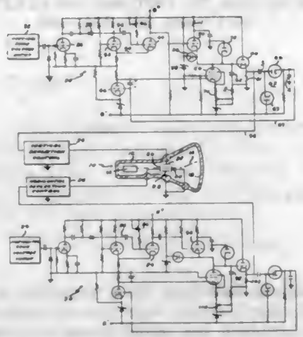


In a television receiver, a circuit breaker is provided which is responsive jointly to total current supplied to the receiver and to current supplied to the horizontal deflection output stage. The circuit breaker includes a bi-metallic breaker contact through which receiver current flows and a heating element operatively associated with the bi-metallic element. The current supplied to the horizontal output tube flows through the heating element.

3,419,808
CONTINUOUSLY VARIABLE CIRCUIT FOR CONTROLLING THE SWEEP OF AN OSCILLOSCOPE

John G. Lenhoff, Jr., Linthicum Heights, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed June 28, 1966, Ser. No. 562,441
1 Claim. (Cl. 328—183)

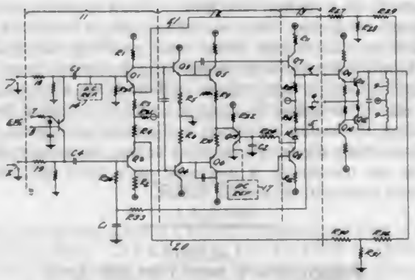


A linear sweep voltage generator for a cathode ray tube in which the sweep voltage is generated by the alternate charging and discharging of a capacitor. The same starting point for each sweep is insured by limiting the maximum capacitor voltage during charging to a fixed reference value established by a Zener diode regulator. A high degree of sweep linearity is achieved by discharging the capacitor through a pentode having negative current feedback to hold the discharge current constant. The amplitude of the sweep is held constant over a wide range of sweep frequencies by making the capacitor discharge rate an inverse function of the sweep voltage amplitude through varying the pentode control grid potential as an inverse function of the sweep voltage amplitude.

3,419,809
STABLE D.C. AMPLIFIER

Richard F. Lach, Hartford, and Henry E. Martin, Wapping, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 17, 1967, Ser. No. 653,719
11 Claims. (Cl. 330—10)

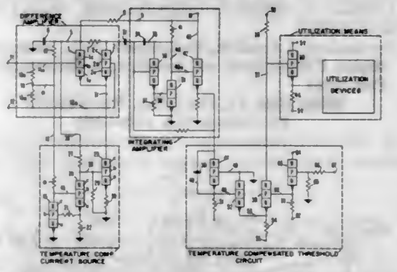


A D.C. amplifier is described for driving an A.C. load with a push-pull output amplifier. Two negative D.C. feedback loops are employed to maintain the quiescent voltage of the output terminals at the desired D.C. levels. The entire amplifier described includes an input differential amplifier, an intermediate amplifier including an emitter follower stage and a push-pull amplifier stage which in turn drives the push-pull output amplifier. A chopper is added for driving therewith the A.C. load. The entire circuit is D.C. coupled.

3,419,810
TEMPERATURE COMPENSATED AMPLIFIER WITH AMPLITUDE DISCRIMINATION

Melvin P. Xylander, Apalachin, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 7, 1967, Ser. No. 629,125
1 Claim. (Cl. 330—23)

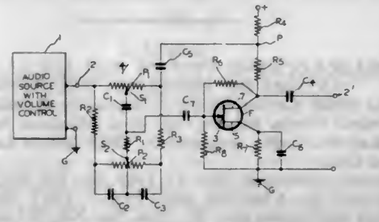


A differential amplifier having temperature compensating means for maintaining reasonably constant gain over a wide range of temperatures.

3,419,811
AUDIO AMPLIFIER TONE CONTROL SYSTEM

Daniel R. von Recklinghausen, Arlington, and Lawrence W. Fish, Jr., Hudson, Mass., assignors to H. H. Scott, Inc., Maynard, Mass., a corporation of Massachusetts

Filed June 7, 1967, Ser. No. 644,137
7 Claims. (Cl. 330—25)

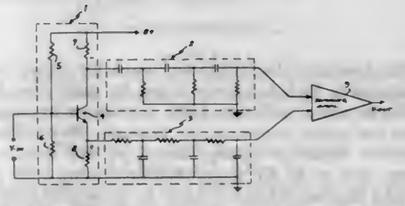


The present invention relates to a novel audio amplifier tone control system that obviates the necessity for impedance transformation inputs and multiple transistor stages through the utilization of a field-effect transistor with critical DC negative feedback impedance values relative to the impedance of the input tone control network.

3,419,812
BANDPASS AMPLIFIER

Irving F. Barditch and Charles G. Brooks, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

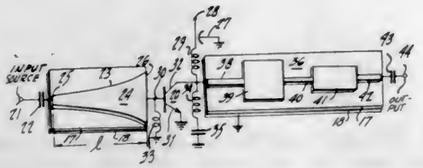
Filed Sept. 2, 1966, Ser. No. 577,101
2 Claims. (Cl. 330—30)



An amplifier having a bandpass characteristic is provided by dividing the input signal in the amplifier into

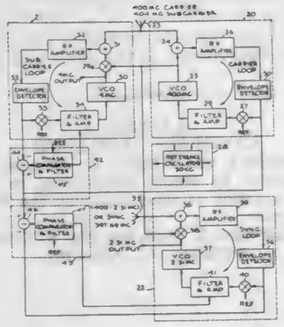
two equal components 180 degrees out of phase, passing one component through a passive high pass filter, the other component through a passive low pass filter, and then vectorially adding the outputs of the filters.

3,419,813
WIDE-BAND TRANSISTOR POWER AMPLIFIER USING A SHORT IMPEDANCE MATCHING SECTION
Constantine Kamnitsis, Oceanport, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 22, 1967, Ser. No. 648,127
10 Claims. (Cl. 330—30)



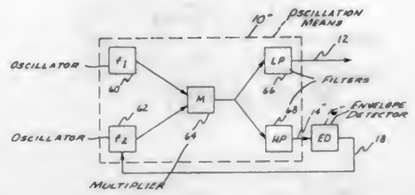
A wide-band transistor power amplifier is provided using a short, impedance matching, strip transmission line section. The section is made to match the wide-band, high input impedance of a signal source coupled to one end of the section with the real, low input impedance of a high frequency power transistor coupled at the opposite end of the section. The width of the section changes exponentially between the opposed ends so as to provide with the transistor power amplifiaction of a wide-band, high frequency input signal supplied by the source.

3,419,814
PHASE-LOCKING SYSTEM FOR LOCAL OSCILLATORS OF TRACKING RECEIVERS
Ross Edwin Graves, Pacific Palisades, Jacob Milton Sacks, Palos Verdes Estates, and Don Murdock Jacob, Los Angeles, Calif., assignors to TRW Inc., a corporation of Ohio
Original application Nov. 13, 1962, Ser. No. 237,229, now Patent No. 3,308,380, dated Mar. 7, 1967. Divided and this application July 22, 1966, Ser. No. 567,269
6 Claims. (Cl. 331—2)



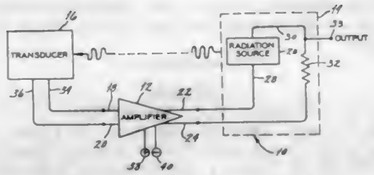
This invention discloses a technique for phase tracking on incoming high frequency signal by generating a local oscillator signal differing from the incoming signal by given low audio frequency, for example, 30 kc. The local oscillator signal is injected ahead of any reactive elements, such as an RF stage, thereby causing both incoming and injected reference signal to be simultaneously affected and varied by reactive elements. Phase-locking of the incoming signal is achieved by a phase-locked loop on the 30 kc. offset audio frequency, which is not substantially affected by the same previously mentioned reactive elements.

3,419,815
SIGNAL GENERATORS WITH RAPID AUTOMATIC AMPLITUDE STABILIZATION
Sigmund N. Porter, P.O. Box 66188, Los Angeles, Calif. 90066
Filed Mar. 20, 1967, Ser. No. 624,321
14 Claims. (Cl. 331—40)



An amplitude stabilized signal generator in which the stabilization may be more rapid than the period of oscillation, and in which the initial phase may be preset is disclosed. An amplitude signal reporting the amplitude of the output signal is generated simultaneously with the output signal, and used for negative feedback control.

3,419,816
OPTICALLY-COUPLED OSCILLATOR CIRCUIT
Joseph W. Sharp, East St. Louis, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,693
14 Claims. (Cl. 331—107)

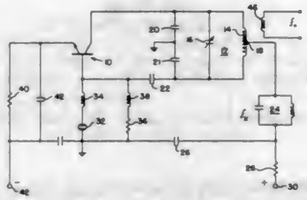


The disclosure of the present invention includes a description of a unique oscillator circuit wherein electromagnetic radiation, such as visible light, is internally generated by a solid-state device and positively fed back to the input of the oscillator amplifying device by means of a transducer which converts the radiation into a corresponding electrical signal. For purposes of illustrating the invention, the radiation means is disclosed as a solid-state, light-emitting diode, an infrared device, or a laser diode, while the transducer is disclosed as a solar cell, photoresistor photocell, or similar device.

3,419,817
FREQUENCY MULTIPLIER AND SPECTRUM GENERATOR
Alwin Hahnel, Rochester, N.Y., assignor to Stromberg Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Apr. 13, 1967, Ser. No. 630,675
2 Claims. (Cl. 331—116)

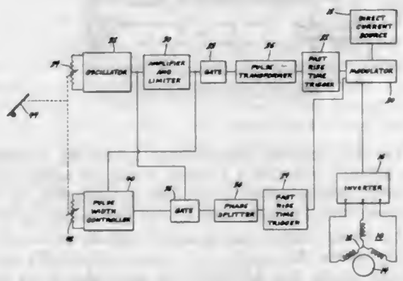
A frequency multiplier and spectrum generator of the phase controlled, keyed type including two tank circuits energized by a single transistor. One tank circuit is crystal controlled to oscillate at a relatively low frequency. The second tank circuit is tunable over a wide range of

frequencies, all higher than the frequency of the crystal controlled tank. The crystal controlled tank keys the transistor and the high frequency tank on and off. The output of the high frequency tank includes only harmon-



ics of the crystal controlled tank, with maximum energy concentrated near the frequency to which the high frequency tank is tuned. The crystal controlled tank is connected to the transistor through a virtual ground point in the coil of the high frequency tank.

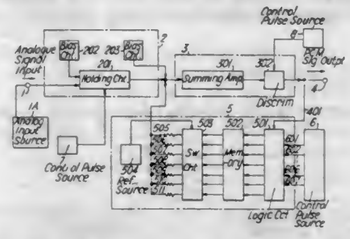
3,419,818
PULSE FREQUENCY AND PULSE WIDTH CONTROL FOR A MODULATOR
Jalal T. Salihi, Santa Barbara, and Michael A. Constantini, Santa Monica, Calif., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,373
18 Claims. (Cl. 332—9)



This invention relates to a driver or trigger circuit for a pulse modulator that controls the voltage applied to an induction motor from a source of direct current. The trigger circuit includes a variable frequency square wave generator which controls a pulse frequency control circuit and the output frequency of a pulse width control circuit. The trigger circuit has a gate circuit for preventing operation of the pulse width control circuit until the output frequency of the square wave generator attains a predetermined value. The trigger circuit for the modulator includes fast rise trigger circuits for gating controlled rectifiers which are a part of the modulator. The induction motor can be utilized to propel a motor vehicle.

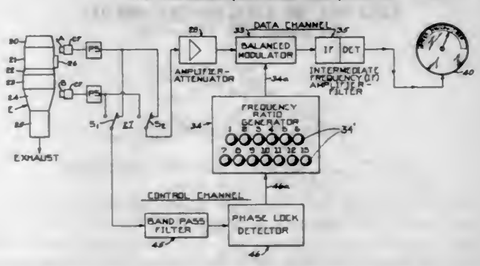
3,419,819
ENCODER MEANS HAVING TEMPERATURE-COMPENSATION APPARATUS INCLUDED THEREIN
Ryuichi Murakami and Haruo Kaneko, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 18, 1965, Ser. No. 497,032
Claims priority, application Japan, Oct. 19, 1964, 39/59,377
7 Claims. (Cl. 332—9)

Encoder means is provided, in accordance with this invention, with apparatus for compensating the encoder for ambient temperature variations. The compensating apparatus may take the form, according to an embodiment of this invention, of a biasing circuit which not only compensates the characteristic of the holding circuitry included in such encoder means for temperature varia-



tions but in addition thereto compensates for the direct-current drift introduced by such temperature variations.

3,419,820
ELECTRONIC FREQUENCY RATIO GENERATOR
Houchang Handjani, Cedar Grove, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,883
10 Claims. (Cl. 332—22)

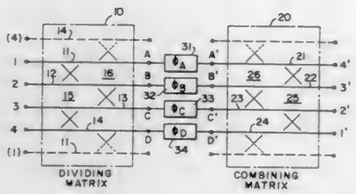


1. A frequency ratio generator for producing an electrical signal of frequency that continuously bears a predetermined numerical ratio to a slowly varying frequency of a pure tone signal, comprising a source of high frequency signals, a double side-band modulator responsive to said pure tone signal and operably connected with the source of high frequency signals for mixing the pure tone signal with a local high frequency signal from the source, the outputs of said modulator consisting of a main signal of the same frequency as said local signal and upper and lower side-band signals of frequencies determined by the frequency of the pure tone signal, signal processing means connected with the side-band modulator and said source of high frequency signals for receiving a second high frequency signal from the source of high frequency signals and including multistage signal mixing and binary dividing means, and also switching means between the modulator and the multi-stage signal mixing and binary dividing means for selectively connecting respective stages of said processing means to certain modulator outputs according to the binary representation of said numerical ratio for producing at the output stage a side-band signal containing the aforesaid signal of predetermined ratio frequency.

3,419,821
HIGH POWER MICROWAVE SWITCH
Calvin C. Jones, Jessup, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 5, 1965, Ser. No. 493,088
8 Claims. (Cl. 333—7)

A high power microwave multi-channel switch wherein two hybrid microwave power networks are connected back to back by two-condition phase shifters which phase

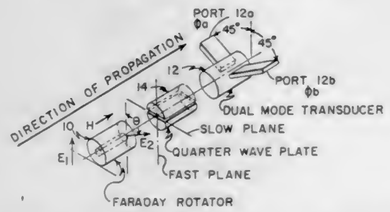
shifters, by being either zero degree or 180°, can select which output port the input power will exit. Each microwave power network includes first and second sets of three db hybrid couplers connecting alternate and intermediate pairs of channels respectively. In high power applications the invention's simplicity and ability to switch high power with medium power phase shifters is economically attractive.



3,419,822
DUAL OUTPUT PHASE SHIFTER

Stephen N. Andre, Tonawanda, and Leland R. Megargel, Buffalo, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,314
2 Claims. (Cl. 333—11)



A phase shifter comprising a circular waveguide assembly containing a Faraday rotator and a quarter wave plate disposed in that order between a single input port and a dual mode transducer having two output ports. A resistive card is axially disposed at the input end of the guide to absorb the reflected TE_{11} component. The output ports are oriented at 45° on either side of the fast plane of the quarter wave plate and spaced from each other along the longitudinal axis of the guide to provide decoupling. A series of three transverse wires are located between the output ports to short circuit the TE_{11} component having the polarization to which one of the output ports is receptive.

3,419,823
PHASE-DIFFERENTIAL NETWORK

Harold Seidel, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New Jersey

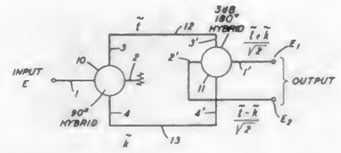
Filed Apr. 10, 1967, Ser. No. 629,513
3 Claims. (Cl. 333—11)

This application describes a broadband phase-differential network comprising a 90 degree hybrid junction having an arbitrary power-division ratio and a 180 degree hybrid junction having a power-division ratio of unity. The incident signal is coupled to the 90 degree hybrid wherein it is divided into two quadrature components $\tilde{t}$ and $\tilde{k}$. These, in turn, are recombined in the 180 degree hybrid to produce two equal output signals having a relative phase angle

$$\alpha = 2 \arctan \left| \frac{\tilde{k}}{\tilde{t}} \right|$$

therebetween.

In the first embodiment of the invention, the phase angle α is determined by the power-division ratio of the 90 degree hybrid. In a second embodiment of the invention

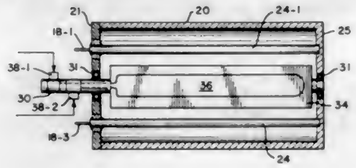


both hybrids have unity power-division ratios, and a separate variable attenuator is included between the hybrids. In this manner the ratio of $\tilde{k}$ to $\tilde{t}$ can be continuously varied to produce a continuously variable phase angle α.

3,419,824
CONTINUOUSLY VARIABLE RESOLVER AND SYSTEMS USING THE SAME

Harold Seidel, Fanwood, N.J., assignor to Merrimac Research and Development Inc., Irvington, N.J., a corporation of New Jersey

Filed May 10, 1965, Ser. No. 454,494
13 Claims. (Cl. 333—24)

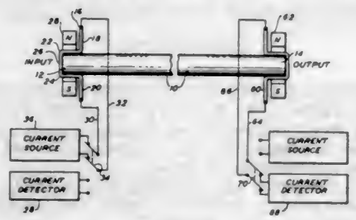


1. A variable resolver comprising: a housing forming a cavity, means for exciting a mode of energy within said cavity having components of circular polarization, a rotatable plane loop within said cavity for coupling out energy at a phase corresponding to the angular orientation of the loop within the cavity, and means electrically coupled to said cavity for adjusting the polarization of the energy therein by reflecting energy back into the cavity to obtain a mode of energy therein having substantially symmetric circular polarization.

3,419,825
TORSIONAL DELAY LINE TRANSDUCER

Richard J. La Manna, Whippany, N.J., assignor to Litton Business Systems, Inc., a corporation of New York

Continuation of application Ser. No. 521,937, Jan. 20, 1966. This application Dec. 12, 1967, Ser. No. 690,035
12 Claims. (Cl. 333—30)



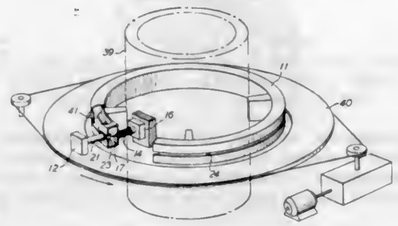
An electromagnetic transducer for operating with a torsional stress-wave delay line comprises conductors affixed opposed ends of the delay line. Each conductor is placed within a magnetic field. Current passing through one of the conductors causes it, in accordance with the

generator effect, to twist. The resulting twisting of the delay line causes a current to be generated in the second conductor.

3,419,826
MICROWAVE SLIP RING

Walter H. MacWilliams, Jr., Bernardsville, and Douglas H. Ring, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed Dec. 16, 1966, Ser. No. 602,292
8 Claims. (Cl. 333—98)

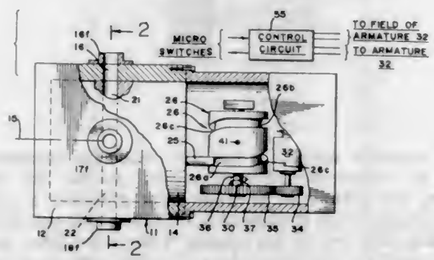


1. Apparatus for coupling electromagnetic signals of microwave frequencies between two terminals capable of relative motion comprising a waveguide of rectangular cross section having a slot in the substantial center of one face, a first terminal, first coupling means in fixed relation to said waveguide for coupling said signals between said first terminal and said waveguide, a second terminal capable of relative movement parallel to said wave guide, and second coupling means for coupling said signals between said second terminal and said waveguide comprising a coaxial transmission line having an inner and an outer conductor, both connected at one end to said second terminal, said outer conductor being electrically coupled at its other end to the outer surface of said waveguide, said inner conductor entering said waveguide through said slot without making contact therewith.

3,419,827
INDEXING MICROWAVE SWITCH

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of David L. Nixon, Arcadia, and Frank E. McCrea, San Gabriel, Calif.

Filed Dec. 27, 1966, Ser. No. 605,099
9 Claims. (Cl. 333—98)



1. In a waveguide switch of the type having a stationary member comprising a plurality of waveguide ports, a rotor having an axis of rotation and defining at least one waveguide channel threthrough, a source of energy for rotating said rotor to selected rotational positions, whereby at each position said channel is aligned with another pair of ports, improved means for controlling the rotation of said rotor from one position to another comprising:

a cam having an axis of rotation;

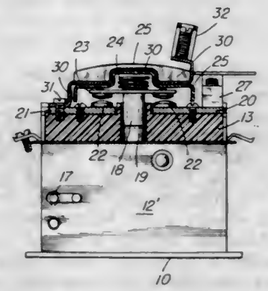
means coupling said cam to said source of energy for rotating said cam about its axis of rotation, said cam defining a modified spiralling groove about its surface; and

control means including a cam follower rotor, frictionally engaging said cam in the groove thereof to control the rotation of said rotor, as a function of the rotation of said cam and the shape characteristics of said groove.

3,419,828
MEANS PROPORTIONAL TO MAGNETIC FLUX TO BIAS ELECTRIC SWITCH CONTACTS CLOSED

Randall C. Bremer, East Granby, Conn., assignor to Arrow-Hart, Inc., Hartford, Conn., a corporation of Connecticut

Filed Dec. 13, 1966, Ser. No. 601,382
5 Claims. (Cl. 335—16)

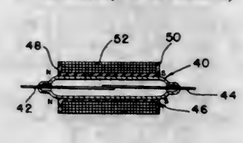


An electromagnetically operated contactor having one or more pairs of fixed contacts engaged and disengaged by a movable contact as the contactor is energized and deenergized, in combination with means to concentrate an electromagnetic flux field creating a force acting on the bridging contact tending to hold it closed on occurrence of heavy excess current conditions such as upon a direct short circuit, and tending to minimize contact bounce as the contacts engage under high in-rush current conditions, the force being in proportion to the square of the current.

3,419,829
DRY REED CONTACT RELAY WITH PERMANENT MAGNET

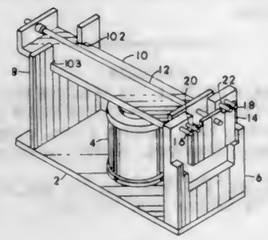
Max Baermann, Bensberg-Wulfshof, Bezirk, Cologne, Germany

Filed Dec. 2, 1960, Ser. No. 73,236
Claims priority, application Germany, July 9, 1960, B 58,548
5 Claims. (Cl. 335—153)



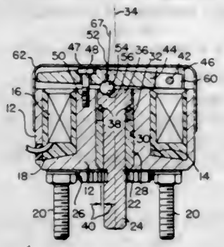
A normally closed magnetically operated switch comprising a protective tube into which there extends two overlapping reed contacts and a permanent magnet cylinder surrounding the tube to close the contacts when no additional magnetic field is applied. An electro-coil, when energized, applies a magnetic field which offsets the field of the permanent magnet and opens the contacts. Upon deenergization of the electro-coil, the contacts are closed by the permanent magnet. The permanent magnet is formed from permanently magnetic particles of low permeability embedded within a hardened plastic binder.

3,419,830
BINARY ELECTRO-MECHANICAL TRANSDUCER USING A LATERALLY SLIDING ARMATURE
Ranald O. Whitaker, 3145 N. Delaware, Indianapolis, Ind. 46205
Filed Dec. 5, 1966, Ser. No. 599,038
2 Claims. (Cl. 335—170)



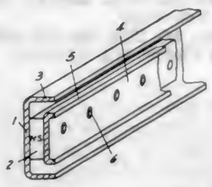
1. An electro-mechanical transducer comprising a frame bearing an electromagnet; an armature assembly having an armature adapted to be drawn by said electromagnet and a lever having notches along one edge said lever being rotatably mounted to said armature; and stops fixed to said frame and adapted to fit into said notches in two different combinations, the first of said combinations defining a first binary position, the second of said combinations defining a second binary position; said lever having a first corner which upon movement of said armature away from said stops when said armature is in said first binary position engages a first lip of said frame, said engagement causing lateral movement of said armature to said second binary position; and said lever having a second corner which upon movement of said armature away from said stops when said armature is in said second binary position engages a second lip of said frame, said engagement causing laterial movement of said armature to said first binary position.

3,419,831
ROTARY SOLENOID
Raymond J. Ganowsky, Clifton Springs, N.Y., assignor to G. W. Lisk Co., Inc., Clifton Springs, N.Y., a corporation of New York
Filed Nov. 14, 1966, Ser. No. 593,838
22 Claims. (Cl. 335—228)



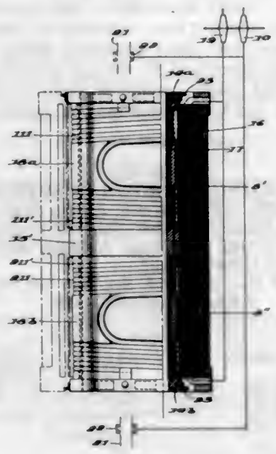
A rotary solenoid having only a single antifriction ball converter between the armature, preferably a hinged "clapper" type, and the top surface of the rotatable output shaft. There are a pair of coactive oppositely inclined cam surfaces, one each in the armature and top surface of the output shaft between which is retained the single ball converter for transmitting arcuate pivotal movement of the armature into rotary movement of the output shaft.

3,419,832
PERMANENT MAGNET HOLDING DEVICES
Max Baermann, 506 Bensberg-Wulfshof, Bezirk Cologne, Germany
Filed Sept. 28, 1966, Ser. No. 582,665
Claims priority, application Germany, Oct. 2, 1965, B 63,630
1 Claim. (Cl. 335—285)



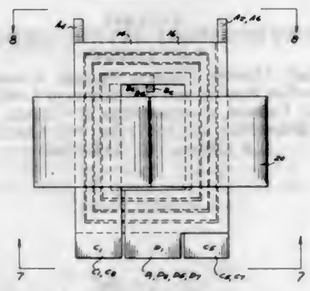
A permanent magnet holding device including two elongated U-shaped ferromagnetic members having legs and separated by a flexible permanent magnet strip with the edges of the legs being in the some place to form poles.

3,419,833
REGULATOR DEVICE FOR INDUCTION APPARATUS EMPLOYING ADDITION AND SUBTRACTION OF COIL TURNS
Armand Alphonse Vigreux, Montivilliers, France, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed July 17, 1967, Ser. No. 653,902
Claims priority, application France, Aug. 10, 1966, 72,697
6 Claims. (Cl. 336—15)



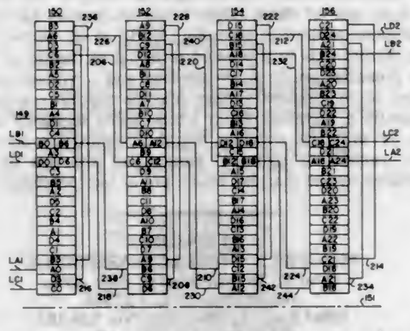
A regulator device for use with induction apparatus such as transformers, induction coils and the like for adding and subtracting in-circuit turns comprises a core surrounding which is a helical flexible, insulated regulator winding. One end of this winding is fixed, the other end is arranged for movement along a circular path about the core axis, and a cylindrical mobile guide member is located on the core intermediate upper and lower sections of the winding, the turns of the upper and lower winding sections being wound in opposite directions and being separated by a direction reversing portion which passes along a U-shaped transition groove in the guide member. When the movable end of the winding is moved along its circular path, it entrains all of the winding section between it and the guide member, effects movement of the direction reversing portion of the winding along the groove of the guide member and thus adds turns to one of the winding sections while simultaneously subtracting turns from the other section, the guide member being displaced longitudinally along the core in one direction or the other depending upon the sense of rotation of the movable end of the winding. All turns of the regulator winding are thus always traversed by the current and the desired regulation is effected by arranging for an increase in the number of turns having one direction of winding and a simultaneous decrease in the number of turns having the opposite direction of winding.

3,419,834
ELECTRICAL COILS
Ian C. McKechnie, 16254 Meyers, and Lester E. Oliphant, 16561 Lindsay, both of Detroit, Mich. 48235
Filed Mar. 24, 1966, Ser. No. 537,092
9 Claims. (Cl. 336—69)



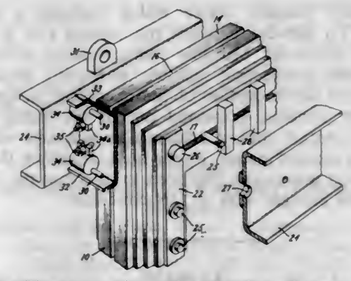
Transformer coils are formed of flat metal plates and positioned with a dielectric material between the parallel surfaces of juxtaposed coils. The capacitance and inductance between the coils can be determined by proper choice of the dimensions of the elements.

3,419,835
ELECTRICAL WINDING STRUCTURES
Gerhard M. Stein, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 29, 1967, Ser. No. 626,866
41 Claims. (Cl. 336—187)



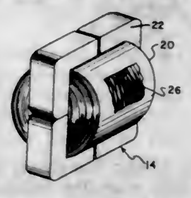
Electrical winding structures for power transformers of the core-form type, in which electrically connected turns are interleaved or separated by one or more turns from a different electrical portion of the winding structure, to increase the effective series capacitance of the structure. This is accomplished, in one embodiment of the invention, by having a plurality of side-by-side pancakes each wound from first and second conductive strands spirally wound together to provide first and second radially interleaved sections having start and finish ends. A first connection is made between the finish end of the first section of each pancake coil and the start end of the first section of the next adjacent pancake coil, to provide a first series path through the winding having first and second ends. The second section of each of the pancake coils is severed at substantially its midpoint to provide first and second radial portions in each pancake coil which have inner and outer radially disposed ends. A second connection is made to connect the start and finish ends of the second section together in each of said pancake coils. The outer end of the first radial portion of the second section of each pancake coil is connected with inner end of the second radial portion of the portion of the second section of the next adjacent pancake coil to provide a second series path through the winding having first and second ends. The circumferential locations at which the first and second connections enter the pancake coils at the start ends of the first and second sections are spaced, with their locations relative to one another being reversed in at least two adjacent pancake coils, to transpose the location of the first and second sections.

3,419,836
ADJUSTABLE TRANSFORMER CORE CLAMP
Frank S. Aldridge, Jr., Rome, Ga., assignor to General Electric Company, a corporation of New York
Filed July 26, 1967, Ser. No. 656,184
6 Claims. (Cl. 336—210)



A rectilinear portion of a laminated magnetic core which is clamped laterally between parallel longitudinal clamps is also clamped endwise between transverse plates which extend between overhanging ends of the longitudinal clamps in abutting relation with the ends of the core portion. The transverse plates are pressed against the core ends by angularly adjustable eccentric collars mounted on transverse tie rods adjacent the plates.

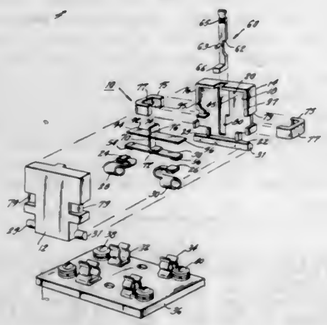
3,419,837
PULSE TRANSFORMER
Alexander B. C. Marshall, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,006
3 Claims. (Cl. 336—212)



A primary coil is wound upon one layer of soft insulation. A second layer of soft insulation covers the primary coil and several layers of secondary coils are laid upon

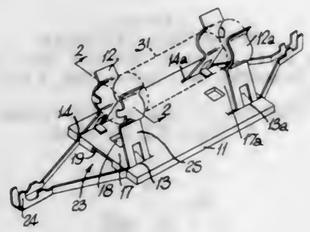
the second layer of soft insulation, the transformer forming part of a well-bore neutron generator.

3,419,838
TRIP-FREE CIRCUIT BREAKER DEVICE
Howard R. Shaffer, Glenside, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1966, Ser. No. 602,756
8 Claims. (Cl. 337—44)



A circuit breaker device which includes a manual operator for moving between the contact ON and contact OFF positions. Movable contact means includes an intermediate connecting member selectively engageable with a reset notch portion of the operating plunger. The connecting member is moved out of the notch as the movable contact makes bridging engagement with the stationary contact means. Under fault condition, the movable contact means can trip open to interrupt the breaker even if the plunger is in its ON condition.

3,419,839
CARTRIDGE FUSE HOLDERS
Benjamin William Matthews, Small Heath, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Apr. 3, 1967, Ser. No. 627,905
Claims priority, application Great Britain, Apr. 14, 1966, 16,347/66
5 Claims. (Cl. 337—188)



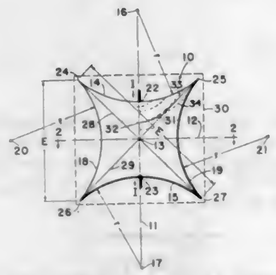
A cartridge-fuse holder comprising an insulating base having pairs of slots extending inwardly from opposite edges thereof and clips slidably engaged in each pair of slots respectively, the clips being adapted to support and make electrical connection to cartridge fuses in use.

3,419,840
COMPOSITION RESISTOR
Carl L. Wright, Youngstown, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 18, 1965, Ser. No. 508,498
3 Claims. (Cl. 338—226)



Carbon composition resistor having a pyrolytic silica dispersed in the composition.

3,419,841
SHEET RESISTORS HAVING INTEGRAL TAP POINTS
David Mark Makow, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Mar. 27, 1967, Ser. No. 626,094
9 Claims. (Cl. 338—308)

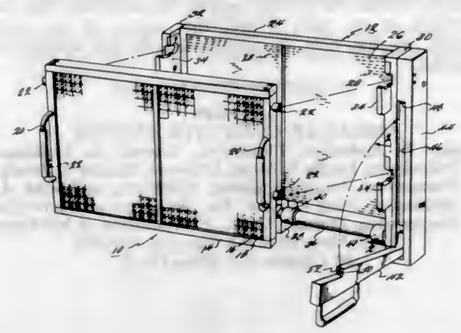


A fixed resistor of thin sheet or film form having opposed edges, between feed points on which a voltage may be applied to produce current flow along a current axis between the points and through the body of the resistor, at least one of these edges being shaped as an integral triangular projection extending at 30 to 45 degrees from the current axis to a pointed terminal at the tip of which the potential gradient is very low and a voltage proportional to the applied voltage may be tapped; one form is basically a rectangle from whose sides segments are removed to leave concave margins symmetric about the axis, permitting electrical ganging of the tips of cusps bounded by the margins which are at like potential.

3,419,842
MULTIPLE CONTACT ASSEMBLY
John E. Taylor, Jr., 413 Pine Ave., Waynesboro, Va. 22980
Filed Jan. 12, 1966, Ser. No. 520,104
5 Claims. (Cl. 339—18)

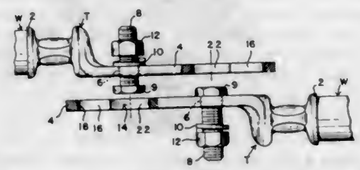
A multiple contact assembly for bringing contacts on a fixed assembly panel into engagement with contacts on a movable assembly panel. The two panels are first positioned with respect to one another by a hanger arrangement on one of the panels. In this position the movable panel is operatively related to a cam arrangement which when actuated initially causes vertical and horizontal displacement of the contacts of the movable panel while

engaging the fixed panel's contacts, followed by a limited reverse vertical and horizontal displacement thereof. This



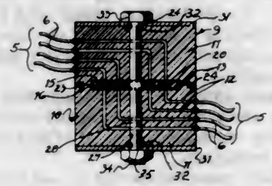
action produces double wiping of the contacts to achieve positive electrical connections.

3,419,843
DETACHABLE ELECTRICAL CONNECTOR
Kenneth Scott Hays, Exton, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Feb. 28, 1966, Ser. No. 530,664
3 Claims. (Cl. 339—47)



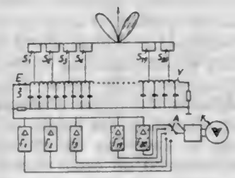
A connector for electrical conductors or the like comprises counterpart terminals each provided with a tongue having a hole and a keyhole slot and bolt means disposed in the hole, the tongues being connected together with the bolt means mating with the larger section of the keyhole slot and the terminals being moved relative to each other causing the bolt means to be disposed in the smaller section of the keyhole slot whereby the bolt means are tightened to secure the terminals together.

3,419,844
ELECTRICAL CONNECTOR
Edgar Schmued, 5051 Palos Verdes Drive N., Rolling Hills Estates, Calif. 90274
Filed July 12, 1965, Ser. No. 471,334
2 Claims. (Cl. 339—48)



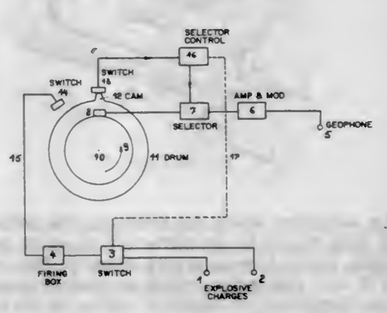
A multi-pin connector formed of a pair of mutually connectable terminal blocks in which lead wires are embedded, the terminal ends of the lead wires in one block being electrically joined with the terminal ends of the lead wires in the other block by ball shaped pellets of electrically conductive metal wire positioned and insulated from each other in an intermediate cavity provided between the two terminal blocks.

3,419,845
ECHO SOUNDING APPARATUS
Heinz A. E. Thiede, 28 J. Chr. Findorff-Strasse, 2804 Bremen-Lilienthal, Germany; Gunter F. W. Berkelmann, 55 Am Dobben, 28 Bremen, Germany; and Reinhard W. Leisterer, 9 Taubenstrasse, 2807 Achim, Bezirk Bremen, Germany
Filed June 1, 1967, Ser. No. 642,897
12 Claims. (Cl. 340—3)



The invention provides an apparatus for echo sounding, by which the angular locations of reflecting objects, relative to a vessel carrying the sounding apparatus, can be determined, this being accomplished by dividing the sounding transducer into strips which are connected to respective tappings on a compensation network which is so arranged that to each transducer strip a sounding signal is fed which differs in some predetermined characteristic from the sounding signals of adjacent strips, reflected signals received by the transducer strips being indicative of the said angular locations by virtue of their said predetermined characteristics.

3,419,846
METHOD FOR CUTTING OUT STRAY SIGNALS
Dominique Michon, Paris, France, assignor to Compagnie Generale de Geophysique, Paris, France
Filed May 22, 1967, Ser. No. 640,133
Claims priority, application France, May 20, 1966, 62,223
8 Claims. (Cl. 340—15.5)

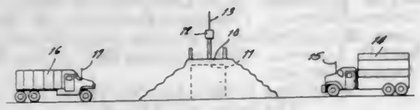


A method for cutting out strays of a substantially constant amplitude and frequency such as those produced by the mains out of the compound record formed by adding the records of similar signals produced in sequence at uniform intervals chiefly for seismic purposes, said method consisting in shifting the beginning of each record by a value $K/f+1/Nf$ wherein K is an integer, f the frequency of the strays and N the number of records. The addition of N records wipes out the sum of the N sinusoidal stray voltages thus phase-shifted by $2\pi/N$ corresponding to said fraction $1/Nf$.

3,419,847
LOW BRIDGE WARNING DEVICE FOR VEHICLES

Robert S. Bonney, 518 Wildwood Road, West Allenhurst, N.J. 07711

Filed Jan. 28, 1966, Ser. No. 523,667
10 Claims. (Cl. 340—22)

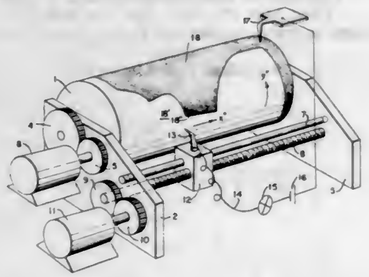


1. A height clearance indicator system comprising, a transmitting device positioned adjacent to an obstruction to limit the height of a vehicle about to pass under it, said transmitting device including an oscillator for generating a predetermined radio carrier frequency, a modulator for modulating the carrier frequency at a modulation frequency related to the height of the obstruction, and an antenna for radiating the modulated wave, a receiving circuit mounted on each vehicle which may attempt to pass under said obstruction, said receiving circuit including an antenna, a tuning circuit adjusted to receive said carrier frequency, a demodulator for rectifying the receiver wave to produce the modulating frequency, a high-pass electrical filter adjusted for passing only those frequencies which are above a frequency related to the height of the vehicle, and a signal device connected to the filter for producing a signal when the vehicle has clearance for passing under the obstruction.

3,419,848
NAVIGATIONAL SYSTEM

Erich Zipse, Oftersheim, and Horst Brendes, Sandhausen, Germany, assignors to Teldix Luftfahrt-Austrustungs-G.m.b.H., Heidelberg-Wieblingen, Germany

Filed May 10, 1965, Ser. No. 454,360
Claims priority, application Germany, May 14, 1964, T 26,190
11 Claims. (Cl. 340—24)

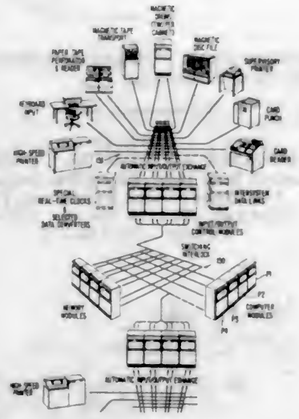


An indicating device for indicating the position of a craft with respect to the surface of the earth and which includes means forming a map whose surface is divided into at least two regions which are scale representations, in two dimensions, of respective regions on the surface of the earth. The regions of the map are constituted by surface portions having different electrical conductivity with one of the surface portions being an electrically conductive surface portion. An electric contact is arranged to engage the surface of the map means, and means are provided for causing the means and the contact slide to occupy a position relative to each other which is representative of the position of the craft with respect to the surface of the earth. Signaling means are connected in circuit with at least the electrically conductive surface portion of the map means and the electric contact slide for indicating whether or not the slide is in engagement with the electrically conductive surface portion. A signal which indicates that the contact slide engages the electrically conductive surface portion thus indicates that the position of the craft is over that region of the earth which, on the map, is represented by this conductive portion.

3,419,849
MODULAR COMPUTER SYSTEM

James P. Anderson, Flourtown, Samuel A. Hoffman, Erdenheim, Lucile E. Mott, Ardmore, Stanley J. Pezely, Norristown, Joseph Shifman, Villanova, and John A. Wilkinson, West Chester, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 30, 1962, Ser. No. 246,855
20 Claims. (Cl. 340—172.5)



1. A modular data processing system, comprising in combination:

a plurality of identical computer modules,

a plurality of memory modules,

a plurality of input-output control modules,

a bus for connecting each of said input-output control modules to all of said memory modules,

a plurality of buses for respectively connecting each of said computer modules to each of said memory modules,

switch interlock means distributed within said memory modules assigning a predetermined priority to said buses over which one of said memory modules happens to be simultaneously addressed.

each of said computer modules including interrupt means,

each of said interrupt means responsive to a plurality of interrupt conditions causing its associated computer module to address via one of said plurality of buses a storage location within said memory modules containing a program for servicing the particular interrupt condition to which said interrupt means is responding,

each of said interrupt means including an interrupt register providing each computer module with the capability of responding to all of said plurality of interrupt conditions,

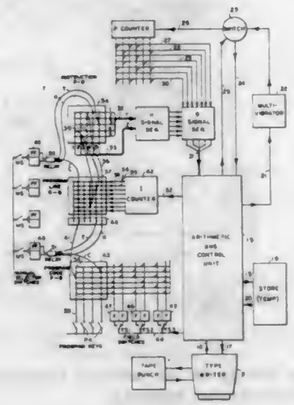
mask register means connected to said interrupt register permitting its associated computer module to respond only to selected ones of said interrupt conditions,

each of said make register means including means for changing one or more of said selected ones of said interrupt conditions to which its associated computer module responds.

3,419,850
PROGRAMMABLE COMPUTER UTILIZING NONADDRESSABLE REGISTERS

Jan Krammer, Nijmegen, Netherlands, assignor to Friden, Inc.

Continuation-in-part of application Ser. No. 471,313, July 12, 1965. This application Oct. 21, 1965, Ser. No. 499,537
65 Claims. (Cl. 340—172.5)

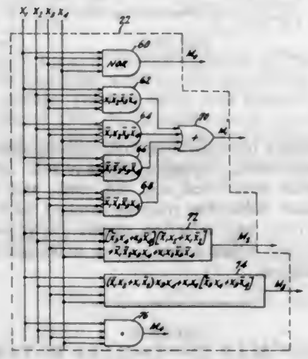


A programmable computer is disclosed which has several storage registers, selected ones of which are capable of cooperating as a working pair of nonaddressable registers. A means is provided for interchanging the active and passive registers prior to the entry of a nonaddressed number into the active register. A program means is also provided which causes a predetermined program sequence to be performed by the arithmetic and control unit of the computer in response to the combination of an activated manual program selecting device and a position of a movable portion of the input-output unit.

3,419,851
CONTENT ADDRESSED MEMORIES

Joseph R. Burns, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 3, 1965, Ser. No. 506,245
6 Claims. (Cl. 340—172.5)

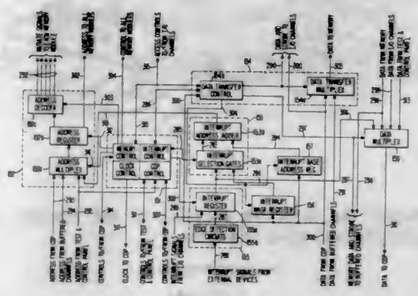


A digital manifestation is derived from each word stored in a content-addressed memory which manifestation is indicative of the degree of match of that word with a tag word. In response to these manifestations, words in the memory having any desired degree of match to the tag word are read out.

3,419,852
INPUT/OUTPUT CONTROL SYSTEM FOR ELECTRONIC COMPUTERS

Hans B. Marx, Broomall, and Bruce W. Nutting, West Chester, Pa., and Thomas Marra, Cherry Hill, N.J., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Feb. 14, 1966, Ser. No. 527,322
14 Claims. (Cl. 340—172.5)

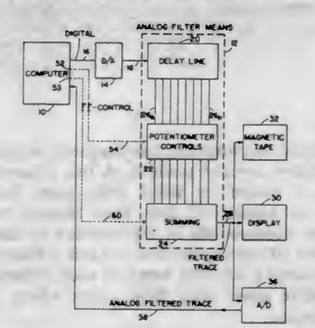


The present disclosure describes an input-output control unit for a modular computer system having as its principal subdivision, a "module interface control" and whose function is the providing of interface between various units of the computer system, the governing and controlling of communications therebetween and the timing synchronizing of the system.

3,419,853
ANALOG-DIGITAL SYSTEM FOR PROCESSING SEISMIC SIGNALS

Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed May 4, 1966, Ser. No. 547,650
16 Claims. (Cl. 340—172.5)



This invention concerns a hybrid type filtering system using a digital computer in conjunction with an analog computer whereby the best features of each are utilized. Novel analog filtering means are disclosed.

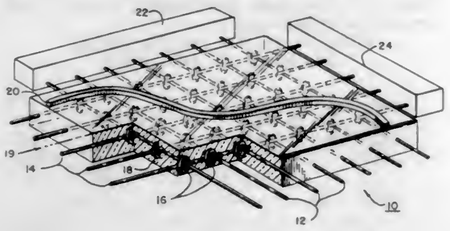
3,419,854
MAGNETICALLY SELECTED GATE

Gerald L. Mohnkern, Las Cruces, N. Mex., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 28, 1964. Ser. No. 421,736
5 Claims. (Cl. 340—174)

This invention relates to a matrix network of circuits coupled at given intervals by saturable cores in a matrix configuration oriented in a plane. A flexible strip of permanently-magnetized material is positioned in any desired

curve or configuration of curves along the surface of said plane to saturate a given sequence of the saturable cores,

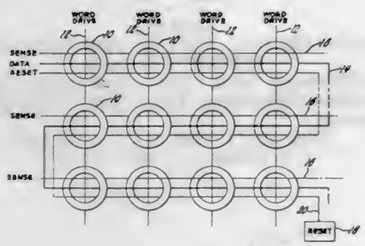


to reduce the inductive coupling of the circuits corresponding to said given sequence.

3,419,855
COINCIDENT CURRENT WIRED CORE MEMORY FOR COMPUTERS

Hayden A. Nelson, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 24, 1964, Ser. No. 420,960
16 Claims. (Cl. 340—174)



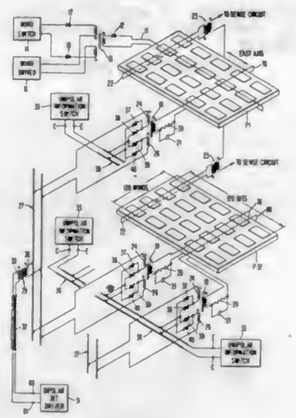
A fixed content toroidal core magnetic memory employing coincident current readout. A two dimensional array of cores is linked by word drive lines defining word columns. A bundle of data lines threads rows of the array, and corresponds in the number of conductors to the number of words storable in each column. Each data line represents a discrete word in each column and links in a positive sense only those cores where a "1" is to be represented.

3,419,856
WIRING ARRANGEMENT FOR A THIN FILM MAGNETIC MEMORY

Frederic C. Doughty, Valley Forge, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 10, 1964, Ser. No. 388,553
19 Claims. (Cl. 340—174)

A magnetic memory is provided with a stack of memory planes containing magnetic storage elements. Each memory plane can store a group of words and all of the bits of each word it stores. Word and bit lines are wired so as to restrict currents to a single selected plane, and so as to minimize noise voltages induced into sense lines, and to minimize delay of signals. Noise is further reduced by driving bit lines through transformer and diode networks. Driver circuits for the bit lines are operated selectively to both energize selected transformer and diode networks for driving selected bit lines and to

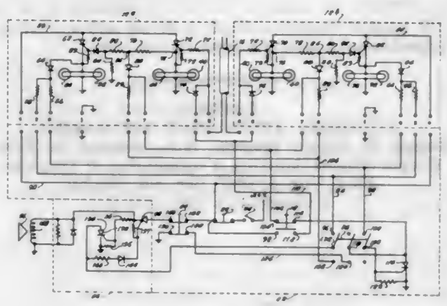


quench the energy in the selected transformers to obtain rapid transformer recovery.

3,419,857
ANNUNCIATOR SYSTEM

Merle E. Martin, Dallas, Tex., assignor to Beta Corporation, Dallas, Tex., a corporation of Texas

Filed Oct. 8, 1964, Ser. No. 402,653
8 Claims. (Cl. 340—213.1)



An annunciator for indicating malfunctions occurring in monitored equipment including three visual indications for each station monitored, e.g. red, pink, and white, at least one visual indication may be latched until the annunciator is reset and selection means are provided for choosing between either a first out or mark-acknowledge mode of operation.

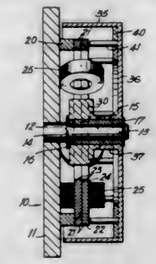
3,419,858
MAGNETICALLY CONTROLLED ROTATING INDICATOR

Alvin J. Silverman, Massapequa, and Albert Diamond, Plainview, N.Y., assignors to Vernitron Corporation, Farmingdale, N.Y., a corporation of New York

Filed Aug. 14, 1967, Ser. No. 660,399
9 Claims. (Cl. 340—378)

The device of the instant invention includes an annular array of selectively energizable salient poles having a

permanent magnet rotor mounted centrally of the poles. An indicia-carrying drum may rotate about the poles with

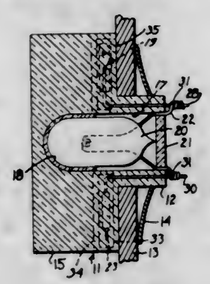


the rotor and carry at least one magnetic formation slightly offset with respect to the magnetic axis of the rotor.

3,419,859
MESSAGE ANNUNCIATOR OR SIGNAL UNIT

William R. Beall, 649 Solway St., Glendale, Calif. 91206

Filed July 19, 1965, Ser. No. 473,153
4 Claims. (Cl. 340—381)

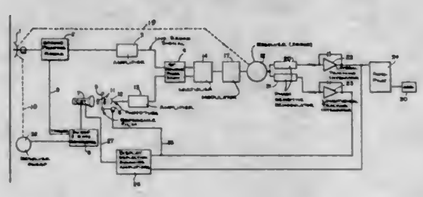


A lamp signal unit for mounting on a panel where the electrical components for operating the lamp are located in the head of the device, in front of the panel and surrounding the signal lamp. The lamp, head, and body are configured such that minimum space is occupied by the unit at the rear of the panel and maximum size is given to the head or message area of the device.

3,419,860
VIDEO PHASE COMPARISON GUIDANCE SYSTEM FOR AIRCRAFT AND THE LIKE

Carl A. Helber, Dayton, Ohio, and Claude J. Pasquier, Long Island City, N.Y., assignors to Goodyear Aerospace Corporation, a corporation of Delaware

Filed Mar. 14, 1957, Ser. No. 646,041
7 Claims. (Cl. 343—7)

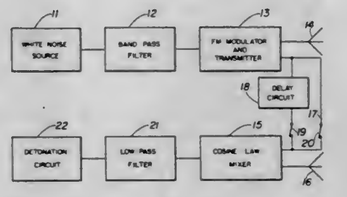


4. A guidance system for aircraft and the like including means for producing a live video signal of the terrain over which the aircraft is flying, means for producing a stored video signal of the terrain over which the aircraft should be flying, means for effecting a 90° phase shift between the signals, means for multiplying the phase shifted signals to produce an error signal, means for resolving the error signal into lateral and longitudinal vector voltages, and means operated by said vector voltages for returning the aircraft to course and for reducing said error signal to zero.

3,419,861
RANDOM FREQUENCY MODULATION CORRELATION FUZE SYSTEM

Arnold E. Resnik, Ontario, and William F. Williams, San Fernando, Calif., assignors to United States of America as represented by the Secretary of the Navy

Filed June 26, 1956, Ser. No. 594,070
4 Claims. (Cl. 343—7)

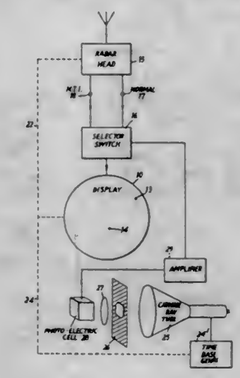


1. A Doppler fuze system comprising means for transmitting a signal having a carrier modulated by random noise, means for mixing the return echo signal with an undelayed signal and a delayed signal from the transmitter, and means for deriving a trigger signal suitable for actuating the fuze from the output of said mixing means.

3,419,862
P.P.I. RADAR APPARATUS

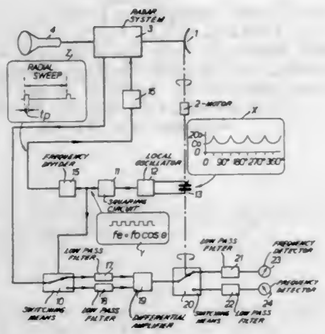
Robert Neal Harrison, Camberley, and Kenneth Lockhart Richardson, Stanwell, England, assignors to The Solartron Electronic Group Limited, Farnborough, Hampshire, England, a corporation of Great Britain

Filed Sept. 29, 1967, Ser. No. 671,734
2 Claims. (Cl. 343—7.7)



In P.P.I. radar apparatus, permanent echoes are removed from the display by selecting M.T.I. signals for display only in those regions where permanent echoes exist. A signal generator generates switching pulses in synchronism with the display and corresponding to permanent targets and these are applied to effect selection of normal or M.T.I. radar signal for display by means of a selector switch.

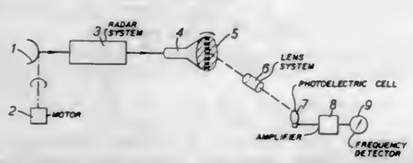
3,419,863
SPEED MEASURING APPARATUS
John Henry Reginald Lewis, Theydon Bois, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 21, 1967, Ser. No. 661,966
Claims priority, application Great Britain, Aug. 23, 1966, 37,840/66
8 Claims. (Cl. 343—8)



A radar for a vehicle in which video signals are branched off and blanked or gated at a frequency which is substantially constant with relation to an individual radial scan of the P.P.I. but which is varied as a function of the angular deflection of the scan from a datum. The gated video signal, which will contain a major frequency component signal proportional to the speed of the vehicle in the datum direction, is passed through a low pass filter to remove the gating frequency and thence to a frequency meter which will produce an output corresponding to the major component of frequency and thus corresponding to the speed of the vehicle in said datum direction.

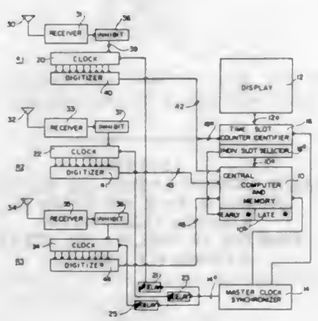
In the described embodiment the video signals are gated alternately between two paths both feeding a differential amplifier and each having an individual low pass filter whereby the output corresponding to said major frequency component signal is amplified but noise and disturbing signals generated in the receiver are substantially cancelled. A further switch may be provided to enable the datum direction to be varied.

3,419,864
SPEED MEASURING APPARATUS
John Henry Reginald Lewis, Theydon Bois, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 21, 1967, Ser. No. 661,967
Claims priority, application Great Britain, Aug. 23, 1966, 37,839/66
10 Claims. (Cl. 343—8)



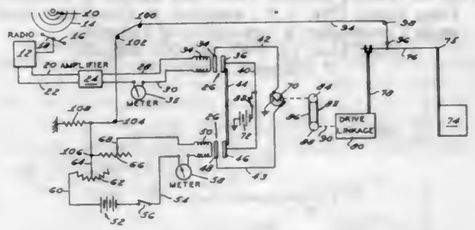
Apparatus is known for measuring the speed of a moving member in relation to a reference point using a light source and a light cell which receives light reflected from the moving member. In such arrangements motion of the moving member modulates the light. In the invention a photo cell is subjected to light from a P.P.I. display in a tube having a graticuled mask on its face. In operation output from the cell is passed to a frequency meter which is calibrated to read speed and arranged to detect a major component of frequency derived from the movements of the display across the tube.

3,419,865
MOBILE EMERGENCY UNIT LOCATING SYSTEM
John P. Chisholm, Rte. 1, Koloa Kauai, Hawaii 96756
Filed May 10, 1967, Ser. No. 637,501
8 Claims. (Cl. 343—112)



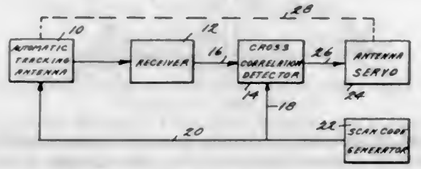
A system for continuously locating the positions of police cars or other special units in a metropolitan area and providing a continuous display of these locations for the purpose of showing the distribution of units, especially in the vicinity of a reported crime, the system including a plurality of receiver stations all synchronized to a common clock system; and each police unit being equipped with a pulse transmitter and a clock to actuate the local pulse transmitter during a unique time slot assigned to that unit; and all receivers delivering information to a central computer which determines the differences in times-of-arrival of the same pulse signal from a mobile unit and computes therefrom the position of the mobile unit by solving simultaneous hyperbolic relationships.

3,419,866
AUTOMATIC PILOT AND METHOD
George M. Holley, Jr., 510 Sheldon, Grosse Pointe, Mich. 48236
Filed May 17, 1967, Ser. No. 639,090
11 Claims. (Cl. 343—117)



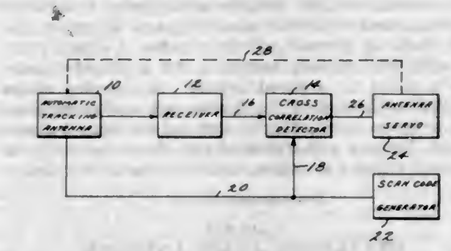
This disclosure relates to an inexpensive automatic pilot having particular utility for marine applications, and wherein a directional antenna on the vessel is adjusted relative to a fixed distant radio transmitter, when the vessel is on its proper course, such that deviation from such course causes the output characteristic of a radio receiver connected to the antenna to increase or decrease in accordance with the direction of the deviation, and such output characteristic's variation is utilized to automatically control the vessel's steering gear by comparing it with a reference characteristic.

3,419,867
AUTOMATIC TRACKING SYSTEM UTILIZING CODED SCAN RATE
Peter M. Pifer, Atlanta, Ga., assignor to Scientific-Atlanta, Inc., Atlanta, Ga., a corporation of Georgia
Continuation of application Ser. No. 587,608, Oct. 18, 1966. This application Feb. 21, 1968, Ser. No. 707,335
6 Claims. (Cl. 343—113)



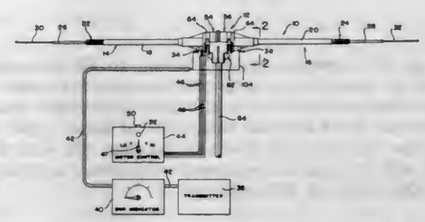
Disclosed in this application is an antenna tracking system in which the antenna beam is modulated as a measure of the deviation of the line-of-sight to the target from the boresight axis of the antenna in such a continually changing coded manner as to make that modulation distinguishable from other modulation, including extraneous signals, present on the incoming signal received by the antenna. The antenna beam is moved in accordance with a coded scan control signal whose scan rate varies. That is, the rate of scan is coded. The same coded control signal is correlated with the signal that is received by the antenna, to distinguish the deviation measuring signal in order that the signal only is employed to derive antenna pointing-error signals which are therefore free of the other modulation received by the antenna.

3;419,868
AUTOMATIC TRACKING SYSTEM UTILIZING CODED SCAN SEQUENCE
Lorimer Clayton, Jr., Atlanta, Ga., assignor to Scientific-Atlanta, Inc., Atlanta, Ga., a corporation of Georgia
Continuation of application Ser. No. 587,528, Oct. 18, 1966. This application Apr. 5, 1968, Ser. No. 719,265
16 Claims. (Cl. 343—113)



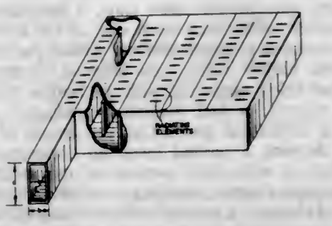
Disclosed in this application is an antenna tracking system in which the antenna beam is modulated as a measure of the deviation of the line-of-sight to the target from the boresight axis of the antenna in such a continually changing coded manner as to make that modulation distinguishable from other modulation, including extraneous signals, present on the incoming signal received by the antenna. The antenna beam is moved in accordance with a coded scan control signal which has a changing scanning pattern that is at least pseudo-randomly coded. That same coded control signal is correlated with the signal received by the antenna, to distinguish the deviation measuring signal in order that that signal only is employed to derive antenna pointing-error signals which are therefore free of the other modulation received by the antenna.

3,419,869
REMOTELY TUNED RADIO ANTENNA
John Altmayer, Euclid, Ohio, assignor, by mesne assignments, to New-Tronics Corporation, Brook Park, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 327,713, Dec. 3, 1963. This application Oct. 2, 1967, Ser. No. 676,003
11 Claims. (Cl. 343—703)



A dipole antenna having a feed point approximately midway between its ends wherein: each element can have its electrical length simultaneously increased or decreased whereby the resonant frequency of the antenna can be changed at will to the frequency of the transmitter; or the electrical length of one element can be increased or decreased relative to the electrical length of the other element whereby the impedance of the feed point may be varied to match the impedance of the feed line.

3,419,870
DUAL-PLANE FREQUENCY-SCANNED ANTENNA ARRAY
Sam H. Wong, Los Angeles, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed May 24, 1965, Ser. No. 458,113
9 Claims. (Cl. 343—768)

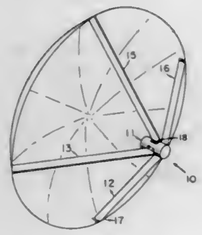


A dual-plane frequency-scanned antenna array employing a single continuous regularly-folded radiating feedline having a plurality of radiating elements arranged in a coplanar matrix.

3,419,871
ANTENNA FEEDHORN SUPPORT STRUCTURE

Albert Cohen, Stow, Mass., and Charles W. Creaser, Jr., Amherst, N.H., assignors to Communication Structures Incorporated, West Concord, Mass., a corporation of Massachusetts

Filed Oct. 23, 1965, Ser. No. 503,749
8 Claims. (Cl. 343—781)

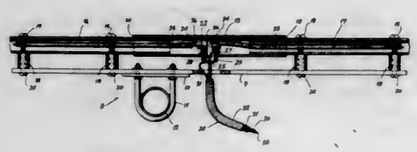


In an RF antenna assembly having an RF feed supported by spars from a reflector, the spars are made of ogival cross section in which two arcs symmetrical about a common chord intersect each other at acute angles to form the edges of each spar, and the spars are each disposed with its edges facing respectively toward and away from the source of RF radiation.

3,419,872
DIPOLE ANTENNA HAVING COAXIAL CABLE ARMS CAPACITIVELY COUPLED TO SPACED TUBULAR RADIATORS

Wallace E. St. Vrain, Kirkwood, and Joseph J. Mandino, Bridgeton, Mo., assignors to Mosley Electronics, Inc., Bridgeton, Mo., a corporation of Missouri

Filed June 23, 1966, Ser. No. 559,817
3 Claims. (Cl. 343—792)

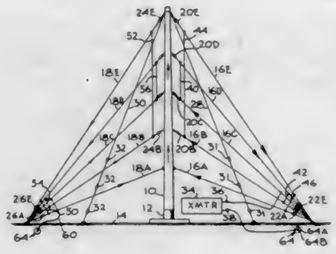


1. An antenna assembly comprising a support, a central hollow tube having open ends, a first antenna element received within one open end of the hollow tube, a second antenna element received within the other open end of the hollow tube, both antenna elements being hollow and being supported with the hollow tube on the antenna support, a first insulated conductor extending through a substantial portion of the length of the first antenna element, a second insulated conductor extending through a substantial portion of the length of the second antenna element, forming a capacitor between conductor and element, a coaxial cable, the coaxial cable having the conventional hot line and ground conductor separated by insulation, first means for connecting the first conductor to the hot wire of the coaxial cable, and second means insulated from the first means for connecting the second conductor to the ground conductor of the coaxial cable.

3,419,873
MONOPOLE ANTENNA

Robert L. Tanner and Mogens G. Andreasen, Menlo Park, and Frank B. Harris and Edward M. T. Jones, Portola Valley, Calif., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Delaware

Filed Dec. 9, 1964, Ser. No. 417,074
2 Claims. (Cl. 343—847)

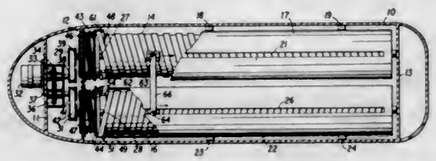


There is provided an arrangement for interconnecting the guy wires which support a monopole antenna having top load conductors, to provide an inductance which is connected for tuning the antenna. In addition, a novel ground current distribution system is provided which reduces the ground current resistance loss.

3,419,874
MECHANICAL TUNING ARRANGEMENT FOR DUAL HELIX WINDING ANTENNA (COMPACT ANTENNA, 30–76 MEGACYCLES)

Robert M. Moorehead, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Dec. 10, 1965, Ser. No. 513,039
8 Claims. (Cl. 343—877)



A compact variable inductor arrangement is achieved by using a reel of flexible conducting tape in conjunction with a helically grooved cylinder member. A second cylinder with longitudinally extending slot is placed concentrically about the grooved cylinder. A clamping means attached to the end of the flexible tape and cooperating both with the outer cylinder slot and the inner cylinder groove, forces a withdrawal of tape from the supply as the inner cylinder is rotated relative to the outer cylinder.

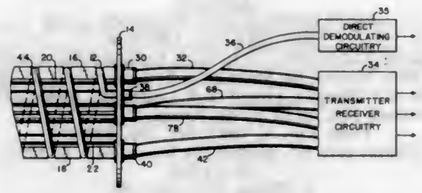
3,419,875
MULTI-MODE HELIX ANTENNA

Jorgen Aasted, San Diego, Calif., assignor to Ryan Aeronautical Company, San Diego, Calif.

Filed Aug. 8, 1966, Ser. No. 571,075
11 Claims. (343—895)

1. A mono-pulse helix antenna for transmitting or receiving high frequency radiation patterns comprising, helically shaped conductor means,

stripline circuit means positioned within the volume of said helically shaped conductor means for selectively feeding or receiving high frequency energy to or from said helically shaped conductor means along the length thereof,



and ground plane means positioned within the volume defined by said stripline circuit means.

3,419,876
STREAMLINED ANTENNA AND METHOD OF MAKING THE SAME

Eugene A. Edwards, Cleveland Heights, and George M. Winterstein, Cleveland, Ohio, assignors to Tenatronics Ltd., Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 26, 1964, Ser. No. 392,195
7 Claims. (Cl. 343—901)

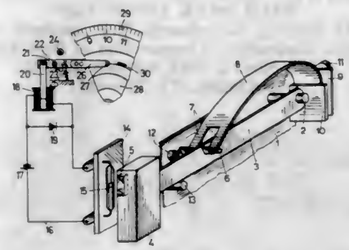


6. A telescopic antenna in which at least two adjacent telescopic sections each have a prolate cross-section comprising a first inner section having a prolate cross-section, a second adjacent tubular section having a prolate cross-section substantially corresponding in configuration to the cross-section of the adjacent inner section and telescopically assembled on said first section with the axes of said cross-sections in substantial alignment, a spring contact carried by said first section and secured adjacent the lower end thereof, the inner circumference of said second section being sufficiently larger than the outer circumference of said first section to receive said first carrying spring contact in a compressed condition, and a flexible packing ring carried by the upper end of said second section, said packing ring having an internal surface in sealing engagement with the surface of said first section above said contact, and a viscous anti-rattling material substantially filling the void between said first and second sections when telescoped to the minimum length of said antenna, whereby said packing ring seals said viscous material within said antenna and serves as a stop limiting the maximum extension of said sections with respect to each other, and a mounting fixture closing the integral space in said antenna.

3,419,877
VIBRATORY RECORDER

Werner Roth, 7741 Buchenberg, 152 Dorfle, Germany

Filed Oct. 12, 1966, Ser. No. 586,185
Claims priority, application Germany, Oct. 15, 1965, K 57,400
10 Claims. (Cl. 346—7)

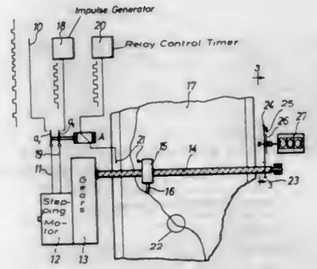


In a vibratory recording instrument a recording arrangement is provided. An electric circuit includes a voltage source, a switch which is adapted to be opened and closed by a magnetic field, and electric actuating means which is connectable to and disconnectable from the source by the switch and is connected with the recording means for operating the same. A support is provided. A vibratory arrangement is mounted on the support so that movements of the support result in vibration of the vibratory arrangement. A magnet is carried by the vibratory arrangement proximal to but out of engagement with the switch and produces, when the vibratory arrangement vibrates, an oscillating magnetic field adjacent the switch which effects opening and closing of the same so that the recording means is correspondingly intermittently actuated.

3,419,878
RECORDER WITH REVERSIBLE PEN DRIVE

Klemens Maurer, Solingen, Germany, assignor to Sunvic-Regler GmbH, Solingen-Wald, Germany

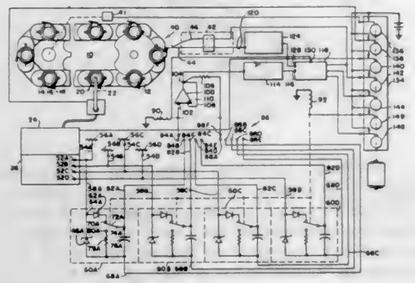
Filed May 10, 1967, Ser. No. 637,379
Claims priority, application Austria, May 27, 1966, A 5,042
9 Claims. (Cl. 346—14)



An indicating or recording device has an indicating or pen member movable by a drive whose direction of rotation can be reversed by a timer and wherein the measured input values in the form of an impulse sequence are applied to a stepping motor, and the indicating or pen member is moved as a function of the movement of the stepping motor. The drive for the indicating member is through a threaded spindle. In one form the spindle is

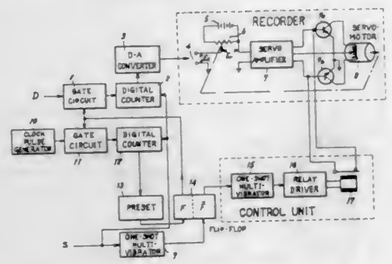
connected to a counter through a one-way clutch so as to integrate the input pulses. In another variation the input comprises a second stepping motor connected to a differential, to which differential the threaded spindle is connected so that an error signal can be obtained from the differential.

3,419,879
MULTIPLE CHANNEL ANALYSIS SYSTEM WITH PEAK DETECTION
Milton H. Pelavin, Greenburgh, N.Y., assignor to Technicon Cororation, a corporation of New York
Filed Nov. 2, 1964, Ser. No. 408,026
8 Claims. (Cl. 346—33)



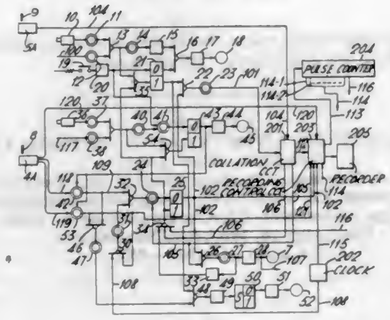
A sequential sample, multichannel, liquid flow, analytical system has a detector for each channel and a null-balance chart recorder cyclically coupled to each detector. A capacitor for each channel is coupled to the sliding tap of the balancing circuit for the recorder for detecting and storing the peak value of the curve plotted for that channel; a digital voltmeter is coupled to each capacitor for providing an analogue to digital conversion; and a digital recording device is coupled to said voltmeter.

3,419,880
X-RAY DIFFRACTION RECORDING SYSTEM
Yasumasa Takano, Hitoshi Miura, and Tadamasa Yamamoto, Tokyo, Japan, assignors to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Dec. 16, 1966, Ser. No. 602,271
Claims Priority, application Japan, Dec. 17, 1965, 40/77,751
8 Claims. (Cl. 346—33)



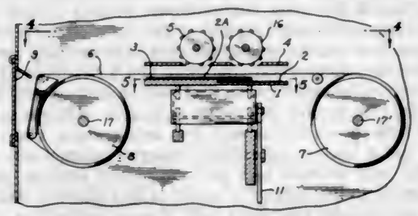
A step scan recording apparatus and method for measuring X-ray diffraction intensities. The apparatus has a mechanism that controls a goniometer and initiates a pulse that is transmitted to a counter circuit. The counter circuit remains open after being initiated by the pulse for a predetermined time in which it digitally counts signals generated by a detector. The digital count is converted to an analog voltage that is used to drive a servomotor that is geared to a recording pen and potentiometer. The servomotor is controlled by the potentiometer and a control circuit, such that the recording pen plots the relation between the intensity of diffracted X-rays and the Bragg angle.

3,419,881
EMPLOYEE CARD SENSING AND RECORDING DEVICE
Mititaka Yamamoto, 17 Ryoanji Gotanda-cho, Ukyo-ku, Yukio Mizuta, 68 Mukaijima Ninomaru-cho, Fushimi-ku, and Shizuya Ano, 172–9 Uguisudai, Nagaoka-cho, Otokuni-gun, all of Kyoto, Japan
Filed Apr. 4, 1967, Ser. No. 628,474
Claims priority, application Japan, Apr. 6, 1966, 41/21,865
3 Claims. (Cl. 346—42)



This invention provides a recording control apparatus which is adapted to be installed at an entrance and exit of an office, manufacturing plant, laboratory or such other places, and which is capable of automatically and selectively recording various items of information about the passage of employees through the gateway, such as the identification number of each employee, the time at which each passage occurred, the number of hours of overtime work, and so forth. Schematic circuit diagrams are provided which disclose the details of one preferred system making use of employee identification cards and justification or reason cards selectively used therewith when an employee passes through the entrance or exit.

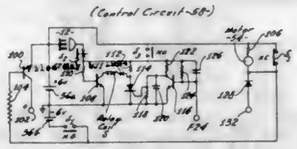
3,419,882
AUTOMATIC RECORDING OF MOTOR FUEL SALES FROM DISPENSING PUMPS WITH INFORMATION FROM INSERTED CREDIT CARD
Herman J. Schroeder, 1710 E. Mendocino St., and Ralph E. White, 1699 E. Mendocino St., both of Altadena, Calif. 91001
Filed Apr. 5, 1966, Ser. No. 540,337
6 Claims. (Cl. 346—43)



A method and apparatus for automatically recording and billing the sales of motor fuels, for example, from fuel dispensing pumps. The apparatus includes a printing

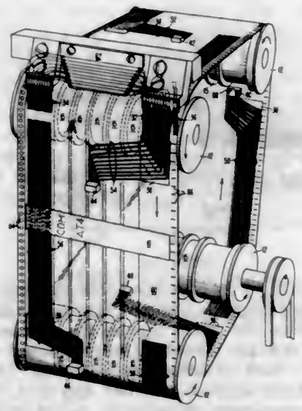
plate member upon which billing forms may be placed so that the billing forms may be moved into contact with printing rollers for thereby recording various detailed information relating to the sale of motor fuels and the like.

3,419,883
DATA ACQUISITION AND RECORDING SYSTEM
Jacob Chapsky, Los Angeles, Calif., assignor, by mesne assignments, to Lockheed Aircraft Corporation, Plainfield, N.J., a corporation of California
Filed May 5, 1964, Ser. No. 365,019
4 Claims. (Cl. 346—74)



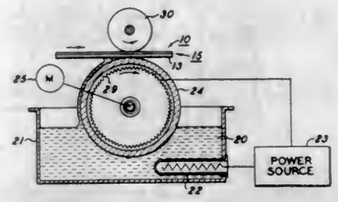
Tape recording meter reading unit featuring a timing switch driven by the tape drive and having a position corresponding to the advancement of the tape by a length just sufficient to receive a cycle of data from one meter, and a control switch wired to the drive so that the drive can be activated by turning on the control switch and the drive will automatically be turned off by the timing switch at the end of the cycle and disabled from subsequent activation for a new cycle until the control switch is returned to its off position.

3,419,884
ELECTROGRAPHIC PRINTER
Peter Betts, Donald R. Reichel, and Everett T. Eiselen, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1964, Ser. No. 378,886
4 Claims. (Cl. 346—74)



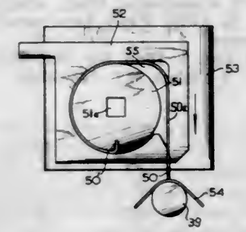
An electrographic printer for impressing an image on paper wherein a plurality of heads held on an endless belt are moved into proximity with the paper and energized in response to an incoming signal to print an image thereon. Thereafter the paper is passed through toning and fixing stations for developing the image.

3,419,885
IMAGE DEPELOPMENT OF THERMOPLASTIC LAYERS
Peter P. Augostini. Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,174
4 Claims. (Cl. 346—74)



This invention relates to method and apparatus for the imagewise development of a thermoplastic deformable layer wherein the image charge pattern bearing surface of the deformable thermoplastic layer is brought into uniform thermal contact with an insulating liquid heated to at least the softening temperature of the thermoplastic layer.

3,419,886
ELECTRIC PRINT-OUT APPARATUS
Alfred Ortlieb, Stuttgart-Vaihingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Mar. 9, 1965, Ser. No. 438,256
Claims priority, application Germany, Mar. 13, 1964, B 75,891
9 Claims. (Cl. 346—74)

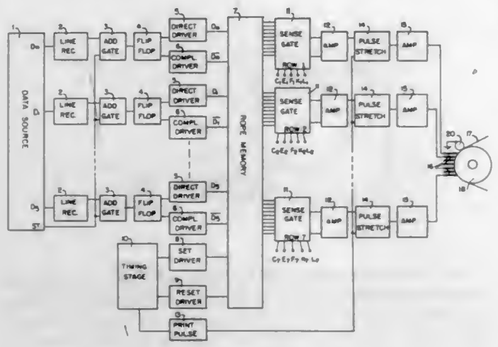


A print-out head including discs to whose peripheries electrode wires are secured adjacent a relatively moving record medium having a burnable layer. Information modulated voltages applied to the electrode wires effects a print-out in the burnable layer. The discs are rotatable to present additional electrode wire to the printing area as the electrode wire is consumed.

3,419,887
CHARACTER PRINTER UTILIZING A ROPE MEMORY
Joseph P. Moran, Chicago, and Robert Czajkowski, Wood Dale, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 7, 1965, Ser. No. 485,273
8 Claims. (Cl. 346—74)

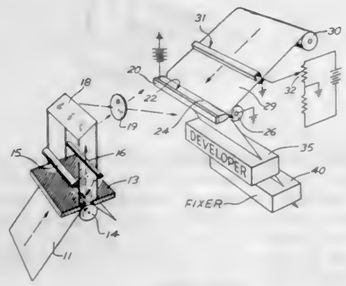
1. A high speed data processing system for generating electrical impulses derived from coded information and applied to a plurality of scanning electrodes for producing characters on a recording sheet by a plurality of dots arranged in rows and columns and with the selective

presence of dots forming predetermined characters, such system including in combination, a rope memory having a plurality of inhibit registers corresponding to the bits of coded information and a plurality of sense lines corresponding to the dots in the pattern of the character, a plurality of input circuits including line receivers each



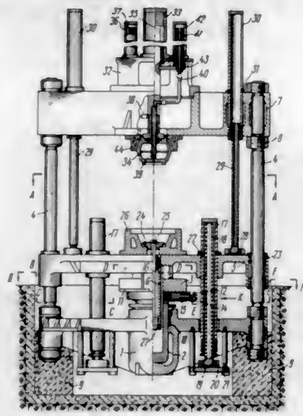
coupled to one of said inhibit registers, gate means coupled to said sense lines and combining said sense lines corresponding to the dots in each row into a group and providing a group for each row of a character, said gate means including output means for each group, and pulse amplifier and shaper means coupling each output means to one of said scanning electrodes.

3,419,888
ELECTROSTATIC REPRODUCTION SYSTEM
Robert M. Levy, Kalamazoo, Mich., assignor, by mesne assignments, to Allied Paper Incorporated, a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,549
3 Claims. (Cl. 346—74)



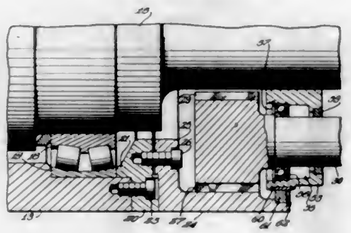
An electrostatic copier suitable for office use. The light image of the original copy to be reproduced is directed by a lens system against a conductive, photocathode surface which is maintained at a negative potential. Those areas of the photocathode surface which are illuminated emit photoelectrons. These liberated electrons are attracted across a narrow gap toward a target made up of a series of closely spaced conductors embedded in an insulating material. The resulting current flow in the target conductors deposits a latent charge image upon a dielectric surface, the charge image being developed by known xerographic techniques.

3,419,889
HYDRAULIC PRESS FOR MANUFACTURING HOLLOW RUBBER ARTICLES, E.G., DIAPHRAGMS FOR TYPE SHAPERS-VULCANIZERS
Grigory Nickolaevich Krugljachenko, Nickolai Iljich Alexeev, Natan Iosifovich Naiguz, Vladimir Emmanuilovich Leibovich, Grigory Izraljevich Shmunis, and Mikhail Galileevich Brandenburgsky, Odessa, U.S.S.R., assignors to Zavod Pressov, Odessa, U.S.S.R.
Filed Oct. 14, 1964, Ser. No. 403,866
5 Claims. (Cl. 18—17)



A hydraulic press having a plunger of a main cylinder provided with a hole which can be closed during the press operation by shutters moving along guide rails on the upper end of the plunger. The force of the plunger is imparted to a moving crossarm which is connected to an intermediate rod which is slidable in the hole of the plunger at the end of travel of the intermediate rod.

3,419,890
CROWN ROLL DRIVE
Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Nov. 18, 1965, Ser. No. 508,447
5 Claims. (Cl. 29—115)

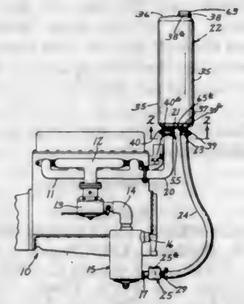


Support and drive for controlled deflection roll in which controlled nip pressure is obtained between a roll couple, and the drive to the roll is around the support for the roll. The roll is in the form of a shell supported on a stationary center shaft on self-aligning bearings. The center shaft is rockingly supported at one end in a stationary housing, accommodating bending of the shaft about its opposite ends by the nip correcting pressures acting against the shaft. The drive is in the form of spaced internal gears journalled on the center shaft, on opposite sides of the support for the center shaft and geared drive connections between the internal gears journalled in cages supported on opposite sides of the support for the center shaft.

3,419,891
METHYL METHACRYLATE RESIN DENTURE PLATES CONTAINING EMBEDDED VEIN-SIMULATING SHORT-LENGTH STRANDS OF NONPLASTICIZED, LOW SHRINKAGE FIBERS OF POLYVINYL CHLORIDE HAVING AN AFNOR INDEX GREATER THAN 450
John A. Cornell, Philadelphia, Pa., assignor to Sartomer Resins, Inc., Essington, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1966, Ser. No. 578,613
3 Claims. (Cl. 32—2)

A molded denture comprising a mixture of methyl methacrylate polymer and methyl methacrylate monomer in which are embedded vein-simulating short-length strands of nonplasticized fibers of polyvinyl chloride having an Afnor index greater than 450.

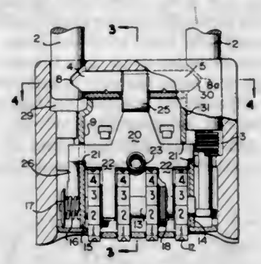
3,419,892
EXHAUST EJECTOR
Wayne M. Wagner, Rosemount, and William R. Wolff, Newport, Minn., assignors to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,699
5 Claims. (Cl. 60—30)



A combination muffler and air ejector unit for internal combustion engines that utilize an air cleaner incorporating means to scavenge the dust therefrom to improve efficiency. The muffler housing contains a plurality of chambers into which the exhaust gases are introduced. The expanded gases are then forced through an ejector tube mounted in the muffler housing. The ejector tube comprises a venturi through which the gases pass at an increased velocity causing a reduction in static pressure. One end of an air intake tube is mounted in the venturi and the other end is connected to the air cleaner by a flexible scavenging line, preferably having a check valve mounted therein, to scavenge dirty air from the cleaner during engine operation.

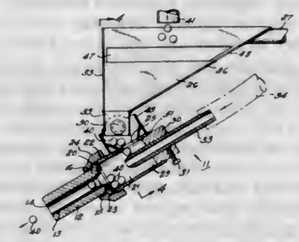
3,419,893
PERMUTATION LOCKS
Carl A. Vahlstrom, New Britain, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed June 13, 1966, Ser. No. 556,962
7 Claims. (Cl. 70—24)

A lock structure in which a fulcrumed blocking lever is provided which upon pivotal movement in a first direction prevents disengagement of a lock securing element from a lock body. The blocking lever is pivoted on a pivot means intermediate its ends which is releasable from a pivot mounting in the lock body. The blocking means of said lever is on one side of the pivot means and a locking means engages the lever on the opposite side of said pivot means. A single spring engages the blocking lever between the pivot means and the locking means, this single spring means performing the multiple functions of biasing said lever in a second direction out of blocking engage-



ment, biasing said pivot means against its mounting with a relatively strong force, and biasing said blocking lever against said locking means with a relatively light force.

3,419,894
PEENING NOZZLE
Harold W. Burney, Hackensack, N.J., and Fred K. Landecker, Los Angeles, Calif., assignors to Metal Improvement Company, Carlstadt, N.J., a corporation of New Jersey
Filed Apr. 1, 1966, Ser. No. 539,431
5 Claims. (Cl. 72—53)

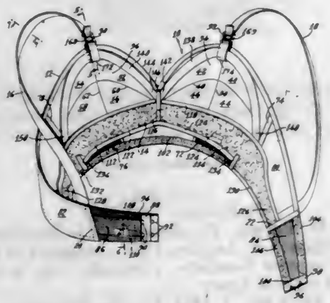


This disclosure is directed to a nozzle for ejecting shot at high velocity for peening operations. The nozzle is fed from a hopper with the input peening shot being all supplied under a like head. The nozzle further is capable of being pivoted so that the uniformity of the head with respect to the feeding chamber will not be affected.

3,419,895
BRASSIERE
Gloria M. Stephensen, 2611 Forbes St., Jacksonville, Fla. 32204
Filed Dec. 27, 1966, Ser. No. 604,785
7 Claims. (Cl. 128—484)

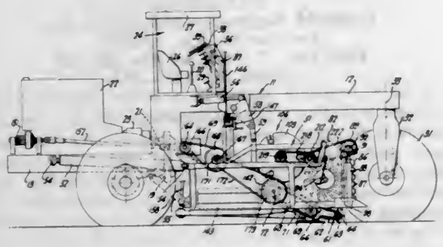
6. In a brassiere including a breast covering outer structure including a pair of covering cups for the user's breasts at the front thereof and a pair of backward extensions, said backward extensions of said outer structure being adjustably and releaseably secured together adjacent the midportion of the user's back, a breast supporting hammock inner structure having breast engaging portions at the front thereof and a pair of backward extensions respectively connected to said backward extensions of said outer structure, a pair of elongated shoulder engaging straps for supporting the brassiere on the user thereof, one end of each of said shoulder straps being attached to one of said backward extensions of one of said outer and inner structures, the other end of each of said shoulder straps extending over a user's shoulder and terminating in a buckle adjacent the top of a respective said covering cup,

each said shoulder strap being adjustable within its said respective buckle to vary the effective supporting length of said strap, a loop of flexible material attached to and depending from each said buckle, the top of each said breast covering cup being detachably connected to a respective loop, an elongated, breast encircling harness member for supporting said inner structure from said opposite end of each said shoulder strap, said harness member extending through and being slidable in said loops, said harness member adjacent its midportion being attached to said inner structure substantially midway thereof, said outer ends of said harness member being attached to said inner structure generally between said breast engaging



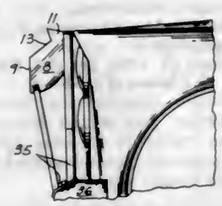
portions and respective backward extensions thereof, and generally vertical stitches attaching said outer structure to said inner structure and positioned between said breast engaging portions and said backward extensions of said inner structure and between said cups and said backward extensions of said outer structure, said stitching commencing at the lower edge of said outer structure and the lower edge of said inner structure and extending generally upward therefrom to a position generally midway between said lower edge and the upper edge of said inner structure for additionally securing and supporting said inner structure with said outer structure and providing an increase in uplift and support of the user's breasts.

3,419,896
SUGAR CANE HARVESTER
Richard A. Duncan, Lafayette, La., assignor, by mesne assignments, to The Thomson Machinery Company, Inc., a corporation
Filed Dec. 30, 1964, Ser. No. 422,116
9 Claims. (Cl. 146—133)



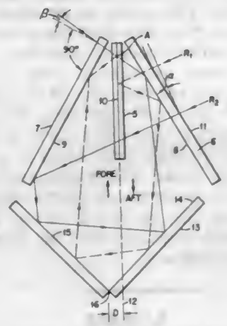
The disclosure comprises a self-contained harvester movable through a sugar cane field, and includes machinery effective to sever and gather in the cane, to cut the cane into desired lengths and to discharge the cut lengths from the machine.

3,419,897
AIRSTREAM DEFLECTOR FOR VEHICLES
Glenn N. Bratsberg, P.O. Box 723, Lewiston, Idaho 83501
Filed Apr. 27, 1967, Ser. No. 634,302
5 Claims. (Cl. 296—91)



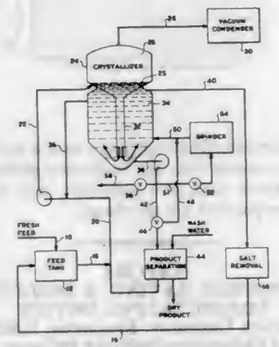
The disclosure shows and describes an airstream deflector device that is to be mounted at the front of the vehicle in position to receive a large volume of air as the vehicle moves forward and deflects the air upwardly through a reduced throat so that the velocity of the received air is substantially increased. This high velocity sheet of air thus meets the air above the device and drives upwardly any small objects such as earth particles, bugs, water drops, snowflakes, and the like, so that these particles are lifted above the vehicle front before the vehicle moves forward through the air. The construction is such that the greater the forward speed of the vehicle, the greater the amount of air deflected upward by the device to do the work of creating an upwardly moving barrier of air of sufficient quantity and force to lift the objects above the vehicle front.

3,419,898
ALIGNMENT INTERFEROMETER
Richard R. Baldwin, 133 Cherokee St., Clinton, Tenn. 37716 and Leonard G. Whitten, Jr., 105 Edison Lane, Oak Ridge, Tenn. 37830
Filed Mar. 11, 1965, Ser. No. 438,990
10 Claims. (Cl. 356—110)



An alignment interferometer including a beam divider, light incident upon the divider and being part reflected and part transmitted thereby, reflectors symmetrically disposed laterally of the divider and reflecting the separate portions of the light along separate non-parallel paths to a retroreflector spaced apart from the divider whereupon the portions of light are retroreflected along separate non-parallel paths to the beam divider to recombine in optical interference. The path of a portion of light returning to the divider is different from, but parallel to, its original path from the beam divider to the retroreflector. Those portions of light which ultimately combine in optical interference comprise the reflected portion of one ray of light and the transmitted portion of a separate ray of light.

3,419,899
CRYSTALLIZATION OF AMMONIUM PERCHLORATE
Lewis E. Tufts, Lewiston, and Donald L. Eichler, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Apr. 16, 1965, Ser. No. 448,710
8 Claims. (Cl. 23—302)

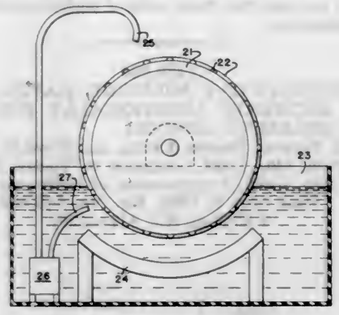


1. A process for producing low moisture, high quality ammonium perchlorate crystals comprising feeding to a crystallization zone, maintained at a temperature from about 20 degrees centigrade to about 90 degrees centigrade, an aqueous solution containing ammonium perchlorate, maintaining an evaporating zone within said crystallization zone for subatmospheric removal of water, concentrating said ammonium perchlorate solution in said evaporating zone to a supersaturated condition by evaporating water, crystallizing ammonium perchlorate while maintaining said supersaturated condition at a level below that at which spontaneous seed generation occurs by feeding to said supersaturated solution seeding particles of ammonium perchlorate wherein said seeding particles are obtained by grinding ammonium perchlorate crystals to a particle size of 0.01 to 50 microns, and wherein said seeding is at a rate proportional to the rate of withdrawal of crystalline product, and removing from said crystallization zone crystalline ammonium perchlorate product.

3,419,900
FUEL CELLS WITH ALKALI METAL HYDROXIDE ELECTROLYTE AND ELECTRODE CONTAINING FLUOROCARBON POLYMER
Glenn V. Elmore, Vestal, N.Y., and Howard A. Tanner, Xenia, Ohio, assignors to Leesona Corporation, Warwick, R.I., a Corporation of Massachusetts
Continuation-in-part of application Ser. No. 12,758, Mar. 4, 1960. This application Dec. 22, 1966, Ser. No. 609,985
16 Claims. (Cl. 136—86)

Lightweight electrodes and an electrochemical cell utilizing the said electrodes are described. The lightweight electrodes comprise a catalytic layer containing a substantially uniform admixture of metal-containing electrocatalyst particles and a fluorocarbon polymer. When the electrode is disposed of in the electrochemical cell, the catalytic layer is exposed to the electrolyte of the cell. There is further described electrolytes comprising an eutectic mixture of at least two alkali metal hydroxides substantially free of water and electrolytes having a pastelike consistency at a temperature below about 300° C.

3,419,901
METHOD FOR PRODUCING FLAKES OF NICKEL
George F. Nordblom, Yardley, Pa., assignor, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,543
5 Claims. (Cl. 204—10)



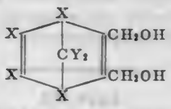
Small flakes of metallic nickel, about 1/16 inch square and about 0.000040 inch thick, are deposited from solution onto a cathode. A grid made from an electrically nonconducting material is disposed on the cathode surface. Flakes are removed from the cathodes by sprays of electrolyte or other fluids. The flakes are suitable for use in nickel-alkaline batteries.

3,419,902
IMPREGNATED METAL CLEANER
Gerald Greber and Irwin Liebman, Chicago, Ill., assignors, by mesne assignments, to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Sept. 1, 1965, Ser. No. 484,475
5 Claims. (Cl. 252—91)

A disposable metal cleaning cloth in the form of an absorbent paper, cloth or plastic impregnated with an acid-type metal cleaning formula containing as the active cleaning ingredients 1 to 3 parts by weight tartaric acid for each part by weight of alkali metal chloride.

3,419,903
PROCESS FOR PREPARATION OF SUBSTITUTED 2,3 - BISHYDROXYMETHYLBICYCLO(2.2.1) - 2,5-HEPTADIENE
Paul E. Hoch, Youngstown, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed July 29, 1963, Ser. No. 298,417
7 Claims. (Cl. 260—617)

1. A process for the preparation of a compound represented by the formula



comprising reacting

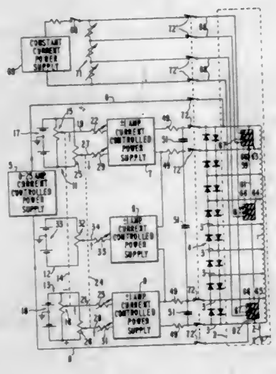


with butyne diol in the presence of a monohydric alcohol selected from the group consisting of butyl alcohol and amyl alcohol, wherein:

(a) X is halogen;

(b) Y is selected from the group consisting of halogen, hydrogen, and alkoxy;
(c) said reaction is run at a temperature of about 100 degrees to about 200 degrees centigrade;
(d) from about 0.5 to about 3 moles of perhalogenated cyclopentadiene is used per mole of butyne diol; and
(e) from about 20 to about 150 milliliters of said alcohol are used per gram mole of perhalogenated cyclopentadiene.

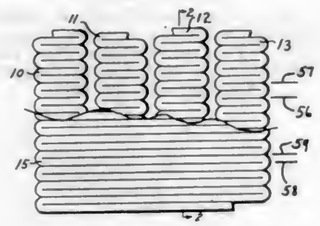
3,419,904
SUPERCONDUCTIVE SOLENOID HAVING WINDING SEGMENTS ADDITIONALLY ENERGIZED FOR GRADIENT CONTROL
Harry E. Weaver, Portola Valley, and Floyd E. F. Kingston, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 5, 1966, Ser. No. 548,009
9 Claims. (Cl. 317—123)



A superconductive solenoid magnet is disclosed together with a gyromagnetic resonance spectrometer using same. The superconductive solenoid includes a plurality of separately energizable winding sections. Power supplies are provided for separately energizing the winding sections in sets with predetermined relative currents to produce corrective magnetic field gradient components within the magnetic field region of the solenoid to cancel certain residual magnetic field gradient components therein. The currents are arranged in the various sets of winding segments of the solenoid such that the total field intensity in the region being corrected is not changed by changes in the gradient cancelling components. The sample to be analyzed of a gyromagnetic resonance spectrometer is immersed in a corrected region of the magnetic field. The corrected solenoid magnet produces an extremely intense highly homogenous magnetic field permitting high resolution gyromagnetic resonance spectra to be obtained from the spectrometer.

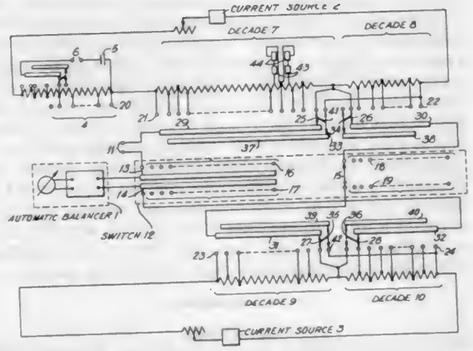
3,419,905
SYNCHRONOUS MACHINE
Carl T. Letter, Lower Graniteville, Vt.
(35 Merchant St., Barre, Vt. 05641)
Filed Oct. 13, 1965, Ser. No. 495,493
8 Claims. (Cl. 318—165)

A rotating electrical machine utilizes single layer windings formed on the surface of a support structure with turns in the shape of a linear conductor folded back and forth upon the support surface thereby providing individual turns which create a ring of alternating north and south magnetic poles between adjacent conductors. A continuous rotor winding extends over a plurality of stator windings which are spatially phase displaced around the stator. The stator may be energized by signals of different frequency and electrical phase corresponding to the spatial



phase displacement. When used as a motor the rotor speed varies in accordance with the frequency difference of the signals and when used as a generator sum or difference frequency components are produced.

3,419,906
POTENTIOMETER HAVING A MULTIPOSITION COMMUTATING DEVICE
Victor Sergeevich Umantsev, Krasnodar, U.S.S.R., assignor to Zavod Elektroizmeriteljnykh Priborov, Krasnodar, U.S.S.R.
Continuation of application Ser. No. 370,602, May 27, 1964. This application June 12, 1967, Ser. No. 645,550
1 Claim. (Cl. 324—98)



A potentiometer having at least two circuits adapted to have independent supply sources, each circuit having means for adjusting the value of the current in that circuit and balancing resistors in the form of decades, portions of these decade balancing resistors being adapted to be selected as required to provide a selected voltage which approximately balances the voltage across the unknown resistor to be measured, a self-balancing meter to measure the difference between the selected voltage and the voltage across the unknown resistor, one of the circuits having a standard resistor and switch means capable of applying successively the voltage across each stage of a first decade balancing resistor of one circuit against a constant voltage supplied by selected stages of the decade balancing resistors of the other circuit, so that any differences in the voltages across different stages of the first decade resistor are indicated on the self balancing meter.

DESIGNS

DECEMBER 31, 1968

213,034
SNACK FOOD PRODUCT OR THE LIKE
Lyle Slaybaugh, Battle Creek, Mich., assignor to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 9,157
Term of patent 14 years
(Cl. D1—2)



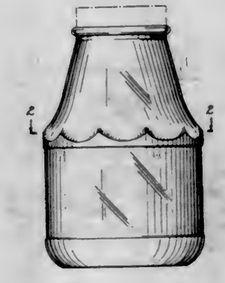
213,035
BOOT
Shade Murray, Nashville, Tenn., assignor to J. W. Carter Company, Nashville, Tenn., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 8,403
Term of patent 14 years
(Cl. D2—273)



213,036
STOCKING
Wasyl Trylowsky, 508 E. 5th St., New York, N.Y. 10009
Filed Jan. 31, 1968, Ser. No. 10,376
Term of patent 14 years
(Cl. D2—342)



213,037
JAR OR SIMILAR ARTICLE
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Sept. 23, 1966, Ser. No. 3,990. Divided and this application Dec. 13, 1967, Ser. No. 9,754
Term of patent 14 years
(Cl. D9—92)



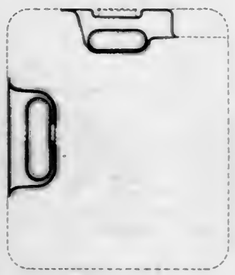
213,038
JAR OR SIMILAR ARTICLE
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Sept. 23, 1966, Ser. No. 3,990. Divided and this application Dec. 13, 1967, Ser. No. 9,755
Term of patent 14 years
(Cl. D9—92)



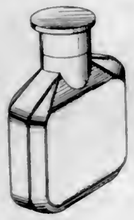
213,039
JAR OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 20, 1967, Ser. No. 6,764. Divided and this application Nov. 14, 1967, Ser. No. 9,633
Term of patent 14 years
(Cl. D9—100)



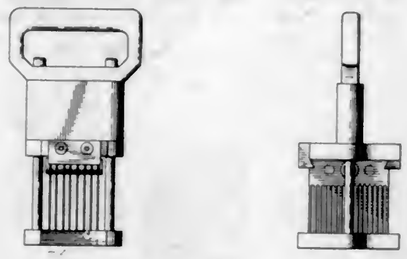
213,040
JUG
Earl L. Schaper and Stanley A. Marcus, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Michigan
Original design application Jan. 3, 1966, Ser. No. 422, now Patent No. 209,623, dated Dec. 19, 1967. Divided and this application Aug. 4, 1967, Ser. No. 8,138
Term of patent 14 years
(Cl. D9—44)



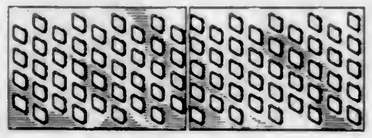
213,041
BOTTLE OR SIMILAR ARTICLE
George R. Stehl, Stony Brook, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Oct. 27, 1967, Ser. No. 9,185
Term of patent 14 years
(Cl. D9—130)



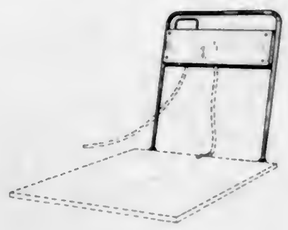
213,042
MEAT TENDERIZING DEVICE OR SIMILAR ARTICLE
Rene Kyburz, Hamburg, and Andre P. Jaccard, Buffalo, N.Y., assignors to Jaccard Corporation, Buffalo, N.Y., a corporation of New York
Filed Dec. 28, 1967, Ser. No. 9,954
Term of patent 14 years
(Cl. D11—1)



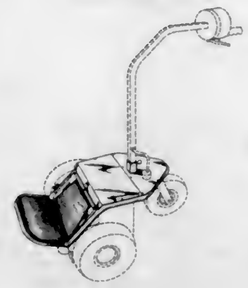
213,043
WALKWAY
Emil P. Crepeau, Minneapolis, Minn., assignor to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Nov. 13, 1967, Ser. No. 9,387
Term of patent 14 years
(Cl. D13—1)



213,044
HANDLE FOR AN AIR FILM PALLET
Warner K. Brown and Thomas Tomolak, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Sept. 22, 1967, Ser. No. 8,698
Term of patent 14 years
(Cl. D14—3)



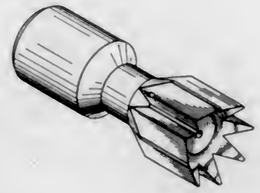
213,045
GOLF CART
Harold Saunders, 10759 W. 25th St., Lakewood, Colo. 80215
Filed Jan. 26, 1968, Ser. No. 10,325
Term of patent 14 years
(Cl. D14—3)



213,046
COMBINED HOSE AND NOZZLE
Clarence W. Borden, Trenton, N.J., assignor to Goodall Rubber Company, Trenton, N.J.
Filed Oct. 14, 1966, Ser. No. 4,275
Term of patent 14 years
(Cl. D23—34)



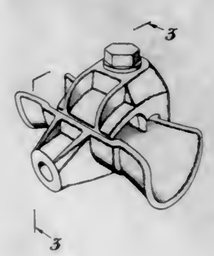
213,047
CLEANING NOZZLE
Virgil Kenneth Steidley, Mansfield, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed June 5, 1967, Ser. No. 7,365
Term of patent 14 years
(Cl. D23—34)



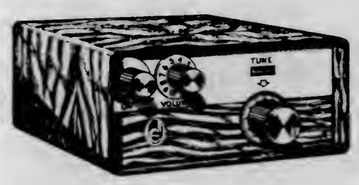
213,048
BULLETIN BOARD OR THE LIKE
Richard McFadyen, Essex Fells, N.J., assignor to Ketcham & McDougall, Inc., Roseland, N.J., a corporation of New Jersey
Filed Oct. 2, 1967, Ser. No. 8,811
Term of patent 14 years
(Cl. D25—1)



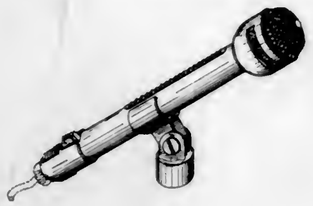
213,049
CONDUCTOR CLAMP
L. E. Lindsey, 222 Vista Ave., Pasadena, Calif. 91107
Filed Apr. 29, 1968, Ser. No. 11,652
Term of patent 14 years
(Cl. D26—1)



213,050
TUNER FOR A PUBLIC ADDRESS SYSTEM
Warren Brent Hardy, 55 W. Louise Ave., Salt Lake City, Utah 84115
Filed Jan. 3, 1968, Ser. No. 10,041
Term of patent 14 years
(Cl. D26—14)



213,051
MICROPHONE
Robert F. Herrold III, Niles, Mich., assignor to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Delaware
Filed Feb. 14, 1968, Ser. No. 10,573
Term of patent 14 years
(Cl. D26—14)



213,052
FLAG OR THE LIKE
Melvin Charles, 1122 E. Henry St., and Gleason T. Jackson, 1517 Bower St., both of Linden, N.J. 07036
Filed July 6, 1967, Ser. No. 7,722
Term of patent 14 years
(Cl. D29—17)



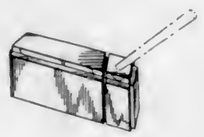
213,053
ANIMAL COVERALL OR SIMILAR ARTICLE
Celia C. Church, Woodhaven, N.Y., assignor to one-half interest to Lynn Dever, Queens Village, N.N.Y.
Filed Nov. 16, 1967, Ser. No. 9,446
Term of patent 14 years
(Cl. D30—37)



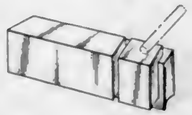
213,054
SAFETY GRIP BAR FOR A BATHROOM OR THE LIKE
William R. Brewer, Arleta, Calif., assignor to Hamilton C. de Jong (doing business as Safety Brothers), Pasadena, Calif.
Filed Dec. 26, 1967, Ser. No. 9,904
Term of patent 14 years
(Cl. D33—21)



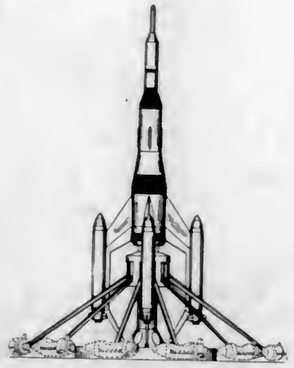
213,055
GOLF PUTTER HEAD
James Karban, Jr., 1645 Grove Ave., Berwyn, Ill. 60402
Filed Aug. 10, 1967, Ser. No. 8,212
Term of patent 3½ years
(Cl. D34—5)



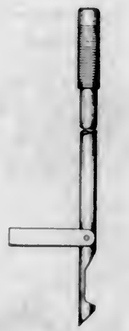
213,056
GOLF PUTTER HEAD
James Karban, Jr., 1645 Grove Ave., Berwyn, Ill. 60402
Filed Oct. 6, 1967, Ser. No. 8,883
Term of patent 3½ years
(Cl. D34—5)



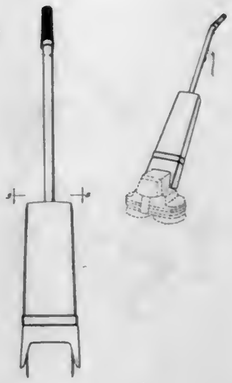
213,057
ROCKET AMUSEMENT RIDE
George F. McGinnis, Los Angeles, Calif., assignor to Wed Enterprises, Inc., Glendale, Calif., a corporation of California
Filed Nov. 13, 1967, Ser. No. 9,356
Term of patent 14 years
(Cl. D34—5)



213,058
DANDELION DIGGER OR SIMILAR ARTICLE
Richard L. Clifton, 2623 N. Cooper, Colorado Springs, Colo. 80907
Filed Oct. 19, 1967, Ser. No. 9,068
Term of patent 14 years
(Cl. D35—2)



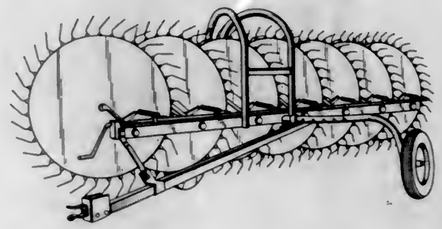
213,059
COMBINATION HANDLE AND LIQUID DISPENSER FOR A FLOOR-CONDITIONER
Meyric K. Rogers, La Grange Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 18, 1967, Ser. No. 5,476
Term of patent 14 years
(Cl. D37—3)



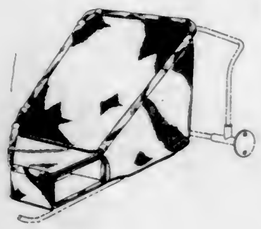
213,060
HAND PULLED SHOVEL
Lorenz H. Kutz, Rte. 1, Mound, Minn. 55364
Filed Feb. 2, 1968, Ser. No. 10,423
Term of patent 14 years
(Cl. D39—1)



213,061
SIDE DELIVERY RAKE
Edward J. Johnston, La Grange, N. Donald Patterson, Downers Grove, and Frank J. Macha, Jr., Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 2, 1967, Ser. No. 9,257
Term of patent 14 years
(Cl. D40—1)



213,062
RIDING MOWER GRASS CATCHING BAG
Victor Leader, Minneapolis, Minn., assignor to Leader Farms, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 11, 1968, Ser. No. 10,123
Term of patent 14 years
(Cl. D40—1)



213,063
SPOT LAMP
Joseph Thornley and Frank Stanley Allwork, Thetford, Norfolk, England, assignors to Mole-Richardson (England) Limited, London, England, a British company
Filed May 3, 1967, Ser. No. 6,930
Claims priority, application Great Britain Feb. 7, 1967
Term of patent 14 years
(Cl. D48—20)



213,064
FRONT FENDER FLASHING TURN SIGNAL
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation
Filed Apr. 4, 1966, Ser. No. 1,763
Term of patent 14 years
(Cl. D48—32)



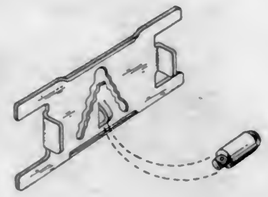
213,065
SHIRT BUNDLING RACK
Ephraim Cohen, 2424 Sylvale Road, Baltimore, Md. 21209
Filed Mar. 21, 1967, Ser. No. 6,320
Term of patent 14 years
(Cl. D49—1)



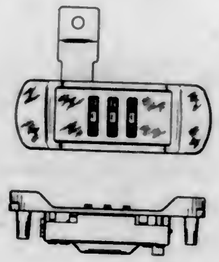
213,066
SPLIT DUSTER ATTACHMENT FOR VACUUM CLEANERS
Vivian M. Wright, 6813 Timmons Drive, Des Moines, Iowa 50322
Filed Apr. 10, 1968, Ser. No. 11,397
Term of patent 14 years
(Cl. D49—19)



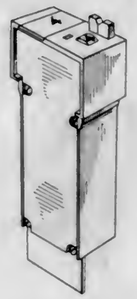
213,067
PORTABLE DOOR LOCK
Kenneth H. Briggs, 2133 Eunice St., Berkeley, Calif. 94707
Filed Oct. 2, 1967, Ser. No. 8,829
Term of patent 14 years
(Cl. D50—7)



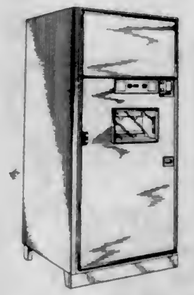
213,068
COMBINATION LOCK
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Filed Oct. 26, 1967, Ser. No. 9,170
Term of patent 14 years
(Cl. D50—7)



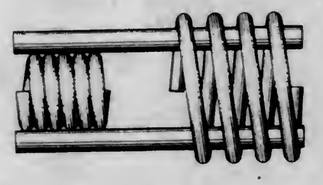
213,069
ELECTRONIC DECADE COUNTER
Richard Waldemar Lebherz, Aldingen, Kreis Tuttlingen, Germany, assignor to J. Hengstler K.G. Zahlerfabrik
Filed Oct. 6, 1967, Ser. No. 8,889
Claims priority, application Germany Apr. 15, 1967
Term of patent 14 years
(Cl. D52—1)

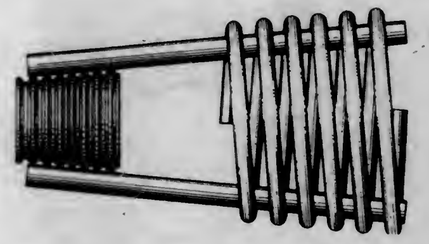


213,070
DISPENSING MACHINE
Curtis Lane, Riverdale, N.Y., and Kenneth Glenby, Woodcliff Lake, N.J., assignors to Lanex Importing Company, Lodi, N.J.
Filed Dec. 26, 1967, Ser. No. 9,928
Term of patent 14 years
(Cl. D52—3)

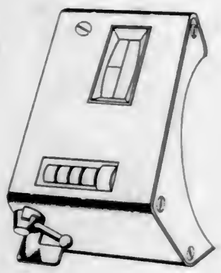


213,071
ANCHOR INSERT
Martin William Boll, East Rockaway, and Robert Murray MacRobbie, Seaford, N.Y., assignors to Richmond Screw Anchor Co., division of Shattuck Denn Mining Co., Bronx, N.Y.
Filed Apr. 30, 1968, Ser. No. 11,715
Term of patent 14 years
(Cl. D54—9)

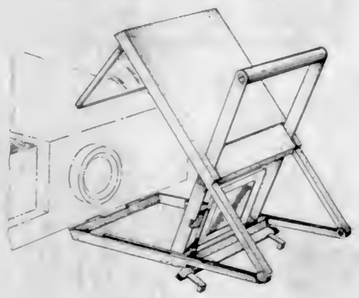




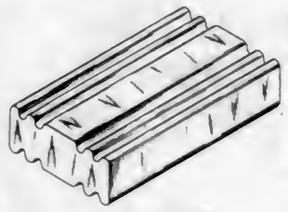
213,072
MILL TABLE POSITION INDICATING DEVICE
Francis L. Moseley, 700 Flintridge Ave., Pasadena, Calif. 91103, and Peter Moseley, 1369 Skywood Circle, and Glenn A. Johnson, 2163 N. Altadena Drive 91001, both of Altadena, Calif.
Filed Oct. 31, 1967, Ser. No. 9,226
Term of patent 14 years
(Cl. D55—1)



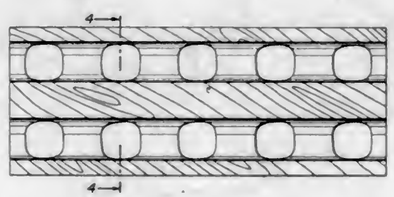
213,073
COLLAPSIBLE REAR PROJECTION VIEWER ACCESSORY FOR A SLIDE PROJECTOR OR SIMILAR ARTICLE
Richard W. Lanigan, Arlington Heights, Ill., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed May 25, 1967, Ser. No. 7,265
Term of patent 14 years
(Cl. D61—1)



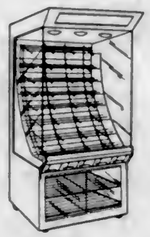
213,074
BAR OF SOAP OR SIMILAR ARTICLE
George Edward Griffith and Jose R. Cid, Mexico City, Mexico, assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed July 15, 1966, Ser. No. 3,086
Claims priority, application Mexico Mar. 17, 1966
Term of patent 3½ years
(Cl. D73—1)



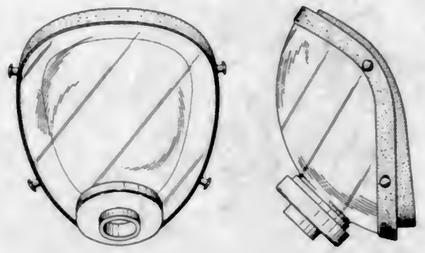
213,075
PENCIL HOLDER
Robert T. Bogan, Jr., 2031 Somervell NE., Albuquerque, N. Mex. 87112
Filed May 19, 1967, Ser. No. 7,189
Term of patent 14 years
(Cl. D74—5)



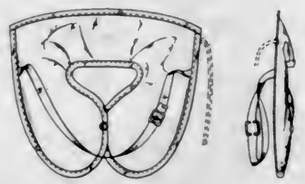
213,076
DISPLAY STAND
Ernest M. Emery, 1997 Vista Way 92116; Raymond G. Twigg, 12540 Jacksou Hill Drive 92119; John J. Chaparro, 8731 Pinecrest Ave.; Robert J. Hoover, 530 N. Rios 92128; and Hugo Mahler, 10030 Sunset Ave. 92110; all of San Diego, Calif.
Filed Mar. 20, 1967, Ser. No. 6,311
Term of patent 14 years
(Cl. D80—11)



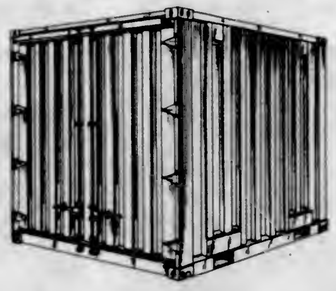
213,077
BREATHING MASK
Robert L. Holloway, Snyder, N.Y., assignor to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed July 27, 1967, Ser. No. 8,030
Term of patent 14 years
(Cl. D83—1)



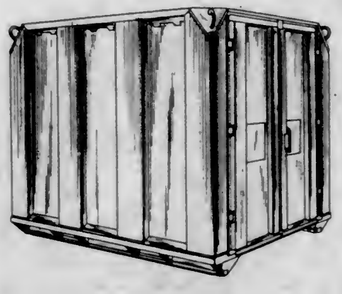
213,078
ELECTRIC HEATING PAD
Lawrence Katzman and Robert Dublirer, New York, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 10,015
Term of patent 14 years
(Cl. D83—1)



213,079
CARGO SHIPPING CONTAINER
Pierre Detanger, Neuilly-sur-Seine, France, assignor to Societe Interconinentale des Containers S.I.C., Paris, France, a company of France
Filed Sept. 22, 1966, Ser. No. 3,970
Claims priority, application France Mar. 24, 1966
Term of patent 3½ years
(Cl. D87—1)



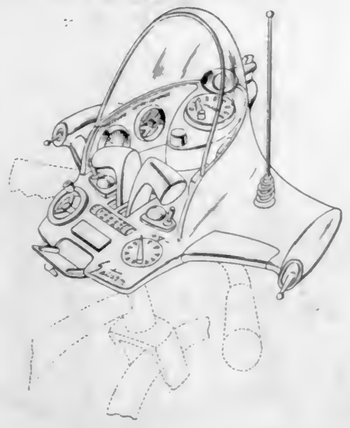
213,080
FREIGHT CONTAINER
Pierre Detanger, Neuilly-sur-Seine, France, assignor to Societe Intercontinentale des Containers S.I.C., Paris, France, a company of France
Filed Sept. 22, 1966, Ser. No. 3,971
Claims priority, application France Mar. 24, 1966
Term of patent 3½ years
(Cl. D87—1)



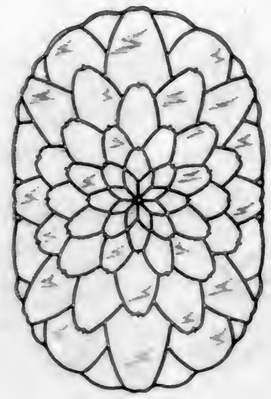
213,081
QUILTED PLASTIC MATERIAL
Ira N. Brophy, Valley Stream, N.Y., assignor to Whitmor Manufacturing Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 2, 1967, Ser. No. 9,319
Term of patent 14 years
(Cl. D87—3)



213,082
VELOCIPEDE ATTACHMENT TOY OR SIMILAR ARTICLE
Ben Walker, Belleville, N.J.
(18 Oswego Ave., Oakland, N.J. 07436)
Filed Sept. 7, 1967, Ser. No. 8,512
Term of patent 14 years
(Cl. D90—1)



213,083
PLACE MAT
Esther Singer Lobar, New York, N.Y., assignor to Singer Home Products Corp., New York, N.Y., a corporation of New York
Filed Apr. 9, 1968, Ser. No. 11,375
Term of patent 14 years
(Cl. D92—1)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Albertson, Orris E., and W. E. Budd, to Dorr-Oliver, Inc. Treatment and disposal of waste sludges. Re. 26,514, 12–31–68, Cl. 110—8.
Budd, William E.: *See*—
Albertson, Orris E., and Budd. Re. 26,514.
Caterpillar Tractor Co.: *See*—
Klaus, Frederick C., and Medley. Re. 26,513.
Dalton, Edward: *See*—
Mazzarella, Emil D., and Dalton. Re. 26,510.
Deere & Co.: *See*—
Rohweder, Glen W. Re. 26,512.
Dorr-Oliver, Inc.: *See*—
Albertson, Orris E., and Budd. Re. 26,514.
Hewson, Carl E. Heart and lung resuscitator. Re. 26,511, 12–31–68, Cl. 128—145.8.
Klaus, Frederick C., and J. C. Medley, to Caterpillar Tractor Co. Hyuraulic brake and steering system for vehicles. Re. 26,513, 12–31–68, Cl. 180—79.2.
Mazzarella, Emil D., and E. Dalton, to National Starch and Chemical Corp. Water resistant paper coating compositions. Re. 26,510, 12–31–68, Cl. 106—210.
Medley, Jackson C.: *See*—
Klaus, Frederick C., and Medley. Re. 26,513.
National Starch and Chemical Corp.: *See*—
Mazzarella, Emil D., and Dalton. Re. 26,510.
Rohweder, Glen W., to Deere & Co. Mounting and dismounting means for agricultural machines. Re. 26,512, 12–31–68, Cl. 56—21.

LIST OF PLANT PATENTEES

Conard-Pyle Co., The: *See*—
Lissemore, Jack D. 2,854.
Swim, Herbert C., and Weeks. 2,855.
Lissemore, Jack D., to The Conard-Pyle Co. Rose plant. 2,854, 12–31–68, Cl. 5.
Swim, Herbert C., and O. L. Weeks, to O. L. Weeks, d.b.a. Weeks Wholesale Rose Grower. Rose plant. 2,853, 12–31–68, Cl. 14.
Swim, Herbert C., and O. L. Weeks, to The Conard-Pyle Co. Rose plant. 2,855, 12–31–68, Cl. 19.
Weeks, O. L.: *See*—
Swim, Herbert C., and Weeks. 2,853.
Swim, Herbert C., and Weeks. 2,855.
Weeks Wholesale Rose Grower: *See*—
Swim, Herbert C., and Weeks. 2,853.

LIST OF DESIGN PATENTEES

Allwork, Frank S.: *See*—
Thornley, Joseph, and Allwork. 213,063.
Anchor Hocking Glass Corp.: *See*—
Pettengill, Floyd E. 213,037.
Pettengill, Floyd E. 213,038.
Benes, Frank J. 213,039.
"Automatic" Sprinkler Corp. of America: *See*—
Holloway, Robert L. 213,077.
Benes, Frank J., to Anchor Hocking Glass Corp. Jar or similar article. 213,039, 12–31–68, Cl. D9—100.
Bogan, Robert T., Jr. Pencil holder. 213,075, 12–31–68, Cl. D74—5.
Boll, Martin W., and R. M. MacRobbie, to Richmond Screw Anchor Co., Division of Shattuck. Anchor insert. 213,071, 12–31–68, Cl. D54—9.
Borden, Clarence W., to Goodall Rubber Co. Combined hose and nozzle. 213,046, 12–31–68, Cl. D23—34.
Brewer, William R., to H. C. DeJong (d.b.a. Safety Brothers). Safety grip bar for a bathroom or the like. 213,054, 12–31–68, Cl. D33—21.
Briggs, Kenneth H. Portable door lock. 213,067, 12–31–68, D50—7.
Brophy, Ira N., to Whitmor Mfg. Co., Inc. Quilted plastic material. 213,081, 12–31–68, Cl. D87—3.
Brown, Warner K., and T. Tomolak, to Clark Equipment Co. Handle for an air film pallet. 213,044, 12–31–68, Cl. D14—3.
Butler Mfg. Co.: *See*—
Crepeau, Emil P. 213,043.
Carter, J. W., Co.: *See*—
Murray, Shade. 213,035.
Chaparro, John J.: *See*—
Emery, Ernest M., Twigg, Chaparro, Hoover, and Mahler. 213,076.
Charles, Melvin, and G. T. Jackson. Flag or the like. 213,052, 12–31–68, Cl. D29—17.
Church, Celia C., ½ to L. Dever. Animal coverall or similar article. 213,053, 12–31–68, Cl. 30—37.
Cid, Jose R.: *See*—
Griffith, George E., and Cid. 213,074.
Clark Equipment Co.: *See*—
Brown, Warner K., and Tomolak. 213,044.
Clifton, Richard L. Dandelion digger or similar article. 213,058, 12–31–68, Cl. D35—2.
Cohen, Ephraim. Shirt bundling rack. 213,065, 12–31–68, Cl. D49—1.
Colgate-Palmolive Co.: *See*—
Griffith, George E., and Cid. 213,074.
Crepeau, Emil P., to Butler Mfg. Co. Walkway. 213,043, 12–31–68, Cl. D13—1.
DeJong, Hamilton C.: *See*—
Brewer, William R. 213,054.
Detanger, Pierre, to Societe Interconinentale des Containers S.I.C. Cargo shipping container. 213,079, 12–31–68, Cl. D87—1.
Detanger, Pierre, to Societe Intercontinentale des Containers S.I.C. Freight container. 213,080, 12–31–68, Cl. D87—1.
Dever, Lynn: *See*—
Church, Celia C. 213,053.
Dow Chemical Co., The: *See*—
Schaper, Earl L., and Marcus. 213,040.
Dublirer, Robert: *See*—
Katzman, Lawwrence, and Dublirer. 213,078.
Electro-Voice, Inc.: *See*—
Herrold, Robert F., III. 213,051.
Emery, Ernest M., R. G. Twigg, J. J. Chaparro, R. J. Hoover, and H. Mahler. Display stand. 213,076, 12-31-68, Cl. D80—11.
Fedtro, Inc.: *See*—
Kahn, Robert D. 213,064.
Gehrle, Charles S., to Presto Lock Co., Inc. Combination lock. 213,068, 12–31–68, Cl. D50—7.
General Aniline & Film Corp.: *See*—
Lanigan, Richard W. 213,073.
Glenby, Kenneth: *See*—
Lane, Curtis, and Glenby. 213,070.
Goodall Rubber Co.: *See*—
Borden, Clarence W. 213,046.
Griffith, George E., and J. R. Cid, to Colgate-Palmolive Co. Bar of soap or similar article. 213,074, 12–31–68, Cl. D73—1.
Hardy, Warren B. Tuner for a public address system. 213,050, 12–31–68, Cl. D26—14.
Hengstler, J., K.G.: *See*—
Lebherz, Richard W. 213,069.
Herrold, Robert F., III, to Electro-Voice, Inc. Microphone. 213,051, 12–31–68, Cl. D26—14.
Holloway, Robert L., to "Automatic" Sprinkler Corp. of America. Breathing mask. 213,077, 12–31–68, Cl. D83—1.
Hoover, Robert J.: *See*—
Emery, Ernest M., Twigg, Chaparro, Hoover, and Mahler. 213,076.
International Harvester Co.: *See*—
Johnston, Edward J., Patterson, and Macha. 213,061.
Jaccard, Andre R.: *See*—
Kyburz, Rene, and Jaccard. 213,042.
Jaccard Corp.: *See*—
Kyburz, Rene, and Jaccard. 213,042.
Jackson, Gleason T.: *See*—
Charles, Melvin, and Jackson. 213,052.

Johnson, Glenn A.: *See*—
Moseley, Francis L. and P., and Johnson. 213,072.
Johnston, Edward J., N. D. Patterson, and F. J. Macha, Jr., to International Harvester Co. Side delivery rake. 213,061, 12–31–68, Cl. D40—1.
Kahn, Robert D., to Fedtro, Inc. Front fender flashing turn signal. 213,064, 12–31–68, Cl. D48—32.
Karban, James, Jr. Golf putter head. 213,055, 12–31–68, Cl. D34—5.
Karban, James, Jr. Golf putter head. 213,056, 12–31–68, Cl. D34—5.
Katzman, Lawrence, and R. Dublirer, to Kaz Mfg. Co., Inc. Electric heating pad. 213,078, 12–31–68, Cl. D83—1.
Kaz Mfg. Co., Inc.: *See*—
Katzman, Lawrence, and Dublirer. 213,078.
Kellogg Co.: *See*—
Slaybaugh, Lyle. 213,034.
Ketcham & McDougall, Inc.: *See*—
McFadyen, Richard. 213,048.
Kutz, Lorenz H. Hand pulled shovel. 213,060, 12–31–68, Cl. D39—1.
Kyburz, Rene, and A. R. Jaccard, to Jaccard Corp. Meat tenderizing device or similar article. 213,042, 12–31–68, Cl. D11—1.
Lane, Curtis, and K. Glenby, to Lanex Importing Co. Dispensing machine. 213,070, 12–31–68, Cl. D52—3.
Lanex Importing Co.: *See*—
Lane, Curtis, and Glenby. 213,070.
Lanigan, Richard W., to General Aniline & Film Corp. Collapsible rear projection viewer accessory for a slide projector or similar article. 213,073, 12–31–68, Cl. D61—1.
Leader Farms, Inc.: *See*—
Leader, Victor. 213,062.
Leader, Victor, to Leader Farms, Inc. Riding mower grass catching bag. 213,062, 12–31–68, Cl. D40—1.
Lebherz, Richard W., to J. Hengstler, K.G. Electronic decade counter. 213,069, 12–31–68, Cl. D52—1.
Lindsey, L. E. Conductor clamp. 213,049, 12–31–68, Cl. D26—1.
Lobar, Ester S., to Singer Home Products Corp. Place mat. 213,083, 12–31–68, Cl. D92—1.
MacRobbie, Robert M.: *See*—
Boll, Martin W., and MacRobbie. 213,071.
Macha, Frank J., Jr.: *See*—
Johnston, Edward J., Patterson, and Macha. 213,061.
Mahler, Hugo: *See*—
Emery, Ernest M., Twigg, Chaparro, Hoover, and Mahler. 213,076.
Marcus, Stanley A.: *See*—
Schaper, Earl L., and Marcus. 213,040.
McFadyen, Richard, to Ketcham & McDougall, Inc. Bulletin board or the like. 213,048, 12–31–68, Cl. D25—1.
McGinnis, George F., to Wed Enterprises, Inc. Rocket amusement ride. 213,057, 12–31–68, Cl. D34—5.
Mole-Richardson (England) Ltd.: *See*—
Thornley, Joseph, and Allwork. 213,063.
Moseley, Francis L. and P., and G. A. Johnson, to Denn Mining Co. Mill table position indicating device. 213,072, 12–31–68, Cl. D55—1.
Moseley, Peter: *See*—
Moseley, Francis L. and P., and Johnson. 213,072.
Murray, Shade, to J. W. Carter Co. Boot. 213,035, 12–31–68, Cl. D2—273.
Myers, F. E., Bros. Co., The: *See*—
Steidley, Virgil K. 213,047.
Patterson, N.: *See*—
Johnston, Edward J., Patterson, and Macha. 213,061.
Pettengill, Floyd E., to Anchor Hocking Glass Corp. Jar or similar article. 213,037, 12–31–68, Cl. D9—92.
Pettengill, Floyd E., to Anchor Hocking Glass Corp. Jar or similar article. 213,038, 12–31–68, Cl. D9—92.
Presto Lock Co., Inc.: *See*—
Gehrie, Charles S. 213,068.
Richmond Screw Anchor Co.: *See*—
Boll, Martin W., and Mac Robbie. 213,071.
Rogers, Meyric K., to Sunbeam Corp. Combination handle and liquid dispenser for floor-conditioner. 213,059, 12–31–68, Cl. D37—3.
Safety Brothers: *See*—
Brewer, William R. 213,054.
Saunders, Harold. Golf cart. 213,045, 12–31–68, Cl. D14—3.
Schaper, Earl L., and S. A. Marcus, to The Dow Chemical Co. Jug. 213,040, 12–31–68, Cl. D9—44.
Singer Home Products Corp.: *See*—
Lobar, Ester S. 213,083.
Slaybaugh, Lyle, to Kellogg Co. Snack food product or the like. 213,034, 12–31–68, Cl. D1—2.
Societe Interconinentale des Containers S.I.C.: *See*—
Detanger, Pierre. 213,079.
Detanger, Pierre. 213,080.
Stehl, George R., to Warner-Lambert Pharmaceutical Co. Bottle or similar article. 213,041, 12–31–68, Cl. D9—130.
Steidley, Virgil K., to The F. E. Myers Bros Co. Cleaning nozzle. 213,047, 12–31–68, Cl. D23—34.
Sunbeam Corp.: *See*—
Rogers, Meyric K. 213,059.
Thornley, Joseph, and F. S. Allwork, to Mole-Richardson (England) Ltd. Spot lamp. 213,063, 12–31–68, Cl. D48—20.
Tomolak, Thomas: *See*—
Brown, Warner K., and Tomolak. 213,044.
Trylowsky, Wasyl. Stocking. 213,036, 12–31–68, Cl. D2—342.
Twigg, Raymond G.: *See*—
Emery, Ernest M., Twigg, Chaparro, Hoover, and Mahler. 213,076.
Walker, Ben. Velocipede attachment toy or similar article. 213,082, 12–31–68, Cl. D90—1.
Warner-Lambert Pharmaceutical Co.: *See*—
Stehl, George R. 213,041.
Wed Enterprises, Inc.: *See*—
McGinnis, George F. 213,057.
Whitmor Mfg. Co., Inc.: *See*—
Brophy, Ira N. 213,081.
Wright, Vivian M. Split duster attachment for vacuum cleaners. 213,066, 12–31–68, Cl. D49—19.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 31ST DAY OF DECEMBER, 1968

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Kinnecom, Paul G. 3,418,771.
AEG-Elotherm G.m.b.H.: *See*—
Schierholt, Hans. 3,419,754.
Stengel, Edgar, and Müller. 3,419,701.
A.E.I. Corp.: *See*—
Christine, William C., and Pierce. 3,418,786.
AMP Inc.: *See*—
Bingley, Donald W. 3,419,783.
Hays, Kenneth S. 3,419,843.
Aasted, Jorgen, to Ryan Aeronautical Co. Multi-mode helix antenna. 3,419,875, 12–31–68, Cl. 343—895.
Abe, Hitoshi, and K. Imai, to Kurashiki Rayon Co., Ltd. Methacrylic resin-vinylidene chloride resin compositions and method of production thereof. 3,419,519, 12–31–68, Cl. 260—41.
Abbott Laboratories: *See*—
Johnson, Robert P., and Oswald. 3,419,568.
Acciarri, Jerry A., W. C. Ziegenhain, and D. L. Ziegler, to Continental Oil Co. Process for producing alpha alumina monohydrate. 3,419,352, 12–31–68, Cl. 23—143.
Acoustics Development Corp.: *See*—
Baran, Joseph G. 3,419,305.
Adalbert, Gerhard: *See*—
Barth, Robert, and Adalbert. 3,418,679.
Adams, Dolor N., to Harris-Intertype Corp. Ink transfer member. 3,418,935, 12–31–68, Cl. 101—348.
Addressograph Multigraph Corp.: *See*—
Klosky, John P., and Carper. 3,419,328.
Adler, Otto: *See*—
Remy, Hermann, Adler, and Heberer. 3,418,821.
Adler, Robert, to Zenith Radio Corp. Ultrasonic transducer matching for bragg reflection scanning. 3,419,322, 12–31–68, Cl. 350—161.
Admiral Corp.: *See*—
Gerstein, Bernard. 3,419,749.
Schneider, Christian D. 3,419 670.
Aelony, David, to General Mills, Inc. Curing of epoxies with an amine-substituted acid. 3,419,525, 12–31–68, Cl. 260—47.
African Explosives and Chemical Industries Ltd.: *See*—
Stewart, Iain G. H., and Hunt. 3,419,193.
Agfa Aktiengesellschaft: *See*—
Von Konig, Anita, Mader, Ulrich, and Weyde. 3,419,395.
Agfa-Gevaert A.G.: *See*—
Mayr, Helmut, and Pelte. 3,419,325.
Wick, Richard, Biedermann, Winkler, Bestenreiner, Kiper, Pawlik, Von Sybel, Von Wasielewski, and Wagner. 3,418,904.
Wick, Richard, Huber, and Hennig. 3,418,906.
Agthe, Ralph, to Spindel-Motoreu- und Maschinenfabrik AG. Apparatus for analyzing fresh concrete. 3,419,139, 12–31–68, Cl. 209—10.
Aiken, Howard H., J. T. Marsh, and A. I. Parvin, to Aiken Industries, Inc. Sorting machine for C-shaped articles. 3,419,141, 12–31–68, Cl. 209—73.
Aiken Industries, Inc.: *See*—
Aiken, Howard H., Marsh, and Parvin. 3,419,141.
Air Reduction Co., Inc.: *See*—
Cook, Harold E. 3,419,296.
Smith, Mark J. 3,419,468.
Wright, Carl L. 3 419,840.
Ajinomoto Co., Inc.: *See*—
Kawamura, Yurio, Ando, Takenouchi, Sakata, and Maruyama. 3,419,608.
Komachiya, Yoshioki, Suzuki, and Sakurai. 3,419,551.
Aktiebolaget Bofors: *See*—
Edman, Bjorn R., and Oman. 3,419,644.
Aktiebolaget Malcus Holmquist: *See*—
Soderquist, John E. V. 3,418,763.
Aktiengesellschaft Brown, Boveri & Cie: *See*—
Vigreux, Armand A. 3 419,833.
Akutin, Modest S., L. A. Rodivilova, and S. L. Gershkokhen, to Gosudarstveny Nauchno-Issledovatelsky Institute Plasticheskikh mass. Method of preparing phenolformaldehyde resins employing an organic solvent to dissolve the phenol. 3,419,527, 12–31–68, Cl. 260—57.
Albert, Richard J., to E. I. du Pont de Nemours and Co. Extruding apparatus. 3,418,687, 12–31–68, Cl. 18—14.
Alburn, Harvey E., and N. H. Grant, to American Home Products Corp. Treatment of inflammations by administering a cycloleucyl compound. 3,419,655 12–31–68, Cl. 424—305.
Aldridge, Frank S., Jr., to General Electric Co. Adjustable transformer core clamp. 3,419,836, 12–31–68, Cl. 336—210.
Alexander, Ezra M.: *See*—
Searight, Charles E., Alexander, and Ryan. 3,419,403.
Alexander, Harry W. Rotary bun grill. 3,418,920, 12–31–68, Cl. 99—386.
Alexeev, Nickolai I.: *See*—
Krugljachenko, Grigory N., Alexeev, Naiguz, Leibovich, Shmunis, and Brandenburgsky. 3,419,889.
Allaben, Charles M., Jr., to Borg-Warner Corp. Electromagnetically actuated clutch. 3,419,118, 12–31–68, Cl. 192—35.
Allen, Robert D. Sewage removal plant. 3,419,149, 12–31–68, Cl. 210—262.
Allied Chemical Corp.: *See*—
Pietrusza, Edward W., Zybert, and Pedersen. 3,419,636.
Allied Paper Inc.: *See*—
Levy, Robert M. 3,419,888.
Allis-Chalmers Mfg. Co.: *See*—
Vernati, Homer L. 3,418,872.
Allison, Ronald, and P. H. Jilbert, to National Research Development Corp. Prosthetic hand for controlled actuation by electromyogram signals. 3,418,661, 12–31–68, Cl. 3—1.1.
Allison, William D., to Ford Motor Co. Interconnected vehicle suspension having rear trailing arms. 3,419,101, 12–31–68, Cl. 180—73.
Allmand, Thomas R., to Fabriques de Produits Chimques de Thann et de Mulhouse. Spiral stairs. 3,418,770, 12–31–68, Cl. 52—187.
Altmayer, John, to New-Tronics Corp. Remotely tuned radio antenna. 3,419,869, 12–31–68, Cl. 343—703.
Amend, John W., Jr., to Beloit Corp. High speed paper making machine. 3,419,203, 12–31–68, Cl. 226—97.
American Bosch Arma Corp.: *See*—
Lindell, Albert W., Jr. 3,418,990.
American Cyanamid Co.: *See*—
Siiteri, Pentti K., and Mills. 3,419,472.
American Felt Co.: *See*—
Smith, Edward A., and Wrotnowski. 3,419,151.
American Greetings Corp.: *See*—
Margolis, Alan L. 3,418,748.
American Home Products Corp.: *See*—
Alburn, Harvey E., and Grant. 3,419,655.
Apat, Joseph K. 3,418,855.
American Machine & Foundry Co.: *See*—
Moshy, Raymond J. 3,419,014.
Sicard, Marcel C. 3,419,703.
American Metall Climax, Inc.: *See*—
Larson, Melvin L., and Moore. 3,419,589.
American Seating Co.: *See*—
Way, Douglas E., and Berry. 3,419,241.
Ametek, Inc.: *See*—
Lornitzo, Frank C. 3,419,199.
Amicon Corp.: *See*—
Michaels, Alan S. 3,419,430.
Michaels, Alan S. 3,419,431.
Ammerman, Frank E., and D. J. Schindehette, to Chrysler Corp. Electrolytic preparation of semiconductor compounds. 3,419 484, 12–31–68, Cl. 204—86.
Amstsberg, Lester A., and W. K. Wallace, to Chicago, Pneumatic Tool Co. Torque controlled electric nut-runner with solenoid brake. 3,419,087, 12–31–68, Cl. 173—12.
Anciaux, Albert T. J. H. Shoe sole. 3,418,731, 12–31–68, Cl. 36—30.
Anderson, Albin R., R. C. Carlson, Jr., C. W. Higgins, and N. F. Smith, to Western Electric Co., Inc. Apparatus for making slab cuts in resistor films. 3,418,759, 12–31–68, Cl. 51—37.
Anderson Bros. Mfg. Co.: *See*—
Stohlquist, Roger H., and Strombeck. 3,418,893.
Anderson, Frank R., and A. J. Castro, to Westates Space-Era Products, Inc. Non-skid mats. 3,418,668, 12–31–68, Cl. 4—185.
Anderson, Henry H., and W. A. Miller, to Union Carbide Corp. Durable extrusion apparatus. 3,418,685, 12–31–68, Cl. 18—12.
Anderson, James P., S. A. Hoffman, L. E. Mott, S. J. Pezely, J. Shifman, and J. A. Wilkinson, to Burroughs Corp. Modular computer system. 3,419,849, 12–31–68, Cl. 340—172.5.
Anderson, Norman G., and R. H. Stevens, to United States of America, Atomic Energy Commission. Flame ionization detector. 3,419 359, 12–31–68, Cl. 23—253.
Anderson, Phillip J.: *See*—
Khan, Amanullah R., Eakin, and Anderson. 3,418,812.
Anderson, Ralph F., to National Lock Co. Hinge and catch assembly. 3,418,682, 12–31–68, Cl. 16—145.
Andersson, Sven: *See*—
Bratt, Alton S. G. 3,418,782.
Ando, Taketoshi: *See*—
Kawamura, Yurio, Ando, Takenouchi, Sakata, and Maruyama. 3,419,608.
Andre, Stephen N., and L. R. Megargel, to Sylvania Electric Products, Inc. Dual output phase shifter. 3,419,822, 12–31–68, Cl. 333—11.

Andreasen, Mogens G.: *See*—
Tanner, Robert L., Andreasen, Harris, and Jones. 3,419,873.
Andresen, John H., Jr., to J. F. Baier. Flow controller. 3,419,038, 12–31–68, Cl. 137—504.
Angelastro, Leon L., and M. E. Beltempo. Device providing fountain for dance performance therein. 3,419,216, 12–31–68, Cl. 239—20.
Anglo Paper Products Ltd.: *See*—
Sepall, Ola. 3,419,466.
Anjac Plastics, Inc.: *See*—
Mock, Donald E., and Banner. 3,419,063.
Ano, Shizuya: *See*—
Yamamoto, Mititaka, Mizuta, and Ano. 3,419,881.
Apat, Joseph K., to American Home Products Corp. Apparatus for testing sharpness of needles. 3,418,855, 12–31–68, Cl. 73—432.
Apel, Francis N.: *See*—
Cotter, Robert J., Apel, and Conte. 3,419,624.
Apri, Edward W. Limited motion device for shoulder harnesses and the like. 3,419,308, 12–31–68, Cl. 297—386.
Aramini, Salvatore J., to Trufast Products, Inc. Fabric creasing and pressing machine. 3,419,200, 12–31–68, Cl. 223—38.
Ariel, Carmi, to Clary Corp. Data printing system. 3,419,678, 12–31–68, Cl. 178—23.
Armco Steel Corp.: *See*—
Helgesen, Peter E. 3,418,772.
Aro Corp.: *See*—
Brandenberg, Karl A. 3,419,032.
Arro Vacuum, Inc.: *See*—
Berger, Donald T. 3,419,248.
Arrow-Hart, Inc.: *See*—
Bremer, Randall C. 3,419,828.
Arutunian, Gregory, to United States of America, Army. Sintered titanium coating process. 3,419,388, 12–31–68, Cl. 75—208.
Arval, Tibor, to Sperry Rand Corp. Calculating mechanisms for calculating machines. 3,419,212, 12–31–68, Cl. 235—60.
Aschan, Harry R.: *See*—
Dowdican, Franklin W., and Aschan. 3,418,936.
Asenbauer, Donald J., to Shell Oil Co. Container lid with encapsulated reinforcing members. 3,419,184, 12–31–68, Cl. 220—97.
Ashland Oil & Refining Co.: *See*—
Hudak, Stephen F. 3,419,510.
Leas, Arnold M. 3,419,368.
Assalit, Louis. Container and closure assembly. 3,419,195, 12–31–68, Cl. 222—402.1.
Asseo, Sabi J., to Westinghouse Electric Corp. Speed regulating system providing constant loop gain. 3,419,777, 12–31–68, Cl. 318—338.
Athena Controls Inc.: *See*—
Evalds, Egils. 3,419,214.
Atlantic Refining Co., The: *See*—
Condo, Albert C., and Mendham. 3,419,511.
Atlas-Pacific Engineering Co.: *See*—
Baker, William E., and Urrere. 3,419,142.
Attwood, John G., R. L. Kosrow, and G. M. Reimer, to Union Special Machine Co. Lubrication system for sewing machines. 3,418,955, 12–31–68, Cl. 112—256.
Augostini, Peter P., to Xerox Corp. Image development of thermoplastic layers. 3,419,885, 12–31–68, Cl. 346—74.
Austin, Lewis M., to Owens-Illinois, Inc. Apparatus for producing glass rod and tubing. 3,419,376, 12–31–68, Cl. 65—192.
Automated Building Components, Inc.: *See*—
Jurelt, John C., and Kushner. 3,419,205.
Automatic Electric Laboratories, Inc.: *See*—
Burns, Robert V. and Cleary. 3,419,674.
Daly, Edmund B., and Rice. 3,419,734.
Lord, John M., and Sterly. 3,419,684.
Avco Corp.: *See*—
Partos, Stephen E. 3,418,942.
Ayala, Carl, to Marvin Glass & Associates. Vibrating soundmaker. 3,418,749, 12–31–68, Cl. 46—189.
Ayranto, Roy: *See*—
Lepp, Jacob H., and Ayranto. 3,419,222.
Azuma, Shiro. Bar feeding apparatus for an automatic lathe. 3,419,160, 12–31–68, Cl. 214—1.2.
Bach, Frederick O., to A. B. Dick Co. Light sensitive lithographic plate of a water soluble diazo compound and a hydrophilic filler material. 3,419,394, 12–31–68, Cl. 96—75.
Badger, Alfred E.: *See*—
Lehr, Glen J., Oelke, O'Connell, and Badger. 3,419,371.
Badger Meter Mfg. Co.: *See*—
Genthe, William K., Vander Heyden, and Strobel. 3,419,793.
Genthe, William K., Vander Heyden, and Strobel. 3,419,795.
Hartz, Marvin E. 3,419,035.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Bock, Gustav. 3,419,564.
Deuschel, Werner, Vilsmeier, and Riedel. 3,419,557.
Mahling, Dieter, Mueller-Tamm, Seibt, Zuern, and Scharf. 3,419,518.
Schenk, Walter, and Stranger. 3,419,486.
Baehre, Herbert K., to Collins Radio Co. Semiconductor circuit for A-C to D-C conversion or frequency multiplication. 3,419,787, 12–31–68, Cl. 321—43.
Baermann, Max. Dry reed contact relay with permanent magnet. 3,419,829, 12–31–68, Cl. 335—153.
Baermann, Max. Permanent magnet holding devices. 3,419,832, 12–31–68, Cl. 335—285.
Baier, John F.: *See*—
Andresen, John H., Jr. 3,419,038.
Bailey, James R., and R. J. Bokosky, to Switchcraft, Inc. Push button switch with button-actuated carriage adapted to carry plurality of blades for simple and complex switching arrangements. 3,419,696, 12–31–68, Cl. 200—159.
Bailey, John L.: *See*—
White, John D., and Bailey. 3,419,217.
Baker, Carl C.: *See*—
Salna. Karl, and Baker. 3,419,170.
Baker, Thomas B., S. B. Levy, and R. F. Ottolini, to E. I. du Pont de Nemours and Co. Heat transfer apparatus having flexible plastic tubular elements arranged in a braided configuration. 3,419,069, 12–31–68, Cl. 165—158.
Baker, William E., and C. L. Urrere, to Atlas-Pacific Engineering Co. Cherry stemming and sorting machine. 3,419,142, 12–31–68, Cl. 209—108.
Balamuth, Lewis: *See*—
Kleesattel, Claus, Kuris, and Balamuth. 3,419,776.
Baldur, Roman, to Dominion Engineering Works, Ltd. Multiple drive for large gears. 3,418,865, 12–31–68, Cl. 74—410.
Baldwin, Jerry L.: *See*—
Hoffman, Robert K., Baldwin, MacFarlane, and Vander Horst. 3,418,789.
Baldwin, Richard R., and L. G. Whitten, Jr. Alignment interferometer. 3,419,898, 12–31–68, Cl. 356—110.
Bangor Punta Operations, Inc.: *See*—
Futer, Rudolph E. 3,418,724.
Banner, Joseph: *See*—
Mock, Donald E., and Banner. 3,419,063.
Banner Metals, Inc.: *See*—
Laughlin, Philip R., and Betts. 3,419,175.
Baran, Joseph G., to Acoustics Development Corp. Booth with cantilever-mounted spring-back seat. 3,419,305, 12–31–68, Cl. 297—157.
Baran, Ronald J.: *See*—
Morris, William C., and Baran. 3,419,412.
Barber, Richard B., L. G. Cross, and W. G. Prince, to Lear Siegler, Inc. Laser optical apparatus for cutting holes. 3,419,321, 12–31–68, Cl. 350—8.
Barbu, Richard J.: *See*—
Krauss, John, and Barbu. 3,419,003.
Bard, C. R., Inc.: *See*—
Walek, George A., III. 3,419,137.
Bard, Ralph A., Jr.: *See*—
Van Dorn, William G. 3,419,090.
Barditch, Irving F., and C. G. Brooks, to United States of America, Air Force. Bandpass amplifier. 3,419,812, 12–31–68, Cl. 330—30.
Barish, Benjamin, and A. R. Thomson, to TRW Inc. Pulsed fuel delivery system for turbine power package. 3,418,805, 12–31–68, Cl. 60—39.28.
Barnett, Eugene J.: *See*—
Dalton, Robert F., and Barnett. 3,418,780.
Barogenics, Inc.: *See*—
Kip, Ruloff F., Jr. 3,418,922.
Zeitlin, Alexander, and Boggio. 3,418,923.
Barows, Arthur G., E. W. Parrish, and R. C. Miner, to International Harvester Co. Root crop harvester. 3,419,084, 12–31–68, Cl. 171—58.
Barth, Robert, and G. Adalbert, to Robert Bosch G.m.b.H. Windshield wiper. 3,418,679, 12–31–68, Cl. 15—250.36.
Bartolini Salimbeni Vival, Pietro. Cyclic movable ice maker. 3,418,823, 12–31–68, Cl. 62—138.
Basic Inc.: *See*—
Jepsen, Tage L. B. 3,419,140.
Batiuk, Walter, C. H. Jung, and F. W. Morgan, to The Boeing Co. Prevention of caking in high temperature fluidization processes. 3,419,416, 12–31–68, Cl. 117—106.
Battaglia, Anthony. Hair spray device. 3,419,197, 12–31–68, Cl. 222—485.
Bauer, Douglas M., to General Electric Co. Blade connection means for power-operated slicing knife. 3,418,713, 12–31–68, Cl. 30—272.
Baughman, Davis L., and E. F. Pierce, to The Pangborn Corp. Apparatus for use in treating workpieces. 3,418,756, 12–31–68, Cl. 51—14.
Baumgartner, Alois, to Thiokol Chemical Corp. Cavity shaping machine. 3,418,884, 12–31–68, Cl. 90—43.
Bausch & Lomb Inc.: *See*—
Hubbard, George M. 3,419,334.
Bayha, Jack E. Radiation sensitive currency acceptor with escrow. 3,419,724, 12–31–68, Cl. 250—219.
Bazarnic, Peter P. Device for measuring, registering and pouring. 3,419,187, 12–31–68, Cl. 222—36.
Beal, Robert E., and R. A. Eisenbauer, to United States of America, Agriculture. Production of C_{18} cyclic acids in aqueous solvent. 3,419,586, 12–31–68, Cl. 260—405.6.
Beall, William R. Message annunciator or signal unit. 3,419,859, 12–31–68, Cl. 340—381.
Beasley, Thomas J., Jr., and R. P. Rodenbaugh. Head jamb-weatherstrip interlocking key means. 3,418,754, 12–31–68, Cl. 49—407.
Beaudouin, Jacques R., to International Telephone and Telegraph Corp. High power transistor structure. 3,419,763, 12–31–68, Cl. 317—234.
Beaunit Corp.: *See*—
Fuzek, John F. 3,419,638.
Beauvais, Max, and C. Moreau, said Moreau assor. to Societe Financiere et Industrielle des Ateliers et Chantiers de Bretagne. Sterilization apparatus. 3,418,918, 12–31–68, Cl. 99—362.
Becher, Heinz-Manfred, R. Sebring, and K. Zelle, to C. H. Boehringer, Sohn. 2 - ethoxy - methyl-4,6-dinitro-phenol. 3,419,620, 12–31–68, Cl. 260—611.
Beckman, Ronald H.: *See*—
Propst, Robert L., and Beckman. 3,418,765.
Bedrosian, Paul H., to United States of America, Health, Education and Welfare. Device for preventing damage to radioactive sources in lead-filled trays or drawers. 3,419,320, 12–31–68, Cl. 312—352.
Beer, Arthur O., and G. H. Kling, to Westinghouse Air Brake Co. Vehicle test bed. 3,418,849, 12–31–68 Cl. 73—117.
Beesley, Scott L. Storage structure with reciprocating gravity fed extension rails. 3,419,185, 12–31–68, Cl. 221—176.
Begley, John W., and L. W. Pollock, to Phillips Petroleum Co. Production of acrylonitrile. 3,419,597, 12–31–68, Cl. 260—465.3.

Behr, Josef: *See*—
Hetmann, Richard, and Behr. 3,418,866.
Belew, Leland W., to The Mosier Safe Co. Security file. 3,418,951, 12–31–68, Cl. 109—59.
Bell, Eric B., to Saunders-Roe Developments Ltd. Device for measuring the concentration of substances in liquids. 3,419,716, 12–31–68, Cl. 250—43.5.
Bell & Howell Co.: *See*—
Prelletz, Edward R. 3,419,119.
Bell Telephone Laboratories, Inc.: *See*—
Crowell, Merton H., Dalton, Gordon, and Labuda. 3,419,746.
Elvis, Peter, and Houcke. 3,419,679.
MacWilliams, Walter H., Jr., and Ring. 3,419,826.
Michael, Henry J., Morse, Oram, Roccati, and Smith. 3,419,683.
Seidel, Harold. 3,419,823.
Bellet, Joseph. In-bed exerciser and/or cushion. 3,419,268, 12–31–68, Cl. 272—57.
Bellows, Alfred H., to Polaroid Corp. Photographic camera erecting system. 3,418,907, 12–31–68, Cl. 95—39.
Belmont, Lawrence P. W., Sr.: *See*—
Gloninger, Irving L. W., and Belmont. 3,418,717.
Beloit Corp.: *See*—
Amend, John W., Jr. 3,419,203.
Justus, Edgar J. 3,419,890.
Beltempo, Maria E.: *See*—
Angelastro, Leon L., and Beltempo. 3,419,216.
Bendix Corp., The: *See*—
Black, James D., and Winterbotham. 3,419,773.
Foote, Theodore. 3,419,043.
Benson, Glendon M., to Physics International Co. Fuel injector-ignitor system for internal combustion engines. 3,418,980, 12–31–68, Cl. 123—32.
Bentley, John M., and W. H. Watson, to Westinghouse Electric Corp. Tension member position regulating system utilizing a variable limiter. 3,419,771, 12–31–68, Cl. 318—6.
Benton, Crayton D.: *See*—
Mathews, Victor M., Jr., and Benton. 3,419,710.
Benton, Robert C., to Chemcut Corp. Method and means for continuous control of etching rate. 3,419,446, 12–31–68, Cl. 156—3.
Berger, Abe, to General Eletric Co. Method for producing silicon hydrides. 3,419,354, 12–31–68, Cl. 23—204.
Berger, Abe, to General Electric Co. Method for making organosiloxane hydrides. 3,419,592, 12–31–68, Cl. 260—448.2.
Berger, Donald T., to Arro Vacuum, Inc. Valve. 3,419,248, 12–31–68, Cl. 251—309.
Berkelmann, Gunter F. W.: *See*—
Thiede, Heinz A. E., Berkelmann, and Leisterer. 3,419,845.
Berman, Robert A. Respiratory device. 3,419,004, 12–31–68, Cl. 128—208.
Bernard, George G.: *See*—
Maly, George P., Smith, Bernard, and Fox. 3,419,072.
Bernard, Georges: *See*—
Pelenc, Yves, and Bernard. 3,419,802.
Pelenc, Yves, and Bernard. 3,419,803.
Bernard, Raoul, to Societe Paulstra. Assemblies of the elastic coupling type. 3,418,827, 12–31–68, Cl. 64—11.
Bernstein, Jack, to E. R. Squibb & Sons, Inc. N-[(1-substituted piperidyl) alkylpiperidinoalkyl] derivatives of N-containing heterocyclic compounds. 3,419,554, 12–31–68, Cl. 260—243.
Bernstein, Jack, H. L. Yale, and K. A. Losee, to E. R. Squibb & Sons, Inc. Fluorinated phenothiazine compounds. 3,419,553, 12–31–68, Cl. 260—243.
Bernstein, Jack, J. Krapcho, and C. Turk, to E. R. Squibb & Sons, Inc. 1 aminoalkyl 1-aryl indanes and tetrahydronaphthalenes. 3,419,560, 12–31–68, Cl. 260—268.
Berry, Hammond A.: *See*—
Way, Douglas E., and Berry. 3,419,241.
Berthier, Joseph G., to Tubauto. System for setting the height of seats in automotive vehicles. 3,419,243, 12–31–68, Cl. 248—394.
Bertin & Cie: *See*—
Pavlin, Cyrille F., and Salmon. 3,419,738.
Bestenreiner, Friedrich: *See*—
Wick, Richard, Biedermann, Winkler, Bestenreiner, Kiper, and Pawlik. 3,418,904.
Beta Corp.: *See*—
Martin, Merle E. 3,419,857.
Beteiligungs- und Patentverwaultungsgesellschaft mit beschrankter Haftung: *See*—
Schneider, Fritz W., and Stohlmeier. 3,419,210.
Betts, Earl L.: *See*—
Laughlin, Philip R., and Betts. 3,419,175.
Betts, Peter, D. R. Reichel, and E. T. Eiselen, to International Business Machines Corp. Electrographic printer. 3,419,884, 12–31–68, Cl. 346—74.
Beutel, Helmuth K., A. D. Markum, and C. W. O'Donnell, to General Dynamics Corp. Manually-operated closed-cycle refrigeration system. 3,418,824, 12–31–68, Cl. 62—474.
Bevis Industries, Inc.: *See*—
Coburn, Theodore R. 3,418,702.
Bicking, John B., to Merck & Co., Inc. 4-(2-methyleneal-kanoyl) phenylsulfinyl alkanoic acids. 3,419,606, 12–31–68, Cl. 260—515.
Bieckert, Ernst, R. Kallischnigg, and K. Gensel, to Knoll A.G. Organic peroxides. 3,419,577, 12–31–68, Cl. 260—338.
Biedermann, Friedrich: *See*—
Wick, Richard, Biedermann, Winkler, Bestenreiner, Kiper, Pawlik, Von Sybel, Von Wasielewski, and Wagner. 3,418,904.
Bilinski, Thomas, Jr., and J. M. McGowan. Pin and pinsetting assembly. 3,419,213, 12–31–68, Cl. 235—60.
Bing, Charles W.: *See*—
Schmidlin, Albertus E., and Bing. 3,419,028.
Bing, Herbert A.: *See*—
Land, Edwin H., and Bing. 3,418,903.
Bingley, Donald W., to AMP Inc. System for supplying frequency controlled single phase voltage from varying polyphase input voltage. 3,419,783, 12–31–68, Cl. 321—7.
Birtill, John W.: *See*—
Bottomley, Alastair H., Styles, Jilbert Birtill, and Truscott. 3,418,662.
Bissett-Berman Corp., The: *See*—
Brown, Neil L. 3,419,796.
Bjarngard, Bengt: *See*—
Debye, Anne L., and Bjarngard. 3,419,720.
Black Clawson Co., The: *See*—
Phelps, Richard W., Coghill, and Ingison. 3,418,970.
Black and Decker Mfg. Co., The: *See*—
Sheps, Martin I. 3,418,761.
Black, James D., and C. H. Winterbotham, to The Bendix Corp. Machine tool position servo including a linear adjustable cam for compensating lead-screw error. 3,419,773, 12–31–68, Cl. 318—18.
Black, John W., and R. W. Lindsey, to Pemco Wheel Co. Storage unit. 3,419,155, 12–31–68, Cl. 211—90.
Black, William R.: *See*—
Hornung, Stephen A., Stichweh, and Black. 3,419,733.
Bleasdale, Desmond H. Laminated structure with former element. 3,419,457, 12–31–68, Cl. 161—102.
Bliss, E. W., Co.: *See*—
Cheslock, Edward P. 3,419,713.
Cox, Floyd E. 3,419,730.
Matteson, David J. 3,418,887.
McDermott, John J., and Thompson. 3,419,231.
O'Regan, James F., Lundberg, and Mussoni. 3,419,082.
Bloch, Herman S., to Universal Oil Products Co. Desalinization of aqueous solutions. 3,419,492, 12–31–68, Cl. 210—32.
Blomquist, Alfred P.: *See*—
Cartwright, Bert W., Froslie, and Blomquist. 3,418,871.
Blos, Ernst O.: *See*—
Rotert, Kurt, and Blos. 3,418,838.
Blue Grass Industries, Inc.: *See*—
Shumate Clifford W. 3,418,660.
Bluestone, Henry: *See*—
Pyne, William J., and Bluestone. 3,419,626.
Blumenkopf, Norman: *See*—
Catino, Sigmund C., Strobel, and Blumenkopf. 3,419,659.
Bobkowicz, Emilian. Method and apparatus for making multicomponent nonwoven fabric. 3,419,451, 12–31–68, Cl. 156—161.
Bobo, Roy A., to Reed Roller Bit Co. Drill string stabilizer. 3,419,094, 12–31–68, Cl. 175—325.
Bock, Gustav, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of bis(1-arylureido)-benzene-p- or m-dicarboxylic acid dialkyl esters. 3,419,564, 12–31–68, Cl. 260—294.3.
Boebringer, C. H., Sohn: *See*—
Becher, Heinz-Manfred, Sehring, and Zelle, 3,419,620.
Boehringer Ingelheim G.m.b.H.: *See*—
Griss, Gerhart R. 3,419,575.
Boeing Co., The: *See*—
Batiuk, Walter, Jung, and Morgan. 3,419,416.
Marks, Harold R. 3,419,414.
Stewart, David. 3,419,691.
Boggio, F. George: *See*—
Zeitlin, Alexander, and Boggio. 3,418,923.
Bok, Edward, to Dike, Inc. Drafting device. 3,419,335, 12–31–68, Cl. 401—48.
Bokosky, Robert J.: *See*—
Bailey, James R., and Bokosky. 3,419,696.
Bond Stores Inc.: *See*—
Shapiro, Laurence L., and Parillo. 3,419,154.
Bonded Products, Inc.: *See*—
Hight, Hanford Z., Gallant, Shannon, and Loeffler. 3,419,647.
Bonney, Robert S. Low bridge warning device for vehicles. 3,419,847, 12–31–68, Cl. 340—22.
Bopp, Achim, and G. Krause, to Fernseh G.m.b.H. Method and apparatus for equalizing timing errors in signals containing periodic components. 3,419,681, 12–31–68, Cl. 178—69.5.
Borden, Inc.: *See*—
Lees, William A., and Swire. 3,419,512.
Borg-Warner Corp.: *See*—
Allaben, Charles M., Jr. 3,419,118.
Tracy, Herbert E. 3,419,279.
Borner, Gerhard, to Zeiss Ikon Aktiengesellschaft. Motion picture camera provided with exposure control device and film speed selector. 3,419,326, 12–31–68, Cl. 352—141.
Bosch, Robert, G.m.b.H.: *See*—
Barth, Robert, and Adalbert. 3,418,679.
Ortlieb, Alfred. 3,419,886.
Bosi, Joseph L., to Hydro-Line Mfg. Co. Valve for fluid pressure device. 3,419,247, 12–31–68, Cl. 251—214.
Bossbart, John L., to Sun Electric Corp. Testing apparatus for dual hydraulic systems. 3,418,843, 12–31–68, Cl. 73—37.
Bottenbruch, Ludwig: *See*—
Schnell, Hermann, Bottenbruch, Darsow, and Weirauch. 3,419,526.
Bottomley, Alastair H., P. R. D. Styles, P. H. Jilbert; J. W. Birtill, and J. R. Truscott, to National Research Development Corp. Prosthetic hand with improved control system for actuation by electromyogram signals. 3,418,662, 12–31–68, Cl. 3—1.1.
Bowden, Howard J.: *See*—
Earle, Ernest L., Jr., Bowden, Civille, and Feldbrugge. 3,419,399.
Boyanich, Milan, Sr. Hand truck with push plate. 3,419,281, 12–31–68, Cl. 280—47.29.
Boyd, John M.: *See*—
Nodwell, William B., Boyd, and Calgary. 3,419,097.
Brace, Robert S.: *See*—
Isbell, Perry T., and Brace. 3,419,168.

Bradford Dyers' Association Ltd., The: *See*—
Wilford, Ernest. 3,418,931.
Brady, Rupert J. Booms having three sections, fully extensible with axially connected rams. 3,419,157, 12–31–68, Cl. 212—55.
Brand, Max K. Key making machine for tubular-type key. 3,418,882, 12–31–68, Cl. 90—13.05.
Brandenberg, Karl A., to Aro Corp. Differentiator valve for fluid logic circuits. 3,419,032, 12–31–68, Cl. 137—102.
Brandenburgsky, Mikhail G.: *See*—
Krugljachenko, Grigory N., Alexeev, Naignz, Leibovich, Shmunis, and Brandenburgsky. 3,419,889.
Brandon, Richard N. Dispenser and cutter and the like. 3,419,201, 12–31–68, Cl. 225—93.
Brane, Maxwell D., to Westinghouse Electric Corp. Electrical converter apparatus for rectifying and adding a plurality of A.C. voltages. 3,419,786, 12–31–68, Cl. 321—27.
Bratsberg, Glenn N. Airstream deflector for vehicles. 3,419,897, 12–31–68, Cl. 296—91.
Bratt, Alton S. G., to S. Andersson. Anchors for the parapets of balconies. 3,418,782, 12–31–68, Cl. 52—707.
Bratton, Francis H., and H. I. Reynolds, to G. T. Schjeldahl Co. Hydrogen generating system. 3,419,361, 12–31–68, Cl. 23—281.
Braun, Ernst and G., to Halbach & Braum. Connecting device for conveyor chains and the like. 3,419,126, 12–31–68, Cl. 198—1.
Braun, Gert: *See*—
Braun, Ernst and G. 3,419,126.
Braun, John D.: *See*—
Kaufman, Martin H., and Braun. 3,419,628.
Bray, Ulric B., and J. E. Wood, to Bray-Wood Co. Cold asphalt paving process. 3,418,900, 12–31–68, Cl. 94—23.
Bray-Wood Co.: *See*—
Bray, Ulric B., and Wood. 3,418,900.
Bremer, Randall C., to Arrow-Hart, Inc. Means proportional to magnetic flux to bias electric switch contacts closed. 3,419,828, 12–31–68, Cl. 335—16.
Brendes, Horst: *See*—
Zipse, Erich, and Brendes. 3,419,848.
Brennan, Ambrose K., Jr., to Read Corp. Continuous mixer discharge control. 3,419,250, 12–31–68, Cl. 259—41.
Brewer, Lee M., H. Engelhardt, R. P. Rohde, and J. F. Yonker, to General Motors Corp. Fluid flow control mechanism. 3,419,208, 12–31–68, Cl. 230—157.
Brewer, Willie F., to FMC Corp. Reinforcing means for rotary mower blades. 3,418,793, 12–31–68, Cl. 56—295.
Bridge, Arnold H., Jr., to The Goodyear Tire & Rubber Co. Reinforcement element. 3,419,059, 12–31–68, Cl. 152—359.
Briggs, Frederick A., C. C. Ketterer, and L. A. Sherbeck, to E. I. du Pont de Nemours and Co. Prevention of filament twinning in dry spinning. 3,419,653, 12–31–68, Cl. 264—204.
British Aircraft Corp. (Operating) Ltd.: *See*—
Wotton, John. 3,419,233.
Brooks, Charles, and T. Sutton, to Cee Bee Mfg. Co., Inc. Decorati e extruded plastic stripping and laminated products including the same. 3,419,458, 12–31–68, Cl. 161—121.
Brooks, Charles G.: *See*—
Barditch, Irving F., and Brooks. 3,419,812.
Brooks, Fred A., Jr., to Esso Production Research Co. Method for consolidating subterranean formations. 3,419,073, 12–31–68, Cl. 166—33.
Brouwer, Frans, and D. Gray, to Stewart-Warner Corp. Facsimile phasing system. 3,419,680, 12–31–68, Cl. 178—69.5.
Brown, Frederick L., to The Dow Chemical Co. Hot-press water-resistant amino alcohol ester interpolymer latex-based adhesive for various substrates. 3,419,507, 12–31–68, Cl. 260—8.
Brown, George L.: *See*—
Schmidle, Claude J., and Brown. 3,419,515.
Brown, Joanne N. Clothing construction for infant wear. 3,418,659, 12–31–68, Cl. 2—70.
Brown, Neil L., to The Bissett-Berman Corp. Compensated salinometer. 3,419,796, 12–31–68, Cl. 324—30.
Brown, Norman F., to Otis Engineering Corp. Well tools. 3,419,074, 12–31–68, Cl. 166—46.
Brown, Norman F., to Otis Engineering Corp. Well tools. 3,419,075, 12–31–68, Cl. 166—46.
Browne, Frank L.: *See*—
Philibert, Robert A., Browne, Sanger, and Kirk. 3,419,756.
Brumbaugh, George U., L. S. Sherman, and H. Furiya, to Pacific Car and Foundry Co. (Peterbilt Motors Co. Division). Truck hood. 3,419,099, 12–31–68, Cl. 180—69.
Brundage, Robert W., to The Emerson Electric Co. Vane type oscillating hydraulic motor. 3,418,886, 12–31–68, Cl. 91—339.
Brunswick Corp.: *See*—
Deuschle, Fritz, and Reiss. 3,419,179.
Bryan, John F., Jr.: *See*—
Hansford, William W., Bryan, and Hutchinson. 3,418,944.
Bryant, Ozro N.: *See*—
Wagner, John T., and Bryant. 3,418,806.
Buchheit, Otto K., to Verwaltungsgesellschaft Moeller und Neumann offene Handelsgesellschaft. Hydraulic forming or injection press for molding synthetic materials. 3,418,689, 12–31–68, Cl. 18—16.
Bucyrus-Erie Co.: *See*—
Mork, George W. 3,419,156.
Buczak, Edwin J., to Parker Metal Goods Co. Cart handle having a printed legend thereon. 3,418,739, 12–31–68, Cl. 40—308.
Budd Co., The: *See*—
Eggert, Walter S., Jr., and Wessells. 3,419,303.
Hogan, Patrick J. 3,419,057.
Bueler, Richard C., to Wagner Electric Corp. Control valve. 3,419,315, 12–31–68, Cl. 303—71.
Bunger, Hilary D. Dispensing assembly. 3,419,191, 12–31–68, Cl. 222—93.
Burbine, William G.: *See*—
Jordan, Merrill E., and Burbine. 3,419,356.
Burgess, Alan C.: *See*—
Williams, Sidney B., and Burgess. 3,418,854.
Burgess, Bernard W., and S. M. Chapman, to Pulp and Paper Research Institute of Canada. Turbulent drying process. 3,418,723, 12–31–68, Cl. 34—1.
Burgess, Lester D., to Lif-O-Gen, Inc. Toggle valve. 3,419,246, 12–31–68, Cl. 251—205.
Burgess, Price B., to Malleable Research and Development Foundation. Control of excess chromium in malleable irons. 3,419,439, 12–31–68, Cl. 148—3.
Burk, Emmett H., Jr.: *See*—
Horvath, Endre, and Burk. 3,419,353.
Burklin, Gerlinde, to Siemens Aktiengesellschaft. Anti-static polystyrene-polybutadiene blends. 3,419,640, 12–31–68, Cl. 260—892.
Burnett, William R., to J. P. Stevens & Co., Inc. Seam jumper and selvage lifter. 3,418,908, 12–31–68, Cl. 118—8.
Burney, Harold W., and F. K. Landecker, to Metal Improvement Co. Peening nozzle. 3,419,894, 12–31–68, Cl. 72—53.
Burns, James A.: *See*—
Harbison, Dixon T., and Burns. 3,419,078.
Burns, Joseph R., to Radio Corp. of America. Content addressed memories. 3,419,851, 12–31–68, Cl. 340—172.5.
Burns, Robert V., and R. T. Cleary, to Automatic Electric Laboratories, Inc. Image positioning and coupling circuits for television camera and display apparatus. 3,419,674, 12–31–68, Cl. 178—6.
Burroughs Corp.: *See*—
Anderson, James P., Hoffman, Mott, Pezely, Shifman, and Wilkinson. 3,419,849.
Doughty, Frederic C. 3,419,856.
Marx, Hans B., Nutting, and Marra. 3,419,852.
Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Perrotta, Agostino V. 3,419,558.
Byczkowski, Ernest, and H. J. Tischler, to Young Spring & Wire Corp. Windshield wiper and washer system. 3,418,676, 12–31–68, Cl. 15—250.04.
Byrne Doors, Inc.: *See*—
Davidson, Charles S. 3,418,775.
C.A.V. Ltd.: *See*—
Peltret, Pierre H., and Wheatley 3,419,292.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Vassiliev, Avenir, Nicolas, and Hildebrandt. 3,419,496.
Cabot Corp.: *See*—
Jordan, Merrill E., and Burbine. 3,419,356.
Calgary, Alberta: *See*—
Nodwell, William B., Boyd, and Calgary. 3,419,097.
Calhoun, Edward J., and K. G. Pinter. Smoking article. 3,419,013, 12–31–68, Cl. 131—15.
California Institute Research Foundation: *See*—
Rembaum, Alan, and Landel. 3,419,384.
Camco, Inc: *See*—
King, Howard M., Jr. 3,419,045.
Cameron Iron Works, Inc.: *See*—
Williams, Leonard E., Jr., and Gruller. 3,419,071.
Campbell, Arthur W., and B. D. La Grone, to Commercial Solvents Corp. Products and method for vulcanization of rubber. 3,419,520, 12–31–68, Cl. 260—41.5.
Campbell, Clyde D.: *See*—
Cross, James M., Merzger, and Campbell. 3,419,612.
Campbell, Donald R., G. Fallos, and A. R. Zine, Jr., to Corning Glass Works. Pipe coupling. 3,419,290, 12–31–68, Cl. 285—223.
Campbell, Mark R., and L. A. Wright, to McDonnell Douglas Corp. Thrust reverser. 3,419,218, 12–31–68, Cl. 239—265.37.
Campillo, Carlos C.: *See*—
Zaffaroni, Alejandro, and Campillo. 3,419,470.
Canadian Patents and Development Ltd.: *See*—
Dawson, Peter S. S. 3,419,473.
Makow, David M. 3,419,841.
Canter, Carl R.: *See*—
Rytter, Edward A., and Canter. 3,419,500.
Capps, David B.: *See*—
Elslager, Edward F., and Capps. 3,419,584.
Carborundum Co., The: *See*—
Dooley, Peter C., Jr. 3,418,762.
Cardan, Bernhard. Building construction. 3,418,768, 12–31–68, Cl. 52—167.
Cardillo, Joseph S., and E. Jonsson, to White Motor Corp. Radial piston pump. 3,418,937, 12–31–68, Cl. 103—39.
Carel, Alfred B., and G. Perkins, Jr., to Continental Oil Co. Movable oven assembly. 3,419,255, 12–31–68, Cl. 263—6.
Carlson, Ernest C., to International Harvester Co. Hydraulic indicator for a bucket. 3,418,966, 12–31–68, Cl. 116—124.
Carlson, Roy C., Jr.: *See*—
Anderson, Albin R., Carlson, Higgins, and Smith. 3,418,759.
Carmichael, Thomas, and D. U. Howard. Vehicle flush toilet. 3,418,664, 12–31–68, Cl. 4—115.
Carnation Co.: *See*—
Moore, Robert D. 3,419,196.
Carns, Sidney L., to North American Rockwell Corp. Shielded angular drive assembly. 3,418,828, 12–31–68, Cl. 64—32.
Carper, Robert L.: *See*—
Klosky, John P., and Carper. 3,419,328.
Carter, John G.: *See*—
Van Dorn, William G. 3,419,090.
Cartwright, Bert W., L. E. Frosile, and A. P. Blomquist, to Chrysler Corp. Transmission for motor vehicle. 3,418,871, 12–31–68, Cl. 74—763.
Carysforth, Henry A.: *See*—
Rivman, Samuel J., and Carysforth. 3,418,891.
Castro, Albert J.: *See*—
Anderson, Frank R., and Castro. 3,418,668.

Cataphote Corp.: *See*—
Searight, Charles E., Alexander, and Ryan. 3,419,403.
Catino, Sigmund C., A. F. Strobel, and N. Blumenkopf, to GAF Corp. Sun screening methods. 3,419,659, 12–31–68, Cl. 424—60.
Catlos, Peter V., to Cordex Ltd. Twine. 3,418,799, 12–31–68, Cl. 57—152.
Cavitron Corp.: *See*—
Kleesattel, Claus, Kuris, and Balamuth. 3,419,776.
Cease Central, Inc.: *See*—
Cease, William W. 3,419,186.
Cease, William W., to Cease Central, Inc. Article dispenser. 3,419,186, 12–31–68, Cl. 221—221.
Cee Bee Mfg., Co., Inc.: *See*—
Brooks, Charles, and Sutton. 3,419,458.
Celanese Corp.: *See*—
Chase, Joseph D., and Gesting. 3,419,529.
Timmons, William D. 3,419,463.
Timmons, William D. 3,419,464.
Centre de Recherches de Pont-A-Mousson: *See*—
Lorang, Pierre E. 3,419,066.
Centre Stephanois de Recherche Mecanique Hydromecanique et Frottement: *See*—
Polti, Jean-Loup. 3,419,110.
Chapman, Stuart M.: *See*—
Burgess, Bernard W., and Chapman. 3,418,723.
Chapsky, Jacob, to Lockheed Aircraft Corp. Data acquisition and recording system. 3,419,883, 12–31–68, Cl. 346—74.
Chase, Joseph D., and P. F. Gesting, to Celanese Corp. Stabilization of oxymethylene copolymers. 3,419,529, 12–31–68, Cl. 260—67.
Chateau, Henri R. P.; deceased, by J. Chateau, administratrix, M.-C. M. Gadet, and J. J. L. Pouradier, to Eastman Kodak Co. Print-out emulsions and process. 3,419,396, 12–31–68, Cl. 96—108.
Chateau, Jacqueline: *See*—
Chateau, Henri R. P., Gadet, and Pouradier. 3,419,396.
Chemcut Corp.: *See*—
Benton, Robert C. 3,419,446.
Chemical Construction Corp.: *See*—
Chevion, Alexander. 3,419,362.
Chemische Werke Albert: *See*—
Ronifs, Hans A., and Schmidt. 3,419,349.
Chen, Richard J.: *See*—
Land, Edwin H., and Chen. 3,418,912.
Cheslock, Edward P., to E. W. Bliss Co. Panel light modules. 3,419,713, 12–31–68, Cl. 240—1.2.
Chevion, Alexander, to Chemical Construction Corp. Fluid heater. 3,419,362, 12–31–68, Cl. 23—288.
Chiba, Teiichiro, K. Hiramatsu, and K. Hirano, to Kurashiki Rayon Co. Ltd. Process for making improved films from saponified ethylene-vinyl acetate copolymers. 3,419,654, 12–31–68, Cl. 264—210.
Chicago Bridge & Iron Co.: *See*—
Engdahl, Gerald E. 3,419,174.
Chicago Lock Co.: *See*—
Kerr, William J. 3,418,833.
Chicago, Pneumatic Tool Co.: *See*—
Amstsberg, Lester A., and Wallace. 3,419,087.
Chisholm, John P. Mobile emergency unit locating system. 3,419,865, 12–31–68, Cl. 343—112.
Cholin, Roger R., and K. E. Guest. Cable cam shutoff mechanism. 3,419,083, 12–31–68, Cl. 169—26.
Christensen, Vernon E. Apparatus for plumbing and gauging posts. 3,418,721, 12–31–68, Cl. 33—180.
Christine, William C., and J. E. Pierce, to A. E. I. Corp. Packaging machine. 3,418,786, 12–31–68, Cl. 53—282.
Chrysler Corp.: *See*—
Ammerman, Frank E., and Schindebette. 3,419,484.
Cartwright, Bert W., Frosile, and Blomquist. 3,418,871.
Levy, Gert G. 3,419,501.
Chupp, John P.: *See*—
Early, Jack D., and Chupp. 3,419,585.
Cimini, Claude, to W. R. Grace & Co. Concrete joint seal. 3,418,898, 12–31–68, Cl. 94—18.
Civille, Francis J.: *See*—
Earle, Ernest L., Jr., Bowden, Civille, and Feldbrugge. 3,419,399.
Claeys, Marcel. Loom battens and controls. 3,419,048, 12–31–68, Cl. 139—188.
Claflin, Howard B. Paperboard form construction for rubber mold. 3,418,695, 12–31–68, Cl. 18—45.
Clark Equipment Co.: *See*—
Frost, Barry L. 3,418,807.
Messenger, Ronald L. 3,419,104.
Newhouse, James H. 3,418,861.
Walton, William B. 3,419,798.
Clark, Jack H. J. H. Van Tassel, G. B. Larrabee, and J. F. Haefling, to Texas Instruments Inc. Ohmic contact to semiconductor devices. 3,419,763, 12–31–68, Cl. 317—234.
Clark, John B.: *See*—
Foerster, George S., and Clark. 3,419,385.
Clarke, Derrick S. Manufacture of plastic tubing or sheeting. 3,418,688, 12–31–68, Cl. 18—14.
Clary Corp.: *See*—
Ariel, Carmi. 3,419,678.
Clauson-Kaas, Niels: *See*—
Petersen, John V. B., and Clauson-Kaas. 3,419,570.
Clayton, Lorimer, Jr., to Scientific-Atlanta, Inc. Automatic tracking system utilizing coded scan sequence. 3,419,868, 12–31–68, Cl. 343—113.
Cleary, Robert T.: *See*—
Burns, Robert V., and Cleary. 3,419,674.
Clements, Warner W. Electromechanical actuator. 3,419,739, 12–31–68, Cl. 310—15.
Cleveland Trencher Co., The: *See*—
Penote, Vincent S. 3,418,781.
Coates, Joseph F.: *See*—
Wakeman, Reginald L., and Coates. 3,419,562.
Coburn. Theodore R., to Bevis Industries, Inc. Tenter clip chain. 3,418,702, 12–31–68, Cl. 26—61.
Cockshott, Charles P., to J. Lucas (Industries) Ltd. Semiconductor devices. 3,419,442, 12–31–68, Cl. 148—187.
Coe Mfg. Co., The: *See*—
Morris, Edward P. 3,418,727.
Cohen, Albert, and C. W. Creaser, Jr., to Communication Structures Inc. Antenna feedhorn support structure. 3,419,871, 12–31–68, Cl. 343—781.
Cohen, Alfred G.: *See*—
Small, Samuel N., Cohen, Weiss. 3,419,295.
Cohn, Irving H., to Simmonds, Precision Products, Inc. Capacitance-type measuring apparatus for fluids in a supercritical state including a diode linearization network. 3,419,801, 12–31–68, Cl. 324—61.
Colebower, Edgar W., to Martin Marietta Corp. Solar cell assemblies. 3,419,434, 12–31–68, Cl. 136—89.
Collins, Harvey H., to Package Machinery Co. Ejector mechanism for a plastic injection molding machine or the like. 3,418,684, 12–31–68, Cl. 18—2.
Collins Radio Co.: *See*—
Baehre, Herbert K. 3,419,787.
Moorehead, Robert M. 3,419,874.
Collons, Rodger D. Method of sealing a container by vacuum. 3,418,783, 12–31–68, Cl. 53—22.
Colombeau, Marcel: *See*—
Einekave, Nissim, and Colombeau. 3,419,769.
Columbia Carbon Co.: *See*—
Marsico, William E. 3,419,505.
Columbian Industries, Inc.: *See*—
Norris, Harrison C. 3,419,011.
Commercial Solvents Corp.: *See*—
Campbell, Arthur W., and La Grone. 3,419,520.
Goodale, Charles D., and Frump. 3,419,379.
Minnick, Joseph J. 3,419,444.
Riddick, John A. 3,419,407.
Commonwealth Scientific and Industrial Research Organization: *See*—
Mills, John C. 3,419,717.
Communication Structures Inc.: *See*—
Cohen, Albert, and Creaser. 3,419,871.
Compagnie Generale de Geophysique: *See*—
Michon, Dominique. 3,419,846.
Compagnie Generale d'Electro Ceramique: *See*—
Huc, Jean. 3,419,768.
Condo, Albert C., and W. E. Mendham, to The Atlantic Refining Co. Plasticized polyvinyl chloride compositions containing an acrylonitrile-butadiene rubber and flexible, oil resistant films and sheets. 3,419,511, 12–31–68, Cl. 260—22.
Conn, William M.: *See*—
Lichte, Carl L., and Conn. 3,419,093.
Connelly, Lavern R., to Eaton Yale & Towne Inc. Fluid coupling with flow control means. 3,419,122, 12–31–68, Cl. 192—58.
Conrad, Ernest E., to International Business Machines Corp. Method of selectively removing powdered glass. 3,419,425, 12–31–68, Cl. 117—212.
Conrad, Robert. Tube coupling. 3,419,293, 12–31–68, Cl. 287—58.
Conte, Louis B., Jr.: *See*—
Cotter, Robert J., Apel, and Conte. 3,419,624.
Continental Aviation Engineering Corp.: *See*—
Waugaman, William J. 3,418,982.
Continental Can Co., Inc.: *See*—
Erlandson, Paul M. 3,418,835.
Gamble, Burton L. 3,419,418.
Khoury, Nick S. 3,419,183.
Levenson, Albert A., Jr. 3,419,453.
Rarey, Kenneth W., and Kennedy. 3,418,930.
Stec, Frederick J. 3,419,181.
Continental Oil Co.: *See*—
Acciarri, Jerry A., Ziegenbain, and Ziegler. 3,419,352.
Carel, Alfred B., and Perkins. 3,419,255.
Conway Clutch Co., The: *See*—
Conway, William A. 3,419,117.
Conway, William A., to The Conway Clutch Co. Overload released pneumatic clutch with brake. 3,419,117, 12–31–68, Cl. 192—15.
Cook, Harold E., to Air Reduction Co., Inc. Electrode connecting pin and assembly. 3,419,296, 12–31–68, Cl. 287—127.
Cook, John W., to Westinghouse Electric Corp. Temperature control system and method for operating a reduction rolling mill. 3,418,834, 12–31–68, Cl. 72—9.
Cooke, Brian A., to Imperial Chemical Industries, Ltd. Electro-deposition of paint using an ion exchange membrane. 3,419,488, 12–31–68, Cl. 204—181.
Cooper, Broughton M. and J. C. Picker stick checking device. 3,419,049, 12–31–68, Cl. 139—162.
Cooper, Joseph C.: *See*—
Cooper, Broughton M. and J. C. 3,419,049.
Copeland, William M., and F. J. Ritter, to Sunbeam Corp. Hair dryness indiactor. 3,418,963, 12–31–68, Cl. 116—67.
Corby, Denis P., to Crown By-Products Co. Apparatus for removing grease from cans and drums. 3,419,147, 12–31–68, Cl. 210—152.
Cordex Ltd.: *See*—
Catlos, Peter V. 3,418,799.
Cordis Corp.: *See*—
Williamson, Donald E. 3,419,010.
Cornell, John A., to Sartomer Rasins, Inc. Methyl methacrylate resin denture plates containing embedded vein-simulating short-length strands of nonplasticized, low shrinkage fibers of polyvinyl chloride having an AFNOR index greater than 450. 3,419,891, 12–31–68, Cl. 32—2.

Corning Glass Works: *See*—
Campbell, Donald R., Fallos, and Zine. 3,419,290.
Cramer, William H., and Garfinkel. 3,419,370.
Tomb, William H., Wesel, and Zine. 3,419,291.

Costantini, Michael A.: *See*—
Salihi, Jalal T., and Costantini. 3,419,818.

Costlow, Donald G., S. Csanyi and J. Csanyi. Ladder attachment for use with aluminum siding. 3,419,109, 12–31–68, Cl. 182—214.

Cotter, Robert J., F. N. Apel, and L. B. Conte, Jr., to Union Carbide Corp. Novel bisphenols of dicyclopentadiene. 3,419,624, 12–31–68, Cl. 260—619.

Couceyro, Ramon E. Punch card interpreter. 3,418,728, 12–31–68, Cl. 35—2.

Courtney, John L. Subsurface hair elevator. 3,419,020, 12–31–68, Cl. 132—54.

Cox, Floyd E., to E. W. Bliss Co. Power supply. 3,419,730, 12–31–68, Cl. 307—66.

Craine, Joseph B.: *See*—
Hayhurst, Lewis J., Ramsbottom, and Craine. 3,419,400.

Cramer, William H., and H. M. Garfinkel, to Corning Glass Works. Method of producing a photochromic glass and resulting article. 3,419,370, 12–31–68, Cl. 65—30.

Crampton Mfg. Co.: *See*—
Knoth, Erwin W. 3,419,129.

Cranmer, William S.: *See*—
Hartz, Ralph S., and Cranmer. 3,419,751.

Creaser, Charles W., Jr.: *See*—
Cohen, Albert, and Creaser. 3,419,871.

Creative Chemistry, Inc.: *See*—
Murray, Maynard. 3,419,398.

Cressman, Homer W. J., and J. R. Thirtle, to Eastman Kodak Co. Elements and developers for color photography utilizing phenolic couplers containing an aminoalkyl group on the coupling position. 3,419,390, 12–31–68, Cl. 96—55.

Cresswell, Roger A., and G. S. Kitson, to Rolls-Royce Ltd. Cooling means for rotatable jet nozzle, bearing and turbine blades. 3,418,810, 12–31–68, Cl. 60—232.

Cropp, David I., C. C. Jordan, and R. W. Lingo, to Glass-Tite Industries, Inc. Work holder for aligning and sealing a beaded wire element into a glass tube. 3,419,372, 12–31–68, Cl. 65—146.

Crosby, Peter F., to Diebold Inc. Pneumatic tube system. 3,419,229 12–31–68, Cl. 243—19.

Cross, James M., S. H. Metzger, Jr., and C. D. Campbell, to Mobay Chemical Co. Mixtures of 2,4- and 2,6-lower alkyl cyclohexylenediamines. 3,419,612, 12–31–68, Cl. 260—563.

Cross, Lloyd G.: *See*—
Barber, Richard B., Cross, and Prince. 3,419,321.

Crouzet: *See*—
Jullien-Davin, Jean A. L. 3,419,781.

Crowell, Merton H., J. V. Dalton, E. I. Gordon, and E. F. Labuda, to Bell Telephone Laboratories, Inc. Light sensitive storage device including diode array. 3,419,746, 12–31–68, Cl. 315—10.

Crown By-Products Co.: *See*—
Corby, Denis P. 3,419,147.

Csanyi, James: *See*—
Costlow, Donald G., Csanyi, S., and Csanyi, J. 3,419,109.

Csyani, Steve: *See*—
Costlow, Donald G., and Csanyi, S. and J. 3,419,109.

Culich, Eli: *See*—
Schaller, Robert L., Towne, and Culich. 3,419,159.

Culligan, Inc.: *See*—
Rak, Stanley F. 3,419,360.

Culver, William H., to Pennsalt Chemicals Corp. Control of cacti. 3,419,382, 12–31–68, Cl. 71—128.

Curcio, Edmund N., to The Ohio Crankshaft Co. Apparatus and method of growing a crystal from a vapor. 3,419,417, 12–31–68, Cl. 117—106.

Current, George C. and S. B. Bow and arrow sight. 3,418,718, 12–31–68, Cl. 33—46.

Current, James H., to Schlumberger Technology Corp. Well tool with expansible anchor. 3,419,079, 12–31–68, Cl. 166—206.

Current, Susie B.: *See*—
Current, George C. and S. B. 3,418,718.

Curtis, Gerald R., to Statham Instruments, Inc. Blood pressure transducer. 3,418,853, 12–31–68, Cl. 73—406.

Curtis, Larry G., and P. J. Trent, to Eastman Kodak Co. Photographic viewing screen prepared from a lenticulated polyester film. 3,419,408, 12–31–68, Cl. 117—10.

Curtiss-Wright Corp.: *See*—
Handjani, Houchang. 3,419,820.

D.B.A. Products Co., Inc.: *See*—
Regan, Patrick J. 3,418,672.

D.I.P.A.: *See*—
Ramond, Jean-Claude. 3,419,152.

Dagra N.V.: *See*—
Sanders, Johannes C. 3,419,657.

Dahlberg, Reinhard, to Telefunken Patentverwertungsgesellschaft m.b.H. Controllable electrical resistance. 3,419,767, 12–31–68, Cl. 317—235.

Daimler-Benz Aktiengesellschaft: *See*—
Enke, Kurt. 3,419,100.
Scherenberg, Hans O. 3,418,986.
Von Koch, Arwed. 3,419,027.

Dall'Asta, Gino: *See*—
Natta, Giulio, Mazzanti, and Dall'Asta. 3,419,538.

Dalton, John V.: *See*—
Crowell, Merton H., Dalton, Gordon, and Labuda. 3,419,746.

Dalton, Robert F., and E. J. Barnett, to Westinghouse Electric Corp. Range apparatus trim. 3,418,780, 12–31–68, Cl. 52—627.

Daly, Edmund B., and V. K. Rice, Jr., to Automatic Electric Laboratories, Inc. Two-input pulse shaping transistor circuit. 3,419,734, 12–31–68, Cl. 307—268.

Dan River Mills, Inc.: *See*—
Pangle, James C., Jr. 3,419,493.

Dangauthier, Marcel, to Societe Industrielle et Commerciale des Automobiles Peugeot. Fluid distributor. 3,418,885, 12–31–68, Cl. 91—380.

Danhel, Antonin: *See*—
Kramolis, Vladislav, Danhel, Rataj, and Kochta. 3,418,696.

Danico, Henry F., to United-Carr Inc. Two component ventilator. 3,418,658, 12–31–68, Cl. 2—14.

Daniels, Frank J.: *See*—
Lipfert, Donald E., Daniels, and Goldschmidt. 3,419,176.

Daniels, William A. and W. A. Daniels, Jr. Bath lift control valve. 3,419,044, 12–31–68, Cl. 137—625.69.

Darsow, Gerhard: *See*—
Schnell, Hermann, Bottenbruch, Darsow, and Weirauch. 3,419,526.

Datawell N.V.: *See*—
Verhagen, Cornelis M. 3,418,722.

Davidson, Charles S., to Byrne Doors, Inc. Door construction. 3,418,775, 12–31–68, Cl. 52—464.

Davidson, Keith V.: *See*—
Riley, Robert E., Davidson, and Taub. 3,419,656.

Davis, Donald W. Method of swallowing a pill. 3,418,999, 12–31–68, Cl. 128—1.

Davis, Edna L. Drapery measuring tape assembly. 3,418,719, 12–31–68, Cl. 33—137.

Davis, Leonard M., and D. Gobel, to Shaw-Walker Co. Card feed mechanism. 3,419,262, 12–31–68, Cl. 271—3.

Davis, Pauls, and H. C. Vogt, to Wyandotte Chemicals Corp. Halogen containing ether compositions. 3,419,621, 12–31–68, Cl. 260—615.

Davis, Steven S., to The Elmco Corp. Drum filter of molded construction. 3,419,150, 12–31–68, Cl. 210—401.

Dawson, Peter S. S., to Canadian Patents and Development Ltd. Continuous phased culturing of cells. 3,419,473, 12–31–68, Cl. 195—104.

Day & Zimmermann, Inc.: *See*—
Mattia, Manlio M. 3,419,477.

De Bell, Arthur G., to North American Rockwell Corp. Blackbody radiating device with a protective hood. 3,419,709, 12–31–68, Cl. 219—553.

Debye, Anne L., and B. Bjarngard, to Isotopes, Inc. Holder for releasably securing a shape-retaining dosimeter element during readout. 3,419,720, 12–31–68, Cl. 250—83.

De Celis, Joseph W., to De Laval Turbine Inc. Separation tank and method. 3,419,145, 12–31–68, Cl. 210—84.

Deibel, Raymond A., and A. C. Scinta, to Trico Products Corp. Windshield wiper arm and blade assembly. 3,418,678, 12–31–68, Cl. 15—250.23.

Deitch, Sidney R. Bumpless garter device. 3,418,701, 12–31–68, Cl. 24—245.

Delaney, John T., Jr., to Ethyl Corp. Corona treating apparatus having an electrode with an adjustable width. 3,419,489, 12–31–68, Cl. 204—312.

De Laval Turbine Inc.: *See*—
De Celis, Joseph W. 3,419,145.

Delisio, Charles J.: *See*—
Scaravilli, Victor J., and Delisio. 3,419,311.

De Man, Willem, to Lever Bros. Co. Process for continuously deacidifying glyceride oils. 3,419,588, 12–31–68, Cl. 260—425.

De Nicola, Robert A.: *See*—
Macchione, Gary H., and De Nicola. 3,418,932.

Denzler, Emil, to H. A. Schlatter A.G. Welding machine for metal grids. 3,419,699. 12–31–68, Cl. 219—56.

Derenski, David J., to Teletype Corp. Telegraph transmitter control circuit. 3,419,671, 12–31–68, Cl. 178—3.

Desmoras, Jacques. and P. Jacquet, to Rhone-Poulenc S.A. Controlling weeds in sugar beets and graminaceous crops with pyridazine derivations. 3,419,381, 12–31–68, Cl. 71—92.

Dettling, Conrad J., to The Polymer Corp. Process for coating. 3,419,409, 12–31–68, Cl. 117—18.

Deuschel, Werner, W. Vilsmeier, and G. Riedel, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of fluorubin and substitution products thereof from diaminoquinoxalines. 3,419,557, 12–31–68 Cl. 260—250.

Deuschle, Fritz, and R. E. Reiss, to Brunswick Corp. Captive cap specimen vial. 3,419,179, 12–31–68, Cl. 220—38.5.

Diamond, Albert: *See*—
Silverman, Alvin J., and Diamond. 3,419,858.

Diamond Power Specialty Corp.: *See*—
Rausch, David A. 3,418,680.

Diamond Shamrock Corp.: *See*—
Lipowski Stanley A., and Fetscher. 3,419,603.
Pyne, William J., and Bluestone. 3,419,626.
Nelson, John B., Jr. 3,419,481.

Di Carlo, Frederick J., to Warner-Lambert Pharmaceutical Co. Method for relieving coronary insufficiency. 3,419,571, 12–31–68, Cl. 424—298.

Di Chiaro, Joseph A. Frame construction for refrigerator door. 3,418,755. 12–31–68. Cl. 49—501.

Dickinson, Travis R., to Geigy Chemical Corp. Method of patching ceramic lined equipment and patch therefor. 3,419,448. 12–31–68, Cl. 156—94.

Diebold Inc.: *See*—
Crosby, Peter F. 3,419,229.

Diehr, George, to Optomechanisms, Inc. Single and double beam interferometer means. 3,419,331, 12–31–68, Cl. 356—106.

Dienes, Zoltan B., to Minnesota Mining and Mfg. Co. Flexible mold and cable splice. 3,419,669, 12–31–68, Cl. 174—84.

Dick, A. B., Co.: *See*—
Bach, Frederick O. 3,419,394.

Diepenhorst, Gerald, and M. O. Fletemier, to Ford Motor Co. Self-adjusting assembly and method for forming same. 3,419,297, 12–31–68, Cl. 287—189.36.

Dieter, Julian A., W. Jones, G. E. Ott, Jr., and W. J. Rece, Jr., to R. A. Jones & Co., Inc. Carton folding and gluing machine. 3,418,892, 12–31–68, Cl. 93—52.

Dieterich, Dieter, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethane plastics. 3,419,533, 12–31–68, Cl. 260—77.5.

Dietz, Milton S., to Polaroid Corp. Photoresponsive film supply monitoring apparatus for a photographic camera. 3,418,905, 12–31–68, Cl. 95—11.

Dike, Inc.: *See*—
Bok, Edward. 3,419,335.

Dill, Dale R., to Monsanto Co. Thermoplastic resins plasticized with esters of tricyclo(4,2,2,$0^{2,5}$)-dec-7-ene-3,4,9,10-tetracarboxylic acids. 3,419,513, 12–31–68, Cl. 260—31.8.

Dillon, Horace T., to The Dow Chemical Co. Sealing method. 3,418,813, 12–31–68, Cl. 61—1.

Dinkelkamp, Henry T., and M. Miles, to Stewart-Warner Corp. Float switch assembly. 3,419,695, 12–31–68, Cl. 200—84.

Dirk, William R., and C. D. Peterson, to Lennox Industries Inc. Burner construction. 3,419,338, 12–31–68, Cl. 431—181.

Dischert, Robert A.: *See*—
Seer, Harold G., Jr., and Dischert. 3,419,735.

Dittrich, Ferdinand J., to Metco Inc. Composite carbide flame spray material. 3,419,415, 12–31–68, Cl. 117—100.

Di Valerio, Panfilo A., W. A. Skura, and J. E. O'Donnell, to Uniroyal, Inc. Method of making transmission belts. 3,419,449, 12–31–68, Cl. 156—159.

Doerr, Joseph F.: *See*—
Hagler, Norman R., Pierce, Doerr, and Johnston. 3,419,105.

Dombbrower, Ralph L., Jr.: *See*—
Mayers, Fred T., and Dombbrower. 3,419,098.

Dominion Engineering Works, Ltd.: *See*—
Baldur, Roman. 3,418,865.

Dommann, Gunther, to Gewerkschaft Eisenhutte Westfalia. Planer guide arrangement for extraction of mineral in longwall mining operations. 3,419,312, 12–31–68, Cl. 299—32.

Donaldson Co., Inc.: *See*—
Wagner, Wayne M., and Wolff. 3,419,892.

Donkersloot, Arie, to Electronic Flag Poles, Inc. Flagpole assembly. 3,418,967, 12–31–68, Cl. 116—173.

Dooley, Peter C., Jr., to The Carborundum Co. Abrasive cut-off wheels. 3,418,762, 12–31–68, Cl. 51—206.5.

Dopyera, John. Stringed instrument neck construction. 3,418,876, 12–31–68, Cl. 84—293.

Dornik, Albina M. Crocheted doll house and assembly thereof. 3,418,747. 12–31–68. Cl. 46—21.

Doss, Richard C., to Phillips Petroleum Co. Preparation of thiols and thioether compounds. 3,419,614, 12–31–68, Cl. 260—583.

Doss, Richard C. to Phillips Petroleum Co. Organic chemistry. 3,419,617, 12–31–68, Cl. 260—601.

Doss, Richard C., to Phillips Petroleum Co. Fluorotrinitromethane. 3,419,625, 12–31–68, Cl. 260—644.

Dotto, Gianni A., to P. R. Mallory & Co. Inc. Self-commutated direct current motor with permanent magnet rotor. 3,419,740, 12–31–68, Cl. 310—46.

Doughty, Frederic C., to Burroughs Corp. Wiring arrangement for a thin film magnetic memory. 3,419,856, 12–31–68, Cl. 340—174.

Dove, Frank, to Sperry Rand Ltd. Take-off directors. 3,418,851. 12–31–68, Cl. 73—178.

Dow Corning Corp.: *See*—
Hadlock, Ronald O. 3,419,514.
Lee, Headie O. 3,419,172.
Quaal, George J. 3,419,423.
Robbins, William B., and Kern. 3,419,487.
Tarno, Larry J. 3,419,516.
Willing, David N. 3,419,593.

Dow Chemical Co., The: *See*—
Brown, Frederick L. 3,419,507.
Dillon, Horace T. 3,418,813.
Ernst, Edward A. 3,419,070.
Foerster, George S., and Clark. 3,419,385.
Harrison, Hugh T. 3,419,591.
Leach, Irby H. 3,419,648.
Roberts, Carleton W., and Travis. 3,419,576.
Weissenberg, Ulrich W. 3,419,347.

Dowdican, Franklin W., and H. R. Aschan, Pump. 3,418,936, 12–31–68, Cl. 103—25.

Downs, Harold H., and H. I. Stanback, to Square D Co. Electrical panelboard front with knockouts and support for overload devices. 3,419,177, 12–31–68, Cl. 220—24.3.

Drake, Leonard C., to Mobil Oil Corp. Conversion of ammonium aluminosilicate to hydrogen aluminosilicate. 3,419,350, 12–31–68 Cl. 23—111.

Dresser Industries, Inc.: *See*—
Lichte, Carl L., and Conn. 3,419,093.
Marshall, Alexander B. C. 3,419,837.
Venghiattis, Alexis A. 3,419,089.

Duncan, Richard A., to The Thomson Machinery Co., Inc. Sugar cane harvester. 3,419,896, 12–31–68, Cl. 146—133.

Dunlop Rubber Co. Ltd.: *See*—
Goy, Ronald S. 3,419,060.

Du Pont de Nemours, E. I., and Co.: *See*—
Albert, Richard J. 3,418,687.
Baker, Thomas B., Levy, and Ottolini. 3,419,069.
Briggs, Frederick A., Ketterer, and Sherbeck. 3,419,653.
Ehrich, Felix F., and Jaffe. 3,419,581.
Gebhard, John C., Jr., and Mead. 3,419,461.
Hagedorn, Donald L. 3,419,476.
Isbell Charles L., Jr. 3,419,601.
Izard, Emmette F. 3,419,478.
Joarder, Mohammad G. K., and Walker. 3,418,798.
Kauer, James C. 3,419,598.
Krysiak, Henry R. 3,419,450.
Krysiak, Henry R. 3,419,452.
Linn, William J. 3,419,536.
McShane, Herbert F., Jr. 3,419,594.
Parrish, Esperanza G. 3,419,345.
Plimmer, Peter N. 3,419,522.
Sanders, Paul A. 3,419,658.
Temple, Stanley. 3,419,610.
Wehr, Rudolf. 3,419,462.

Duryee, George, to United Shoe Machine Corp. Round table packaging machine. 3,418,785, 12–31–68, Cl. 53—184.

Dwyer, Raymond J. Radiation sensitive electronic counting system. 3,419,725, 12–31–68, Cl. 250—222.

Dynamit Nobel Aktiengesellschaft: *See*—
Tschoepe, Bruno. 3,418,741.

ESB Inc.: *See*—
Nordblom, George F. 3,419,901.

Eakin, Bertram E.: *See*—
Khan, Amanullah R., Eakin, and Anderson. 3,418,812.

Earle, Ernest L., Jr., H. J. Bowden, F. J. Civille, and H. R. Feldbrugge, to General Foods Corp. Process for forming a coffee dough and drying same. 3,419,399, 12–31–68, Cl. 99—71.

Early, Jack D., and J. P. Chupp, to Monsanto Co. 4'-methylsulfonyl-3-phenylsalicylanilides. 3,419,585, 12–31–68, Cl. 260—397.6.

Eastes, Frank E., to W. R. Grace & Co. Heat sealable polyvinylidene chloride film coated with fatty acid salt. 3,419,421, 12–31–68. Cl. 117—138.8.

Eastman Kodak Co.: *See*—
Chateau, Henri R. P. 3,419,396.
Cressman, Homer W. J., and Thirtle. 3,419,390.
Curtis, Larry G., and Trent. 3,419,408.
Goffe, Charles A., and Stauffer. 3,419,719.
Harris, James E. 3,418,969.
Houle, James F., and Van Norman. 3,419,406.
Merrill, Stewart H., and Perry. 3,419,397.
Stahly, Frederick A., and Humphriss. 3,419,420.
Young, David V. 3,419,391.

Eaton Yale & Towne Inc.: *See*—
Connelly, Lavern R. 3,419,122.

Eaves, Charles A.: *See*—
Seidel, Joseph, and Eaves. 3,418,710.

Eby, Richard R.: *See*—
Nolt, Edwin B., and Eby. 3,419,300.

Eby, Richard R., to Sperry Rand Corp. Twine clamp means for knotter of baler. 3,419,301, 12–31–68, Cl. 289—13.

Eckert, George W., and H. V. Hess, to Texaco Inc. Motor fuel containing octane improver. 3,419,367, 12–31–68, Cl. 44—66.

Eckert, John S., to U.S. Stoneware, Inc. Distributor. 3,419,251. 12–31–68, Cl. 261—40.

Eckert, John S., to U.S. Stoneware, Inc. Support plate. 3,419,253, 12–31–68, Cl. 261—96.

Edelman, Irving, to Maid-Rite Novelty Corp. Separable fastener for wearing apparel. 3,418,700. 12–31–68, Cl. 24—201.

Edman, Bjorn R., and O. Oman, to Aktiebolaget Bofors. Method of filling a tubular part with a solid, granular substance and a liquid substance. 3,419,644, 12–31–68, Cl. 264—3.

Edwards, Bryant, to Illinois Tool Works Inc. Apparatus for manufacturing plastic container with thickened bead. 3,418,690, 12–31–68, Cl. 18—19.

Edwards, Clifford, Ltd.: *See*—
Gould, Percy, and Firmager. 3,419,693.

Edwards, Eugene A., and G. M. Winterstein, to Tenatronics Ltd., Inc. Streamlined antenna and method of making the same. 3,419,876. 12–31–68, Cl. 343—901.

Edwards, John, and H. J. Ringold, to Syntex Corp. 2a-fluoroderivatives of the androstane series. 3,419,583, 12–31–68, Cl. 260—397.4.

Eggert, Walter S., Jr., and H. W. Wessells, III. to The Budd Co. Lower body construction for automobiles. 3,419,303, 12–31–68, Cl. 296—28.

Eholzer, Ulrich: *See*—
Fetzer, Uwe, Eholzer, Ugi, Hammann, and Unterstenhofer. 3,419,596.

Ehrich, Felx F., and E. E. Jaffe, to E. I. du Pont de Nemours and Co. Separation and recovery of diaroylaminoanthraquinones from the reaction of diaminoanthraquinones and aroyl halides. 3,419,581, 12–31–68, Cl. 260—377.

Eichler, Donald L.: *See*—
Tufts, Lewis E., and Eichler. 3,419,899.

Elmco Corp.: *See*—
Davis, Steven S. 3,419,150.

Elsai Co., Ltd.: *See*—
Matsuoka, Yoshitaka, Hidaka, Yoshizawa, and Hashimoto. 3,419,471.

Elselen, Everett T.: *See*—
Betts, Peter, Reichel, and Elselen. 3,419,884.

Eisenberg, Sydney M.: *See*—
Stoddard, Glenn G. 3,419,012.

Eisenbauer, Roger A.: *See*—
Beal, Robert E., and Eisenhauer. 3,419,586.

Elder, William H., to The Curators of the University of Missouri. Oral contraceptive for birds. 3,419,661, 12–31–68, Cl. 424—243.

Electric & Musical Industries Ltd.: *See*—
Hartley, Frederick W. 3,419,774.

Electro-Autosizing Machine Corp.: *See*—
Levi, Richard J., and Montgomery. 3,419,800.

Electronic Flag Poles, Inc.: *See*—
Donkersloot, Arie. 3,418,967.

Elenburg, Wayland D., to Walker-Neer Mfg., Inc. Well drilling method. 3,419,092, 12–31–68, Cl. 175—69.

Elitex: *See*—
Kramolis, Vladislav, Danhel, Rataj, and Kochta. 3,418,696.

Elliott Brothers (London) Ltd.: *See*—
Winn, Roger F. E. 3,419,784.

Ellis, Charles A., to Ritter Pfaudler Corp. Dental handpiece drive mechanism and dental tool holder. 3,418,715, 12–31–68, Cl. 32—26.

Ellis, Leslie M.: *See*—
Stone, Roy A., and Ellis. 3,418,683.

Elmore, Glenn V., and H. A. Tanner, to Leesona Corp. Fuel cells with alkali metal hydroxide electrolyte and electrode containing fluorocarbon polymer. 3,419,900, 12-31-68, Cl. 136—86.

Elnekave, Nissim, and M. Colombeau, to Laboratoire Central des Industries Electriques. Low capacitance condenser for use as a secondary standard. 3,419,769, 12-31-68, Cl. 317—244.

Elslager, Edward F., and D. B. Capps, to Parke, Davis & Co. Polymeric compounds and methods for their production. 3,419,584, 12-31-68, Cl. 260—397.6.

Elvis, Peter, and G. P. Houcke, to Bell Telephone Laboratories, Inc. Start-stop synchronization checking circuit for long trains, short trains and single start-stop characters. 3,419,679, 12-31-68, Cl. 178—53.1.

Emerson Electric Co., The: *See*—
Brundage, Robert W. 3,418,886.

Emerson, Herff C., to Rohr Corp. Integrated and match machined rocket nozzle and process of making same. 3,418,707, 12-31-68, Cl. 29—157.

Emery, Robert B.: *See*—
Homrig, Horace J., and Emery. 3,419,180.

Emhart Corp.: *See*—
Vahlstrom, Carl A. 3,419,893.

Engdahl, Gerald E., to Chicago Bridge & Iron Co. Method and apparatus for liquefied gas storage. 3,419,174, 12-31-68, Cl. 220—9.

Engelhardt, Hans: *See*—
Brewer, Lee M., Engelhardt, Rohde, and Yonker. 3,419,208.

Enke, Kurt, to Daimler-Benz Aktiengesellschaft. Wheel suspension of driven wheels, especially of the rear wheels of a motor vehicle. 3,419,100, 12-31-68, Cl. 180—73.

Entwicklungsring Sud G.m.b.H.: *See*—
Kopp, Gerhard. 3,418,809.

Eppy, Samuel. Multiple rope jump rope. 3,419,270, 12-31-68, Cl. 272—75.

Ercoli, Alberto, and R. Gardi, to Warner-Lambert Pharmaceutical Co. Pentacyclic steroid intermediates and method of preparing the same. 3,419,550, 12-31-68, Cl. 260—239.55.

Ercoli, Alberto, and R. Gardi, to Warner-Lambert Pharmaceutical Co. Pentacyclic steroids and process. 3,419,582, 12-31-68, Cl. 260—397.3.

Ericson, Richard E., to The Kendall Co. Vented surgical drainage tube with flushing protective valve. 3,419,009, 12-31-68, Cl. 128—349.

Erlandson, Paul M., to Continental Can Co., Inc. Fluid lubricated electrohydraulic body separating and forming. 3,418,835, 12-31-68, Cl. 72—56.

Ernst, Edward A., to The Dow Chemical Co. Selective perforation and directional fracturing. 3,419,070, 12-31-68, Cl. 166—5.

Essex Wire Corp.: *See*—
Guhn, Darrold L. 3,419,790.

Esso Production Research Co.: *See*—
Brooks, Fred A., Jr. 3,419,073.

Esso Research and Engineering Co.: *See*—
Inchalik, Elroy J., Kirschenbaum, and Hill. 3,419,615.

Etablissements Kuhlmann: *See*—
Kopp, Georges, and Vittecoq. 3,419,341.

Etablissements Merlin & Gerin Societe Anonyme: *See*—
Pelenc, Yves, and Bernard. 3,419,802.
Pelenc, Yves, and Bernard. 3,419,803.

Ethyl Corp.: *See*—
Delaney, John T., Jr. 3,419,489.
Nelson, Gunner E. 3,419,483.
Sibert, John W. 3,419,609.

Euforbia, Felix A., to Foremast Screen Print, Inc. Method of coloring pile fabrics. 3,419,413, 12-31-68, Cl. 117—38.

Evaids, Egils, to Athena Controls Inc. Temperature regulating system. 3,419,214, 12-31-68, Cl. 236—78.

Evans, S. W., & Sons, Inc.: *See*—
Evans, Wayne S. Jr., and Tartaglia. 3,419,026.

Evans, Wayne S., Jr., and L. G. Tartaglia, to S. W. Evans & Sons, Inc. Umbrella. 3,419,026, 12-31-68, Cl. 135—20.

Explosives Corp. of America: *See*—
Maes, Michel E. 3,419,443.

Express Injector Co. Ltd.: *See*—
Love, Douglas S. 3,419,007.

FMC Corp.: *See*—
Brewer, Willie F. 3,418,793.
Herwig, Henry G. 3,419,153.
Ryan, Daniel J. 3,419,650.
Towns, Donald L. 3,419,579.
West, Fred W., and Gresham. 3,419,590.

Fabriques de Produits Chimques de Thann et de Mulhouse: *See*—
Allmand, Thomas R. 3,418,770.

Fairbanks, Gordon J., to Stewart-Warner Corp. Flame detector control means for a burner assembly. 3,419,337, 12-31-68, Cl. 431—77.

Fairbanks Morse Inc.: *See*—
Meller, Floyd M., and Swanson. 3,418,952.

Faldbrugge, Alonzo H. R.: *See*—
Earle, Ernest L., Jr., Bowden, Civille, and Feldbrugge. 3,419,399.

Fallos, George: *See*—
Campbell, Donald R., Fallos, and Zine. 3,419,290.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
Dieterich, Dieter. 3,419,533.
Fetzer, Uwe, Eholzer, Ugi, Hammann, and Unterstenhofer. 3,419,596.
Fetzer, Uwe, Ugi, Unterstenhofer, and Hammann. 3,419,540.
Fetzer, Uwe, Ugi, Knupfer, Renner, and Grewe. 3,419,546.
Gilch, Heinrich. 3,419,482.
Knupfer, Hans, Wirth, and Schellhammer. 3,419,563.
Schnell, Hermann, Bottenbruch, Darsow, and Weirauch. 3,419,526.
Zirngibl, Hans, Gutsche, and Weidmann. 3,419,351.

Farber, Sheldon, to Warner-Lambert Pharmaceutical Co. Process of preparing 7-halo-2-dimethylamino-5-phenyl-3H-1, 4-benzodiazepine 4-oxides. 3,419,545, 12-31-68, Cl. 260—239.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Hermann, Hans D., and Gutweiler .3,419,528.
Hirsch, Lothar, Hornig, Mau, and Quadflieg. 3,419,618.
Kuhne, Rudolf, and Meininger. 3,419,541.
Meininger, Fritz, Steuernagel, and Frolich. 3,419,542.
Pietzka, Gerhard, and Pelz. 3,419,645.
Soder, Alfons, and Hempel. 3,419,619.

Fareri, Elizabeth L., R. J. McGuire, and E. Mitchell, to Gulf Research & Development Co. Alkoxylated quaternary ammonium salts of esters of salicylic acid as microbicides. 3,419,366, 12-31-68, Cl. 44—63.

Farr Co.: *See*—
Marble, Robert I. 3,418,915.

Farthing, Alan C.: *See*—
Thompson, John M., and Farthing. 3,419,393.

Fautz, Howard C., to Vulcan-Hart Corp. Broiler. 3,418,921, 12-31-68, Cl. 99—445.

Federal Products Corp.: *See*—
Worthen, John H. 3,418,720.

Feldman, Samuel. Cuff link protector. 3,418,699, 12-31-68, Cl. 24—90.5.

Fernseh G.m.b.H.: *See*—
Bopp, Achim, and Krause. 3,419,681.

Ferris, Robert G., to Starline, Inc. Shuttle type animal feeder. 3,419,130, 12-31-68, Cl. 198—67.

Fetscher, Charles A.: *See*—
Lipowski, Stanley A., and Fetscher. 3,419,603.

Fetzer, Uwe, I. Ugi, G. Unterstenhofer, and I. Hammann, to Farbenfabriken Bayer Aktiengesellschaft. '—N=N'-group-containing isonitriles. 3,419,540, 12-31-68, Cl. 260—143.

Fetzer, Uwe, I. Ugi, H. Knupfer, J. A. Renner, and F. Grewe, to Farbenfabriken Bayer Aktiengesellschaft. Bicyclic and tricyclic isonitriles. 3,419,546, 12-31-68, Cl. 260—239.

Fetzer, Uwe, U. Eholzer, I. Ugi, I. Hammann, and G. Unterstenhofer, to Farbenfabriken Bayer Aktiengesellschaft. Araliphatic isonitriles. 3,419,596, 12-31-68, Cl. 260—465.

Fiber Industries, Inc.: *See*—
Ure, George R. 3,419,460.

Field, Brian O.: *See*—
Hardy, Clarence J., and Field. 3,419,348.

Fielden, Marvel L.: *See*—
Lunsford, Carl D., and Fielden. 3,419,559.

Finkin, Eugene F. Automobile ventilation techninqes. 3,418,914, 12-31-68, Cl. 98—2.

Fiori, Anthony M., to John F. McCarthy, Inc. Apparatus for monitoring high speed processes. 3,419,677, 12-31-68, Cl. 178—6.8.

Firewel Co., Inc., The: *See*—
Massey, Alton A. 3,418,822.

Firma Franz Berrenberg: *See*—
Hany, Harald, and Stille. 3,418,859.
Hany, Harald, and Stille. 3,418,860.

Firmager, Derek: *See*—
Gould, Percy, and Firmager. 3,419,693.

Fischer, Raymond C., to International Harvester Co. Vibrator for plow. 3,419,085, 12-31-68, Cl. 172—40.

Fish, Lawrence W., Jr.: *See*—
Von Reckilnghausen, Daniel R., and Fish. 3,419,811.

Fisons Pharmaceuticals Ltd.: *See*—
Fitzmaurice, Colin, and Lee. 3,419,578.

Fitts, Martin E. Foamable package and method for forming cellular foam. 3,419,134, 12-31-68, Cl. 206—47.

Fitzmaurice, Colin, and T. B. Lee, to Fisons Pharmaceuticals Ltd. Bis-chromonyl compounds. 3,419,578, 12-31-68, Cl. 260—345.2.

Fletemier, Marvin O.: *See*—
Diepenhorst, Gerald, and Fletemier. 3,419,297.

Flinter, John J.: *See*—
Noonan, G. David, and Flinter. 3,419,286.

Flintkote Co., The: *See*—
Manderbach, James R., and Pestel. 3,418,776.

Flory, John F., to United States of America, Air Force. Parallel platform linkages sor shock isolation systems. 3,419,238, 12-31-68, Cl. 248—163.

Foerster, George S., and J. B. Clark, to The Dow Chemical Co. Magnesium-base alloy. 3,419,385, 12-31-68, Cl. 75—168.

Food Equipment Development Corp.: *See*—
Morine, Richard L. 3,419,052.

Foote, Theodore, to Bendix Corp. Valve apparatus. 3,419,043, 12-31-68, Cl. 137—625.48.

Forbro Design Corp.: *See*—
Gately, Joseph R. 3,419,789.

Ford, James G.: *See*—
Palumbo, Anthony J., and Ford. 3,419,498.

Ford Motor Co.: *See*—
Allison, William D. 3,419,101.
Diepenhorst, Gerald, and Fletemier. 3,419,297.
Glenn, Theodore L. 3,419,115.
Goodale, William B. 3,418,677.
Hurbis, Charles J. 3,418,862.
Mitchell, Herbert C. 3,418,868.
Sampietro, Achille C. 3,419,102.

Foremast Screen Print, Inc.: *See*—
Euforbia, Felix A. 3,419,413.

Forgrove Machinery Co., Ltd., The: *See*—
Parker, Matthew, and Lebeter. 3,418,784.

Fort Howard Paper Co.: *See*—
Wiggins, Robert B. 3,418,925.

Foster, Effery A. Building panels. 3,418,778, 12-31-68, Cl. 52—520.

Fox, John R.: *See*—
Maly, George P., Smith, Bernard, and Fox. 3,419,072.

Fox Products Co.: *See*—
Godshalk, James B. 3,418,977.

Fowler, Wilburn R. Automatic thread cutting attachment for industrial sewing machines. 3,418,953, 12-31-68, Cl. 112—252.

Fraze, Ermal C. Can top and method of making same. 3,418,956, 12-31-68, Cl. 113—116.

Frey, Ernst: *See*—
Frey, Fred and E. 3,419,302.

Frey, Fred and E. Gate latches. 3,419,302, 12-31-68, Cl. 292—189.

Freyburg, Rolf: *See*—
Salzberger, Andreas, and Freyburg. 3,419,123.

Freyn, Fritz, to H. List. Internal combustion engine with cylinders arranged in V-configuration. 3,418,994, 12-31-68, Cl. 123—195.

Frick, wilhelm, to Geigy Chemical Corp. Compositions and methods for treating pain with substituted ureas. 3,419,664, 12-31-68, Cl. 424—322.

Fridén, Inc.: *See*—
Krammer, Jan. 3,419,850.

Friedman, Leonard. Converted squaring shears. 3,418,875, 12-31-68, Cl. 83—694.

Frolich, Heinrich: *See*—
Meininger, Fritz, Steuernagel, and Frolich. 3,419,542.

Fromme Forderanlagen G.m.b.H.: *See*—
Fromme, Hans-Georg, and Nadler. 3,418,948.
Fromme, Hans-Georg, Reitz, and Huppke. 3,418,949.

Fromme, Hans-Georg, and F. Nadler, to Fromme Forderanlagen G.m.b.H. Chain driven conveyor system having driving members. 3,418,948, 12-31-68, Cl. 104—172.

Fromme, Hans-Georg, R.-H. Reitz, and W. Huppke, to Fromme Forderanlagen G.m.b.H. Chain driven conveyor system having driving members. 3,418,949, 12-31-68, Cl. 104—172.

Froslie, Leonard E.: *See*—
Cartwright, Bert W., Froslie, and Blomquist. 3,418,871.

Frost, Barry L., to Clark Equipment Co. Remote control device. 3,418,807, 12-31-68, Cl. 60—54.5.

Frump, John A.: *See*—
Goodale, Charles D., and Frump. 3,419,379.

Fry, Jeremy J., to Rotork Marine Ltd. Design and construction of hulls for marine craft. 3,418,957, 12-31-68, Cl. 114—66.5.

Fuhrman, Nathan: *See*—
Gordon, Emanuel, and Fuhrman. 3,419,387.

Fuji Shashin Film Kabushiki Kaisha: *See*—
Obuchi, Kazuo. 3,418,972.

Fujihara, Yoshiki, to W. R. Grace & Co. Method of forming concrete joints. 3,418,899, 12-31-68, Cl. 94—22.

Fukai, Masayasu: *See*—
Tomago, Akio, and Fukai. 3,419,770.

Furiya, Hideo: *See*—
Brumbaugh, George U., Sherman, and Furiya. 3,419,099.

Futer, Rudolph E., to Bangor Punta Operations, Inc. Method and apparatus for subjecting material to conditioning gas with whirling motion. 3,418,724, 12-31-68, Cl. 34—10.

Fuzek, John F., to Beaunit Corp. Dyeable polypropylene. 3,419,638, 12-31-68, Cl. 260—873.

Fyrk, Clas O. F., to Swenson Spreader & Mfg., Co. Material spreading and mixing apparatus. 3,419,221, 12-31-68, Cl. 239—656.

GAF Corp.: *See*—
Catino, Sigmund C., Strobel, and Blumenkopf. 3,419,659.

Gadet, Marie-Claude M.: *See*—
Chateau, Henri R. P., Gadet, and Pouradier. 3,419,396.

Gallant, Melvin M.: *See*—
Hight, Hanford Z., Gallant, Shannon, and Loeffler. 3,419,647.

Gamble, Burton L., to Continental Can Co., Inc. Method and apparatus for spot coating metal sheet. 3,419,418, 12-31-68, Cl. 117—111.

Gander, Robert J., to Johnson & Johnson. Pressurized composition for applying foamed dressings. 3,419,506, 12-31-68, Cl. 260—2.5.

Ganowsky, Raymond J., to G. W. Lisk Co., Inc. Rotary solenoid. 3,419,831, 12-31-68, Cl. 335—228.

Garbage Service Co.: *See*—
Redman, Lawrence E. 3,419,377.

Gardi, Rinaldo: *See*—
Ercoli, Alberto, and Gardi. 3,419,550.
Ercoli, Alberto, and Gardi. 3,419,582.

Gardner, Gerald H. F., to Gulf Research & Development Co. Method and apparatus for drilling wells with eccentric jet drills. 3,419,091, 12-31-68, Cl. 175—67.

Gardner, John F., M. H. Lustig, and A. A. Lux, to Xerox Corp. Document handling system. 3,419,264, 12-31-68, Cl. 271—68.

Garfinkel, Harmon M.: *See*—
Cramer, William H., and Garfinkel. 3,419,370.

Garig, Henry H. Vibration monitors. 3,419,690, 12-31-68, Cl. 200—61.45.

Garringtons Ltd.: *See*—
Lees, Joseph. 3,418,874.

Gary Tool Inc.: *See*—
Klemp, Alfred W. 3,418,760.

Gassen, Hans-Gunter: *See*—
Witzel, Herbert, Maurer, and Gassen. 3,419,544.

Gately, Joseph R., to Forbro Design Corp. High precision D.C. voltage regulator. 3,419,789, 12-31-68, Cl. 323—22.

Gatzi, Karl, to Geigy Chemical Corp. Amino azacycloalkanones. 3,419,548, 12-31-68, Cl. 260—239.3.

Gaveny, Leonard H., and R. L. Glick, to Thiokol Chemical Corp. Positive displacement control system for controlling the flow of gases within a solid propellant rocket motor to regulate the burning rate of the solid propellant. 3,418,811, 12-31-68, Cl. 60—254.

Gebhard, John C., Jr., and E. J. Mead, to E. I. du Pont de Nemours and Co. Polymeric laminate and article covered therewith. 3,419,461, 12-31-68, Cl. 161—184.

Gehman, Bruce L.: *See*—
Hammond, Robert H., Meyer, Gehman, and Kelly. 3,419,718.

Geigy Chemical Corp.: *See*—
Dickinson, Travis R. 3,419,448.
Frick, Wilhelm, 3,419,664.
Gatzi, Karl. 3,419,548.
Petersen, John V. B., and Clauson-Kaas. 3,419,570.
Renner, Ulrich. 3,419,569.
Schiumbom, Peter. 3,419,535.

General Dynamics Corp.: *See*—
Beutel, Helmuth K. Markum, and O'Donnell. 3,418,824.

General Electric Co.: *See*—
Aldridge, Frank S., Jr. 3,419,836.
Bauer, Douglas M. 3,418,713.
Berger, Abe. 3,419,354.
Berger, Abe. 3,419,592.
Gordon, Walter H., Jr. 3,419,705.
Grenoble, Maurice E. 3,419,508.
Kauffman, Melvin R., and Sholtes. 3,419,190.
Lafuze, David L. 3,419,785.
Mishkovsky, Victor. 3,419,791.
Plock, Eugene V. 3,419,427.
Sours, William A. 3,418,705.
Steen, Floyd L. 3,419,757.
Vaughn, Howard A., Jr. 3,419,634.
Vaughn, Howard A., Jr. 3,419,635.
Welch, Stanley B. 3,419,428.
Wrightenberry, Jerry O. 3,419,192.

General Foods Corp.: *See*—
Earle, Ernest L., Jr., Bowden, Civille, and Feldbrugge. 3,419,399.

General Industries Co., The: *See*—
Harter, Earl F. 3,419,318.

General Mills, Inc.: *See*—
Aelony, David. 3,419,525.

General Motors Corp.: *See*—
Brewer, Lee M., Engelhardt, Rohde, and Yonker. 3,419,208.
Griffen, Thomas J. 3,419,037.
Hagler, Norman R., Pierce, Doerr, and Johnston. 3,419,105.
Lamm, Lewis J. 3,418,971.
Lewis, Dale K., and Hudson. 3,418,988.
Mazzarine, Janis. 3,419,316.
Nelson, Hayden A. 3,419,855.
Salibi, Jalal T., and Costantini. 3,419,818.
Sheldrake, Leonard J., and Mullen. 3,419,782.
Stott, Thomas C. F. 3,419,120.
Stott, Thomas C. F. 3,419,121.
Strobush, Victor H. 3,419,307.

General Precision Systems Inc.: *See*—
Schmidlin, Albertus E., and Bing. 3,419,028.

General Signal Corp.: *See*—
Philibert, Robert A., Browne, Sanger, and Kirk. 3,419,756.

Gensel, Klaus: *See*—
Bleckert, Ernst, Kallischnigg, and Gensel. 3,419,577.

Genthe, William K., W. H. Vander Heyden, and D. H. Strobel, to Badger Meter Mfg. Co. Volumetric flow measuring device employing pulsed paramagnetic resonance. 3,419,793, 12-31-68, Cl. 324—.5.

Genthe, William K., W. H. Vander Heyden, and D. H. Strobel, to Badger Meter Mfg. Co. NMR flowmeter employing pulsed magnetization. 3,419,795, 12-31-68, Cl. 324—.5.

Gentile, Anthony V., to Uniroyal, Inc. Ozone-resistant composition. 3,419,639, 12-31-68, Cl. 260—889.

Geo-Engineering Development Co.: *See*—
Rudd, Neilson. 3,419,332.

Geoservices: *See*—
Issenmann, Olivier M. B. 3,418,841.

Germans, Fedde H., and P. R. Vos, to Koninklijke Nederlandse Textiel Unie N.V. Apparatus for checking a web of material as to uniformity. 3,419,723, 12-31-68, Cl. 250—219.

Gershkokhen, Svetlana L.: *See*—
Akutin, Modest S., Rodivilova, and Gershkokhen. 3,419,527.

Gerstein, Bernard, to Admiral Corp. Convergence circuit. 3,419,749, 12-31-68, Cl. 315—13.

Gesting, Peter P.: *See*—
Chase, Joseph D., and Gesting. 3,419,529.

Gewerkschaft Eisenhutte Westfalia: *See*—
Dommann, Gunther. 3,419,312.
Ulusal, Hüseyin. 3,419,313.

Giannetti, Joseph P., A. M. Henke, and R. T. Sebulsky, to Gulf Research & Development Co. Activating a composite catalyst with HCl prior to a carbon chloride treatment. 3,419,503, 12-31-68, Cl. 252—441.

Gilch, Heinrich, to Farbenfabriken Bayer Aktiengesellschaft. Electrolytic method for preparing polyamides. 3,419,482, 12-31-68, Cl. 204—62.

Gildart, Richard F., to Rehrig Pacific Co. Reinforced milk crate. 3,419,182, 12-31-68, Cl. 220—73.

Gillis, Donald M., 49% to S. Grennebaum. Roofing. 3,418,777, 12-31-68, Cl. 52—520.

Gilreath, Lafayette E., to Offshore Engineering Corp. Apparatus for carrying out well drilling operations from floating structures. 3,419,259, 12-31-68, Cl. 267—1.

Ginther, Elwood I. Belt and tie holder. 3,419,239, 12-31-68, Cl. 248—215.

Girgis, Magdy F. Method for peeling and processing grain. 3,419,056, 12-31-68, Cl. 146—221.6.

Glusti, Edmund C., and R. O. Stevens. Weeding and mulching device. 3,419,086, 12-31-68, Cl. 172—523.

Glenn, Theodore L., to Ford Motor Co. Starter safety switch on clutch pedal. 3,419,115, 12-31-68, Cl. 192—.02.

Glanzstoff A.G.: *See*—
Magerlein, Helmut, Siggel, Rupp, and Meyer. 3,419,630.

Glass-Tite Industries, Inc.: *See*—
Cropp, David I., Jordan, and Lingo. 3,419,372.

Glick, Robert L.: *See*—
Gaveny, Leonard H., and Glick. 3,418,811.
Globe Engineering Co.: *See*—
Vanderlaan, Dirk, Thomas, and Miller. 3,418,837.
Gloninger, Irving L. W., and L. P. W. Belmont, Sr. Measuring apparatus. 3,418,717, 12–31–68, Cl. 33—8.
Gobel, Dolph: *See*—
Davis, Leonard M., and Gobel. 3,419,262.
Goddin, Derek J. H. Device for measuring the pressure between two surfaces at least one of which is a roll. 3,418,850, 12–31–68, Cl. 73—141.
Godshalk, James B., to Fox Products Co. Poultry watering devices. 3,418,977, 12–31–68, Cl. 119—72.5.
Goffe, Charles A., and R. E. Stauffer, to Eastman Kodak Co. X-ray film pack containing absorbable gas and means for absorbing said gas. 3,419,719, 12–31–68, Cl. 250—68.
Goldschmidt, Willifred: *See*—
Lipfert, Donald E., Daniels, and Goldschmidt. 3,419,176.
Gomi, Shinpei: *See*—
Sogawa, Toru, Gomi, and Shiga. 3,419,632.
Goodale, Charles D., and J. A. Frump, to Commercial Solvents Corp. Process for coating fertilizer particles with magnesium and calcium phosphates and sulfates and the resulting product. 3,419,379, 12–31–68, Cl. 71—60.
Goodale, William B., to Ford Motor Co. Windshield wiper closure control system. 3,418,677, 12–31–68, Cl. 15—250.19.
Goodman, Isaac, and J. E. Martin, to Imperial Chemical Industries Ltd. Polymers from polymerized unsaturated materials and uretidone dimers. 3,419,534, 12–31–68, Cl. 260—77.5.
Goodman, Sol. Sign panel. 3,418,738, 12–31–68, Cl. 40—130.
Goodwin, Robert J., J. L. Pekarek, and P. W. Schaub, to Gulf Research & Development Co. Nozzles for abrasive-laden slurry. 3,419,220, 12–31–68, Cl. 239—591.
Goodyear Aerospace Corp.: *See*—
Helber, Carl A., and Pasquier. 3,419,860.
Goodyear Tire & Rubber Co., The: *See*—
Bridge, Arnold H., Jr. 3,419,059.
Gordon, Emanuel, and N. Fuhrman, to United States of America, Atomic Energy Commission. Process of making high loaded UO_2-columbium cermets. 3,419,387, 12–31–68, Cl. 75—206.
Gordon, Eugene I.: *See*—
Crowell, Merton H., Dalton, Gordon, and Labuda. 3,419,746.
Gordon, Walter H., Jr., to General Electric Co. Heater filament for an electrical cigarette lighter. 3,419,705, 12–31–68, Cl. 219—270.
Gordy, Edwin. Densitometer. 3,419,806, 12–31–68, Cl. 328—2.
Gore, James K.: *See*—
Seegmiller, Robert, and Gore. 3,419,485.
Gorog, Etienne P., and C. M. Melas, to International Business Machines Corp. Data transmission apparatus for generating a redundant information signal consisting of successive pulses followed by successive inverse pulses. 3,419,804, 12–31–68, Cl. 325—38.
Gossett, Forrest D. Camper hold-down device. 3,419,242, 12–31–68, Cl. 248—361.
Gosudarstveny Nauchno-Issledovatelsky Institute Plasticheskikh mass: *See*—
Akutin, Modest S., Rodivilova, and Gershkokhen. 3,419,527.
Gottschalk, Robert E., to Panavision, Inc. Motion picture camera with remote film magazine. 3,419,324, 12–31–68, Cl. 352—75.
Gould, Percy, and D. Firmager, to Clifford Edwards, Ltd. Control switch for a fluid pressure system. 3,419,693, 12–31–68, Cl. 200—83.
Gould, Ralph E., and G. A. Simmons, Jr., to Owens-Illinois, Inc. Pumping vane type glass feeder. 3,419,373, 12–31–68, Cl. 65—180.
Gove, Donald C., to Ikor Inc. Push button utilizing transmitting and receiving means coacting with an apertured shield to provide a capacitive coupling. 3,419,697, 12–31–68, Cl. 200—181.
Goy, Ronald S., to Dunlop Rubber Co. Ltd. Textile cord material and pneumatic tires manufactured therewith. 3,419,060, 12–31–68, Cl. 152—359.
Grace, W. R., & Co.: *See*—
Cimini, Claude. 3,418,898.
Eastes, Frank E. 3,419,421.
Fujihara, Yoshiki. 3,418,899.
Laskin, Maurie. 3,419,402.
Ross, William C. 3,418,864.
Wood, Louis L. 3,419,616.
Gramar Co.: *See*—
Gray, Richard H. 3,419,088.
Gramlich, Fritz, to Firma Ludwig Spitzer Sen. Fahrzeugwerk KG. Pressure-retentive receptacle, especially for bulk-carrying vehicles. 3,419,310, 12–31–68, Cl. 298—8.
Grant, Norman H.: *See*—
Alburn, Harvey E., and Grant. 3,419,655.
Gratzmuller, Jean L. Fast evacuation valve. 3,419,030, 12–31–68, Cl. 137—102.
Graves, Ross E., J. M. Sacks, and D. M. Jacob, to TRW Inc. Phase-locking system for local oscillators of tracking receivers. 3,419,814, 12–31–68, Cl. 331—2.
Gray, Dudley: *See*—
Brouwer, Frans, and Gray. 3,419,680.
Gray, Richard H., to Gramar Co. Apparatus for perforating wells. 3,419,088, 12–31–68, Cl. 175—4.51.
Greber, Gerald, and I. Liebman, to Miles Laboratories, Inc. Impregnated metal cleaner. 3,419,902, 12–31–68, Cl. 252—91.
Greco, Robert L., and G. C. Wright, to Xerox Corp. Document stacker apparatus. 3,419,265, 12–31–68, Cl. 271—86.
Green, Martin, to Westinghouse Electric Corp. Image comparison. 3,419,747, 12–31–68, Cl. 315—11.
Green, Milton, and W. E. Solodar, to Polaroid Corp. Novel nitro- and amino - arylalkoxyhydroquinones. 3,419,600, 12–31–68, Cl. 260—479.
Green, Milton W., to Radio Corp. of America. Function generation and analog-to-digital conversion using superconducting techniques. 3,419,712, 12–31–68, Cl. 235—197.
Greenebaum, Sam: *See*—
Gillis, Donald M. 3,418,777.
Gregg, Frederick B., to Gregg Gibson & Gregg, Inc. Swamp clearing machine. 3,418,961, 12–31–68, Cl. 115—1.
Gregg Gibson & Gregg, Inc.: *See*—
Gregg, Frederick B. 3,418,961.
Grenoble, Maurice E., to General Electric Co. Cellulose surfaces and method of treating. 3,419,508, 12–31–68, Cl. 260—18.
Gresham, John T.: *See*—
West, Fred W., and Gresham. 3,419,590.
Grewe, Ferdinand: *See*—
Fetzer, Uwe, Ugi, Knupfer, Renner, and Grewe. 3,419,546.
Grierson, Hew McInnes, to Wiggins Teape Research & Development Ltd. Drying cylinders for paper making and textile machines. 3,419,068, 12–31–68, Cl. 165—89.
Griffen, Thomas J., to General Motors Corp. Power parking brake vacuum release switch. 3,419,037, 12–31–68, Cl. 137—351.
Griffith, William S.: *See*—
Weston, Charles D., and Griffith. 3,419,343.
Griss, Gerhart R., to Boehringer Ingelheim G.m.b.H. Novel 2-amino-5-aminoalkyl-thiadiazoles. 3,419,575, 12–31–68, Cl. 260—306.8.
Groce, Homer W., and W. A. Warnock, to Wellman Industries, Inc. Auxiliary transfer rolls for textile card licker-in. 3,418,697, 12–31–68, Cl. 19—105.
Groetschel, Karl M. Roof supports for mine workings. 3,418,814, 12–31–68, Cl. 61—45.
Groom, David W. Electric furnace. 3,419,666, 12–31–68, Cl. 13—20.
Gruller, David L.: *See*—
Williams, Leonard E., Jr., and Gruller. 3,419,071.
Grunberg, Jacques F., and H. Takagi, to L'Air Liquide Societe Anonyme Pour l'Etude Telkoku Sanso Kabushiki Kaisha. Liquefaction of natural gas by cascade refrigeration. 3,418,819, 12–31–68, Cl. 62—11.
Guenter, Richard G., to United States of America, Army. Apparatus for forming rocket propellant grains. 3,418,686, 12–31–68, Cl. 18—12.
Guest, Kenneth E.: *See*—
Cholin, Roger R., and Guest. 3,419,083.
Guhn, Darrold L., to Essex Wire Corp. Alternating current voltage regulator utilizing electromagnetic switch means, an autotransformer and voltage sensing means. 3,419,790, 12–31–68, Cl. 323—43.5.
Gulf General Atomic Inc.: *See*—
Hammond, Robert H., Meyer, Gehman, and Kelly. 3,419,718.
Gulf Oil Corp.: *See*—
Hopkins, Thomas R., and Pullen. 3,419,574.
Rivman, Samuel J., and Carysforth. 3,418,891.
Gulf Research & Development Co.: *See*—
Fareri, Elizabeth L., McGuire, and Mitchell. 3,419,366.
Gardner, Gerald H. F. 3,419,091.
Giannetti, Joseph P., and Sebulsky. 3,419,503.
Goodwin, Robert J., Pekarek, and Schaub. 3,419,220.
Rocchini, Albert G., and Trautman. 3,419,497.
Gurwicz, Isaac D., to Sercon Engineering Ltd. Pulse controlled circuit for a battery load. 3,419,778, 12–31–68, Cl. 318—341.
Gustafson, Bert M., L. Malter, and R. P. Gustafson. Density gradient system. 3,419,051, 12–31–68, Cl. 141—69.
Gustafson, Robert P.: *See*—
Gustafson, Bert M., Malter, and Gustafson. 3,419,051.
Gutsche, Walter: *See*—
Zirngibl, Hans, Gutsche, and Weidmann. 3,419,351.
Gutweiler, Klemens: *See*—
Hermann, Hans D., and Gutweiler. 3,419,528.
Haas, Howard C., and H. S. Kolesinski, to Polaroid Corp. Cyanoethylated polyvinyl spacer layers for image-receiving element. 3,419,389, 12–31–68, Cl. 96—3.
Haditsch, Karl, to McDowell-Wellman Engineering Co. Apparatus and system for operating railroad car dumper doors. 3,419,165, 12–31–68, Cl. 214—44.
Hadlock, Ronald O., to Dow Corning Corp. Air drying food release coating. 3,419,514, 12–31–68, Cl. 260—33.4.
Haefling, James F.: *See*—
Clark, Jack H., Van Tassel, Larrabee, and Haefling. 3,419,765.
Hagedorn, Donald L., to E. I. du Pont de Nemours and Co. Process for recovering liquid carboxylic acid amine solvent from aqueous solution thereof containing acetylenic polymers by flash distillation with a hydrocarbon oil. 3,419,476, 12–31–68, Cl. 203—52.
Hagel, Carl H. Elevator and building arrangement. 3,419,161, 12–31–68, Cl. 214—16.1.
Hagel, Carl H. Helical elevator and storage building arrangement. 3,419,162, 12–31–68, Cl. 214—16.1.
Hagler, Norman R., E. W. Pierce, J. F. Doerr, and W. J. Johnston, to General Motors Corp. Vehicle road speed control system. 3,419,105, 12–31–68, Cl. 180—108.
Habnel, Alwin, to Stromberg Carlson Corp. Frequency multiplier and spectrum generator. 3,419,817, 12–31–68, Cl. 331—116.
Hakogi, Ichiro, to Tomi Kogyo Kabushiki Kaisha. Apparatus for printing on curved surface body. 3,418,926, 12–31–68, Cl. 101—35.
Halbach & Braun: *See*—
Braun, Ernest and G. 3,419,126.
Halcon International, Inc.: *See*—
Ozero, Brian J. 3,419,629.
Hall, Leslie A., to Lockheed Aircraft Corp. Theft-prevention ignition system with electronic voltage regulation for vehicles. 3,419,729, 12–31–68, Cl. 307—10.
Hall, Lester M.: *See*—
Wise, Irvin L., and Hall. 3,418,978.

Hall, Lewis W., Jr.: *See*—
Peterkin, Melvin E., and Hall. 3,419,641.
Halliburton Co.: *See*—
Homrig, Horace J., and Emery. 3,419,180.
Halsberghe, Robert, to Trefileries Leon Bekaert. Packing packaged goods. 3,419,138, 12–31–68, Cl. 206—65.
Halvorsen, Roy H. Fish lure with retractable hooks. 3,418,743, 12–31–68, Cl. 43—35.
Hamilton, Robert W., to G. D. Searle & Co. 3β-Hydroxyandrost-5-en-17-one azines. 3,419,549, 12–31–68, Cl. 260—239.5.
Hammann, Ingeborg: *See*—
Fetzer, Uwe, Eholzer, Ugi, Hammann, and Unterstenhofer. 3,419,596.
Fetzer, Uwe, Ugi, Unterstenhofer, and Hammann. 3,419,540.
Hammond, Robert H., C. H. Meyer, Jr., B. L. Gehman, and G. M. Kelly, to Gulf General Atomic Inc. Apparatus for measuring the vapor deposition rate in a coating process. 3,419,718, 12–31–68, Cl. 250—49.5.
Hanai, Mikihiko. Apparatus for automatically fabricating caps, disc and the like articles of plastics. 3,418,691, 12–31–68, Cl. 18—20.
Handelsman, Barry: *See*—
Weinstock, Leonard M., and Handelsman. 3,419,572.
Handjani, Houchang, to Curtiss-Wright Corp. Electronic frequency ratio generator. 3,419,820, 12–31–68, Cl. 332—22.
Haniel & Lueg G.m.b.H.: *See*—
Holstein, Richard, and Voigt. 3,418,997.
Holstein, Richard, and Voigt. 3,418,998.
Hanni-Werke Korber & Co. K.G.: *See*—
Wochnowski, Waldemar. 3,419,015.
Hansen, Frantz: *See*—
Hesse, Holger, and Hansen. 3,419,031.
Hansen, Robert L., to Minnesota Mining & Mfg. Co. Fluorocarbon fluoroalkanesulfonates. 3,419,595, 12–31–68, Cl. 260—456.
Hansford, William W., J. F. Bryan, Jr., and J. B. Hutchinson, to M-H Equipment Co., Inc. Subfloor conveyor switch control means. 3,418,944, 12–31–68, Cl. 104—130.
Hanson, Henry R. Door bottom seal. 3,418,753, 12–31–68, Cl. 49—308.
Hanson, Raymond A. Control for roadway surface preparation apparatus. 3,418,901, 12–31–68, Cl. 94—39.
Hany, Harald, and V. Stille, to Firma Franz Berrenberg. Spindle press. 3,418,859, 12–31–68, Cl. 74—199.
Hany, Harald, and V. Stille, to Firma Franz Berrenberg. Shift mechanism for spindle press. 3,418,860, 12–31–68, Cl. 74—199.
Harbison, Dixon T., and J. A. Burns, to Harbison-Fischer Mfg. Co. Pump anchors. 3,419,078, 12–31–68, Cl. 166—138.
Harbison-Fischer Mfg. Co.: *See*—
Harbison, Dixon T., and Burns. 3,419,078.
Hardman & Holden Ltd.: *See*—
Harson, Samuel E. 3,419,587.
Hardy, Clarence J., and B. O. Field, to United Kingdom Atomic Energy Authority. Separation of metals. 3,419,348, 12–31–68, Cl. 23—102.
Haren, Ralph J., to Walker Mfg. Co. Packaging material. 3,419,459, 12–31–68, Cl. 161—134.
Harer, Delmar: *See*—
Hurlburt, Joseph C., and Harer. 3,418,796.
Harless, Charles A., to Harris-Intertype Corp. Web tensioning apparatus. 3,419,228, 12–31–68, Cl. 242—75.43.
Harr, Charles R.: *See*—
Hatcher, Harry R., and Harr. 3,419,383.
Harris, Frank B.: *See*—
Tanner, Robert L., Andreasen, Harris, and Jones. 3,419,873.
Harris-Intertype Corp.: *See*—
Adams, Dolor N. 3,418,935.
Harless, Charles A. 3,419,228.
Weidman, William H. 3,419,263.
Harris, James E., to Eastman Kodak Co. Treatment of fibers. 3,418,969, 12–31–68, Cl. 118—325.
Harrison, Homer S., to Mechanical Handling Systems, Inc. Overload release for a conveyor drive and the like. 3,418,947, 12–31–68, Cl. 104—172.
Harrison, Hugh T., to The Dow Chemical Co. Substituted phenetidine salt of hexafluoroarsenic and hexafluorophosphoric acids. 3,419,591, 12–31–68, Cl. 260—440.
Harrison, Peter F., to Peco Machinery Ltd. Double acting press mechanism for injection moulding machines. 3,418,893, 12–31–68, Cl. 18—30.
Harrison, Robert N., and K. L. Richardson, to The Solartron Electronic Group Ltd. P.P.I. radar apparatus. 3,419,862, 12–31–68, Cl. 343—7.7.
Harson, Samuel E., to Hardman & Holden Ltd. Zirconium compounds. 3,419,587, 12–31–68, Cl. 260—414.
Hart, Atlee S. Automatic liquid drain mechanism. 3,419,034, 12–31–68, Cl. 137—172.
Harter, Earl F., to The General Industries Co. Bearing construction. 3,419,318, 12–31–68, Cl. 308—132.
Hartley, Frederick W., to Electric & Musical Industries Ltd. Position control servo mechanism using a trigonometric function generator. 3,419,774, 12–31–68, Cl. 318—18.
Hartz, Marvin E., to Badger Meter Mfg. Co. Air elimination device for liquid transport system. 3,419,035, 12–31–68, Cl. 137—174.
Hartz, Ralph S., and W. S. Cranmer, to Radio Corp. of America. Protection for horizontal deflection circuits. 3,419,751, 12–31–68, Cl. 315—27.
Hashii, Kiyoshi, to Kabushiki Kaisha Daini Seikosha. Crowns comprising push-button inside of them. 3,418,800, 12–31–68, Cl. 58—63.
Hashimoto, Akira: *See*—
Matsuoka, Yoshitaka, Hidaka, Yoshizawa, and Hashimoto. 3,419,471.
Hatcher, Harry R., and C. R. Harr, to SCM Corp. Producing pulverulent iron for powder metallurgy by multistage reduction. 3,419,383, 12–31–68, Cl. 75—.5.
Hauck Mfg. Co.: *See*—
Schreter, Robert E., and Parker. 3,419,339.
Hauni-Werke Koerber & Co., KG: *See*—
Wahle, Guenter. 3,418,844.
Hawker Siddeley Dynamics Ltd.: *See*—
Wheable, Desmond, and Stuttard. 3,419,731.
Hayakawa, Shigeru, to Matsushita Electric Industrial Co., Ltd. Capacitor comprising ferroelectric ceramic with oxidic silver electrodes and heterojunction barrier layer between electrodes and ceramic. 3,419,759, 12–31–68, Cl. 317—230.
Hayakawa, Shigeru, H. Ikushima, T. Nitta, K. Nagase, H. Taki, and Y. Lida, to Matsushita Electric Industrial Co., Ltd. Ceramac capacitor comprising semiconductive barium titanate body and silver alloy electrodes containing minor amount of Cu, Ca or Bi. 3,419,758, 12–31–68, Cl. 317—230.
Hayhurst, Lewis J., J. M. Ramsbottom, and J. B. Craine, to Swift & Co. Packaging foods-prouuction of oxygen-free packages. 3,419,400, 12–31–68, Cl. 99—171.
Hays, Kenneth S., to AMP Inc. Detachable electrical connector. 3,419,843, 12–31–68, Cl. 339—47.
Heat Technology Laboratory, Inc.: *See*—
Stottle, Robert D. 3,419,438.
Heberer, Franz: *See*—
Remy, Hermann, Adler, and Heberer. 3,418,821.
Hedgewick, Peter, to Reflex Corp. of Canada Ltd. Plastic vial molding apparatus. 3,419,244, 12–31–68, Cl. 249—79.
Hedrick, Ross M., and W. R. Richard, Jr., to Monsanto Co. Reinforced polyamides and process of preparation thereof. 3,419,517, 12–31–68, Cl. 260—37.
Helber, Carl A., and C. J. Pasquier, to Goodyear Aerospace Corp. Video phase comparison guidance system for aircraft and the like. 3,419,860, 12–31–68, Cl. 343—7.
Helgesen, Peter E., to Armco Steel Corp. Building mullion. 3,418,772, 12–31–68, Cl. 52—397.
Helier, Isaac. Noisemaking projectile toy. 3,418,995, 12–31–68, Cl. 124—27.
Helms, Thomas F., to Idex Corp. Can body testing machine. 3,418,845, 12–31–68, Cl. 73—45.5.
Helvey, Walter F.: *See*—
Holland, Harry W., and Helvey. 3,419,386.
Hempel, Wolfgang: *See*—
Soder, Alfons, and Hempel. 3,419,619.
Henderson, John P.: *See*—
Jones, David I. G., and Henderson. 3,419,111.
Henke, Alfred M.: *See*—
Giannetti, Joseph P., Henke, and Sebulsky. 3,419,503.
Henning, Fridolin: *See*—
Wick, Richard, Huber, and Henning. 3,418,906.
Henry, Arnold W.: *See*—
Rembaum, Alan, and Henry. 3,419,537.
Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Braking systems for tractors and trailers. 3,419,314, 12–31–68, Cl. 303—7.
Hercules Inc.: *See*—
Matlack, Albert S. 3,419,342.
Herlach, Heinrich, to Oerlikon-Buhrle Holding Ltd. Automatic firearm with breech casing free to recoil on a support. 3,418,880, 12–31–68, Cl. 89—42.
Herlet, Adolf, and R. Rosenheinrich, to Siemens Aktiengesellschaft. Process of attaching electric connections to a semiconductor body. 3,418,709, 12–31–68, Cl. 29—589.
Hermann, Hans D., and K. Gutweiler, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing modified polyoxymethylenes. 3,419,528, 12–31–68, Cl. 260—67.
Herpich, William M., to The Torrington Co. Stud and sleeve assembly. 3,418,869, 12–31–68, Cl. 74—569.
Herwig, Henry G., to FMC Corp. Scum remover. 3,419,153, 12–31–68, Cl. 210—525.
Herzog, Arno H., to Monsanto Co. Injection-luminescent gas diodes having a graded p-n junction. 3,419,742, 12–31–68, Cl. 313—108.
Hess, Howard V.: *See*—
Eckert, George W., and Hess. 3,419,367.
Hesse, Holger, and F. Hansen; said Hansen, assor. to said Hesse. Breathing valve. 3,419,031, 12–31–68, Cl. 137—102.
Hesson, James C., to United States of America, Atomic Energy Commission. Seal. 3,419,432, 12–31–68, Cl. 136—83.
Hetmann, Richard, and J. Behr, to Dr. Ing. Porsche, KG. h.c.f., Firma. Shifting arrangement for multi-speed gear wheel change-speed transmissions, especially for motor vehicles. 3,418,866, 12–31–68, Cl. 74—477.
Hewitt, Eugene E., to Uniroyal, Inc. Method and apparatus for bonding together two thermoplastic sheets by ultrasonic energy. 3,419,447, 12–31–68, Cl. 156—73.
Hidaka, Yoshio: *See*—
Matsuoka, Yoshitaka, Hidaka, Yoshizawa, and Hashimoto. 3,419,471.
Higgins, Charles W.: *See*—
Anderson, Albin R., Carlson, Higgins, and Smith. 3,418,759.
Hight, Hanford Z., M. M. Galiant, G. W. Shannon, and J. F. Loeffler, to Bonded Products, Inc. Plastic sealing off of pipe. 3,419,647, 12–31–68, Cl. 264—35.
Hild, Henry F., and S. E. Manecke, to Robertshaw Controls Co. Rod and tube temperature sensor for controlling the heating means of an oven or the like. 3,419,707, 12–31–68, Cl. 219—391.
Hildebrandt, Mieczyslaw: *See*—
Vassiliev, Avenir, Nicolas, and Hildebrandt. 3,419,496.
Hill, Ralph M.: *See*—
Inchalik, Elroy J., Kirschenbaum, and Hill. 3,419,615.
Hillside Metal Products, Inc.: *See*—
Oddsen, Odd N. 3,418,704.
Hintze, Rudolf. Small hermetic compressor. 3,419,207, 12–31–68, Cl. 230—58.

Hiramatsu, Kazuo: *See*—
Chiba, Teiichiro, Hiramatsu, and Hirano. 3,419,654.

Hirano, Katsuaki: *See*—
Chiba, Teiichiro, Hiramatsu, and Hirano. 3,419,654.

Hirose, Kazuo. Rocker arm for internal combustion engines. 3,418,985, 12–31–68, Cl. 123—90.

Hirota, Jun: *See*—
Ueda, Kenichi, Yasunaga, Komatsu, and Hirota. 3,419,-539.

Hirsch, Lothar, L. Hornig, G. Mau, and T. Quadflieg, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing acetaldehyde. 3,419,618, 12–31–68, Cl. 260—604.

Hirshfeld, Julian J., and B. A. Sample, Jr., to Monsanto Co. Ingrain dyeing of synthetic fibers with a furfural solution of ingrain dyes. 3,419,340, 12–31–68, Cl. 8—32.

Hitachi, Ltd.: *See*—
Oikawa, Mitsuru, Tanaka, Kawafune, Yoshida, and Yamanaka. 3,419,327.

Hitachi Shipbuilding and Engineering Co. Ltd.: *See*—
Niwa, Toshio, and Oishi. 3,419,148.
Yasuda, Masuichi, Yokogawa, and Ito. 3,419,211.

Hlavac, Richard E. Stripper plate bolt assembly for a die set. 3,418,839, 12–31–68, Cl. 72—344.

Hobe, Harold E., and F. Kennedy, to United States Steel Corp. Gas circulating separator. 3,419,256, 12–31–68, Cl. 263—47.

Hoch, Paul E., to Hooker Chemical Corp. Process for preparation of substituted 2,3-bishydroxymethylbicyclo(2.2.1)-2,5-heptadiene. 3,419,903, 12–31–68, Cl. 260—617.

Hoch, Paul E., and G. B. Stratton, to Hooker Chemical Corp. Tricyclic ketals as herbicides. 3,419,380, 12–31–68, Cl. 71—88.

Hoffman, Alfred. Method of making and reinforcing decorative polyester resin products. 3,419,454, 12–31–68, Cl. 161—5.

Hoffman, Robert K., J. L. Baldwin, D. D. MacFarlane, and J. Vander Horst, to C. A. Norgren Co. Automatic liquid discharge mechanism. 3,418,789, 12–31–68, Cl. 55—219.

Hoffman, Samuel A.: *See*—
Anderson, James P., Hoffman, Mott, Pezely, Shifman, and Wilkinson. 3,419,849.

Hoffmann, Ernest, and S. O. Wagner, to Rayette-Faberge, Inc. Hair curlers. 3,419,019, 12–31–68, Cl. 132—41.

Hogan, Patrick J., to The Budd Co. Nut and bolt locking means. 3,419,057, 12–31–68, Cl. 151—48.

Holcomb, Stephen A. Multiple grip clothespins. 3,418,698, 12–31–68, Cl. 24—81.

Holland, Harry W., and W. F. Helvey, to Union Carbide Corp. Powder metallurgical process for making an electrolytic capacitor anode. 3,419,386, 12–31–68, Cl. 75—201.

Holley, George M., Jr. Automatic pilot and method. 3,419,866, 12–31–68, Cl. 343—117.

Hollingsworth, R Lee. Apparatus for recording perpendicular magnetic fields in transverse tracks on a magnetic tape. 3,419,688, 12–31–68, Cl. 179—100.2.

Holstein, Richard, and H. Voigt, to Haniel & Lueg G.m.b.H. Refuse burning grate particularly designed for the combustion of wet refuse. 3,418,997, 12–31–68, Cl. 126—176.

Holstein, Richard, and H. Voigt, to Haniel & Lueg G.m.b.H. Combustion grate particularly designed for burning refuse such as garbage. 3,418,998, 12–31–68, Cl. 126—176.

Holzer, Rolf, H. Stehle, F. Schubert, R. Weber, and E. Klar, to Siemens Aktiengesellschaft. Method of and apparatus for locating envelope-tube damage at individual nuclear fuel elements in a reactor core. 3,419,467, 12–31–68, Cl. 176—19.

Homier, Robert I., and R. C. Posh, to Lear Siegler, Inc. Seat positioning mechanism. 3,419,306, 12–31–68, Cl. 297—375.

Homrig, Horace J., and R. B. Emery, to Halliburton Co. Closure assembly for high-pressure, high-temperature vessels. 3,419,180, 12–31–68, Cl. 220—46.

Honshu Seishi Kabushiki Kaisha: *See*—
Tachibana, Sachihiko, Umedo, Nagai, and Orito. 3,418,-890.

Hood, Carl E. Vehicle propulsion means for use over snow. 3,419,095, 12–31–68, Cl. 180—6.

Hooker Chemical Corp.: *See*—
Hoch, Paul E. 3,419,903.
Hoch, Paul E., and Stratton. 3,419,380.
Tufts, Lewis E. and Eichler. 3,419,809.
Weil, Edward D., and Schlichting. 3,419,663.

Hopkins, Thomas R., and J. W. Pullen, to Gulf Oil Corp. 4-chloro-2-butynyl N-(2-benzothiazoyl) carbamate. 3,419,-574, 12–31–68, Cl. 260—304.

Hornig, Lothar: *See*—
Hirsch Lothar, Hornig, Mau, and Quadflieg. 3,419,618.

Hornung, Stephen A., J. H. Stichweh, and W. R. Black, to K. M. White Co. Electronic timing circuit. 3,419,733, 12–31–68, Cl. 307—141.

Horvath, Endre, and E. H. Burk, Jr., to Sinclair Research, Inc. Production of thionyl chloride from hydrogen chloride, sulfur and oxygen. 3,419,353, 12–31–68, Cl. 23—203.

Houcke, George P.: *See*—
Elvis, Peter, and Houcke. 3,419,679.

Houdaille Industries, Inc.: *See*—
Rumsey, Rollin D. 3,419,114.

Houle, James F., and G. R. Van Norman, to Eastman Kodak Co. Coating compositions. 3,419,406, 12–31–68, Cl. 106—287.

Howard, Durrell U.: *See*—
Carmichael, Thomas, and Howard. 3,418,664.

Hrusovsky, Louis J., to North American Rockwell Corp. Wear resistant leaf spring. 3,419,260, 12–31–68, Cl. 267—47.

Hubbard, George M., to Bausch & Lomb Inc. Telescopic bow sighting device having a folded sight path and a movable objective and sighting axis deflector. 3,419,334, 12–31–68, Cl. 356—254.

Hubbell, Catherine C., and E. V. Pennell. Convertible drop leaf coffee and dinner table. 3,418,950, 12–31–68, Cl. 108—136.

Huber, Hans-Peter: *See*—
Wick, Richard, Huber, and Hennig. 3,418,906.

Huc, Jean, to Compagnie Generale d'Electro Ceramique. Ceramic capacitor. 3,419,768, 12–31–68, Cl. 317—242.

Hudak, Stephen F., to Ashland Oil & Refining Co. Carboxyl-terminated urethane-containing polyesters and coating composition derived therefrom. 3,419,510, 12–31–68, Cl. 260—18.

Hudson, Ora R.: *See*—
Lewis, Dale K., and Hudson. 3,418,988.

Hughes Aircraft Co.: *See*—
Klein, Frederick A. 3,418,857.

Humalainen, Robert A. R. Artificial playing surface. 3,418,-897, 12–31–68, Cl. 94—7.

Humphrey, Arthur E., and R. L. Raymond, to Sun Oil Co. Production of carboxylic acids by microbiological oxidation of hydrocarbons. 3,419,469, 12–31–68, Cl. 195—28.

Humphriss, Wesley D.: *See*—
Stahly, Frederick A., and Humphriss. 3,419,420.

Hunt, Michael S.: *See*—
Stewart, Iain G. H., and Hunt. 3,419,193.

Hunt, Seymour. Battery powered cigarette lighter. 3,419,704, 12–31–68, Cl. 219—268.

Hunter, David R., and M. S. Kesselman, to Litton Systems, Inc. Combinational computer system. 3,419,711, 12–31–68, Cl. 235—150.31.

Huntington, Morgan C. Method of non-cyclic filtration utilizing boundary layer heat transfer. 3,419,144, 12–31–68, Cl. 210—78.

Hunziker, Fritz: *See*—
Schmutz, Jean, and Hunziker. 3,419,547.

Huppke, Willi: *See*—
Fromme, Hans-Georg, Reitz, and Huppke. 3,418,949.

Hurbis, Charles J., Ford Motor Co. Regenerator drive. 3,418,-862, 12–31–68, Cl. 74—229.

Hurlburt, Joseph C., and D. Harer, to Sperry Rand Corp. Mower. 3,418,796, 12–31–68, Cl. 56—25.

Hursh, Neal W., and J. Stark, Jr., to Radio Corp. of America. Circuit protection for a television receiver. 3,419,807, 12–31–68, Cl. 328—8.

Hurst, Peter, to Imperial Chemical Industries Ltd. Oxidation of acrolein or methacrolein with an antimony-phosphorus-vanadium-oxygen catalyst. 3,419,607, 12–31–68, Cl. 260—530.

Hutchinson, Jesse B.: *See*—
Hansford, William W., Bryan, and Hutchinson. 3,418,944.
Stevenson, Norman R., and Hutchinson. 3,418,945.

Huysmans, Cornelis P., to Lever Bros Co. Drying process. 3,419,062, 12–31–68, Cl. 159—47.

Hydro-Line Mfg. Co.: *See*—
Bosi, Joseph I. 3,419,247.

I-T-E Circuit Breaker Co.: *See*—
Kussy, Frank W. 3,419,755.
Shaffer, Howard R. 3,419,838.

Idex Corp.: *See*—
Helms, Thomas F. 3,418,845.

Iizuka, Shimpei: *See*—
Tanigaki, Takashi, Kelichi and Katsumi Ishimoto, and Iizuka. 3,419,700.

Iketani, Taisho. Device for automatically and intermittently spraying pressurized products. 3,419,189, 12–31–68, Cl. 222—54.

Ikor Inc.: *See*—
Gove, Donald C. 3,419,697.

Ikushima, Hiroshi: *See*—
Hayakawa, Shigeru, Ikushima, Nitta, Nagase, Taki, and Lida. 3,419,758.

Ilford Ltd.: *See*—
Thompson, John M. 3,419,392.
Thompson, John M., and Farthing. 3,419,393.

Illinois Tool Works Inc.: *See*—
Edwards, Bryant. 3,418,690.

Imai, Kiyokazu: *See*—
Abe, Hitoshi, and Imai. 3,419,519.

Imperial Chemical Industries, Ltd.: *See*—
Cooke, Brian A. 3,419,488.
Goodman, Isaac, and Martin. 3,419,534.
Hurst, Peter. 3,419,607.
Scott, Gerald, and Williams. 3,419,521.

Inchalik, Elroy J., I. Kirschenbaum, and R. M. Hill, to Esso Research and Engineering Co. Production of cyclododecanol and cyclododecanone. 3,419,615, 12–31–68, Cl. 260—586.

Inchausti, Roberts R. Crystal collecting apparatus including aspiration nozzle. 3,419,219, 12–31–68, Cl. 239—417.3.

Industrial Research Associates, Inc.: *See*—
Towner, Robert T. 3 419,333.

Institute of Gas Technology: *See*—
Khan, Amanullah R., Eakin, and Anderson. 3,418,812.

International Business Machines Corp.: *See*—
Betts, Peter, Reichel, and Elselen. 3,419,884.
Conrad, Ernest E. 3,419,425.
Gorog, Etienne P., and Melas. 3,419,804.
Melas, Constantine M. 3,419,805.
Pennebaker, William B. 3,419,761.
Schaefer, John O. 3,418,933.
Xylander, Melvin P. 3,419,810.

International Harvester Co.: *See*—
Barows, Arthur C., Parrish, and Miner. 3,419,084.
Carlson, Ernest C. 3,418,966.
Fischer, Raymond C. 3,419,085.
Isbell, Perry T., and Brace. 3,419,168.
Johnston, Edward J., Peacock, and Macha. 3,418,795.
Lepp, Jacob H., and Ayranto. 3,419,222.
McMillen, Russell G. 3,419,103.
Saina, Karl, and Baker. 3,419,170.
Zagotta, Joseph L. 3,419,096.

International Telephone and Telegraph Corp.: *See*—
Beaudouin, Jacques R. 3,419,763.

Isaksen, Elmer. Side and forward dumping loader with bucket clapping means. 3,419,171, 12–31–68, Cl. 214—768.

Isbell, Charles L., Jr., to E. I. du Pont de Nemours and Co. Cyclic process for the production of methyl methacrylate. 3,419,601, 12–31–68, Cl. 260—486.

Isbell, Perry T., and R. S. Brace, to International Harvester Co. Cotton harvester. 3,419,168, 12–31–68, Cl. 214—83.28.

Ishimoto, Katsumi: *See*—
Tanigaki, Takashi, Kelichi and Katsumi Ishimoto, and Iizuka. 3,419,700.

Ishimoto, Kelichi: *See*—
Tanigaki, Takashi, Kelichi and Katsumi Ishimoto, and Iizuka. 3,419,700.

Isotopes, Ic.: *See*—
Debye, Anne L., and Bjarngard. 3,419,720.

Issenmann, Olivier M. B,. to Geoservices. Measurement of the volume of gases contained in a predetermined quantity of any material and especially geological samples such as drilling muds, waters and rocks. 3,418,841, 12–31–68, Cl. 73—19.

Ito, Hiroyuki: *See*—
Yasuda, Masuichi, Yokogawa, and Ito. 3,491,211.

Ito, Michio. Musical instrument construction. 3,418,877, 12–31–68, Cl. 84—414.

Iverson, Marlowe L.: *See*—
Recht, Howard L., and Iverson. 3,419,436.

Izard, Emmette F., to E. I. du Pont de Nemours and Co. Azeotropic distillation of a N,N, dimethylacetamide acetic acid mixture using a saturated aliphatic hydrocarbon. 3,419,478, 12–31–68, Cl. 203—70.

Jackson, Donald R., deceased, by R. H. Jackson, special administratrix, to Wyandotte Chemicals Corp. Polyhalogenous polyurethane products. 3,419,532, 12–31–68, Cl. 260—77.5.

Jackson, Ruth H.: *See*—
Jackson, Donald R. 3,419,532.

Jackson, William R., to McCall Bros. & Co. Suspended ceiling system. 3,418,766, 12–31–68, Cl. 52—83.

Jacob, Don M.: *See*—
Graves, Ross E., Sacks, and Jacob. 3,419,814.

Jacquet, Pierre: *See*—
Desmoras, Jacques, and Jacquet. 3,419,381.

Jaffe, Edward E.: *See*—
Ehrich, Felix F., and Jaffe. 3,419,581.

Jagenberg Werke Akt.-Ges.: *See*—
Lohrmann, Erich. 3,419,706.

James, Clayton, to Load King Trailer Co. Power actuated folding gooseneck trailer. 3,419,169, 12–31–68, Cl. 214—506.

James, Peter: *See*—
Lastnik, Abraham L., and James. 3,418,657.

Japan Synthetic Rubber Co., Ltd.: *See*—
Ueda, Kenichi, Yasunaga, Komatsu, and Hirota. 3,419,-539.

Jendrisak, Joseph E., and A. V. Sisto, to Shatterproof Glass Corp. Window units. 3,418,779, 12–31–68, Cl. 52—616.

Jenkins, Herndon, to A. H. Robins Co, Inc. 2-aryl-tetrahydropyran-3-amines. 3,419,555, 12–31–68, Cl. 260—247.2.

Jenkins, Herndon, to A. H. Robins Co. Inc. 2,3,4,4a,5,6,10b-heptahydro-1-oxophenanthridines and production thereof. 3,419,561, 12–31–68, Cl. 260—286.

Jennings, Earl R., to Pan American Petroleum Corp. Pump valve. 3,419,041, 12–31–68, Cl. 137—533.19.

Jentzen-Miller Co.: *See*—
Jentzen, Sydney W. 3,419,319.

Jentzen, Sydney W., to Jentzen-Miller Co. Modular display table. 3,419,319, 12–31–68, Cl. 312—257.

Jepsen, Tage L. B., to Basic Inc. Selective flotation of dolomite away from magnesite. 3,419,140, 12–31–68, Cl. 209—12.

Jet-Clean Co.: *See*—
Zadron, Emil, and Kenmonth. 3,419,429.

Jilbert, Phillip H.: *See*—
Allison, Ronald, and Jilbert. 3,418,661.
Bottomley, Alastair H., Styles, Jilbert, Birtill, and Truscott. 3,418,662.

Jivoin, Anton. Carton opening device. 3,418,894, 12–31–68, Cl. 93—53.

Joarder, Mohammad G. K., and G. R. Walker, to E. I. du Pont de Nemours and Co. Air jet process and apparatus for making novelty yarn and product thereof. 3,418,798, 12–31–68, Cl. 57—34.

Johnson & Johnson: *See*—
Gander, Robert J. 3,419,506.

Johnson, Kenneth M., to The Stanley Works. Cafe traverse rod. 3,419,065, 12–31–68, Cl. 160—345.

Johnson, Marvin L.: *See*—
Morehouse, Earl P., and Johnson. 3,419,285.

Johnson, Robert P., and J. P. Oswald, to Abbott Laboratories. Derivatives of 1,2,3,4-tetrahydro-5H-pyrido[4,3]-indoles. 3,419,568, 12–31–68, Cl. 260—294.9.

Johnston, Edward J., P. J. Peacock, and F. J. Macha, Jr., to International Harvester Co. Combination mower and crop processing apparatus. 3,418,795, 12–31–68, Cl. 56—25.

Johnston, William J.: *See*—
Hagler, Norman R., Pierce, Doerr, and Johnston. 3,419,-105.

Jones, Calvin C., to Westinghouse Electric Corp. High power microwave switch. 3,419,821, 12–31–68, Cl. 333—7.

Jones, Charles E., and W. H. Riley. Compaction unit. 3,419,166, 12–31–68, Cl. 214—82.

Jones, David I. C., and J. P. Henderson, to United States of America, Air Force. Plural load viscoelastic damping device. 3,419,111, 12–31–68, Cl. 188—1.

Jones, Edward M. T.: *See*—
Tanner, Robert L., Andreasen, Harris, and Jones. 3,419,-873.

Jones, R. A., & Co., Inc.: *See*—
Dieter, Julian A., Jones, Ott, and Rece. 3,418,892.
Stone, Orison W. 3,419,133.

Jones, Richard N., to Swift & Co. Fatliquoring with tetrakis (hydroxyalkylene) phosphonium halide and an organic phosphate ester and leather flameproofed thereby. 3,419,-344, 12–31–68, Cl. 8—94.23.

Jones, Wickliffe: *See*—
Dieter, Julian A., Jones, Ott, and Rece. 3,418,892.

Jonsson, Einar: *See*—
Cardillo, Joseph S., and Jonsson. 3,418,937.

Jordan, Chalmer C.: *See*—
Cropp, David I., Jordan, and Lingo. 3,419,372.

Jordan, Merrill E., and W. G. Burbine, Cabot Corp. Process for controlling rubber hardness properties of carbon black. 3,419,356, 12–31–68, Cl. 23—209.4.

Jozeptitos, Charles J., to The Nash Engineering Co. Manifold muffler arrangement. 3,419,107, 12–31–68, Cl. 181—40.

Jullien-Davin, Jean A. L., to Crouzet. Voltage regulating systems. 3,419,781, 12–31–68, Cl. 321—2.

Jung, Charles H.: *See*—
Batiuk, Walter, Jung, and Morgan. 3,419,416.

Jung, Margarete, and H. H. Von Doehren, to Varta Aktiengesellschaft. Metallic catalyst electrode and method of its manufacture. 3,419,437, 12–31–68, Cl. 136—120.

Jureit, John C., and B. H. Kushner, to Automated Building Components, Inc. Apparatus for forming reinforced wooden members. 3,419,203, 12–31–68, Cl. 227—152.

Justus, Edgar J., to Beloit Corp. Crown roll drive. 3,419,890, 12–31–68, Cl. 29—115.

Kabushiki Kaisha Daini Seikosha: *See*—
Hashii, Kiyoshi. 3,418,800.

Kabushiki Kaisha Hitachi Seisakusho: *See*—
Ono, Minoru. 3,419,766.

Kaiser, Carl, and C. L. Zirkle, to Smith Kline & French Laboratories. 2-amino-or-amino - alkylene - spiro[cyclopropane-1,9'-fluorenes] and the salts thereof. 3,419,604, 12–31–68, Cl. 260—501.1.

Kaiser, Donald B., and R. Roth, to Radio Corp. of America. Electron tube having a tensioned cathode. 3,419,743, 12–31–68, Cl. 313—278.

Kallianos, Andrew G.: *See*—
Mold, James D., Kallianos, and Shelburne. 3,419,543.

Kallischnigg, Rolf: *See*—
Bieckert, Ernst, Kallischnigg, and Gensel. 3,419,577.

Kamnitsis, Constantine, to Radio Corp. of America. Wide-band transistor power amplifier using a short impedance matching section. 3,419,813, 12–31–68, Cl. 330—30.

Kaneko, Haruo: *See*—
Murakami, Ryuichi, and Kaneko. 3,419,819.

Kao Soap Co., Ltd.: *See*—
Maruta, Iwao. 3,419,465.

Kapff, Sixt F., to Standard Oil Co. Peak temperature recording apparatus. 3,418,842, 12–31–68, Cl. 73—36.

Kardos, Louis F., to Westinghouse Electric Corp. On-off and proportional position servo motor control system. 3,419,775, 12–31–68, Cl. 318—18.

Kasper, Robert J., and S. J. Ryba, Jr., to The Ohio Crankshaft Co. Device for controlling the power factor in the output circuit of a generator. 3,419,792, 12–31–68, Cl. 323—105.

Kasugai, Takahiko, and S. Nojima. Negative resistance semiconductor devices. 3,419,764, 12–31–68, Cl. 317—234.

Kauer, James C., to E. I. du Pont de Nemours and Co. Derivatives of bicyclo[2.2.2]oct-2-ene and process of preparation. 3,419,598, 12–31–68, Cl. 260—468.

Kaufman, Martin H., and J. D. Braun, to United States of America, Navy. Process for preparing fluorocarbon monomers. 3,419,628, 12–31–68, Cl. 260—653.3.

Kauffman, Melvin R., and G. T. Sholtes, to General Electric Co. Treating agent dispensing means for automatic washing machine. 3,419,190, 12–31–68, Cl. 222—70.

Kawafune, Kazuyoshi: *See*—
Oikawa, Mitsuru, Tanaka, Kawafune, Yoshida, and Yamanaka. 3,419,327.

Kawai, Atsushi: *See*—
Kubota, Masaichi, Kawai, and Omoto. 3,419,652.

Kawamura, Yurio, T. Ando, K. Takenouchi, Y. Sakata, and H. Maruyama, to Ajinomoto Co., Inc. Sherulitic crystal aggregate of monosodium glutamates monohydrate and method of preparing the same. 3,419,608, 12–31–68, Cl. 260—534.

Kearns, Brantley F. Protective sleeve for tarpaulin rigging. 3,419,025, 12–31–68, Cl. 135—5.

Kearns, Tommy C., to Swift & Co. Method of producing monoammonium phosphate by reacting phosphoric acid and ammonia under pressure. 3,419,378, 12–31–68, Cl. 71—34.

Keeling, Hugh E., and D. C. Tabler, to Phillips Petroleum Co. Separation using silica gel. 3,419,627, 12–31–68, Cl. 260—652.

Kelley, Carl S., to Phillips Petroleum Co. Manufacturing town gas from liquefied natural gas. 3,419,369, 12–31–68, Cl. 48—196.

Kelly, Guy M.: *See*—
Hammond, Robert H., Meyer, Gehman, and Kelly. 3,419,-718.

Kendall Co., The: *See*—
Ericson, Richard E. 3,419,009.

Kenmonth, Alton S.: *See*—
Zadron, Emil, and Kenmonth. 3,419,429.

Kennecott Copper Corp.: *See*—
Von Stein, Paul. 3,419,355.

Kennedy, Frank: *See*—
Hobe, Harold E., and Kennedy. 3,419,256.

Kennedy, John B., Jr.: *See*—
Rarey, Kenneth W., and Kennedy. 3,418,930.

Kern, Edward L.: *See*—
Robbins, William B., and Kern. 3,419,487.

Kerr, William J., to Chicago Lock Co. Tamperproof cylinder lock. 3,418,833, 12–31–68, Cl. 70—421.

Kerstetter, Donald R., to Sylvania Electric Products Inc. Integral laminated cathode and support structure. 3,419,744, 12–31–68, Cl. 313—346.

Kesselman, Martin S.: *See*—
Hunter, David R., and Kesselman. 3,419,711.

Ketterer, Charles C.: *See*—
Briggs, Frederick A., Ketterer, and Sherbeck. 3,419,653.

Kewanee Oil Co.: *See*—
Morris, William C., and Baran. 3,419,412.

Khan, Amanullah R., B. E. Eaklu, and P. J. Anderson, to Institute of Gas Technology. Insulating means for underground storage system. 3,418,812, 12–31–68, Cl. 61—5.

Kharasch, Ethel M. Body supported puppet stage. 3,418,746, 12–31–68, Cl. 46—13.

Khoury, Nick S., to Continental Can Co., Inc. Bonded metal side seam. 3,419,183, 12–31–68, Cl. 220—77.

Kihara, Nobutoshi, to Sony Corp. System for eliminating jitter from video signals. 3,419,675, 12–31–68, Cl. 178—6.6.

Kind, Nicholas J.: *See*—
Schultz, William J., and Kind. 3,419,753.

King, Howard M., Jr., to Camco, Inc. Orifice retainer assembly. 3,419,045, 12–31–68, Cl. 138—44.

King, Paul A., to Union Carbide Corp. Dressing and use thereof. 3,419,006, 12–31–68, Cl. 128—268.

King, Ronald F.: *See*—
Livingston, William D., and King. 3,419,649.

Kingsley, Lewis A. Tape feed and take-up mechanism. 3,418,924, 12–31–68, Cl. 101—9.

Kingston, Floyd E.: *See*—
Weaver, Harry E., Jr., and Kingston. 3,419,794.
Weaver, Harry E., and Kingston. 3,419,904.

Kinkead Industries Inc.: *See*—
Rockey, Thomas. 3,418,666.

Kinnecom, Paul G., to ACF Industries, Inc. Metal floor construction for railway cars and method of forming same. 3,418,771, 12–31–68, Cl. 52—377.

Kip, Ruloff F., Jr., to Barogenics, Inc. Load-bearing frame structure. 3,418,922, 12–31–68, Cl. 100—214.

Kiper, Gerd: *See*—
Wick, Richard, Biedermann, Winkler, Bestenreiner, Kiper, and Pawlik. 3,418,904.

Kirk, George A.: *See*—
Philibert, Robert A., Browne, Sanger, and Kirk. 3,419,756.

Kirk, Norbert A. Ball point pens. 3,419,336, 12–31–68, Cl. 401—111.

Kirk, Stella: *See*—
Philbert, Robert A., Browne, Sanger, and Kirk. 3,419,756.

Kirschenbaum, Isidor: *See*—
Inchalik, Elroy J., Kirschenbaum, and Hill. 3,419,615.

Kitson, George S.: *See*—
Cresswell, Roger A., and Kitson. 3,418,810.

Klar, Erich: *See*—
Holzer, Rolf, Stehle, Schubert, Weber, and Klar. 3,419,467.

Kleesattel, Claus, A. Kuris, and L. Balamuth, to Cavitron Corp. Devices for sensing and indicating variations in frequency and amplitude of acoustically vibrated work members. 3,419,776, 12–31–68, Cl. 318—118.

Klein, Frederick A., to Hughes Aircraft Co. Reference mechanism for a shaft-mounted rotatable element. 3,418,857, 12–31–68, Cl. 74—10.

Klein, Gerhart P., to P. R. Mallory & Co., Inc. Anodic printing for detecting defective sites in valve metal oxide films. 3,419,479, 12–31–68, Cl. 204—1.

Klender, Gerald J., to Uniroyal, Inc. Novel substituted 1,3,5-triazatriphosphorines and process for their polymerization. 3,419,504, 12–31–68, Cl. 260—2.

Klevans, William L.: *See*—
Van Dorn, William G. 3,419,090.

Kling, Gary H.: *See*—
Beer, Arthur O., and Kling. 3,418,849.

Klomp, Alfred W., to Gary Tool, Inc. Method and apparatus for making index plates, master gears, and the like. 3,418,760, 12–31–68, Cl. 51—157.

Klosky, John P., and R. L. Carper, to Addressograph Multigraph Corp. Imaging of lithographic masters. 3,419,328, 12–31–68, Cl. 355—106.

Knall, Leo: *See*—
Petrescu, Nicolae, and Knall. 3,419,490.

Knapp-Monarch Co.: *See*—
Kueser, John J. 3,418,736.

Knoll A.G.: *See*—
Bieckert, Ernst, Kallischnigg, and Gensel. 3,419,577.

Knoth, Erwin W., to Crampton Mfg. Co. Device for orienting parts and the like. 3,419,129, 12–31–68, Cl. 198—33.

Knudsen, Lawrence B., and A. D. Munjee, to National Lead Co. Fluid scrubber. 3,419,252, 12–31–68, Cl. 261—79.

Knupfer, Hans: *See*—
Fetzer, Uwe, Ugi, Knupfer, Renner, and Grewe. 3,419,546.

Knupfer, Hans, W.-F. Wirth, and C.-W. Schellhammer, to Farbenfabriken Bayer Aktiengesellschaft. Process for producing 7-amino-carbostyrile derivatives. 3,419,563, 12–31–68, Cl. 260—288.

Kocher, Alfred L., and E. A. Wiedemann. Building block and wall made therefrom. 3,418,774, 12–31–68, Cl. 52—437.

Kochta, Zdenek: *See*—
Kramolis, Vladislav, Danhel, Rataj, and Kochta. 3,418,696.

Koehring Co.: *See*—
Nelson, Wayne F. 3,419,081.

Kolesinski, Henry S.: *See*—
Haas, Howard C., and Kolesinski. 3,419,389.

Komachiya, Yoshioki, S. Suzuki, and S. Sakurai, to Ajinomoto Co., Inc. Method of preparing 5-(indolyl-3-methylene)-hydantoin. 3,419,551, 12–31–68, Cl. 260—240.

Komatsu, Koei: *See*—
Ueda, Kenichi, Yasunaga, Komatsu, and Hirota. 3,419,539.

Kommanditgesellschaft Friedrich Kocks: *See*—
Rotert, Kurt, and Blos. 3,418,838.

Koninklijke Nederlandse Textiel Unie N.V.: *See*—
Germans, Fedde H., and Vos. 3,419,723.

Kopp, Georges, and R. R. J. Vittecoq, to Etablissements Kuhlmann. Powders and pastes of metallisable dyestuffs. 3,419,341, 12–31–68, Cl. 8—42.

Kopp, Gerhard, to Entwicklungsring Sud G.m.b.H. Rotatable jet nozzle with automatic compensation for bearing play. 3,418,809, 12–31–68, Cl. 60—232.

Kopp, Jean E. Rotary pumps. 3,418,939, 12–31–68, Cl. 103—136.

Koppers Company, Inc.: *See*—
Quintilian, Bartholomew F., and Williams. 3,418,792.
Tucker, Linwood G., and Preston. 3,419,475.

Kosrow, Robert L.: *See*—
Attwood, John G., Kosrow, and Reimer. 3,418,955.

Kostochka, Nikolai G. Coke oven charging machine having cover removal and clean off means. 3,419,163, 12–31–68, Cl. 214—18.

Koulovatos, James. Sewerage treatment plant. 3,419,146, 12–31–68, Cl. 210—138.

Kowal, Leo B.: *See*—
Offenbacher, Wendel, and Kowal. 3,419,374.

Kozar, John J. Drum sander with sheet sandpaper anchoring means. 3,418,764, 12–31–68, Cl. 51—365.

Krammer, Jan, to Friden, Inc. Programmable computer utilizing nonaddressable registers. 3,419,850, 12–31–68, Cl. 340—172.5.

Kramolis, Vladislav, A. Danhel, A. Rataj, and Z. Kochta, to Elitex. Control system for carding machine. 3,418,696, 12–31–68, Cl. 19—105.

Krapcho, John: *See*—
Bernstein, Jack, Krapcho, and Turk. 3,419,560.

Krapcho, John, to E. R. Squibb & Sons, Inc. Novel tropolone derivatives. 3,419,599, 12–31–68, Cl. 260—473.

Krause, Gerhard: *See*—
Bopp, Achim, and Krause. 3,419,681.

Krauss, John, and R. J. Barbu, to Markbar Corp. Stretch bandage. 3,419,003, 12–31–68, Cl. 128—157.

Krugljachenko, Grigory N., N. I. Alexeev, N. I. Naiguz, V. E. Leibovich, G. I. Shmunis, and M. G. Brandenburgsky, to Zavod Pressov. Hydraulic press for manufacturing hollow rubber articles e.g. diaphragms for type shapers-vulcanizers. 3,419,889, 12–31–68, Cl. 18—17.

Kruth, Andre E. Chalk board eraser. 3,418,673, 12–31–68, Cl. 15—118.

Krysiak, Henry R., to E. I. du Pont de Nemours and Co. Process for bonding rubber to shaped polyester structures. 3,419,450, 12–31–68, Cl. 156—330.

Krysiak, Henry R., to E. I. du Pont de Nemours and Co. Process for bonding rubber to polyester structures. 3,419,452, 12–31–68, Cl. 156—328.

Kubota, Masaichi, A. Kawai, and S. Omoto, to Mitsubishi Rayon Co., Ltd. Process for producing highly crimped fibers. 3,419,652, 12–31–68, Cl. 264—168.

Kuck, Ewald D. Monolithic concrete silo and forms for making the same. 3,418,769, 12–31–68, Cl. 52—184.

Kueser, John J., to Knapp-Monarch Co. Vented steam iron with burp avoiding feature. 3,418,736, 12–31–68, Cl. 38—77.

Kühne, Rudolf, and F. Meininger, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing monoazo dyestuffs. 3,419,541, 12–31–68, Cl. 260—162.

Kumazawa, Michio, to Seibu Gomu Kagaku Kabushiki Kaisha. Fender for protecting ships alongside a fixed structure. 3,418,816, 12–31–68, Cl. 61—48.

Kumin, Victor M., and C. M. Samour, to The G. T. Schjeldahl Co. Method for treating polyester film. 3,419,410, 12–31–68, Cl. 117—25.

Kurashiki Rayon Co., Ltd.: *See*—
Abe, Hitoshi, and Imai. 3,419,519.
Chiba, Teiichiro, Hiramatsu, and Hirano. 3,419,654.

Kureha Kagaku Kogyo Kabushiki Kaisha: *See*—
Sogawa, Toru, Gomi, and Shiga. 3,419,632.

Kuris, Arthur: *See*—
Kleesattel, Claus, Kuris, and Balamuth. 3,419,776.

Kuryla, William C., to Union Carbide Corp. Ketene acetals and orthoesters. 3,419,580, 12–31–68, Cl. 260—347.8.

Kushner, Benjamin H.: *See*—
Jureit, John C., and Kushner. 3,419,205.

Kussy, Frank W., to I-T-E Circuit Breaker Co. Manual reversing starters for electrical loads. 3,419,755, 12–31–68, Cl. 317—13.

Laboratoire Central des Industries Electriques: *See*—
Elnekave, Nissim, and Colombeau. 3,419,769.

Lach, Richard F., and H. E. Martin, to United Aircraft Corp. Stable D.C. amplifier. 3,419,809, 12–31–68, Cl. 330—10.

Lachampt, Felix, A. Viout, and G. Vanlerberghe, to L'Oreal. Water-in-oil emulsions containing magnesium salts of a succinic acid ester. 3,419,665, 12–31–68, Cl. 424—365.

Lafuze, David L., to General Electric Co. Power factor sensitive current limit. 3,419,785, 12–31–68, Cl. 321—11.

La Grone, Bobby D.: *See*—
Campbell, Arthur W., and La Grone. 3,419,520.

L'Air Liquide Societe Anonyme Pour l'Etude Telkoku Sanso Kabushiki Kaisha: *See*—
Grunberg, Jacques F., and Takagi. 3,418,819.

La Manna, Richard J., to Litton Business Systems, Inc. Torsional delay line transducer. 3,419,825, 12–31–68, Cl. 333—30.

Lambert, Charles E. Advertising spectacles. 3,418,737, 12–31–68, Cl. 40—67.

Lamm, Lewis J., to General Motors Corp. Apparatus for electrostatic spray coating. 3,418,971, 12–31–68, Cl. 118—626.

Land, Edwin H., to Polaroid Corp. Range finding-focusing apparatus for a photographic camera. 3,418,908, 12–31–68, Cl. 95—45.

Land, Edwin H., and H. A. Bing, to Polaroid Corp. Adjustable diaphragm with indicia thereon. 3,418,903, 12–31–68, Cl. 95—10.

Land, Edwin H., and R. J. Chen, to Polaroid Corp. Photographic processing apparatus. 3,418,912, 12–31–68, Cl. 95—89.

Landau, David A., to The Reliance Electric and Engineering Co. Control for speed varying drive. 3,418,863, 12–31–68, Cl. 74—230.17.

Landecker, Fred K.: *See*—
Burney, Harold W., and Landecker. 3,419,894.

Landel, Robert F.: *See*—
Rembaum, Alan, and Landel. 3,419,384.

Lane, Herbert J. Electrical control system. 3,419,732, 12–31–68, Cl. 307—116.

Lang, Robert M., to Wyandotte Chemicals Corp. Starch composition comprising souring agents and surfactants. 3,419,405, 12–31–68, Cl. 106—211.

Lannon, John P. Inoculant for cattle or the like. 3,419,660, 12–31–68, Cl. 424—92.

Larl, Ioan, to Ministerul Petrolului. Tool-joints for drilling strings. 3,419,289, 12–31–68, Cl. 285—178.

Larrabee, Graydon B.: *See*—
Clark, Jack H., Van Tassel, Larrabee, and Haefling. 3,419,765.

Larrison, Millard S., to Weston Chemical Corp. Polyphosphites as stabilizers for hydrocarbon polymers. 3,419,524, 12–31–68, Cl. 260—45.95.

Larson, Bertil I. T. Mechanic gear intended for lowering railroad guard bars. 3,418,870, 12–31–68, Cl. 74—625.

Larson, Melvin L., and F. W. Moore, to American Metall Climax, Inc. Organic molybdenum compounds containing sulfur and method of preparation. 3,419,589, 12–31–68, Cl. 260—429.

Laskin, Maurie, to W. R. Grace & Co. Process for preparing a freeze-dried gelled product. 3,419,402, 12–31–68, Cl. 99—199.

Lastnik, Abraham L., and P. James, to United States of America, Army. Retention device for protective helmet. 3,418,657, 12–31–68, Cl. 2—6.

Laughlin, Philip R., and E. L. Betts, to Banner Metals, Inc. Baking pan frame. 3,419,175, 12–31–68, Cl. 220—19.

Lawrence, Owen N., and G. A. Long, to Joseph Lucas (Industries) Ltd. Hover height control apparatus for air cushion vehicles. 3,419,106, 12–31–68, Cl. 180—119.

Leach, Irby H., to The Dow Chemical Co. Polystyrene molding apparatus and method. 3,419,648, 12–31–68, Cl. 264—53.

Lear Siegler Inc.: *See*—
Barber, Richard B., Cross, and Prince. 3,419,321.
Homler, Robert I., and Posh. 3,419,306.

Leas, Arnold M., to Ashland Oil & Refining Co. Thermally stabilized hydrocarbon liquid compositions. 3,419,368, 12–31–68, Cl. 44—70.

Lebeter, Geoffrey G.: *See*—
Parker, Matthew, and Lebeter. 3,418,784.

Lebourg, Maurice P., to Schlumberger Technology Corp. Zone protection apparatus. 3,419,080, 12–31–68, Cl. 166—207.

Lechene, Leo L. Disposable broom core and bristle assembly. 3,418,674, 12–31–68, Cl. 15—182.

Lee, Delbert: *See*—
Teeter, Ford C., and Lee. 3,419,494.

Lee, Headie O., to Dow Corning Corp. Closure system for containers. 3,419,172, 12–31–68, Cl. 215—32.

Lee, Thomas B.: *See*—
Fitzmaurice, Colin, and Lee. 3,419,578.

Leeds & Northrup Co.: *See*—
Ross, Charles W. 3,419,772.

Leeming, Michael N.: *See*—
Rothschild, Louis I., Williamson, and Leeming. 3,419,750.

Lees, Joseph, to Garringtons Ltd. Stock shear having a pair of pivotal shear blades. 3,418,874, 12–31–68, Cl. 83—456.

Lees, William A., and J. R. Swire, to Borden, Inc. Anaerobic curing composition. 3,419,512, 12–31–68, Cl. 260—29.7.

Leesona Corp.: *See*—
Elmore, Glenn V., and Tanner. 3,419,900.

Legendre, Victor J., to Thomas Electronics, Inc. Vacuum seal for a thin berryllium X-ray window. 3,419,741, 12–31–68, Cl. 313—59.

Lehner, Walter H., to PPG Industries, Inc. Method of inspecting all-glass multiple glazed units. 3,418,846, 12–31–68, Cl. 73—52.

Lehr, Glen J., W. W. Oelke, T. B. O'Connell, and A. E. Badger, to Libbey-Owens-Ford Glass Co. Tempering glass between roughened glass contacting surfaces. 3,419,371, 12–31–68, Cl. 65—114.

Leibovich, Vladimir E.: *See*—
Krugljachenko, Grigory N., Alexeev, Naiguz, Leibovich, Shmunis, and Brandenburgsky. 3,419,889.

Leibow, Martin. Trimming mechanism for splicing operation. 3,418,883. 12–31–68, Cl. 90—15.

Leisterer, Reinhard W.: *See*—
Thiede, Heinz A. E., Berkelmann, and Leisterer. 3,419,545.

Lemelson, Jerome H. Adjustable machinery joint. 3,419,168, 12–31–68, Cl. 214—1.

Lenhoff, John G., Jr., to United States of America, Air Force. Continuously variable circuit for controlling the sweep of an oscilloscope. 3,419,808, 12–31–68, Cl. 328—183.

Lennox Industries, Inc.: *See*—
Dirk, William R., and Peterson. 3,419,338.

Leonard, Roy F. Conveyor system. 3,419,128, 12–31–68, Cl. 198—31.

Leonard, Ward Electric Co.: *See*—
Schultz, William J., and Kind. 3,419,753.

Lepp, Jacob H., and R. Ayranto, to International Harvester Co. Material unloader. 3,419,222, 12–31–68, Cl. 239—681.

Letter, Carl T. Synchronous machine. 3,419,905, 12–31–68, Cl. 318—165.

Levenson, Albert A., Jr., to Continental Can Co., Inc. Machine for forming containers from thermoplastic webs or tubing. 3,419,433, 12–31–68, Cl. 156—513.

Lever Brothers Co.: *See*—
De Man, Willem. 3,419,588.
Huysmans, Cornelis P. 3,419,062.
Rytter, Edward A., and Canter. 3,419,500.

Levi, Cass B., to The McNally Pittsburg, Mfg., Corp. Apparatus for separating materials. 3,419,143, 12–31–68, Cl. 209—481.

Levi, Richard J., and J. R. Montgomery, to Electro-Autosizing Machine Corp. Gauging system including automatic balancing and stoppage means. 3,419,800, 12–31–68, Cl. 324—61.

Levy, Gert G., to Chrysler Corp. Metal cleaning composition. 3,419,501, 12–31–68 Cl. 252—137.

Levy, Robert M., to Allied Paper Inc. Electrostatic reproduction system. 3,419,888, 12–31–68, Cl. 346—74.

Levy, Stanley B.: *See*—
Baker, Thomas B., Levy, and Ottolini. 3,419,089.

Lewing, Albert W., to Third National Bank of Hampton County administrator with the will annexed of the estate of said A. W. Lewing, deceased, assor. to Tampax Inc. Applicator tube. 3,419,005, 12–31–68, Cl. 128—263.

Lewis, Dale K., and O. R. Hudson, to General Motors Corp. Ignition system for internal combustion engines. 3,418,988, 12–31–68, Cl. 123—148.

Lewis, John H. R., to The Marconi Co. Ltd. Speed measuring apparatus. 3,419,863, 12–31–68, Cl. 343—8.

Lewis, John H. R., to The Marconi Co. Ltd. Speed measuring apparatus. 3,419,864, 12–31–68, Cl. 343—8.

Libbey-Owens-Ford Glass Co.: *See*—
Lehr, Glen J., Oelke, O'Connell, and Badger. 3,419,371.
Miller, Alfred H., Perry, and Wheat. 3,419,651.

Libby, Hugo L., to United States of America, Atomic Energy Commission. Nondestructive eddy current testing device for testing metal tubing and instantaneously displaying the cross section of said tubing. 3,419,797, 12–31–68, Cl. 324—40.

Libman, Max L.: *See*—
Rabinow, Jacob. 3,418,965.

Licentia Patent-Verwaltungs-G.m.b.H.: *See*—
Pabst, Wolfgang. 3,419,727.
Wenzel, Dieter. 3,419,745.

Lichte, Carl L., and W. M. Conn, to Dresser Industries, Inc. Cutter assembly for well tools. 3,419,093, 12–31–68, Cl. 175—228.

Lida, Yoshio: *See*—
Hayakawa, Shigeru, Ikushima, Nitta, Negase, Taki, and Lida. 3,419,758.

Liebman, Irwin: *See*—
Greber, Gerald, and Liebman. 3,419,902.

Lif-O-Gen, Inc.: *See*—
Burgess, Lester D. 3,419,246.

Liggett & Myers Inc.: *See*—
Mold, James D., Kallianos, and Shelburne. 3,419,543.

Lilla, Mario. Universal multiple access telephone terminal. 3,419,685, 12–31–68, Cl. 179—99.

Lilliston Implement Co.: *See*—
Whitfield, Carroll J., and Nafziger. 3,418,790.

Lilly, Eli and Co.: *See*—
Whitehead, Calvert W., and Traverso. 3,419,552.

Lin-Den Co.: *See*—
Nelson, Robert T. 3,418,929.

Lindell, Albert W., Jr., to American Bosch Arma Corp. Ignition system isolation circuit for internal combustion engines and the like. 3,418,990, 12–31–68, Cl. 123—148.

Lindgren, Erik A. Shock absorbing apparatus. 3,419,237, 12–31–68, Cl. 248—54.

Lindsey, Ronald W.: *See*—
Black, John W., and Lindsey. 3,419,155.

Lingo, Robert W.: *See*—
Cropp, David I., Jordan, and Lingo. 3,419,372.

Linn, William J., to E. I. du Pont de Nemours and Co. Polymers containing polycyanotetrahydrofuran rings and the preparation thereof. 3,419,536, 12–31–68, Cl. 260—85.1.

Lipfert, Donald E., F. J. Daniels, and W. Goldschmidt, to Olin Mathieson Chemical Corp. Container. 3,419,176, 12–31–68, Cl. 220—23.4.

Lipowski, Stanley A., and C. A. Fetscher, to Diamond Shamrock Corp. Stabilization of water soluble acetohydroxamic acid salts. 3,419,603, 12–31–68, Cl. 260—500.5.

Lippman, Jerome, and H. J. Orr. Liquid-soap dispenser. 3,419,194, 12–31–68, Cl. 222—390.

Lisk, G. W. Co., Inc.: *See*—
Ganowsky, Raymond J. 3,419,831.

List, Hans: *See*—
Freyn, Fritz. 3,418,994.
Scheiterlein, Andreas, and Skatsche. 3,418,993.
Skatsche, Othmar. 3,418,984.

Little, Arthur J., and W. R. Mayer, to Stewart-Warner Corp. Hour meter. 3,418,802, 12–31–68, Cl. 58—145.

Litton Business Systems, Inc.: *See*—
La Manna, Richard J. 3,419,825.

Litton Systems, Inc.: *See*—
Hunter, David R., and Keeselman. 3,419,711.

Livingston, William D., and R. F. King. Method for moulding pipes from cementitious mixes. 3,419,649, 12–31–68, Cl. 264—71.

Load King Trailer Co.: *See*—
James, Clayton. 3,419,169.

Lockheed Aircraft Corp.: *See*—
Chapsky, Jacob. 3,419,883.
Hall, Leslie A. 3,419,729.

Loeffler, Jacob F.: *See*—
Hight, Hanford Z., Gallant, Shannon, and Loeffler. 3,419,647.

Logsdon, Duane D. Stabilizer for polymer composition pipe. 3,419,288, 12–31–68, Cl. 285—58.

Lohrmann, Erich, to Jagenberg Werke Akt.-Ges. Method for cutting of paper and similar materials. 3,419,706, 12–31–68, Cl. 219—384.

Long, Geoffrey A.: *See*—
Lawrence, Owen N., and Long. 3,419,106.

Long, John C. Shower installations. 3,418,665, 12–31–68, Cl. 4—149.

Lonza Ltd.: *See*—
Schubert, Siegfried W., and Makart. 3,419,556.

Lookabaugh, Robert E. Eye testing and training apparatus incorporating optical projector and relatively rotatable target templates. 3,419,323, 12–31–68, Cl. 351—2.

Loos, Alvin H. Fishing lure cover. 3,418,745, 12–31–68, Cl. 43—42.09.

Lorang, Pierre E., to Centre de Recherches de Pont-A-Mousson. Centrifugal casting machine. 3,419,066, 12–31–68, Cl. 164—154.

Lord, John M., and G. E. Sterly, to Automatic Electric Laboratories, Inc. Sequential switching arrangements. 3,419,684, 12–31–68, Cl. 179—99.

L'Oreal: *See*—
Lachampt, Felix, Viout, and Vanlerberghe. 3,419,665.

Lornitzo, Frank C., to Ametek, Inc. Shirt-folding machine and method. 3,419,199, 12–31–68, Cl. 223—37.

Losee, Kathryn A.: *See*—
Bernstein, Jack, Yale, and Losee. 3,419,553.

Lourenco, Anthony L.: *See*—
Starkey Orval R. 3,418,791.

Love, Douglas S., to Express Injector Co. Ltd. Ampoule for use with a needleless hypodermic injector. 3,419,007, 12–31–68, Cl. 128—272.

Lucas, Joseph (Industries) Ltd.: *See*—
Cockshott, Charles P. 3,419,442.
Lawrence, Owen N., and Long. 3,419,106.
Matthews, Benjamin W. 3,419,839.
Mowbray, Dorian F. 3,418,941.

Lucas, Louis, to North American Philips Co., Inc. High-voltage semiconductor diode with ceramic envelope. 3,419,762, 12–31–68, Cl. 317—234.

Lundberg, Bertil A.: *See*—
O'Regan, James F., Lundberg, and Mussoni. 3,419,082.

Lundblad, Oskar G. A. Smoking pipes. 3,419,016, 12–31–68, Cl. 131—225.

Lunsford, Carl D., and M. L. Fielden, to A. H. Robins Co., Inc. 5-substituted-2-oxazolidinones. 3,419,559, 12–31–68, Cl. 260—268.

Lustig, Martin H.: *See*—
Gardner, John F., Lustig, and Lux. 3,419,264.

Lux, Adalbert A.: *See*—
Gardner, John F., Lustig, and Lux. 3,419,264.

MB Associates: *See*—
Mainhardt, Robert, and Mawhinney. 3,419,230.

M-H Equipment Co., Inc.: *See*—
Hansford, William W., Bryan, and Hutchinson. 3,418,944.
Stevenson, Norman R., and Hutchinson. 3,418,945.

MKC Electronics Corp.: *See*—
Mathews, Victor M., Jr., and Benton. 3,419,710.

Mabuchi, Takaichi, to Tokyo Kagaku Kabushiki Kaisha. Propulsion unit for aquatic toys. 3,418,751, 12–31–68, Cl. 46—243.

Macchione, Gary H., and R. A. De Nicola; said De Nicola assor. to said Macchione. Printer. 3,418,932, 12–31–68, Cl. 101—228.

MacFarlane, Dennis D.: *See*—
Hoffman, Robert K., Baldwin, MacFarlane, and Vander Horst. 3,418,789.

Macha, Frank J., Jr.: *See*—
Johnston, Edward J., Peacock, and Macha. 3,418,795.

Macovski, Albert, to Stanford Research Institute. Filter for encoding color difference signals. 3,419,672, 12–31–68, Cl. 178—5.4.

Macovski, Albert, to Stanford Research Institute. Line scan printer. 3,419,676, 12–31–68, Cl. 178—6.6.

MacPeek, Donald L.: *See*—
Marcus, Erich, and MacPeek. 3,419,622.

MacWilliams, Walter H., Jr., and D. H. Ring, to Bell Telephone Laboratories, Inc. Microwave slip ring. 3,419,826, 12–31–68, Cl. 333—98.

Mader, Helmut: *See*—
Von Konig, Anita, Mader, Ulrich, and Weyde. 3,419,395.

Madsen, Elmer W.: *See*—
Palmero, Albert, and Madsen. 3,419,698.

Maeda, Tetsuo. Handle control device for bicycle speed change gear. 3,418,867, 12–31–68, Cl. 74—535.

Maes, Michel E., to Explosives Corp. of America. Hydrazine containing explosive compositions. 3,419,443, 12–31–68, Cl. 149—1.

Magerlein, Helmut, E. Siggel, H.-D. Rupp, and G. Meyer, to Glanzstoff A.G. Process for the production of symmetrical aromatic derivatives of ethylene. 3,419,630, 12–31–68, Cl. 260—668.

Mahling, Dieter, H. Mueller-Tamm, H. Seibt, L. Zuern, and E. Scharf, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Self-extinguishing molding material based on propylene polymers. 3,419,518, 12–31–68, Cl. 260—41.

Maid-Rite Novelty Corp.: *See*—
Edelman, Irving. 3,418,700.

Mainhardt, Robert, and R. C. Mawhinney, to MB Associates. Nozzle. 3,419,230, 12–31–68, Cl. 244—3.23.

Makart, Johann L.: *See*—
Schubert, Siegfried W., and Makart. 3,419,556.

Makow, David M. to Canadian Patents and Development Ltd. Sheet resistors having integral tap points. 3,419,841, 12–31–68, Cl. 338—308.

Malleable Research and Development Foundation: *See*—
Burgess, Price B. 3,419,439.

Mallory, P. R., & Co., Inc.: *See*—
Dotto, Gianni A. 3,419,740.
Klein, Gerhart P. 3,419,479.

Malter, Lewis: *See*—
Gustafson, Bert M., Malter, and R. P. Gustafson. 3,419,051.

Maly, George P., G. H. Smith, G. G. Bernard, and J. R. Fox, to Union Oil Co. of California. Consolidation of subterranean formations. 3,419,072, 12–31–68, Cl. 166—33.

Manderbach, James R., and P. Pestel, to The Flintkote Co. Fire-resistant wall construction. 3,418,776, 12–31–68, Cl. 52—481.

Mandino, Joseph J.: *See*—
St. Vrain, Wallace E., and Mandino. 3,419,872.

Manecke, Siegfried E.: *See*—
Hild, Henry F., and Manecke. 3,419,707.

Mansei Kogyo Kabushiki Kaisha: *See*—
Tashiro, Kengo. 3,419,054.

Mao, George W., to Minnesota Mining and Mfg. Co. Partially nitrided aluminum refractory material. 3,419,404, 12–31–68, Cl. 106—65.

Mara, Thomas: *See*—
Marx, Hans B., Nutting, and Mara. 3,419,852.

Marble, Robert I., to Farr Co. Clean air ceiling module. 3,418,915, 12–31–68, Cl. 98—40.

Marciniak, Frank: *See*—
Stoddard, Glenn G. 3,419,012.

Marconi Co. Ltd., The: *See*—
Lewis, John H. R. 3,419,863.
Lewis, John H. R. 3,419,864.

Marcus, Erich, and D. L. MacPeek, to Union Carbide Corp. Di (ω-hydroxyalkyl) cyclopentanes. 3,419,622, 12–31–68, Cl. 260—617.

Margolis, Alan L., to American Greetings Corp. Animated greeting card. 3,418,748, 12–31–68, Cl. 46—34.

Markbar Corp.: *See*—
Krauss, John, and Barbu. 3,419,003.

Markels, Michael, Jr., to The Susquehanna Corp. Composite propellent compositions containing rounded oxidizer particles of a maximum size of 100 microns. 3,419,445, 12–31–68, Cl. 149—19.

Marks, Harold R., to The Boeing Co. Wear-resistant repellent-finished article and process of making the same. 3,419,414, 12–31–68, Cl. 117—70.

Markum, Arvel D.: *See*—
Beutel, Helmuth K., Markum, and O'Donnell. 3,418,824.

Marotta, Patrick T. Hoisting and launching apparatus for dinghy. 3,418,671, 12–31–68, Cl. 9—39.

Marsh, James T.: *See*—
Aiken, Howard H., Marsh, and Parvin. 3,419,141.

Marshack, Irving L., to Mobay Chemical Co. Foot supporting construction. 3,418,732, 12–31–68, Cl. 36—44.

Marshall, Alexander B. C., to Dresser Industries, Inc. Pulse transformer. 3,419,837, 12–31–68, Cl. 336—212.

Marsico, William E., to Columbia Carbon Co. Polymerization process employing a modified iron coordination catalyst. 3,419,505, 12–31–68, Cl. 260—2.

Marti, Fritz, to Portescap Le Porte-Echappement Universel S.A. Device for compensating for thermal changes in oscillators. 3,418,801, 12–31–68, Cl. 58—108.

Martin, Clarence B. Golfer's arm positioning device comprising elbow bend restraining means. 3,419,277, 12–31–68, Cl. 273—189.

Martin, Henry E.: *See*—
Lach, Richard F., and Martin. 3,419,809.

Martin, Johannes J. Industrial furnace. 3,418,996, 12–31–68, Cl. 126—152.

Martin, John E.: *See*—
Goodman, Isaac, and Martin. 3,419,534.

Martin, John W., to United States of America, Interior. Drift drogue. 3,418,852, 12–31–68, Cl. 73—189.

Martin, Macklin F. Method of salvaging tire carcasses and articles made therefrom. 3,418,803, 12–31–68, Cl. 59—35.

Martin Marietta Corp.: *See*—
Colehower, Edgar W. 3,419,434.
Weston, Charles D., and Griffith. 3,419,343.

Martin, Merle E., to Beta Corp. Annunciator system. 3,419,857, 12–31–68, Cl. 340—213.1.

Martin, Merrill D. Sheet accumulator device for automatic sheet stackers. 3,419,266, 12–31–68, Cl. 271—86.

Martin, Sterling T., to Union Carbide Corp. Fluid material transfer apparatus. 3,418,940, 12–31–68, Cl. 103—152.

Martin, William E. Load ejecting wall mechanism for scraper bowl equipment. 3,418,735, 12–31–68, Cl. 37—129.

Maruta, Iwao, to Kao Soap Co., Ltd. Saponified rosin solution of a vinyl polymer and method of sizing paper therewith. 3,419,465, 12–31–68, Cl. 162—168.

Maruyama, Hiromasa: *See*—
Kawamura, Yurio, Ando, Takenouchi, Sakata, and Maruyama. 3,419,608.

Marvin Glass & Associates: *See*—
Ayala, Carl. 3,418,749.

Marx, Hans B., B. W. Nutting, and T. Marra, to Burroughs Corp. Input/output control system for electronic computers. 3,419,852, 12–31–68, Cl. 340—172.5.

Massey, Alton A., to The Firewel Co., Inc. Apparatus for transporting a stream of cryogenic liquified gas. 3,418,822, 12–31–68, Cl. 62—55.

Matchett, Beverly R. L. Dispenser. 3,419,188, 12–31–68, Cl. 222—52.

Matecki, Edward A., to Union Carbide Corp. Hollow shirred meat casing stick. 3,419,401, 12–31–68, Cl. 99—176.

Mathews, Victor M., Jr., and C. D. Benton, to MKC Electronics Corp. Magnetic card reader having sequential indicia sensing means. 3,419,710, 12–31–68, Cl. 235—61.11.

Matlack, Albert S., to Hercules Inc. Process for dyeing polypropylene fibers containing a nickel phenolate of a bis(o-alkylphenol) sulfone. 3,419,342, 12–31–68, Cl. 8—46.

Matsuoka, Yoshitaka, Y. Hidaka, M. Yoshizawa, and A. Hashimoto, to Eisai Co., Ltd. Preparation of albumin-free lysozyme. 3,419,471, 12–31–68, Cl. 195—66.

Matsushita Electric Industrial Co., Ltd.: *See*—
Hayakawa, Shigeru. 3,419,759.
Hayakawa, Shigeru, Ikushima, Nitta, Nagase, Taki, and Lida. 3,419,758.
Sato, Hosei. 3,418,917.
Tomago, Akio, and Fukai. 3,419,770.

Mattel, Inc.: *See*—
Ryan, John W., and Meggs. 3,418,750.

Matteson, David J., to E. W. Bliss Co. High energy rate actuator. 3,418,887, 12–31–68, Cl. 91—392.

Matthews, Benjamin W., to Joseph Lucas (Industries) Ltd. Cartridge fuse holders. 3,419,839, 12–31–68, Cl. 337—186.

Mattia, Manlio M., to Day & Zimmermann, Inc. Process for purifying acetone by azeotropic distillation with an alkylchloride. 3,419,477, 12–31–68, Cl. 203—67.

Mau, Gunther: *See*—
Hirsch, Lothar, Hornig, Mau, and Quadflieg. 3,419,618.

Maurer, Hans K.: *See*—
Witzel, Herbert, Maurer, and Gassen. 3,419,544.

Maurer, Klemens, to Sunvic-Regler G.m.b.H. Recorder with reversible pen drive. 3,419,878, 12–31–68, Cl. 346—14.

Mawhinney, Robert C.: *See*—
Mainhardt, Robert, and Mawhinney. 3,419,230.

Maxey, Alexander R., to Westel Co. Dual capstan control system. 3,419,202, 12–31–68, Cl. 226—25.

Maxwell, Stuart L. Sanitary cover for a recessed floor drain. 3,418,669, 12–31–68, Cl. 4—286.

May, Joseph C., to The Superior Electric Co. Automatic voltage regulator. 3,419,788, 12–31–68, Cl. 323—6.

Mayer, William R.: *See*—
Little, Arthur J., and Mayer. 3,418,802.

Mayers, Fred T., and R. L. Dombbrower, Jr. Three-wheeled automotive vehicle. 3,419,098, 12–31–68, Cl. 180—25.

Mayr, Helmut, and R. Pelte, to Agfa-Gevaert A.G. Motion picture camera fade-in and fade-out control arrangement. 3,419,325, 12–31–68, Cl. 352—91.

Mazzanti, Giorgio: *See*—
Natta, Giulio, Mazzanti, and Dall'Asta. 3,419,538.

Mazzarins, Janis, to General Motors Corp. Track shoe assembly. 3,419,316, 12–31–68, Cl. 305—54.

McAllister, Patrick V., and J. D. McGregor, to Thiokol Chemical Corp. Tungsten oxide coated rocket motor throat insert. 3,419,441, 12–31–68, Cl. 148—6.3.

McCall Bros., & Co.: *See*—
Jackson, William R. 3,418,766.

McCarthy, John F., Inc.: *See*—
Fiori, Anthony M. 3,419,677.

McCarthy, Reginald J.: *See*—
Werkmeister, Gottfried W. L., and McCarthy. 3,419,227.

McConnell, George W. Subsurface cutter attachment for a bulldozer. 3,418,734, 12–31–68, Cl. 37—2.

McConnell, James L.: *See*—
Niewyk, Anthony, McConnell, and Myers. 3,419,708.

McDermott, John J., and C. S. Thompson, to E. W. Bliss Co. Aircraft arresting system. 3,419,231, 12–31–68, Cl. 244—110.

McDonnell Douglas Corp.: *See*—
Campbell, Mark R., and Wright. 3,419,218.

McDowell-Wellman Engineering Co.: *See*—
Haditsch, Karl. 3,419,165.

McEwan, James. Lawn mower sharpener. 3,418,757, 12–31–68, Cl. 51—34.

McEwan, James. Oscillating vertical spindle sander. 3,418,758, 12–31–68, Cl. 51—34.

McGary, Charles W., Jr., and P. L. Smith, to Union Carbide Corp. Esters of phosphorus-containing acid, halogenated epoxide, and dicarboxylic acid. 3,419,642, 12–31–68, Cl. 260—952.

McGowan, Jared M.: *See*—
Bilinski, Thomas, Jr., and McGowan. 3,419,213.

McGraw-Edison Co.: *See*—
Olsen, John C. 3,419,726.

McGregor, James D.: *See*—
McAllister, Patrick V., and McGregor. 3,419,441.

McGuire, Robert J.: *See*—
Fareri, Elizabeth L., McGuire, and Mitchell. 3,419,366.

McKechnie, Ian C., and Oliphant. 3,419,834, 12–31–68, Cl. 336—69.

McKenzie, Donald E.: *See*—
Recht, Howard L., and McKenzie. 3,419,435.

McMillen, Russell G., to International Harvester Co. Steering mechanism. 3,419,103, 12–31–68, Cl. 180—79.2.

McNally, Pittsburgh Mfg. Corp., The: *See*—
Levi, Cass B. 3,419,143.

McShane, Herbert F., Jr., to E. I. du Pont de Nemours and Co. Continuous process for the halogenation of tolylene diisocyanate. 3,419,594, 12–31–68, Cl. 260—453.

McStay, Morgan B., and J. G. Sloane, to Short Bros. & Harland Ltd. Anti-drag arrangements for aerial and other moving bodies. 3,419,232, 12–31–68, Cl. 244—119.

Mead, Edward J.: *See*—
Gebhard, John C., Jr., and Mead. 3,419,461.

Mead, Theodore C., to Texaco Inc. Method of preparing ketomonocarboxylic acids. 3,419,605, 12–31–68, Cl. 260—514.

Mechanical Handling Systems, Inc.: *See*—
Harrison, Homer S. 3,418,947.

Megargel, Leland R.: *See*—
Andre, Stephen N., and Megargel. 3,419,822.

Meggs, Daniel H.: *See*—
Ryan, John W., and Meggs. 3,418,750.

Meguiar, Kenneth D.: *See*—
Meguiar, Larry G. and K. D. 3,418,675.

Meguiar, Larry G. and K. D., to Mirror Bright Polish Co. Buffing wheel. 3,418,675, 12–31–68, Cl. 15—230.

Meijer, Roelf J., and R. A. J. O. van Witteveen, to North American Philips Co., Inc. Device for converting calorific energy into mechanical energy. 3,418,804, 12–31–68, Cl. 60—24.

Meikle, John E., to United States of America, Army. Spectrophotometric apparatus for rapid analysis having deflection means to prevent vortex formation. 3,419,722, 12–31–68, Cl. 250—218.

Meininger, Fritz: *See*—
Kühne, Rudolf, and Meininger. 3,419,541.

Meininger, Fritz, H. Steuernagel, and H. Frolich, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Azo dyestuffs containing a ureido group. 3,419,542, 12–31–68, Cl. 260—195.

Meintel, Alfred J., Jr.: *See*—
Vogeley, Arthur W., and Meintel. 3,419,329.

Meiresonne, Arthur C., to Owens-Illinois Inc. Apparatus for supporting and glazing glass articles. 3,419,375, 12–31–68, Cl. 65—181.

Melas, C. Michael: *See*—
Gorog, Etienne P., and Melas. 3,419,804.

Melas, Constantine M., to International Business Machines Corp. Binary to multilevel conversion by combining redundant information signal with transition encoded information signal. 3,419,805, 12–31–68, Cl. 325—38.

Meller, Floyd H., and C. L. Swanson, to Fairbanks Morse Inc. Incinerator. 3,418,952, 12–31–68, Cl. 110—8.

Mendham, William E.: *See*—
Condo, Albert C., and Mendham. 3,419,511.

Mercier, Jacques H. Hydraulic actuator with internal dashpot. 3,418,888, 12–31–68, Cl. 91—396.

Merck & Co., Inc.: *See*—
Bicking, John B. 3,419,606.
Weinstock, Leonard M. 3,419,573.
Weinstock, Leonard M., and Handelsman. 3,419,572.

Mercox, Inc.: *See*—
Tabor, Patrick MacD. 3,419,274.

Merrill, Stewart H., and E. J. Perry, to Eastman Kodak Co. Silver halide peptizers. 3,419,397, 12–31–68, Cl. 96—114.

Merrimac Research and Development Inc.: *See*—
Seidel, Harold. 3,419,824.

Messa, Matthew A. Water treatment apparatus and method. 3,419,491, 12–31–68, Cl. 210—20.

Messenger, Ronald L., to Clark Equipment Co. Operator side guard for use with an industrial truck. 3,419,104, 12–31–68, Cl. 180—82.

Messer Griesheim G.m.b.H.: *See*—
Röder, Georg. 3,419,257.

Metal Improvement Co.: *See*—
Burney, Harold W., and Landecker. 3,419,894.

Metco Inc.: *See*—
Dittrich, Ferdinand J. 3,419,415.

Metzger, Sidney H., Jr.: *See*—
Cross, James M., and Metzger, and Campbell. 3,419,612.

Meyer, Charles H., Jr.: *See*—
Hammond, Robert H., Meyer, Gehman, and Kelly. 3,419,718.

Meyer, Gerhard: *See*—
Magerlein, Helmut, Siggel, Rupp, and Meyer. 3,419,630.

Meyerhoffer, Joseph J. Mechanical nut and fruit picker. 3,418,797, 12–31–68, Cl. 56—328.

Michael, Henry J., C. E. Morse, F. G. Oram, E. J. Roccati, and J. P. Smith. 3,419,683, 12–31–68, Cl. 179—18.

Michaels, Alan S., to Amicon Corp. Electrical energy device containing polyelectrolyte gel separator. 3,419,430, 12–31–68, Cl. 136—26.

Michaels, Alan S., to Amicon Corp. Polyelectrolyte gel separator and battery therewith. 3,419,431, 12–31–68, Cl. 136—26.

Michon, Dominique, to Compagnie Generale de Geophysique. Method for cutting out stray signals. 3,419,846, 12–31–68, Cl. 340—15.5.

Microdot Inc.: *See*—
Russell, John D. 3,418,711.

Miles Laboratories, Inc.: *See*—
Greber, Gerald, and Liebman. 3,419,902.

Miles, Marshall: *See*—
Dinkelkamp, Henry T., and Miles. 3,419,695.

Miller, Alfred H., G. Perry, and L. C. Wheat, to Libbey-Owens-Ford Glass Co. Method of shaping thermoplastic sheets. 3,419,651, 12–31–68, Cl. 264—160.

Miller, Charlie D., and A. C. O'Hara. Oscillatory target and motion imparting means. 3,419,272, 12–31–68, Cl. 273—105.2.

Miller, Herman, Inc.: *See*—
Propst, Robert L., and Beckman. 3,418,765.

Miller, Richard D.: *See*—
Vanderlaan, Dirk, Thomas, and Miller. 3,418,837.

Miller-Thomas Corp. d.b.a. Globe Engineering Co.: *See*—
Vanderlaan, Dirk, Thomas, and Miller. 3,418,837.

Miller, Walter A.: *See*—
Anderson, Henry H., and Miller. 3,418,685.

Millmaster Onyx Corp.: *See*—
Wakeman, Reginald L., and Coates. 3,419,562.

Millner, Elliott. Screw clip or the like including headless screws with cylindrical bore driving means. 3,419,135, 12–31–68, Cl. 206—56.

Mills, John C., to Commonwealth Scientific and Industrial Research Organization. Manipulator for accurately positioning specimens within an electron microscope or an electron diffraction camera. 3,419,717, 12–31–68, Cl. 250—49.5.

Mills, Richard D.: *See*—
Sliteri, Pentti K., and Mills. 3,419,472.

Miner, Robert C.: *See*—
Barows, Arthur G., Parrish, and Miner. 3,419,084.

Ministerul Industriei Chimice: *See*—
Petrescu, Nicolae, and Knall. 3,419,490.

Ministerul Petrolului: *See*—
Lari, Ioan. 3,419,289.

Minnesota Mining and Mfg. Co.: *See*—
Dienes, Zoltan B. 3,419,669.
Hansen, Robert L. 3,419,595.
Mao, George W. 3,419,404.

Minnich, Willy. Variable transmission. 3,418,858, 12–31–68, Cl. 74—68.

Minnick, Joseph J., to Commercial Solvents Corp. Thickened aqueous inorganic nitrate salt nitroparaffin explosive composition sensitized with an air entrapping material. 3,419,444, 12–31–68, Cl. 149—2.

Mirror Bright Polish Co.: *See*—
Megular, Larry G. and K. D. 3,418,675.

Mishkovsky, Victor, to General Electric Co. Level detector for electric current. 3,419,791, 12–31–68, Cl. 323—44.

Mita, Yoshinari, to Nippon Electric Co. Ltd. High speed information recording and duplicating apparatus employing a stencil master document. 3,418,927, 12–31–68, Cl. 101—90.

Mitchell, Edward: *See*—
Fareri, Elizabeth L., McGuire, and Mitchell. 3,419,366.

Mitchell, Herbert C., to Ford Motor Co. Crank handle assembly. 3,418,868, 12–31–68, Cl. 74—547.

Mitsubishi Rayon Co., Ltd.: *See*—
Kubota, Masaichi, Kawai, and Omoto. 3,419,652.

Miura, Hitoshi: *See*—
Takano, Yasumasa, Miura, and Yamamoto. 3,419,880.

Mizuta, Yukio: *See*—
Yamamoto, Mititaka, Mizuta, and Ano. 3,419,881.

Milnar, Russell J., to Whirlpool Corp. Food waste disposer. 3,419,224, 12–31–68, Cl. 241—285.

Mobay Chemical Co.: *See*—
Cross, James M., Metzger, and Campbell. 3,419,612.
Marshack, Irving L. 3,418,732.

Mobbs, Freddie L. Portable tree stand. 3,419,108, 12–31–68, Cl. 182—129.

Mobil Oil Corp.: *See*—
Drake, Leonard C. 3,419,350.

Mock, Donald E., and J. Banner, to Anjac Plastics, Inc. Top carrier system for drapery panels. 3,419,063, 12–31–68, Cl. 160—199.

Modern Faucet Mfg. Co.: *See*—
Ward, Irving A. 3,419,036.

Mohnkern, Gerald L., to United States of America, Army. Magnetically selected gate. 3,419,854, 12–31–68, Cl. 340—174.

Mold, James D., A. G. Kallianos, and F. A. Shelburne, to Liggett & Myers Inc. Carbonate esters of flavorants. 3,419,543, 12–31–68, Cl. 260—234.

Molins Machine Co., Ltd.: *See*—
Williamson, David T. N. 3,419,204.

Monk, Brian A., to S. A. Monk (Sutton in Ashfield) Ltd. Multihead fully fashioned knitting machines. 3,418,829, 12–31–68, Cl. 66—70.

Monk, S. A., (Sutton in Ashfield) Ltd.: *See*—
Monk, Brian A. 3,418,829.

Monnich, Carl E., to Sterer Engineering and Mfg. Co. Diaphragm relief valve. 3,419,039, 12–31–68, Cl. 137—510.

Monsanto Co.: *See*—
Dill, Dale R. 3,419,513.
Early, Jack D., and Chupp. 3,419,585.
Hedrick, Ross M., and Richard. 3,419,517.
Herzog, Arno H. 3,419,742.
Hirshfeld, Julian J., and Sample. 3,419,340.
Nelson, George D. 3,419,499.
Sharp, Joseph W. 3,419,816.
Weissenberger, Gustav. 3,419,662.

Montecatini Edison S.p.A.: *See*—
Natta, Giulio, Mazzanti, and Dall'Asta. 3,419,538.
Rinaldo, Paolo, and Trupiano. 3,419,440.

Montgomery, John R.: *See*—
Levi, Richard J., and Montgomery. 3,419,800.

Moore, Fred W.: *See*—
Larson, Melvin L., and Moore. 3,419,589.

Moore, Robert D., to Carnation Co. Plastic pail with ball having two interchangeable positions. 3,419,196, 12–31–68, Cl. 222—465.

Moore, Robert E., to Sun Oil Co. Hydrated 1,3-diaminoadamantanes and preparation thereof. 3,419,611, 12–31–68, Cl. 260—563.

Moorehead, Robert M., to Collins Radio Co. Mechanical tuning arrangement for dual helix winding antenna (compact antenna, 30–76 megacycles). 3,419,874, 12–31–68, Cl. 343—877.

Moran, Joseph P., and R. Czajkowski, to Motorola, Inc. Character printer utilizing a rope memory. 3,419,887, 12–31–68, Cl. 346—74.

Moreau, Claude: *See*—
Beauvais, Max, and Moreau. 3,418,918.

Morehouse, Earl P., and M. L. Johnson. Towing hitch. 3,419,285, 12–31–68, Cl. 280—446.

Morgan, Frank W.: *See*—
Batiuk, Walter, Jung, and Morgan. 3,419,416.

Morgan, Rubie F. Roller stretcher. 3,418,670, 12–31–68, Cl. 5—81.

Morikawa, Ryuichi, N. Shibata, and Y. Takami, to The Toyo Rubber Industries Co., Ltd. Tubeless tire. 3,419,061, 12–31–68. Cl. 152—362.

Morin, Nelson H. Granulators. 3,419,223, 12–31–68, Cl. 241—73.

Morine, Richard L., to Food Equipment Development Corp. Automatic dispensing apparatus. 3,419,052, 12–31–68, Cl. 141—102.

Moriwaki, Katsushi. Wrench. 3,418,873, 12–31–68, Cl. 81—99.

Mork, George W., to Bucyrus-Erie Co. Counterweight attaching means for cranes. 3,419,156, 12–31–68, Cl. 212—49.

Morris, Edward P., to The Coe Mfg. Co. Veneer dryer. 3,418,727, 12–31–68, Cl. 34—155.

Morris, William G., and R. J. Baran, to Kewanee Oil Co. Process for coating with epoxy compositions. 3,419,412, 12–31–68, Cl. 117—38.

Morse, Charles E.: *See*—
Michael, Henry J., Morse, Oram, Roccati, and Smith. 3,419,683.

Moshy, Raymond J., to American Machine & Foundry Co. Reconstituted tobacco. 3,419,014, 12–31–68, Cl. 131—17.

Mosler Safe Co., The: *See*—
Belew, Leland W. 3,418,951.

Mosley Electronics, Inc.: *See*—
St. Vrain, Wallace E., and Mandino. 3,419,872.

Motomak Motorenbau Maschinen- und Werkzeugfabrik, Konstruktionen G.m.b.H.: *See*—
Sossna, Hans-Jurgen. 3,418,983.

Motorola, Inc.: *See*—
Moran, Joseph P., and Czajkowski. 3,419,887.

Mott, Lucile E.: *See*—
Anderson, James P., Hoffman, Mott, Pezely, Shifman, and Wilkinson. 3,419,849.

Mowbray, Dorian F., to Joseph Lucas (Industries) Ltd. Stroke adjusting means for hydraulic machines. 3,418,941, 12–31–68, Cl. 103—162.

Mueller-Tamm, Heinz: *See*—
Mahling, Dieter, Mueller-Tamm, Seibt, Zuern, and Scharf. 3,419,518.

Mullen, Jerrold L.: *See*—
Sheldrake, Leonard J., and Mullen. 3,419,782.

Müller, Jürgen: *See*—
Stengel, Edgar, and Müller. 3,419,701.

Munjee, Aman D.: *See*—
Knudsen, Lawrence B., and Munjee. 3,419,252.

Munn, Ben. Coin collection system for multiple parking meter stations. 3,419,209, 12–31–68, Cl. 232—1.

Murakami, Ryuichi, and H. Kaneko, to Nippon Electric Co., Ltd. Encoder means having temperature-compensation apparatus included therein. 3,419,819, 12–31–68, Cl. 332—9.

Murray, Maynard, to Creative Chemistry, Inc. Liquid food product and process for preparing same. 3,419,398, 12–31–68, Cl. 99—28.

Musselwhite, Fred L.: *See*—
Nance, Lacy C. 3,418,831.

Musselwhite, William E.: *See*—
Nance, Lacy C. 3,418,831.

Mussoni, Walter J.: *See*—
O'Regan, James F., Lundberg, and Mussoni. 3,419,082.

Mutchnik, Henry and M. Slide assemblies for extension tables. 3,419,317. 12–31–68. Cl. 308—3.6.

Mutchnik, Melvin: *See*—
Mutchnik, Henry and M. 3,419,317.

Mutterer, Heinz K.: *See*—
Rentschler, Waldemar T., Starp, and Mutterer. 3,418,910.

Myers, George H.: *See*—
Niewyk, Anthony, McConnell, and Myers. 3,419,708.

Nadler, Franz: *See*—
Fromme, Hans-Georg, and Nadler. 3,418,948.

Nafziger, Marvin L.: *See*—
Whitfield, Carroll J., and Nafziger. 3,418,790.

Nagai, Susumu: *See*—
Tachibana, Sachihiko, Umedo, Nagai, and Orito. 3,418,890.

Nagano, Masaaki: *See*—
Yasuhara, Ichiro, Nagano, and Sato. 3,418,881.

Nagase, Kaneomi: *See*—
Hayakawa, Shigeru, Ikushima, Nitta, Negase, Taki, and Lida. 3,419,758.

Naiguz, Natan I.: *See*—
Krugljachenko, Grigory N., Alexeev, Naiguz, Leibovich, Shmunis, and Brandenburgsky. 3,419,889.

Nalco Chemical Co.: *See*—
Newman, Theodore R. 3,419,502.

Nance, Lacy C.; 25% to E. Williamson, 12½% each to W. E. and F. L. Musselwhite. Feed control for automatic striper. 3,418,831. 12–31–68, Cl. 66—132.

Nantz, Merle E., to United States of America, Air Force. Moments of inertia platform. 3,418,847, 12–31–68, Cl. 73—65.

Nardon, Carl J. Waffle iron construction. 3,418,919, 12–31–68, Cl. 99—378.

Nash Engineering Co., The: *See*—
Jozepaitis, Charles M. 3,419,107.

National Aeronautics and Space Administration: *See*—
Webb, James E. 3,419,827.

National Lead Co.: *See*—
Knudsen, Lawrence B., and Munjee. 3,419,252.

National Lock Co.: *See*—
Anderson, Ralph F. 3,418,682.
Stone, Roy A., and Ellis. 3,418,683.

National Research Development Corp.: *See*—
Allison, Ronald, and Jilbert. 3,418,661.
Bottomley, Alastair H., Styles, Jilbert, Birtill, and Truscott. 3,418,662.

Natta, Giulio, G. Mazzanti, and G. Dall'Asta, to Montecatini Edison S.p.A. Processes for the production of highly crystalline poly (vinyl alkyl ethers). 3,419,538, 12–31–68, Cl. 260—91.1.

Neal, Charles B., and L. R. Poel, to Sylvania Electric Products Inc. Convergence waveform shaping circuitry. 3,419,748. 12–31–68, Cl. 315—13.

Nelson, George D., to Monsanto Co. Deicer compositions. 3,419,499, 12–31–68, Cl. 252—70.

Nelson, Gunner E., to Ethyl Corp. Two stage electrolytic and chemical process for alpha-olefin conversion to aliphatic acids. 3,419,483, 12–31–68, Cl. 204—79.

Nelson, Hayden A., to General Motors Corp. Coincident current wired core memory for computers. 3,419,855, 12–31–68, Cl. 340—174.

Nelson, Herbert O., to The Secretary of State for Defense in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland. Vehicle wheels. 3,418,980, 12–31–68, Cl. 115—1.

Nelson, John B., Jr., to Diamond Shamrock Corp. Electrolyte and process for electroplating black chromium and article thereby produced. 3,419,481, 12–31–68, Cl. 204—51.

Nelson, Robert T., to Lin-Den Co. Endless type band and method of making same. 3,418,929, 12–31–68, Cl. 101—111.

Nelson, Wayne F., to Koehring Co. Well cementing device. 3,419,081, 12–31–68. Cl. 166—225.

Nestel, Emil, to Emil Nestel KG. Yarn feed mechanism for circular knitting machines. 3,418,830, 12–31–68, Cl. 66—125.

Nestel, Emil KG.: *See*—
Nestel, Emil. 3,418,830.

Netting, David I.: *See*—
Weides, Helmut H., and Netting. 3,419,495.

New-Tronics Corp.: *See*—
Altmayer, John. 3,419,869.

Newhouse, James H., to Clark Equipment Co. Sheave assembly. 3,418,861, 12–31–68, Cl. 74—216.5.

Newland, David E. Folding bicycles. 3,419,283, 12–31–68, Cl. 280—278.

Newman, Theodore R., to Nalco Chemical Co. Process for dispersing solids in aqueous systems. 3,419,502, 12–31–68, 252—180.

Nicholas, Harry P. H. Sterilizing device. 3,419,346, 12–31–68, Cl. 21—87.

Nichols Engineering & Research Corp.: *See*—
Von Dreusche, Charles F., Jr. 3,419,254.

Nickerson, Bryan W., Jr. Portable shelter. 3,419,024, 12–31–68, Cl. 135—2.

Nicolas, Jean: *See*—
Vassiliev, Avenir, Nicolas, and Hildebrandt. 3,419,496.

Niewyk, Anthony, J. L. McConnell, and G. H. Myers, to Whirlpool Corp. Electronic heat control for dryer. 3,419,708, 12–31–68, Cl. 219—501.

Nihon Denshi Kabushiki Kaisha: *See*—
Takano, Yasumasa, Miura, and Yamamoto. 3,419,880.

Nihon Genshiryoku Kenkyujo: *See*—
Sugimoto, Senichi. 3,418,788.

Nippon Electric Co. Ltd.: *See*—
Mita, Yoshinari. 3,418,927.
Murakami, Ryuichi, and Kaneko. 3,419,819.

Nitta, Tsuneharu: *See*—
Hayakawa, Shigeru, Ikushima, Nitta, Negase, Taki, and Lida. 3,419,758.

Niwa, Toshio, and S. Oishi, to Hitachi Shipbuilding and Engineering Co. Ltd. Continuous-type centrifugal machine. 3,419,148, 12–31–68, Cl. 210—213.

Nix, William O., to Philco Corp. Film developing apparatus. 3,418,911, 12–31–68, Cl. 95—89.

Nodwell, William B., and J. M. Boyd. Single frame tracked carrier. 3,419,097, 12–31–68, Cl. 180—9.46.

Nojima, Susumu: *See*—
Kasugai, Takahiko, and Nojima. 3,419,764.

Nolt, Edwin B., and R. R. Eby, to Sperry Rand Corp. Twine finger for knotter mechanism of baler. 3,419,300, 12–31–68, Cl. 289—13.

Noonan, G. David, and J. J. Flinter. Business form and mailing envelope. 3,419,286, 12–31–68, Cl. 282—11.5.

Nordblom, George F., to ESB Inc. Method for producing flakes of nickel. 3,419,901, 12–31–68, Cl. 204—10.

Nordin, Ivan C., to Parke, Davis & Co. Process for the production of 1-(o-chlorophenyl) 2,2,2-trichloroethanol. 3,419,623, 12–31–68, Cl. 260—618.

Norgren, C. A., Co.: *See*—
Hoffman, Robert K., Baldwin, MacFarlane, and Vander Horst. 3,418,789.

Norris, Harrison C., to Columbian Industries, Inc. Calendar pad securement means. 3,419,011, 12–31–68, Cl. 129—23.

North American Philips Co., Inc.: *See*—
Lucas, Louis. 3,419,762.
Meijer, Roelf J., and Van Witteveen. 3,418,804.
Schmidt, Siegfried. 3,419,752.
Tillack, Jürgen. 3,419,357.
Wijma, Johannes. 3,419,567.

North American Rockwell Corp.: *See*—
Carns, Sidney L. 3,418 828.
De Bell, Arthur G. 3,419,709.
Hrusovsky, Louis J. 3,419,260.
Raleigh, Douglas O. 3,419,760.
Recht, Howard L., and Iverson. 3,419,436.
Recht, Howard L., and McKenzie. 3,419,435.
Wong, Sam H. 3,419,870.

Northern Electric Co. Ltd.: *See*—
Thompson, Gordon B., and Whitaker. 3,419,682.

Novack, Edward, and E. L. Terrill, to The Risdon Mfg. Co. Dispensing valve. 3,419,249. 12–31–68, Cl. 251—339.

Nozoe, Tetsuo. G. Sunagawa, N. Soma, and Y. Sato, to Sankyo Co., Ltd. Process for preparing troponeimines. 3,419,613, 12–31–68. Cl. 260—566.

Nutting, Bruce W.: *See*—
Marx, Hans B., Nutting, and Marra. 3,419,852.

Oakland Corp., The: *See*—
Wallace, Richard B. 3,418,840.

Obuchi, Kazuo, to Fuji Shashin Film Kabushiki Kaisha. Powder dusting device for electrophotography. 3,418,972, 12–31–68, Cl. 118—637.

O'Connell, Gerard P. Package for paint brushes or the like. 3,419,132. 12–31–68, Cl. 206—15.1.

O'Connell, Thomas B.: *See*—
Lehr, Glen J., Oelke, O'Connell, and Badger. 3,419.371.

Oddicini, Renzo. Articulated structure particularly for partitions. 3,419,064, 12–31–68, Cl. 160—229.

Oddsen, Odd N., to Hillside Metal Products, Inc. Method of making a roller bearing. 3,418,704, 12–31–68, Cl. 29—148.4.

O'Donnell, Charles W.: *See*—
Beutel, Helmuth K., Markum, and O'Donnell. 3,418,824.

O'Donnell, John E.: *See*—
Di Valerio, Panfilo A., Skura, and O'Donnell. 3,419,449.

Oelke, Waldemar W.: *See*—
Lehr, Glen J., Oelke, O'Connell, and Badger. 3,419,371.

Oerlikon-Buhrle Holding Ltd.: *See*—
Herlach, Heinrich. 3,418,880.

Offenbacher, Wendel, and L. B. Kowal, to Pittsburgh Plate Glass Co. Detecting ribbon formation abnormalities in drawing glass sheets. 3,419,374, 12–31–68, Cl. 65—160.

Offshore Engineering Corp.: *See*—
Gilreath, Lafayette E. 3,419,259.

O'Hara, Arthur C.: *See*—
Miller, Charlie D., and O'Hara. 3,419,272.

Ohio Crankshaft Co., The: *See*—
Curcio, Edmund N. 3,419,417.
Kasper, Robert J., and Ryba. 3,419,792.

Ohmura, Kazumi: *See*—
Yokoi, Satoru, and Ohmura. 3,418,946.

Oikawa, Mitsuru, M. Tanaka, K. Kawafune, K. Yoshida, and H. Yamanaka, to Hitachi, Ltd. Xerographic reproducing apparatus. 3,419,327, 12–31–68, Cl. 355—8.

Oishel, John R., to Trico Products Corp. Wiper arm. 3,419,299, 12–31–68, Cl. 287—53.

Oishi, Saburo: *See*—
Niwa, Toshio, and Oishi. 3,419,148.

Oki Electric Industry Co. Ltd.: *See*—
Sawaki, Toshiro. 3,419,124.

Olin Mathieson Chemical Corp.: *See*—
Lipfert, Donald E., Daniels, and Goldschmidt. 3,419,176.
Pryor, Michael J., and Winter. 3,419,364.

Oliphant, Lester E.: *See*—
McKechnie, Ian C., and Oliphant. 3,419,834.

Olivetti, Ing. C., & C., S.p.A.: *See*—
Ricciardi, Giuseppe, and Sandrone. 3,418,856.

Olsen, John C., to McGraw-Edison Co. Outdoor lighting photocontrol having adjustable shade. 3,419,726, 12–31–68, Cl. 250—237.

Olson, John H. Forming metals using liquid dies. 3,418,836, 12–31–68, Cl. 72—57.

Olympus Optical Co., Inc.: *See*—
Sato, Masaaki. 3,419,226.

Oman, Olof: *See*—
Edman, Bjorn R., and Oman. 3,419,644.

Omori, Shozo. Tubular food package with tear strip. 3,419,206, 12–31–68. Cl. 229—66.

Omoto, Seiichi: *See*—
Kubota, Masaichi, Kawai, and Omoto. 3,419,652.

O'Neill, Robert A. Method and apparatus for handling aircraft passengers, baggage and freight. 3,419,164, 12–31–68, Cl. 214—38.

Ono, Minoru, to Kabushiki Kaisha Hitachi Seisakusho. Method of producing insulated gate field effect transistors with improved characteristics. 3,419,766, 12–31–68, Cl. 317—235.

Optomechanisms, Inc.: *See*—
Diehr, George. 3,419,331.

Oram, Frank G.: *See*—
Michael, Henry J., Morse, Oram, Roccati, and Smith. 3,419,683.

O'Regan, James F., B. A. Lundberg, and W. J. Mussoni, to E. W. Bliss Co. Portable foam nozzle. 3,419,082, 12–31–68, Cl. 169—15.

Orito, Hiroshi: *See*—
Tachibana, Sachihiko, Umedo, Nagai, and Orito. 3,418,890.

Oroszlan, Andrew, and G. C. Tesoro, to J. P. Stevens & Co., Inc. Hydroxy-alkoxy, alkyl quaternary ammonium sulfones. 3,419,566, 12–31–68, Cl. 260—294.8.

Orr, Henry J.: *See*—
Lippman, Jerome, and Orr. 3,419,194.

Ortlieb, Alfred, to Robert Bosch G.m.b.H. Electric print-out apparatus. 3,419,886, 12–31–68, Cl. 346—74.

Oswald, John P.: *See*—
Johnson, Robert P., and Oswald. 3,419,568.

Osweiler, Paul L., to Price Brothers Co. Reinforced concrete pipe. 3,419,047, 12–31–68, Cl. 138—175.

Otis Elevator Co.: *See*—
Yost, Herman R. 3,419,127.

Otis Engineering Corp.: *See*—
Brown, Norman F. 3,419,074.
Brown, Norman F. 3,419,075.
Sizer, Phillips S., and Spencer. 3,419,076.

Ott, George E., Jr.: *See*—
Dieter, Julian A., Jones, Ott, and Rece. 3,418,892.

Ottolini, Roland F.: *See*—
Baker, Thomas B., Levy, and Ottolini. 3,419,069.

Owens-Illinois, Inc.: *See*—
Austin, Lewis M. 3,419,376.
Gould, Ralph E., and Simmons. 3,419,373.
Meiresonne, Arthur C. 3,419,375.

Ozero, Brian J., to Halcon International, Inc. Preparation of vinyl chloride. 3,419,629, 12–31–68, Cl. 260—656.

PPG Industries, Inc.: *See*—
Lehner, Walter H. 3,418,846.
Parker, Earl E. 3,419,637.

Pabst, Wolfgang, to Licentia Patent-Verwaltungs-G.m.b.H. Device for digital measurement of angular motion. 3,419,727 12–31–68. Cl. 250—231.

Pacific Car and Foundry Co. (Peterbilt Motors Co. Division): *See*—
Brumbaugh, George U., Sherman, and Furiya. 3,419,099.

Package Machinery Co.: *See*—
Collins, Harvey H. 3,418,684.

Palen, Peter H., to Sigma-Netics, Inc. Pressure responsive actuator wherein a spring is adjusted by rotation of the housing to change actuation pressure. 3,419,692. 12–31–68, Cl. 200—82.

Palmer, Charles G. Control system for article stackers. 3,418,895, 12–31–68, Cl. 93—93.

Palmero, Albert, and E. W. Madsen, to The Superior Electric Co. Workpiece heating oven. 3,419,698, 12–31–68, Cl. 219—10.47.

Palumbo, Anthony J., and J. G. Ford, to Westinghouse Electric Corp. Thermally stable cellulose products. 3,419,498, 12–31–68, Cl. 252—63.7.

Pan American Petroleum Corp.: *See*—
Jennings, Earl R. 3,419,041.
Silverman, Daniel. 3,419,853.
Vincent, Renic P. 3,418,938.
Vincent, Renic P., and Wilder. 3,418,818.

Panavision, Inc.: *See*—
Gottschalk, Robert E. 3,419,324.

Pangborn Corp., The: *See*—
Baughman, Davis L., and Pierce. 3,418,756.

Pangle, James C., Jr., to Dan River Mills, Inc. Reclaiming water from textile mill waste waters. 3,419,493, 12–31–68, Cl. 210—44.

Panicci, John D. Fishing lure. 3,418,744, 12–31–68, Cl. 43—42.5.

Pannier Corp., The: *See*—
Pannier, Ralph A. 3,418,934.

Pannier, Ralph A., to The Pannier Corp. Line band selector for differential tin plate marker. 3,418,934, 12–31–68, Cl. 101—328.

Panto, Vittorio. Device for operating the control of both brake and accelerator of an automobile by single pedal. 3,419,116, 12–31–68, Cl. 192—3.

Papadeas, Michael A., to Western Electric Co., Inc. System for testing and adjusting electrical filters having a signal burst transmitting means. 3,419,799, 12–31–68, Cl. 324—57.

Parillo, Vincent: *See*—
Shapiro, Laurence L., and Parillo. 3,419,154.

Parke, Davis & Co.: *See*—
Eislager, Edward F., and Capps. 3,419,584.
Nordin, Ivan C. 3,419,623.

Parker, Earl E., to PPG Industries, Inc. Chemical-resistant polyester resins based upon dicyclohexanols and neopentyl glycol-type diols. 3,419,637, 12–31–68, Cl. 260—871.

Parker Metal Goods Co.: *See*—
Buczak, Edwin J. 3,418,739.

Parker, Matthew, and G. G. Lebeter, to The Forgrove Machinery Co., Ltd. Wrapping machines. 3,418,784, 12–31–68, Cl. 53—122.

Parker, Melvin J.: *See*—
Schreter, Robert E., and Parker. 3,419,339.

Parrish, Edward W.: *See*—
Barows, Arthur G., Parrish, and Miner. 3,419,084.

Parrish, Esperanza G., to E. I. du Pont de Nemours and Co. Neutralization of hydrophilic gel fibers of a cellulose derivative. 3,419,345, 12–31–68, Cl. 8—137.5.

Partos, Stephen E., to Avco Corp. Contamination-resistant fuel pump with eccentrically located drive shaft. 3,418,942, 12–31–68, Cl. 103—173.

Parvin, Allan I.: *See*—
Aiken, Howard H., Marsh, and Parvin. 3,419,141.

Pasquier, Claude J.: *See*—
Helber, Carl A., and Pasquier. 3,419,860.

Patz, Paul. Flight cleaner for material stacker. 3,419,131, 12–31–68, Cl. 198—229.

Pavlin, Cyrille F., and B. J. M. Salmon, to Bertin & Cie. Heterogenous flow generating device. 3,419,738, 12–31–68, Cl. 310—11.

Pawlik, Guenter: *See*—
Wick, Richard, Biedermann, Winkler, Bestenreiner, Kiper, and Pawlik. 3,418,904.

Peacock, Peter J.: *See*—
Johnston, Edward J., Peacock, and Macha. 3,418,795.

Peco Machinery Ltd.: *See*—
Harrison, Peter F. 3,418,693.

Pedersen, Jack R.: *See*—
Pietrusza, Edward W., Zybert, and Pedersen. 3,419,636.

Peirce, Inez H. Coffee making devices. 3,418,916, 12–31–68, Cl. 99—305.

Pekarek, Joseph L.: *See*—
Goodwin, Robert J., Pekarek, and Schaub. 3,419,220.

Pelavin, Milton H., to Technicon Corp. Multiple channel analysis system with peak detection. 3,419,879, 12–31–68, Cl. 346—33.

Pelenc, Yves, and G. Bernard, to Etablissements Merlin & Gerin Societe Anonyme. Apparatus for current measurement by means of the Faraday effect. 3,419,802, 12–31–68, Cl. 324—96.

Pelenc, Yves, and G. Bernard, to Etablissements Merlin & Gerin, Societe Anonyme. Apparatus for current measurement by means of the Faraday effect. 3,419,803, 12–31–68, Cl. 324—96.

Pelte, Richard: *See*—
Mayr, Helmut, and Pelte. 3,419,325.

Peltret, Pierre H., and D. Wheatley, to C. A. V. Ltd. Means for retaining a platelike part upon a shaft or the like. 3,419,292, 12–31–68, Cl. 287—52.07.

Pelz, Alfred: *See*—
Pietzka, Gerhard, and Pelz. 3,419,645.

Pemco Wheel Co.: *See*—
Black, John W., and Lindsey. 3,419,155.

Pennebaker, William B., to International Business Machines Corp. Method for depositing silicon nitride insulating films and electric devices incorporating such films. 3,419,761, 12–31–68, Cl. 317—234.

Pennell, Elmer V.: *See*—
Hubbell, Catherine C., and Pennell. 3,418,950.

Pennsalt Chemicals Corp.: *See*—
Culver, William H. 3,419,382.
Strauss, William. 3,418,094.

Penote, Vincent S., to The Cleveland Trencher Co. Bolt anchor for concrete. 3,418,781, 12–31–68, Cl. 52—699.

Pepe, Enrico J., to Union Carbide Corp. Paper sized with isocyanate-modified silicone. 3,419,422, 12–31–68, Cl. 117—155.

Perkins, Gerald, Jr.: *See*—
Carel, Alfred B., and Perkins. 3,419,255.

Perrotta, Agostino V., to Burroughs Wellcome & Co. (U.S.A.) Inc. Method of making 5-anilino uracils. 3,419,558, 12–31–68, Cl. 260—256.4.

Perry, Ernest J.: *See*—
Merrill, Stewart H., and Perry. 3,419,307.

Perry, Glenn: *See*—
Miller, Alfred H., Perry, and Wheat. 3,419,651.

Pestel, Paul: *See*—
Manderbach, James R., and Pestel. 3,418,776.

Peterkin, Melvin E., and L. W. Hall, Jr., to Sun Oil Co. Hot melt adhesive comprising an aromatic-aldehyde resin and an ethylene-vinyl acetate copolymer. 3,419,641, 12–31–68, Cl. 260—897.

Peters, Werner, and K.-C. Traenckner. Method of coking and classifying particulate matter by fluidization. 3,419,474, 12–31–68, Cl. 201—4.

Petersen, John V. B., and N. Clauson-Kaas, to Geigy Chemical Corp. Method of preparing 2,3-pyridinediol. 3,419,570, 12–31–68, Cl. 260—297.

Peterson, Clifford D.: *See*—
Dirk, William R., and Peterson. 3,419,338.

Peterson, Fred D., to Peterson Products of San Mateo, Inc. Boom apparatus. 3,419,046, 12–31–68, Cl. 138—153.

Peterson Products of San Mateo, Inc.: *See*—
Peterson, Fred D. 3,419,046.

Peterson, William H., to Pullman-Inc. Acceleration indicating device. 3,418,964, 12–31–68, Cl. 116—114.

Petrescu, Nicolae, and L. Knall, to Ministerul Industriei Chimice. Reactor for acetylene production from hydrocarbon gases by electrocracking in direct current. 3,419,490, 12–31–68, Cl. 204—323.

Pettersen, Gunnar N. Covering cap with closable opening for bottle or other container. 3,419,198, 12–31–68, Cl. 222—541.

Pezely, Stanley J.: *See*—
Anderson, James P., Hoffman, Mott, Pezely, Shifman, and Wilkinson. 3,419,849.

Phelps, Richard W., J. T. Coghill, and R. E. Ingison, to The Black Clawson Co. Paper coating apparatus. 3,418,970, 12–31–68, Cl. 118—410.

Philadelphia Handle Co., Inc.: *See*—
Szabo, Marton. 3,418,681.

Philadelphia Quartz Co.: *See*—
Welds, Helmut H., and Netting. 3,419,495.

Philco Corp.: *See*—
Nix, William O. 3,418,911.

Philibert, Robert A., F. L. Browne, D. M. Sanger, and G. A. Kirk, deceased, by Stella Kirk, legal representative, to General Signal Corp. and O. Z. Electrical Mfg. Co., Inc. Ground fault responsive system for electric power distribution apparatus. 3,419,756, 12–31–68, Cl. 317—16.

Phillips Petroleum Co.: *See*—
Begley, John W., and Pollock. 3,419,597.
Doss, Richard C. 3,419,617.
Doss, Richard C. 3,419,614.
Doss, Richard C. 3,419,625.
Keeling, Hugh E., and Tabler. 3,419,627.
Kelley, Carl S. 3,419,369.
Stapp, Paul R. 3,419,633.
Streets, William L. 3,419,365.

Phillips, Robert E. Card for medical testing and method of making the same. 3,419,000, 12–31–68, Cl. 128—2.

Physics International Co.: *See*—
Benson, Glendon M. 3,418,980.

Picker Corp.: *See*—
Snarr, James L. 3,418,913.

Piel, Michel F. Garment with electrically conductive heating element. 3,419,702, 12–31–68, Cl. 219—211.

Pierce, Earl W.: *See*—
Hagler, Norman R., Pierce, Doerr, and Johnston. 3,419,105.

Pierce, Edwin F.: *See*—
Baughman, Davis L., and Pierce. 3,418,756.

Pierce, Joseph E.: *See*—
Christine, William C., and Pierce. 3,418,786.

Pinter, Karoly G.: *See*—
Calhoun, Edward J., and Pinter. 3,419,013.

Pittsburgh Plate Glass Co.: *See*—
Offenbacher, Wendel, and Kowal. 3,419,374.

Pietrusza, Edward W., W. J. Zybert, and J. R. Pedersen, to Allied Chemical Corp. Blends of aliphatic polyamides and cyclic copolyamides. 3,419,636, 12–31–68, Cl. 260—857.

Pietschmann, Helmut, to Ritter Co., Inc. Device for variable height positioning of treatment appliances on dental equipment. 3,418,714, 12–31–68, Cl. 32—22.

Pietzke, Gerhard, and A. Pelz, to Farbwerke Hoechst Aktiengesellschaft vormals. Process for preparing finely porous, shaped carbon bodies. 3,419,645, 12–31–68, Cl. 264—29.

Pifer, Peter M., to Scientific-Atlanta, Inc. Automatic tracking system utilizing coded scan rate. 3,419,867, 12–31–68, Cl. 343—113.

Pittman, Allen G., and W. L. Wasley, to United States of America, Agriculture. Fluorinated alkyl esters of acrylic (type) acids. 3,419,602, 12–31–68, Cl. 260—486.

Plimmer, Peter N., to E. I. du Pont de Nemours and Co. Nongraying, nonyellowing polytetrafluoroethylene molding powder. 3,419,522, 12–31–68, Cl. 260—45.75.

Plishner, Paul J. Magnetically actuated valve clamp for urethra control. 3,419,008, 12–31–68, Cl. 128—346.

Plock, Eugene V., to General Electric Co. Method of cleaning soiled articles. 3,419,427, 12–31–68, Cl. 134—4.

Poel, Lawrence R.: *See*—
Neal, Charles B., and Poel. 3,419,748.

Poggioli, Sante J., to Sandspa Corp. Golfer's arm bend indicator. 3,419,276, 12–31–68, Cl. 273—183.

Poirier, Alfred G. Aircraft rescue system. 3,419,234, 12–31–68, Cl. 244—137.

Polaroid Corp.: *See*—
Bellows, Alfred H. 3,418,907.
Dietz, Milton S. 3,418,905.
Green, Milton, and Solodar. 3,419,600.
Haas, Howard C., and Kolesinski. 3,419,389.
Land, Edwin H. 3,418,908.
Land, Edwin H., and Chen. 3,418,912.
Land, Edwin H., and Bing. 3,418,903.

Pollock, Lyle W.: *See*—
Begley, John W., and Pollock. 3,419,597.

Polti, Jean-Loup, to Centre Stephanois de Recherche Mecanique, Hydromecanique et Frottement. Method of dry-lubricating mechanical devices. 3,419,110, 12–31–68, Cl. 184—1.

Polymer Corp., The: *See*—
Dettling, Conrad J. 3,419,409.

Ponzano, Gianluigi. Stroke-adjusting and rebound-damping device for high-speed printer hammers. 3,418,928, 12–31–68, Cl. 101—93.

Porache, KG. Dr. Ing.: *See*—
Hetmann, Richard, and Behr. 3,418,866.

Porter, Sigmund N. Signal generators with rapid automatic amplitude stabilization. 3,419,815, 12–31–68, Cl. 331—40.

Portescap Le Porte-Echappement Universel S.A.: *See*—
Marti, Fritz. 3,418,801.

Posh, Raymond C.: *See*—
Homier, Robert I., and Posh. 3,419,306.

Pouradier, Jacques J. L.: *See*—
Chateau, Henri R. P., Gadet, and Pouradier. 3,419,396.

Powlan, Roy Y. Insulating swimming pool cover. 3,418,667, 12–31–68, Cl. 4—172.

Pratt Mfg. Corp.: *See*—
Pratt, Robert H. 3,419,136.

Pratt, Robert H., to Pratt Mfg. Corp. Package for flat articles such as surgical sponges. 3,419,136, 12–31–68, Cl. 206—63.2.

Pre-Cast Safety Splint, Inc.: *See*—
Santosus, Carmen. 3,419,002.

Prellets, Edward R., to Bell & Howell Co. Framing clutch mechanism. 3,419,119, 12–31–68, Cl. 192—48.3.

Preston, Elliott: *See*—
Tucker, Linwood G., and Preston. 3,419,475.

Price Brothers Co.: *See*—
Osweiler, Paul L. 3,419,047.

Price, Glenn R., to Stauffer Chemical Co. Process for the preparation of phosphonohalothionates. 3,419,643, 12–31–68, Cl. 260—973.

Prince, William G.: *See*—
Barber, Richard B., Cross, and Prince. 3,419,321.

Primo Safety Corp.: *See*—
Rideout, Donald C. 3,418,896.

Prontor-Werk Alfred Gauthier G.m.b.H.: *See*—
Rentschler, Waldemar T., Starp, and Mutterer. 3,418,910.

Propst, Robert L., and R. H. Beckman, to Herman Miller, Inc. Coordinated system for activity isolation. 3,418,765, 12–31–68, Cl. 52—36.

Pryor, Michael J., and J. Winter, to Olin Mathieson Chemical Corp. Composite silver and copper article. 3,419,364, 12–31–68, Cl. 29—183.5.

Pullen, Joe W.: *See*—
Hopkins, Thomas R., and Pullen. 3,419,574.

Pullman-Inc.: *See*—
Peterson, William H. 3,418,964.

Pulp and Paper Research Institute of Canada: *See*—
Burgess, Bernard W., and Chapman. 3,418,723.

Pyne, William J., and H. Bluestone, to Diamond Shamrock Corp. Chloro-substituted xylylene dibromides. 3,419,626, 12–31–68, Cl. 260—651.

Quaal, George J., to Dow Corning Corp. Adducts of silicon hydride polysiloxanes and hydrolyzable silanes having alkenyl radicals useful for rendering substrates water repellent. 3,419,423, 12–31–68, Cl. 117—161.

Quadflieg, Therese: *See*—
Hirsch, Lothar, Hornig, Mau, and Quadflieg. 3,419,618.

Quintillian, Bartholomew F., and R. J. W. Williams, to Koppers Co., Inc. Modular collector electrode for electrostatic precipitators. 3,418,792, 12–31–68, Cl. 55—156.

Rabinow, Clare L. Optically controlled photographic shutter. 3,418,909, 12–31–68, Cl. 95—53.

Rabinow, Jacob, 10% to M. L. Libman. Metric-English converter for machine tools with automatic selector. 3,418,965, 12–31–68, Cl. 116—115.5.

Radio Corp. of America: *See*—
Burns, Joseph R. 3,419,851.
Green, Milton W. 3,419,712.
Hartz, Ralph S., and Cranmer. 3,419,751.
Hursh, Neal W., and Stark. 3,419,807.
Kaiser, Donald B., and Roth. 3,419,743.
Kamitsis, Constantine. 3,419,813.
Seer, Harold G., Jr., and Dischert. 3,419,735.
Toda, Minoru. 3,419,737.

Rak, Stanley F., to Culligan, Inc. Chemical feeder device. 3,419,360, 12–31–68, Cl. 23—272.7.

Raleigh, Douglas O., to North American Rockwell Corp. Ionic solid state electrochemical capacitor. 3,419,760, 12–31–68, Cl. 317—230.

Ramond, Jean-Claude, to D.I.P.A. Centrifugal purifier. 3,419,152, 12–31–68, Cl. 210—512.

Ramsbottom, John M.: *See*—
Hayhurst, Lewis J., Ramsbottom, and Craine. 3,419,400.

Rarey, Kenneth W., and J. B. Kennedy, Jr., to Continental Can Co., Inc. Electrostatic screen printing using a toner repelling screen. 3,418,930, 12–31–68, Cl. 101—114.

Rataj, Alois: *See*—
Kramolis, Vladislav, Danhel, Rataj, and Kochta. 3,418,696.

Rausch, David A., to Diamond Power Specialty Corp. Long retracting soot blower. 3,418,680, 12–31–68, Cl. 15—317.

Ravich, Robert A. Interpersonal behavior game-test. 3,418,729, 12–31–68, Cl. 35—22.

Rayette-Faberge, Inc.: *See*—
Hoffmann, Ernest, and Wagner. 3,419,019.

Raymond, Richard L.: *See*—
Humphrey, Arthur E., and Raymond. 3,419,469.

Read Corp.: *See*—
Brennan, Ambrose K., Jr. 3,419,250.

Rece, Wesley J., Jr.: *See*—
Dieter, Julian A., Jones, Ott, and Rece. 3,418,892.

Recht, Howard L., and D. E. McKenzie, to North American Rockwell Corp. Energy conversion process and apparatus. 3,419,435, 12–31–68, Cl. 136—100.

Recht, Howard L., and M. L. Iverson, to North American Rockwell Corp. Porous matrix for galvanic cell. 3,419,436, 12–31–68, Cl. 136—100.

Redman, Lawrence E., to Garbage Service Co. Method for treating organic and inorganic waste material. 3,419,377, 12–31–68, Cl. 71—9.

Reed, Frederick P., to United States of America, Army. Round control device. 3,418,879, 12–31–68, Cl. 89—33.

Reed Roller Bit Co.: *See*—
Bobo, Roy A. 3,419,094.

Reeves, Robert W. Feed tray for cages. 3,418,974, 12–31–68, Cl. 119—18.

Reflex Corp. of America: *See*—
Stanley, Wallace A. 3,419,715.

Reflex Corp. of Canada Ltd.: *See*—
Hedgewick, Peter. 3,419,244.

Regan, Patrick J., to D.B.A. Products Co., Inc. Bowling lane maintenance device. 3,418,672, 12–31–68, Cl. 15—98.

Rehrig Pacific Co.: *See*—
Gildart, Richard F. 3,419,182.

Reichel, Donald R.: *See*—
Betts, Peter, Reichel, and Elselen. 3,419,884.

Reichmann, Horst, to Joh. Vaillant K.G. Instantaneous water heater heated by a vaporised oil burner. 3,418,979, 12–31–68, Cl. 122—367.

Reimer, George M.: *See*—
Attwood, John G., Kosrow, and Reimer. 3,418,955.

Reiss, Robert E.: *See*—
Deuschle, Fritz, and Reiss. 3,419,179.

Reitz, Rudolf-Heinrich: *See*—
Fromme, Hans-Georg, Reitz, and Huppke. 3,418,949.

Reliance Electric and Engineering Co., The: *See*—
Landau, David A. 3,418,863.

Reliance Engineering & Development Co.: *See*—
Smith, Marvon A. 3,419,112.

Rembaum, Alan, and R. F. Landel, to California Institute Research Foundation. Preparation of alkali metal dispersions. 3,419,384, 12–31–68, Cl. 75—66.

Rembaum, Alan, and A. W. Henry, to United States of America, National Aeronautics and Space Administration. Dicyanoacetylene polymers. 3,419,537, 12–31–68, Cl. 260—85.5.

Remy, Hermann, O. Adler, and F. Heberer, to Rowenta Metallwarenfabrik GmbH. Gas-fueled lighter. 3,418,821, 12–31–68, Cl. 62—52.

Renner, Johann A.: *See*—
Fetzer, Uwe, Ugi, Knupfer, Renner, and Grewe. 3,419,546.

Renner, Ulrich, to Geigy Chemical Corp. Indole derivatives. 3,419,569, 12–31–68, Cl. 260—296.

Rentschler, Waldemar T., F. W. R. Starp, and H. K. Mutterer, to Prontor-Werk Alfred Gauthier G.m.b.H. Release device for a photographic camera. 3,418,910, 12–31–68, Cl. 95—53.3.

Research Laboratories of Australia Pty, Ltd.: *See*—
Wright, Robert J. 3,419,411.

Resnik, Arnold E., and W. F. Williams, to United States of America, Navy. Random frequency modulation correlation fuze system. 3,419,861, 12–31–68, Cl. 343—7.

Reynolds, Harold I.: *See*—
Bratton, Francis H., and Reynolds. 3,419,361.

Rhoades, Robert B., to V-M Corp. Multi-track bi-directional tape recorder with uni-directional actuated traversing transducers. 3,419,686, 12–31–68, Cl. 179—100.2.

Rhone-Poulenc S.A.: *See*—
Desmoras, Jacques, and Jacquet. 3,419,381.

Ricciardi, Giuseppe and B. Sandrone, to Olivetti, Ing. C., & C., S.p.A. Rangefinder for a start-stop telegraph selector. 3,418,856, 12–31–68, Cl. 74—1.5.

Rice, Verner K., Jr.: *See*—
Daly, Edmund B., and Rice. 3,419,734.

Rich, David. Gas turbine engines. 3,418,808, 12–31–68, Cl. 60—226.

Richard, William R., Jr.: *See*—
Hedrick, Ross M., and Richard. 3,419,517.

Richardson, Kenneth L.: *See*—
Harrison, Robert N., and Richardson. 3,419,862.

Riddick, John A., to Commercial Solvents Corp. Binary azeotropes. 3,419,407, 12–31–68, Cl. 106—311.

Rideout, Donald C., to Prismo Safety Corp. Reflective markers and reflective elements therefor. 3,418,896, 12–31–68, Cl. 94—1.5.

Riedel, Daniel P., to Vindale Corp. Mobile home heating system. 3,419,215, 12–31–68, Cl. 237—28.

Riedel, Guenther: *See*—
Deuschel, Werner, Vilsmeier, and Riedel. 3,419,557.

Riley, Robert E., K. V. Davidson, and J. M. Taub, to United States of America, Atomic Energy Commission. Method of making solid solution carbide-graphite compositions. 3,419,656, 12–31–68, Cl. 264—332.

Riley, William H.: *See*—
Jones, Charles E., and Riley. 3,419,166.

Rinaldo, Paolo, and R. Trupiano, to Montecatini Edison S.p.A. Solid composition for the pickling of stainless steels and alloys with a high content of chrome. 3,419,440, 12–31–68, Cl. 148—6.15.

Ring, Douglas H.: *See*—
MacWilliams, Walter H., Jr., and Ring. 3,419,826.

Ringold, Howard J.: *See*—
Edwards, John, and Ringold. 3,419,583.

Risdon Mfg. Co., The: *See*—
Noyack, Edward, and Terrill. 3,419,249.

Risser, Roger L.: *See*—
Schwalm, Bruce D., and Risser. 3,419,055.

Ritchie Bros. Construction Co.: *See*—
Ritchie, John P. 3,419,258.

Ritchie, John P., to Ritchie Bros. Construction Co. Package for dry ready-mix materials. 3,419,258, 12–31–68, Cl. 206—47.

Ritter Co., Inc.: *See*—
Pletschmann, Helmut. 3,418,714.

Ritter, Frederick J.: *See*—
Copeland, William M., and Ritter. 3,418,963.

Ritter Pfaudler Corp.: *See*—
Ellis, Charles A. 3,418,715.

Rivman, Samuel J., and H. A. Carysforth, to Gulf Oil Corp. Method of making a reclosable bag. 3,418,891, 12–31–68, Cl. 93—35.

Robbins, William B., and E. L. Kern, to Dow Corning Corp. Method of growing thin film semiconductors using an electron beam. 3,419,487, 12–31–68, Cl. 204—164.

Roberts, Arthur H. Molded decorative article. 3,419,455, 12–31–68, Cl. 161—7.

Roberts, Carleton W., and G. D. Travis, to The Dow Chemical Co. Cycloaliphatic substituted 1,2,3,4,9,9-hexachloro-1,4,4a, 5,6,7,8,8a-octahydro-1,4-methanonaphthalene - 6,7-dicarboximides. 3,419,576, 12–31–68, Cl. 260—326.

Roberts, Charles D. Furnace filter with replaceable filter element. 3,418,794, 12–31–68, Cl. 55—501.

Roberts, Robert E., to Sports Industries, Inc. Reserve valve mechanism. 3,419,042, 12–31–68. Cl. 137—613.

Robertshaw Controls Co.: *See*—
Hild, Henry F., and Manecke. 3,419,707.

Robins, A. H., Co, Inc.: *See*—
Jenkins, Herndon. 3,419,555.
Jenkins, Herndon. 3,419,561.
Lunsford, Carl D., and Fielden. 3,419,559.

Roccati, Edgar J.: *See*—
Michael, Henry J., Morse, Oram, Roccati, and Smith. 3,419,683.

Rocchini, Albert G., and C. E. Trautman, to Gulf Research & Development Co. Electrical insulating oil. 3,419,497, 12–31–68, Cl. 252—63.

Rockey, Thomas, to Kinkead Industries Inc. Shower and tub enclosure. 3,418,666, 12–31–68, Cl. 4—154.

Rodenbaugh, Richard P.: *See*—
Beasley, Thomas J., Jr., and Rodenbaugh. 3,418,754.

Röder, Georg, to Messer Griesheim G.m.b.H. Mounting arrangement for cutting torch of oxyacetylene cutting machine. 3,419,257, 12–31–68, Cl. 266—23.

Rodivilova, Lena A.: *See*—
Akutin, Modest S., Rodivilova, and Gershkokhen. 3,419,527.

Rohde, Robert P.: *See*—
Brewer, Lee M., Engelhardt, Rohde, and Yonker. 3,419,208.

Rohlfs, Hans A., and H. Schmidt, to Chemische Werke Albert. Process for the manufacture of catenarily condensed ammoniumphosphates and ammonium - metal - phosphates. 3,419,349, 12–31–68, Cl. 23—107.

Rohm & Haas Co.: *See*—
Schmidle, Claude J., and Brown. 3,419,515.

Rohr Corp.: *See*—
Emerson, Herff C. 3,418,707.

Rolls-Royce Ltd.: *See*—
Cresswell, Roger A., and Kitson. 3,418,810.

Rosaia, Henry P. Refuse packer construction. 3,419,167, 12–31–68, Cl. 214—83.3.

Rosen, Karl I. J. Device for storing yarn for the immediate need of yarn of knitting machines. 3,419,225, 12–31–68, Cl. 242—47.12.

Rosenheinrich Rene: *See*—
Herlet, Adolf, and Rosenheinrich. 3,418,709.

Ross, Charles W., to Leeds & Northrup Co. Probabilistic and deterministic filter for control systems. 3,419,772, 12–31–68, Cl. 318—18.

Ross, William C., to W. R. Grace & Co. Printing blanket and method of making the same. 3,418,864, 12–31–68, Cl. 74—232.

Rotax Ltd.: *See*—
Walsh, Peter A. 3,419,736.

Rotert, Kurt, and E. O. Blos, to Kommanditgesellschaft Friedrich Kocks. Stand changing units for continuous rolling mills. 3,418,838, 12–31–68, Cl. 72—239.

Roth, Robert *See*—
Kaiser, Donald B., and Roth. 3,419,743.

Roth, Werner. Vibratory recorder. 3,419,877, 12–31–68, Cl. 346—7.

Rothschild, Louis I., J. V. Williamson, and M. N. Leeming, to United States of America, Air Force. Constant rate incremental positioning circuit for CRT X-Y plotter display. 3,419,750 12–31–68, Cl. 315—18.

Rotork Marine Ltd.: *See*—
Fry, Jeremy J. 3,418,957.

Rowenta Metallwarenfabrik G.m.b.H.: *See*—
Remy, Herman, Adler, and Heberer. 3,418,821.

Rudd, Neilson, to Geo-Engineering Development Co. Apparatus for geological core-logging and the like. 3,419,332, 12–31–68, Cl. 356—162.

Rudie, Donald D., to System Development Corp. Fingerprint classification by coordinate system. 3,419,287, 12–31–68, Cl. 283—7.

Rudzinski, Stanley P. Hunting arrowhead with offset cutting edges. 3,419,273. 12–31–68, Cl. 273—106.5.

Ruffin, Dorothy A. Device for use with a comb. 3,419,021, 12–31–68, Cl. 132—112.

Rumsey, Rollin D., to Houdaille Industries, Inc. Hydraulic action devices with inertia insensitive snubbing circuit. 3,419,114, 12–31–68, Cl. 188—97.

Rupp, Hans-Dieter: *See*—
Magerlein, Helmut, Siggel, Rupp, and Meyer. 3,419,630.

Rusche, Frederic. Method of installing liner for thin wall pipe pile. 3,418,817. 12–31–68, Cl. 61—53.52.

Russell, Carl D. CDR combination high and low pressure power injection heating and refrigeration machine and method. 3,418,825, 12–31–68, Cl. 62—483.

Russell, John D., to Microdot Inc. Wire strain gage and process for the manufacture thereof. 3,418,711, 12–31–68, Cl. 29—613.

Ruud, Gunnar. Method and apparatus for mechanical aeration of stacks of cardboard, paper or other sheet material. 3,418,725, 12–31–68, Cl. 34—33.

Ryan Aeronautical Co.: *See*—
Aasted, Jorgen. 3,419,875.

Ryan, Daniel J., to FMC Corp. Method for making thermoplastic films. 3,419,650, 12–31–68, Cl. 264—146.

Ryan, John R.: *See*—
Searight, Charles E., Alexander, and Ryan. 3,419,403.

Ryan, John W., and D. H. Meggs, to Mattel, Inc. Gate crossing apparatus. 3,418,750, 12–31–68, Cl. 46—216.

Ryba, Stanley J., Jr.: *See*—
Kasper, Robert J., and Ryba. 3,419,792.

Rytter, Edward A., and C. R. Canter, to Lever Bros. Co. Novel process and composition. 3,419,500, 12–31–68, Cl. 252—89.

SCM Corp.: *See*—
Hatcher, Harry R., and Harr. 3,419,383.

SSM Constructors, Inc.: *See*—
Scaravilli, Victor J., and Delisio. 3,419,311.

Sacks, Jacob M.: *See*—
Graves, Ross E., Sacks, and Jacob. 3,419,814.

Saffer, Michael. Skipping toy and exerciser with counter means. 3,419,269. 12–31–68, Cl. 272—74.

St. Vrain, Wallace E., and J. J. Mandino, to Mosley Electronics, Inc. Dipole antenna having coaxial cable arms capacitively coupled to spaced tubular radiators. 3,419,872, 12–31–68, Cl. 343—792.

Saito, Shinichi. Water-tank for rearing fishes. 3,418,973, 12–31–68, Cl. 119—3.

Sakata, Yoshiki: *See*—
Kawamura, Yurio, Ando, Takenouchi, Sakata, and Maruyama. 3,419,608.

Sakurai, Setsuji: *See*—
Komachiya, Yoshioki, Suzuki, and Sakurai. 3,419,551.

Salihi, Jalal T., and M. A. Costantini, to General Motors Corp. Pulse frequency and pulse width control for a modulator. 3,419,818, 12–31–68, Cl. 332—9.

Salmon, Benjamin J. M.: *See*—
Pavlin, Cyrille F., and Salmon. 3,419,738.

Salna, Karl, and C. C. Baker, to International Harvester Co. Attachment for tractor loader. 3,419,170, 12–31–68, Cl. 214—767.

Salzberger, Andreas, and R. Freyburg, to Willy Feller Zahl- und Rechenwerke G.m.b.H. Portable electric typewriter. 3,419,123, 12–31–68, Cl. 197—17.

Samour, Carlos M.: *See*—
Kumin, Victor M., and Samour. 3,419,410.

Sampietro, Achille C., to Ford Motor Co. Independent rear suspension system for a motor vehicle. 3,419,102, 12–31–68, Cl. 180—73.

Sample, Byron A., Jr.: *See*—
Hirshfeld, Julian J., and Sample. 3,419,340.

Sanders, Johannes C., to Dagra N.V. Iodopanoic acid in a hydrogel. 3,419,657, 12–31–68, Cl. 424—5.

Sanders, Paul A., to E. I. du Pont de Nemours and Co. Non-aqueous aerosol foams containing mineral oil. 3,419,658, 12–31–68, Cl. 424—45.

Sandrone, Bruno: *See*—
Ricciardi, Giuseppe, and Sandrone. 3,418,856.

Sandspa Corp.: *See*—
Poggioli, Sante J. 3,419,276.

Sanford, Lawrence. Weil cutting tool. 3,419,077. 12–31–68, Cl. 166—55.8.

Sanger, David M. :*See*—
Philibert, Robert A., Browne, Sanger, and Kirk. 3,419,756.

Sangimino, Vito. Autowagon. 3,419,304, 12–31–68, Cl. 296—99.

Sankyo Co., Ltd.: *See*—
Nozoe, Tetsuo, Sunagawa, Soma, and Sato. 3,419,613.

Santic, William V. Garbage can protector. 3,419,240. 12–31–68, Cl. 248—350.

Santosus, Ca men, to Pre-Cast Safety Splint, Inc. Traction device. 3,419,002, 12–31–68, Cl. 128—85.

Sartomer Rasins, Inc.: *See*—
Cornell, John A. 3,419,891.

Sarvay, John T., to The Standard Products Co. Gasketing system. 3,418,773, 12–31–68, Cl. 52—400.

Sato, Hosei, to Matsushita Electric Industrial Co., Ltd. Semi-automatic pop-up toaster. 3,418,917, 12–31–68, Cl. 99—329.

Sato, Masaaki, to Olympus Optical Co., Inc. Tape recorder. 3,419,226, 12–31–68, Cl. 242—55.13.

Sato, Naotosni: *See*—
Yasuhara, Ichiro, Nagano, and Sato. 3,418,881.

Sato, Yoshio: *See*—
Nozoe, Tetsuo, Sunagawa, Soma, and Sato. 3,419,613.

Saunders-Roe Developments Ltd.: *See*—
Bell, Eric B. 3,419,716.

Sawaki, Toshiro, to Oki Electric Industry Co, Ltd. Cable positioned type drum printer. 3,419,124, 12–31–68, Cl. 197—53.

Sawdo, Richard: *See*—
Svendsen, Noel A., Sawdo, and Varteresian. 3,418,954.

Scaravilli, Victor J., and C. J. Delisio, to SSM Constructors, Inc. Hydraulic circuit for holding and pushing cylinders of tunneling machine. 3,419,311, 12–31–68, Cl. 299—31.

Schaefer, John O., to International Business Machines Corp. Printer having force compensating platen. 3,418,933, 12–31–68, Cl. 101—274.

Schaller, Robert L., D. L. Towne, and E. Culich, to Sundstrand Corp. Bar loading apparatus. 3,419,159, 12–31–68, Cl 214—1.

Scharf, Emil: *See*—
Mahling, Dieter, Mueller-Tamm, Seibt, Zuern, and Scharf. 3,419,518.

Schaschl, Edward, to Union Oil Co. of California. Corrosion testing probe. 3,418,848, 12–31–68, Cl. 73—86.

Schaub, Paul W.: *See*—
Goodwin, Robert J., Pekarek, and Schaub. 3,419,220.

Scheiterlein, Andreas, and O. Skatsche, to H. List. Single-cylinder experimental engine. 3,418,993, 12–31–68, Cl. 123—195.

Schellhammer, Carl-Wolfgang: *See*—
Knupfer, Hans, Wirth, and Schellhammer. 3,419,563.

Schenk, Walter, and H. Stanger, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Photochemical production of β-chlorethane sulfochloride. 3,419,486, 12–31–68, Cl. 204—162.

Scherb, Walter R., Jr., to Western Electric Co., Inc. Process for manufacturing relays. 3,418,712. 12–31–68, Cl. 29—622.

Scherenberg, Hans O., to Daimler-Benz Aktiengesellschaft. Method and apparatus for preventing inlet valve wear of supercharged internal combustion engines. 3,418,986, 12–31–68, Cl. 123—119.

Schering Corp.: *See*—
Villani, Frank J. 3,419,565.

Schierholt, Hans, to AEG-Elotherm G.m.b.H. Spark erosion machinery with spark controlling feedback circuitry sensing gap conditions. 3,419,754, 12–31–68, Cl. 315—227.

Schindehette, Donald J.: *See*—
Ammerman, Frank E., and Schindehette. 3,419,484.

Schjeldahl, G. T., Co.: *See*—
Bratton, Francis H., and Reynolds. 3,419,361.
Kumin, Victor M., and Samour. 3,419,410.

Schlatter, H. A., A.G.: *See*—
Denzler, Emil. 3,419,699.

Schlichting, Hans L.: *See*—
Weil, Edward D., and Schlichting. 3,419,663.

Schlumberger Technolog. Corp.: *See*—
Current, James H. 3,419,079.
Lebourg, Maurice P. 3,419,080.
Shore, James B. 3,419,694.

Schlumbom, Peter to Geigy Chemical Corp. Acylated melamine derivatives. 3,419,535, 12–31–68, Cl. 260—78.5.

Schlüter, Kurt: *See*—
Steggewentz, Hermann, and Schlüter. 3,419,424.

Schmidle, Claude J., and G. L. Brown, to Rohm & Haas Co. Anhydrous polymer dispersions and process of preparing said dispersions. 3,419,515, 12–31–68, Cl. 260—33.6.

Schmidlin, Albertus F., and C. W. Bing, to General Precision Systems Inc. Fluid oscillator. 3,419,028, 12–31–68, Cl. 137—81.5.

Schmidt, Heinz: *See*—
Rohlfs, Hans A., and Schmidt. 3,419,349.

Schmidt, Paul F., to Westinghouse Electric Corp. Anodic oxidation. 3,419,480, 12–31–68, Cl. 204—15.

Schmidt, Siegfried, to North American Philips Co., Inc. Multiple spark printer. 3,419,752, 12–31–68, Cl. 315—35.

Schmutz, Jean, and F. Hunziker, to Dr. A. Wander S.A. Certain 10-basically substituted-5H-dibenzo[b,e][1,4]diazepine compounds. 3,419,547, 12–31–68, Cl. 260—239.3.

Schneider, Christian D., to Admiral Corp. Strain relief for line cords. 3,419,670, 12–31–68, Cl. 174—135.

Schneider, Fritz W., and I. G. Stohlmeier, to Beteiligungs- und Patentverwaultungsgesellschaft mit beschrankter Haftung. Full-envelope centrifuge with discharge screw. 3,419,210, 12–31–68, Cl. 233—7.

Schneider, Joseph R., to Sperry Rand Corp. Diffraction grating angular rate sensor. 3,419,330, 12–31–68, Cl. 356—106.

Schnell, Hermann, L. Bottenbruch, G. Darsow, and K. Weirauch, to Farbenfabriken Bayer Aktiengesellschaft. High molecular weight thermoplastic polycarbonates. 3,419,526, 12–31–68, Cl. 260—49.

Schreter, Robert E., and M. J. Parker, to Hauck Mfg. Co. Inspirator assembly. 3,419,339, 12–31–68, Cl. 431—284.

Schroeder, Herman J., and R. E. White. Automatic recording of motor fuel sales from dispensing pumps with information from inserted credit card. 3,419,882, 12–31–68, Cl. 346—43.

Schubert, Franz: *See*—
Holzer, Rolf, Stehle, Schubert, Weber, and Klar. 3,419,467.

Schubert, Siegfried W., and J. L. Makart, to Lonza Ltd. Production of cyanomelamine. 3,419,556, 12–31–68, Cl. 260—249.6.

Schultz, William J., and N. J. Kind, to Leonard, Ward Electric Co. Solid state dimmer control circuit. 3,419,753, 12–31–68, Cl. 315—194.

Schwalm, Bruce D., and R. L. Risser, to Sperry Rand Corp. Shear bar mounting. 3,419,055, 12–31–68, Cl. 146—120.

Scientific-Atlanta, Inc.: *See*—
Clayton, Lorimer Jr. 3,419,868.
Pifer, Peter M. 3,419,867.

Scinta, Anthony C.: *See*—
Delbel, Raymond A., and Scinta. 3,418,678.

Scola, Joseph to Vargas Mfg. Co. Tube clamp. 3,419,245, 12–31–68, Cl. 251—10.

Scott, Gerald, and D. Williams, to Imperial Chemical Industries, Ltd. Process for vulcanizing rubbers in presence of thiophosphoryl disulfides. 3,419,521, 12–31–68, Cl. 260—41.5.

Scott, H. H., Inc.: *See*—
Von Recklinghausen, Daniel R., and Fish. 3,419,811.

Scott, Nathaniel C. Disposable body waste receptacle. 3,418,663, 12–31–68, Cl. 4—113.

Searight, Charles E., E. M. Alexander, and J. R. Ryan, to Cataphote Corp. High index of refraction glass compositions. 3,419,403, 12–31–68, Cl. 106—47.

Searle, G. D., & Co.: *See*—
Hamilton, Robert W. 3,419,549.

Sebulsky, Raynor T.: *See*—
Giannetti, Joseph P., Henke, and Sebulsky. 3,419,503.

Secretary of State for Defense in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, The: *See*—
Nelson. Herbert O. 3,418,960.

Seeger, Fritz. Wall structure with expellable insert. 3,418,767, 12–31–68, Cl. 52—127.

Seegmiller, Robert. and J. K. Gore, to United States of America, Atomic Energy Commission. Electropolishing platinum in a molten bath of potassium thiocyanate and potassium cyanide. 3,419,485, 12–31–68, Cl. 204—140.5.

Seer, Harold G., Jr., and R. A. Dischert, to Radio Corp. of America. Monostable multivibrator control. 3,419,735, 12–31–68, Cl. 307—273.

Sehring, Richard: *See*—
Becher, Heinz-Manfred, Sehring, and Zelle. 3,419,620.

Seibt, Hubertus: *See*—
Mahling, Dieter, Mueller-Tamm, Seibt, Zuern, and Scharf. 3,419,518.

Seibu Gomu Kagaku Kabushiki Kaisha: *See*—
Kumazawa, Michio. 3,418,816.

Seidel, Harold. to Bell Telephone Laboratories Inc. Phase-differential network. 3,419,827, 12–31–68, Cl. 333—11.

Seidel, Harold, to Merrimac Research and Development Inc. Continuously variable resolver and systems using the same. 3,419,824, 12–31–68, Cl. 333—24.

Seidel, Joseph, and C. A. Eaves, to Westinghouse Electric Corp. High temperature magnetic cores and process for producing the same. 3,418,710, 12–31–68, Cl. 29—609.

Sepall, Ola, to Anglo Paper Products Ltd. Method and apparatus for washing pulp. 3,419,466, 12–31–68, Cl. 162—204.

Sercon Engineering Ltd.: *See*—
Gurwicz, Isaac D. 3,419,778.

Seward, Harold H. Automobile stop-start indicator. 3,418,962, 12–31–68, Cl. 116—28.

Shaffer, Howard R., to I-T-E Circuit Breaker Co. Trip-free circuit breaker device 3,419,838, 12–31–68, Cl. 337—44.

Shamos, Morris H.: *See*—
Smythe, William J., and Shamos. 3,419,358.

Shannon, George W.: *See*—
Hight, Hanford Z., Gallant, Shannon, and Loeffler. 3,419,647.

Shapiro, Laurence L., and V. Parillo, to Bond Stores Inc. Hanger bar lock. 3,419,154, 12–31–68, Cl. 211—7.

Sharp, Joseph W., to Monsanto Co. Optically-coupled oscillator circuit. 3,419,816, 12–31–68, Cl. 331—107.

Shatterproof Glass Corp.: *See*—
Jendrisak, Joseph E., and Sisto. 3,418,779.

Shaw-Walker Co.: *See*—
Davis, Leonard M., and Gobel. 3,419,262.

Shelburne, Frank A.: *See*—
Mold, James E., Kallianos, and Shelburne. 3,419,543.

Sheldrake, Leonard J., and J. L. Mullen, to General Motors Corp. Direct current commutation system for brushless electrical motors. 3,419,782, 12–31–68, Cl. 321—5.

Shell Oil Co.: *See*—
Asenbauer, Donald J. 3,419,184.

Shelley, Lewis A. Boom snubbing device and control valve therefor. 3,419,113, 12–31–68, Cl. 188—96.

Sheps, Martin L., to The Black and Decker Mfg. Co. Dual-action power-operated abrading tool. 3,418,761. 12–31–68, Cl. 51—170.

Sherbeck, Leander A.: *See*—
Briggs, Frederick A., Ketterer, and Sherbeck. 3,419,653.

Sherman, Larry S.: *See*—
Brumbaugh, George U., Sherman, and Furiya. 3,419,099.

Shibata, Narajiro: *See*—
Morikawa, Ryuichi, Shibata, and Takami. 3,419,061.

Shifman, Joseph: *See*—
Anderson, James P., Hoffman, Mott, Pezely, Shifman, and Wilkinson. 3,419,849.

Shiga, Kazuyuki: *See*—
Sogawa, Toru, Gomi, and Shiga. 3,419,632.

Shmunis, Grigory I.: *See*—
Krugljachenko, Grigory N., Alexeev, Nalguz, Leibovich, Shmunis, and Brandenburgsky. 3,419,889.

Sohan, Elliot. Closure and drainage valve. 3,419,033, 12–31–68, Cl. 137—107.

Sholtes, George T.: *See*—
Kauffman, Melvin R., and Sholtes. 3,419,190.

Shore, James B., to Schlumberger Technology Corp. Well tool utilizing a switch means responsive to both pressure and the wall area surrounding the switch. 3,419,694, 12–31–68, Cl. 200—83.

Short Bros. & Harland Ltd.: *See*—
McStay, Morgan B., and Sloane. 3,419,232.

Shumate, Clifford W., to Blue Grass Industries, Inc. Man's undergarment and method of making. 3,418,660, 12–31–68, Cl. 2—224.

Sibert, John W., to Ethyl Corp. Preparation of alkali metal salts of nitriliotriacetic acid. 3,419,609, 12–31–68, Cl. 260—534.

Sicard, Marcel C., to American Machine & Foundry Co. Electric cigar lighters. 3,419,703, 12–31–68, Cl. 219—265.

Siemens Aktiengesellschaft: *See*—
Burklin, Gerlinde. 3,419,640.
Herlet, Adolf, and Rosenheinrich. 3,418,709.
Holzer, Rolf, Stehle, Schubert, Weber, and Klar. 3,419,-467.
Steggewentz, Hermann, and Schlüter. 3,419,424.

Siggel, Erhard: *See*—
Magerlein, Helmut, Siggel, Rupp, and Meyer. 3,419,630.

Sigma-Netics, Inc.: *See*—
Palen, Peter H. 3,419,692.

Siiteri, Pentti K., and R. D. Mills, to American Cyanamid Co. Process for preparing streptokinase-rich material. 3,419,-472, 12–31–68, Cl. 195—68.

Silverman, Alvin J., and A. Diamond, to Vernitron Corp. Magnetically controlled rotating indicator. 3,419,858, 12–31–68, Cl. 340—378.

Silverman, Daniel, to Pan American Petroleum Corp. Analog-digital system for processing seismic signals. 3,419,853, 12–31–68, Cl. 340—172.5.

Silverman, Harvey F. Electronic ignition system. 3,418,989, 12–31–68, Cl. 123—148.

Simmonds Precision Products, Inc.: *See*—
Cohn, Irving H. 3,419,801.

Simmons, George A., Jr.: *See*—
Gould, Ralph E., and Simmons. 3,419,373.

Sinclair Research, Inc.: *See*—
Horvath, Endre, and Burk. 3,419,353.
Teeter, Ford C., and Lee. 3,419,494.

Sisto, Armando V.: *See*—
Jendrisak, Joseph E., and Sisto. 3,418,779.

Siver, Chester A. Method of making valves by electron beam welding. 3,418,708, 12–31–68, Cl. 29—157.1.

Sizer, Phillips S., and L. K. Spencer, to Otis Engineering Corp. Surface condition responsive subsurface safety valve system. 3,419,076, 12–31–68, Cl. 166—53.

Sjostrom Automations, Inc.: *See*—
Sjostrom, Robert L. 3,419,261.

Sjostrom, Robert L., to Sjostrom Automations, Inc. Folder for optional quarter fold or french fold. 3,419,261, 12–31–68, Cl. 270—69.

Skatsche, Othmar, to H. List. Internal combustion engine. 3,418,984, 12–31–68, Cl. 123—90.

Skatsche, Othmar: *See*—
Scheiterlein, Andreas, and Skatsche. 3,418,993.

Skura, William A.: *See*—
Di Valerio, Panfilio A., Skura, and O'Donnell. 3,419,449.

Slauer, Richard G., to Sylvania Electric Products Inc. Air handling troffer. 3,419,714, 12–31–68, Cl. 240—9.

Slifer, Luther W., Jr., to United States of America, National Aeronautics and Space Administration. Solar cell and circuit array and process for nullifying magnetic fields. 3,419,-433, 12–31–68, Cl. 136—89.

Sliney, Harold E., to United States of America, National Aeronautics and Space Administration. Self-lubricating fluoride-metal composite materials. 3,419,363, 12–31–68, Cl. 29—182.1.

Sloane, John G.: *See*—
McStay, Morgan B., and Sloane. 3,419,232.

Small, Samuel N., to A. G. Cohen, and P. Weisse. Hinge coupling unit for tiltable umbrella. 3,419,295, 12–31–68, Cl. 287—99.

Smith, Edward A., and A. C. Wrotnowski, to American Felt Co. Strainer bag construction. 3,419,151, 12–31–68, Cl. 210—460.

Smith, Eva L. Farrowing pig pen. 3,418,975, 12–31–68, Cl. 119—20.

Smith, Gerould H.: *See*—
Maly, George P., Smith, Bernard, and Fox. 3,419,072.

Smith, Harold B.: *See*—
Van Dorn, William G. 3,419,090.

Smith, Jack L. Halter. 3,418,787, 12–31–68, Cl. 54—24.

Smith, John P.: *See*—
Michael, Henry J., Morse, Oram, Roccati, and Smith. 3,419,683.

Smith Kline & French Laboratories: *See*—
Kaiser, Carl, and Zirkle. 3,419,604.

Smith, Mark J., to Air Reduction, Inc. Extruded graphite matrix containing coated particles. 3,419,468, 12–31–68, Cl. 176—69.

Smith, Marvon A., to Reliance Engineering & Development Co. Method and apparatus for lowering casing into a bore hole. 3,419,112, 12–31–68, Cl. 188—67.

Smith, Norman F: *See*—
Anderson, Albin R., Carlson, Higgins, and Smith. 3,418,-759.

Smith, Percy L.: *See*—
McGary, Charles W., Jr., and Smith. 3,419,642.

Smith, Robert L. Method for making an earth pit mold for a plastic boat hull. 3,419,646, 12–31–68, Cl. 264—32.

Smith, Ving. Collapsible seat. 3,419,309, 12–31–68, Cl. 297—456.

Smythe, William J., and M. H. Shamos, to Technicon Corp. Automatic analysis apparatus and method. 3,419,358, 12–31–68, Cl. 23—230.

Snarr, James L., to Picker Corp. Film processor. 3,418,913, 12–31–68, Cl. 95—94.

Societe Anonyme Andre Citroen: *See*—
Henry-Biabaud, Edmond. 3,419,314.

Societe Financiere et Industrielle des Ateliers et Chantiers de Bretagne: *See*—
Beauvais, Max, and Moreau. 3,418,918.

Societe Industrielle et Commerciale des Automobiles Peugeot: *See*—
Danguathier, Marcel. 3,418,885.

Societe Paulstra: *See*—
Bernard, Raoul. 3,418,827.

Soder, Alfons, and W. Hempel, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing pure dimethylsulfoxide. 3,419,619, 12–31–68, Cl. 260—607.

Soderquist, John E. V., to Aktiebolaget Malcus Holmquist. Method for maintaining of centering holes in centerless infeed grinding. 3,418,763, 12–31–68, Cl. 51—281.

Sogawa, Toru, S. Gomi, and K. Shiga, to Kureha Kagaku Kogyo Kabushiki Kaisha. Thermal cracking method of hydrocarbons. 3,419,632, 12–31–68, Cl. 260—679.

Solodar, Warren E.: *See*—
Green, Milton, and Solodar. 3,419,600.

Solartron Electronic Group Ltd., The: *See*—
Harrison, Robert N., and Richardson. 3,419,862.

Solo Products Corp.: *See*—
Solomon, Nathan L., and Steek. 3,419,017.

Solomon, Nathan L., and S. Steek, to Solo Products Corp. Method and apparatus for straightening hair. 3,419,017, 12–31–68, Cl. 132—7.

Solomon, Nathan. Flexible hair curling device. 3,419,018, 12–31–68, Cl. 132—40.

Soma, Nobuo: *See*—
Nozoe, Tetsuo, Sunagawa, Soma, and Sato. 3,419,613.

Sony Corp.: *See*—
Kihara, Nobutoshi. 3,419,675.

Soprani, Paolo S. Electronic accordion with hinged keyboard and contact plate. 3,419,668, 12–31–68, Cl. 84—1.17.

Sossna, Hans-Jurgen, to Motomak Motorenbau Maschinen- und Werkzeugfabrik, Konstruktionen G.m.b.H. Automatically hydraulically adjusting play-equalization element for the valve control in piston engines. 3,418,983, 12–31–68, Cl. 123—90.

Sours, William A., to General Electric Co. Method and apparatus for mounting shafts and like devices in plastic cabinets. 3,418,705, 12–31–68, Cl. 29—149.5.

Spaleny, George R., to The Standard Register Co. Ribbon control apparatus. 3,419,125, 12–31–68, Cl. 197—165.

Sparks, Walton E., to Westinghouse Electric Corp. Hair dryer. 3,418,726, 12–31–68, Cl. 34—99.

Spencer, Larry K.: *See*—
Sizer, Phillips S., and Spencer. 3,419,076.

Sperry Rand Corp.: *See*—
Arval, Tibor. 3,419,212.
Eby, Richard R. 3,419,301.
Hurlburt, Joseph C., and Harer. 3,418,796.
Nolt, Edwin B., and Eby. 3,419,300.
Schneider, Joseph R. 3,419,330.
Schwalm, Bruce D., and Risser. 3,419,055.

Sperry Rand Ltd.: *See*—
Dove, Frank. 3,418,851.

Spindel-Motoreu- und Maschinenfabrik AG: *See*—
Agthe, Ralph. 3,419,139.

Spitzer, Ludwig, Firma: *See*—
Gramlich, Fritz. 3,419,310.

Sports Industries, Inc.: *See*—
Roberts, Robert E. 3,419,042.

Square D Co.: *See*—
Downs, Harold H., and Stanback. 3,419,177.

Squibb, E. R., & Sons, Inc.: *See*—
Bernstein, Jack. 3,419,554.
Bernstein, Jack, Krapcho, and Turk. 3,419,560.
Bernstein, Jack, Yale, and Losee. 3,419,553.
Krapcho, John. 3,419,599.

Stahly, Frederick A., and W. D. Humphriss, to Eastman Kodak Co. Magnetic coating compositions. 3,419,420, 12–31–68, Cl. 117—138.8.

Stamicarbon N.V.: *See*—
Tiessens, Meindert, and Vroomans. 3,419,530.

Stanback, Harris I.: *See*—
Downs, Harold H., and Stanback. 3,419,177.

Standard Oil Co. (Indiana): *See*—
Kapff, Sixt F. 3,418,842.

Standard Pressed Steel Co.: *See*—
Walker, Richard A. 3,419,058.

Standard Products Co., The: *See*—
Sarvay, John T. 3,418,773.

Standard Register Co., The: *See*—
Spaleny, George R. 3,419,125.

Stanford Research Institute: *See*—
Macovski, Albert. 3,419,672.
Macovski, Albert. 3,419,676.

Stanger, Hans: *See*—
Schenk, Walter, and Stanger. 3,419,486.

Stanley, Wallace A., to Reflex Corp. of America. Automobile reflectors. 3,419,715, 12–31–68, Cl. 240—41.55.

Stanley Works, The: *See*—
Johnson, Kenneth M. 3,419,065.

Stapp, Paul R., to Phillips Petroleum Co. Polymerization of acyclic monoolefins. 3,419,633, 12–31–68, Cl. 260—683.15.

Stark, John, Jr.: *See*—
Hursh, Neal W., and Stark. 3,419,807.

Starkey, Orval R., 50% to A. L. Lourenco. Roller compressing apparatus for mechanical pickers. 3,418,791, 12–31–68, Cl. 56—42.

Starline, Inc.: *See*—
Ferris, Robert G. 3,419,130.

Starp, Franz W. R.: *See*—
Rentschler, Waldemar T., Starp, and Mutterer. 3,418,910.

Statham Instruments, Inc.: *See*—
Curtis, Gerald R. 3,418,853.

Stauffer Chemical Co.: *See*—
Price, Glenn R. 3,419,643.

Stauffer, Robert E.: *See*—
Goffe, Charles A., and Stauffer. 3,419,719.

Stec, Frederick J., to Continental Can Co., Inc. Score guard overcap for full open ends. 3,419,181, 12–31–68, Cl. 220—54.

Steek, Samuel: *See*—
Solomon, Nathan L., and Steek. 3,419,017.

Steen, Floyd L., to General Electric Co. Overcurrent protective means. 3,419,757, 12–31–68, Cl. 317—36.

Steggewentz, Hermann, and K. Schlüter, to Siemens Aktiengesellschaft. Method of influencing the surface profile of semiconductor layers precipitated from the gas phase. 3,419,424, 12–31–68, Cl. 117—201.

Stehle, Heins: *See*—
Holzer, Rolf, Stehle, Schubert, Weber, and Klar. 3,419,-467.

Stein, Gerhard M., to Westinghouse Electric Corp. Electrical winding structures. 3,419,835, 12–31–68, Cl. 336—187.

Steinke, John J. Ignition distributor structure. 3,419,689, 12–31–68, Cl. 200—19.

Stengel, Edgar, and J. Müller, to AEG-Elotherm G.m.b.H. Apparatus for heating and holding the temperature of long stock. 3,419,701, 12–31–68, Cl. 219—156.

Stephens, Timothy, to United States of America, Air Force. Object locating by means of sensing a light spot. 3,419,721, 12–31–68, Cl. 250—202.

Stephensen, Gloria M. Brassiere. 3,419,895, 12–31–68, Cl. 128—484.

Sterer Engineering and Mfg. Co.: *See*—
Monnich, Carl E. 3,419,039.

Sterly, Glenn E.: *See*—
Lord, John M., and Sterly. 3,419,684.

Steuernagel, Helmut: *See*—
Meininger, Fritz, Steuernagel, and Frolich. 3,419,542.

Stevens, J. P., & Co., Inc.: *See*—
Burnett, William R. 3,418,968.
Oroszlan, Andrew, and Tesoro. 3,419,566.

Stevens, Richard H.: *See*—
Anderson, Norman G., and Stevens. 3,419,359.

Stevens, Royce O.: *See*—
Giusti, Edmund C., and Stevens. 3,419,086.

Stevenson, Norman R., and J. B. Hutchinson, to M-H Equipment Co., Inc. Subfloor conveyor switch apparatus. 3,418,-945, 12–31–68, Cl. 104—172.

Stewart, David, to The Boeing Co. Position indicator switches. 3,419,691, 12–31–68, Cl. 200—61.52.

Stewart, Iain G. H., and M. S. Hunt, to African Explosives and Chemical Industries Ltd. Method of and apparatus for dispensing fluent materials. 3,419,193, 12–31–68, Cl. 222—183.

Stewart, James B., to Westinghouse Electric Corp. Endless loop message recording apparatus with reset and indicating means. 3,419,687, 12–31–68, Cl. 179—100.2.

Stewart-Warner Corp.: *See*—
Brouwer, Frans, and Gray. 3,419,680.
Dinkelkamp, Henry T., and Miles. 3,419,695.
Fairbanks, Gordon J. 3,419,337.
Little, Arthur J., and Mayer. 3,418,802.

Stichweh, James H.: *See*—
Hornung, Stephen A., Stichweh, and Black. 3,419,733.

Stille, Volker: *See*—
Hany, Harald, and Stille. 3,418,859.
Hany, Harald, and Stille. 3,418,860.

Stoddard, Glenn G., to G. G. Stoddard, S. M. Eisenberg, and F. Marciniak. Clamping device. 3,419,012, 12–31–68, Cl. 129—35.

Stoddard, Glenn G.: *See*—
Stoddard, Glenn G. 3,419,012.

Stohlmeier, Ingo G.: *See*—
Schneider, Fritz W., and Stohlmeier. 3,419,210.

Stohlquist, Roger H., and L. Strombeck, to Anderson Bros. Mfg. Co. Carton feeding and erecting apparatus. 3,418,893, 12–31–68, Cl. 93—53.

Strombeck, Leo: *See*—
Stohlquist, Roger H., and Strombeck. 3,418,893.

Stromberg Carlson Corp.: *See*—
Hahnel, Alwin. 3,419,817.

Stolle, Karl H. Rocking locomotion apparatus. 3,419,267, 12–31–68, Cl. 272—1.

Stone, Orison W., to R. A. Jones & Co., Inc. Shadow box carton having article support. 3,419,133, 12–31–68, Cl. 206—45.14.

Stone, Roy A., and L. M. Ellis, to National Lock Co. Combined hinge and catch assembly. 3,418,683, 12–31–68, Cl. 16—145.

Stott, Thomas C. F., to General Motors Corp. Transmission synchronizing clutch with balk pins that are circumferentially biased. 3,419,120, 12–31–68, Cl. 192—53.

Stott, Thomas C. F., to General Motors Corp. Positive-clutch coupling arrangements having synchronizer mechanisms and cylindrical bearing means. 3,419,121, 12–31–68, Cl. 192—53.

Stottle, Robert D., to Heat Technology Laboratory, Inc. Heat flux measuring device. 3,419,438, 12–31–68, Cl. 136—230.

Stratton, George B.: *See*—
Hoch, Paul E., and Stratton. 3,419,380.

Stratton, John K. Removable covering. 3,418,752, 12–31–68, Cl. 47—28.

Straub, Henrik H., to United States of America, Army. Breathing valve assembly. 3,419,029, 12–31–68, Cl. 137—81.5.

Strauss, William, to Pennsalt Chemicals Corp. Apparatus scrap grinder and plastic injections molding machine. 3,418,694, 12–31–68, Cl. 18—30.

Streets, William L., to Phillips Petroleum Co. Petroleum distillates containing butadiene-styrene copolymers. 3,419,365, 12–31–68, Cl. 44—62.

Stricklin, James A. Method and means for augmenting hypervelocity flight. 3,418,878, 12–31–68, Cl. 89—8.

Strobel, Albert F.: *See*—
Catino, Sigmund C., Strobel, and Blumenkopf. 3,419,659.

Strobel, Donald H.: *See*—
Genthe, William K., Vander Heyden, and Strobel. 3,419,-793.
Genthe, William K., Vander Heyden, and Strobel. 3,419,-795.

Strobush, Victor H., to General Motors Corp. Front seat back lock and adjusting means. 3,419,307, 12–31–68, Cl. 297—379.

Stuttard, Edward B.: *See*—
Wheable, Desmond, and Stuttard. 3,419,731.

Styles, Peter R. D.: *See*—
Bottomley, Alastair H., Styles, Jilbert, Birtill, and Truscott, 3,418,662.

Sud-Chemie A.G.: *See*—
Walz, Alfred. 3,419,667.

Sudsy's Inc.: *See*—
Youngren, Glen R., Sr. and Jr. 3,419,022.

Sugimoto, Senichi, to Nihon Genshiryoku Kenkyujo. Process for disposing solid radioactive wastes. 3,418,788, 12–31–68, Cl. 55—8.

Sun Electric Corp.: *See*—
Bosshart, John L. 3,418,843.

Sun Oil Co.: *See*—
Humphrey, Arthur E., and Raymond. 3,419,469.
Moore, Robert E. 3,419,611.
Peterkin, Melvin E., and Hall. 3,419,641.
Van Venrooy, John J. 3,419,631.

Sunagawa, Genshun: *See*—
Nozoe, Tetsuo, Sunagawa, Soma, and Sato. 3,419,613.

Sunbeam Corp.: *See*—
Copeland, William M., and Ritter. 3,418,963.

Sundstrand Corp.: *See*—
Schaller, Robert L., Towne, and Culich. 3,419,159.

Sunvic-Regler GbmH.: *See*—
Maurer, Klemens. 3,419,878.

Superior Electric Co., The: *See*—
May, Joseph C. 3,419,788.
Palmero, Albert, and Madsen. 3,419,698.

Susquehanna Corp., The: *See*—
Markels, Michael, Jr. 3,419,445.

Sutton, Thomas: *See*—
Brooks, Charles, and Sutton. 3,419,458.

Suzuki, Seiji: *See*—
Komachiya, Yoshioki, Suzuki, and Sakurai. 3,419,551.

Svendsen, Noel A., R. Sawdo, and R. Varteresian, to Zalkind Sewing Machine & Supply Co., Inc. Cutting attachment for a sewing machine and control mechanism therefor. 3,418,-954, 12–31–68, Cl. 112—252.

Swaine, Derek, to Sylvania Electric Products Inc. Control apparatus for color television receivers. 3,419,673, 12–31–68, Cl. 178—5.4.

Swanson, Charles L.: *See*—
Meller, Floyd H., and Swanson. 3,418,952.

Swartz, Wendell H. Cigarette server. 3,419,178, 12–31–68, Cl. 229—36.

Swearingen, Judson S. Method and apparatus for removing vapors from gaseous mixtures by freezing. 3,418,820, 12–31–68, Cl. 62—12.

Swenson Spreader & Mfg. Co.: *See*—
Fyrk, Chas O. F. 3,419,221.

Swift & Co.: *See*—
Hayhurst, Lewis J., Ramsbottom, and Craine. 3,419,400.
Jones, Richard N. 3,419,344.
Kearns, Tommy C. 3,419,378.

Swire, John R.: *See*—
Lees, William A., and Swire. 3,419,512.

Switchcraft, Inc.: *See*—
Bailey, James R., and Bokosky. 3,419,696.

Sylvania Electric Products, Inc.: *See*—
Andre, Stephen N., and Megargel. 3,419,822.
Kerstetter, Donald R. 3,419,744.
Neal, Charles B., and Poel. 3,419,748.
Slauer, Richard G. 3,419,714.
Swaine, Derek. 3,419,673.

Syntex Corp.: *See*—
Edwards, John, and Ringold. 3,419,583.
Zaffaroni, Alejandro, and Campillo. 3,419,470.

System Development Corp.: *See*—
Rudie, Donald D. 3,419,287.

Szabo, Marton, to Philadelphia Handle Co., Inc. Collapsible handle operable by exertion of a push downwardly on one end thereof. 3,418,681, 12–31–68, Cl. 16—115.

TRG, Inc.: *See*—
Tanner, Robert L., Andreasen, Harris, and Jones. 3,419,-873.
Barish, Benjamin, and Thomson. 3,418,805.
Graves, Ross E., Sacks, and Jacob. 3,419,814.

Tabler, Donald C.: *See*—
Keeling, Hugh E., and Tabler. 3,419,627.

Tabor, Patrick MacD., to Mercox, Inc. Material discharge projectile. 3,419,274, 12–31–68, Cl. 273—106.5.

Tachibana, Sachihiko, H. Umedo, S. Nagai, and H. Orito, to Honshu Seishi Kabushiki Kaisha. Method of manufacturing cylindrical filter pieces of filter sheets. 3,418,890, 12–31–68, Cl. 93—1.

Taggart, Everett R. Fluid carrying conduit insulator. 3,419,-067, 12–31–68, Cl. 165—47.

Takagi, Harumitsu: *See*—
Grunberg, Jacques F., and Takagi. 3,418,819.

Takami, Yoshiaki: *See*—
Morikawa, Ryuichi, Shibata, and Takami. 3,419,061.

Takano, Yasumasa, H. Miura, and T. Yamamoto, to Nihon Denshi Kabushiki Kaisha. X-ray diffraction recording system. 3,419,880, 12–31–68, Cl. 346—33.

Takenouchi, Kuniharu: *See*—
Kawamura, Yurio, Ando, Takenouchi, Sakata, and Maruyama. 3,419,608.

Taki, Hiromitsu: *See*—
Hayakawa, Shigeru, Ikushima, Nitta, Negase, Taki, and Lida. 3,419,758.

Tampax Inc.: *See*—
Lewing, Albert W. 3,419,005.

Tanaka, Makoto: *See*—
Oikawa, Mitsuru, Tanaka, Kawafune, Yoshida, and Yamanaka. 3,419,327.

Tanigaki, Takashi, K. and K. Ishimoto, and S. Iizuka, to Uraga Jukogyo Kabushiki Kaisha. Automatic electrogas vertical seam welding arrangement. 3,419,700, 12–31–68, Cl. 219—126.

Tanner, Dale. Container-filling machine. 3,419,053, 12–31–68, Cl. 141—145.

Tanner, Howard A.: *See*—
Elmore, Glenn V., and Tanner. 3,419,900.
Tanner, Philip H., and T. R. F. Nonweiler, to Vosper Ltd. Moving weight stabilizers for floating bodies. 3,418,959, 12–31–68, Cl. 114—124.
Tanner, Robert L., M. G. Andreasen, F. B. Harris, and E. M. T. Jones, to TRG, Inc., Monopole antenna. 3,419,873, 12–31–68, Cl. 343—847.
Tarno, Larry J., to Dow Corning Corp. Deep section cure silicone rubber. 3,419,516, 12–31–68, Cl. 260—37.
Tartaglia, Louis G.: *See*—
Evans, Wayne S., Jr., and Tartaglia. 3,419,026.
Tashiro, Kengo, to Mansei Kogyo Kabushiki Kaisha. Fuel charge valve of liquified gas fueled lighter. 3,419,054, 12–31–68, Cl. 141—293.
Taub, James M.: *See*—
Riley, Robert E., Davidson, and Taub. 3,419,656.
Taylor, John E., Jr. Multiple contact assembly. 3,419,842, 12–31–68, Cl. 339—18.
Technicon Corp.: *See*—
Pelavin, Milton H. 3,419,879.
Smythe, William J., and Shamos. 3,419,358.
Teeter, Ford C., and D. Lee, to Sinclair Research, Inc. Oil-in-water emulsion and method of making same. 3,419,494, 12–31–68, Cl. 252—34.7.
Teldix Luftfahrt-Ausrustungs-G.m.b.H.: *See*—
Zipse, Erich, and Brendes. 3,419,848.
Telefunken Patentverwertungsgesellschaft m.b.H.: *See*—
Dahlberg, Reinhard. 3,419,767.
Telescopic Bolt Co.: *See*—
Worley, Kenneth S. 3,419,298.
Teletype Corp.: *See*—
Derenski, David J. 3,419,671.
Temple, Stanley, to E. I. du Pont de Nemours and Co. Process for polymerizing fluorinated olefin epoxides. 3,419,610, 12–31–68, Cl. 260—544.
Tenatronics, Ltd., Inc.: *See*—
Edwards, Eugene A., and Winterstein, George M. 3,419,876.
Tenney, Alvan H., to Union Carbide Corp. Molded fabric. 3,419,456, 12–31–68, Cl. 161—72.
Terrill, Edwin L.: *See*—
Noyack, Edward, and Terrill. 3,419,249.
Tesoro, Giuliana C.: *See*—
Orcutlan, Andrew, and Tesoro. 3,419,566.
Teters, Timie R. Automobile turntable. 3,418,943, 12–31–68, Cl. 104—44.
Texaco Inc.: *See*—
Eckert, George W., and Hess. 3,419,367.
Mead, Theodore C. 3,419,605.
Texas Instruments Inc.: *See*—
Clark, Jack H., Van Tassel, Larrabee, and Haefling. 3,419,765.
Verges, Jules P., Jr. 3,419,780.
Thibodeaux, Edward J. Drill pipe valve having means for rendering it temporarily inoperative. 3,419,040, 12–31–68, Cl. 137—515.7.
Thiede, Heins A. E., G. F. W. Berkelmann, and R. W. Leisterer. Echo sounding apparatus. 3,419,845, 12–31–68, Cl. 340—3.
Thiokol Chemical Corp.: *See*—
Baumgartner, Alois. 3,418,884.
Caveny, Leonard H., and Glick. 3,418,811.
McAllister, Patrick V., and McGregor. 3,419,441.
Third National Bank of Hampden County: *See*—
Lewing, Albert W. 3,419,005.
Thirtle, John R.: *See*—
Cressman, Homer W. J., and Thirtle. 3,419,390.
Thiry, Leon F. Antideflection roll with non-rotating beam and lever supports. 3,418,703, 12–31–68, Cl. 29—116.
Thomas Electronics, Inc.: *See*—
Legendre, Victor J. 3,419,741.
Thomas, Jack D.: *See*—
Vanderlaan, Dirk, Thomas, and Miller. 3,418,837.
Thompson, Charles S.: *See*—
McDermott, John J., and Thompson. 3,419,231.
Thompson, Gordon B., and S. H. Whitaker, to Northern Electric Co. Ltd. Long transit time transmission system. 3,419,682, 12–31–68, Cl. 179—1.
Thompson, John M., Ilford Ltd. Thioether silver halide development accelerators. 3,419,392, 12–31–68, Cl. 96—66.3.
Thompson, John M., and A. C. Farthing, to Ilford Ltd. Cyclic thioether silver halide development accelerators. 3,419,393, 12–31–68, Cl. 96—66.3.
Thomson, Arthur R.: *See*—
Barish, Benjamin, and Thomson. 3,418,805.
Thomson Machinery Co., Inc., The: *See*—
Duncan, Richard A. 3,419,896.
Tibbals, Kerry W. Tandem hitch. 3,419,284, 12–31–68, Cl. 280—412.
Tiessens, Meindert, and H. J. Vroomans, to Stamicarbon N.V. Preparation of macromolecular polyoxymethylenes. 3,419,530, 12–31–68, Cl. 260—67.
Tillack, Jürgen, to North American Philips Co. Inc. Processes for manufacturing iodine of very high purity. 3,419,357, 12–31–68, Cl. 23—216.
Timmons, William D., to Celanese Corp. Adhesion of polyester to rubber. 3,419,463, 12–31–68, Cl. 161—231.
Timmons, William D., to Celanese Corp. Adhesion of polyester to rubber. 3,419,464, 12–31–68, Cl. 161—231.
Tischler, Henry J.: *See*—
Byczkowski, Ernest, and Tischler. 3,418,676.
Toda, Minoru, to Radio Corp. of America. Hall effect inductive element. 3,419,737, 12–31–68, Cl. 307—309.
Toews, David W. Pipe trailer means with turntable structure. 3,419,282, 12–31–68, Cl. 280—63.
Tokyo Kagaku Kabushiki Kaisha: *See*—
Mabuchi, Takaichi. 3,418,751.
Tomago, Akio, and M. Fukai, to Matsushita Electric Industrial Co., Ltd. Metallized paper condensers. 3,419,770, 12–31–68, Cl. 317—258.
Tomb, William H., P. E. Wesel, and A. R. Zine, Jr. Corning Glass Works. Pipe coupling. 3,419,291, 12–31–68, Cl. 285—233.
Tomi Kogyo Kabushiki Kaisha: *See*—
Hakogi, Ichiro. 3,418,926.
Torrington Co., The: *See*—
Herpich, William M. 3,418,869.
Toyoda Automatic Loom Works, Ltd.: *See*—
Yoshida, Masaru. 3,419,050.
Towne, Donald L.: *See*—
Schaller, Robert L., Towne, and Culich. 3,419,159.
Towner, Robert T., to Industrial Research Associates, Inc. Runway visual range computer system. 3,419,333, 12–31–68, Cl. 356—205.
Towns, Donald L., to FMC Corp. Synthesis of 2,3-dihydro-2,2-dimethyl-7-benzofuranol. 3,419,579, 12–31–68, Cl. 260—346.2.
Toyo Rubber Industries Co., Ltd., The: *See*—
Morikawa, Ryuichi, Shibata, and Takami. 3,419,061.
Tracy, Herbert E., to Borg-Warner Corp. Mechanical seals. 3,419,279, 12–31–68, Cl. 277—22.
Traenckner, Kurt-Christian: *See*—
Peters, Werner, and Traenckner. 3,419,474.
Trans-Sonics Inc.: *See*—
Williams, Sidney B., and Burgess. 3,418,854.
Trautman, Charles E.: *See*—
Rocchini, Albret G., and Trautman. 3,419,497.
Traverso, John J.: *See*—
Whitehead, Calvert W., and Traverso. 3,419,552.
Trefileries Leon Bekaert: *See*—
Halsberghe, Robert. 3,419,138.
Trico Products Corp.: *See*—
Deibel, Raymond A., and Scinta. 3,418,678.
Olshet, John R. 3,419,299.
Trio Mfg. Co.: *See*—
Vail, Arthur E. 3,418,976.
Trent, Parker J.: *See*—
Curtis, Larry G., and Trent. 3,419,408.
Trischler, Floyd D., to Whittaker Corp. Fluorine-containing polyformals. 3,419,531, 12–31–68, Cl. 260—67.
Trufast Products, Inc.: *See*—
Aramini, Salvatore J. 3,419,200.
Trupiano, Roberto: *See*—
Rinaldo, Paolo, and Trupiano. 3,419,440.
Truscott, John R.: *See*—
Bottomley, Alastair H., Styles, Jilbert, Birtill, and Truscott. 3,418,662.
Tschoepe, Bruno, to Dynamit Nobel Aktiengesellschaft. Firearm. 3,418,741, 12–31–68, Cl. 42—77.
Tsubakimoto Chain Mfg. Co. Ltd.: *See*—
Yokoi, Satoru, and Ohmura. 3,418,946.
Tubauto: *See*—
Berthier, Joseph G. 3,419,243.
Tucker, Linwood G., and E. Preston, to Koppers Co., Inc. High chambered coke oven structure. 3,419,475, 12–31–68, Cl. 202—143.
Tufts, Lewis E., and D. L. Eichler, to Hooker Chemical Corp. Crystallization of ammonium perchlorate. 3,419,899, 12–31–68, Cl. 23—302.
Turk, Chester: *See*—
Bernstein, Jack, Krapcho, and Turk. 3,419,560.
Tyrrell, Cyril M., Sr., and C. M. Tyrrell, Jr. Shoelace anchor. 3,418,733, 12–31–68, Cl. 36—50.
U.S. Stoneware, Inc.: *See*—
Eckert, John S. 3,419,251.
Eckert, John S. 3,419,253.
Ueda, Kenichi, H. Yasunaga, K. Komatsu, and J. Hirota, to Japan Synthetic Rubert Co., Ltd. Method of producing cis-1,4 polybutadiene. 3,419,539, 12–31–68, Cl. 260—94.3.
Ugi, Ivar: *See*—
Fetzer, Uwe, Ugi, Unterstenhofer, and Hammann. 3,419,540.
Fetzer, Uwe, Ugi, Knupfer, Renner, and Grewe. 3,419,546.
Fetzer, Uwe, Eholzer, Ugi, Hammann, and Unterstenhofer. 3,419,596.
Ulderup, Jurgen. Universal joint having movable bearing parts made of a non-rusting material and non-movable parts coated with a non-rusting material. 3,419,294, 12–31–68, Cl. 287—87.
Ulrich, Hans: *See*—
Von Konig, Anita, Mader, Ulrich, and Weyde. 3,419,395.
Ulusal, Huseyin, deceased (by N. Ulusal, heir), to Gewerkschaft Eisenhutte Westfalia. Coal cutter with vibratory drive. 3,419,313, 12–31–68, Cl. 299—34.
Ulusal, Nuriye: *See*—
Ulusal, Huseyin. 3,419,313.
Umantsev, Victor S., to Zavod Elektroizmeritel'nykh Priborov. Potentiometer having a multiposition commutating device. 3,419,906, 12–31–68, Cl. 324—98.
Umedo, Hajime: *See*—
Tachibana, Sachihiko, Umedo, Nagai, and Orito. 3,418,890.
Union Carbide Corp.: *See*—
Anderson, Henry H., and Miller. 3,418,685.
Cotter, Robert J., Apel, and Conte. 3,419,624.
Holland, Harry W., and Helvey. 3,419,386.
Kinz, Paul A. 3,419,006.
Kuryla, William C. 3,419,580.
Marcus, Erich, and MacPeek. 3,419,622.
Martin, Sterling T. 3,418,940.
Matecki, Edward A. 3,419,401.
McGary, Charles W., Jr., and Smith. 3,419,642.
Pepe, Enrico J. 3,419,422.
Tenney, Alvan H. 3,419,456.

Union Oil Co. of California: *See*—
Maly, George P., Smith, Bernard, and Fox. 3,419,072.
Schaschl, Edward. 3,418,848.
Union Special Machine Co.: *See*—
Attwood, John G., Kosrow, and Reimer. 3,418,955.
Uniroyal, Inc.: *See*—
Di Valerio, Panfilo A., Skura, and O'Donnell. 3,419,449.
Gentile, Anthony V. 3,419,639.
Hewitt, Eugene E. 3,419,447.
Klender, Gerald J. 3,419,504.
United Aircraft Corp.: *See*—
Lach, Richard F., and Martin. 3,419,809.
United-Carr Inc.: *See*—
Danico, Henry F. 3,418,658.
United Kingdom Atomic Energy Authority: *See*—
Hardy, Clarence J., and Field. 3,419,848.
United Shoe Machine Corp.: *See*—
Duryee, George. 3,418,785.
United States Steel Corp.: *See*—
Hobe, Harold E., and Kennedy. 3,419,256.
United States of America
Agriculture: *See*—
Beal, Robert E., and Eisenhauer. 3,419,586.
Pittman, Allen G., and Wasley. 3,419,602.
Air Force: *See*—
Barditch, Irving F., and Brooks. 3,419,812.
Flory, John F. 3,419,238.
Jones, David I. G., and Henderson. 3,419,111.
Lenhoff, John G., Jr. 3,419,808.
Nantz, Merle E. 3,418,847.
Rothschild, Louis I., Williamson, and Leeming. 3,419,750.
Stephens, Timothy. 3,419,721.
Atomic Energy Commission: *See*—
Anderson, Norman G., and Stevens. 3,419,359.
Gordon, Emanuel, and Fuhrman. 3,419,387.
Hesson, James C. 3,419,432.
Libby, Hugo L. 3,419,797.
Riley, Robert E., Davidson, and Taub. 3,419,656.
Seegmiller, Robert, and Gore. 3,419,485.
Wright, Ralph R. 3,419,419.
Army: *See*—
Arutunian, Gregory. 3,419,388.
Guenter, Richard G. 3,418,686.
Lastnik, Abraham L., and James. 3,418,657.
Meikle, John E. 3,419,722.
Mohnkern, Gerald L. 3,419,854.
Reed, Frederick P. 3,418,879.
Straub, Henrik H. 3,419,029.
Health, Education and Welfare: *See*—
Bedrosian, Paul H. 3,419,30.
Interior: *See*—
Martin, John W. 3,418,852.
Navy: *See*—
Kaufman, Martin H., and Braun. 3,419,628.
Resnik, Arnold E., and Williams. 3,419,861.
National Aeronautics and Space Administration: *See*—
Rembaum, Alan, and Henry. 3,419,537.
Slifer, Luther W., Jr. 3,419,433.
Sliney, Harold E. 3,419,363.
Vogeley, Arthur W., and Meintel. 3,419,329.
Universal Oil Products Co.: *See*—
Bloch, Herman S. 3,419,492.
University of Missouri, The Curators of the: *See*—
Elder, William H. 3,419,661.
Unterstenhofer, Gunter: *See*—
Fetzer, Uwe, Ugi, Unterstenhofer, and Hammann. 3,419,540.
Fetzer, Uwe, Eholzer, Ugi, Hammann, and Unterstenhofer. 3,419,596.
Uraga Jukogyo Kabushiki Kaisha: *See*—
Tanigaki, Takashi, and Iizuka. 3,419,700.
Ure, George R., to Fiber Industries, Inc. Polyethylene terephthalate films containing surface protrusions. 3,419,460, 12–31–68, Cl. 161—162.
Urrere, Charles L.: *See*—
Baker, William E., and Urrere. 3,419,142.
V-M Corp.: *See*—
Rhoades, Robert B. 3,419,686.
Vahlstrom, Carl A., to Embart Corp. Permutation locks. 3,419,893, 12–31–68, Cl. 70—24.
Vail, Arthur E., to Trio Mfg. Co. Birdhouse. 3,418,976, 12–31–68, Cl. 119—23.
Vailliant, Joh., K.G.: *See*—
Reichmann, Horst. 3,418,979.
Valdespino, Joe M. Portable washing machine. 3,418,832, 12–31–68, Cl. 68—183.
Valdespino, Joe M. Portable dishwasher. 3,419,023, 12–31–68, Cl. 134—101.
Valyi, Emery I. Mold clamping apparatus. 3,418,692, 12–31–68, Cl. 18—30.
Vander Heyden, William H.: *See*—
Genthe, William K., Vander Heyden, and Strobel. 3,419,793.
Genthe, William K., Vander Heyden, and Strobel. 3,419,795.
Vander Horst, John: *See*—
Hoffman, Robert K., Baldwin, MacFarlane, and Vander Horst. 3,418,789.
Vanderlaan, Dirk, J. D. Thomas, and R. D. Miller, to Miller-Thomas Corp., d.b.a. Globe Engineering Co. Self lubricated and sanitary drive means for can flanger and the like. 3,418,837, 12–31–68, Cl. 72—94.
Van Dorn, William G., 25% to J. G. Carter, 10% to R. A. Bard, Jr., 10% to H. B. Smith, and 5% to W. L. Klevans. Offshore drilling system. 3,419,090, 12–31–68, Cl. 175—7.
Vanlerberghe, Guy: *See*—
Lachampt, Felix, Viout, and Vanlerberghe. 3,419,665.
VanNorman, Gilden R.: *See*—
Houle, James F., and VanNorman. 3,419,406.
Van Tassel, James H.: *See*—
Clark, Jack H., Van Tassel, Larrabee, and Haefling. 3,419,765.
Van Venrooy, John J., to Sun Oil Co. Substituted adamantane compounds. 3,419,631, 12–31–68, Cl. 260—668.
Van Witteveen, Roland A. J. O.: *See*—
Meijer, Roelf J., and van Witteveen. 3,418,804.
Vargas Mfg. Co.: *See*—
Scola, Joseph. 3,419,245.
Varian Associates: *See*—
Weaver, Harry E., and Kingston. 3,419,904.
Weaver, Harry E., Jr., and Kingston. 3,419,794.
Varta Aktiengesellschaft: *See*—
Jung, Margarete, and Von Doehren. 3,419,437.
Varteresian, Robert: *See*—
Svendsen, Noel A., Sawdo, and Varteresian. 3,418,954.
Vassiliev, Avenir, J. Nicolas, and M. Hildebrandt, to CSF-Compagnie Generale de Telegraphie Sans Fil. Garnet compositions. 3,419,496, 12–31–68, Cl. 252—62.57.
Vaughn, Howard A., Jr., to General Electric Co. Organopolysiloxane polycarbonate block copolymers. 3,419,634, 12–31–68, Cl. 260—824.
Vaughn, Howard A., Jr., to General Electric Co. Room temperature vulcanizing organopolysiloxane - polycarbonate compositions. 3,419,635, 12–31–68, Cl. 260—824.
Venghiattis, Alexis A., to Dresser Industries, Inc. Tracer bullet, self-sealing. 3,419,089, 12–31–68, Cl. 175—4.57.
Vergez, Jules P., Jr., to Texas Instruments Inc. Static synthetic sine wave inverter. 3,419,780, 12–31–68, Cl. 321—2.
Verhagen, Cornelis M., to Datawell N.V. Compass car mounting. 3,418,722, 12–31–68, Cl. 33—222.
Verlinden, Marius A. J. Pressure vessel made of plastic, especially a beer cask. 3,419,173, 12–31–68, Cl. 220—5.
Vernati, Homer L., to Allis-Chalmers Mfg. Co. Transmission shift and throttle interlock. 3,418,872, 12–31–68, Cl. 74—878.
Vernitron Corp.: *See*—
Silverman, Alvin J., and Diamond. 3,419,858.
Verwaltungsgesellschaft Moeller und Neumann offene Handelsgesellschaft: *See*—
Boehheit, Otto K. 3,418,689.
Vigreux, Armand A., to Aktiengesellschaft Brown, Boveri & Cie. Regulator device for induction apparatus employing addition and subtraction of coil turns. 3,419,833, 12–31–68, Cl. 336—15.
Villani Frank J., to Schering Corp. Aza-dibenzocycloheptenes. 3,419,565, 12–31–68, Cl. 260—294.7.
Vilsmeier, Wolfgang: *See*—
Deuschel, Werner, Vilsmeier, and Riedel. 3,419,557.
Vincent, Renic P., to Pan American Petroleum Corp. Apparatus for injecting a viscoelastic material in a subsurface pump. 3,418,938, 12–31–68, Cl. 103—46.
Vincent, Renic P., and L. B. Wilder, to Pan American Petroleum Corp. Underwater power source. 3,418,818, 12–31–68, Cl. 61—69.
Vindale Corp.: *See*—
Riedel, Daniel P. 3,419,215.
Viout, Andre: *See*—
Lachampt, Felix, Viout, and Vanlerberghe. 3,419,665.
Vision Control, Inc.: *See*—
Wise, Irvin L., and Hall. 3,418,978.
Vittecoq, Rene R. J.: *See*—
Kopp, Georges, and Vittecoq. 3,419,341.
Vogeley, Arthur W., and A. J. Meintel, Jr., to United States of America, National Aeronautics and Space Administration. Combined optical attitude and altitude indicating instrument. 3,419,329, 12–31–68, Cl. 356—72.
Vogt, Herwart C.: *See*—
Davis, Pauls and Vogt. 3,419,621.
Volgt, Herbert: *See*—
Holstein, Richard, and Volgt. 3,418,997.
Holstein, Richard, and Volgt. 3,418,998.
Von Doehren, Hans H.: *See*—
Jung, Margarete, and Von Doehren. 3,419,437.
Von Dreusche, Charles F., Jr., to Nichols Engineering & Research Corp. High temperature multiple hearth furnace structures. 3,419,254, 12–31–68, Cl. 263—26.
Von Koch, Arwed, to Daimler-Benz Aktiengesellschaft. Speed responsive pressure control device. 3,419,027, 12–31–68, Cl. 137—47.
Von Konig, Anita, H. Mader, H. Ulrich, and E. Weyde, to Agfa Aktiengesellschaft. Light-sensitive material with incorporated developer. 3,419 395, 12–31–68, Cl. 96—95.
Von Recklinghausen, Daniel R., and L. W. Fish, Jr., to H. H. Scott, Inc. Audio amplifier tone control system. 3,419,811, 12–31–68, Cl. 330—25.
Von Seggern, Ernst A., and H. E. Internal combustion chamber and process utilizing a diffused mixture and auxiliary air. 3,418,981, 12–31–68, Cl. 123—75.
Von Seggern, Henry E.: *See*—
Von Seggern, Ernest A. and H. E. 3,418,981.
Von Stein, Paul, to Kennecott Copper Corp. Recovery of high purity selenium from selenium-bearing solutions containing metallic impurities. 3,419,355, 12–31–68, Cl. 23—209.
Vos, Pieter R.: *See*—
Germans, Fedde H., and Vos. 3,419,723.
Vosper Ltd.: *See*—
Tanner, Philip H., and Nonweiler. 3,418,959.
Vroomans, Hubertus J.: *See*—
Tiessens, Meindert, and Vroomans. 3,419,530.
Vulcan-Hart Corp.: *See*—
Fautz, Howard C. 3,418,921.
Wagner Electric Corp.: *See*—
Bueler, Richard C. 3,419,315.
Wagner, John T., and O. N. Bryant, to Westinghouse Electric Corp. Elastic fluid turbine apparatus. 3,418,806, 12–31–68, Cl. 60—39.51.
Wagner, Siegbert O.: *See*—
Hoffmann, Ernest, and Wagner. 3,419,019.

Wagner, Wayne M., and W. R. Wolff, to Donaldson Co., Inc. Exhaust ejector. 3,419,892, 12–31–68, Cl. 60—30.

Wahle, Guenter, to Hauni-Werke Koerber & Co., KG. Method and apparatus for testing cigarettes or the like. 3,418,844, 12–31–68, Cl. 73—45.1.

Wakeman, Reginald L., and J. F. Coates, to Millmaster Onyx Corp. Quaternary ammonium acinitro compounds. 3,419,-562, 12–31–68, Cl. 260—286.

Walck, George A., III, to C. R. Bard, Inc. Closed-end peel package. 3,419,137, 12–31–68, Cl. 206—63.2.

Walker, Garland R.: *See*—
Joarder, Mohammad G. K., and Walker. 3,418,798.

Walker Mfg. Co.: *See*—
Haren, Ralph J. 3,419,459.

Walker-Neer Mfg., Inc.: *See*—
Elenburg, Wayland D. 3,419,092.

Walker, Richard A., to Standard Pressed Steel Co. Set screw. 3,419,058, 12–31–68, Cl. 151—70.

Wallace, Richard B., to The Oakland Corp. Compass compensation. 3,418,840, 12–31–68, Cl. 73—1.

Wallace, William K.: *See*—
Amstsberg, Lester A., and Wallace. 3,419,087.

Walsh, Peter A., to Rotax Ltd. Externally controlled capacitor charging and discharging circuit. 3,419,736, 12–31–68, Cl. 307—293.

Walton, William B., to Clark Equipment Co. Displacement sensing transducer using hall effect devices. 3,419,798, 12–31–68, Cl. 324—45.

Walz, Alfred, to Sud-Chemie A.G. Electric furnace. 3,419,667, 12–31–68, Cl. 13—23.

Wander, A., Dr., S.A.: *See*—
Schmutz, Jean, and Hunziker. 3,419,547.

Ward, Irving A., to Modern Faucet Mfg. Co. Valve assembly. 3,419,036, 12–31–68, Cl. 137—218.

Warner-Lambert Pharmaceutical Co.: *See*—
Di Carlo, Frederick J. 3,419,571.
Ercoli, Alberto, and Gardi. 3,419,550.
Ercoli, Alberto, and Gardi. 3,419,582.
Farber, Sheldon. 3,419,545.

Warnock, William A.: *See*—
Groce, Homer W., and Warnock. 3,418,697.

Waskosky, Stephen D. Game apparatus with magnetically actuated game pieces. 3,419,271, 12–31–68, Cl. 273—94.

Wasley, William L.: *See*—
Pittman, Allen G., and Wasley. 3,419,602.

Watson, Wesley H.: *See*—
Bentley, John M., and Watson. 3,419,771.

Waugaman, William J., to Continental Aviation Engineering Corp. Variable compression ratio piston assembly. 3,418,-982, 12–31–68, Cl. 123—78.

Way, Douglas E., and H. A. Berry, to American Seating Co. Concealed fastening for seat ends. 3,419,241, 12–31–68, Cl. 248—361.

Weaver, Harry E., and F. E. F. Kingston, to Varian Associates. Super conductive solenoid having winding segments additionally energized for gradient control. 3,419,904, 12–31–68, Cl. 317—123.

Weaver, Harry E., Jr., and F. E. Kingston, to Varian Associates. Superconductive magnet having an automatic coolant low level warning and shut down means. 3,419,794, 12–31–68, Cl. 324—.5.

Weber, Robert: *See*—
Holzer, Rolf. Stehle, Schubert, Weber, and Klar. 3,419,467.

Webb, James E., administrator of the National Aeronautics and Space Administration with respect to an invention of D. L. Nixon, and F. E. McCrea. Indexing microwave-switch. 3,419,827, 12–31–68, Cl. 333—98.

Weber, Alphons P. Personnel lowering device. 3,419,236, 12–31–68, Cl. 244—151.

Wehr, Rudolf, to E. I. du Pont de Nemours and Co. Benzoin-type copolymers and glass fabric laminates thereof. 3,419,-462, 12–31–68, Cl. 161—198.

Weldman, William H., to Harris-Intertype Corp. Sheet feeder. 3,419,263, 12–31–68, Cl. 271—26.

Weldmann, Walter: *See*—
Zirngibl, Hans, Gutsche, and Weldmann. 3,419,351.

Well, Edward D., and H. L. Schlichting, to Hooker Chemical Corp. Method for the control of insects using thioalkylphenyl carbamates. 3,419,663, 12–31–68, Cl. 424—300.

Weinstock, Leonard M., to Merck & Co., Inc. 3-Chloro-4-oxy-1,2,5-thiadiazoles and a process for preparing same. 3,419,-573, 12–31–68, Cl. 260—302.

Weinstock, Leonard M., and B. Handelsman, to Merck & Co., Inc. Ring synthesis of halo-substituted 1,2,5-thiadiazoles. 3,419,572, 12–31–68, Cl. 260—302.

Weirauch, Kurt: *See*—
Schnell, Hermann, Bottenbruch, Darsow, and Weirauch. 3,419,526.

Weirich, Henry: *See*—
Weirich, William F. and H. 3,418,889.

Weirich, William F. and H. Device for creasing and cutting slot insulation. 3,418,889, 12–31–68, Cl. 93—1.

Weissenberger, Gustav. to Monsanto Co. Method of inhibiting the growth of bacteria and fungi with triorganotin oximes. 3,419,662, 12–31–68, Cl. 424—245.

Weissenberg, Ulrich W., to The Dow Chemical Co. Method of preparing anhydrous magnesium halides. 3,419,347, 12–31–68, Cl. 23—91.

Welch, Stanley B., to General Electric Co. Method of loosening food soil from walls of domestic oven. 3,419,428, 12–31–68, Cl. 134—22.

Weldes, Helmut H., and D. I. Netting, to Philadelphia Quartz Co. Expanded silica insulation material. 3,419,495, 12–31–68, Cl. 252—62.

Wellman Industries, Inc.: *See*—
Groce, Homer W., and Warnock. 3,418,697.

Wenzel, Dieter, to Licentia Patent-Verwaltunga-G.m.b.H. Electron-optical image-reproduction system with power supply voltage regulated according to ambient light. 3,419,745, 12–31–68, Cl. 315—10.

Werkmeister, Gottfried W. L., and R. J. McCarthy. Device for locking a hollow core to a drive shaft. 3,419,227, 12–31–68, Cl. 242—72.

Wesel, Peter E.: *See*—
Tomb, William H., Wesel, and Zine. 3,419,201.

Wessells, Henry W., III: *See*—
Eggert, Walter S., Jr., and Wessells. 3,419,303.

West, Fred W., and J. T. Gresham, to FMC Corp. Fluorinated organomercury compounds. 3,419,590, 12–31–68, Cl. 260—431.

Westates Space-Era Products, Inc.: *See*—
Anderson, Frank R., and Castro. 3,418,668.

Westel Co.: *See*—
Maxey, Alexander R. 3,419,202.

Western Electric Co., Inc.: *See*—
Anderson, Albin R., Carlson, Higgins, and Smith. 3,418,759.
Papadeas, Michael A. 3,419,799.
Scherb, Walter R., Jr. 3,418,712.

Westinghouse Air Brake Co.: *See*—
Beer, Arthur O., and Kling. 3,418,849.

Westinghouse Electric Corp.: *See*—
Asseo, Sabi J. 3,419,777.
Bentley, John M., and Watson. 3,419,771.
Brane, Maxwell D. 3,419,786.
Dalton, Robert F., and Barnett. 3,418,780.
Cook, John W. 3,418,834.
Green, Martin. 3,419,747.
Jones, Calvin C. 3,419,821.
Kardos, Louis F. 3,419,775.
Palumbo, Anthony J., and Ford. 3,419,498.
Schmidt, Paul F. 3,419,480.
Seidel, Joseph, and Eaves. 3,418,710.
Sparks, Walton E. 3,418,726.
Stein, Gerhard M. 3,419,835.
Stewart, James B. 3,419,687.
Wagner, John T., and Bryant. 3,418,806.
Zehner, David W. 3,419,779.

Weston, Charles D., and W. S. Griffith, to Martin-Marietta Corp. Method for coloring cellulose textile fibers with dyestuffs containing pendant thiosulfate groups. 3,419,343, 12–31–68, Cl. 8—54.2.

Weston Chemical Corp.: *See*—
Larrison, Millard S. 3,419,524.

Weyde, Edith: *See*—
Von Konig, Anita, Mader, Ulrich, and Weyde. 3,419,395.

Wheable, Desmond, and E. B. Stuttard, to Hawker Siddeley Dynamics Ltd. Switching devices. 3,419,731, 12–31–68, Cl. 307—115.

Wheat, Lawrence C.: *See*—
Miller, Alfred H., Perry, and Wheat. 3,419,651.

Wheatley, Denis: *See*—
Peltret, Pierre H., and Wheatley. 3,419,292.

Wheeler, John H. Preloaded fluid packing assembly and male adapter. 3,419,280, 12–31–68, Cl. 277—123.

Whirlpool Corp.: *See*—
Milnar, Russell J. 3,419,224.
Niewyk, Anthony, McConnell, and Myers. 3,419,708.

Whitaker, Ranald O. Binary electro-mechanical transducer using a laterally sliding armature. 3,419,830, 12–31–68, Cl. 336—170.

Whitaker, Stuart H.: *See*—
Thompson, Gordon B., and Whitaker. 3,419,682.

White, Charles S. Method and apparatus for making bearings. 3,418,706, 12–31–68, Cl. 29—149.5.

White, John D., and J. L. Bailey. Air freshener device. 3,419,-217, 12–31–68, Cl. 239—58.

White, K. M., Co.: *See*—
Hornung, Stephen A., Stichweh, and Black. 3,419,733.

White Motor Corp.: *See*—
Cardillo, Joseph S., and Jonsson. 3,418,937.

White, Ralph E.: *See*—
Schroeder, Herman J., and White. 3,419,882.

Whitehead, Calvert W., and J. J. Traverso, to Eli Lilly and Co. Preparation of substituted dihydrobenzothiadiazine-1,1-dioxides. 3,419,552, 12–31–68, Cl. 260—243.

Whitfield, Carroll J., and M. L. Nafziger, to Lilliston Implement Co. Rotary cutters with equal angular velocities. 3,418,790, 12–31–68, Cl. 56—6.

Whittaker Corp.: *See*—
Trischler, Floyd D. 3,419,531.

Whitten, Leonard G., Jr.: *See*—
Baldwin, Richard R., and Whitten. 3,419,898.

Wick, Richard, F. Biedermann, A. Winkler, F. Bestenreiner, G. Kiper, G. Pawlik, R. Von Sybel, E. Von Wasielewski, and K. Wagner, to Agfa-Gevaert Aktiengesellschaft. Photographic camera with automatic electronic flash and daylight diaphragm control. 3,418,904, 12–31–68, Cl. 95—10.

Wick, Richard, H. P. Huber, and F. Hennig, to Agfa-Gevaert Aktiengesellschaft. Photoflash unit. 3,418,906, 12–31–68, Cl. 95—11.

Wiedemann, Ernest A.: *See*—
Kocher, Alfred L., and Wiedemann. 3,418,774.

Wiener, Jack S. Continuously recycling message transmitting system. 3,419,278, 12–31–68, Cl. 274—13.1.

Wieshuber, Franz X. Earring construction having interchangeable parts. 3,418,826, 12–31–68, Cl. 63—13.

Wiggins, Robert B., to Fort Howard Paper Co. Art of manufacturing embossed paper products. 3,418,925, 12–31–68, Cl. 101—23.

Wiggins Teape Research & Development Ltd.: *See*—
Grierson, Hew McI. 3,419,068.

Wijma, Johannes, to North American Philips Co., Inc. Herbicides. 3,419,567, 12–31–68, Cl. 260—294.8.

Wilder, Lawrence B.: *See*—
Vincent, Renic P., and Wilder. 3,418,818.

Wilford, Ernest, to The Bradford Dyers' Assn. Ltd. Apparatus for stencil-printing thick fabrics. 3,418,931, 12–31–68, Cl. 101—126.

Wilkinson, John A.: *See*—
Anderson, James P., Hoffman, Mott, Pezely, Shifman, and Wilkinson. 3,419,849.

Willett, Joseph T., to Wyandotte Chemicals Corp. Mercury compounds as catalysts for the polyurethane reaction. 3,419,509, 12–31–68, Cl. 260—18.

Williams, Derek: *See*—
Scott, Gerald, and Williams. 3,419,521.

Williams Inlan Corp., The: *See*—
Williams, Paul G., Jr. 3,418,730.

Williams, Leonard E., Jr., and D. L. Gruller, to Cameron Iron Works, Inc. Underwater wellhead apparatus. 3,419,071, 12–31–68, Cl. 166—.6.

Williams, Paul G., Jr., to The Williams Inlan Corp. Problem-solving equipment. 3,418,730, 12–31–68, Cl. 35—24.

Williams, Robert J. W.: *See*—
Quintilian, Bartholomew F., and Williams. 3,418,792.

Williams, Sidney B., and A. C. Burgess, to Trans-Sonics Inc. Diaphragm type instrument. 3,418,854, 12–31–68, Cl. 73—407.

Williams, William F.: *See*—
Resnik, Arnold E., and Williams. 3,419,861.

Williamson, David T., to Molins Machine Co., Ltd. Web-feeding devices. 3,419,204, 12–31–68, Cl. 226—124.

Williamson, Donald E., to Cordis Corp. Catheter. 3,419,010, 12–31–68, Cl. 128—350.

Williamson, Ertle: *See*—
Nance, Lacy C. 3,418,831.

Williamson, James V.: *See*—
Rothschild, Louis I., Williamson, and Leeming. 3,419,750.

Willing, David N., to Dow Corning Corp. Catalysts for the reaction of ≡SiH with organic compounds containing aliphatic unsaturation. 3,419,593, 12–31–68, Cl. 260—448.2.

Willy Feller Zahl- und Rechenwerke G.m.b.H.: *See*—
Salzberger, Andreas, and Freyburg. 3,419,123.

Wilson, Curtis L. Weapon holster. 3,419,728, 12–31–68, Cl. 307—9.

Wilson, Herbert W. Concrete surface finishing apparatus. 3,418,902, 12–31–68, Cl. 94—45.

Winkleman, Joseph R. Putter head with magnetic weight adjusting means. 3,419,275, 12–31–68, Cl. 273—171.

Winkler, Alfred: *See*—
Wick, Richard, Biedermann, Winkler, Bestenreiner, Kiper, and Pawlik. 3,418,904.

Winn, Roger F. E., to Elliott Brothers (London) Ltd. Magnitude-to-frequency converters. 3,419,784, 12–31–68, Cl. 321—8.

Winter, Joseph: *See*—
Pryor, Michael J., and Winter. 3,419,364.

Winterstein, George M.: *See*—
Edwards, Eugene A., and Winterstein. 3,419,876.

Wirth, Wolf-Dieter: *See*—
Knupfer, Hans, Wirth, and Schellhammer. 3,419,563.

Wise, Irvin L., and L. M. Hall, to Vision Control, Inc. Distorting contact lens for animals. 3,418,978, 12–31–68, Cl. 119—97.

Witzel, Herbert, H. K. Maurer, and H.-G. Gassen, to Zellstoffabrik Waldhof A.G. Novel preparation of 1,2,3,5-tetra-acyl-β-D-ribofuranoses. 3,419,544, 12–31–68, Cl. 260—234.

Wochnowski, Waldemar, to Hanni-Werke Korber & Co. K.G. Method and apparatus for mixing additives with tobacco. 3,419,015, 12–31–68, Cl. 131—138.

Wolff, William R.: *See*—
Wagner, Wayne M., and Wolff. 3,419,892.

Wong, Sam H., to North American Rockwell Corp. Dual-plane frequency-scanned antenna array. 3,419,870, 12–31–68, Cl. 343—768.

Wood, Charles E. Sonic washer. 3,419,426, 12–31–68, Cl. 134—1.

Wood, Jack E.: *See*—
Bray, Ulric B., and Wood. 3,418,900.

Wood, John W., Jr. Acoustic control apparatus. 3,419,235, 12–31–68, Cl. 244—138.

Wood, Louis L., to W. R. Grace & Co. Preparation of ninhydrin. 3,419,616, 12–31–68, Cl. 260—590.

Woods, James F. Motor operated exercising device for the feet. 3,419,001, 12–31–68, Cl. 128—25.

Woods, Robert E. Interproximal wedging device. 3,418,716, 12–31–68, Cl. 32—64.

Worley, Kenneth S., to Telescopic Bolt Co. Joint including telescoping bolt assembly. 3,419,298, 12–31–68, Cl. 287—189.36.

Worthen, John H., to Federal Products Corp. Bore gage with shock absorbing motion transmitting means. 3,418,720, 12–31–68, Cl. 33—147.

Wotton, John, to British Aircraft Corp. (Operating) Ltd. Aircraft fuel supply arrangements. 3,419,233, 12–31–68, Cl. 244—135

Wright, Carl L., to Air Reduction Co. Inc. Composition resistor. 3,419,840, 12–31–68, Cl. 338—226.

Wright, Gerard C.: *See*—
Greco, Robert L., and Wright. 3,419,265.

Wright, Lyle A.: *See*—
Campbell, Mark R., and Wright. 3,419,218.

Wright, Ralph R., to United States of America, Atomic Energy Commission. Nickel-plating bath for thorium. 3,419,-419, 12–31–68, Cl. 117—130.

Wright, Robert J., to Research Laboratories of Australia Pty, Ltd. Method for the transfer of developed electrostatic images using a lattice forming substance. 3,419,411, 12–31–68, Cl. 117—37.

Wrightenberry, Jerry O., to General Electric Co. Treating agent dispenser for automatic washing machine. 3,419,192, 12–31–68, Cl. 222—166.

Wyandotte Chemicals Corp.: *See*—
Davis, Pauls, and Vogt. 3,419,621.
Jackson, Donald R. 3,419,532.
Lang, Robert M. 3,419,405.
Willett, Joseph T. 3,419,509.

Wyatt, Charles F. Spar for sailing craft and method of manufacturing same. 3,418,958, 12–31–68, Cl. 114—89.

Xerox Corp.: *See*—
Augostini, Peter P. 3,419,885.
Gardner, John F., Lustig, and Lux. 3,419,264.
Greco, Robert L., and Wright. 3,419,265.

Xylander, Melvin P., to International Business Machines Corp. Temperature compensated amplifier with amplitude discrimination. 3,419,810, 12–31–68, Cl. 330—23.

Yaklyvich, Frank. Fishing rod handle. 3,418,742, 12–31–68, Cl. 43—25.2.

Yale, Harry L.: *See*—
Bernstein, Jack, Yale, and Losee. 3,419,553.

Yamamoto, Mititaka, Y. Misuta, and S. Ano. Employee card sensing and recording device. 3,419,881, 12–31–68, Cl. 346—42.

Yamamoto, Tadamasa: *See*—
Takano, Yasumasa, Miura, and Yammoto. 3,419,880.

Yamanaka, Hisashi: *See*—
Oilawa, Mitsuru, Tanaka, Kawafune, Yoshida, and Yamanaka. 3,419,327.

Yasuda, Masuichi, A. Yokogawa, and H. Ito, to Hitachi Shipbuilding and Engineering Co., Ltd. Centrifugal machine with differential drive. 3,419,211, 12–31–68, Cl. 233—7.

Yasuhara, Ichiro, M. Nagano, and N. Sato, to Yutaka Seimitsu Kogyo, Ltd. Generating method of cutting gears and a device therefor. 3,418,81, 12–31–68, Cl. 90—2.

Yasunaga, Hidetoshi: *See*—
Ueda, Kenichi, Yasunaga, Komatsu, and Hirota. 3,419,-539.

Yokogawa, Akira: *See*—
Yasuda, Masuichi, Yokogawa, and Ito. 3,419,211.

Yokoi, Satoru, and K. Ohmura, to Tsubakimoto Chain Mfg. Co, Ltd. Automatic stop and feeder mechanism for trolley conveyors. 3,418,946, 12–31–68, Cl. 104—172.

Yonker, John F.: *See*—
Brewer, Lee M., Engelhardt, Rohde, and Yonker. 3,419,-208.

Yoshida, Keiji: *See*—
Oilawa, Mitsuru, Tanaka, Kawafune, Yoshida, and Yamanaka. 3,419,327.

Yoshida, Masaru, to Toyoda Automatic Loom Works, Ltd. Take-up roller mechanism in a weaving loom. 3,419,050, 12–31–68, Cl. 133—311.

Yoshizawa, Masayuki: *See*—
Matsuoka, Yoshitaka, Hidaka, Yoshizawa, and Hashimoto. 3,419,471.

Yost, Herman R., to Otis Elevator Co. Tension carriage for passenger conveyors. 3,419,127, 12–31–68, Cl. 198—16.

Young, David V., to Eastman Kodak Co. Silver halide color photography utilizing magenta-dye-forming couplers. 3,419,-391, 12–31–68, Cl. 96—56.5.

Young Spring & Wire Corp.: *See*—
Byczkowski, Ernest, and Tischler. 3,418,676.

Youngren, Glen R., Jr.: *See*—
Youngren, Glen R., Sr., and G. R. Youngren, Jr. 3,419,-022.

Youngren, Glen R., Sr., and G. R. Youngren, Jr., to Sudzy's Inc. Tire sidewall cleaning machine. 3,419,022, 12–31–68, Cl. 134—45.

Yutaka Seimitsu Kogyo, Ltd.: *See*—
Yasuhara, Ichiro, Nagano, and Sato. 3,418,881.

Zadron, Emil, and A. S. Kenmonth, to Jet-Clean Co. Method and apparatus for cleaning engine blocks and the like. 3,419,429, 12–31–68, Cl. 134—33.

Zaffaroni, Alejandro, and C. C. Campillo to Syntex Corp. 11-microbiological hydroxylation of steroids in presence of dimethylsulfoxide. 3,419,470, 12–31–68, Cl. 195—51.

Zagotta, Joseph L., to International Harvester Co. Low friction hydrostatic transaxle. 3,419,096, 12–31–68, Cl. 180—6.48.

Zalkind Sewing Machine & Supply Co., Inc.: *See*—
Svendsen, Noel A., Sawdo, and Varteresian. 3,418,954.

Zavod Elektrolzmeriteljnykh Priborov: *See*—
Umantsev, Victor S. 3,419,906.

Zavod Pressov: *See*—
Krugljachenko, Grigory N., Alexeev, Naiguz, Leibovich, Shmunis, and Brandenburgsky. 3,419,89.

Zehner, David W., to Westinghouse Electric Corp. System for removing a bad battery from charging circuit. 3,419,-779, 12–31–68, Cl. 320—6.

Zeile, Karl: *See*—
Becher, Heinz-Manfred, Sehring, and Zeile. 3,419,620.

Zeiss Ikon Aktiengesellschaft: *See*—
Borner, Gerhard. 3,419,326.

Zeitlin, Alexander, and F. G. Boggio, to Barogenics, Inc. Compact frame structures. 3,418,923, 12–31–68, Cl. 100—214.

Zellstofffabrik Waldhof A.G.: *See*—
Witzel, Herbert, Maurer, and Gassen. 3,419,544.

Zenith Radio Corp.: *See*—
Adler, Robert. 3,419,322.

Ziegenhain, William C.: *See*—
Acciarri, Jerry A., Ziegenhain, and Ziegler. 3,419,352.

Ziegler, Donald L.: *See*—
Acciarri, Jerry A., Ziegenhain, and Ziegler. 3,419,352.

Zine, Anthony R., Jr.: *See*—
Campbell, Donald R., Fallos, and Zine. 3,419,290.
Tomb, William H., Wesel, and Zine. 3,419,291.

Zipse, Erich, and H. Brendes, to Teldix Luftfahrt-Austrustungs G.m.b.H. Navigational system. 3,419,848, 12–31–68, Cl. 340—24.

Zirkle, Charles L.: *See*—
Kaiser, Carl, and Zirkle, 3,419,604.
Zirngibl, Hans, W. Gutsche, and W. Weidmann, to Farbenfabriken Bayer Aktiengesellschaft. Vapor phase process for the conversion of metal halides into their oxides, 3,419,351, 12–31–68, Cl. 23—140.
Zuern, Ludwig: *See*—
Mahling, Dieter, Mueller-Tamm, Seibt, Zuern, and Scharf, 3,419,518.
Zybert, Walter J.: *See*—
Pietrusza, Edward W., Zybert, and Pedersen, 3,419,636.

CLASSIFICATION OF PATENTS

ISSUED DECEMBER 31, 1968

NOTE.—First number, class; second number, subclass; third number, patent number

2– 6	3,418,657	32– 64	3,418,716	58– 63	3,418,800	75–168	3,419,385	104–130	3,418,944	128–346	3,419,008
14	3,418,658	33– 8	3,418,717	108	3,418,801	201	3,419,386	172	3,418,945	349	3,419,009
70	3,418,659	46	3,418,718	145	3,418,802	206	3,419,387		3,418,946	350	3,419,010
224	3,418,660	137	3,418,719	59– 35	3,418,803	208	3,419,388		3,418,947	484	3,419,895
3– 1.1	3,418,661	147	3,418,720	60– 24	3,418,804	81– 99	3,418,873		3,418,948	129– 23	3,419,011
	3,418,662	180	3,418,721	30	3,419,892	83–456	3,418,874		3,418,949	35	3,419,012
4–113	3,418,663	222	3,418,722	39.28:	3,418,805	694	3,418,875	106– 47	3,419,403	131– 15	3,419,013
115	3,418,664	34– 1	3,418,723	.51:	3,418,806	84– 1.17:	3,419,668	65	3,419,404	17	3,419,014
149	3,418,665	10	3,418,724	54.5	3,418,807	293	3,418,876	210	RE.26,510	138	3,419,015
154	3,418,666	33	3,418,725	226	3,418,808	414	3,418,877	211	3,419,405	225	3,419,016
172	3,418,667	99	3,418,726	232	3,418,809	89– 8	3,418,878	287	3,419,406	132– 7	3,419,017
185	3,418,668	155	3,418,727		3,418,810	33	3,418,879	311	3,419,407	40	3,419,018
286	3,418,669	35– 2	3,418,728	254	3,418,811	42	3,418,880	108–136	3,418,950	41	3,419,019
5– 81	3,418,670	22	3,418,729	61– .5	3,418,812	90– 2	3,418,881	109– 59	3,418,951	54	3,419,020
8– 32	3,419,340	24	3,418,730	1	3,418,813	13.05:	3,418,882	110– 8	RE.26,514	112	3,419,021
42	3,419,341	36– 30	3,418,731	45	3,418,814	15	3,418,883		3,418,952	134– 1	3,419,426
46	3,419,342	44	3,418,732	48	3,418,815	43	3,418,884	112–252	3,418,953	4	3,419,427
54.2	3,419,343	50	3,418,733		3,418,816	91–339	3,418,886		3,418,954	22	3,419,428
94.23:	3,419,344	37– 2	3,418,734	53.52:	3,418,817	380	3,418,885	256	3,418,955	33	3,419,429
137.5	3,419,345	129	3,418,735	69	3,418,818	392	3,418,887	113–116	3,418,956	45	3,419,022
9– 39	3,418,671	38– 77	3,418,736	62– 11	3,418,819	396	3,418,888	114– 66.5	3,418,957	101	3,419,023
13– 20	3,419,666	40– 67	3,418,737	12	3,418,820	93– 1	3,418,889	89	3,418,958	135– 2	3,419,024
23	3,419,667	130	3,418,738	52	3,418,821		3,418,890	124	3,418,959	5	3,419,025
15– 98	3,418,672	308	3,418,739	55	3,418,822	35	3,418,891	115– 1	3,418,960	20	3,419,026
118	3,418,673	313	3,418,740	138	3,418,823	52	3,418,892		3,418,961	136– 26	3,419,430
182	3,418,674	42– 77	3,418,741	474	3,418,824	53	3,418,893	116– 28	3,418,962		3,419,431
230	3,418,675	43– 25.2	3,418,742	483	3,418,825		3,418,894	67	3,418,963	83	3,419,432
250.04:	3,418,676	35	3,418,743	63– 13	3,418,826	93	3,418,895	114	3,418,964	86	3,419,900
.19:	3,418,677	42.09:	3,418,745	64– 11	3,418,827	94– 1.5	3,418,896	115.5	3,418,965	89	3,419,433
.23:	3,418,678	.5	3,418,744	32	3,418,828	7	3,418,897	124	3,418,966		3,419,434
.36:	3,418,679	44– 62	3,419,365	65–114	3,419,371	18	3,418,898	173	3,418,967	100	3,419,435
317	3,418,680	63	3,419,366	146	3,419,372	22	3,418,899	117– 10	3,419,408		3,419,436
16–115	3,418,681	66	3,419,367	160	3,419,374	23	3,418,900	18	3,419,409	120	3,419,437
145	3,418,682	70	3,419,368	180	3,419,373	39	3,418,901	25	3,419,410	230	3,419,438
	3,418,683	46– 13	3,418,746	181	3,419,375	45	3,418,902	37	3,419,411	137– 47	3,419,027
18– 2	3,418,684	21	3,418,747	192	3,419,376	95– 10	3,418,903	38	3,419,412	81.5	3,419,028
12	3,418,685	34	3,418,748	66– 70	3,418,829		3,418,904		3,419,413		3,419,029
	3,418,686	189	3,418,749	125	3,418,830	11	3,418,905	70	3,419,414	102	3,419,030
14	3,418,687	216	3,418,750	132	3,418,831		3,418,906	100	3,419,415		3,419,031
	3,418,688	243	3,418,751	68–183	3,418,832	39	3,418,907	106	3,419,416		3,419,032
16	3,418,689	47– 28	3,418,752	70– 24	3,419,893	45	3,418,908		3,419,417	107	3,419,033
17	3,419,889	48–196	3,419,369	421	3,418,833	53	3,418,909	111	3,419,418	172	3,419,034
19	3,418,690	49–308	3,418,753	71– 9	3,419,377	.3	3,418,910	130	3,419,419	174	3,419,035
20	3,418,691	407	3,418,754	34	3,419,378	89	3,418,911	138.8	3,419,420	218	3,419,036
30	3,418,692	501	3,418,755	60	3,419,379		3,418,912		3,419,421	351	3,419,037
	3,418,693	51– 14	3,418,756	88	3,419,380	94	3,418,913	155	3,419,422	504	3,419,038
	3,418,694	34	3,418,757	92	3,419,381	96– 3	3,419,389	161	3,419,423	510	3,419,039
45	3,418,695		3,418,758	128	3,419,382	55	3,419,390	201	3,419,424	515.7	3,419,040
19–105	3,418,696	37	3,418,759	72– 9	3,418,834	56.5	3,419,391	212	3,419,425	533.19:	3,419,041
	3,418,697	157	3,418,760	53	3,419,894	66.3	3,419,392	118– 8	3,418,968	613	3,419,042
21– 87	3,419,346	170	3,418,761	56	3,418,835		3,419,393	325	3,418,969	625.48:	3,419,043
23– 91	3,419,347	206.5	3,418,762	57	3,418,836	75	3,419,394	410	3,418,970	.69:	3,419,044
102	3,419,348	281	3,418,763	94	3,418,837	95	3,419,395	626	3,418,971	138– 44	3,419,045
107	3,419,349	365	3,418,764	239	3,418,838	108	3,419,396	637	3,418,972	153	3,419,046
111	3,419,350	52– 36	3,418,765	344	3,418,839	114	3,419,397	119– 3	3,418,973	175	3,419,047
140	3,419,351	83	3,418,766	73– 1	3,418,840	98– 2	3,418,914	18	3,418,974	139–162	3,419,049
143	3,419,352	127	3,418,767	19	3,418,841	40	3,418,915	20	3,418,975	188	3,419,048
203	3,419,353	167	3,418,768	36	3,418,842	99– 28	3,419,398	23	3,418,976	311	3,419,050
204	3,419,354	184	3,418,769	37	3,418,843	71	3,419,399	72.5	3,418,977	141– 69	3,419,051
209	3,419,355	187	3,418,770	45.1	3,418,844	171	3,419,400	97	3,418,978	102	3,419,052
.4	3,419,356	377	3,418,771	.5	3,418,845	176	3,419,401	122–367	3,418,979	145	3,419,053
216	3,419,357	397	3,418,772	52	3,418,846	199	3,419,402	123– 32	3,418,980	293	3,419,054
230	3,419,358	400	3,418,773	65	3,418,847	305	3,418,916	75	3,418,981	146–120	3,419,055
253	3,419,359	437	3,418,774	86	3,418,848	329	3,418,917	78	3,418,982	133	3,419,896
272.7	3,419,360	464	3,418,775	117	3,418,849	362	3,418,918	90	3,418,983	221.6	3,419,056
281	3,419,361	481	3,418,776	141	3,418,850	378	3,418,919		3,418,984	148– 3	3,419,439
288	3,419,362	520	3,418,777	178	3,418,851	386	3,418,920		3,418,985	6.15:	3,419,440
302	3,419,899		3,418,778	189	3,418,852	445	3,418,921	119	3,418,986	.3	3,419,441
24– 81	3,418,698	616	3,418,779	406	3,418,853	100–214	3,418,922	136	3,418,987	187	3,419,442
90.5	3,418,699	627	3,418,780	407	3,418,854		3,418,923	148	3,418,988	149– 1	3,419,443
201	3,418,700	699	3,418,781	432	3,418,855	101– 9	3,418,924		3,418,989	2	3,419,444
245	3,418,701	707	3,418,782	74– 1.5	3,418,856	23	3,418,925		3,418,990	19	3,419,445
26– 61	3,418,702	53– 22	3,418,783	10	3,418,857	35	3,418,926	179	3,418,991	151– 48	3,419,057
29–115	3,419,890	122	3,418,784	68	3,418,858	90	3,418,927	182	3,418,992	70	3,419,058
116	3,418,703	184	3,418,785	199	3,418,859	93	3,418,928	195	3,418,993	152–359	3,419,059
148.4	3,418,704	282	3,418,786		3,418,860	111	3,418,929		3,418,994		3,419,060
149.5	3,418,705	54– 24	3,418,787	216.5	3,418,861	114	3,418,930	124– 27	3,418,995	362	3,419,061
	3,418,706	55– 8	3,418,788	229	3,418,862	126	3,418,931	126–152	3,418,996	156– 3	3,419,446
157	3,418,707	156	3,418,792	230.17:	3,418,863	228	3,418,932	176	3,418,997	73	3,419,447
.1	3,418,708	219	3,418,789	232	3,418,864	274	3,418,933		3,418,998	94	3,419,448
182.1	3,419,363	501	3,418,794	410	3,418,865	328	3,418,934	128– 1	3,418,999	159	3,419,449
183.5	3,419,364	56– 6	3,418,790	477	3,418,866	348	3,418,935	2	3,419,000	161	3,419,451
589	3,418,709	21	RE.26,512	535	3,418,867	103– 25	3,418,936	25	3,419,001	328	3,419,452
609	3,418,710	25	3,418,795	547	3,418,868	39	3,418,937	85	3,419,002	330	3,419,450
613	3,418,711		3,418,796	569	3,418,869	46	3,418,938	145.8	RE.26,511	513	3,419,453
622	3,418,712	42	3,418,791	625	3,418,870	136	3,418,939	157	3,419,003	159– 47	3,419,062
30–272	3,418,713	295	3,418,793	763	3,418,871	152	3,418,940	208	3,419,004	160–199	3,419,063
32– 2	3,419,891	328	3,418,797	878	3,418,872	162	3,418,941	263	3,419,005	229	3,419,064
22	3,418,714	57– 34	3,418,798	75– .5	3,419,383	173	3,418,942	268	3,419,006	345	3,419,065
26	3,418,715	152	3,418,799	66	3,419,384	104– 44	3,418,943	272	3,419,007	161– 1	3,419,370

161 – 5 : 3,419,454	198 – 229 : 3,419,131	222 – 390 : 3,419,194
7 : 3,419,455	200 – 19 : 3,419,689	402.1 : 3,419,195
72 : 3,419,456	61.45: 3,419,690	465 : 3,419,196
102 : 3,419,457	.52: 3,419,691	485 : 3,419,197
121 : 3,419,458	82 : 3,419,692	541 : 3,419,198
134 : 3,419,459	83 : 3,419,693	223 – 37 : 3,419,199
162 : 3,419,460	3,419,694	38 : 3,419,200
184 : 3,419,461	84 : 3,419,695	225 – 93 : 3,419,201
198 : 3,419,462	159 : 3,419,696	226 – 25 : 3,419,202
231 : 3,419,463	181 : 3,419,697	97 : 3,419,203
3,419,464	201 – 4 : 3,419,474	124 : 3,419,204
162 – 168 : 3,419,465	202 – 143 : 3,419,475	227 – 152 : 3,419,205
204 : 3,419,466	203 – 52 : 3,419,476	229 – 66 : 3,419,206
164 – 154 : 3,419,066	67 : 3,419,477	230 – 58 : 3,419,207
165 – 47 : 3,419,067	70 : 3,419,478	157 : 3,419,208
89 : 3,419,068	204 – 1 : 3,419,479	232 – 1 : 3,419,209
158 : 3,419,069	10 : 3,419,901	233 – 7 : 3,419,210
166 – .6 : 3,419,071	15 : 3,419,480	3,419,211
5 : 3,419,070	51 : 3,419,481	235 – 60 : 3,419,212
33 : 3,419,072	62 : 3,419,482	3,419,213
3,419,073	79 : 3,419,483	61.11: 3,419,710
46 : 3,419,074	86 : 3,419,484	150.31: 3,419,711
3,419,075	140.5 : 3,419,485	197 : 3,419,712
53 : 3,419,076	162 : 3,419,486	236 – 78 : 3,419,214
55.8 : 3,419,077	164 : 3,419,487	237 – 28 : 3,419,215
138 : 3,419,078	181 : 3,419,488	239 – 20 : 3,419,216
206 : 3,419,079	312 : 3,419,489	58 : 3,419,217
207 : 3,419,080	323 : 3,419,490	265.37: 3,419,218
225 : 3,419,081	206 – 15.1 : 3,419,132	417.3 : 3,419,219
169 – 15 : 3,419,082	45.14: 3,419,133	591 : 3,419,220
26 : 3,419,083	47 : 3,419,134	656 : 3,419,221
171 – 58 : 3,419,084	3,419,258	681 : 3,419,222
172 – 40 : 3,419,085	56 : 3,419,135	240 – 1.2 : 3,419,713
523 : 3,419,086	63.2 : 3,419,136	9 : 3,419,714
173 – 12 : 3,419,087	3,419,137	41.55: 3,419,715
174 – 84 : 3,419,669	65 : 3,419,138	241 – 73 : 3,419,223
135 : 3,419,670	209 – 10 : 3,419,139	285 : 3,419,224
175 – 4.51: 3,419,088	12 : 3,419,140	242 – 47.12: 3,419,225
.57: 3,419,089	73 : 3,419,141	55.13: 3,419,226
7 : 3,419,090	108 : 3,419,142	72 : 3,419,227
67 : 3,419,091	481 : 3,419,143	75.43: 3,419,228
69 : 3,419,092	210 – 20 : 3,419,491	243 – 19 : 3,419,229
228 : 3,419,093	32 : 3,419,492	244 – 3.23: 3,419,230
325 : 3,419,094	44 : 3,419,493	110 : 3,419,231
176 – 19 : 3,419,467	78 : 3,419,144	119 : 3,419,232
69 : 3,419,468	84 : 3,419,145	135 : 3,419,233
178 – 3 : 3,419,671	138 : 3,419,146	137 : 3,419,234
5.4 : 3,419,672	152 : 3,419,147	138 : 3,419,235
3,419,673	213 : 3,419,148	151 : 3,419,236
6 : 3,419,674	262 : 3,419,149	248 – 54 : 3,419,237
.6 : 3,419,675	401 : 3,419,150	163 : 3,419,238
3,419,676	460 : 3,419,151	215 : 3,419,239
.8 : 3,419,677	512 : 3,419,152	350 : 3,419,240
23 : 3,419,678	525 : 3,419,153	361 : 3,419,241
53.1 : 3,419,679	211 – 7 : 3,419,154	3,419,242
69.5 : 3,419,680	90 : 3,419,155	394 : 3,419,243
3,419,681	212 – 49 : 3,419,156	249 – 79 : 3,419,244
179 – 1 : 3,419,682	55 : 3,419,157	250 – 43.5 : 3,419,716
18 : 3,419,683	214 – 1 : 3,419,158	49.5 : 3,419,717
99 : 3,419,684	3,419,159	3,419,718
3,419,685	.2 : 3,419,160	68 : 3,419,719
100.2 : 3,419,686	16.1 : 3,419,161	83 : 3,419,720
3,419,687	3,419,162	202 : 3,419,721
3,419,688	18 : 3,419,163	218 : 3,419,722
180 – 6 : 3,419,095	38 : 3,419,164	219 : 3,419,723
.48: 3,419,096	44 : 3,419,165	3,419,724
9.46: 3,419,097	82 : 3,419,166	222 : 3,419,725
25 : 3,419,098	83.28: 3,419,168	231 : 3,419,727
69 : 3,419,099	.3 : 3,419,167	237 : 3,419,726
73 : 3,419,100	506 : 3,419,169	251 – 10 : 3,419,245
3,419,101	767 : 3,419,170	205 : 3,419,246
3,419,102	768 : 3,419,171	214 : 3,419,247
79.2 : Re.26,513	215 – 32 : 3,419,172	309 : 3,419,248
3,419,103	219 – 10.47: 3,419,698	339 : 3,419,249
82 : 3,419,104	56 : 3,419,699	252 – 34.7 : 3,419,494
108 : 3,419,105	126 : 3,419,700	62 : 3,419,495
119 : 3,419,106	156 : 3,419,701	.57: 3,419,496
181 – 40 : 3,419,107	211 : 3,419,702	63 : 3,419,497
182 – 129 : 3,419,108	265 : 3,419,703	.7 : 3,419,498
214 : 3,419,109	268 : 3,419,704	70 : 3,419,499
184 – .1 : 3,419,110	270 : 3,419,705	89 : 3,419,500
188 – 1 : 3,419,111	384 : 3,419,706	91 : 3,419,902
67 : 3,419,112	391 : 3,419,707	137 : 3,419,501
96 : 3,419,113	501 : 3,419,708	180 : 3,419,502
97 : 3,419,114	553 : 3,419,709	441 : 3,419,503
192 – .02: 3,419,115	220 – 5 : 3,419,173	259 – 41 : 3,419,250
3 : 3,419,116	9 : 3,419,174	260 – 2 : 3,419,504
15 : 3,419,117	19 : 3,419,175	3,419,505
35 : 3,419,118	23.4 : 3,419,176	.5 : 3,419,506
48.3 : 3,419,119	24.3 : 3,419,177	8 : 3,419,507
53 : 3,419,120	36 : 3,419,178	18 : 3,419,508
3,419,121	38.5 : 3,419,179	3,419,509
58 : 3,419,122	46 : 3,419,180	3,419,510
195 – 28 : 3,419,469	54 : 3,419,181	22 : 3,419,511
51 : 3,419,470	73 : 3,419,182	29.7 : 3,419,512
66 : 3,419,471	77 : 3,419,183	31.8 : 3,419,513
68 : 3,419,472	97 : 3,419,184	33.4 : 3,419,514
104 : 3,419,473	221 – 176 : 3,419,185	.6 : 3,419,515
197 – 17 : 3,419,123	221 : 3,419,186	37 : 3,419,516
53 : 3,419,124	222 – 36 : 3,419,187	3,419,517
165 : 3,419,125	52 : 3,419,188	41 : 3,419,518
198 – 1 : 3,419,126	54 : 3,419,189	3,419,519
16 : 3,419,127	70 : 3,419,190	.5 : 3,419,520
31 : 3,419,128	93 : 3,419,191	3,419,521
33 : 3,419,129	166 : 3,419,192	45.75: 3,419,522
67 : 3,419,130	183 : 3,419,193	.85: 3,419,523

260 – 45.95: 3,419,524	260 – 668 : 3,419,630	310 – 46 : 3,419,740
47 : 3,419,525	3,419,631	312 – 257 : 3,419,319
49 : 3,419,526	679 : 3,419,632	352 : 3,419,320
57 : 3,419,527	683.15: 3,419,633	313 – 59 : 3,419,741
67 : 3,419,528	824 : 3,419,634	108 : 3,419,742
3,419,529	3,419,635	278 : 3,419,743
3,419,530	857 : 3,419,636	346 : 3,419,744
3,419,531	871 : 3,419,637	315 – 10 : 3,419,745
77.5 : 3,419,532	873 : 3,419,638	3,419,746
3,419,533	889 : 3,419,639	11 : 3,419,747
3,419,534	892 : 3,419,640	13 : 3,419,748
85.1 : 3,419,536	897 : 3,419,641	3,419,749
.5 : 3,419,537	952 : 3,419,642	18 : 3,419,750
88.1 : 3,419,535	973 : 3,419,643	27 : 3,419,751
91.1 : 3,419,538	261 – 40 : 3,419,251	35 : 3,419,752
94.3 : 3,419,539	79 : 3,419,252	194 : 3,419,753
143 : 3,419,540	96 : 3,419,253	227 : 3,419,754
162 : 3,419,541	263 – 6 : 3,419,255	317 – 13 : 3,419,755
195 : 3,419,542	26 : 3,419,254	16 : 3,419,756
234 : 3,419,543	47 : 3,419,256	36 : 3,419,757
3,419,544	264 – 3 : 3,419,644	123 : 3,419,904
239 : 3,419,545	29 : 3,419,645	230 : 3,419,758
3,419,546	32 : 3,419,646	3,419,759
.3 : 3,419,547	35 : 3,419,647	3,419,760
3,419,548	53 : 3,419,648	234 : 3,419,761
.5 : 3,419,549	71 : 3,419,649	3,419,762
.55: 3,419,550	146 : 3,419,650	3,419,763
240 : 3,419,551	160 : 3,419,651	3,419,764
243 : 3,419,552	168 : 3,419,652	3,419,765
3,419,553	204 : 3,419,653	235 : 3,419,766
3,419,554	210 : 3,419,654	3,419,767
247.2 : 3,419,555	332 : 3,419,656	242 : 3,419,768
249.6 : 3,419,556	266 – 23 : 3,419,257	244 : 3,419,769
250 : 3,419,557	267 – 1 : 3,419,259	258 : 3,419,770
256.4 : 3,419,558	47 : 3,419,260	318 – 6 : 3,419,771
268 : 3,419,559	270 – 69 : 3,419,261	18 : 3,419,772
3,419,560	271 – 3 : 3,419,262	3,419,773
286 : 3,419,561	26 : 3,419,263	3,419,774
3,419,562	68 : 3,419,264	3,419,775
288 : 3,419,563	86 : 3,419,265	118 : 3,419,776
294.3 : 3,419,564	3,419,266	165 : 3,419,905
.7 : 3,419,565	272 – 1 : 3,419,267	338 : 3,419,777
.8 : 3,419,566	57 : 3,419,268	341 : 3,419,778
3,419,567	74 : 3,419,269	320 – 6 : 3,419,779
.9 : 3,419,568	75 : 3,419,270	321 – 2 : 3,419,780
296 : 3,419,569	273 – 94 : 3,419,271	3,419,781
297 : 3,419,570	105.2 : 3,419,272	5 : 3,419,782
302 : 3,419,572	106.5 : 3,419,273	7 : 3,419,783
3,419,573	3,419,274	8 : 3,419,784
304 : 3,419,574	171 : 3,419,275	11 : 3,419,785
306.8 : 3,419,575	183 : 3,419,276	27 : 3,419,786
326 : 3,419,576	189 : 3,419,277	43 : 3,419,787
338 : 3,419,577	274 – 13 : 3,419,278	323 – 6 : 3,419,788
345.2 : 3,419,578	277 – 22 : 3,419,279	22 : 3,419,789
346.2 : 3,419,579	123 : 3,419,280	43.5 : 3,419,790
347.8 : 3,419,580	280 – 47.29: 3,419,281	44 : 3,419,791
377 : 3,419,581	63 : 3,419,282	105 : 3,419,792
397.3 : 3,419,582	278 : 3,419,283	324 – .5 : 3,419,793
.4 : 3,419,583	412 : 3,419,284	3,419,794
.6 : 3,419,584	446 : 3,419,285	3,419,795
3,419,585	282 – 11.5 : 3,419,286	30 : 3,419,796
405.6 : 3,419,586	283 – 7 : 3,419,287	40 : 3,419,797
414 : 3,419,587	285 – 58 : 3,419,288	45 : 3,419,798
425 : 3,419,588	178 : 3,419,289	57 : 3,419,799
429 : 3,419,589	223 : 3,419,290	61 : 3,419,800
431 : 3,419,590	233 : 3,419,291	3,419,801
440 : 3,419,591	287 – 52.07: 3,419,292	96 : 3,419,802
448.2 : 3,419,592	53 : 3,419,299	3,419,803
3,419,593	58 : 3,419,293	98 : 3,419,906
453 : 3,419,594	87 : 3,419,294	325 – 38 : 3,419,804
456 : 3,419,595	99 : 3,419,295	3,419,805
465 : 3,419,596	127 : 3,419,296	328 – 2 : 3,419,806
.3 : 3,419,597	189.36: 3,419,297	8 : 3,419,807
468 : 3,419,598	3,419,298	183 : 3,419,808
473 : 3,419,599	289 – 13 : 3,419,300	330 – 10 : 3,419,809
479 : 3,419,600	3,419,301	23 : 3,419,810
486 : 3,419,601	292 – 189 : 3,419,302	25 : 3,419,811
3,419,602	296 – 28 : 3,419,303	30 : 3,419,812
500.5 : 3,419,603	91 : 3,419,897	3,419,813
501.1 : 3,419,604	99 : 3,419,304	331 – 2 : 3,419,814
514 : 3,419,605	297 – 157 : 3,419,305	40 : 3,419,815
515 : 3,419,606	375 : 3,419,306	107 : 3,419,816
530 : 3,419,607	379 : 3,419,307	116 : 3,419,817
534 : 3,419,608	386 : 3,419,308	332 – 9 : 3,419,818
3,419,609	456 : 3,419,309	3,419,819
544 : 3,419,610	298 – 8 : 3,419,310	22 : 3,419,820
563 : 3,419,611	299 – 31 : 3,419,311	333 – 7 : 3,419,821
3,419,612	32 : 3,419,312	11 : 3,419,822
566 : 3,419,613	34 : 3,419,313	3,419,823
583 : 3,419,614	303 – 7 : 3,419,314	24 : 3,419,824
586 : 3,419,615	71 : 3,419,315	30 : 3,419,825
590 : 3,419,616	305 – 54 : 3,419,316	98 : 3,419,826
601 : 3,419,617	307 – 9 : 3,419,728	3,419,827
604 : 3,419,618	10 : 3,419,729	335 – 16 : 3,419,828
607 : 3,419,619	66 : 3,419,730	153 : 3,419,829
611 : 3,419,620	115 : 3,419,731	170 : 3,419,830
615 : 3,419,621	116 : 3,419,732	228 : 3,419,831
617 : 3,419,622	141 : 3,419,733	285 : 3,419,832
3,419,903	268 : 3,419,734	336 – 15 : 3,419,833
618 : 3,419,623	273 : 3,419,735	69 : 3,419,834
619 : 3,419,624	293 : 3,419,736	187 : 3,419,835
644 : 3,419,625	309 : 3,419,737	210 : 3,419,836
651 : 3,419,626	308 – 3.6 : 3,419,317	212 : 3,419,837
652 : 3,419,627	132 : 3,419,318	337 – 44 : 3,419,838
653.3 : 3,419,628	310 – 11 : 3,419,738	188 : 3,419,839
656 : 3,419,629	15 : 3,419,739	338 – 226 : 3,419,840

338 – 308 : 3,419,841	340 – 174 : 3,419,855	343 – 117 : 3,419,866
339 – 18 : 3,419,842	3,419,856	703 : 3,419,869
47 : 3,419,843	213.1 : 3,419,857	768 : 3,419,870
48 : 3,419,844	378 : 3,419,858	781 : 3,419,871
340 – 3 : 3,419,845	381 : 3,419,859	792 : 3,419,872
15.5 : 3,419,846	343 – 7 : 3,419,860	847 : 3,419,873
22 : 3,419,847	3,419,861	877 : 3,419,874
24 : 3,419,848	.7 : 3,419,862	895 : 3,419,875
172.5 : 3,419,849	8 : 3,419,863	901 : 3,419,876
3,419,850	3,419,864	346 – 7 : 3,419,877
3,419,851	112 : 3,419,865	14 : 3,419,878
3,419,852	113 : 3,419,867	33 : 3,419,879
3,419,853	3,419,868	3,419,880
174 : 3,419,854		

346 – 42 : 3,419,881	352 – 141 : 3,419,326	424 – 45 : 3,419,658
43 : 3,419,882	355 – 8 : 3,419,327	60 : 3,419,659
74 : 3,419,883	106 : 3,419,328	92 : 3,419,660
3,419,884	356 – 72 : 3,419,329	243 : 3,419,661
3,419,885	106 : 3,419,330	245 : 3,419,662
3,419,886	3,419,331	298 : 3,419,571
3,419,887	110 : 3,419,898	300 : 3,419,663
3,419,888	162 : 3,419,332	305 : 3,419,655
901 : 3,419,876	205 : 3,419,333	322 : 3,419,664
350 – 8 : 3,419,321	254 : 3,419,334	365 : 3,419,665
161 : 3,419,322	401 – 48 : 3,419,335	431 – 77 : 3,419,337
351 – 2 : 3,419,323	111 : 3,419,336	181 : 3,419,338
352 – 75 : 3,419,324	424 – 5 : 3,419,657	284 : 3,419,339
91 : 3,419,325		

Classification of Designs

D 1 – 2 : 213,034	D13 – 1 : 213,043	D29 – 17 : 213,052	D39 – 1 : 213,060	D50 – 7 : 213,068	D80 – 11 : 213,076
D 2 – 273 : 213,035	D14 – 3 : 213,044	D30 – 37 : 213,053	D40 – 1 : 213,061	D52 – 1 : 213,069	D83 – 1 : 213,077
342 : 213,036	213,045	D33 – 21 : 213,054	213,062	3 : 213,070	213,078
D 9 – 44 : 213,040	D23 – 34 : 213,046	D34 – 5 : 213,055	D48 – 20 : 213,063	D54 – 9 : 213,071	D87 – 1 : 213,079
92 : 213,037	213,047	213,056	32 : 213,064	D55 – 1 : 213,072	213,080
213,038	D25 – 1 : 213,048	213,057	D49 – 1 : 213,065	D61 – 1 : 213,073	3 : 213,081
100 : 213,039	D26 – 1 : 213,049	D35 – 2 : 213,058	19 : 213,066	D73 – 1 : 213,074	D90 – 1 : 213,082
130 : 213,041	14 : 213,050	D37 – 3 : 213,059	D50 – 7 : 213,067	D74 – 5 : 213,075	D92 – 1 : 213,083
D11 – 1 : 213,042	213,051				

Classification of Plants

P. – 5 : 2,854	P. – 14 : 2,853	P. – 19 : 2,855			

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

(NOTE.—CODES ARE CHANGED AS OF JANUARY 1, 1967)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,418,670
3,418,811
3,419,320
3,419,340
3,419,438
3,419,448
2 : 3,418,852
4 : 3,418,718
3,418,808
3,419,377
3,419,728
5 : 3,419,108
6 : 3,418,667
3,418,668
3,418,675
3,418,698
3,418,706
3,418,707
3,418,711
3,418,724
3,418,732
3,418,733
3,418,743
3,418,745
3,418,750
3,418,757
3,418,758
3,418,768
3,418,776
3,418,777
3,418,791
3,418,803
3,418,820
3,418,824
3,418,836
3,418,837
3,418,847
3,418,853
3,418,857
3,418,875
3,418,876
3,418,882
3,418,884
3,418,895
3,418,900
3,418,911
3,418,914
3,418,915
3,418,916
3,418,919

6 : 3,418,921
3,418,924
3,418,937
3,418,978
3,418,980
3,418,981
3,418,988
3,419,000
3,419,032
3,419,033
3,419,036
3,419,039
3,419,042
3,419,046
3,419,056
3,419,063
3,419,072
3,419,086
3,419,090
3,419,099
3,419,112
3,419,134
3,419,142
3,419,145
3,419,147
3,419,164
3,419,167
3,419,175
3,419,182
3,419,184
3,419,196
3,419,202
3,419,218
3,419,230
3,419,242
3,419,248
3,419,266
3,419,274
3,419,279
3,419,288
3,419,293
3,419,308
3,419,324
3,419,384
3,419,429
3,419,435
3,419,436
3,419,470
3,419,531
3,419,537

6 : 3,419,602
3,419,628
3,419,646
3,419,648
3,419,666
3,419,672
3,419,676
3,419,678
3,419,709
3,419,711
3,419,712
3,419,718
3,419,729
3,419,739
3,419,760
3,419,763
3,419,787
3,419,794
3,419,796
3,419,814
3,419,815
3,419,818
3,419,844
3,419,855
3,419,859
3,419,861
3,419,870
3,419,873
3,419,875
3,419,882
3,419,883
3,419,884
3,419,904
8 : 3,418,789
3,419,095
3,419,298
9 : Re.2[illegible],514
3,418,715
3,418,730
3,418,845
3,418,869
3,418,992
3,419,008
3,419,014
3,419,065
3,419,089
3,419,107
3,419,151
3,419,191
3,419,249

9 : 3,419,364
3,419,387
3,419,639
3,419,698
3,419,703
3,419,788
3,419,809
3,419,828
3,419,893
10 : 3,418,686
3,419,024
3,419,069
3,419,342
3,419,345
3,419,450
3,419,452
3,419,462
3,419,536
3,419,594
3,419,598
3,419,610
3,419,611
3,419,658
3,419,735
11 : 3,419,616
3,419,827
12 : 3,418,666
3,418,699
3,418,740
3,418,797
3,418,832
3,418,961
3,419,010
3,419,023
3,419,141
3,419,178
3,419,179
3,419,197
3,419,205
3,419,234
3,419,261
3,419,426
3,419,895
13 : 3,418,783
3,418,790
3,419,836
3,419,867
3,419,868
15 : 3,419,865
16 : 3,419,897

17 : Re.26,512
Re.26,513
3,418,682
3,418,683
3,418,690
3,418,728
3,418,735
3,418,746
3,418,749
3,418,795
3,418,802
3,418,812
3,418,826
3,418,833
3,418,835
3,418,842
3,418,843
3,418,846
3,418,848
3,418,849
3,418,872
3,418,893
3,418,894
3,418,899
3,418,930
3,418,932
3,418,955
3,418,963
3,418,964
3,418,966
3,418,967
3,418,976
3,419,009
3,419,022
3,419,051
3,419,084
3,419,085
3,419,096
3,419,119
3,419,130
3,419,170
3,419,174
3,419,181
3,419,183
3,419,221
3,419,237
3,419,247
3,419,273
3,419,278
3,419,305

17 : 3,419,322
3,419,332
3,419,336
3,419,353
3,419,360
3,419,378
3,419,394
3,419,398
3,419,400
3,419,401
3,419,418
3,419,432
3,419,444
3,419,453
3,419,492
3,419,494
3,419,502
3,419,549
3,419,568
3,419,586
3,419,643
3,419,670
3,419,671
3,419,674
3,419,680
3,419,684
3,419,695
3,419,696
3,419,734
3,419,749
3,419,816
3,419,887
3,419,902
18 : 3,418,863
3,419,103
3,419,337
3,419,379
3,419,383
3,419,407
3,419,447
3,419,520
3,419,552
3,419,782
3,419,790
3,419,807
3,419,830
19 : 3,418,687
3,418,719
3,418,929
3,419,067

19 : 3,419,338
20 : 3,418,734
3,419,001
3,419,143
3,419,258
3,419,282
3,419,574
3,419,710
21 : 3,418,660
3,418,752
3,418,933
3,419,177
3,419,190
3,419,192
3,419,368
3,419,427
3,419,428
3,419,476
3,419,733
22 : 3,418,793
3,419,040
3,419,483
3,419,690
3,419,896
23 : 3,419,146
3,419,176
24 : 3,418,756
3,418,761
3,418,778
3,418,792
3,418,909
3,418,965
3,419,144
3,419,157
3,419,217
3,419,317
3,419,318
3,419,333
3,419,433
3,419,434
3,419,585
3,419,779
3,419,808
3,419,812
3,419,821
25 : Re.26,511
3,418,657
3,418,658
3,418,684
3,418,708
3,418,713
3,418,739
3,418,759
3,418,854
3,418,864
3,418,879
3,418,898
3,418,903
3,418,905
3,418,907
3,418,908
3,418,912
3,418,952
3,418,954
3,418,962
3,419,005
3,419,082
3,419,132
3,419,223
3,419,235
3,419,286
3,419,344
3,419,356
3,419,389
3,419,410
3,419,423
3,419,430
3,419,431
3,419,479
3,419,487
3,419,600
3,419,697
3,419,720
3,419,721
3,419,730
3,419,799
3,419,811
3,419,871
26 : 3,418,676
3,418,677
3,418,738
3,418,742
3,418,744
3,418,760
3,418,765
3,418,770
3,418,775
3,418,779
3,418,807
3,418,813
3,418,817
3,418,828
3,418,840
3,418,861
3,418,862
3,418,868

26 : 3,418,871
3,418,947
3,418,982
3,418,991
3,419,034
3,419,037
3,419,057
3,419,101
3,419,102
3,419,104
3,419,105
3,419,115
3,419,122
3,419,129
3,419,155
3,419,172
3,419,208
3,419,260
3,419,297
3,419,306
3,419,319
3,419,347
3,419,385
3,419,388
3,419,405
3,419,439
3,419,484
3,419,501
3,419,507
3,419,509
3,419,516
3,419,532
3,419,576
3,419,584
3,419,589
3,419,593
3,419,609
3,419,621
3,419,623
3,419,686
3,419,708
3,419,715
3,419,755
3,419,834
3,419,866
3,419,888
27 : 3,418,787
3,419,171
3,419,224
3,419,284
3,419,307
3,419,361
3,419,404
3,419,510
3,419,525
3,419,595
3,419,669
3,419,798
3,419,892
28 : 3,418,990
3,419,241
3,419,403
29 : 3,418,716
3,418,736
3,418,771
3,418,886
3,418,943
3,419,315
3,419,499
3,419,513
3,419,517
3,419,661
3,419,742
3,419,872
31 : 3,418,663
3,419,019
3,419,323
3,419,660
32 : 3,419,140
33 : 3,419,188
34 : Re.26,510
3,418,659
3,418,671
3,418,685
3,418,704
3,418,712
3,418,729
3,418,785
3,418,891
3,418,995
3,419,017
3,419,018
3,419,028
3,419,038
3,419,053
3,419,127
3,419,128
3,419,137
3,419,158
3,419,238
3,419,246
3,419,252
3,419,254
3,419,262
3,419,287
3,419,350

34 : 3,419,417
3,419,489
3,419,500
3,419,504
3,419,506
3,419,524
3,419,545
3,419,553
3,419,554
3,419,560
3,419,565
3,419,571
3,419,572
3,419,573
3,419,579
3,419,581
3,419,590
3,419,597
3,419,599
3,419,603
3,419,604
3,419,615
3,419,624
3,419,636
3,419,647
3,419,683
3,419,687
3,419,689
3,419,692
3,419,704
3,419,737
3,419,741
3,419,746
3,419,751
3,419,791
3,419,800
3,419,813
3,419,820
3,419,823
3,419,824
3,419,825
3,419,826
3,419,847
3,419,851
3,419,894
35 : 3,419,021
3,419,485
3,419,656
3,419,854
36 : 3,418,678
3,418,692
3,418,700
3,418,701
3,418,705
3,418,755
3,418,762
3,418,822
3,418,834
3,418,888
3,418,922
3,418,923
3,418,942
3,418,950
3,418,970
3,419,002
3,419,003
3,419,004
3,419,006
3,419,013
3,419,083
3,419,087
3,419,114
3,419,118
3,419,133
3,419,135
3,419,154
3,419,159
3,419,186
3,419,200
3,419,209
3,419,216
3,419,229
3,419,240
3,419,264
3,419,265
3,419,268
3,419,269
3,419,270
3,419,272
3,419,276
3,419,281
3,419,290
3,419,291
3,419,295
3,419,299
3,419,304
3,419,309
3,419,330
3,419,331
3,419,334
3,419,346
3,419,354
3,419,358
3,419,362
3,419,367
3,419,370

36 : 3,419,380
3,419,390
3,419,391
3,419,397
3,419,399
3,419,406
3,419,415
3,419,420
3,419,422
3,419,425
3,419,455
3,419,456
3,419,458
3,419,468
3,419,478
3,419,508
3,419,523
3,419,558
3,419,566
3,419,592
3,419,605
3,419,629
3,419,634
3,419,635
3,419,659
3,419,663
3,419,673
3,419,679
3,419,688
3,419,719
3,419,747
3,419,753
3,419,756
3,419,761
3,419,771
3,419,776
3,419,777
3,419,789
3,419,801
3,419,806
3,419,810
3,419,817
3,419,822
3,419,831
3,419,840
3,419,858
3,419,879
3,419,885
3,419,899
3,419,900
3,419,903
3,419,831
3,418,968
3,419,025
3,419,343
3,419,413
3,419,460
3,419,463
3,419,464
3,419,514
3,419,543
3,419,705
3,419,680
3,418,695
3,418,703
3,418,726
3,418,727
3,418,747
3,418,748
3,418,769
3,418,772
3,418,773
3,418,780
3,418,781
3,418,794
3,418,805
3,418,839
3,418,892
3,418,897
3,418,913
3,418,935
3,418,951
3,418,956
3,418,971
3,419,043
3,419,044
3,419,047
3,419,052
3,419,059
3,419,109
3,419,111
3,419,117
3,419,125
3,419,149
3,419,165
3,419,187
3,419,194
3,419,201
3,419,215
3,419,236
3,419,251
3,419,253
3,419,263
3,419,271
3,419,275

39 : 3,419,311
3,419,316
3,419,321
3,419,328
3,419,363
3,419,371
3,419,373
3,419,375
3,419,376
3,419,386
3,419,412
3,419,481
3,419,515
3,419,626
3,419,651
3,419,724
3,419,725
3,419,740
3,419,773
3,419,792
3,419,860
3,419,869
3,419,876
40 : 3,418,669
3,418,818
3,418,825
3,418,936
3,418,938
3,419,041
3,419,070
3,419,180
3,419,255
3,419,352
3,419,365
3,419,369
3,419,591
3,419,614
3,419,617
3,419,625
3,419,627
3,419,633
3,419,853
41 : 3,418,721
3,419,113
42 : 3,418,674
3,418,681
3,418,694
3,418,710
3,418,717
3,418,764
3,418,786
3,418,796
3,418,806
3,418,855
3,418,887
3,418,889
3,418,896
3,418,934
3,418,977
3,418,987
3,419,026
3,419,055
3,419,058
3,419,091
3,419,153
3,419,166
3,419,213
3,419,214
3,419,220
3,419,231
3,419,239
3,419,250
3,419,256
3,419,296
3,419,300
3,419,301
3,419,302
3,419,303
3,419,339
3,419,366
3,419,372
3,419,409
3,419,446
3,419,449
3,419,461
3,419,469
3,419,475
3,419,477
3,419,480
3,419,491
3,419,495
3,419,497
3,419,498
3,419,503
3,419,511
3,419,562
3,419,606
3,419,631
3,419,637
3,419,641
3,419,650
3,419,655
3,419,677
3,419,707
3,419,713
3,419,743

42 : 3,419,744
3,419,750
3,419,757
3,419,772
3,419,775
3,419,783
3,419,786
3,419,835
3,419,838
3,419,843
3,419,849
3,419,852
3,419,856
3,419,891
3,419,901
44 : 3,418,702
3,418,720
3,418,989
3,419,199
3,419,245
45 : 3,418,665
3,418,697
3,418,753
3,418,766
3,419,049
3,419,277
3,419,421
46 : 3,419,169
3,419,285
47 : 3,418,754
3,418,798
3,418,953
3,418,969
3,419,168
3,419,359
3,419,408
3,419,419
3,419,638
3,419,898
48 : 3,418,664
3,418,878
3,418,883
3,418,902
3,418,944
3,418,945
3,418,974
3,419,045
3,419,071
3,419,073
3,419,074
3,419,075
3,419,076
3,419,077
3,419,078
3,419,079
3,419,080
3,419,081
3,419,088
3,419,092
3,419,093
3,419,094
3,419,228
3,419,259
3,419,280
3,419,382
3,419,472
3,419,505
3,419,529
3,419,694
3,419,765
3,419,780
3,419,837
3,419,857
3,419,874
49 : 3,418,737
3,419,150
3,419,355
3,419,441
50 : 3,419,185
3,419,722
3,419,905
51 : 3,418,774
3,418,920
3,419,098
3,419,329
3,419,335
3,419,445
3,419,493
3,419,555
3,419,559
3,419,561
3,419,785
3,419,842
53 : 3,418,901
3,419,029
3,419,414
3,419,416
3,419,443
3,419,653
3,419,691
3,419,797
54 : 3,418,940
3,419,522
3,419,580
3,419,601
3,419,612

54 : 3,419,622	55 : 3,418,925	55 : 3,419,020	55 : 3,419,156	55 : 3,419,459	55 : 3,419,793
3,419,642	3,418,999	3,419,035	3,419,203	3,419,685	3,419,795
3,419,714	3,419,011	3,419,131	3,419,402	3,419,726	3,419,890
55 : 3,418,672	3,419,012	3,419,136			

Design Patents

6 : 213,049	17 : 213,055	26 : 213,040	34 : 213,052	36 : 213,053	36 : 213,083
213,054	213,056	213,044	213,068	213,064	39 : 213,037
213,057	213,059	213,051	213,082	213,070	213,038
213,067	213,061	27 : 213,043	35 : 213,075	213,071	213,039
213,072	213,073	213,060	36 : 213,036	213,077	213,047
213,076	19 : 213,066	213,062	213,041	213,078	47 : 213,035
8 : 213,045	24 : 213,065	34 : 213,046	213,042	213,081	49 : 213,050
213,058	26 : 213,034	213,048			

Plant Patents

6 : 2,853	6 : 2,855	34 : 2,854			

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 31, 1968 Volume 857 Number 5

TRADEMARKS

NOTICES

United States Adopted Names

LIST NO. 21

July 1, 1968 to October 31, 1968

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeial Convention) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (USAN) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the United States Pharmacopeia, or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Secretary, United States Adopted Names Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill., 60610.

alamecin : antbiotic
alexidine : antimicrobial
algestone acetophenide : progestogen
aranotin : antiviral
azaserine : fungicide
bendazac : anti-inflammatory
benzetimide hydrochloride : antiparkinson
besylate : benzenesulfonate radical
betamethasone sodium phosphate : glucocorticoid
bisobrin lactate : fibrinolytic
bromhexine hydrochloride : expectorant ; mucolytic
carpolene : suspending and emulsifying agent
citenamide : anticonvulsant
clindamycin : antiparasitic
clodazon hydrochloride : antidepressant
clonidine hydrochloride : antihypertensive
clorazepate dipotassium : tranquilizer
clozapine : sedative
cyproquinate : coccidiostat
difiumidone sodium : anti-inflammatory
difluprednate : anti-inflammatory
fantridone hydrochloride : antidepressant
fetoxylate hydrochloride : antidiarrheal
flunidazole : antiprotozoal
fluocinolide acetate : glucocorticoid
fospirate : veterinary anthelmintic
glyburide : oral hypoglycemic
hoquizil hydrochloride : bronchodilator
ipronidazole : histomonacide
levodopa : antiparkinson
mesuprine hydrochloride : vasodilator ; uterine relaxant
metformin : oral hypoglycemic
metolazone : diuretic

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1968

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] ---------- 16,378
Date of oldest new application ---------- September 11, 1967
Date of oldest amended application (filing date) ---------- January 5, 1965

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	3-12-68	10- 6-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	2- 1-68	7-26-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	2-28-68	10-20-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-11-67	1-5 -65
Renewals (All Classes)	9-23-68	----------
Sec. 12(c) Publications (All Classes)	10- 4-68	----------

Applications filed during the month of October 1968—2,732

Registrations Issued ---------- 402—No. 862,559 to No. 862,960
Renewals Issued ---------- 100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

midaflur: ataractic
nalbuphine hydrochloride: analgesic; narcotic antagonist
naranol hydrochloride: tranquilizer
nequinate: veterinary coccidiostat
niridazole: schistosomicide
nisobamate: tranquilizer; sedative; hypnotic
oxilapine: tranquilizer
pentazocine hydrochloride: analgesic
pentazocine lactate: analgesic
piquizil hydrochloride: bronchodilator
polacrilin potassium: pharmaceutical aid (tablet disintegrant)
pyrantel pamoate: anthelmintic
sulfamoxole: antibacterial sulfonamide
sulpiride: digestive aid; psychotropic
tebutate: tertiary butyl acetate radical
tinidazole: antiprotozoal
trifumidate: anti-inflammatory

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 127,438 (LAST WORD), The L. S. Starrett Company, Machinists' and toolmakers' test-indicators, **filed** July 17, 1968, D.C., E.D. Mich. (Detroit), Doc. 31508, *The L. S. Starrett Company* v. *Elvcay P. Gray, doing business as Last Word Sales Company.*

Reg. No. 369,889. (See Reg. No. 572,477.)

Reg. No. 506,387 (DORMEYER), Dormeyer Corporation, Electric food mixers, juicers, and choppers; **Reg. No. 657,044**, same, Electrical utensils and hand-held portable electric tools, **filed** July 3, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1239, *Dynamics Corporation of America and Dormeyer Corporation* v. *A. F. Dormeyer Corporation et al.*

Reg. No. 545,409 (PRECISION BRAND), Precision Steel Warehouse, Inc., Music wire, tempered spring steel and flat wire; **Reg. No. 594,669**, same, Blue tempered spring steel, black oiled tempered spring steel and flat wire; **Reg. No. 610,561** (NOKORODE), The M. W. Dunton Company, Solder wire containing a core of soldering flux; **Reg. No. 642,489** (PSW, ETC. AND DESIGN), Precision Steel Warehouse, Inc., Cold rolled annealed spring steel, cold rolled annealed high carbon flat wire, hard rolled high carbon spring steel strip, blue tempered spring steel, black oiled tempered scaleless spring steel, spring steel feeler gauge stock, tool steel sheets, spring steel music wire, stainless steel strip, cold rolled strip steel, cold rolled steel sheets, shim steel, tin coated steel in coils and cut lengths, low carbon cold rolled steel flat wire, beryllium copper strips in coils and cut lengths, brass strips in coils and cut lengths, nickel silver strips in coils and cut lengths, Phosphor bronze strips in coils and cut lengths, steel arbor spacers and shims, brass shim stock, steel shim stock, ground flat stock, thickness gauge stock and drill rods; **Reg. No. 655,989** (PRECISION BRAND), same, Beryllium copper strips in coils and cut lengths and nickel silver strips in coils and cut lengths; **Reg. No. 836,580** (PSW PRECISION BRAND AND DESIGN), same, Electrolytic tin-coated steel in coil form and also in the form of flat lengths, electro-galvanized steel in coil form and also in the form of flat lengths, hot-dipped galvanized steel in cold form and also flat lengths, hot-dipped long terne steel in coil form and also in the form of flat lengths, hot-dipped tin-coated cold rolled steel in coil form and also in the form of flat lengths, heat-treatable and non-heat-treatable coiled aluminum sheets, heat-treatable and non-heat-treatable flat aluminum sheets, special temper spring steel strip in the form of coils and also in the form of flat lengths, stainless tempered and polished spring steel strip in the form of coils and also in the form of flat lengths, electrolytic tin plate, double reduced tin plate, double reduced black plate 17–7PH stainless steel strip in the form of coils and also in the form of flat lengths, 4130 alloy strip in the form of coils and also in the form of flat lengths, steel rods with rolled threads, steel rods and cut threads, and dowel pins; **Reg. No. 841,503** (PRECISION BRAND ETC. AND DESIGN), same, Cold rolled shim steel, cold rolled strip steel, cold rolled annealed spring steel, feeler gauge stock, steel shims, and brass shims, **filed** July 17, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1323, *Precision Steel Warehouse, Inc.* v. *Arwood Grasser, doing busines as Precision Metal Slitting Company.*

Reg. No. 572,477 (DOUBLE COLA), Seminole Flavor Company, Cola variety of carbonated non-alcoholic, non-cereal maltless beverages sold as soft drinks, and flavoring therefor; **Reg. No. 671,904** (DOUBLE MEASURE-DOUBLE PLEASURE), same, Carbonated soft drinks and flavoring therefor; **Reg. No. 369,889** (THE DOUBLE LINE), same, carbonated, nonalcoholic, noncereal, maltless beverages sold as soft drinks, and syrups for compounding the same; **Reg. No. 686,012** (DOUBLE-CHERRY), same, Cherry-flavored syrups and concentrates used in the manufacture of carbonated soft drink beverages; **Reg. No. 685,237** (DOUBLE-PEACH), same, Peach-flavored syrups and concentrates used in the manufacture of carbonated soft drink beverages; **Reg. No. 580,419** (DOUBLE-GRAPE), same, Grape-flavored carbonated nonalcoholic, non-cereal, maltless beverages sold as soft drinks, and flavoring therefor; **Reg. No. 580,418** ("DOUBLE ORANGE"), same, Orange-flavored, carbonated, non-alcoholic, non-cereal, maltless beverages sold as soft drinks, and flavoring therefor; **Reg. No. 589,377** (DOUBLE DRY), same, Carbonated nonalcoholic, noncereal maltless beverages sold as soft drinks, and syrups and extracts used in making the same; **Reg. No. 583,052** (DOUBLE LEMON), same, Lemon flavored carbonated non-alcoholic, non-cereal maltless beverages sold as soft drinks, and flavoring therefor; **Reg. No. 688,060** (DOUBLE-ROOT BEER), same, Root beer flavor used in the manufacture of carbonated soft drink beverages; **Reg. No. 688,059** (DOUBLE-STRAWBERRY), same, Strawberry-flavored syrups and concentrates used in the manufacture of carbonated soft drink beverages; **Reg. No. 701,059** (DOUBLE CREAM SODA), same, Cream soda-flavored syrups and concentrates used in the manufacture of carbonated soft drink beverages, **filed** July 16, 1968, D.C. Nebr. (Omaha), Doc. C–03095, *Fairmont Foods Company* v. *The Coca-Cola Company.*

Reg. No. 579,679 (MEDCOLATOR), Medco Products Co., Inc., Electrical treatment machine for the stimulation of muscles by an electric current applied through pad electrodes; **Reg. No. 733,146** (MEDCO-SONLATOR), same, Combined electrical and ultrasonic medical therapy apparatus; **Reg. No. 793,449** (MEDCO), same, Electrical equipment in the medical field for diagnostic and therapeutic purposes for use in connection with the body, and for a water soluble coupling lotion for use in connection with the electrical equipment, **filed** Oct. 28, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1972, *Medco Products Company, Inc.* v. *Medco Hospital Supply Corp., John M. Mills and Leonard T. Fript.* Judgment, Medco Hospital Supply Corp., its officers, agents, servants, employees, attorneys, and all persons in active concert or participation with them, John M. Mills and Leonard T. Fript or any of them be enjoined from using the designation "Medco" or any corporate name, including the word feature "Medco," in whole or in part, or any trademark using the word feature "Medco," in whole or in part, and any other designation which by colorable imitation or otherwise is likely to be mistaken for or confused with the plaintiff's name "Medco Products Co., Inc." or any of the plaintiff's marks including "Medco," "Medcolator," "Medco-Sonlator," "Medco-Therm," and "Medco-Marcontrol"; defendants are ordered to deliver up to the plaintiff for destruction all documents and things containing reproductions, counterfeits, copies or colorable imitations of the designation "Medco" as hereinabove referred to. The defendants are directed to file with the Court within thirty (30) days a report setting forth in detail the manner and form in which the defendants complied with the injunction, July 18, 1968.

Reg. No. 580,418. (See Reg. No. 572,477.)
Reg. No. 580,419. (See Reg. No. 572,477.)
Reg. No. 583,052. (See Reg. No. 572,477.)
Reg. No. 589,377. (See Reg. No. 572,477.)
Reg. No. 594,669. (See Reg. No. 545,409.)
Reg. No. 610,561. (See Reg. No. 545,409.)

Reg. No. 624,399 (BLAZON), Blazon, Inc., Play gymnasium apparatus and plastic play pools, **filed** Aug. 10, 1966, D.C., N.D. Ind. (Hammond), Doc. 3875, *Blazon, Inc.* v. *Blazon Mobile Homes Corporation.* Plaintiff's motion for protective order granted; defendant's motion for summary judgment granted; plaintiff's motions for partial summary judgment and preliminary injunction denied, May 17, 1968.

Reg. No. 642,489. (See Reg. No. 545,409.)
Reg. No. 655,989. (See Reg. No. 545,409.)
Reg. No. 657,044. (See Reg. No. 506,387.)

Reg. No. 671,904. (See Reg. No. 572,477.)
Reg. No. 685,237. (See Reg. No. 572,477.)
Reg. No. 686,012. (See Reg. No. 572,477.)
Reg. No. 688,059. (See Reg. No. 572,477.)
Reg. No. 688,060. (See Reg. No. 572,477.)
Reg. No. 701,059. (See Reg. No. 572,477.)
Reg. No. 733,146. (See Reg. No. 579,679.)
Reg. No. 793,449. (See Reg. No. 579,679.)
Reg. No. 836,580. (See Reg. No. 545,409.)
Reg. No. 841,503. (See Reg. No. 545,409.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 234,587. Toho Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Dec. 14, 1965.

EMLIE

Priority claimed under Sec. 44(d) on Japanese applications filed June 18, 1965, Reg. Nos. 715,688; 727,597; 728,593; 736,192 and 749,099; dated Aug. 8, 1966; Dec. 20, 1966; Jan. 6, 1967; Mar. 16, 1967 and July 27, 1967, respectively.

Class 1—Raw or Partly Prepared Materials

For Natural and Synthetic Fibers (Int. Cl. 22).

Class 39—Clothing

For Suits, Coats, Including Topcoats, Raincoats, and Overcoats, Shirts, Slacks, Gloves, Skirts, Wrapping Cloths Used for Wrapping Around the Body in the Manner of a Dressing Gown, and Handkerchiefs (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Bedding Covers, Quilts, Comforters, Pillow Covers, Sheets, Curtains, Carpets, Wrapping Cloths Used for Wrapping and Carrying Loose Articles, and Knited, Netted, and Textile Fabrics Used in the Manufacture of the Aforementioned Items (Int. Cls. 24 and 27).

Class 43—Thread and Yarn

For Yarns and Threads Made of High Wet Modulus Fibers (Int. Cl. 23).

SN 251,743. Thurman A. Pelsue, d.b.a. T. A. Pelsue Company, Denver, Colo. Filed Aug. 4, 1966.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Self-Contained Combination Generator, Water Pump and Air Compressor Units and Wheel Chocks Therefor (Int. Cl. 7).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Dehydrators, Portable Blowers With Blower Hose and Containers Therefor, and Air Conditioners (Int. Cl. 11).

Class 50—Merchandise Not Otherwise Classified

For Manhole Shields, Manhole Tent Frames and Tents Mountable on Said Shields (Int. Cls. 6 and 22).

First use Feb. 1, 1964.

SN 263,982. American Bus Association, Inc., Cleveland, Ohio. Filed Feb. 6, 1967.



Owner of Reg. No. 661,164.

Class 5—Adhesives

For Adhesives for Securing and Sealing Vehicle Accessories (Int. Cl. 1).

Class 12—Construction Materials

For Sealers (Int. Cl. 17).

Class 19—Vehicles

For Flooring, Step Treads, Door Edges, Upholstery, Mud Flaps, Stanchions and Fittings, Plastic Windows and Window Sash for Vehicles (Int. Cl. 12).

First use Dec. 20, 1966.

SN 264,447. Ross-Matthai Corporation, Baltimore, Md. Filed Feb. 10, 1967.

PLACE MATCH

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Placemats, Napkins and Tablecloths of Textile Fabrics (Int. Cl. 24).

Class 50—Merchandise Not Otherwise Classified

For Table Placemats, Napkins and Tablecloths of Plastic Material (Int. Cl. 27).

First use Jan. 9, 1967.

SN 264,752. Modern Manufacturing Company, Inc., Menasha, Wis. Filed Feb. 15, 1967.

FLORōVEL

Class 2—Receptacles

For Plastic Bags for Cut and Potted Flowers (Int. Cl. 22).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Baggers for Applying Protective Plastic Bags to Cut and Potted Flowers (Int. Cl. 7).

First use Oct. 22, 1965.

SN 275,343. Nasco Industries, Fort Atkinson, Wis. Filed July 5, 1967.

NASCO

Class 2—Receptacles

For Milk Sampling Jars, Metal Pails, and Bins for Use on Farms (Int. Cls. 6 and 20).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tree Shapers, Shears, Scissors, Pruners, Hand Sprayers, Power Sprayers, Balers for Farm Crops, and Hand-Held and Walk-Behind Planters; and Kitchen Food Mixers, Butcher Knives, Paring Knives, Can Openers, and Flatware of Non-Precious Metal, for Use as Home Economics Training Aids (Int. Cls. 7 and 8).

Class 26—Measuring and Scientific Appliances

For Scientific, Mathematical, Biological and Home Economics Teaching Aids; Microscopes and Projectors (Int. Cl. 9).

First use November 1945.
Subj. to Intf. with SN 274,824.

SN 279,577. Superior Continental Corporation, Hickory, N.C., by change of name from Superior Cable Corporation, Hickory, N.C. Filed Sept. 1, 1967.

COMM/SCOPE

Class 100—Miscellaneous

For Engineering Services and Consultation Services in Conjunction With the Construction, Maintenance, and Repair of Community Antenna Television and Communications Systems for Others (Int. Cl. 42).

Class 103—Construction and Repair

For Construction, Maintenance and Repair of Community Antenna Television Communications Systems for Others (Int. Cl. 37).

First use April 1967.

SN 279,578. Superior Continental Corporation, Hickory, N.C., by change of name from Superior Cable Corporation, Hickory, N.C. Filed Sept. 1, 1967.



Class 100—Miscellaneous

For Engineering Services and Consultation Services in Conjunction With the Construction, Maintenance, and Repair of Community Antenna Television and Communications Systems for Others (Int. Cl. 42).

Class 103—Construction and Repair

For Construction, Maintenance and Repair of Community Antenna Television Communications Systems for Others (Int. Cl. 37).

First use April 1967.

SN 283,643. The J. E. Doyle Company, Cleveland, Ohio. Filed Oct. 30, 1967.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Vacuum Sheet and Board Cleaners for Cleaning Continuous and Cut Sheets of Paper, Board, and Other Sheet Stock Handled in Printing Presses, Papers and Board Making Machinery and Like Equipment, and Replacement Parts Therefor (Int. Cl. 7).

First use Oct. 10, 1967.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Infra-Red Driers for Drying the Imprint on Surfaces Especially Sheets Handled in Printing Presses and Like Equipment, and Replacement Parts Therefor (Int. Cl. 11).

First use Oct. 18, 1967.

SN 283,840. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Nov. 1, 1967.

DISGUSTING DISGUISES

The word "Disguises" is disclaimed apart from the mark as shown, without disclaiming any common law rights in the mark as a whole.

Class 22—Games, Toys, and Sporting Goods

For Children's Toys—Namely, Masks and Stickers (Int. Cl. 28).

Class 46—Foods and Ingredients of Foods

For Chewing Gum —Namely, Bubble Gum (Int. Cl. 30).

First use Oct. 2, 1967.

SN 285,009. Fly-Wheel Corporation, d.b.a. Schiefer Manufacturing Co., Monterey Park, Calif. Filed Nov. 16, 1967.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cap Screw Sets (Int. Cl. 6).
First use Apr. 8, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Vehicle Parts—Namely, Flywheels, Clutch Assemblies and Parts Thereof, Pressure Plate Assemblies, Dual-Drive Conversion Kits and Clutch Disks (Int. Cl. 12).
First use May 1960.

SN 285,010. Fly-Wheel Corporation, d.b.a. Schiefer Manufacturing Co., Monterey Park, Calif. Filed Nov. 16, 1967.

SCHIEFER

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cap Screw Sets (Int. Cl. 6).
First use Apr. 8, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Vehicle Parts—Namely, Flywheels, Clutch Assemblies and Parts Thereof, Pressure Plate Assemblies, Dual-Drive Conversion Kits and Clutch Disks (Int. Cl. 12).
First use May 1947.

SN 289,150. The Belmas Company, Inc., Houston, Tex. Filed Jan. 19, 1968.

BELMAS

The stippling which appears on the drawing is for background shading purposes only.

Class 2—Receptacles

For Pressure Vessels Used in Various Processes by the Petroleum Refining, Petrochemical and Chemical Industry (Int. Cl. 6).

Class 103—Construction and Repair

For Custom Fabrication of Welded Products Including Towers, Columns, Drums, Reactors and Related Industrial Equipment (Int. Cl. 37).

First use Mar. 20, 1952.

SN 290,752. J. A. Richards Company, Kalamazoo, Mich. Filed Feb. 9, 1968.

Metlfoam

Class 14—Metals and Metal Castings and Forgings

For Metal Knife Stock (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Steel Rule Dies Made From Metal Knife Stock (Int. Cl. 7).

First use Sept. 15, 1962.

SN 292,450. Nippon Gakki Co., Ltd., Hamamatsu, Shizuoka Prefecture, Japan. Filed Mar. 5, 1968.

YAMAHA

The Japanese word "Yamaha" means "mountain leaves." Owner of Japanese Reg. No. 447,348, dated July 7, 1954.

Class 19—Vehicles

For Motorboats and Parts Therof (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Outboard Engines (Int. Cl. 7).

SN 293,658. Textron Inc., Providence, R.I. Filed Mar. 20, 1968.

BRITISH STERLING

No claim is made to the word "British" apart from the mark as shown. Owner of Reg. Nos. 804,836 and 805,745.

Class 51—Cosmetics and Toilet Preparations

For Men's Toiletries—Namely, Cologne, After-Shave Lotion, Shaving Cream, Talcum Powder, Spray Hair Groom and Personal Deodorant (Int. Cls. 3 and 5).
First use Sept. 30, 1965.

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).
First use Apr. 28, 1967.

SN 298,770. C. Cretors & Co., d.b.a. Cretors Co., Chicago, Ill. Filed May 22, 1968.



Class 34—Heating, Lighting, and Ventilating Apparatus

For Commercial Popcorn Machines (Int. Cl. 11).

Class 46—Foods and Ingredients of Foods

For Popcorn (Int. Cl. 30).

First use in or before 1893.
Subj. to Int'. with SN 270,823.

SN 300,032. The Gillette Company, Boston, Mass. Filed June 10, 1968.

IL LEONE

"Il Leone" can mean "the lion" in Italian.

Class 51—Cosmetics and Toilet Preparations

For After Shave Lotion, Hand Lotion, Body Lotion, Deodorant for Personal Use, Facial Bronzer, and Shaving Cream (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Feb. 16, 1968.

SN 300,502. Joe Optican Jewelry Co., Inc., St. Joseph, Mo. Filed June 17, 1968.

Optican's

Class 27—Horological Instruments

For Watches (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Finger Rings (Int. Cl. 14).

First use on or about Oct. 25, 1957.

SN 301,571. Avon Products, Inc., New York, N.Y. Filed June 28, 1968.

MOPPET

Class 51—Cosmetics and Toilet Preparations

For Cologne, Talcum Powder, Bubble Bath, Lip Pomade, Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use June 10, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 291,643. Serex Inc., Twisburg, Ohio. Filed Feb. 21, 1968.

SEREX

For Plastic Foams for Use in Insulation, Flotation, Structural, and Other Applications (Int. Cl. 17).
First use in or about July 1962.

SN 291,893. Palmetto Plastics, Inc., Jenkinsville, S.C. Filed Feb. 26, 1968.

NYLENE

For Nylon Resin and Polymers (Int. Cl. 1).
First use on or before Feb. 16, 1968.

SN 291,905. Shell Oil Company, New York, N.Y. Filed Feb. 26, 1968.

PARTHON

For Polymer Suitable for Molding or Forming Furniture Component Parts (Int. Cl. 1).
First use at least as early as Jan. 26, 1968.

SN 292,186. Antonio Conterno, d.b.a. R. T. A. Resine Termoplastiche Applicate S.A.S. Dott. A. Conterno & C., Vigano S. Martino (Bergamo), Italy. Filed Feb. 29, 1968.

MACROCELL

Owner of Italian Reg. No. 178,034, dated Nov. 3, 1965.
For Cellulose Acetate Resins (Int. Cl. 1).

SN 306,434. General Clay Products Corp., Columbus, Ohio. Filed Sept. 3, 1968.

Decra Chips

No claim is made to the word "Chips" apart from the mark as shown.
For Colored Ceramic Chips Used for Landscaping and Inhibiting the Growth of Weeds Around Shrubbery, Flower Beds, Garden Pathways and Similar Areas (Int. Cl. 19).
First use Aug. 13, 1968.

SN 306,435. General Electric Company, Schenectady, N.Y. Filed Sept. 3, 1968.

GENERAL ELECTRIC

Owner of Reg. Nos. 366,727, 824,265, and others.
For Synthetic Plastics in the Form of Powder, Liquid, Rods, Sheets, Tubing and Extruded Sections for General Use in the Industrial Arts; Synthetic Resins; Synthetic Rubber and Silicone Gum in the Form of Raw Materials; Moulding Compounds; Manufactured Diamonds; Fused Quartz in Various Shapes Such as Discs, Ingots, Rods and Tubes for General Use in the Industrial Arts (Int. Cls. 1, 14, and 17).
First use at least as early as 1932.

Class 2—Receptacles

SN 281,895. Inland Steel Company, Chicago, Ill. Filed Oct. 5, 1967.



The drawing is lined for the color green, but color is not claimed as an integral part of the mark.
For Steel Shipping Containers, Particularly Barrels, Drums and Pails (Int. Cl. 6).
First use June 23, 1967.

SN 283,103. Containers Incorporated, Madison, Wis. Filed Oct. 23, 1967.



For Containers, i.e., Metal Cans (Int. Cl. 6).
First use at least as early as August 1966.

SN 290,564. Abbott & Hast Mortuary Accommodation Company, Los Angeles, Calif. Filed Feb. 8, 1968.

CASKET AIRTRAY

The word "Casket" is disclaimed apart from the mark as shown.
For Shipping Cases for the Shipment of Casketed Remains by Airplane Which Consist of a Wooden Supporting Structure, a Plastic Bag, a Rectangular Cardboard Sleeve, a Rectangular Cardboard Cover and Lock Grip Straps (Int. Cl. 20).
First use Jan. 19, 1968.

SN 290,918. West Virginia Pulp and Paper Company, New York, N.Y. Filed Feb. 12, 1968.

COTE-A-COR 600

For Coated Corrugated Paperboard as a Component of Cartons (Int. Cl. 16).
First use Oct. 24, 1967.

SN 299,380. Republic Molding Corporation, Chicago, Ill. Filed May 29, 1968.

TEAR, TOTE & TOSS

For Plastic Garbage Receptacles and Utility Bins Having Removable and Replaceable Plastic Liners (Int. Cl. 21).
First use November 1967.

SN 304,865. Mercantile Stores Company, Inc., New York, N.Y. Filed Aug. 12, 1968.

MERVILLE

Owner of Reg. Nos. 524,796 and 542,284.
For Dampening Bags, Sweater Bags, Knitwear Bags, Blanket Bags, Dress Bags and Suit Bags (Int. Cl. 21).
First use on or about Mar. 11, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 273,916. Weselen Enterprises, La Porte, Ind. Filed June 14, 1967.

WESELEN

For Bird Cage Embrace and Seed Stopper (Int. Cl. 21).
First use May 12, 1967.

Class 5 — Adhesives

SN 272,866. Standard Packaging Corporation, Stamford, Conn. Filed June 1, 1967.



Owner of Reg. Nos. 595,308, 604,047, and others.
For Glue Sold in Dispensers and Tape Sold in Dispensers (Int. Cl. 16).
First use at least as early as Apr. 12, 1967; Sept. 17, 1953, as to "Stanpak."

SN 291,410. Lumbermens Merchandising Corporation, Wayne, Pa. Filed Feb. 19, 1968.

ELMCO

For Glue (Int. Cl. 16).
First use October 1935.

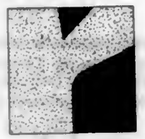
Class 6 — Chemicals and Chemical Compositions

SN 271,377. The Lubrizol Corporation, Cleveland, Ohio. Filed May 12, 1967.

AUTO BOND

Owner of Reg. Nos. 634,719, 809,802, and 834,593.
For Phosphating Solutions for Treatment of Metal Surfaces (Int. Cl. 1).
First use Apr. 12, 1967.

SN 283,564. Radiant Color Company, Richmond, Calif. Filed Oct. 27, 1967.



The stippling shown in the drawing is not actually part of the mark, but is used to indicate shading only.
For Pigments for Use as Coloring Materials in the Production of Fluorescent Color (Int. Cl. 2).
First use about Aug. 14, 1967.

SN 291,958. Bio-Lab, Inc., Decatur, Ga. Filed Feb. 27, 1968.

BURN-OUT

For Bactericide, Disinfectant and Oxidizing Agent for Swimming Pools (Int. Cl. 5).
First use Oct. 23, 1967.

SN 307,068. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Sept. 11, 1968.

CONSIDER

For Bathroom Deodorant (Int. Cl. 5).
First use Aug. 2, 1968.

SN 307,910. Baron Blakeslee, Inc., Chicago, Ill. Filed Sept. 23, 1968.

MINI-BULK

For Solvents (Int. Cl. 1).
First use on or about Aug. 22, 1968.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 299,589. Clyde R. Rockwood, Columbus, Ohio. Filed June 3, 1968.

SAFE-T-SHELL

For Plugs for Use in Firearms (Int. Cl. 13).
First use Apr. 16, 1968.

Class 10 — Fertilizers

SN 301,742. Georesources, Inc., Denver, Colo. Filed July 1, 1968.

HUMEX

For Soil Amendment (Int. Cl. 1).
First use Apr. 13, 1967.

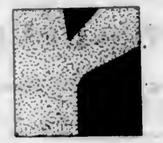
SN 302,435. Monsanto Company, St. Louis, Mo. Filed July 10, 1968.

FPA

For Fertilizer (Int. Cl. 1).
First use Apr. 24, 1967.

Class 11 — Inks and Inking Materials

SN 283,565. Radiant Color Company, Richmond, Calif. Filed Oct. 27, 1967.



The stippling shown in the drawing is not actually part of the mark, but is used to indicate shading only.
For Fluorescent Inks—Namely, Silk Screen, Letter-Press and Rotogravure Fluorescent, Phosphorescent or Luminous Inks (Int. Cls. 2 and 16).
First use about Aug. 14, 1967.

SN 285,160. Toka Shikiso Chemical Industry Co., Ltd., Itabashi-ku, Tokyo, Japan. Filed Nov. 17, 1967.



No claim is made to the exclusive use of the configuration of the ink roller apart from the mark as a whole. Owner of Japanese Reg. No. 441,561, dated Mar. 6, 1954.
For Printing, Duplicating, and Rubber Stamp Inks (Int. Cls. 2 and 16).
First use March 1954; in commerce March 1967.

Class 12 — Construction Materials

SN 267,283. James A. Fries, Jr., Swainsboro, Ga. Filed Mar. 9, 1967.



The words "They're Portable" and "The Economical Building With Hundreds of Uses" are disclaimed apart from the mark as shown. The lining as shown is part of the mark and does not represent color.
For Portable Buildings—Namely, Work Shops, Business Offices, Vacation Cottages, Children's Playhouses, Home Storage Houses, and Contractors' Job Site Shacks (Int. Cl. 19).
First use Mar. 3, 1966.

SN 282,780. Dole Refrigerating Company, Chicago, Ill. Filed Oct. 18, 1967.

THE VIROQUA DOOR

No claim of exclusive right is made to "Door" for the goods recited.
For Insulated Doors Usable With Trucks, Coolers, and Freezers (Int. Cl. 19).
First use on or about Sept. 1, 1960.

SN 300,603. Masonite Corporation, Chicago, Ill. Filed June 17, 1968.

MATCH STIX

For Color Coordinated Caulking Compound for Repairing Nail Holes, Mars, and Scratches on Prefinished Paneling (Int. Cl. 19).
First use Apr. 29, 1968.

SN 301,022. American Metal Climax, Inc., New York, N.Y. Filed June 21, 1968.

SHADOWFORM

For Aluminum Building Facings (Int. Cl. 6).
First use Feb. 23, 1968.

SN 301,953. Niles Expanded Metals Company, Niles, Ohio. Filed July 3, 1968.

UNITREAD

For Gratings of Expanded Metal (Int. Cl. 6).
First use Jan. 1, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 263,471. Mass Action Sales Systems, Inc., Dallas, Tex. Filed Jan. 27, 1967.



For Stainless Steel Pots and Pans (Int. Cl. 21).
First use Aug. 1, 1966.

SN 277,235. Woodford Manufacturing Co., Des Moines, Iowa. Filed July 31, 1967.

IOWA

Owner of Reg. No. 432,931.
For Hydrants (Int. Cl. 11).
First use Nov. 1, 1911.

SN 283,579. Schwaiger Corporation, Cullman, Ala. Filed Oct. 27, 1967.



Applicant disclaims the words "Triple Lock Nut" apart from the mark as shown.
For Locknuts (Int. Cl. 6).
First use June 19, 1967.

SN 286,218. Vaco Products Company, Chicago, Ill. Filed Dec. 4, 1967.

POW'RIVET

For Blind Rivets (Int. Cl. 6).
First use Oct. 9, 1967.

SN 287,228. Mirra-Cote Company, Inc., El Segundo, Calif. Filed Dec. 19, 1967.

MC

For Bathroom Accessories—Namely, Holders, Hooks, Racks, Display Boards, and Cabinet Hardware (Int. Cl. 21).
First use July 17, 1967.

SN 299,332. Joseph Dyson & Sons, Inc., Eastlake, Ohio. Filed May 29, 1968.

D-LOC

For Lock Nuts and Parts Therefor (Int. Cl. 6).
First use in or about March 1968.

SN 299,748. American Standard Inc., New York, N.Y. Filed June 5, 1968.

STAN-SURE

For Bathtubs (Int. Cl. 11).
First use on or about Oct. 7, 1965.

SN 299,796. Sealed Unit Parts Co., Inc., Bronx, N.Y. Filed June 5, 1968.

INSTA-FLOW

For Tap Valve for Fluid Carrying Pipe (Int. Cl. 6).
First use Jan. 28, 1968.

SN 299,988. Leslie Welding Company, Inc., Franklin Park, Ill. Filed June 7, 1968.

HIDE-N-HOLD

For Fasteners (Int. Cl. 6).
First use Mar. 26, 1968.

Class 15 — Oils and Greases

SN 297,320. The Standard Oil Company, Cleveland, Ohio. Filed May 3, 1968.

BEARING GARD

For Lubricating Grease (Int. Cl. 4).
First use Apr. 10, 1968.

SN 298,722. Georgia-Carolina Oil Company, Macon, Ga. Filed May 21, 1968.

ROYAL FLUSH

For Fuel Oil Additive for Internal Combustion Engines and Heating Plants (Int. Cl. 1).
First use Mar. 6, 1968.

Class 16 — Protective and Decorative Coatings

SN 279,261. Alpha Metals, Inc., Jersey City, N.J. Filed Aug. 29, 1967.

PROTECTOCOAT

For Rosin Base Protective Coating Used for the Preservation of Solderable Metallic Surfaces (Int. Cl. 2).
First use Apr. 29, 1964.

Class 17 — Tobacco Products

SN 277,385. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed Aug. 2, 1967.

SANTOS-DUMONT

Owner of Swiss Reg. No. 190,230, dated Jan. 25, 1962.
For Cigarettes (Int. Cl. 34).

Class 18 — Medicines and Pharmaceutical Preparations

SN 217,547. Kimbell Milling Company, Fort Worth, Tex. Filed Apr. 28, 1965.

KEY-MIN

For Animal Feed Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use May 1960.

SN 224,202. Kali-Chemie Aktiengesellschaft, Hannover, Germany. Filed July 26, 1965.

KALI-CHEMIE

The English translation of "Chemie" is "chemistry." Owner of German Reg. No. 846,855, dated Oct. 19, 1964.
For Medicines and Pharmaceutical Preparations (Int. Cl. 5).

SN 270,806. Paige Proprietary Limited, Richmond, Victoria, Australia. Filed May 5, 1967.

STOP'N GROW

Priority claimed under Sec. 44(d) on Australian Reg. No. 207,749, dated Jan. 31, 1967.
For Nail Biting Deterrent Preparations (Int. Cl. 5).

SN 276,688. Psor-Ban Laboratories, Inc., Newark, Ohio. Filed July 24, 1967.

PSOR-BAN

For Preparation for the Relief of Psoriasis (Int. Cl. 5).
First use May 30, 1960.

SN 277,416. Abbott Laboratories, North Chicago, Ill. Filed Aug. 3, 1967.

MACROSCAN

For Radioactive Pharmaceutical To Be Given Internally for Lung Scanning Purposes (Int. Cl. 5).
First use Nov. 22, 1966.

SN 282,887. Cole Pharmacal Company, Inc., d.b.a. Cole Chemical Co. and/or Cole Chemical Company, St. Louis, Mo. Filed Oct. 19, 1967.

SPASNIL

For Antispasmodic Preparation (Int. Cl. 5).
First use at least as early as December 1955.

SN 287,307. Meyer Laboratories Inc., Detroit, Mich. Filed Dec. 20, 1967.

FERROBID

For Pharmaceutical Compound Containing Ferrous Fumarate, Which Is Used for the Prevention and Treatment of Iron Deficiency and Iron Deficiency Anemias (Int. Cl. 5).
First use Dec. 4, 1967.

SN 288,081. Broemmel Pharmaceuticals, San Francisco, Calif. Filed Jan. 4, 1968.

OP-SULFA

Owner of Reg. Nos. 628,132, 681,053, and others.
For Ophthalmic Solution (Int. Cl. 5).
First use July 1966.

SN 288,289. Drugs for Veterinary Medicine, Inc., Yonkers, N.Y. Filed Jan. 8, 1968.

PEVIDINE

For Antiseptic Germicide for Animals (Int. Cl. 5).
First use Aug. 24, 1967.

SN 289,244. Mead Johnson & Company, Evansville, Ind. Filed Jan. 22, 1968.

OPTIGEN

Owner of Reg. Nos. 397,676, 830,280, and others.
For Special Dietary Product of Specific Amino Acid Composition for the Treatment of Metabolic Disorders (Int. Cl. 5).
First use on or prior to Dec. 28, 1967.

SN 289,968. Chemagro Corporation, Kansas City, Mo. Filed Jan. 31, 1968.

BAYMIX

For Animal Feed Additive (Int. Cl. 5).
First use Jan. 17, 1964.

SN 290,831. Ali Y. Debeh, d.b.a. Fourche Valley Laboratory, Plainview, Ark. Filed Feb. 12, 1968.

SAFARA

For Laxative (Int. Cl. 5).
First use Feb. 3, 1964.

SN 292,943. The Macbick Company, Wilmington, Mass. Filed Mar. 11, 1968.

BARACOAT

For Barium Compound and Enema Bag Package Containing Such Compound (Int. Cl. 5).
First use Jan. 25, 1968.

SN 293,502. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

REGROLINE

Owner of Reg. No. 748,677.
For Diuretic and Anti-Hypertensive Preparation (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,504. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

HYGROZINE

Owner of Reg. Nos. 437,263, 568,240, and 728,465.
For Diuretic and Anti-Hypertensive Preparation (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,505. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

AXIAMBRIN

Owner of Reg. No. 795,483.
For Anti-Rheumatic Preparation (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,507. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

NORMUDE

For Anti-Depressant Preparation (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,508. Geigy Chemical Corporation, Ardsley, N.Y. Filed Mar. 18, 1968.

PANCORAN

Owner of Reg. No. 805,473.
For Cardiovascular Preparation (Int. Cl. 5).
First use Mar. 5, 1968.

SN 293,588. Schering Corporation, Bloomfield, N.J. Filed Mar. 18, 1968.

Coricidin
MEDILETS

Owner of Reg. Nos. 533,777, 540,029, and 794,357.
For Antihistaminic-Analgesic Preparation (Int. Cl. 5).
First use Aug. 15, 1966.

SN 294,584. Bristol-Myers Company, New York, N.Y. Filed Apr. 1, 1968.

PATH FINDER

For Analgesic Tablets (Int. Cl. 5).
First use Mar. 6, 1968.

SN 296,396. Bristol-Myers Company, New York, N.Y. Filed Apr. 24, 1968.

SENSE

For Oral Antiseptic Mouthwash (Int. Cl. 5).
First use Mar. 4, 1968.

SN 297,240. American Home Products Corporation, New York, N.Y. Filed May 3, 1968.

THE COLD HIDER

Applicant makes no exclusive claim to "Cold" apart from the mark as shown.
For Decongestant Tablets (Int. Cl. 5).
First use Apr. 15, 1968.

SN 298,780. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed May 22, 1968.

REBOUND

For Aspirin (Int. Cl. 5).
First use May 20, 1968.

SN 306,538. Salvador Lopez, d.b.a. Philpharma, Hato Rey, Puerto Rico. Filed Sept. 4, 1968.

PRAMOX

For Drug Product Containing Progesterone and Estradiol Benzoate for Hormone Deficiencies (Int. Cl. 5).
First use January 1967.

SN 306,737. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Sept. 6, 1968.

LITHANE

For Psychotherapeutic Preparation (Int. Cl. 5).
First use Aug. 21, 1968.

Class 19—Vehicles

SN 287,296. Husky Trailer Manufacturing Company, Houston, Tex. Filed Dec. 20, 1967.

Husky

For Livestock Trailers, Horse Trailers, Tractor and Implement Trailers, and Utility Trailers (Int. Cl. 12).
First use Feb. 15, 1964.

SN 288,145. J. H. Weir Truck Body Manufacturing Company, Omaha, Nebr. Filed Jan. 4, 1968.

WEIR TRUCK BODY

The term "Truck Body" is disclaimed apart from the mark as a whole.
For Truck Bodies (Int. Cl. 12).
First use June 1, 1961.

SN 290,515. North American Rockwell Corporation, Pittsburgh, Pa. Filed Feb. 7, 1968.

COMMANDER

Owner of Reg. Nos. 588,526, 834,266, and others.
For Aviation Equipment—Namely, Aircraft and Parts Thereof (Int. Cl. 12).
First use Dec. 1, 1944.

SN 291,773. Remin Laboratories, Inc., Joliet, Ill. Filed Feb. 23, 1968.

KART-A-BAG

For Hand Cart for Transporting a Suitcase (Int. Cl. 12).
First use on or before Dec. 6, 1967.

SN 302,684. Mako Marine, Inc., Hialeah, Fla. Filed July 15, 1968.

MAKO

For Wind Propelled and Hand Propelled Pleasure Boats (Int. Cl. 12).
First use Apr. 15, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 261,890. Tasker Instruments Corporation, Van Nuys, Calif. Filed Jan. 3, 1967.

TASKER

For Electronic Alpha Numeric Display Device; Radar Systems and Components Thereof—Namely, Radar Displays, Tracking Circuits, Antennas, Transmitter/Receivers, and Pedestals (Int. Cl. 9).
First use January 1957.

SN 283,848. Appleton Electric Company, Chicago, Ill. Filed Nov. 1, 1967.

STCN

For Connectors for Flexible Electric Wiring Conduit (Int. Cl. 9).
First use Apr. 28, 1967.

SN 289,025. Lustrum, Inc., Reading, Pa. Filed Jan. 17, 1968.

ARCEE

Applicant disclaims the representation of the light bulb, apart from the mark as shown.
For Incandescent Lamps or Bulbs (Int. Cl. 11).
First use June 9, 1967.

SN 289,109. McGraw-Edison Company, Elgin, Ill. Filed Jan. 18, 1968.

HOSPITALITY

For Electric Toasters and Coffee Urns (Int. Cl. 11).
First use June 28, 1933.

SN 289,824. Motorola, Inc., Franklin Park, Ill. Filed Jan. 29, 1968.

ESCORT

For Television Receivers (Int. Cl. 9).
First use Dec. 22, 1966.

SN 289,926. Simplex Wire and Cable Company, Cambridge, Mass. Filed Jan. 30, 1968.

HIWRAP

For Polytetrafluoroethylene Fused and Unfused Tape for Use as Insulation on Electric Wire and Electrical Equipment (Int. Cl. 17).
First use Nov. 13, 1967.
Subj. to Intf. with SN 293,292.

SN 289,928. Simplex Wire and Cable Company, Cambridge, Mass. Filed Jan. 30, 1968.

TEMPREX

For Electric Hook-Up Wire Insulated With Extruded Polytetrafluoroethylene (Int. Cl. 9).
First use Nov. 13, 1967.

SN 289,930. Simplex Wire and Cable Company, Cambridge, Mass. Filed Jan. 30, 1968.

TEMPRENE

For Electric Hook-Up Wire Insulated With Tape Wrapped Polytetrafluoroethylene (Int. Cl. 9).
First use Nov. 8, 1967.

SN 290,444. Communication Control Corporation, d.b.a. Communications Development Corporation, Malibu, Calif. Filed Feb. 7, 1968.

ASTRO-COM

For Wireless Electronic Communication Devices—Namely, Wrist-Carried Transmitters (Int. Cl. 9).
First use at least as early as March 1967.
Subj. to Intf. with SN 275,719.

SN 290,572. Aquadynamics, Inc., North Hollywood, Calif. Filed Feb. 8, 1968.

POLARITE

The mark comprises the word "Polarite" with a highly stylized "A" as shown.
For Automatic Polarity Regulator for Marine Use (Int. Cl. 9).
First use Jan. 15, 1968.

SN 292,089. Fujiya Electric Co. Ltd., Tokyo, Japan. Filed Feb. 28, 1968.

FENCO

Owner of U.S. Reg. No. 843,714.
For Transistor Radios (Int. Cl. 9).
First use Jan. 1, 1966; in commerce Jan. 1, 1966.

SN 292,846. Electronized Chemicals Corporation, Burlington, Mass. Filed Mar. 11, 1968.

E.C.C.

For Heat-Shrinkable Insulation, Such as Tubing and Tape and Modified Polyolefin Material for Use in Printed Circuit Boards (Int. Cl. 17).
First use in or before September 1964.
Subj. to Intf. with SN 279,129.

SN 294,108. American Enka Corporation, Enka, N.C. Filed Mar. 21, 1968.

FLEXCOAT

For Insulated Conductor (Int. Cl. 9).
First use Jan. 22, 1968.

SN 294,206. Pennsylvania Electronics Technology, Inc., Pittsburgh, Pa. Filed Mar. 26, 1968.

THERMOFUZE

For Current Limiters (Int. Cl. 9).
First use Aug. 31, 1967.

SN 294,875. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed Apr. 3, 1968.

FABRICSCOPE

For Electric Irons (Int. Cl. 9).
First use on or about Jan. 26, 1968.

SN 295,239. Laser Power Industries, Inc., Los Angeles, Calif. Filed Apr. 9, 1968.

LPB

For Electric Storage Batteries (Int. Cl. 9).
First use on or about Apr. 19, 1967.

SN 301,123. Beauchaine & Sons, Inc., Laconia, N.H. Filed June 24, 1968.

ADD-A-POINT

For Terminal Blocks (Int. Cl. 9).
First use May 23, 1943.

SN 302,676. ESB Incorporated, Philadelphia, Pa. Filed July 15, 1968.

SEASPACE

For Marine Batteries (Int. Cl. 9).
First use Nov. 8, 1967.

SN 302,902. Sealectro Corporation, Mamaroneck, N.Y. Filed July 17, 1968.

SLIDE-N-SWITCH

No claim is made to the word "Switch" apart from the combination.
For Multipole, Non-Bridging Switch (Int. Cl. 9).
First use Mar. 1, 1968.

SN 304,863. Ionetics Corporation, Avenel, N.J. Filed Aug. 12, 1968.

ECONO-LYTIC

For Electrolytic Capacitors (Int. Cl. 9).
First use Mar. 17, 1967.

Class 22—Games, Toys, and Sporting Goods

SN 286,704. Robert L. Moore, Lagrange, Ill. Filed Dec. 11, 1967.

CIRCUS

For Equipment Sold as a Unit for Playing a Board-Type Parlor or Amusement Game (Int. Cl. 28).
First use during November 1967.

SN 287,668. Nimrod Products, Inc., New York, N.Y. Filed Dec. 27, 1967.

NIMROD SPORTSMAN

For Golf Balls (Int. Cl. 28).
First use Sept. 6, 1967.
Subj. to Intf. with SN 292,736.

SN 297,751. Atlantic Lures, Inc., Providence, R.I. Filed May 9, 1968.

DEVIL SPOON

The word "Spoon" is disclaimed apart from the mark as shown.
For Fishing Lures (Int. Cl. 28).
First use July 28, 1963.

SN 298,273. Western Publishing Company, Inc., Racine, Wis. Filed May 15, 1968.

SOUND-A-ROUND

Applicant disclaims the exclusive right to the word "Sound" apart from the mark as shown.
For Sound Reproducing Amusement Device Combining a Toy Phonograph, a Circular Jigsaw Puzzle With Soundtrack and a Children's Book Sold as a Unit, and a Circular Jigsaw Puzzle With Soundtrack Sold as a Unit (Int. Cl. 28).
First use Feb. 26, 1968.

SN 300,448. Holiday Publishing Co., Inc., Park Ridge, Ill. Filed June 14, 1968.

ICE-BREAKER

For Equipment Used for Playing a Parlor Game (Int. Cl. 28).
First use Aug. 10, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 254,410. Universal American Corporation, New York, N.Y. Filed Sept. 13, 1966.

AMPULCO

For Conveyor Pulleys, Split Pulleys, Speed Reducers, Sheaves, and Base Supports for Motors (Int. Cl. 7).
First use Feb. 7, 1957.

SN 263,245. Ball Brothers Company Incorporated, Muncie, Ind. Filed Jan. 25, 1967.

BALL

For Glassware Conveying and Orienting Equipment (Int. Cl. 7).
First use on or about Sept. 24, 1963.

SN 276,248. Randel's Manufacturing Company, Incorporated, Oklahoma City, Okla. Filed July 18, 1967.

ASTRO

For Automotive Mufflers (Int. Cl. 12).
First use Mar. 1, 1966.

SN 277,058. Lodding Engineering Corporation, Auburn, Mass. Filed July 28, 1967.

VIBRELIEF

For Apparatus for Stress-Relieving Materials (e.g. Metals) by the Application of Vibratory Energy to Such Materials (Int. Cl. 7).
First use March 1967.

SN 277,367. Morris Radial Drill Co., Cleveland, Ohio. Filed Aug. 2, 1967.

MORRIS MOR-SPEED

For Radial Drills and Special Production Machinery—Namely, Drilling Machines, Boring Machines, Reaming Machines, Counter Boring Machines, Tapping Machines, and Milling Machines (Int. Cl. 7).
First use beginning on or about Apr. 13, 1928.

SN 278,047. Uniroyal, Inc., New York, N.Y. Filed Aug. 10, 1967.

FISK

Owner of Reg. Nos. 128,063, 266,188, and 780,997.
For Fuel Pumps for Motor Vehicles (Int. Cl. 12).
First use May 11, 1967.

SN 278,103. Howe-Baker Engineers, Inc., Tyler, Tex. Filed Aug. 11, 1967.

CAPSULFINER

For Apparatus for Desulfurizing Petroleum Hydrocarbon Liquids (Int. Cl. 7).
First use Sept. 12, 1966.

SN 282,476. Polcon Corporation, Montreal, Quebec, Canada. Filed Oct. 13, 1967.

HELIXOR

Priority claimed under Sec. 44(d) on Canadian application filed Aug. 19, 1967; Reg. No. 158,062, dated Aug. 30, 1968.
For Aerating and Mixing Units for Waste Water Treatment (Int. Cl. 11).

SN 284,858. Societe Anonyme des Etablissements NEU, Lille (Nord), France. Filed Oct. 17, 1967.

VENTIFLOC

Owner of French Reg. No. 716,565, dated May 18, 1966.
For Blowers Used in Processing Textile Fibers To Untangle and Transport (Int. Cl. 7).

SN 286,357. Multiplex Company, St. Louis, Mo. Filed Dec. 6, 1967.

CHOC-LO-MATIC

For Non-Alcoholic Hot Beverage Dispensers Containing a Heating Unit (Int. Cl. 11).
First use about July 1966.

SN 289,267. Brunswick Corporation, Chicago, Ill. Filed Jan. 22, 1968.

QUICKSILVER

Owner of Reg. No. 565,610.
For Marine Stern Drive Power Packages Including an Inboard Engine, and Parts Thereof (Int. Cl. 7).
First use Mar. 22, 1967.

SN 289,365. The Whip Guide Company, Cleveland Heights, Ohio. Filed Jan. 22, 1968.

GIZMO

For Whip Guides for Gun Drills (Int. Cl. 7).
First use Feb. 17, 1965.

SN 290,307. McCaffrey-Ruddock Tagline Corporation, Los Angeles, Calif. Filed Feb. 5, 1968.

RUD-O-BRAKE

Owner of Reg. Nos. 400,841 and 512,052.
For Spring Activated Reel Adapted for Use With Material Handling Apparatus To Operate a Control Line or Lines Leading to the Material Handling Element of the Apparatus (Int. Cl. 7).
First use Dec. 20, 1967.

SN 290,389. Grove Manufacturing Company, Shady Grove, Pa. Filed Feb. 6, 1968.

GROVE

Owner of Reg. Nos. 792,129, 792,130, and 817,995.
For Mobile Industrial Cranes (Int. Cl. 7).
First use August 1967.

SN 290,421. Michael Vasilantone, d.b.a. Vastex Machine Co., Roselle, N.J. Filed Feb. 6, 1968.

VASTEX

For Textile Printing Machines (Int. Cl. 7).
First use Jan. 2, 1968.

SN 290,764. The Stanley Works, New Britain, Conn. Filed Feb. 9, 1968.

MIGHTY MIDGET

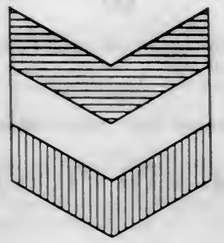
Owner of Reg. Nos. 67,119 and 587,233.
For Power Tools—Namely, Drills (Int. Cl. 7).
First use on or about Aug. 5, 1927.

SN 290,917. Waterous Company, St. Paul, Minn. Filed Feb. 12, 1968.

FLOTO PUMP

For Float Mounted Centrifugal Pumps (Int. Cl. 7).
First use Oct. 11, 1967.

SN 291,105. Standard Oil Company of California, San Francisco, Calif. Filed Feb. 14, 1968.



The drawing is lined for the colors red and blue, and applicant claims the colors red, white and blue. Owner of Reg. No. 842,368 and others.
For Windshield Scrapers (Int. Cl. 8).
First use Sept. 7, 1966.

SN 291,109. Tritec Corporation, Houston, Tex. Filed Feb. 14, 1968.



The word "Hydro," and the representation of the goods are disclaimed apart from the mark as shown.
For High Pressure Cleaning Machines (Int. Cl. 7).
First use Oct. 15, 1967.

SN 291,236. Pesek Engineering & Mfg. Company, Minneapolis, Minn. Filed Feb. 16, 1968.

PEMCO

For Chemical and Spray Type Etching Machines Used for Production of Printed Circuit Boards and Chemically Milled Parts (Int. Cl. 7).
First use Aug. 24, 1967.

SN 291,267. Ilines Machine Products Ltd., Weston, Ontario, Canada. Filed Feb. 16, 1968.

Chipper

For Apparatus for Extruding Food Products in the Form of Dough (Int. Cl. 7).
First use October 1967.

SN 291,348. Babson Bros. Co., Oak Brook, Ill. Filed Feb. 19, 1968.

JET-FLO

For Milking Machine Inflations (Int. Cl. 7).
First use Jan. 18, 1968.

SN 291,706. Bird Machine Company, South Walpole, Mass. Filed Feb. 23, 1968.

FIBERMIZER

For Elutriation Device for Use With Centrifugal Separator (Int. Cl. 7).
First use July 12, 1966.

SN 291,890. Nordberg Manufacturing Company, Milwaukee, Wis. Filed Feb. 26, 1968.

GP

For Vibrating Screens for the Mining Industry (Int. Cl. 7).
First use Jan. 16, 1968.

SN 291,895. Park-Air Corp., Boston, Mass. Filed Feb. 26, 1968.

EJECTO PUNCH

The word "Punch" is disclaimed apart from the mark as shown.
For Pneumatically Operated Punch (Int. Cl. 7).
First use Dec. 1, 1967.

SN 292,135. Ritter Pfaudler Corporation, Rochester, N.Y. Filed Feb. 28, 1968.

FAVAIR

For Flotation Separation Apparatus Used in Water and Waste Treatment and Parts Therefor (Int. Cl. 11).
First use Oct. 28, 1966.

SN 295,019. Crown Controls Corporation, New Bremen, Ohio. Filed Apr. 5, 1968.

CROWN

Owner of Reg. Nos. 696,379, 819,474, and others.
For Material Lifting, Transporting and/or Handling Equipment—Namely, Hand Propelled Hand Lift Trucks and Pallet Trucks; Power Propelled Power Lift Trucks and Pallet Trucks; Power Tugs; Fork Lift Trucks; Platform Lift Trucks; Special Application Lift Trucks; Stock Picker Trucks; Lift Truck Attachments or Accessories for Handling Drums, Cartons and Other Articles; and Parts Thereof (Int. Cl. 12).
First use August 1962; Feb. 6, 1959, as to "Crown."

SN 303,649. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 26, 1968.

3M

Owner of Reg. Nos. 596,750 and 844,526.
For Spray Unit for Attachment to a Floor Maintenance Machine for Remote Actuation of an Aerosol Can (Int. Cl. 7).
First use Feb. 12, 1968.

SN 303,652. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 26, 1968.

SCOTCH-BRITE

Owner of Reg. Nos. 677,849, 715,247, and 730,037.
For Spray Unit for Attachment to a Floor Maintenance Machine for Remote Actuation of an Aerosol Can (Int. Cl. 7).
First use Feb. 12, 1968.

SN 304,182. Autocase Corporation, Richmond, Va. Filed Aug. 2, 1968.



The mark comprises a fanciful representation of the letter "A."
For Packaging Machinery (Int. Cl. 7).
First use at least as early as Aug. 10, 1966.

SN 307,388. Mercantile Stores Company, Inc., New York, N.Y. Filed Sept. 16, 1968.

MERVILLE

Owner of Reg. Nos. 524,796 and 542,284.
For Scissors (Int. Cl. 8).
First use June 12, 1967.

Class 26 — Measuring and Scientific Appliances

SN 279,566. Responsive Environments Corporation, Englewood Cliffs, N.J. Filed Sept. 1, 1967.

REC

For Computer-Based Learning Systems (Int. Cl. 9).
First use June 14, 1967.

SN 288,845. The National Cash Register Company, Dayton, Ohio. Filed Jan. 15, 1968.

CENTURY

For Electronic Data Processing Systems and Components Thereof (Int. Cl. 9).
First use Nov. 6, 1967.

SN 296,141. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Apr. 22, 1968.

PM

For Printing and Developing Machines Used in the Printing and Development of Light-Sensitive Diazotype Materials and Parts Thereof (Int. Cl. 9).
First use Feb. 22, 1968.

SN 296,142. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Apr. 22, 1968.

OM

For Printing and Developing Machines Used in the Printing and Development of Light-Sensitive Diazotype Materials and Parts Thereof (Int. Cl. 9).
First use Feb. 14, 1968.

SN 300,535. Raytheon Company, Lexington, Mass. Filed June 17, 1968.

COLLIMASTER

For X-Ray Collimator (Int. Cl. 9).
First use Aug. 5, 1966.

SN 301,547. Perfect Film & Chemical Corporation, Manhasset, N.Y. Filed June 27, 1968.

PERMA-FLASHMATIC

For Cameras (Int. Cl. 9).
First use May 2, 1968.

SN 304,042. R. J. Naylor, d.b.a. Digi-T-Co., Philadelphia, Pa. Filed Aug. 1, 1968.

DIGI-PROBE

For Test Probe Unit for Determining Logic Conditions in Digital Equipment by Means of Integral Visual Indicators (Int. Cl. 9).
First use June 4, 1968.

Class 28 — Jewelry and Precious-Metal Ware

SN 284,085. Gladwin Limited, London, England. Filed Nov. 3, 1967.

EMBASSY

Owner of British Reg. No. 428,258, dated July 26, 1922; and U.S. Reg. No. 500,839.
For Table and Other Household Knives, Forks, Spoons, Scoops, Servers, Tongs and Nutcrackers, All of Which Are Silver Plated (Int. Cls. 8 and 14).

SN 295,427. Dubarry Fifth Avenue Inc., Brooklyn, N.Y. Filed Apr. 11, 1968.

FLAMENCO

For Jewelry Carrying Simulated Pearls—Namely, Necklaces Earrings, Pendant Necklaces, and Pins (Int. Cl. 14).
First use Mar. 22, 1968.

SN 300,545. The Agagem Company, Valdosta, Ga. Filed June 17, 1968.

agagem

For Jewelry, Containing Semi-Precious Stones (Int. Cl. 14).
First use Apr. 17, 1968.

SN 306,541. Philips Manufacturing Company, Brooklyn, N.Y. Filed Sept. 4, 1968.

JEWEL FLAKES

The word "Jewel" is disclaimed apart from the mark as shown.
For Jewelry Including Rings, Pins, Pendants, Earrings and Crosses (Int. Cl. 14).
First use July 31, 1968.

SN 308,257. International Silver Company, Meriden, Conn. Filed Sept. 26, 1968.



For Flatware and Holloware Made in Whole or in Part of Precious Metal (Int. Cls. 8 and 14).
First use at least as early as June 3, 1968.

Class 31 — Filters and Refrigerators

SN 295,680. Sternco Industries, Inc., Harrison, N.J. Filed Apr. 15, 1968.

LONGLIFE

Owner of Reg. No. 770,809.
For Filter Made of Plastic Fibre for Use in Home Aquarium Tanks (Int. Cl. 11).
First use Feb. 5, 1968.

Class 32 — Furniture and Upholstery

SN 290,025. Samsonite Corporation, Denver, Colo. Filed Jan. 31, 1968.

CUSTOMAIRE

For Furniture—Namely, Chairs, Settees, Sofas and Tables (Int. Cl. 20).
First use Jan. 8, 1968.

Class 33 — Glassware

SN 299,479. Owens-Illinois, Inc., Toledo, Ohio. Filed May 31, 1968.

UNI-PAK

For Glass Vials (Int. Cl. 21).
First use Aug. 2, 1967.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 298,837. John N. Martin, d.b.a. John N. Martin, Manufacturer, Tulsa, Okla. Filed May 22, 1968.

MX

For Plunger Rings for Oil Well Pumps (Int. Cl. 17).
First use Dec. 14, 1967.

Class 36 — Musical Instruments and Supplies

SN 280,833. I.M.S. International Music Supply G.m.b.H., Bubenreuth, near Erlangen, Germany. Filed Sept. 13, 1967.



For Musical Instruments—Namely, Violins, Cellos, Violas, Double-Basses, Guitars, Mandolins, Lutes, Zithers, Balalaikas, Harps, Ukeleles, Trumpets, Clarinets, Oboes, Bassoons, Trombones, Horns, Pistons, Flutes, Saxophones, Xylophones, Mouthorgans, Concertinas, Percussion Instruments, Chimes, Drums, as Well as Parts and Accessories for Musical Instruments—Namely, Violin Bows, Cases for Musical Instruments, Strings, Rosins, Tuning and Bending Bridges, Finger Boards, Music Stands and Music Clips, Tuning Forks, Crossbars, Stops, Mouthpieces, Mutes, Electrical Musical Instruments—Namely, Electric Guitars, Electric Hawaiian Guitars, Electric Double-Basses, Electric Harps, Electric Harpsicords, Electric Chord Organs, Electrical Accessories for Musical Instruments—Namely, Amplifiers and Resounders, Music Boxes, Phonograph Record Players, Phonograph Record Communicators, Phonograph Records, Tape Recorders and Tape Recorders-Reproducers (Int. Cl. 15).
First use July 1, 1966; in commerce July 1, 1966.

SN 286,271. Kenner Products Company, Cincinnati, Ohio. Filed Dec. 5, 1967.

SWINGSTER

For Portable Record Players (Int. Cl. 9).
First use Aug. 18, 1967.

SN 303,016. Gehavioral Science Associates, Inc., Cincinnati, Ohio. Filed July 18, 1968.

CAREER CONFERENCES

For Prerecorded Magnetic Tapes of Lectures and Discussions (Int. Cl. 9).
First use July 26, 1967.

SN 308,420. Columbia Broadcasting Systems, Inc., New York, N.Y. Filed Sept. 30, 1968.

CROSSROADS

For Grooved Phonograph Records (Int. Cl. 9).
First use August 1966.

Class 37—Paper and Stationery

SN 258,334. United States Tabulating Binder Corporation, Niles, Ill. Filed Nov. 9, 1966.

PERM-A-BIND

Owner of Reg. No. 350,518.
For Covers for Use in Binding Together Record Sheets (Int. Cl. 16).
First use Oct. 14, 1966.

SN 283,878. Cory Corporation, Chicago, Ill. Filed Nov. 1, 1967.

CROWN JEWEL

For Writing Instruments—Namely, Pens and Pencils (Int. Cl. 16).
First use Mar. 27, 1964.

SN 297,755. Bergstrom Paper Company, Neenah, Wis. Filed May 9, 1968.

BERGSTROM

Owner of Reg. No. 720,692.
For Book Papers, Offset Papers, Office Printing Papers, and Safety Papers (Int. Cl. 16).
First use at least as early as Aug. 15, 1960.

SN 298,116. The Exclusive Company, Philadelphia, Pa. Filed May 14, 1968.

Q-TEES

For Stationery—Namely, Social Notes (Int. Cl. 16).
First use Jan. 31, 1968.

SN 298,139. The Mead Corporation, Dayton, Ohio. Filed May 14, 1968.

WEYMOUTH

For Uncoated Book Papers (Int. Cl. 16).
First use Apr. 25, 1967.

SN 298,140. The Mead Corporation, Dayton, Ohio. Filed May 14, 1968.

SOUTHGATE

For Uncoated Book Papers (Int. Cl. 16).
First use Mar. 16, 1967.

SN 305,581. Tru-Foto, Inc., Dayton, Ohio. Filed Aug. 20, 1968.

LITTLE SHOW-OFF

For Wallet-Type Booklet for Retaining Photographs (Int. Cl. 16).
First use July 20, 1968.

Class 38—Prints and Publications

SN 169,988. Motel Horse-Pitality, Inc., Boulder City, Nev., assignee of William J. Taylor, Boulder City, Nev. Filed May 29, 1963.

HORSE-PITALITY

For Annual Directory of Motels and the Like, Where Facilities Are Provided for Horses in Addition to Accommodations for Persons (Int. Cl. 16).
First use May 13, 1963.

SN 266,311. DoAll Company, Des Plaines, Ill. Filed Mar. 9, 1967.

GREEN LIGHT

For Marketing Newsletter (Int. Cl. 16).
First use Sept. 1, 1964.

SN 269,245. Alderman Studios, Inc., High Point, N.C. Filed Apr. 17, 1967.

ALDERMAN

For Catalogs, Brochures, Customer Sales Promotional and Advertising Material Such as Art Work and Design Work, Photographs (Still and Moving), Transparencies, Video Tapes, and Audio-Visual Communication Aids (Int. Cls. 9 and 16).
First use Jan. 13, 1967.

SN 277,552. Robert Fesler, Jr., Cohasset, Mass. Filed Aug. 4, 1967.

CARDS SHARDS

Applicant disclaims the word "Cards" and the words "Cohasset Village" apart from the mark as shown.
For Greeting Cards (Int. Cl. 16).
First use Apr. 27, 1966.

SN 278,402. Neiman-Marcus Company, Dallas, Tex. Filed Aug. 16, 1967.

COSMOPOLITAN

For Address Book (Int. Cl. 16).
First use May 1, 1967.

SN 286,044. James G. Teason, Elmhurst, Ill. Filed Dec. 1, 1967.

SUBURBAN SAM

For Cartoon Distributed for Printing in Newspapers (Int. Cl. 16).
First use Aug. 1, 1967.

SN 291,265. Hitchcock Publishing Company, Wheaton, Ill. Filed Feb. 16, 1968.

CYBERMATION ENGINEERING

The word "Engineering" is disclaimed apart from the mark as shown.
For Trade Magazine (Int. Cl. 16).
First use Jan. 22, 1968.

SN 291,568. World Publishing Company, Omaha, Nebr. Filed Feb. 21, 1968.

Sun Up

For Newspaper (Int. Cl. 16).
First use on or about Apr. 1, 1967.

SN 292,402. The McNaught Syndicate, Inc., New York, N.Y. Filed Mar. 4, 1968.

TOP VIEW

For Newspaper Feature (Int. Cl. 16).
First use Apr. 1, 1967.

SN 294,638. Marva Publishing Corporation, Richmond, Va. Filed Apr. 1, 1968.

EMPHASIS

For Monthly Magazine of General Interest Featuring Pictorial Presentation (Int. Cl. 16).
First use November 1967.

SN 297,662. Dover Publications, Inc., New York, N.Y. Filed May 8, 1968.

DOVER

For Books (Int. Cl. 16).
First use June 1944.

SN 300,511. American Chemical Society, Washington, D.C. Filed June 17, 1968.

POST-P

For Periodical Digest, Published Bi-Weekly, Concerning Patents in the Field of Polymer Chemistry (Int. Cl. 16).
First use Feb. 13, 1967.

SN 301,124. Sid Brawer, d.b.a. Tri-Ads Company, Los Angeles, Calif. Filed June 24, 1968.

"MINI-BOARDS"

For Advertising Display Cards (Int. Cl. 16).
First use June 7, 1968.

SN 303,620. MTH Corporation, Chicago, Ill. Filed July 25, 1968.

PASSPORT

For Newsletter Containing Information Relating to Travel, Published Monthly (Int. Cl. 16).
First use October 1965.

SN 306,025. Alderman Studios Inc., High Point, N.C. Filed Aug. 9, 1968.

For Catalogs, Brochures, Customer Sales Promotional and Advertising Material Such as Art Work and Design Work, Photographs (Still and Moving), Transparencies, Video Tapes, and Audio-Visual Communication Aids (Int. Cls. 9 and 16).
First use Jan. 13, 1967.

Class 39—Clothing

SN 251,595. Asociacion Mexicana de Productores Exportadores de Calzado, S. de R.L.I.P. y C.V., Leon, Guanajuato, Mexico. Filed Aug. 3, 1966.

AMPEC

Owner of Mexican Reg. No. 121,043, dated Oct. 24, 1964.
For Shoes (Int. Cl. 25).
First use March 1964; in commerce Mar. 24, 1966.

SN 272,623. Park-Storyk Corporation, New York, N.Y. Filed May 29, 1967.

AURA BOUTIQUE

For Sweaters (Int. Cl. 25).
First use Mar. 29, 1967.

SN 273,188. Farah Manufacturing Company, Inc., El Paso, Tex. Filed June 6, 1967.

BRAHMA CORD

Applicant disclaims the word "Cord" apart from the mark as shown.
For Men's and Boys' Slacks and Fabrics Sold Exclusively in the Form of Such Garments (Int. Cl. 25).
First use Mar. 18, 1967.

SN 274,772. The Puritan Sportswear Corp., Altoona, Pa. Filed June 26, 1967.

ROYAL CLUB

For Men's Shirts and Sweaters (Int. Cl. 25).
First use Apr. 21, 1967.

SN 274,773. The Puritan Sportswear Corp., Altoona, Pa. Filed June 26, 1967.

TOTER

For Men's Shirts and Sweaters (Int. Cl. 25).
First use Apr. 21, 1967.

SN 277,701. "Nur Die" Textilvertrieb G.m.b.H., Horstmar, Westphalia, Germany. Filed Aug. 7, 1967.

nur die

"Nur Die" translated into English means "only the." Owner of German Reg. No. 782,660, dated Mar. 3, 1961.
For Hosiery (Int. Cl. 25).

SN 280,980. The Sporting Tailors Manufacturing Co., Inc., Boston, Mass. Filed Sept. 22, 1967.

THE SPORTING TAILORS

For Women's and Men's Clothing—Namely, Shorts, Skirts, Jackets, Dresses, Coats, Suits, Swim Suits, Slacks, Sweaters, Shirts, Blouses, and Hats (Int. Cl. 25).
First use July 1965.

SN 281,232. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Wearing Apparel for Men, Women and Children—Namely, Dresses, Robes, Coats, Suits, Slacks, Shirts, Blouses, Sweaters, Neckwear, Lingerie, Skirts, Jackets, and Combinations Thereof; and Boots, Shoes, and Slippers (Int. Cl. 25).

SN 281,614. Oxford Industries, Inc., Atlanta, Ga. Filed Oct. 2, 1967.

SOUTHERN COMFORT

For Men's and Boys' Slacks, Jeans, and Walk Shorts (Int. Cl. 25).
First use Sept. 19, 1967.

SN 286,277. Pinehurst Textiles, Inc., Asheboro, N.C. Filed Dec. 5, 1967.

PINEHURST

Owner of Reg. Nos. 236,437 and 506,136.
For Men's Underwear—Namely, Shorts and Undershirts (Int. Cl. 25).
First use Jan. 30, 1926.

SN 288,495. Ben Cooper, Inc., Brooklyn, N.Y. Filed Jan. 10, 1968.

WILD WILD ANIMALS

For Masquerade Costumes With Masks (Int. Cl. 25).
First use Oct. 25, 1967.

SN 288,496. Ben Cooper, Inc., Brooklyn, N.Y. Filed Jan. 10, 1968.

SATURDAY'S HEROES

For Masquerade Costumes With Masks (Int. Cl. 25).
First use Oct. 25, 1967.

SN 289,291. Formaid Co., Boston, Mass. Filed Jan. 22, 1968.

ROMANTICS

For Brassieres (Int. Cl. 25).
First use Dec. 28, 1967.

SN 300,892. Block-Southland Sportswear, Inc., Wilmington, N.C. Filed June 20, 1968.

GHENT

For Men's, Women's, Boys', Girls' and Children's Outer Shirts, Pajamas, Undershirts, Undershorts, Jackets, Slacks, Night Shirts, Dress Shirts, Sweaters, Knit Shirts, and Bathrobes (Int. Cl. 25).
First use June 10, 1967.

SN 300,995. Benjamin Harrison Weiss, Inc., New York, N.Y. Filed June 20, 1968.

ULTIMITT

For Ski Gloves (Int. Cl. 25).
First use June 10, 1968.

SN 306,113. Associated Dry Goods Corporation, New York, N.Y. Filed Aug. 28, 1968.

UTOPIA

For Ladies' Hosiery (Int. Cl. 25).
First use May 15, 1968.

SN 307,383. Koracorp Industries, Inc., San Francisco, Calif. Filed Sept. 16, 1968.

KORACORP

Owner of Reg. Nos. 564,916, 817,856, and others.
For Women's, Misses', and Children's Clothing—Namely, Suits, Dresses, Skirts, Shirts, Blouses, Vests, Halters, Jackets, Coats, Sweaters, Slacks, Culottes, Outer Shorts, Play-Suits and Pedal Pushers; and Men's and Boys' Clothing—Namely, Suits, Coats, Jackets, Slacks, Shirts, Sweaters, and Hats (Int. Cl. 25).
First use Apr. 17, 1968, on men's coats.

SN 307,384. Koracorp Industries, Inc., San Francisco, Calif. Filed Sept. 16, 1968.



The mark consists of a stylized letter "K."
For Women's, Misses', and Children's Clothing—Namely, Suits, Dresses, Skirts, Shirts, Blouses, Vests, Halters, Jackets, Coats, Sweaters, Slacks, Culottes, Outer Shorts, Play-Suits and Pedal Pushers; and Men's and Boys' Clothing—Namely, Suits, Coats, Jackets, Slacks, Shirts, Sweaters, and Hats (Int. Cl. 25).
First use Apr. 17, 1968, on men's coats.

SN 307,385. Koracorp Industries, Inc., San Francisco, Calif. Filed Sept. 16, 1968.

KORACORP

Owner of Reg. Nos. 564,916, 817,856, and others.
For Women's, Misses', and Children's Clothing—Namely, Suits, Dresses, Skirts, Shirts, Blouses, Vests, Halters, Jackets, Coats, Sweaters, Slacks, Culottes, Outer Shorts, Play-Suits and Pedal Pushers; and Men's and Boys' Clothing—Namely, Suits, Coats, Jackets, Slacks, Shirts, Sweaters, and Hats (Int. Cl. 25).
First use Apr. 17, 1968, on men's coats.

SN 307,619. Wonderknit Corporation, New York, N.Y. Filed Sept. 18, 1968.

LORD BLAIR

"Lord Blair" is a fanciful name and indicates no living person known to applicant. Owner of Reg. No. 748,576.
For Knit Outer Shirts, Sweaters, and Pajamas for Men, Young Men, and Boys (Int. Cl. 25).
First use January 1962.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 299,658. Dundee Mills, Inc., Griffin, Ga. Filed June 4, 1968.



For Towels and Wash Cloths (Int. Cl. 24).
First use in or about June 1959.

Class 43—Thread and Yarn

SN 281,234. Societe Rhodiaceta, Paris, France. Filed Sept. 26, 1967.

BIDIM

Owner of French Reg. No. 702,575, dated Dec. 2, 1965.
For Threads and Yarns of Synthetic Fibers (Int. Cl. 23).

Class 44—Dental, Medical, and Surgical Appliances

SN 286,777. Sound Ear, Inc., Mount Kisco, N.Y. Filed Dec. 12, 1967.

SOUND EAR

For Hearing Aids (Int. Cl. 10).
First use Oct. 15, 1966.
Subj. to Intf. with SN 298,878.

SN 288,067. Alcon Laboratories, Inc., Fort Worth, Tex. Filed Jan. 4, 1968.

CRYOCEPS

Owner of Reg. No. 820,843.
For Cryogenic Surgical Instrument (Int. Cl. 10).
First use Nov. 6, 1967.
Subj. to Intf. with SN 296,697.

SN 296,697. Walter Kidde & Company, Inc., Belleville, N.J. Filed Apr. 26, 1968.

CRYOCEPS

For Cryogenic Instrument for Cataract Extraction (Int. Cl. 10).
First use on or about Mar. 22, 1968.
Subj. to Intf. with SN 288,067.

SN 297,463. Wakefern Food Corporation, Elizabeth, N.J. Filed May 6, 1968.

SHOP-RITE

Owner of Reg. No. 738,144, 812,306, and others.
For Sanitary Napkins (Int. Cl. 5).
First use at least as early as 1962.

SN 298,560. C. R. Bard, Inc., Murray Hill, N.J. Filed May 20, 1968.

URO-TRAY

Owner of Reg. No. 728,603.
For Set of Items Required for Catheterization, Comprising a Catheter, Drainage Tube and Folding Drainage Bottle, Together With Pre-Loaded Accessory Tray Containing Rayon Balls, Forceps, Cleansing Solution, Lubricant, Safety Pin, Rubber Band, Underpad, Drape, and Gloves (Int. Cl. 10).
First use Nov. 1, 1967.

SN 298,878. The Telex Corporation, Tulsa, Okla. Filed May 22, 1968.

SOUND EAR

For Hearing Aids (Int. Cl. 10).
First use December 1956.
Subj. to Intf. with SN 286,777.

SN 299,463. Kimberly-Clark Corporation, Neenah, Wis. Filed May 31, 1968.

COMFORTUBE

For Sanitary Tampons (Int. Cl. 5).
First use May 8, 1968.

SN 302,827. Bommer AG, Zurich, Switzerland. Filed July 16, 1968.

REXTON

For Hearing Aids Which Are Inserted Into the Outer Ear Canal; Hearing Aids Which Go Behind the Ear; and Hearing Aids Which Are Incorporated in the Frames of Spectacles (Int. Cl. 10).
First use Jan. 18, 1955; in commerce in or about January 1960.

SN 303,655. W. A. Baum Co., Inc., Copiague, N.Y. Filed July 26, 1968.

ASEPTI-WRAP

For Cuffs Used in Sphygmomanometers (Int. Cl. 10).
First use June 13, 1968.

SN 306,961. Topco Associates, Inc., Skokie, Ill. Filed Sept. 9, 1968.

TOPCO

Fof Cotton Swabs and Cosmetic Puffs (Int. Cls. 3 and 5).
First use Oct. 4, 1966.

Class 45—Soft Drinks and Carbonated Waters

SN 284,485. J. F. Lazier Manufacturing Co., St. Louis, Mo. Filed Nov. 9, 1967.

PARFA

For Flavoring Concentrates and Extracts Used in Making Soft Drinks and for Use in the Preparation of Soft Drink Syrups (Int. Cl. 32).
First use Sept. 18, 1967.

SN 287,046. Sunkist Growers, Inc., Los Angeles, Calif. Filed Dec. 15, 1967.



Exclusive right to the use of the reproduction of a lemon, apart from the mark shown, is not claimed.
For Frozen Concentrate for Lemonade (Int. Cl. 32).
First use Nov. 1, 1967.

Class 46—Foods and Ingredients of Foods

SN 253,870. Fremantle Fishermen's Co-Operative Society Limited, Fremantle, Western Australia. Filed Sept. 6, 1966.

FREEZIE

For Frozen Rock Lobster Tails (Int. Cl. 29).
First use Apr. 10, 1966; in commerce Apr. 10, 1966.

SN 258,269. Spillers Limited, London, England. Filed Sept. 20, 1966.

SPILLERS

Owner of British Reg. Nos. 855,698 and 855,699, dated Oct. 24, 1963.
For Flour and Foodstuffs for Dogs, Cats, Pigs, Cattle, Sheep, Horses, Poultry, Game Birds, and Cage Birds (Int. Cls. 30 and 31).

SN 279,939. Gerber Products Company, Fremont, Mich. Filed Sept. 8, 1967.

MIMICS

For Sugar Coated Cereal (Int. Cl. 30).
First use Aug. 9, 1967.

SN 283,039. Elsie M. Smith, d.b.a. Bonanza Salt Company, Grand Rapids, Mich. Filed Oct. 20, 1967.

BONANZA

For Spiced Salt for Use in Cooking (Int. Cl. 30).
First use May 1961.

SN 283,374. Herky's International, Inc., Fort Lauderdale, Fla. Filed Oct. 20, 1967.

HERKY'S

For Sandwiches (Int. Cl. 29).
First use Sept. 15, 1967.

SN 283,540. National Federation of Coffee Growers of Colombia, New York, N.Y. Filed Oct. 27, 1967.



The portrait is that of Jose Duval, whose consent is of record. No claim is made to exclusive rights in the phrase "100% Colombian Coffee" or the words "Proprietary Mark of the National Federation of Coffee Growers of Colombia," apart from other features of the mark. "Juan Valdez" is a fictitious name. Owner of Reg. Nos. 726,575 and 752,589.
For Coffee (Int. Cl. 30).
First use on or about Oct. 23, 1961.

SN 284,497. Oroville-Cordell Fruit Growers, Inc., Oroville, Wash. Filed Nov. 9, 1967.



The representation of the person in the mark is fictitious. Applicant disclaims exclusive rights to the representation of the goods, apart from the mark as shown.
For Fresh Apples (Int. Cl. 31).
First use Sept. 20, 1965.

SN 285,111. Bridgford Foods Corporation, Anaheim, Calif. Filed Nov. 17, 1967.

BRIDGFORD

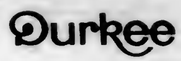
Owner of Reg. No. 826,171.
For Bakery Goods—Namely, Frozen Prepared Bread Dough (Int. Cl. 30).
First use Aug. 31, 1962.

SN 285,865. Sunaid Food Products, Inc., Miami, Fla. Filed Nov. 29, 1967.



For Non-Dairy Creamer for Coffee and Tea (Int. Cl. 29).
First use on or about Aug. 16, 1966.

SN 286,847. SCM Corporation, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Dec. 13, 1967.



Owner of Reg. Nos. 547,098, 798,144 and 835,570.
For Spices, Pepper, Salt, Salad Seasonings Consisting of Various Spices, Freeze Dried Chives, Imitation Butter Flavored Salt, Parsilied Garlic Salt, Meat Sauces, Flaked, Shredded and Grated Coconut, French Fried Onions, Boiled Onions, Chopped Onions, Cocktail Onions, Garlic Powder, Frozen French Pastry Hors d'Oeuvres, Edible Cake and Dessert Decorations, Flavoring Extracts, Maraschino Cherries, Olives, Edible Olive Oil, and Pickles (Int. Cls. 29 and 30).
First use Apr. 24, 1967, on freeze dried chives.

SN 287,047. Sunkist Growers, Inc., Los Angeles, Calif. Filed Dec. 15, 1967.



Exclusive right to the use of the reproduction of an orange apart from the mark shown is not claimed.
For Frozen Concentrated Orange Juice (Int. Cl. 32).
First use Nov. 1, 1967.

SN 288,405. Erprather Muhlen Schmidt & Co. K.-G., Neuss-Weckhoven, Germany. Filed Jan. 4, 1968.

BRATA

Owner of German Reg. No. 671,620, dated July 31, 1953.
For Flour, Breading Flour, and Breading Crumbs (Int. Cl. 30).

SN 288,511. Gerber Products Company, Fremont, Mich. Filed Jan. 10, 1968.

TODDLES

For Protein Foods in Dry Cereal Form (Int. Cl. 30).
First use Dec. 15, 1967.

SN 289,182. General Foods Corporation, White Plains, N.Y. Filed Jan. 19, 1968.

SCOOP

For Low Calorie Granulated Sugar Replacement (Int. Cl. 5).
First use Oct. 26, 1967.

SN 292,371. Frito-Lay, Inc., Dallas, Tex. Filed Mar. 4, 1968.
Owner of Reg. No. 739,105.

FANTASTIX

For Puffed Corn Snacks (Int. Cl. 30).
First use June 5, 1967.

SN 294,403. The National Sugar Refining Company, New York, N.Y. Filed Mar. 28, 1968.

JACK FROST

Owner of Reg. No. 322,756.
For Sugar (Int. Cl. 30).
First use Feb. 6, 1908; Dec. 11, 1913, in another form.

SN 295,015. Thomas Carvel, Yonkers, N.Y. Filed Apr. 5, 1968.

TWICE CREAM

Applicant without waiving its common law rights in the unitary term "Twice Cream" disclaims the word "Cream" separate and apart from the mark as shown.
For Dairy Dessert Products—Namely, Ice Cream and Frozen Custard (Int. Cl. 30).
First use at least as early as Feb. 7, 1956.

SN 295,507. Boots Pure Drug Company Limited, Nottingham, England. Filed Apr. 12, 1968.

SWEETONA

Owner of British Reg. No. 772,322, dated Dec. 17, 1957.
For Tablet for Sweetening Foods (Int. Cl. 1).

SN 296,349. Rockingham Poultry Marketing Cooperative, Inc., Broadway, Va. Filed Apr. 23, 1968.



For Fresh and Frozen Poultry, and Parts Thereof (Int. Cl. 29).
First use Sept. 29, 1967.

SN 296,858. National Cheese Company, Chicago, Ill. Filed Apr. 29, 1968.



For Dairy Products and Imitation Dairy Products—Namely, Whipped Butter, Sour Cream, Sour Half and Half, Sour Cream Dip Snack, Yogurt, Neufchatel Cheese, Cream Cheese, Cottage Cheese, Imitation Whipped Butter, Imitation Sour Cream, Imitation Sour Half and Half, Imitation Sour Cream Dip Snack, Imitation Yogurt, Imitation Neufchatel Cheese, Imitation Cream Cheese, Imitation Cottage Cheese (Int. Cl. 29).
First use on or about Apr. 15, 1960.

SN 297,477. Woody's Cheese Company, Waupaca, Wis. Filed May 6, 1968.

CHUNK O' GOLD

Owner of Reg. No. 544,276.
For Cheese Food (Int. Cl. 29).
First use Dec. 1, 1947.

SN 297,705. J. & J. Provisions Co., Elizabeth, N.J. Filed May 8, 1968.

EL TORERO

For Sausages in Dry Form and Canned in Lard (Int. Cl. 29).
First use February 1964.
Subj. to Intf. with SN 247,382.

SN 298,008. Willa Lee Johnson, d.b.a. Johnson Seafood Company, Biloxi, Miss. Filed May 13, 1968.

GULF COAST

For Canned Oysters and Canned Shrimp (Int. Cl. 29).
First use May 15, 1925.

SN 299,426. Carnation Company, Los Angeles, Calif. Filed May 31, 1968.

HUNGRY DOG

For Dog Food (Int. Cl. 31).
First use Apr. 30, 1968.
Subj. to Intf. with SN 301,138.

SN 299,427. Carnation Company, Los Angeles, Calif. Filed May 31, 1968.

MORNING CUP

For Cat Food (Int. Cl. 31).
First use Apr. 30, 1968.

SN 299,428. Carnation Company, Los Angeles, Calif. Filed May 31, 1968.

BRIGHT EYES

For Cat Food (Int. Cl. 31).
First use Apr. 30, 1968.

SN 299,429. Carnation Company, Los Angeles, Calif. Filed May 31, 1968.

ROLL OVER

For Dog Food (Int. Cl. 31).
First use Apr. 30, 1968.

SN 299,614. The Miami Margarine Company, Cincinnati, Ohio. Filed June 3, 1968.



Owner of Reg. Nos. 680,585 and 784,096.
For Margarine and Salad Dressings (Int. Cl. 29).
First use Dec. 27, 1957.

SN 299,885. Stoppenbach Sausage Company, Jefferson, Wis. Filed June 6, 1968.

ROASTIES

For Meat Sausage Composed of Beef, Pork, or Veal (Int. Cl. 29).
First use Sept. 2, 1949.

SN 300,015. Standard Brands Incorporated, New York, N.Y. Filed June 6, 1968.

TABEAST

For Dried Yeast (Int. Cl. 30).
First use May 20, 1968.

SN 301,138. The Quaker Oats Company, Chicago, Ill. Filed June 24, 1968.

Ken-L ration

HUNGRY HOUND

Without waiver of any common law rights in the mark as a whole or any feature thereof, applicant disclaims the word "Ration" apart from the mark as shown. Owner of Reg. Nos. 188,326, 847,431, and others.
For Dog Food (Int. Cl. 31).
First use May 1, 1968.
Subj. to Intf. with SN 299,426.

SN 303,875. Standard Fruit and Steamship Company, New Orleans, La. Filed July 30, 1968.

cabana

Owner of Reg. Nos. 704,730 and 719,735.
For Pineapples (Int. Cl. 31).
First use Dec. 4, 1967.

SN 304,282. Heggblade-Margueleas Co., San Francisco, Calif. Filed Aug. 5, 1968.

Balmoral

For Fresh Grapes (Int. Cl. 31).
First use June 16, 1968.

SN 304,283. Heggblade-Margueleas Co., San Francisco, Calif. Filed Aug. 5, 1968.

Ducor King

For Fresh Grapes (Int. Cl. 31).
First use June 16, 1968.

SN 304,436. Fritzsche Brothers, Inc., New York, N.Y. Filed Aug. 6, 1968.

DULCETONE

For Sweetener for Low Calorie Food, for Manufacturing and Professional Use Only (Int. Cl. 1).
First use July 29, 1968.

SN 304,550. John J. Kovacevich, Arvin, Calif. Filed Aug. 7, 1968.

RIDGE ROYAL

Owner of Reg. No. 790,805.
For Fresh Grapes (Int. Cl. 31).
First use July 23, 1968.

SN 304,734. Bruce Church, Inc., Salinas, Calif. Filed Aug. 9, 1968.

Red Coach

Owner of Reg. Nos. 252,204, 700,624, and 732,793.
For Fresh Vegetables and Fresh Melons (Int. Cl. 31).
First use July 17, 1968.

SN 305,102. Tri-Valley Growers, San Francisco, Calif. Filed Aug. 14, 1968.

Tenderful

For Canned Fruits and Canned Vegetables (Int. Cl. 29).
First use Aug. 6, 1968.

SN 305,288. Tani Farms, Santa Maria, Calif. Filed Aug. 16, 1968.

TLC

For Fresh Vegetables (Int. Cl. 31).
First use on or about June 15, 1968.

SN 306,429. Crown Packing Company, Pebble Beach, Calif. Filed Sept. 3, 1968.

SNO BUNNY

Owner of Reg. No. 401,056.
For Fresh Vegetables (Int. Cl. 31).
First use Aug. 21, 1968.

Class 47 — Wines

SN 284,155. Baptistin Caracous & Cie, Frejus, Var, France. Filed Nov. 6, 1967.

BAPTISTIN CARACOUS

The mark is not the name of any living individual but is merely fanciful.
For Wines (Int. Cl. 33).
First use May 1955; in commerce June 20, 1966.

Class 49 — Distilled Alcoholic Liquors

SN 273,025. Barrister Liquors Corp., Ltd., Philadelphia, Pa. Filed June 5, 1967.

CANADIAN GOLD

No exclusive rights are claimed in the word "Canadian."
For Canadian Whisky (Int. Cl. 33).
First use June 14, 1962.
Subj. to Intf. with SN 219,019.

SN 284,564. Jay L. Ambrose, d.b.a. Highland Distillers Import Co., Santa Monica, Calif. Filed Nov. 13, 1967.

RARE SCOT

Applicant disclaims the word "Rare" apart from the mark as shown.
For Scotch Whisky (Int. Cl. 33).
First use December 1966.

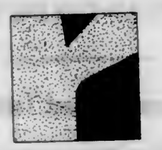
Class 50 — Merchandise Not Otherwise Classified

SN 275,648. Dolan-Jenner Industries, Inc., Melrose, Mass. Filed July 10, 1967.

LUXICON

For Encased Bundle of Optical Fibers (Int. Cl. 9).
First use June 30, 1967.

SN 283,569. Radiant Color Company, Richmond, Calif. Filed Oct. 27, 1967.



The stippling shown in the drawing is not actually part of the mark, but is used to indicate shading only.
For Phosphorescent Luminous Tape for Industrial and Military Purposes (Int. Cl. 20).
First use about Aug. 14, 1967.

SN 287,603. Vistron Corporation, Cleveland, Ohio. Filed Dec. 26, 1967.

DESIGNER CARVINGS

For Decorative Molded Plastic in the Form of Moldings, Medallions, and Plaques, Simulating Wood Carvings for Decorative Use (Int. Cl. 20).
First use at least as early as July 1967.

SN 287,958. Fred Rothenberg, New York, N.Y. Filed Jan. 2, 1968.



FrRog

For Sculpture (Int. Cl. 20).
First use Oct. 26, 1967.

SN 301,342. General Foods Corporation, White Plains, N.Y. Filed June 25, 1968.

KOOL-STRAWS

For Drinking Straws (Int. Cl. 20).
First use Sept. 4, 1956.

SN 301,454. Sonoco Products Company, Hartsville, S.C. Filed June 26, 1968.

SPIRO-PAC

For Tubular Paper Posts for Supporting the Corners of Receptacles (Int. Cl. 16).
First use June 11, 1968.

SN 301,747. Stanley E. Graham, Morris, Ill. Filed July 1, 1968.

WHOPPER KNOCKER

For Fisherman's Novelty Wall Plaque (Int. Cl. 20).
First use June 10, 1968.

SN 305,277. Farmers Regional Cooperative, Fort Dodge, Iowa. Filed Aug. 16, 1968.

Owner of Reg. Nos. 713,274, 600,806, and others.
For Livestock and Poultry Feeders and Waterers (Int. Cl. 21).
First use at least as early as Apr. 15, 1968; March 1959 as to "Felco."

Class 51 — Cosmetics and Toilet Preparations

SN 287,726. Cosmetics Manufacturing Company, d.b.a. Cosmetco, Long Beach, Calif. Filed Dec. 28, 1967.

CUCUMBER DEW

Applicant disclaims the word "Cucumber" apart from the mark as shown.
For Cosmetic Skin Cream (Int. Cl. 3).
First use Nov. 16, 1967.

SN 287,982. Yardley of London, Inc., Totowa, N.J. Filed Jan. 2, 1968.

SURVIVAL CREAM

Applicant disclaims the word "Cream" apart from the mark as shown.
For Hand Lotion, Face Lotion, Face Powder, Liquid Foundation, Cream Foundation, Eye Shadow, Eye Liner, Rouge, and Facial Mask (Int. Cl. 3).
First use Dec. 15, 1967.

SN 287,983. Yardley of London, Inc., Totowa, N.J. Filed Jan. 2, 1968.

SURVIVAL KIT

Applicant disclaims the word "Kit" apart from the mark as shown.
For Hand Lotion, Face Lotion, Face Powder, Liquid Foundation, Cream Foundation, Eye Shadow, Eye Liner, Rouge, and Facial Mask (Int. Cl. 3).
First use Dec. 15, 1967.

SN 290,518. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 7, 1968.

BEAM

Owner of Reg. No. 724,715.
For Breath Freshener (Int. Cl. 3).
First use Sept. 28, 1967; June 8, 1960, on related goods.

SN 290,519. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 7, 1968.

WHITE BELT

For After Shave Lotion (Int. Cl. 3).
First use Sept. 28, 1967.

SN 290,520. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 7, 1968.

BROWN BELT

For After Shave Lotion (Int. Cl. 3).
First use Sept. 28, 1967.

SN 290,793. The J. B. Williams Company, Inc., New York, N.Y. Filed Feb. 9, 1968.

HOT SHOT

For Shave Cream (Int. Cl. 3).
First use Jan. 11, 1968.

SN 292,271. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 1, 1968.

ICE CRYSTALS

For Bath Oil (Int. Cl. 3).
First use on or about Jan. 22, 1968.

SN 293,254. Helene Curtis Industries, Inc., d.b.a. Helene Curtis, Chicago, Ill. Filed Mar. 14, 1968.

PANACEA

For Gel Conditioner for the Hair (Int. Cl. 3).
First use on or about Feb. 13, 1968.

SN 293,394. The Mennen Company, Morristown, N.J. Filed Mar. 15, 1968.

LANOMEN

Owner of Reg. Nos. 508,548 and 701,983.
For Lanamine Ingredient in Aerosol Shave Cream (Int. Cl. 3).
First use Feb. 20, 1968.

SN 306,047. Chesebrough-Pond's Inc., New York, N.Y. Filed Aug. 27, 1968.

WICKER

For Cologne, Dusting Powder, Perfume Creme Sachet, and Body Lotion Parfume (Int. Cl. 3).
First use Aug. 5, 1968.

SN 307,380. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 16, 1968.

TWO DO

Owner of Reg. No. 624,198.
For Hair Wave Set (Int. Cl. 3).
First use Sept. 6, 1968.

SN 307,381. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 16, 1968.

LANCE

Owner of Reg. No. 786,540.
For Shaving Cream (Int. Cl. 3).
First use Sept. 6, 1968.

SN 307,913. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

THE MORNING AFTER

For After Shave Lotion (Int. Cl. 3).
First use Sept. 3, 1968.

SN 307,914. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

THE NIGHT BEFORE

For After Shave Lotion (Int. Cl. 3).
First use Sept. 3, 1968.

SN 307,918. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 23, 1968.

KOOLIP

For Mouthwash and Breath Freshener (Int. Cl. 3).
First use Sept. 3, 1968.

Class 52 — Detergents and Soaps

SN 292,090. Gabel's Cosmetics, Inc., Los Angeles, Calif. Filed Feb. 28, 1968.

SAFON

For Hair Cleaner for Wigs, Hair Pieces, Hair, and Scalp (Int. Cl. 3).
First use at least as early as Apr. 8, 1966.

SN 307,382. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 16, 1968.

THIRD DAY

For Hair Shampoo (Int. Cl. 3).
First use Sept. 6, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 280,910. Moscow Pizza Corporation, Moscow, Idaho. Filed Sept. 22, 1967.

DER RATHAUS

The English translation of the words "Der Rathaus" is "the townhouse."
For Restaurant and Food Carry-Out Services (Int. Cl. 42).
First use July 1, 1964.

SN 282,632. South Bay Clubs International, Inc., Los Angeles, Calif., assignee of South Bay Clubs International, Los Angeles, Calif. Filed Oct. 16, 1967.

SOUTH BAY CLUB

The word "Club" is disclaimed apart from the mark as shown.
For Providing Resort-Style Apartments for Single Persons (Int. Cl. 42).
First use about Jan. 2, 1965.

SN 287,678. Schlumberger Limited (Schlumberger N.V.), New York, N.Y., assignee of Schlumberger Technology Corporation, d.b.a. Schlumberger Well Services, Houston, Tex. Filed Dec. 27, 1967.

BHC

For Well Logging Services, Particularly, Measuring and Providing Logs of Characteristic Properties of Earth Formations Surrounding Well Bores (Int. Cl. 42).
First use July 1963.

SN 288,396. Southeastern Diversified Services, Inc., Atlanta, Ga., assignee of Charles Willingham & Associates, Inc., Atlanta, Ga. Filed Jan. 8, 1968.

Charlie's

The drawing is lined for the colors yellow and gray, and said colors are claimed as a feature of the mark.
For Restaurant Services (Int. Cl. 42).
First use Apr. 14, 1967.

SN 302,863. Red Horse, Incorporated, Frederick, Md. Filed July 16, 1968.

THE RED HORSE

For Restaurant Services (Int. Cl. 42).
First use Sept. 16, 1963.

SN 305,098. Ma Ma De Mar's Pizza International Inc., Youngstown, Ohio. Filed Aug. 14, 1968.

The portrait on the drawing is not that of a living person.
For Restaurant Services (Int. Cl. 42).
First use July 16, 1968.

SN 308,207. Al Hirt Sandwich Saloons, Inc., Nashville, Tenn. Filed Sept. 25, 1968.

AL HIRT'S

"Al Hirt" is a living individual whose consent is of record.
For Restaurant Services (Int. Cl. 42).
First use Sept. 6, 1968.

SN 308,254. 5152 Ground Floor, Inc., New York, N.Y. Filed Sept. 26, 1968.

THE GROUND FLOOR

For Restaurant Services (Int. Cl. 42).
First use Oct. 28, 1965.

Class 101 — Advertising and Business

SN 245,391. Frank Dennis Co., Inc., New York, N.Y. Filed May 11, 1966.

LUCKY BAG

The word "Bag" is disclaimed apart from the mark as shown.
For Promoting the Sale of Goods of Participating Merchants Through Issuance of Discount Certificates Which Are Attached to Shopping Bags and Are Negotiable for Cash or Merchandise (Int. Cl. 35).
First use Mar. 29, 1966.

SN 259,484. Steiner Promotions, Inc., Detroit, Mich. Filed Nov. 25, 1966.



For Promoting the Sale of Goods and Services of Others Through the Conducting of Beauty Contests (Int. Cl. 35).
First use Oct. 14, 1966.

SN 260,991. Charles E. Kress, d.b.a Electronic Dining Planning, Irvington-on-Hudson, N.Y. Filed Dec. 6, 1966.



Applicant disclaims the words "Electronic Dining Planning," apart from the mark as shown.
For Promoting the Sale of Food Products of Others by Conducting a Promotional Contest (Int. Cl. 35).
First use Oct. 27, 1966.

SN 264,087. A. C. Nielsen Company, Chicago, Ill. Filed Feb. 2, 1967.

NEODATA

For Services Relating to Mailing Lists and Magazine and Periodical Subscription Fulfillment, Including Maintenance of Circulation Lists, Furnishing of Mailing Labels, Distributing Renewal and Promotional Notices (Int. Cl. 35).
First use Aug. 21, 1963.

SN 270,653. David T. Artson, d.b.a. Artson Answering System, San Francisco, Calif. Filed May 4, 1967.



For Telephone Answering Service (Int. Cl. 35).
First use September 1963.

SN 273,453. Agency Assistance, Inc., Poughkeepsie, N.Y. Filed June 9, 1967.

TOPIC

For Developing Computer Programs for Others (Int. Cl. 35).
First use Mar. 1, 1967.

SN 286,034. The Reynolds & Reynolds Company, Dayton, Ohio. Filed Dec. 1, 1967.



For Accounting Service for Consumer Goods Rental Agencies (Int. Cl. 35).
First use on or before June 30, 1967.

SN 288,028. The Pagoda, Washington, D.C. Filed Jan. 3, 1968.

Pagoda

For Retail Gift Shop Services (Int. Cl. 35).
First use February 1963.

SN 296,198. Realtron Corporation, Detroit, Mich. Filed Apr. 22, 1968.

REALTRON

For Computer Services for Storing, Updating and Retrieving Real Estate Listings, and Including the Preparation and Furnishing of Maps, Real Estate Style Books, and the Like, for Use by Subscribers in Connection With Such Computer Services (Int. Cl. 35).
First use Aug. 1, 1967.

SN 297,483. Hayden Franchise Corporation, Minneapolis, Minn. Filed Apr. 26, 1968.

SUNNY'S

For Retail Discount Department Store Services (Int. Cl. 35).
First use Mar. 31, 1967.

SN 304,748. Alderman Studios Inc., High Point, N.C. Filed Aug. 9, 1968.



ALDERMAN

For Creation and Production of Advertising Projects for Others Through Means of Art Work, Graphic Design Work, Staging, Copy Writing, and Other Similar Activities (Int. Cl. 35).
First use Jan. 13, 1967.

SN 306,026. Alderman Studios Inc., High Point, N.C. Filed Aug. 9, 1968.



For Creation and Production of Advertising Projects for Others Through Means of Art Work, Graphic Design Work, Staging, Copy Writing, and Other Similar Activities (Int. Cl. 35).
First use Jan. 13, 1967.

Class 102 — Insurance and Financial

SN 288,245. Trust Company of Georgia, Atlanta, Ga. Filed Jan. 5, 1968.

GOLDEN SAVINGS

The word "Savings" is disclaimed apart from the mark as shown.
For Operating a Savings Account-Type Service With Limited Withdrawal Rights (Int. Cl. 36).
First use Dec. 24, 1967.

SN 300,099. Northwestern Mutual Insurance Company, Seattle, Wash. Filed June 10, 1968.

UNIGARD

For Insurance Services—Namely, Property and Casualty Insurance, Workmen's Compensation Insurance, Surety Underwriting, Life Insurance, Accident and Health Insurance, Medical and Hospital Insurance, Marine and Transportation Insurance, Annuities, and Insurance Premium Financing (Int. Cl. 36).
First use May 21, 1968.

SN 300,155. The Investamerica Group, Inc., San Antonio, Tex. Filed June 11, 1968.

the Investamerica Group

For Marketing of Mutual Funds and Other Investment Securities (Int. Cl. 36).
First use on or about Sept. 1, 1966.

Class 103 — Construction and Repair

SN 284,008. Glam-O-Rama, Incorporated, Benson, N.C. Filed Nov. 2, 1967.

GLAM-O-RAMA

For Standard and Coin-Operated Laundry and Dry Cleaning Services (Int. Cl. 37).
First use Apr. 5, 1967.

Class 107 — Education and Entertainment

SN 284,834. The Philadelphia Hockey Club, Inc., Philadelphia, Pa. Filed Nov. 14, 1967.



The mark consists of a fanciful design of the letter "P."
For Professional Hockey Exhibitions (Int. Cl. 41).
First use no later than Sept. 17, 1967.

SN 284,836. The Philadelphia Hockey Club, Inc., Philadelphia, Pa. Filed Nov. 14, 1967.

PHILADELPHIA FLYERS

The word "Philadelphia" is disclaimed apart from the mark as shown.
For Professional Hockey Exhibitions (Int. Cl. 41).
First use no later than Sept. 17, 1967.

SN 295,006. Bankers Management & Services, Inc., Dallas, Tex. Filed Apr. 5, 1968.

THE BILL OF RIGHTS

For Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use Mar. 2, 1968.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 290,872. National Council of Engineering Examiners, Clemson, S.C. Filed Feb. 12, 1968.



The drawing is lined for the colors blue and red. Owner of Reg. No. 779,201.
For Indicating Membership in Applicant.
First use Feb. 5, 1968.

SN 307,282. Tau Kappa Epsilon Fraternity, Indianapolis, Ind. Filed Sept. 13, 1968.

TKE

For Indicating Membership in Applicant.
First use at least as early as Jan. 10, 1902.

SN 307,290. Tau Kappa Epsilon Fraternity, Indianapolis, Ind. Filed Sept. 13, 1968.



For Indicating Membership in Applicant.
First use prior to October 1955.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

862,559. DYK AND DESIGN. Groendyk Manufacturing Company, Inc. MULTIPLE CLASS (Classes 1, 5, 12, 19, 21, 22, and 42). SN 260,795. Pub. 10–15–68. Filed 12–15–66.

862,560. RESISTA-PAK. Louis S. Besso, d.b.a. Pakon Manufacturing Company. SN 270,880. Pub. 10–15–68. Filed 5–8–67.

862,561. SHIELD (DESIGN). Tenneco Inc. MULTIPLE CLASS (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37, 46, 50, 52, 100, 103, and 105). SN 273,348. Pub. 2–27–68. Filed 6–8–67.

862,562. P AND DESIGN. The Permalux Company. MULTIPLE CLASS (Classes 1, 11, and 38). SN 277,099. Pub. 10–15–68. Filed 7–31–67.

862,563. SMC PRODUCTS AND DESIGN. St. Marys Carbon Company. MULTIPLE CLASS (Classes 1, 9, 21, 23, 31, and 35). SN 286,849. Pub. 10–15–68. Filed 12–13–67.

Class 2 — Receptades

862,561. (See Class 1 for this trademark.)

862,564. NARCOTI-GUARD. American Hospital Supply Corporation. SN 261,136. Pub. 10–15–68. Filed 12–20–66.

862,565. ELPO. Elpo Industries Inc. MULTIPLE CLASS (Classes 2 and 23). SN 261,723. Pub. 10–15–68. Filed 12–30–66.

862,566. COLEMAN AND DESIGN. The Coleman Company, Inc. MULTIPLE CLASS (Classes 2, 6, 13, 15, 22, and 34). SN 262,738. Pub. 10–15–68. Filed 1–18–67.

862,567. COLDRINK. Societe Generale de Conditionnement d'Air (Societe Anonyme). SN 269,116. Pub. 10–15–68. Filed 4–13–67.

862,568. DILPACO. Dillard Paper Company, Inc. MULTIPLE CLASS (Classes 2 and 37). SN 271,927. Pub. 10–15–68. Filed 5–19–67.

862,569. CADDY COOLER. Atlantic Golf Equipment Company. SN 277,975. Pub. 10–15–68. Filed 8–10–67.

862,570. CHIEF AND DESIGN. Big Chief of Nebraska, Inc. MULTIPLE CLASS (Classes 2 and 12). SN 284,156. Pub. 10–15–68. Filed 11–6–67.

862,571. MAPES UNITRAY. Packaging Corporation of America. SN 294,782. Pub. 10–15–68. Filed 4–3–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

862,572. SPACE SAVER. Sirco Products Company, Inc. SN 277,938. Pub. 10–15–68. Filed 8–9–67.

862,573. GRANSCALE. Jana Accessories Ltd. SN 294,938. Pub. 10–15–68. Filed 4–4–68.

862,574. 2ND CHOICE. M. Fortunoff of Westbury Corp. SN 302,559. Pub. 10–15–68. Filed 7–12–68.

Class 4 — Abrasives and Polishing Materials

862,561. (See Class 1 for this trademark.)

862,575. ASH AND DESIGN. Ash Precision Equipment, Inc. MULTIPLE CLASS (Classes 4, 23, 26, 27, and 32). SN 263,344. Pub. 6–4–68. Filed 1–26–67.

862,576. KEM'KAL ACTION AND DESIGN. M & M Industrial Services, Inc. SN 289,818. Pub. 10–15–68. Filed 1–29–68.

862,577. SENSE. Bristol-Myers Company. SN 296,395. Pub. 10–15–68. Filed 4–24–68.

862,578. SILVA-MIT. Empire Silver Company, Inc. SN 296,917. Pub. 10–15–68. Filed 4–30–68.

Class 5 — Adhesives

862,559. (See Class 1 for this trademark.)

862,561. (See Class 1 for this trademark.)

862,579. A PLAID DESIGN. Minnesota Mining and Manufacturing Company. SN 277,410. Pub. 10–15–68. Filed 8–3–67.

862,580. WOTHANE. Woburn Chemical Corp. SN 280,995. Pub. 10–15–68. Filed 9–22–67.

Class 6 — Chemicals and Chemical Compositions

862,561. (See Class 1 for this trademark.)

862,566. (See Class 2 for this trademark.)

862,581. KALMINEX. Foseco Trading AG. SN 258,800. Pub. 10–15–68. Filed 11–16–66.

862,582. CELLOIDE. Ugine Kuhlmann. SN 267,866. Pub. 10–15–68. Filed 3–29–67.

862,583. UNI-KEM. Safety First Products Corporation. SN 268,227. Pub. 12–19–67. Filed 4–3–67.

862,584. ALUGAN. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning. SN 268,393. Pub. 10–15–68. Filed 4–5–67.

862,585. SILCOCELL. Imperial Chemical Industries Limited. SN 273,284. Pub. 10–15–68. Filed 6–7–67.

862,586. LUBRAZINC. Witco Chemical Company, Inc. SN 274,011. Pub. 10–15–68. Filed 6–15–67.

862,587. LUBRACAL. Witco Chemical Company, Inc. SN 274,012. Pub. 10–15–68. Filed 6–15–67.

862,588. NT. Photocircuits Corporation. SN 276,600. Pub. 10–15–68. Filed 7–24–67.

862,589. "SIZZLE." Madison Chemical Corporation. SN 280,442. Pub. 10–15–68. Filed 9–15–67.

862,590. STARLICIDE. Ralston Purina Company. SN 282,626. Pub. 10–15–68. Filed 10–16–67.

862,591. CARPETIZE. Maywood Distributing Company. SN 284,697. Pub. 10–15–68. Filed 11–13–67.

862,592. SMOKE 'EM. Nott Manufacturing Co., Inc. SN 291,891. Pub. 10–15–68. Filed 2–26–68.

862,593. OBI-ETCH. Roberts and Porter, Inc. SN 292,301. Pub. 10–15–68. Filed 3–1–68.

862,594. DENSO-DEV. Roberts and Porter, Inc. SN 292,302. Pub. 10–15–68. Filed 3–1–68.

862,595. NORTRON. Fisons Pest Control Limited. SN 292,370. Pub. 10–15–68. Filed 3–4–68.

862,596. TECHNI-NICKEL. Technic, Inc. SN 292,431. Pub. 10–15–68. Filed 3–4–68.

862,597. TECHNI-WHITE. Technic, Inc. SN 292,432. Pub. 10–15–68. Filed 3–4–68.

862,598. VITAMAT. The FR Corporation. SN 292,561. Pub. 10–15–68. Filed 3–6–68.

862,599. AIRE-MATE. Versatek Industries, Inc. SN 294,786. Pub. 10–15–68. Filed 4–3–68.

862,600. FOLICOTE. Sun Oil Company. SN 297,615. Pub. 10–15–68. Filed 5–7–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

862,563. (See Class 1 for this trademark.)

862,601. H AND DESIGN. Hodgdon Powder Company, Inc. SN 289,804. Pub. 10–15–68. Filed 1–29–68.

862,602. MSO AND DESIGN. L. W. Loyd Company, Inc. SN 289,815. Pub. 10–15–68. Filed 1–29–68.

862,603. CESCO. Central Specialties Company. SN 292,319. Pub. 10–15–68. Filed 3–4–68.

Class 10 — Fertilizers

862,561. (See Class 1 for this trademark.)

862,604. RADIANT. Radiant Color Company. SN 285,852. Pub. 10–15–68. Filed 11–29–67.

Class 11 — Inks and Inking Materials

862,561. (See Class 1 for this trademark.)

862,562. (See Class 1 for this trademark.)

862,605. BOWERS AND DESIGN. Bowers Printing Ink Company. SN 286,085. Pub. 10–15–68. Filed 12–4–67.

Class 12 — Construction Materials

862,559. (See Class 1 for this trademark.)

862,561. (See Class 1 for this trademark.)

862,570. (See Class 2 for this trademark.)

862,606. ECONATONE. National Gypsum Company. SN 268,610. Pub. 10–15–68. Filed 4–7–67.

862,607. PEG STUDS. Structural Fasteners, Inc. SN 279,227. Pub. 10–15–68. Filed 8–28–67.

862,608. ARP ABRASION RESISTANT PRODUCTS. Melvin L. Jontz Company. SN 280,712. Pub. 10–15–68. Filed 9–19–67.

862,609. EN GARDE. Johns-Manville Corporation. SN 285,429. Pub. 10–15–68. Filed 11–22–67.

862,610. MINI-DOME AND DESIGN. Spartan-Aqualon Corporation. SN 294,085. Pub. 10–15–68. Filed 3–25–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

862,566. (See Class 2 for this trademark.)

862,611. FOSTER. Foster Manufacturing Co., Inc. MULTIPLE CLASS (Classes 13, 23, and 35). SN 253,214. Pub. 7–2–68. Filed 8–26–66.

862,612. FOR HEALTH'S SAKE! Sani-Jon of America, Inc. SN 269,355. Pub. 10–15–68. Filed 4–17–67.

862,613. HYDRO-AIRE. Crane Co. SN 278,876. Pub. 4–23–68. Filed 8–23–67.

862,614. FLO-COAT. Allied Tube & Conduit Corporation. SN 285,181. Pub. 10–15–68. Filed 11–20–67.

862,615. TAURIUM. Moline Malleable Iron Company. SN 288,222. Pub. 10–15–68. Filed 1–5–68.

862,616. A (DESIGN). American Tack & Hardware Co., Inc. MULTIPLE CLASS (Classes 13 and 21). SN 293,072. Pub. 10–15–68. Filed 3–13–68.

862,617. ACCU-TRIM. Racine Hydraulics, Inc. SN 302,286. Pub. 10–15–68. Filed 7–9–68.

Class 14 — Metals and Metal Castings and Forgings

862,618. MAGNE CORE. Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.). SN 290,088. Pub. 10–15–68. Filed 2–1–68.

862,619. HX. Cyclops Corporation. SN 295,121. Pub. 10–15–68. Filed 4–8–68.

Class 15 — Oils and Greases

862,561. (See Class 1 for this trademark.)

862,566. (See Class 2 for this trademark.)

Class 16 — Protective and Decorative Coatings

862,561. (See Class 1 for this trademark.)

862,620. VISTRON. Vistron Corporation, assignee of The Standard Oil Company. SN 257,803. Pub. 10–15–68. Filed 11–2–66.

862,621. AQUA-PROCESS. Iddings Paint Company, Inc. SN 266,155. Pub. 10–15–68. Filed 3–7–67.

862,622. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 290,485. Pub. 10–15–68. Filed 2–7–68.

Class 17 — Tobacco Products

862,623. FJORD. Lane Limited. SN 300,712. Pub. 10–15–68. Filed 6–18–68.

Class 18 — Medicines and Pharmaceutical Preparations

862,561. (See Class 1 for this trademark.)

862,624. ACEROLA PLUS. U.S. Nutrition Products Co., Inc. SN 233,659. Pub. 7–26–66. Filed 11–30–65.

862,625. REDI-DOSE. Merck & Co., Inc. SN 270,798. Pub. 10–15–68. Filed 5–5–67.

862,626. DONNAPRIN. Dunhall Inc. SN 277,899. Pub. 10–15–68. Filed 8–9–67.

862,627. BARICONE. Reed & Carnrick. SN 281,314. Pub. 10–15–68. Filed 9–27–67.

862,628. DOLORINA. Arday International Corp. SN 283,498. Pub. 10–15–68. Filed 10–27–67.

Class 19 — Vehides

862,559. (See Class 1 for this trademark.)

862,629. TOMOS AND DESIGN. Tomos Tovarna Motornih Vozil. MULTIPLE CLASS (Classes 19 and 23). SN 261,556. Pub. 5–21–68. Filed 11–25–66.

862,630. FORMULA. Thunderbird Products Corporation. SN 285,684. Pub. 10–15–68. Filed 11–27–67.

862,631. HORSE AND SHIELD (DESIGN). Ferrari S.p.A. Esercizio Fabbriche Automobili e Corse. SN 286,254. Pub. 10–15–68. Filed 12–5–67.

862,632. FERRARI AND DESIGN. Ferrarri S.p.A. Esercizio Fabbriche Automobili e Corse. SN 286,256. Pub. 10–15–68. Filed 12–5–67.

862,633. SF AND DESIGN. Ferrari S.p.A. Esercizio Fabbriche Automobili e Corse. SN 286,257. Pub. 10–15–68. Filed 12–5–67.

862,634. YOUNG-MATE. Spartans Industries, Inc. SN 288,648. Pub. 10–15–68. Filed 1–11–68.

862,635. TILDEN. S. G. Tilden, Incorporated. SN 290,776. Pub. 10–15–68. Filed 2–9–68.

862,636. STYRO-CORE AND DESIGN. The Commodore Corporation, assignee of Sunset Traveler, Inc. SN 291,535. Pub. 10–15–68. Filed 2–20–68.

Class 20 — Linoleum and Oiled Cloth

862,561. (See Class 1 for this trademark.)

Class 21 — Electrical Apparatus, Machines, and Supplies

862,559. (See Class 1 for this trademark.)

862,563. (See Class 1 for this trademark.)

862,616. (See Class 13 for this trademark.)

862,637. EMC ELECTRONIC MODULES CORPORATION AND DESIGN. Electronic Modules Corporation. SN 249,630. Pub. 11–7–67. Filed 7–6–66.

862,638. SYMPHONETTE. Longines-Wittnauer Watch Co., Inc. MULTIPLE CLASS (Classes 21 and 26). SN 255,267. Pub. 3–14–67. Filed 9–28–66.

862,639. SEA AND DESIGN. Societe d'Electronique et d'Automatisme. SN 261,598. Pub. 10–15–68. Filed 12–28–66.

862,640. SIGNAFLO. Kent Corporation. SN 266,892. Pub. 1–23–68. Filed 3–16–67.

862,641. KLENATRON. Klenatron Incorporated. SN 270,393. Pub. 10–15–68. Filed 5–1–67.

862,642. MISCELLANEOUS DESIGN. Benthos, Inc. MULTIPLE CLASS (Classes 21, 23, and 26). SN 272,444. Pub. 10–15–68. Filed 5–26–67.

862,643. NORELCO AND DESIGN. North American Philips Company, Inc. MULTIPLE CLASS (Classes 21, 23, 36, and 44). SN 277,847. Pub. 10–15–68. Filed 8–9–67.

862,644. TELESCRIPTER. SCM Corporation. SN 284,397. Pub. 10–15–68. Filed 11–8–67.

862,645. DURALL-T. Anaconda Wire and Cable Company. SN 288,167. Pub. 10–15–68. Filed 1–5–68.

862,646. SOLISTRON. Western Microwave Laboratories, Incorporated. SN 288,395. Pub. 9–10–68. Filed 1–8–68.

862,647. AIR BEAM AND DESIGN. Sunbeam Lighting Company. SN 288,988. Pub. 10–15–68. Filed 12–20–67.

862,648. LIGHTNING. Brunswick Corporation. SN 289,266. Pub. 10–15–68. Filed 1–22–68.

862,649. PRESTO. National Presto Industries, Inc. SN 291,174. Pub. 10–15–68. Filed 2–15–68.

862,650. COLSTON TURBO-JET. Charles Colston Limited. SN 292,350. Pub. 10–15–68. Filed 3–4–68.

862,651. COLOR-LYTIC. Cornell-Dubilier Electric Corporation. SN 292,354. Pub. 10–15–68. Filed 3–4–68.

862,652. EAGLE-EYE. Continental Instruments Corp. SN 293,979. Pub. 10–15–68. Filed 3–25–68.

862,653. HAPPY LITE. Duro-Test Corporation. SN 294,228. Pub. 10–15–68. Filed 3–27–1968.

862,654. SUNBEAM. Sunbeam Corporation. SN 294,421. Pub. 10–15–68. Filed 3–28–68.

862,655. ULTRACON. T. B. Wood's Sons Company. SN 300,318. Pub. 10–15–68. Filed 6–13–68.

862,656. JAMB-GARD. Continental Instruments Corp. SN 300,395. Pub. 10–15–68. Filed 6–14–68.

862,657. RCA (DESIGN). Radio Corporation of America. SN 302,363. Pub. 10–15–68. Filed 7–10–68.

862,658. RCA. Radio Corporation of America. SN 302,365. Pub. 10–15–68. Filed 7–10–68.

862,659. 2ND CHOICE. M. Fortunoff of Westbury Corp. SN 302,560. Pub. 10–15–68. Filed 7–12–68.

Class 22 — Games, Toys, and Sporting Goods

862,559. (See Class 1 for this trademark.)

862,566. (See Class 2 for this trademark.)

862,660. 1884. C. M. McClung & Co., Inc. MULTIPLE CLASS (Classes 22, 23, 26, 29, and 35). SN 255,252. Pub. 10–15–68. Filed 9–28–66.

862,661. SHAKESPEARE. The Avalon Hill Company. SN 261,620. Pub. 10–31–67. Filed 12–29–66.

862,662. SG AND DESIGN. Stanley Gibbons Limited. MULTIPLE CLASS (Classes 22 and 38). SN 268,625. Pub. 10–15–68. Filed 4–7–67.

862,663. NILS MASTER AND DESIGN. Nils Master, Inc. SN 274,336. Pub. 10–15–68. Filed 6–20–67.

862,664. RUMMIKUB. Ephraim Hertzano. SN 274,728. Pub. 10–15–68. Filed 6–26–67.

862,665. JET E HOOP AND DESIGN. Charles C. Edwards. SN 275,369. Pub. 10–15–68. Filed 7–5–67.

862,666. STACK-A-CLOWN. Multi-State Industries, Inc. SN 284,710. Pub. 10–15–68. Filed 11–13–67.

862,667. DAZ-E-BLAZER. Daz-E-Mae Lure Company. SN 284,808. Pub. 10–15–68. Filed 11–14–67.

862,668. DEE BEE CO. Dan Brechner & Company, Inc. SN 285,109. Pub. 10–15–68. Filed 11–17–67.

862,669. 1·2·KANGAROO. 1·2·Kangaroo, Inc. SN 286,028. Pub. 10–15–68. Filed 12–1–67.

862,670. PSYKONOSIS. A to Z Ideas, Inc. SN 286,485. Pub. 10–15–68. Filed 12–8–67.

862,671. EDUCAID AND DESIGN. Aloysius F. Magewick. SN 292,590. Pub. 10–15–68. Filed 3–6–68.

862,672. STUMP. Milton Bradley Company. SN 292,947. Pub. 10–15–68. Filed 3–11–68.

862,673. ASTROPODS. Mattel, Inc. SN 294,137. Pub. 10–15–68. Filed 3–26–68.

862,674. CREATURELINGS. Mattel, Inc. SN 294,138. Pub. 10–15–68. Filed 3–26–68.

862,675. GOOGLI. Mattel, Inc. SN 294,139. Pub. 10–15–68. Filed 3–26–68.

862,676. VENUSEEDS. Mattel, Inc. SN 294,141. Pub. 10–15–68. Filed 3–26–68.

862,677. LOST LINGS. Mattel, Inc. SN 294,143. Pub. 10–15–68. Filed 3–26–68.

862,678. REMCRAFT. Remco Industries, Inc. SN 294,857. Pub. 10–15–68. Filed 4–3–68.

862,679. SEE 'N SAY. Mattel, Inc. SN 294,891. Pub. 10–15–68. Filed 4–4–68.

862,680. YORK. York, Feather & Down Corp. SN 295,489. Pub. 10–15–68. Filed 4–12–68.

862,681. LITTLE BOY (DESIGN). Rainbow Crafts, Inc. SN 301,495. Pub. 10–15–68. Filed 6–27–68.

862,682. SKEDIDDLER. Mattel, Inc. SN 301,889. Pub. 10–15–68. Filed 7–3–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

862,561. (See Class 1 for this trademark.)

862,563. (See Class 1 for this trademark.)

862,565. (See Class 2 for this trademark.)

862,575. (See Class 3 for this trademark.)

862,611. (See Class 13 for this trademark.)

862,629. (See Class 19 for this trademark.)

862,660. (See Class 22 for this trademark.)

862,642. (See Class 21 for this trademark.)

862,643. (See Class 21 for this trademark.)

862,683. EATON. Eaton Yale & Towne Inc. SN 264,312. Pub. 10–15–68. Filed 2–9–67.

862,684. AUTOMATIC. Eaton Yale & Towne Inc. SN 265,891. Pub. 9–17–68. Filed 3–3–67.

862,685. JET SEW AND DESIGN. Jet Sew Inc. SN 266,546. Pub. 10–15–68. Filed 3–13–67.

862,686. AIR-MAZE. North American Rockwell Corporation, by merger and change of name from Rockwell-Standard Corporation. MULTIPLE CLASS (Classes 23, 31, and 34). SN 269,009. Pub. 10–15–68. Filed 4–13–67.

862,687. CLP COLORADO LEISURE PRODUCTS AND DESIGN. Colorado Leisure Products, Inc. SN 270,356. Pub. 10–15–68. Filed 5–1–67.

862,688. MM AND DESIGN. Mix-Mill, Inc. SN 279,406. Pub. 10–15–68. Filed 8–30–67.

862,689. GRIFFIN AND DESIGN. Deep Steam Extraction Ltd. SN 283,994. Pub. 10–15–68. Filed 11–2–67.

862,690. BERKELEY SQUARE. Oneida Ltd. SN 284,231. Pub. 10–15–68. Filed 11–6–67.

862,691. GUARD-LINE. General Fire Extinguisher Corporation. SN 284,470. Pub. 10–15–68. Filed 11–9–67.

862,692. TRIPLE CLEAN AND DESIGN. Triple Clean, Inc. SN 284,518. Pub. 10–15–68. Filed 11–9–67.

862,693. THERMO-JECT. Van Dorn Company. SN 284,851. Pub. 10–15–68. Filed 11–14–67.

862,694. REEL-A-MATIC. William M. Wilson's Sons, Inc. SN 285,080. Pub. 10–15–68. Filed 11–16–67.

862,695. BLISSTEEL. E. W. Bliss Company. SN 286,084. Pub. 10–15–68. Filed 12–4–67.

862,696. THE TIME SAVER. Master Tank & Welding Co. SN 291,516. Pub. 10–15–68. Filed 2–20–68.

862,697. SCREEDMATIC. Kelly Industrial Company. SN 291,991. Pub. 10–15–68. Filed 2–27–68.

862,698. FLOMATIC. Lomag Corporation. SN 294,293. Pub. 10–15–68. Filed 3–27–68.

862,699. HARDHED AND DESIGN. J. K. Smit & Sons, Inc. SN 298,387. Pub. 10–15–68. Filed 5–17–68.

862,700. DYKON. J. K. Smit & Sons, Inc. SN 298,388. Pub. 10–15–68. Filed 5–17–68.

862,701. ANNIVERSARY. The International Silver Company. SN 298,773. Pub. 10–15–68. Filed 5–22–68.

862,702. TERRAMITE. Diesel Sales & Service, Inc. SN 301,487. Pub. 10–15–68. Filed 6–27–68.

Class 26 — Measuring and Scientific Appliances

862,561. (See Class 1 for this trademark.)

862,575. (See Class 3 for this trademark.)

862,638. (See Class 21 for this trademark.)

862,660. (See Class 22 for this trademark.)

862,642. (See Class 21 for this trademark.)

862,703. MEDELCO AND DESIGN. Medelco, Incorporated. SN 257,063. Pub. 8–20–68. Filed 10–24–66.

862,704. ZENITH. Zenith Radio Corporation. SN 271,007. Pub. 10–15–68. Filed 5–8–67.

862,705. ALCO AND DESIGN. Al Nyman & Son, Inc. SN 278,404. Pub. 10–15–68. Filed 8–16–67.

862,706. VISTRON AND DESIGN. Nicholas G. Festos. SN 280,036. Pub. 6–18–68. Filed 9–11–67.

862,707. SEMIDUCER. Conrac Corporation. SN 281,456. Pub. 10–15–68. Filed 9–29–67.

862,708. CSM. Technicon Corporation. SN 290,774. Pub. 10–15–68. Filed 2–9–68.

862,709. MAGNE-FLASH. Arthur H. Thomas Company. SN 290,984. Pub. 10–15–68. Filed 2–13–68.

862,710. INTRIMIK. Brown & Sharpe Manufacturing Company. SN 292,318. Pub. 10–15–68. Filed 3–4–68.

862,711. VERNIDEX. Vernitron Corporation. SN 293,675. Pub. 10–15–68. Filed 3–20–68.

Class 27 — Horological Instruments

862,575. (See Class 3 for this trademark.)

862,712. LEVERETTE. The Pan American Barter Co., Inc. SN 294,074. Pub. 10–15–68. Filed 3–25–68.

Class 28 — Jewelry and Precious-Metal Ware

862,713. MINI DIAMONDS. Helzberg's Diamond Shops, Inc. SN 293,136. Pub. 10–15–68. Filed 3–13–68.

862,714. BOU. Irving Weinberger, d.b.a. Bouche Jewelers. SN 293,187. Pub. 10–15–68. Filed 3–13–68.

862,715. SILVERADO. Sunbell Corporation. SN 294,091. Pub. 10–15–68. Filed 3–25–68.

Class 29 — Brooms, Brushes, and Dusters

862,660. (See Class 22 for this trademark.)

Class 31 — Filters and Refrigerators

862,563. (See Class 1 for this trademark.)

862,686. (See Class 23 for this trademark.)

Class 32 — Furniture and Upholstery

862,575. (See Class 3 for this trademark.)

862,716. 2ND CHOICE. M. Fortunoff of Westbury Corp. SN 302,562. Pub. 10–15–68. Filed 7–12–68.

Class 33 — Glassware

862,717. STAN PAK AND DESIGN. Standard Packaging Corporation. SN 288,369. Pub. 10–15–68. Filed 1–8–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

862,566. (See Class 2 for this trademark.)

862,686. (See Class 23 for this trademark.)

862,718. LIQUICOOLER. Modine Manufacturing Company. SN 267,341. Pub. 10–15–68. Filed 3–22–67.

862,719. ALBRAZE. Modine Manufacturing Company. SN 267,342. Pub. 10–15–68. Filed 3–22–67.

862,720. LOK AIR. Lok-Products Co. SN 278,707. Pub. 10–15–68. Filed 8–21–67.

862,721. DESIGN OF ANCHOR AND H. Anchor Hocking Glass Corporation. SN 282,252. Pub. 10–15–68. Filed 10–11–67.

862,722. ANCHOR HOCKING. Anchor Hocking Glass Corporation. SN 282,254. Pub. 10–15–68. Filed 10–11–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

862,563. (See Class 1 for this trademark.)

862,611. (See Class 13 for this trademark.)

862,660. (See Class 22 for this trademark.)

862,723. FIVE STAR. The Armstrong Rubber Company. SN 286,077. Pub. 8–20–68. Filed 12–4–67.

862,724. CAMINERO IV. The Firestone Tire & Rubber Company. SN 290,837. Pub. 10–15–68. Filed 2–12–68.

862,725. DOALL AND DESIGN. DoALL Company. SN 294,020. Pub. 10–15–68. Filed 3–25–68.

862,726. GLASSPORT. The Firestone Tire & Rubber Company. SN 294,178. Pub. 10–15–68. Filed 3–26–68.

862,727. CUSTOM CRUISER. The Goodyear Tire & Rubber Company. SN 294,183. Pub. 10–15–68. Filed 3–26–68.

862,728. POLYSTEEL. The Goodyear Tire & Rubber Company. SN 294,186. Pub. 10–15–68. Filed 3–26–68.

Class 36 — Musical Instruments and Supplies

862,643. (See Class 21 for this trademark.)

862,729. AMBASSADOR. Ambassador Record Corporation. SN 266,493. Pub. 8–6–68. Filed 3–13–67.

862,730. INDEPENDENCE AND DESIGN. Independence Records. SN 275,377. Pub. 10–15–68. Filed 7–5–67.

862,731. HARMONY A PRODUCT OF COLUMBIA RECORDS AND DESIGN. Columbia Broadcasting System, Inc. SN 287,803. Pub. 10–15–68. Filed 12–29–67.

862,732. QUIXONIC. Quixonic, Inc. SN 288,347. Pub. 10–15–68. Filed 1–8–68.

862,733. TRANS-POR. Institute of Applied Hypnosis, Inc. SN 289,990. Pub. 10–15–68. Filed 1–31–68.

Class 37 — Paper and Stationery

862,561. (See Class 1 for this trademark.)

862,568. (See Class 2 for this trademark.)

862,734. TRANS-PAK. Avery Products Corporation, assignee, by mesne assignment, of Chart-Pak, Incorporated. SN 219,181. Pub. 5–24–66. Filed 5–19–65.

862,735. TEXAS SAFETY AND DESIGN. Stafford-Lowdon Company. SN 255,926. Pub. 10–15–68. Filed 10–6–66.

862,736. STACK-O-MATIC. Eaton Allen Corp. SN 279,543. Pub. 10–15–68. Filed 9–1–67.

862,737. SUR-WIPE AND DESIGN. Fort Howard Paper Company (Delaware corporation), assignee of Fort Howard Paper Company (Wisconsin corporation). SN 280,945. Pub. 10–15–68. Filed 9–22–67.

862,738. GAFORMS. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 284,466. Pub. 10–15–68. Filed 11–9–67.

862,739. TRIUMPH. Textron Inc. SN 284,528. Pub. 10–15–68. Filed 11–3–67.

862,740. SWAN DESIGN. Swanee Paper Corporation. SN 288,884. Pub. 10–15–68. Filed 1–15–68.

862,741. UNIPECO AND DESIGN. Union Pen & Pencil Corp. SN 292,143. Pub. 10–15–68. Filed 2–28–68.

862,742. UNIPECO. Union Pen & Pencil Corp. SN 292,228. Pub. 10–15–68. Filed 2–29–68.

862,743. PLASTICOLOR. Westab Inc. SN 292,230. Pub. 10–15–68. Filed 2–29–68.

Class 38 — Prints and Publications

862,562. (See Class 1 for this trademark.)

862,662. (See Class 22 for this trademark.)

862,744. WEIGHT WATCHERS. Weight Watchers International, Inc. SN 249,692. Pub. 6–18–68. Filed 7–6–66.

862,745. OVERVIEW. The Thomas More Association. SN 255,557. Pub. 10–15–68. Filed 9–30–66.

862,746. WD. The Irving-Cloud Publishing Company. SN 282,090. Pub. 10–15–68. Filed 10–9–67.

862,747. MR. STRUT AND DESIGN. Unistrut Corporation. SN 285,597. Pub. 10–15–68. Filed 11–24–67.

862,748. SAWYER'S. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 288,691. Pub. 10–15–68. Filed 1–12–68.

862,749. EXITODINAMIA. Success Motivation Institute, Inc. SN 293,674. Pub. 10–15–68. Filed 3–20–68.

862,750. THE MAKING OF THE PRESIDENT. Theodore H. White. SN 296,366. Pub. 10–15–68. Filed 4–23–68.

862,751. GRIN AND BEAR IT. Field Enterprises, Inc. SN 302,469. Pub. 10–15–68. Filed 7–11–68.

862,752. 2ND CHOICE. M. Fortunoff of Westbury Corp. SN 302,563. Pub. 10–15–68. Filed 7–12–68.

Class 39 — Clothing

862,753. BANDURA. Joseph Bancroft & Sons Co. SN 255,407. Pub. 7–25–67. Filed 9–29–66.

862,754. WOLFER. Santoron Co., Ltd. SN 263,701. Pub. 10–15–68. Filed 1–31–67.

862,755. ARISTO-BLEND. Phillips-Van Heusen Corporation. SN 268,334. Pub. 10–15–68. Filed 4–4–67.

862,756. LADY MENDEL. H. Mendel & Co., Inc. SN 269,194. Pub. 10–15–68. Filed 4–14–67.

862,757. PERMA BUILT. Mangel Stores Corporation. SN 271,057. Pub. 10–15–68. Filed 5–9–67.

862,758. SILTRON. Alamo Manufacturing Co., Inc. SN 271,998. Pub. 10–15–68. Filed 5–22–67.

862,759. FREDELLE AND DESIGN. Fredelle Footwear, Inc. SN 272,377. Pub. 10–15–68. Filed 5–25–67.

862,760. WAYFINDERS. The British Bata Shoe Company Limited. SN 273,367. Pub. 10–15–68. Filed 6–8–67.

862,761. BAYBROOK. Baybrook, Inc. SN 274,581. Pub. 10–15–68. Filed 6–23–67.

862,762. ZEUS. Puritan Fashions Corporation. SN 275,686. Pub. 10–15–68. Filed 7–10–67.

862,763. SOO. Traverse Bay Woolen Company. MULTIPLE CLASS (Classes 39 and 42). SN 276,191. Pub. 10–15–68. Filed 7–17–67.

862,764. NILLY MILLY. William Bagry, d.b.a. William Bagry Hosiery Co. SN 277,877. Pub. 10–15–68. Filed 8–9–67.

862,765. MINA SALA. Mina Sala. SN 278,130. Pub. 10–15–68. Filed 8–11–67.

862,766. THE LEAST. Fortuna Foundations, Inc. SN 278,295. Pub. 10–15–68. Filed 8–15–67.

862,767. BAR D AND DESIGN. Diana Stores Corporation. SN 280,218. Pub. 10–15–68. Filed 9–13–67.

862,768. FANTASY. Genesco Inc. SN 280,700. Pub. 7–23–68. Filed 9–19–67.

862,769. STRETCH-O-RAMA. Altshul, Stern & Co., Inc., d.b.a. Young Sport Fashions. SN 281,858. Pub. 10–15–68. Filed 10–5–67.

862,770. GOLD CIRCLE. Federated Department Stores, Inc. SN 282,992. Pub. 10–15–68. Filed 10–20–67.

862,771. EMSOLD. Emsold-Gesellschaft Gert Helmers KG SN 283,328. Pub. 10–15–68. Filed 10–25–67.

862,772. GOLD CIRCLE. Federated Department Stores, Inc SN 283,513. Pub. 10–15–68. Filed 10–27–67.

862,773. BILLY BEST. Zayre Corp. SN 284,061. Pub. 10–15–68. Filed 11–2–67.

862,774. PIMATISTE. Shadowline, Incorporated. SN 285,463. Pub. 10–15–68. Filed 11–22–67.

862,775. DEB DUDS. Lees Manufacturing Co. SN 287,023. Pub. 10–15–68. Filed 12–15–67.

862,776. MULES BY BRAY AND DESIGN. J. W. Bray Company, Inc. SN 287,881. Pub. 10–15–68. Filed 1–2–68.

862,777. DUNK-EES AND DESIGN. J. W. Bray Company, Inc. SN 287,883. Pub. 10–15–68. Filed 1–2–68.

862,778. MR. ALMO. Allied Stores Corporation. SN 289,066. Pub. 10–15–68. Filed 1–18–68.

862,779. MILADY MAGOO. Charmose, Inc. SN 289,967. Pub. 10–15–68. Filed 1–31–68.

862,780. FEATHERLOCK. The Enro Shirt Company, Inc. SN 290,086. Pub. 10–15–68. Filed 2–1–68.

862,781. TURINA. World Import Co., Inc. SN 290,121. Pub. 10–15–68. Filed 2–1–68.

862,782. DEB-BELL-A. Verna G. Hager. SN 290,169. Pub. 10–15–68. Filed 2–2–68.

862,783. CADENCE. Russell Hosiery Mills, Inc. SN 290,537. Pub. 10–15–68. Filed 2–7–68.

862,784. JUILLIARD THE ARISTOCRAT OF SLACKS. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 290,605. Pub. 10–15–68. Filed 2–8–68.

862,785. DESIGNED BY SALVATORE AND DESIGN. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 290,978. Pub. 10–15–68. Filed 2–13–68.

862,786. LATINAS. Mid-Atlantic Footwear Corp. SN 291,170. Pub. 10–15–68. Filed 2–15–68.

862,787. INDUSTRIAL CORNER. Norstan Industries, Inc. SN 292,411. Pub. 10–15–68. Filed 3–4–68.

862,788. PACK AGE PEOPLE. S. Augstein & Co., Inc. SN 292,717. Pub. 10–15–68. Filed 3–7–68.

862,789. MAVERICK. Blue Bell, Inc. SN 293,349. Pub. 10–15–68. Filed 3–15–68.

862,790. TRUE MERIT. Associated Dry Goods Corporation. SN 293,461. Pub. 10–15–68. Filed 3–18–68.

862,791. KATI AND DESIGN. Kati Screenprints Inc. SN 293,929. Pub. 10–15–68. Filed 3–22–68.

862,792. KIMBIES. Kimberly-Clark Corporation. SN 294,055. Pub. 10–15–68. Filed 3–25–68.

862,793. TY-UPS AND DESIGN. Bel-Mor Knitwear, Inc. SN 294,251. Pub. 10–15–68. Filed 3–27–68.

862,794. ALYTA. Encore Shoe Corporation. SN 294,605. Pub. 10–15–68. Filed 4–1–68.

862,795. JUILLIARD THE ARISTOCRAT OF SUITS. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 294,734. Pub. 10–15–68. Filed 4–2–68.

862,796. LIMITED EDITION. Ship 'N Shore, Inc. SN 294,754. Pub. 10–15–68. Filed 4–2–68.

862,797. SURELLI. Proudfoot Hosiery Corp. SN 295,252. Pub. 10–15–68. Filed 4–9–68.

862,798. JUILLIARD THE ARISTOCRAT OF SWEATERS. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 295,731. Pub. 10–15–68. Filed 4–16–68.

862,799. ENJAY. Standard Oil Company. SN 296,239. Pub. 10–15–68. Filed 4–23–68.

862,800. ALASKAIRKOAT AND DESIGN. John C. Boswell. SN 301,034. Pub. 10–15–68. Filed 6–21–68.

862,801. ASTRO AND DESIGN. Endicott Johnson Corporation. SN 301,213. Pub. 10–15–68. Filed 6–24–68.

862,802. ARGONAUTS. Eloesser-Heynemann Company. SN 301,924. Pub. 10–15–68. Filed 7–3–68.

862,803. TERRY SUE. Terry Sue Casuals, Inc. SN 302,575. Pub. 10–15–68. Filed 7–12–68.

Class 40 — Fancy Goods, Furnishings, and Notions

862,804. TIP TOE AND DESIGN. B. B. Greenberg Co. SN 279,189. Pub. 10–15–68. Filed 8–28–67.

862,805. MR. JEROME AND DESIGN. Mr. Jerome, Inc. SN 282,095. Pub. 10–15–68. Filed 10–9–67.

862,806. VENUS. Dynasty Enterprises, Inc. SN 287,902. Pub. 10–15–68. Filed 1–2–68.

862,807. MR. ALMO. Allied Stores Corporation. SN 289,067. Pub. 10–15–68. Filed 1–18–68.

862,808. WIGS BY DIANA. Ideal Wig Company, Inc. SN 290,494. Pub. 10–15–68. Filed 2–7–68.

862,809. GABRIELLE. Fashion Tress, Inc. SN 296,614. Pub. 10–15–68. Filed 4–26–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

862,559. (See Class 1 for this trademark.)

862,763. (See Class 39 for this trademark.)

862,810. ELASTICOOL. Rayflex Fabrics, Inc. SN 267,266. Pub. 10–15–68. Filed S.R. 3–21–67; Am. P.R. 6–4–68.

862,811. TISSUEFLEX. Rayflex Fabrics, Inc. SN 267,664. Pub. 10–15–68. Filed S.R. 3–27–67; Am. P.R. 6–4–68.

862,812. PERKYS. Mary Epps Perkins, d.b.a. Saltys Caps & Apparel. SN 276,682. Pub. 5–14–68. Filed 7–24–67.

862,813. SK KILSUND ORIGINAL DUBBEL STRETCH AND DESIGN. Saxylle-Kilsund AB. SN 279,865. Pub. 10–15–68. Filed 9–7–67.

862,814. THERM-A-GARD. H. K. Porter Company, Inc. SN 280,250. Pub. 5–7–68. Filed 9–13–67.

862,815. TAI MING. Noonoo Rug Co. Inc. SN 289,327. Pub. 10–15–68. Filed 1–22–68.

862,816. MOUNTED HORSEMAN (DESIGN). Burberrys Limited. SN 289,475. Pub. 10–15–68. Filed 1–24–68.

862,817. ANNIN ETC. AND DESIGN. Annin & Co. SN 290,237. Pub. 10–15–68. Filed 2–5–68.

862,818. OLYMPIC-NORTH AMERICAN. North American Mills, Inc. SN 292,605. Pub. 10–15–68. Filed 3–6–68.

862,819. ENJAY. Standard Oil Company. SN 296,240. Pub. 10–15–68. Filed 4–23–68.

862,820. ENJAY. Standard Oil Company. SN 296,241. Pub. 10–15–68. Filed 4–23–68.

Class 43 — Thread and Yarn

862,821. ENJAY. Standard Oil Company. SN 296,242. Pub. 10–15–68. Filed 4–23–68.

Class 44 — Dental, Medical, and Surgical Appliances

862,643. (See Class 21 for this trademark.)

862,822. DISPOS-A-CAP. Koberloy, Inc. SN 254,692. Pub. 10–15–68. Filed 9–19–66.

862,823. "SAFE-TIE." Lumex, Inc. SN 268,205. Pub. 10–15–68. Filed 4–3–67.

862,824. ZEIGLER FACIAL EXERCISER AND DESIGN. Zeigler Electronics, Inc. SN 271,882. Pub. 10–15–68. Filed 5–18–67.

862,825. SAROLE, INC. SAROLE SCOOP AND DESIGN. Sarole, Inc. SN 275,873. Pub. 10–15–68. Filed 7–12–67.

862,826. PROSITIONER. Professional Positioners, Inc. SN 291,635. Pub. 10–15–68. Filed 2–21–68.

862,827. 999. Bird Space Technology, Inc. SN 292,254. Pub. 10–15–68. Filed 3–1–68.

862,828. SCRUBTEAM. Minnesota Mining and Manufacturing Company. SN 297,145. Pub. 10–15–68. Filed 5–2–68.

862,829. 3M. Minnesota Mining and Manufacturing Company. SN 297,146. Pub. 10–15–68. Filed 5–2–68.

Class 45 — Soft Drinks and Carbonated Waters

862,830. DESIGN OF SPIRAL FLUTED BOTTLE. PepsiCo. Inc. SN 263,690. Pub. 10–15–68. Filed 1–31–67.

862,831. A SWEETHEART OF A COLA AND DESIGN. Ma Cherie Sales Corporation of America. SN 283,909. Pub. 10–15–68. Filed 11–1–67.

Class 46 — Foods and Ingredients of Foods

862,561. (See Class 1 for this trademark.)

862,832. H HUNTLEYS HAMBURGERS AND DESIGN. Huntleys of Lancaster, Inc. SN 255,983. Pub. 10–15–68. Filed 10–7–66.

862,833. NOMEL. Bush Boake Allen Inc. SN 272,578. Pub. 10–15–68. Filed 5–29–67.

862,834. TRAFALGAR. Trafalgar Foods Ltd. SN 274,265. Pub. 10–15–68. Filed 6–19–67.

862,835. MONOGRAM. International Milling Company Inc. SN 278,763. Pub. 10–15–68. Filed 8–22–67.

862,836. SENOR PICO RANCH BREAD. Senor Pico, Inc., d.b.a. Senor Pico's and Senor Pico's Restaurants. SN 279,105. Pub. 10–15–68. Filed 8–25–67.

862,837. DIVIDER-PAK. R. J. Reynolds Foods, Inc. SN 288,234. Pub. 10–15–68. Filed 1–5–68.

862,838. SEA BRAND AND DESIGN. Shoreline Seafoods Limited. SN 289,343. Pub. 10–15–68. Filed 1–22–68.

862,839. CAT-TAIL. Gilliam Candy Company, Incorporated. SN 291,262. Pub. 10–15–68. Filed 2–16–68.

862,840. CEDEIRA. Gandara y Haz, Ltda. SN 291,980. Pub. 10–15–68. Filed 2–27–68.

862,841. SOLDIER (DESIGN). Dofo, A.M.B.A. (Danske Ostemejeriers Faellessalg OG Osteeksport). SN 292,768. Pub. 10–15–68. Filed 3–8–68.

862,842. SUCHARD MILKA AND DESIGN. Suchard Holding Societe Anonyme. SN 293,648. Pub. 10–15–68. Filed 3–19–68.

862,843. UNOX. Unox Naamlooze Vennootschap. SN 293,669. Pub. 10–15–68. Filed 3–20–68.

862,844. LITE 'N LOW. Anderson, Clayton & Co. SN 296,291. Pub. 10–15–68. Filed 4–23–68.

Class 47 — Wines

862,845. WINE LAKES. Affiliated Distillers Brands Corp. SN 288,924. Pub. 10–15–68. Filed 1–16–68.

Class 49 — Distilled Alcoholic Liquors

862,846. SMIRNOFF LEAVES YOU BREATHLESS! Heublein, Inc. SN 273,639. Pub. 10–15–68. Filed 6–12–67.

862,847. HEATHER MIST. Flagstaff Liquor Co. SN 288,688. Pub. 10–15–68. Filed 1–12–68.

Class 50 — Merchandise Not Otherwise Classified

862,561. (See Class 1 for this trademark.)

862,848. FRANKLIN. The Franklin Mint, Inc., by change of name from General Numismatics Corporation. SN 266,221. Pub. 10–15–68. Filed 3–8–67.

862,849. ADP. Automatic Dust Prevention. SN 268,568. Pub. 10–15–68. Filed 4–7–67.

862,850. POUR-N-SEAL. Phlexode, Inc. SN 286,553. Pub. 10–15–68. Filed 12–8–67.

862,851. ACCRO-MAGNETIC. Accro Systems, Inc. SN 287,215. Pub. 10–15–68. Filed 12–19–67.

862,852. SHORE STEPS AND DESIGN. Midwest Industries, Inc. SN 288,107. Pub. 10–15–68. Filed 1–4–68.

862,853. STOUT-LITE. Stout Sign Company. SN 291,906. Pub. 10–15–68. Filed 2–26–68.

862,854. AD-ALUM. Adler Silhouette Letter Co. SN 293,890. Pub. 10–15–68. Filed 3–22–68.

862,855. SUR-LOCK. Sur-Lock Pallet, Inc. SN 295,979. Pub. 10–15–68. Filed 4–18–68.

862,856. QC AND DESIGN. San Diego Aircraft Engineering, Inc., d.b.a. QC Division, San Diego Aircraft Engineering, Inc. SN 296,581. Pub. 10–15–68. Filed 4–25–68.

Class 51 — Cosmetics and Toilet Preparations

862,857. NATURALLY BLONDE. Clairol Incorporated. SN 254,516. Pub. 10–15–68. Filed 9–15–66.

862,858. MISCELLANEOUS DESIGN. Roffler Sculptur-Kut National Franchised System, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 268,120. Pub. 10–15–68. Filed 4–3–67.

862,859. SPANISH GUITAR. Textron Inc. SN 269,702. Pub. 10–15–68. Filed 4–20–67.

862,860. FRENCH CANCAN. Caron Corporation. SN 270,226. Pub. 10–15–68. Filed 4–28–67.

862,861. COUNTRY SLICKER. Yardley of London, Inc. SN 271,880. Pub. 10–15–68. Filed 5–18–67.

862,862. THE SURE SHADES. Avon Products, Inc. SN 277,768. Pub. 10–15–68. Filed 8–8–67.

862,863. SEA GARDEN. Avon Products, Inc. SN 277,788. Pub. 10–15–68. Filed 8–8–67.

862,864. GOTHAM GOLD STRIPE. Chadbourn Gotham, Inc. SN 289,875. Pub. 10–15–68. Filed 1–30–68.

862,865. COLGATE JR. Colgate-Palmolive Company. SN 298,504. Pub. 10–15–68. Filed 5–20–68.

862,866. ALL PRO AND DESIGN. Boyer-Uecker Ent. SN 300,893. Pub. 10–15–68. Filed 6–20–68.

Class 52 — Detergents and Soaps

862,561. (See Class 1 for this trademark.)

862,858. (See Class 51 for this trademark.)

862,867. JOHNSONITE AND DESIGN. The Johnson Rubber Company. SN 266,427. Pub. 10–15–68. Filed 3–10–67.

862,868. ACCEL. The Diversey Corporation. SN 291,594. Pub. 10–15–68. Filed 2–21–68.

862,869. BI-PHAZE. Madison Chemical Corporation. SN 291,617. Pub. 10–15–68. Filed 2–21–68.

862,870. DEMOLISH. Colgate-Palmolive Company. SN 293,236. Pub. 10–15–68. Filed 3–14–68.

862,871. BOWS & ARROWS. Helene Curtis Industries, Inc. SN 293,379. Pub. 10–15–68. Filed 3–15–68.

862,872. PURINA HEALTH PRODUCTS AND DESIGN. Ralston Purina Company. SN 298,182. Pub. 10–15–68. Filed 5–15–68.

Service Marks

Class 100 — Miscellaneous

862,561. (See Class 1 for this trademark.)

862,873. LEONIE'S BAR RESTAURANT AND DESIGN. Cyrus F. Bell and Sally Bell (joint owners). SN 247,311. Pub. 10–15–68. Filed 6–6–66.

862,874. THE GARDEN CLUB PLAN OF AMERICA. Joseph Bosilevas, d.b.a. The Garden Club Plan of America. SN 253,114. Pub. 10–15–68. Filed 8–25–66.

862,875. CREATIVE DESIGN BOARD AND DESIGN. Creative Design Board. SN 253,283. Pub. 10–15–68. Filed 8–29–66.

862,876. FRESHBEST. Clover Farm Stores Corporation. SN 261,719. Pub. 10–15–68. Filed 12–30–66.

862,877. AGPRO. Agpro, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 269,611. Pub. 10–15–68. Filed 4–20–67.

862,878. TIPPY'S TACO HOUSE AND DESIGN. Tippy's Taco House of America, Inc. SN 270,623. Pub. 10–15–68. Filed 5–3–67.

862,879. MEDICENTER OF AMERICA A NICE PLACE TO GET WELL AND DESIGN. Medicenters of America, Inc. SN 276,846. Pub. 10–15–68. Filed 7–26–67.

862,880. THE MAILING HOUSE. The Mailing House, Inc. MULTIPLE CLASS (Classes 100 and 101). SN 280,612. Pub. 10–15–68. Filed 9–18–67.

862,881. BEAUTY LIFE. Reid-Meredith, Inc. (Delaware corporation), by merger from Reid-Meredith, Inc. (Utah corporation). SN 281,424. Pub. 10–15–68. Filed 9–29–67.

862,882. DUNN & HARGITT'S MOVING AVERAGE SERVICES AND DESIGN. Financial Services, Inc. SN 286,792. Pub. 10–15–68. Filed 12–13–67.

862,883. RR (DESIGN). Roper Research Associates, Incorporated. MULTIPLE CLASS (Classes 100 and 101). SN 289,863. Pub. 10–15–68. Filed 1–30–68.

862,884. GOLDEN DOOR. Golden Door Motels, Inc. SN 293,512. Pub. 10–15–68. Filed 3–18–68.

862,885. REGIS. Kunian Beauty Salons Incorporated. SN 301,493. Pub. 10–15–68. Filed 6–27–68.

862,886. RED CARPET INN. Red Carpet Inns, Inc. SN 302,692. Pub. 10–15–68. Filed 7–15–68.

Class 101 — Advertising and Business

862,880. (See Class 100 for this trademark.)

862,883. (See Class 100 for this trademark.)

862,887. CERTIFIED CROP PRODUCTION PROGRAM AND DESIGN. Kaiser Aluminum & Chemical Corporation, assignee of Southern Nitrogen Company, Inc. SN 249,807. Pub. 10–15–68. Filed 7–7–66.

862,888. PUBLIC RELATIONS NETWORK INTERNATIONAL. The Public Relations Board, Inc. SN 252,966. Pub. 10–15–68. Filed 8–23–66.

862,889. NEEDAPLANE. Needaplane, Inc. SN 259,843. Pub. 10–15–68. Filed 12–1–66.

862,890. FARM PROFIT CENTER. Terra Chemicals International, Inc. SN 262,519. Pub. 10–15–68. Filed 1–13–67.

862,891. SHOW-A-RAMA. United Theatre Owners of the Heart of America, d.b.a. United Motion Picture Association. SN 265,363. Pub. 10–15–68. Filed 2–23–67.

862,892. MISCELLANEOUS DESIGN. Sci-Tek Computer Center, Inc. SN 275,175. Pub. 10–15–68. Filed 6–30–67.

862,893. SCI-TEK. Sci-Tek Computer Center, Inc. SN 275,875. Pub. 10–15–68. Filed 7–12–67.

862,894. ZIP-O-MATED. Fitzsimmons, Inc. SN 276,830. Pub. 10–15–68. Filed 7–26–67.

862,895. NATIONAL. National Income Tax Service, Inc. SN 285,044. Pub. 10–15–68. Filed 11–16–67.

862,896. APRS AND DESIGN. All-Points Relocation Service, Inc. SN 294,131. Pub. 10–15–68. Filed 3–26–68.

Class 102 — Insurance and Financial

862,897. I AND DESIGN. Interbank Card Association, by change of name from Interbank Card, Inc. SN 267,755. Pub. 10–15–68. Filed 3–28–67.

862,898. AA AND DESIGN. Atlantic Associates, Inc. SN 268,282. Pub. 10–15–68. Filed 4–4–67.

862,899. THE EVERYTHING CARD. First National City Bank. SN 278,680. Pub. 10–15–68. Filed 8–21–67.

862,900. PNB FOR EVERYTHING YOU NEED A BANK FOR. The Philadelphia National Bank. SN 284,725. Pub. 10–15–68. Filed 11–13–67.

Class 103 — Construction and Repair

862,561. (See Class 1 for this trademark.)

862,877. (See Class 100 for this trademark.)

862,901. MISCELLANEOUS DESIGN. The Cessna Aircraft Company. SN 263,815. Pub. 10–15–68. Filed 2–2–67.

862,902. ODORCON AND DESIGN. Handi-Clean Products, Inc. SN 277,277. Pub. 10–15–68. Filed 8–1–67.

Class 105 — Transportation and Storage

862,561. (See Class 1 for this trademark.)

862,903. ALASKA AIRLINES. Alaska Airlines, Inc. d.b.a. Alaska Airlines. SN 259,888. Pub. 10–15–68. Filed 12–2–66.

862,904. ALL STAR SERVICES AND DESIGN. The Edwards Transfer and Storage Company. SN 266,313. Pub. 10–15–68. Filed 3–9–67.

862,905. EXEC-O-VAN. Kenneth Narrod Moving Company. SN 271,505. Pub. 10–15–68. Filed 5–15–67.

862,906. C DESIGN. Colpitts Tourist Co., Inc. SN 273,040. Pub. 10–15–68. Filed 6–5–67.

862,907. COURTESY TRAVEL SERVICE AND DESIGN. Courtesy Associates, Inc. SN 287,805. Pub. 10–15–68. Filed 12–29–67.

Class 107 — Education and Entertainment

862,908. THE CUE FAMILY RECREATION AND DESIGN. The Cues, Incorporated. SN 264,520. Pub. 10–15–68. Filed 2–13–67.

862,909. THE CUE. The Cues, Incorporated. SN 264,521. Pub. 10–15–68. Filed 2–13–67.

862,910. THEE PROPHETS. Brian E. Lake, d.b.a. Prophets Production Ltd. SN 272,074. Pub. 10–15–68. Filed 5–22–67.

862,911. DENNY AND THE HITCHHIKERS. Dennis A. Picasso. SN 276,465. Pub. 10–15–68. Filed 7–20–67.

862,912. THE RUMBLES LTD. The Rumbles, Ltd. SN 277,304. Pub. 10–15–68. Filed 8–1–67.

862,913. NEW ORLEANS BUCCANEERS AND DESIGN. New Orleans Buccaneers, Inc. SN 280,880. Pub. 10–15–68. Filed 9–21–67.

862,914. AI AUTOMATION INSTITUTE COURSES AND DESIGN. C-E-I-R, Inc. SN 283,317. Pub. 10–15–68. Filed S.R. 10–25–67; Am. P.R. 1–19–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

862,915. Good Housekeeping S.A. (Proprietary) Limited, Paarden Eiland, Cape Province, Republic of South Africa. SN 279,291. Filed P.R. 8–29–67; Am. S.R. 10–8–68.

ZINS

Owner of South African Reg. No. B62/1729, dated May 28, 1962.
For Scouring Pads (Int. Cl. 21).

Class 21 — Electrical Apparatus, Machines, and Supplies

862,916. Electronic Systems Development, Inc., Seattle, Wash. SN 248,794. Filed P.R. 6–23–66; Am. S.R. 9–26–68.

TELE WEATHER

For Electronic Machine for Video Display of Weather and Time Information (Int. Cl. 9).
First use Sept. 27, 1965.

862,917. Alto-Shaam, Inc., Milwaukee, Wis. SN 255,507. Filed P.R. 9–30–66; Am. S.R. 10–1–68.

LEK TRIK
MOBIL-OVEN

For Electrically Heated Food Ovens for Handling or Transporting Pre-Cooked Foods (Int. Cl. 11).
First use Feb. 15, 1966.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

862,918. Parkline Corporation, New York, N.Y. SN 270,946. Filed P.R. 5–8–67; Am. S.R. 10–11–68.

CHANGE-A-PANEL

For Elevator Cabs and Decorative Panels Employable in Different Elevator Cabs (Int. Cl. 7).
First use Mar. 1, 1967.

Class 36 — Musical Instruments and Supplies

862,919. Farfisa S.p.A., Aspio Terme-Camerano-(Ancona), Italy. SN 272,374. Filed P.R. 5–25–67; Am. S.R. 7–17–68.

L. Mozzani

Priority claimed under Sec. 44(d) on Italian application filed Dec. 16, 1966; Reg. No. 221,669, dated Feb. 20, 1968.
For Stringed Musical Instruments (Int. Cl. 15).

Class 38 — Prints and Publications

862,920. Modern Language Association of America, New York, N.Y. SN 268,116. Filed P.R. 3–31–67; Am. S.R. 10–25–68.

CENTER FOR EDITIONS OF AMERICAN AUTHORS
AN APPROVED TEXT
MODERN LANGUAGE ASSOCIATION OF AMERICA

For Books (Int. Cl. 16).
First use Dec. 27, 1966.

862,921. The Sacramento Union Corporation, Sacramento, Calif. SN 273,988. Filed P.R. 6–15–67; Am. S.R. 10–2–68.

SACRAMENTO MAGAZINE

For Sunday Newspaper Supplement (Int. Cl. 16).
First use about Sept. 11, 1966.

862,922. Twin Circle Publishing Co., Inc., New York, N.Y. SN 278,942. Filed P.R. 8–24–67; Am. S.R. 8–27–68.

THE NATIONAL CATHOLIC PRESS

For Newspaper and Pamphlets Published From Time to Time (Int. Cl. 16).
First use Aug. 2, 1967.

862,923. 16 Magazine, Inc., New York, N.Y. SN 280,800. Filed P.R. 9–20–67; Am. S.R. 10–21–68.
For Department or Section of a Monthly Magazine (Int. Cl. 16).

French's Food

First use Jan. 30, 1967.

862,924. 16 Magazine, Inc., New York, N.Y. SN 280,803. Filed P.R. 9–20–67.; Am. S.R. 10–21–68.

LOOK MA, I'M LAUGHING

For Department or Section of a Monthly Magazine (Int. Cl. 16).
First use July 1, 1960.

862,925. 16 Magazine, Inc., New York, N.Y. SN 280,804. Filed P.R. 9–20–67; Am. S.R. 10–11–68.

YOU'RE TELLING ME

For Department or Section of a Monthly Magazine. (Int. Cl. 16).
First use Aug. 7, 1958.

862,926. Bremson Research, Inc., Kansas City, Mo. SN 280,928. Filed P.R. 9–22–67; Am. S.R. 10–11–68.

BONUS PHOTO

For Photographic Prints (Int. Cl. 16).
First use Jan. 12, 1967.

862,927. The Irving-Cloud Publishing Company, Chicago, Ill. SN 281,581. Filed P.R. 10–2–67; Am. S.R. 10–18–68.

DENTAL PRODUCTS REPORT

For Magazine (Int. Cl. 16).
First use at least as early as Sept 18, 1967.

862,928. Outstanding Young Americans, Inc., Montgomery, Ala. SN 281,814. Filed P.R. 10–4–67; Am. S.R. 10–3–68.

OUTSTANDING
YOUNG WOMEN
OF AMERICA

For Annual Biographical Compilation (Int. Cl. 16).
First use on or about Mar. 10, 1966.

862,929. The Professional Press, Inc., Chicago, Ill. SN 284,317. Filed P.R. 11–7–67; Am. S.R. 10–25–68.

AVIATION GRAPHIC

For Magazine (Int. Cl. 16).
First use on or about Oct. 4, 1967.

862,930. Antonio Llano Montes, d.b.a. Yates Y Pesca Publishing Co., Miami, Fla. SN 290,634. Filed P.R. 2–8–68; Am. S.R. 10–8–68.

Yates Y Pesca

For Magazine (Int. Cl. 16).
First use Oct. 4, 1967.

862,931. The American Oil Chemists' Society, Chicago, Ill. SN 292,525. Filed P.R. 2–19–68; Am. S.R. 10–11–68.

JOURNAL
of the AMERICAN
OIL CHEMISTS'
SOCIETY

For Magazine Relating to News of Interest to Oil Chemists and Members of the Society (Int. Cl. 16).
First use January 1947.

862,932. The American Oil Chemists' Society, Chicago, Ill. SN 292,526. Filed P.R. 2–19–68; Am. S.R. 10–11–68.

Lipids

For Magazine Devoted to Publication of Original Articles Relating to the Several Disciplines Which Comprise the Field of Basic Lipid Research (Int. Cl. 16).
First use Jan. 17, 1966.

Class 39 — Clothing

862,933. Kayser-Roth Corporation, New York, N.Y. SN 272,494. Filed P.R. 5–26–67; Am. S.R. 10–7–68.

HIPOSE

For Ladies' Hosiery (Int. Cl. 25).
First use Apr. 18, 1967.

862,934. Superba Cravats, Inc., Rochester, N.Y. SN 273,999. Filed P.R. 6–15–67; Am. S.R. 10–7–68.

GAINSBOROUGH

For Neckties (Int. Cl. 25).
First use Dec. 27, 1944.

862,935. Kayser-Roth Corporation, New York, N.Y. SN 278,221. Filed P.R. 8–14–67; Am. S.R. 10–7–68.

HIP-POSE

For Ladies' Hosiery (Int. Cl. 25).
First use July 18, 1967.

Class 46 — Foods and Ingredients of Foods

862,936. Arthur T. Coakley, d.b.a. Arthur T. Coakley Unit Products, Baltimore, Md. SN 253,850. Filed P.R. 9–6–66; Am. S.R. 9–18–68.

BLENDIP

For Dry Seasoning Mixture for Cooking Chicken, Meats, Shrimp, Fish and Onions (Int. Cl. 30).
First use June 11, 1965.

862,937. Pet Incorporated, St. Louis, Mo., assignee of Sue Ann Food Products Corporation, Chicago, Ill. SN 265,745. Filed P.R. 3–1–67; Am. S.R. 9–30–68.

OLD FASHIONED

For Salad Dressings; Pickles; Sauerkraut; Garden Salads; Canned Vegetables; Fruit Compotes; Table Syrups; Honey; Relishes; Canned Beans; Prepared Meat Products, Including Salami and Sausages; Cheese; and Cheese Spreads (Int. Cls. 29 and 30).
First use on or about Aug. 15, 1965.

862,938. Popcorn Products, Inc., Chicago, Ill. SN 272,624. Filed P.R. 5–29–67; Am. S.R. 9–26–68.

SWEET 'N FRESH

For Anhydrous Butter Fat for Buttering Popcorn and Other Foods (Int. Cl. 29).
First use May 10, 1967.

862,939. National Dairy Products Corporation, Chicago, Ill. SN 274,532. Filed P.R. 6–22–67; Am. S.R. 8–6–68.

FLAVOR-KEEPER COVER

For Frozen Entrees—Namely, Prepared Meat Products and Prepared Alimentary Pastes, Both Meatless and Meat-Containing, Packaged in Containers With Special Covers (Int. Cl. 29).
First use Jan. 19, 1967.

862,940. National Dairy Products Corporation, Chicago, Ill. SN 274,533. Filed P.R. 6–22–67; Am. S.R. 9–30–68.

FLAVOR-FROZEN!

For Frozen Entrees—Namely, Prepared Meat Products and Prepared Alimentary Pastes, Both Meatless and Meat-Containing; and Frozen Desserts—Namely, Pies (Int. Cls. 29 and 30).
First use Jan. 19, 1967.

862,941. Seapak Division, d.b.a. Sea Pak, St. Simons Island, Ga. SN 277,714. Filed P.R. 8–7–67; Am. S.R. 8–23–68.

FISH-WEDGEES

For Fried Frozen Fish (Int. Cl. 29).
First use on or about July 10, 1967.

862,942. Tani Farms, Santa Maria, Calif. SN 280,984. Filed P.R. 9–22–67; Am. S.R. 10–18–68.

Tani

For Fresh Vegetables (Int. Cl. 31).
First use May 20, 1964.

862,943. J. F. Lazier Manufacturing Co., St. Louis, Mo. SN 285,562. Filed P.R. 11–24–67; Am. S.R. 10–8–68.

IT'S FUN...TO SIP 'N EAT

For Flavoring Concentrates and Flavoring Syrups Adapted for Use in Making Finished Soft Drinks and in Preparation of Flavored Ices (Int. Cl. 32).
First use Sept. 18, 1967.

862,944. Washington Fish & Oyster Co. of Calif., San Francisco, Calif. SN 287,688. Filed P.R. 12–27–67; Am. S.R. 9–30–68.



For Canned Cat Food (Int. Cl. 31).
First use Sept. 22, 1967.

862,945. General Foods Corporation, White Plains, N.Y. SN 288,806. Filed P.R. 1–15–68; Am. S.R. 9–24–68.

THICK 'N CREAMY

For Salad Dressing Mix (Int. Cl. 29).
First use Jan. 19, 1967.

862,946. Landsman Packing Co., Inc., Red Hook, N.Y. SN 291,613. Filed P.R. 2–21–68; Am. S.R. 10–10–68.

JAFFA

For Canned Fruit (Int. Cl. 29).
First use March 1966.

862,947. Desert Date Sales Co., Indio, Calif. SN 296,671. Filed 4–26–68.



For Date Confection (Int. Cl. 30).
First use Oct. 27, 1966.

Class 48 — Malt Beverages and Liquors

862,948. Carling Brewing Company Incorporated, Cleveland, Ohio. SN 278,950. Filed P.R. 8–24–67; Am. S.R. 6–21–68.



The trademark consists of the configuration of the bottle which is used as a container for the goods.
For Beer (Int. Cl. 32).
First use at least as early as June 14, 1967.

862,949. Tivoli Brewing Company, Denver, Colo. SN 288,890. Filed P.R. 1–15–68; Am. S.R. 10–4–68.

BREWED IN THE HEART OF THE ROCKIES

For Beer (Int. Cl. 32).
First use July 1, 1954.

Class 51 — Cosmetics and Toilet Preparations

862,950. Yardley of London, Inc., Totowa, N.J. SN 268,645. Filed P.R. 4–7–67; Am. S.R. 10–3–68.

COLOR WITHOUT COVERAGE

For Face Powder (Int. Cl. 3).
First use Mar. 28, 1967.

862,951. Clairol Incorporated, New York, N.Y. SN 269,637. Filed P.R. 4–20–67; Am. S.R. 10–1–68.

ICED-TEA

For Lipstick (Int. Cl. 3).
First use Dec. 19, 1966.

862,952. Revlon, Inc., New York, N.Y. SN 274,237. Filed P.R. 6–19–67; Am. S.R. 10–17–68.

SEABISCUIT

For Lipstick and Nail Enamel (Int. Cl. 3).
First use May 5, 1967.

862,953. Revlon, Inc., New York, N.Y. SN 274,238. Filed P.R. 6–19–67; Am. S.R. 10–17–68.

FRESHWATER MELON

For Lipstick and Nail Enamel (Int. Cl. 3).
First use May 5, 1967.

862,954. Revlon, Inc., New York, N.Y. SN 274,348. Filed P.R. 6–20–67; Am. S.R. 10–17–68.

CERTAINLY RED

For Nail Enamel, Lipsticks and Rouge (Int. Cl. 3).
First use July 16, 1946.

862,955. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,064. Filed P.R. 6–29–67; Am. S.R. 10–2–68.

SUGAR GLACE

For Lipstick (Int. Cl. 3).
First use June 9, 1967.

862,956. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,863. Filed P.R. 7–12–67; Am. S.R. 10–2–68.

BARE HUG

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

862,957. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,864. Filed P.R. 7–12–67; Am. S.R. 10–2–68.

PUSHOVER

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

862,958. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,865. Filed P.R. 7–12–67; Am. S.R. 10–2–68.

DOUBLE DATE

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

862,959. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,866. Filed P.R. 7–12–67; Am. S.R. 10–2–68.

BUTTERFLY KISS

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

862,960. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 275,868. Filed P.R. 7–12–67; Am. S.R. 10–2–68.

SWEET TALK

For Nail Enamel (Int. Cl. 3).
First use June 9, 1967.

TRADEMARK REGISTRATIONS RENEWED

32,315. "ENO'S FRUIT SALT" ETC. AND DESIGN. Cl. 18 (Int. Cl. 5). 1–3–1899.
32,595. B.E.R. ETC. AND CIRCULAR DESIGN. Cl. 13 (Int. Cl. 6). 3–14–1899.
70,540. SCHRAFFT'S. Cl. 46 (Int. Cl. 30). 9–8–08.
73,322. SERAX. Cl. 1 (Int. Cl. 20). 4–13–09.
243,031. POSTINDEX. Cl. 37 (Int. Cl. 16). 6–12–28.
243,630. "POSTINDEX" AND DESIGN. Cl. 32 (Int. Cl. 20). 6–26–28.
248,219. REPRESENTATION OF A LUMP OF COAL. Cl. 1 (Int. Cl. 4). 10–16–28.
248,551. "BLUE STREAK" ETC. AND BLUE STREAK BORDERING THE FRONT SHEET OF A NEWSPAPER. Cl. 38 (Int. Cl. 16). 10–23–28.
248,559. WALCREST. Cl. 37 (Int. Cl. 27). 10–23–28.
248,580. LUGANO. Cl. 37 (Int. Cl. 16). 10–23–28.
248,588. "GATOR HIDE" ETC. AND REPRESENTATION OF ALLIGATOR ENCLOSED BY CIRCULAR DESIGN. Cl. 37 (Int. Cl. 16). 10–23–28.
248,922. PROMAL AND DESIGN. Cl. 14 (Int. Cl. 6). 11–6–28.
249,072. DIXIE. Cl. 16 (Int. Cl. 1). 11–6–28.
249,628. PACQUIN'S. Cl. 52 (Int. Cl. 3). 11–20–28.
249,807. ALCO-LUX. Cl. 6 (Int. Cl. 5). 11–20–28.
249,865. ELECTRO-MATIC. Cl. 21 (Int. Cl. 9). 11–20–28.
250,035. "JELL-O." Cl. 46 (Int. Cl. 30). 11–27–28.
251,327. "WHITE MULE" ETC. AND REPRESENTATION OF MULE'S HEAD. Cl. 39 (Int. Cl. 25). 1–1–29.
251,444. "ALASKA" AND DRAWING. Cl. 46 (Int. Cl. 30). 1–8–29.
251,736. ERMETO. Cl. 27 (Int. Cl. 14). 1–15–29.
252,223. REPRESENTATION OF GIRL HOLDING TRAY OF FRUIT AND BACKGROUND DESIGN. Cl. 46 (Int. Cl. 31). 1–29–29.
252,224. SUN-MAID. Cl. 46 (Int. Cl. 31). 1–29–29.
252,772. "WHISTOJEL" AND UNDERLINE DESIGN. Cl. 46 (Int. Cl. 29). 2–12–29.
253,357. 240. Cl. 16 (Int. Cl. 2). 2–26–29.
254,093. OLD MASTER. Cl. 29 (Int. Cl. 16). 3–12–29.
254,536. IDEAL. Cl. 11 (Int. Cl. 16). 3–26–29.
438,566. APOTAL. Cl. 26 (Int. Cl. 9). 5–4–48.
439,820. SUNSKIP. Cl. 51 (Int. Cl. 3). 7–27–48.
439,913. SAVOIR FAIRE. Cl. 51 (Int. Cl. 3). 7–27–48.
440,372. RCA ETC. Cl. 27 (Int. Cl. 14). 8–24–48.
440,541. HECFIX. Cl. 39 (Int. Cl. 25). 9–14–48.
440,761. DOWN EAST. Cl. 42 (Int. Cl. 24). 9–28–48.
440,973. SKOOKUM. Cl. 39 (Int. Cl. 25). 10–12–48.
441,099. HEIRLOOM. Cl. 37 (Int. Cl. 16). 10–19–48.
441,168. WORLD'S FAIR ETC. AND DESIGN. Cl. 24 (Int. Cl. 26). 10–26–48.
441,502. LASTONET. Cl. 44 (Int. Cls. 5 and 10). 11–30–48.
441,516. BALDWIN. Cl. 36 (Int. Cl. 15). 11–30–48.
441,840. TARTAGEN. Cl. 18 (Int. Cl. 5). 1–18–49.
441,864. OLYMPOS ΟΛΥΜΤΤΟΕ. Cl. 27 (Int. Cl. 14). 1–18–49.
441,962. T AND DESIGN. Cl. 46 (Int. Cl. 30). 2–1–49.
442,077. KARBATE. Cl. 12 (Int. Cl. 19). 2–8–49.
442,122. GIBBSBORO. Cl. 16 (Int. Cl. 2). 2–22–49.
442,132. CAL-DEXTRO. Cl. 18 (Int. Cl. 5). 3–1–49.
442,291. BRADCORSA. Cl. 42 (Int. Cl. 24). 3–22–49.
500,592. TIMBERIB AND DESIGN. Cl. 12 (Int. Cl. 19). 6–1–48.
501,532. BETWEEN THE ACTS. Cl. 17 (Int. Cl. 34). 8–10–48.
501,533. GREEN TURTLE. Cl. 17 (Int. Cl. 34). 8–10–48.
501,688. BUZZ. Cl. 17 (Int. Cl. 34). 8–17–48.
501,906. CHAS. PFIZER & CO. INC. NEW YORK AND DESIGN. Cl. 18 (Int. Cl. 1). 8–31–48.
501,953. SHAVERS' DELIGHT. Cl. 52 (Int. Cl. 3). 8–31–48.
502,739. CONTI AND DESIGN. Cl. 51 (Int. Cl. 3). 10–5–48.
502,780. TAYLOR-HOBSON. Cl. 23 (Int. Cl. 7). 10–12–48.
502,898. MARCY LEE. Cl. 39 (Int. Cl. 25). 10–12–48.
503,018. PFIZER QUALITY AND DESIGN. Cl. 18 (Int. Cls. 1 and 5). 10–19–48.
503,370. DICOL. Cl. 6 (Int. Cl. 1). 10–26–48.
503,372. CLIP-RITE. Cl. 44 (Int. Cl. 8). 10–26–48.
503,376. CHURCH & CO'S. Cl. 52 (Int. Cl. 3). 10–26–48.
503,377. ARM & HAMMER. Cl. 46 (Int. Cl. 1). 10–26–48.
503,389. VM AND DESIGN. Cl. 44. (Int. Cl. 10). 10–26–48.
503,402. VOLCLAY 625. Cl. 1 (Int. Cl. 1). 10–26–48.
503,547. HOLLYWOOD. Cl. 42 (Int. Cl. 24). 10–26–48.
503,575. COLUMBIA. Cl. 32 (Int. Cl. 20). 11–2–48.
503,646. MADORA. Cl. 39 (Int. Cl. 25). 11–2–48.
503,709. SCOTCH. Cl. 2 (Int. Cl. 16). 11–9–48.
503,745. PYROGARD. Cl. 12 (Int. Cl. 17). 11–9–48.
503,877. DAZOR FLOATING FIXTURE. Cl. 21 (Int. Cls. 9 and 11). 11–16–48.

503,888. ASHLEY. Cl. 34 (Int. Cl. 11). 11–16–48.
503,908. SCOTCH. Cl. 36 (Int. Cl. 9). 11–16–48.
504,093. DREAM-STEAK. Cl. 46 (Int. Cl. 29). 11–23–48.
504,530. BING & GRONDAHL. Cl. 50 (Int. Cl. 21). 12–7–48.
504,541. DIAMOND AND DESIGN. Cl. 23 (Int. Cl. 7). 12–7–48.
504,565. SHEAF OF WHEAT (DESIGN). Cl. 13 (Int. Cl. 6). 12–7–48.
504,852. DEN-MAT. Cl. 42 (Int. Cl. 24). 12–14–48.
504,940. SKIPPY. Cl. 46 (Int. Cl. 29). 12–21–48.
504,961. KELLOGG. Cl. 44 (Int. Cl. 10). 12–21–48.
504,964. RENCOIL AND DESIGN. Cl. 37 (Int. Cl. 16). 12–21–48.
505,459. RUSTEZE. Cl. 52 (Int. Cl. 1). 1–4–49.
505,569. RENCO QUALITY AND DESIGN. Cl. 37 (Int. Cl. 16). 1–11–49.
505,599. EMPYREAN. Cl. 42 (Int. Cl. 24). 1–11–49.
505,600. CORDESSA. Cl. 42 (Int. Cl. 24). 1–11–49.
505,805. BASALJEL. Cl. 6 (Int. Cl. 1). 1–18–49.
505,861. THE GUN DIGEST. Cl. 38 (Int. Cl. 16). 1–18–49.
506,053. GOLDEN AGE. Cl. 45 (Int. Cl. 32). 1–25–49.
506,101. THE CHEMENTATOR. Cl. 38 (Int. Cl. 16). 1–25–49.
506,269. LARKWING. Cl. 42 (Int. Cl. 24). 2–1–49.
506,270. SKY LEADER. Cl. 42 (Int. Cl. 24). 2–1–49.
506,277. CORDURELLA. Cl.42 (Int. Cl. 24). 2–1–49.
506,332. PATSY. Cl. 42 (Int. Cl. 24). 2–1–49.
506,351. HERCULES CHEMIST. Cl. 38 (Int. Cl. 16). 2–1–49.
506,409. CALENDERMETO. Cl. 27 (Int. Cl. 14). 2–8–49.
506,572. NORWOOD. Cl. 51 (Int. Cls. 3 and 5). 2–8–49.
506,580. SOMNOLA. Cl. 42 (Int. Cl. 24). 2–8–49.
506,624. BUFOSAL. Cl. 18 (Int. Cl. 5). 2–15–49.
506,668. RELIABLE. Cl. 21 (Int. Cl. 9). 2–15–49.
507,008. CHIEFTAIN. Cl. 37 (Int. Cl. 16). 2–22–49.
507,010. TUDOR. Cl. 37 (Int. Cl. 16). 2–22–49.
507,011. WISDOM. Cl. 37 (Int. Cl. 16). 2–22–49.
507,057. PHENERGAN. Cl. 6 (Int. Cl. 5). 2–22–49.
507,142. IDEAL BABY SHOE. Cl. 39 (Int. Cl. 25). 3–1–49.
507,143. IDEAL. Cl. 39 (Int. Cl. 25). 3–1–49.

TRADEMARK REGISTRATIONS CANCELED

Trademark Registrations Canceled

Section 8

735,132. K9-KOP. Cl. 6. 7–31–62.
740,005. CROSSED SWORDS (DESIGN). Cl. 30. 10–30–62.
740,148. HUMAN HANDS HOLDING REPLICA OF A TRUCK (DESIGN). Cl. 102. 10–30–62.
740,250. MR. BRAIN. Cl. 22. 11–6–62.

The following registrations issued Nov. 13, 1962

740,434. GRO-KIT. Cl. 1.
740,435. CERALOCK. Cl. 1.
740,439. P.V. WITHIN A CIRCLE. Cl. 2.
740,440. HOBEY THE CLOWN. Cl. 2.
740,441. DIOWAX. Cl. 2.
740,442. SEE-VU. Cl. 2.
740,443. TRI-CLUSTER BEAD. Cl. 2.
740,444. BOTTLE MASTER ONE TRIPPER. Cl. 2.
740,448. I-PAK AND DESIGN. Cl. 2.
740,449. PILL-O-VENT. Cl. 2.
740,450. FINGER LOCK. Cl. 2.
740,451. HARVEYLITE. Cl. 3.
740,455. BONNE AGE. Cl. 3.
740,457. TRANSTOP T AND DESIGN. Cl. 6.
740,460. NY-LINE. Cl. 7.
740,469. CYMEX. Cl. 9.
740,470. THERMEX. Cl. 9.
740,471. TURFIC. Cl. 10.
740,472. MAX-GRO AND DESIGN. Cl. 10.
740,475. DEVILCLAW. Cl. 12.
740,476. SAFETY GUARD. Cl. 12.
740,478. SOFTRONIC AND DESIGN. Cl. 13.
740,481. 16C. Cl. 14.
740,482. 16W. Cl. 14.
740,488. L AND CANDLE DESIGN. Cl. 15.
740,494. ARCOLITE. Cl. 16.
740,495. MARGLOSS AND DESIGN. Cl. 16.
740,503. SAXOL. Cl. 18.
740,506. RM TABLETTEN AND DESIGN. Cl. 18.
740,513. GRECORT. Cl. 18.
740,514. HEPATOL. Cl. 18.
740,519. FARLANDER. Cl. 19.
740,524. WESCO. Cl. 19.
740,529. PLAYMASTER. Cl. 21.
740,530. METRO POLITAN AND DESIGN. Cl. 21.
740,531. METRO OHM AND DESIGN. Cl. 21.
740,532. METRO COIL AND DESIGN. Cl. 21.
740,533. METRO RELAY AND DESIGN. Cl. 21.
740,534. METRO SWITCH AND DESIGN. Cl. 21.
740,535. METRO TEL AND DESIGN. Cl. 21.
740,542. PSI—GREEK SYMBOL IN A CIRCLE. Cl. 21.
740,543. BUDD-STANLEY. Cl. 21.
740,545. TRANSTOP T AND DESIGN. Cl. 21.
740,548. STERLING THE HALLMARK OF QUALITY. Cl. 21.
740,550. CM–10. Cl. 21.
740,551. CT. Cl. 21.
740,553. BUCK-A-ROO. Cl. 23.
740,554. ORTOJUST. Cl. 23.
740,549. OZOTRON. Cl. 21.
740,556. KLEEN AIR AND DESIGN. Cl. 23.
740,558. TAP MASTER. Cl. 23.
740,561. STARTMASTER AND DESIGN. Cl. 23.
740,567. SPANTROL. Cl. 23.
740,571. CHALLENGER. Cl. 23.
740,576. DUO-WASH. Cl. 24.
740,581. E–Z. Cl. 26.
740,584. "D.F.V." Cl. 26.
740,586. ROTO-END. Cl. 26.
740,588. PARAD. Cl. 26.
740,594. CALC-A-LOAD. Cl. 26.
740,595. SIGNA GUARD. Cl. 26.
740,596. HI-MAT. Cl. 26.
740,598. ROLL-O-DRAFT. Cl. 26.
740,599. ASTRA-VUE. Cl. 26.
740,600. TELERATE. Cl. 26.
740,601. CRYOLEVEL. Cl. 26.
740,602. CROYDON. Cl. 26.
740,607. AD/ECS. Cl. 26.
740,610. RADART. Cl. 27.
740,614. VINYLOY AND DESIGN. Cl. 28.
740,616. MARVELLA PEARLESCENT. Cl. 28.
740,620. L AND SANTA CLAUS DESIGN. Cl. 30.
740,624. PURECELL. Cl. 31.
740,628. CUSTOM-MATES. Cl. 32.
740,631. CU. Cl. 32.
740,635. NIA WEL. Cl. 34.
740,640. SKY-GLO. Cl. 34.
740,646. LUCKY 11. Cl. 36.
740,650. MASTERKRAFT. Cl. 36.
740,651. DYNADISC. Cl. 36.
740,655. ISI INDIVIDUALIZED SYSTEMS, INC. AND DESIGN. Cl. 37.
740,662. THE RED TRIANGLE. Cl. 38.
740,665. EXECUCAL. Cl. 38.
740,671. PETTY HITE. Cl. 39.
740,672. GIRDLE HOLD. Cl. 39.
740,673. WAGON BOSS AND DESIGN. Cl. 39.
740,676. SPORT-PRINTS. Cl. 39.
740,681. BONNE AGE. Cl. 39.
740,682. CARMOCS. Cl. 39.
740,687. ZIPETTE. Cl. 40.
740,688. PINKIES. Cl. 40.
740,691. CARINA ! Cl. 40.
740,693. LADY CLAIR. Cl. 40.
740,696. PAM-PURR. Cl. 42.
740,700. TRU LINE ETC. AND DESIGN. Cl. 44.
740,702. CRYCO. Cl. 44.
740,703. SELFLATE. Cl. 44.
740,706. BEAUTRON. Cl. 44.
740,707. DIAMALITE. Cl. 44.
740,708. DOUGLAS. Cl. 44.
740,715. PAPA JOE AND PORTRAIT OF CHEF. Cl. 46.

740,716. LIFE PACK. Cl. 46.
740,717. MARGO LEE'S TEA CADDIES AND DESIGN. Cl. 46.
740,730. RIKSHA INN. Cl. 46.
740,734. SQAIR-PAK. Cl. 50.
740,739. FARM-O-MATIC. Cl. 50.
740,742. CARLA LE PRE. Cl. 51.
740,743. FAENA. Cl. 51.
740,753. TRUE VALUE. Cl. 101.
740,755. SURFACE METROLOGY LABORATORY MICROMETRICAL MFG. CO. AND DESIGN. Cl. 101.
740,760. GOOD NEIGHBORS ABROAD. Cl. 105.
740,762. THE MASTERS. Cl. 107.
740,766. DATA PUNCH. Cl. 26.
740,767. FLOATING-BOARD ACTION AND DESIGN. Cl. 32.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

164,058. EIDERSCUTUM. Cl. 39. 2–13–23. Aquascutum Limited, London, England. Amended to appear:

Eiderscutum

501,005. ALFA. Cl. 6. 7–13–48. Stauffer Chemical Company, New York, N.Y. Amended to appear:

ALFA

501,927. SECURITEE. Cl. 12. 8–31–48. W. J. Haertel. W. J. Haertel & Co., Franklin Park, Ill. Amended to appear:

SECURITEE

506,925. LIQUOR SEDANS. Cl. 6. 2–22–49. Parke, Davis & Company, Detroit, Mich. Amended: In the statement, column 1, line 7, "antispasmodic preparation" is deleted and *preparation for the relief of painful menstruation* is inserted.

670,675. LPC. Cl. 46. 12–2–58. The Great Western Sugar Company, Denver, Colo. Corrected: In the statement, column 1, line 1, "Colorado" should be deleted and *New Jersey* should be inserted.

744,059. AMERICAN MAID. Cl. 22. 1–22–63. South Bend Toy Manufacturing Co., Inc., South Bend, Ind. Amended to appear:

AMERICAN MAID

750,375. MAGOLITE. Cl. 12. 6–4–63. Semicon of California, Inc., Watsonville, Calif. Corrected: In the statement, column 1, line 1, "California corporation" should be deleted and *Kentucky corporation* should be inserted.

782,042. GRUNDFOSS. Cl. 23. 12–22–64. Grundfuss Bjerringbro Pumpefabrik A/S, Grundfos A/S, Bjerringbro, Denmark. Amended to appear:

GRUNDFOS

853,568. MAGELLAN. Cl. 22. 7–30–68. Michelle Marguerite Marie Joseph de le Court, Brussels, Belgium. Corrected: In the statement, column 1, line 2, "Statuaries" should be deleted and *Statuaires* should be inserted and in column 2, line 9, "Oct. 8" should be deleted and *Oct. 18* should be inserted.

853,753. FOODS AMERICANA. Cl. 46. 7–30–68. Unique Pure Foods Corporation, North Bergen, N.J. Corrected: In the statement, column 1, line 1, "Goods" should be deleted and *Foods* should be inserted.

855,784. DORCHESTER. Cl. 8. 9–3–68. Shields, Inc. of Attleboro, Mass., New York, N.Y. Corrected: In the statement, column 1, line 1, "Attlesboro" should be deleted and *Attleboro* should be inserted.

858,100. SUPER-VAN. Cl. 105. 10–1–68. Pennsylvania New York Central Transportation Company, assignee of The New York Central Railroad Company, New York, N.Y. Corrected: In the statement, column 1, line 1, "The Pennsylvania Railroad Company" should be deleted and *Pennsylvania New York Central Transportation Company* should be inserted.

858,876. DUNHILL. Cl. 23. 10–22–68. Alfred Dunhill Limited, London, England. Corrected: In the statement, column 2, line 4 is deleted and *"Dunhill Tailors," the word "Tailors" shall always be* is inserted.

859,052. DUNHILL. Cl. 51. 10–22–68. Alfred Dunhill Limited, London, England. Corrected: In the statement, column 2, line 6, "stye" should be deleted and *style* should be inserted.

859,699. ARC DESIGN. Cl. 34. 11–5–68. The Susquehanna Corporation, by merger from Atlantic Research Corporation, Alexandria, Va. Corrected: In the satement, column 1, line 1, "Susquenhanna" should be deleted and *Susquehanna* should be inserted.

INDEX OF REGISTRANTS

DECEMBER 31, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A to Z Ideas, Inc., Santa Clara, Calif. 862,670, pub. 10–15–68. Cl. 22.

Accro Systems, Inc., Richmond, Va. 862,851, pub. 10–15–68. Cl. 50.

Acme White Lead & Color Works, Detroit, Mich., to The Sherwin-Williams Co., Cleveland, Ohio. 253,357, ren. 12–31–68. Cl. 16.

Adler Silhouette Letter Co., Los Angeles, Calif. 862,854, pub. 10–15–68. Cl. 50.

Affiliated Distillers Brands Corp., New York, N.Y. 862,845, pub. 10–15–68. Cl. 47.

Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 740,588, canc. Cl. 26.

Agpro, Inc., Santa Rosa, Calif. 862,877, pub. 10–15–68. Multiple Class (Classes 100 and 103).

Aktiengesellschaft Chocolat Tobler, Bern, Switzerland. 441,-962, ren. 12–31–68. Cl. 46.

Aktieselskabet Bing & Grondahls Porcellanensfabrik Porcelainfabrikerne Bing & Grondahl Og Norden A/S, Copenhagen, Denmark. 504,530, ren. 12–31–68. Cl. 50.

Alamo Mfg. Co., Inc., New York, N.Y. 862,758, pub. 10–15–68. Cl. 39.

Alaska Airlines : *See*—
Alaska Airlines, Inc.

Alaska Airlines, Inc., d.b.a. Alaska Airlines, Seattle, Wash. 862,903, pub. 10–15–68. Cl. 105.

All Points Relocation Service, Inc., Atlanta, Ga. 862,896, pub. 10–15–68. Cl. 101.

Allied Stores Corp., New York, N.Y. 441,099, ren. 12–31–68. Cl. 37.

Allied Stores Corp., New York, N.Y. 862,778, pub. 10–15–68. Cl. 39.

Allied Stores Corp., New York, N.Y. 862,807, pub. 10–15–68. Cl. 40.

Allied Tube & Conduit Corp., Harvey, Ill. 862,614, pub. 10–15–68. Cl. 13.

Allstate Insurance Co., Skokie, Ill. 740,168, canc. Cl. 102.

Alto-Shaam, Inc., Milwaukee, Wis. 862,917. Cl. 21.

Alshul, Stern, & Co., Inc., d.b.a. Young Sport Fashions, New York, N.Y. 862,100, pub. 10–15–68. Cl. 39.

Automatic Signal Corp., New Haven, Conn., to Laboratory for Electronics, Inc., Waltham, Mass. 249,865, ren. 12–31–68. Cl. 21.

Avalon Hill Co., The, Baltimore, Md. 862,661, pub. 10–31–67. Cl. 22.

Avery Products Corp., San Marino, Calif., from Chart-Pak Inc., Leeds, Mass. 862,734, pub. 5–24–66. Cl. 37.

Avon Products, Inc., New York, N.Y. 862,862–3, pub. 10–15–68. Cl. 51.

Bagry, William, d.b.a. William Bagry Hosiery Co., New York, N.Y. 862,764, pub. 10–15–68. Cl. 39.

Bagry, William, Hosiery : *See*—
Bagry, William.

Baker Brush Co., Inc., New York, N.Y. 254,093, ren. 12–31–68. Cl. 29.

Baldwin Co., The, to D. H. Baldwin Co., Cincinnati, Ohio. 441,516, ren. 12–31–68. Cl. 36.

Baldwin, D. H., Co. : *See*—
Baldwin Co., The.

Baltimore Copper Smelting & Rolling Co., Baltimore, Md., to American Smelting & Refining Co., New York, N.Y. 32,595, ren. 12–31–68. Cl. 13.

Bancroft, Joseph, & Sons Co., Wilmington, Del. 862,753, pub. 7–25–67. Cl. 39.

Bauer Mfg. Co., The, Wooster, Ohio. 740,665, canc. Cl. 38.

Baybrook, Inc., Boston, Mass. 862,761, pub. 10–15–68. Cl. 39.

Beaird, J. B., Co., Inc., The, Shreveport, La. 740,571, canc. Cl. 23.

Beautron Corp. : *See*—
Texas Electronic Products Corp.

Beecham Inc. : *See*—
Eno, J. C., Ltd.

Bell, Cyrus F., and Sally Bell, Langley Park, Md. 862,873, pub. 10–15–68. Cl. 100.

Bel-Mor Knitwear, Inc., New York, N.Y. 862,798, pub. 10–15–68. Cl. 39.

Bendiner & Schlesinger, Inc., New York, N.Y. 249,807, ren. 12–31–68. Cl. 6.

Benthos, Inc., North Falmouth, Mass. 862,642, pub. 10–15–68.

INDEX OF REGISTRANTS

DECEMBER 31, 1968

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A to Z Ideas, Inc., Santa Clara, Calif. 862,670, pub. 10–15–68. Cl. 22.

Accro Systems, Inc., Richmond, Va. 862,851, pub. 10–15–68. Cl. 50.

Acme White Lead & Color Works, Detroit, Mich., to The Sherwin-Williams Co., Cleveland, Ohio. 253,357, ren. 12–31–68. Cl. 16.

Adler Silhouette Letter Co., Los Angeles, Calif. 862,854, pub. 10–15–68. Cl. 50.

Affiliated Distillers Brands Corp., New York, N.Y. 862,845, pub. 10–15–68. Cl. 47.

Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 740,588, canc. Cl. 26.

Agpro, Inc., Santa Rosa, Calif. 862,877, pub. 10–15–68. Multiple Class (Classes 100 and 103).

Aktiengesellschaft Chocolat Tobler, Bern, Switzerland. 441,-962, ren. 12–31–68. Cl. 46.

Aktieselskabet Bing & Grondahls Porcellanensfabrik Porcelainfabrikerne Bing & Grondahl Og Norden A/S, Copenhagen, Denmark. 504,530, ren. 12–31–68. Cl. 50.

Alamo Mfg. Co., Inc., New York, N.Y. 862,758, pub. 10–15–68. Cl. 39.

Alaska Airlines : *See*—
Alaska Airlines, Inc.

Alaska Airlines, Inc., d.b.a. Alaska Airlines, Seattle, Wash. 862,903, pub. 10–15–68. Cl. 105.

All Points Relocation Service, Inc., Atlanta, Ga. 862,896, pub. 10–15–68. Cl. 101.

Allied Stores Corp., New York, N.Y. 441,099, ren. 12–31–68. Cl. 37.

Allied Stores Corp., New York, N.Y. 862,778, pub. 10–15–68. Cl. 39.

Allied Stores Corp., New York, N.Y. 862,807, pub. 10–15–68. Cl. 40.

Allied Tube & Conduit Corp., Harvey, Ill. 862,614, pub. 10–15–68. Cl. 13.

Allstate Insurance Co., Skokie, Ill. 740,148, canc. Cl. 102.

Alto-Shaam, Inc., Milwaukee, Wis. 862,917. Cl. 21.

Altshul, Stern, & Co., Inc., d.b.a. Young Sport Fashions, New York, N.Y. 862,769, pub. 10–15–68. Cl. 39.

Ambassador Record Corp., Newark, N.J. 862,729, pub. 8–6–68. Cl. 36.

American Colloid Co., Chicago, to American Colloid Co., Skokie, Ill. 503,402, ren. 12–31–68. Cl. 1.

American Cyanamid Co., New York, N.Y. 740,469, canc. Cl. 9.

American Home Products Corp. : *See*—
Fort Dodge Laboratories, Inc.
Societe des Usines Chimiques Rhone-Poulenc.
Wyeth Inc.

American Hospital Supply Corp., Evanston, Ill. 862,564, pub. 10–15–68. Cl. 2.

American Oil Chemists' Society, The, Chicago, Ill. 862,931–2. Cl. 38.

American Smelting & Refining Co. : *See*—
Baltimore Copper Smelting & Rolling Co.

American Tack & Hardware Co., Inc., New York, N.Y. 862,-616, pub. 10–15–68. Multiple Class (Classes 13 and 21).

American-Marietta Co., Chicago, Ill. 740,494, canc. Cl. 16.

Anaconda Wire & Cable Co., New York, N.Y. 862,645, pub. 10–15–68. Cl. 21.

Anchor Hocking Glass Corp., Lancaster, Ohio. 862,721–2, pub. 10–15–68. Cl. 34.

Anderson, Clayton & Co., Dallas, Tex. 862,844, pub. 10–15–68. Cl. 46.

Annin & Co., New York, N.Y. 862,817, pub. 10–15–68. Cl. 42.

Apex Dress Co., Inc., New York, N.Y. 740,671, canc. Cl. 39.

Aquascutum Ltd., London, England. 164,058. Am. 7(d). Cl. 39.

Arday International Corp., Bergenfield, N.J. 862,628, pub. 10–15–68. Cl. 18.

Arkwright Merchandising Corp., New York, N.Y. 503,646, ren. 12–31–68. Cl. 39.

Armstrong Rubber Co., The, West Haven, Conn. 862,723, pub. 8–20–68. Cl. 35.

Arrow Houseware Products, Inc., Chicago, Ill. 740,440, canc. Cl. 2.

Art Metal-Knoll Corp. : *See*—
Postindex Co. Inc.

Ash Precision Equipment, Inc., Detroit, Mich. 862 575, pub. 6–4–68. Multiple Class (Classes 4, 23, 26, 27, and 32).

Ashland Oil & Refining Co. : *See*—
United Carbon Co.

Ashley Automatic Heater Co. : *See*—
Automatic Draft & Stove Co., Inc.

Associated Dry Goods Corp., New York, N.Y. 862,790, pub. 10–15–68. Cl. 39.

Atlantic Associates, Inc., Providence, R.I. 862,898, pub. 10–15–68. Cl. 102.

Atlantic Golf Equipment Co., West Palm Beach, Fla. 862,-569, pub. 10–15–68. Cl. 2.

Augstein, S., & Co., Inc., New York, N.Y. 862,788, pub. 10–15–68. Cl. 39.

Automatic Draft & Stove Co., Inc., Lynchburg, Va., to King Stove & Range, Inc., d.b.a. Ashley Automatic Heater Co., Sheffield, Ala. 503,888, ren. 12–31–68. Cl. 34.

Automatic Dust Prevention, San Francisco, Calif. 862,849, pub. 10–15–68. Cl. 50.

Automatic Equipment Co. : *See*—
McMurray, Paul H.

Automatic Signal Corp., New Haven, Conn., to Laboratory for Electronics, Inc., Waltham, Mass. 249,865, ren. 12–31–68. Cl. 21.

Avalon Hill Co., The, Baltimore, Md. 862,661, pub. 10–31–67. Cl. 22.

Avery Products Corp., San Marino, Calif., from Chart-Pak Inc., Leeds, Mass. 862,734, pub. 5–24–66. Cl. 37.

Avon Products, Inc., New York, N.Y. 862,862–3, pub. 10–15–68. Cl. 51.

Bagry, William, d.b.a. William Bagry Hosiery Co., New York, N.Y. 862,764, pub. 10–15–68. Cl. 39.

Bagry, William, Hosiery : *See*—
Bagry, William.

Baker Brush Co., Inc., New York, N.Y. 254,093, ren. 12–31–68. Cl. 29.

Baldwin Co., The, to D. H. Baldwin Co., Cincinnati, Ohio. 441,516, ren. 12–31–68. Cl. 36.

Baldwin, D. H., Co. : *See*—
Baldwin Co., The.

Baltimore Copper Smelting & Rolling Co., Baltimore, Md., to American Smelting & Refining Co., New York, N.Y. 32,595, ren. 12–31–68. Cl. 13.

Bancroft, Joseph, & Sons Co., Wilmington, Del. 862,753, pub. 7–25–67. Cl. 39.

Bauer Mfg. Co., The, Wooster, Ohio. 740,665, canc. Cl. 38.

Baybrook, Inc., Boston, Mass. 862,761, pub. 10–15–68. Cl. 39.

Beaird, J. B., Co., Inc., The, Shreveport, La. 740,571, canc. Cl. 23.

Beautron Corp. : *See*—
Texas Electronic Products Corp.

Beecham Inc. : *See*—
Eno, J. C., Ltd.

Bell, Cyrus F., and Sally Bell, Langley Park, Md. 862,873, pub. 10–15–68. Cl. 100.

Bel-Mor Knitwear, Inc., New York, N.Y. 862,793, pub. 10–15–68. Cl. 39.

Bendiner & Schlesinger, Inc., New York, N.Y. 249,807, ren. 12–31–68. Cl. 6.

Benthos, Inc., North Falmouth, Mass. 862,642, pub. 10–15–68. Multiple Class (Classes 21, 23, and 26).

Beryllium Corp., The : *See*—
Eutectic Welding Alloys Corp.

Besso, Louis S., d.b.a. Pakon Mfg. Co., Oakland, Calif. 862,560, pub. 10–15–68. Cl. 1.

Big Chief of Nebraska, Inc., Grand Island, Neb. 862,570, pub. 10–15–68. Multiple Class (Classes 2 and 12).

Bird Space Technology, Inc., Palm Springs, Calif. 862,827, pub. 10–15–68. Cl. 44.

Bliss, E. W., Co., Canton, Ohio. 862,695, pub. 10–15–68. Cl. 23.

Blue Bell, Inc., Greensboro, N.C. 862,789, pub. 10–15–68. Cl. 39.

Blue Coal Corp. : *See*—
Delaware, Lackawanna & Western Coal Co., The.

Bonne Age Co., Inc., New York, N.Y. 740,455, canc. Cl. 3.

Bonne Age Co., Inc., New York, N.Y. 740,681, canc. Cl. 39.

Bosilevas, Joseph, d.b.a. The Garden Club Plan of America, Cos Cob, Conn. 862,874, pub. 10–15–68. Cl. 100.

Boswell, John C., Salem, Oreg. 862,800, pub. 10–15–68. Cl. 39.

Bouche Jewelers : *See*—
Weinberger, Irving.

Bowers Printing Ink Co., Chicago, Ill. 862,605, pub. 10–15–68. Cl. 11.

Boyer-Uecker Ent., Atlanta, Ga. 862,866, pub. 10–15–68. Cl. 51.

Bradford Dyeing Assn. (U.S.A.), to Bradford Dyeing Assn. (U.S.A.), Inc., Westerly, R.I. 442,291, ren. 12–31–68. Cl. 42.

Bradford Dyeing Assn. (U.S.A.), Inc. : *See*—
Bradford Dyeing Assn. (U.S.A.).

Bradley, Milton, Co., East Longmeadow, Mass. 862,672, Pub. 10–15–68. Cl. 22.

Bray, J. W., Co., Inc., Dalton, Ga. 862,776–7, pub. 10–15–68. Cl. 39.

Brechner, Dan, & Co., Inc., New York, N.Y. 862,668, pub. 10–15–68. Cl. 22.

Bremson Research, Inc., Kansas City, Mo. 862,926. Cl. 38.

Bristol-Myers Co., New York, N.Y. 862,577, pub. 10–15–68. Cl. 4.

British Bata Shoe Co. Ltd., The, Essex, England. 862,760, pub. 10–15–68. Cl. 39.

Brown & Sharpe Mfg. Co., North Kingstown, R.I. 862,710, pub. 10–15–68. Cl. 26.

Brunswick Corp., Chicago, Ill. 862,648, pub. 10–15–68. Cl. 21.

Brunswig Drug Co. : *See*—
McCuster, William C.

Buck-A-Roo Stores, Inc., Overland Park, Kans. 740,553, canc. Cl. 23.

Budd Stanley Co., Inc., Syosset, N.Y. 740,543, canc. Cl. 21.

Burberrys Ltd., London, England. 862,816, pub. 10–15–68. Cl. 42.

Burlington Industries, Inc., New York, N.Y. 740,673, canc. Cl. 39.

Bush Boake Allen Inc., Emerson, N.J. 862,833, pub. 10–15–68. Cl. 46.

C-E-I-R, Inc., Washington, D.C. 862,914, pub. 10–15–68. Cl. 107.

Calc-A-Load Co.: *See*—
Calcaload Co., Inc.
Calcaload Co., Inc., from V. G. Mandt, d.b.a. Calc-A-Load Co., Columbus, Ohio. 740,594, canc. Cl. 26.
Callaway Mills Co., La Grange, Ga. 740,696, canc. Cl. 42.
Canandaigua National Bank & Trust Co., The: *See*—
Cuddeback, Richard J.
Capri Candle Co.: *See*—
Capri Creations.
Capri Creations, from Lafair & Sons Co., d.b.a. Capri Candle Co., and as Capri Creations, Philadelphia, Pa. 740,488, canc. Cl. 15.
Capri Creations, from Lafair & Sons Co., d.b.a. Capri Candle Co., and Capri Creations, Philadelphia, Pa. 740,620, canc. Cl. 30.
Carling Brewing Co. Inc., Cleveland, Ohio. 862,948. Cl. 48.
Caron Corp., New York, N.Y. 862,860, pub. 10–15–68. Cl. 51.
Carter's Ink Co., The, Cambridge, Mass. 254,536, ren. 12–31–68. Cl. 11.
Celanese Corp. of America, New York, N.Y. 740,470, canc. Cl. 9.
Central Specialties Co., Chicago, Ill. 862,603, pub. 10–15–68. Cl. 9.
Centralia Knitting Mills, to Centralia Knitting Mills, Inc., Centralia, Wash. 440,973, ren. 12–31–68. Cl. 39.
Centralia Knitting Mills, Inc.: *See*—
Centralia Knitting Mills.
Cessna Aircraft Co., The, Wichita, Kans. 862,901, pub. 10–15–68. Cl. 103.
Chadbourn Gotham, Inc., Charlotte, N.C. 862,864, pub. 10–15–68. Cl. 51.
Channel Master Corp., Ellenville, N.Y. 740,550, canc. Cl. 21.
Charmose, Inc., Hatboro, Pa. 862,779, pub. 10–15–68. Cl. 39.
Chart-Pak Inc.: *See*—
Avery Products Corp.
Chester-Kent, Inc., St. Paul, Minn. 740,503, canc. Cl. 18.
Chicago Daily News, Inc., The, to Field Enterprises, Inc., Chicago, Ill. 248,551, ren. 12–31–68. Cl. 38.
Church & Dwight Co., Inc., New York, N.Y. 503,376–7, ren. 12–31–68. Cl. 52.
Clairol Inc., New York, N.Y. 862,857, pub. 10–15–68. Cl. 51.
Clairol Inc., New York, N.Y. 862,951. Cl. 51.
Clevite Corp., Cleveland, Ohio. 740,551, canc. Cl. 21.
Clopay Corp., Cincinnati, Ohio. 503,547, ren. 12–31–68. Cl. 42.
Clover Farm Stores Corp., Cleveland, Ohio. 862,876, pub. 10–15–68. Cl. 100.
Coakley, Arthur T., d.b.a. Arthur T. Coakley Unit Products, Baltimore, Md. 862,936. Cl. 46.
Coakley, Arthur T., Unit Products: *See*—
Coakley, Arthur T.
Coleman Co., Inc., The, Wichita, Kans. 862,566, pub. 10–15–68. Multiple Class (Classes 2, 6, 13, 15, 22, and 34).
Colgate-Palmolive Co., New York, N.Y. 862,865, pub. 10–15–68. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 862,870, pub. 10–15–68. Cl. 52.
Colorado Leisure Products, Inc., Broomfield, Colo. 862,687, pub. 10–15–68. Cl. 23.
Colpitts Tourist Co., Inc., Boston, Mass. 862,906, pub. 10–15–68. Cl. 105.
Colston, Charles, Ltd., High Wycombe, England. 862,650, pub. 10–15–68. Cl. 21.
Columbia Broadcasting System, Inc., New York, N.Y. 862,731, pub. 10–15–68. Cl. 36.
Columbus Show Case Co., The, Columbus, Ohio. 503,575, ren. 12–31–68. Cl. 32.
Commodore Corp., The, from Sunset Traveler, Inc., Omaha, Nebr. 862,636, pub. 10–15–68. Cl. 19.
Conrac Corp., New York, N.Y. 862,707, pub. 10–15–68. Cl. 26.
Consolidated Foods Corp.: *See*—
Fernandez, Frank C.
Conti Products Corp., Brooklyn, to The J. B. Williams Co., Inc., New York, N.Y. 502,739, ren. 12–31–68. Cl. 51.
Continental Industries, Inc., Phoenix, Ariz. 740,561, canc. Cl. 23.
Continental Instruments Corp., Lynbrook, N.Y. 862,652, pub. 10–15–68. Cl. 21.
Continental Instruments Corp., Lynbrook, N.Y. 862,656, pub. 10–15–68. Cl. 21.
Continental Oil Co., Ponca City, Okla. 740,662, canc. Cl. 38.
Cook, H. C., Co., The, Ansonia, Conn. 503,372, ren. 12–31–68. Cl. 44.
Corn Products Co.: *See*—
Rosefield Packing Co., Ltd.
Cornell-Dubilier Electric Corp., Newark, N.J. 862,651, pub. 10–15–68. Cl. 21.
Courtesy Associates, Inc., Washington, D.C. 862,907, pub. 10–15–68. Cl. 105.
Crane Co., New York, N.Y. 862,613, pub. 4–23–68. Cl. 13.
Creative Design Board, Chicago, Ill. 862,875, pub. 10–15–68. Cl. 100.
Crofts (Engineers) Ltd., Thornbury, Bradford, Yorkshire, England. 740,554, canc. Cl. 23.
Crompton Co., New York, N.Y. 505,599–600, ren. 12–31–68. Cl. 42.
Crompton Co., New York, N.Y. 506,269–70, ren. 12–31–68. Cl. 42.
Crompton Co., New York, N.Y. 506,277, ren. 12–31–68. Cl. 42.
Crown Cork & Seal Co., Inc.: *See*—
Crown Cork & Seal Co., The.
Crown Cork & Seal Co., The, Baltimore, Md., to Crown Cork & Seal Co., Inc., Philadelphia, Pa. 73,322, ren. 12–31–68. Cl. 1.
Cryco, Inc., Philadelphia, Pa. 740,702, canc. Cl. 44.
Cryotronics, Inc., Clinton, N.J. 740,601, canc. Cl. 26.
Cuddeback Packing Co.: *See*—
Cuddeback, Richard J.
Cuddeback, Richard J., d.b.a. Cuddeback Packing Co., to The Canandaigua National Bank & Trust Co., Canandaigua, N.Y. 504,093, ren. 12–31–68. Cl. 46.
Cues, Inc., The, Milbank, S. Dak. 862,908–9, pub. 10–15–68. Cl. 107.
Curley Co., Inc., Philadelphia, Pa., to Curley Co., Inc., Camden, N.J. 506,572, ren. 12–31–68. Cl. 51.
Curtis, Helene, Industries, Inc., Chicago, Ill. 862,871, pub. 10–15–68. Cl. 52.
Cybernetics, Inc., Paterson, N.J. 740,549, canc. Cl. 21.
Cyclops Corp., Pittsburgh, Pa. 862,619, pub. 10–15–68. Cl. 14.
Darsky, N. H., d.b.a. Golden Age Ginger Ale Co. of America, Youngstown, and Canton, Ohio, and Houston, Tex., to Holiday General Corp., Youngstown, Ohio. 506,053, ren. 12–31–68. Cl. 45.
Daz-E-Mae Lure Co., Oklahoma City, Okla. 862,667, pub. 10–15–68. Cl. 22.
Dazor Mfg. Corp., St. Louis, Mo. 503,877, ren. 12–31–68. Cl. 21.
Dean, Allan, Beverly Hills, from Interstate Development Corp., Los Angeles, Calif. 740,478, canc. Cl. 13.
Debs Co., Canoga Park, Calif. 740,599, canc. Cl. 26.
Deep Steam Extraction Ltd., Montreal, Quebec, Canada. 862,689, pub. 10–15–68. Cl. 23.
DeJur-Amsco Corp., Long Island City, N.Y. 740,558, canc. Cl. 23.
Delaware, Lackawanna & Western Coal Co., The, New York, N.Y., to Blue Coal Corp., Wilkes-Barre, Pa. 248,219, ren. 12–31–68. Cl. 1.
De le Court, Michelle M. M. J., Brussels, Belgium. 853,568, cor. Cl. 22.
Denison Mattress Factory, Denison, Tex. 504,852, ren. 12–31–68. Cl. 42.
Desert Date Sales Co., Indio, Calif. 862,947. Cl. 46.
Diamon-Deb, Inc., Burbank, Calif. 740,707, canc. Cl. 44.
Diamond Printing Machinery Co., to Les Nells, Inc., Cleveland, Ohio. 504,541, ren. 12–31–68. Cl. 23.
Diana Stores Corp., North Bergen, N.J. 862,767, pub. 10–15–68. Cl. 39.
Diesel Sales & Service, Inc., South Charleston, W. Va. 862,702, pub. 10–15–68. Cl. 23.
Dillard Paper Co., Inc., Greensboro, N.C. 862,568, pub. 10–15–68. Cl. 2.
Diversey Corp., The, Chicago, Ill. 862,868, pub. 10–15–68. Cl. 52.
Doall Co., Des Plaines, Ill. 862,725, pub. 10–15–68. Cl. 35.
Dofo, A.M.B.A. (Danske Ostemejerier Faellessalg og Osteeksport), Hadersley, Denmark. 862,841, pub. 10–15–68. Cl. 46.
Donya Pottery: *See*—
Matthews, Helen.
Dorn & Kirschner Band Instrument Co., Inc., Newark, N.J. 740,650, canc. Cl. 36.
Douglas Products Corp., New York, N.Y. 740,708, canc. Cl. 44.
Dunhall Inc., Gravette, Ark. 862,626, pub. 10–15–68. Cl. 18.
Dunhill, Alfred, Ltd., London, England. 858,876, cor. Cl. 23.
Dunhill, Alfred, Ltd., London, England. 859,052, cor. Cl. 51.
Duro-Test Corp., North Bergen, N.J. 862,653, pub. 10–15–68. Cl. 21.
Dynadisc: *See*—
Keemer, Edgar.
Dynasty Enterprises, Inc., Los Angeles, Calif. 862,806, pub. 10–15–68. Cl. 40.
Eastman Kodak Co., Rochester, N.Y. 740,596, canc. Cl. 26.
Eaton Allen Corp., Brooklyn, N.Y. 862,736, pub. 10–15–68. Cl. 37.
Eaton Yale & Towne Inc., Cleveland, Ohio. 862,683–4, pub. 10–15–68. Cl. 23.
Edwards, Charles C., Mancos, Colo. 862,665, pub. 10–15–68. Cl. 22.
Edwards Transfer & Storage Co., The, Columbus, Ohio. 862,904, pub. 10–15–68. Cl. 105.
Electronic Modules Corp., Timonium, Md. 862,637, pub. 11–7–67. Cl. 21.
Electronic Systems Development, Inc., Seattle, Wash. 862,916. Cl. 21.
Ellis, Otis, d.b.a. Lucky 11, Flint, Mich. 740,646, canc. Cl. 36.
Eloesser-Heynemann Co., South San Francisco, Calif. 862,802, pub. 10–15–68. Cl. 39.
Elpo Industries Inc., Fair Lawn, N.J. 862,565, pub. 10–15–68. Multiple Class (Classes 2 and 23).
Empire Silver Co., Inc., Brooklyn, N.Y. 862,578, pub. 10–15–68. Cl. 4.
Emsold-Gesellschaft Gert Helmers KG, Niedersachsen, Germany. 862,771, pub. 10–15–68. Cl. 39.
Encore Shoe Corp., Everett, Mass. 862,794, pub. 10–15–68. Cl. 39.
Endicott Johnson Corp., Endicott, N.Y. 862,801, pub. 10–15–68. Cl. 39.
Eno, J. C., Ltd., London, England, to Beecham Inc., Clifton, N.J. 32,315, ren. 12–31–68. Cl. 18.
Enro Shirt Co., Inc., The, Louisville, Ky. 862,780, pub. 10–15–68. Cl. 39.
Equitable Paper Bag Co. Inc., Long Island City, N.Y. 740,450, canc. Cl. 2.
Eutectic Welding Alloys Corp., Flushing, N.Y., from The Beryllium Corp., Reading, Pa. 740,481–2, canc. Cl. 14.
FMC Corp.: *See*—
Link-Belt Co.
FR Corp., The, Bronx, N.Y. 862,598, pub. 10–15–68. Cl. 6.
Fabriques Movado, La Chaux-De-Fonds, Switzerland, to Movado Watch Agency, Inc., New York, N.Y. 251,736, ren. 12–31–68. Cl. 27.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 740,514, canc. Cl. 18.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. 862,584, pub. 10–15–68. Cl. 6.
Farfisa S.p.A., Asplo Terme-Camerano-(Ancona), Italy. 862,919. Cl. 36.
Fashion Tress, Inc., Hialeah, Fla. 862,809, pub. 10–15–68. Cl. 40.
Federated Department Stores, Inc., Columbus, Ohio. 862,770, pub. 10–15–68. Cl. 39.
Federated Department Stores, Inc., Columbus, Ohio. 862,772, pub. 10–15–68. Cl. 39.
Fernandez, Frank C., Tucson, Ariz., to Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 251,444, ren. 12–31–68. Cl. 46.
Ferrari S.p.A. Esercizio Fabbriche Automobili e Corse, Modena, Italy. 862,631–3, pub. 10–15–68. Cl. 19.
Ferry-Morse Seed Co., Mountain View, Calif. 740,434, canc. Cl. 1.
Festos, Nicholas G., Chicago, Ill. 862,706, pub. 6–18–68. Cl. 26.
Field Enterprises, Inc.: *See*—
Chicago Daily News, Inc., The.
Field Enterprises, Inc., Chicago, Ill. 862,751, pub. 10–15–68. Cl. 38.
Financial Services, Inc., Lafayette, Ind. 862,882, pub. 10–15–68. Cl. 100.
Firestone Tire & Rubber Co., The, Akron, Ohio. 862,724, pub. 10–15–68. Cl. 35.
Firestone Tire & Rubber Co., The, Akron, Ohio. 862,726, pub. 10–15–68. Cl. 35.
First National City Bank, New York, N.Y. 862,899, pub. 10–15–68. Cl. 102.
Fisons Pest Control Ltd., Harston, England. 862,595, pub. 10–15–68. Cl. 6.
Fitzsimmons, Inc., Pittsburgh, Pa. 862,894, pub. 10–15–68. Cl. 101.
Flagstaff Liquor Co., Perth Amboy, N.J. 862,847, pub. 10–15–68. Cl. 49.
Foley Bag Catheter, Inc., St. Paul, Minn. 740,703, canc. Cl. 44.
Forster Mfg. Co., Inc., Wilton, Maine. 441,168, ren. 12–31–68. Cl. 24.
Fort Dodge Laboratories, Inc., Fort Dodge, Iowa, to American Home Products Corp., New York, N.Y. 441,840, ren. 12–31–68. Cl. 18.
Fort Dodge Laboratories, Inc., Fort Dodge, Iowa, to American Home Products Corp., New York, N.Y. 442,132, ren. 12–31–68. Cl. 18.
Fort Howard Paper Co., from Fort Howard Paper Co., Green Bay, Wis. 862,737, pub. 10–15–68. Cl. 37.
Fortuna Foundations, Inc., New York, N.Y. 862,766, pub. 10–15–68. Cl. 39.
Fortunoff, M., of Westbury Corp., Westbury, N.Y. 862,574, pub. 10–15–68. Cl. 3.
Fortunoff, M., of Westbury Corp., Westbury, N.Y. 862,659, pub. 10–15–68. Cl. 21.
Fortunoff, M., of Westbury Corp., Westbury, N.Y. 862,716, pub. 10–15–68. Cl. 32.
Fortunoff, M., of Westbury Corp., Westbury, N.Y. 862,752, pub. 10–15–68. Cl. 38.
Foseco Trading AG, Chur, Switzerland. 862,581, pub. 10–15–68. Cl. 6.
Foster Mfg. Co., Inc., Springfield, Mo. 862,611, pub. 7–2–68. Multiple Class (Classes 13, 23, and 35).
Franklin Mint, Inc., The, from General Numismatics Corp., Yeadon, Pa. 862,848, pub. 10–15–68. Cl. 50.
Fredelle Footwear, Inc., Miami Beach, Fla. 862,759, pub. 10–15–68. Cl. 39.
Fuji Seitetsu Kabushiki Kaisha (Fuji Iron & Steel Co., Ltd.), Chiyoda-Ku, Tokyo, Japan. 862,618, pub. 10–15–68. Cl. 14.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 862,622, pub. 10–15–68. Cl. 16.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 862,738, pub. 10–15–68. Cl. 37.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 862 748, pub. 10–15–68. Cl. 38.
Gandara y Haz, Ltda., Vigo (Pontevedra), Spain. 862,840, pub. 10–15–68. Cl. 46.
Garden Club Plan of America: *See*—
Bosilevas, Joseph.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Fire Extinguisher Corp., Northbrook, Ill. 862,691, pub. 10–15–68. Cl. 23.
General Foods Corp.: *See*—
Postum Co., Inc.
General Foods Corp., White Plains, N.Y. 862,945. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 740,607, canc. Cl. 26.
General Numismatics Corp.: *See*—
Franklin Mint, Inc., The.
Genesco Inc., Nashville, Tenn. 862,768, pub. 7–23–68. Cl. 39.
Gibbons, Stanley, Ltd., London, England. 862,662, pub. 10–15–68. Multiple Class (Classes 22 and 38).
Gilliam Candy Co., Inc., Paducah, Ky. 862,839, pub. 10–15–68. Cl. 46.
Golden Age Ginger Ale Co. of America: *See*—
Darsky, N. H.
Golden Door Motels, Inc., Portland, Oreg. 862,884, pub. 10–15–68. Cl. 100.
Good Housekeeping S.A., (Proprietary) Ltd., Paarden Eiland, Cape Province, Republic of South Africa. 862,915. Cl. 4.
Good Neighbors Abroad, San Francisco, Calif. 740,760, canc. Cl. 105.
Goodrich, B. F., Co., The, Akron, Ohio. 740,734, canc. Cl. 50.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 862,727–8, pub. 10–15–68. Cl. 35.
Gray, Dorothy, Ltd.: *See*—
Lehn & Fink Products Corp.
Great Western Sugar Co., The, Denver, Colo. 670,675, cor. Cl. 46.
Greco Pharmacal, Inc., Bayside, N.Y. 740,513, canc. Cl. 18.
Greenberg, B. B., Co., Cranston, R.I. 862,804, pub. 10–15–68. Cl. 40.
Groendyk Mfg. Co., Inc., Buchanan, Va. 862,559, pub. 10–15–68. Multiple Class (Classes 1, 5, 12, 19, 21, 22, and 42).
Grow Corp., The, from Metropolitan Telecommunications Corp., Brooklyn, N.Y. 740,530–5, canc. Cl. 21.
Grundfoss Bjerringbro Pumperfabrik A/S, Grundfos A/S, Bjerringbro, Denmark. 782 042. Am. 7(d). Cl. 23.
Hadensa-Gesellschaft Richard Morsch & Co., Bundesalle, Berlin-Friedenau, Germany. 740,506, canc. Cl. 18.
Haertel, W. J., to W. J. Haertel & Co., Franklin Park, Ill. 501,927. Am. 7(d). Cl. 12.
Hager, Verna G., Conrad, Mont. 862,782, pub. 10–15–68. Cl. 39.
Hall, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 862,784–5, pub. 10–15–68. Cl. 39.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 862,795, pub. 10–15–68. Cl. 39.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 862,798, pub. 10–15–68. Cl. 39.
Hamilton, R. L., Co.: *See*—
Hamilton, Robert L.
Hamilton, Robert L., d.b.a. R. L. Hamilton Co., Dallas, Tex. 740,614, canc. 12–31–68. Cl. 28.
Hammermill Paper Co.: *See*—
Strathmore Paper Co.
Handi-Clean Products, Inc., Greensboro, N.C. 862,902, pub. 10–15–68. Cl. 103.
Heathcoat, John, & Co., Tiverton, Devon, England, assor. to John Heathcoat & Co., Inc., to John Heathcoat & Co., Inc., New York, N.Y. 441,502, ren. 12–31–68. Cl. 44.
Heathcoat, John, & Co., Inc.: *See*—
Heathcoat, John, & Co.
Helzberg's Diamond Shops, Inc., Kansas City, Mo. 862,713, pub. 10–15–68. Cl. 28.
Herberlein & Co. A.-G., Wattwil, Switzerland. 440,541, ren. 12–31–68. Cl. 39.
Hercules Inc.: *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 506,351, ren. 12–31–68. Cl. 38.
Hertzano, Ephraim, Tel-Aviv, Israel. 862,664, pub. 10–15–68. Cl. 22.
Heublein, Inc., Hartford, Conn. 862,846, pub. 10–15–68. Cl. 49.
Hodgdon Powder Co., Inc., Shawnee Mission, Kans. 862,601, pub. 10–15–68. Cl. 9.
Holiday General Corp.: *See*—
Darsky, N. H.
Hood Chemical Co., Inc., Pittsburgh, Pa., to Texize Chemicals, Inc., Greenville, S.C. 505,459, ren. 12–31–68. Cl. 52.
Huntingburg Furniture Co., Inc., Huntingburg, Ind. 740,628, canc. Cl. 32.
Huntleys of Lancaster, Inc., Lancaster, Pa. 862,832, pub. 10–15–68. Cl. 46.
Iddings Paint Co., Inc., Long Island City, N.Y. 862,621, pub. 10–15–68. Cl. 16.
Ideal Wig Co., Inc., New York, N.Y. 862,808, pub. 10–15–68. Cl. 40.
Imperial Chemical Industries Ltd., Millbank, London, England. 862,585, pub. 10–15–68. Cl. 6.
Independence Records, Hollywood, Calif. 862,730, pub. 10–15–68. Cl. 36.
Individualized Systems, Inc., Atlanta, Ga. 740,655, canc. Cl. 37.
Institute of Applied Hypnosis, Inc., Orlando, Fla. 862,733, pub. 10–15–68. Cl. 36.
Interbank Card Association, from Interbank Card, Inc., Buffalo, N.Y. 862,897, pub. 10–15–68. Cl. 102.
Interbank Card, Inc.: *See*—
Interbank Card Association.
International Milling Co. Inc., Minneapolis, Minn. 862,835, pub. 10–15–68. Cl. 46.
International Paper Co., to International Paper Co., New York, N.Y. 248,588, ren. 12–31–68. Cl. 37.
International Silver Co., The, Meriden, Conn. 862,701, pub. 10–15–68. Cl. 23.
Interstate Development Corp.: *See*—
Dean, Allan.
Irving-Cloud Publishing Co., The, Lincolnwood, Chicago, Ill. 862,746, pub. 10–15–68. Cl. 38.
Irving-Cloud Publishing Co., The, Chicago, Ill. 862,927. Cl. 38.
Jacmar Mfg. Co., Inc., Brooklyn, N.Y. 740,250, canc. Cl. 22.
Jana Accessories Ltd., New York, N.Y. 862,573, pub. 10–15–68. Cl. 3.
Jet Sew Inc., Barneveld, N.Y. 862,685, pub. 10–15–68. Cl. 23.
Johns-Manville Corp., New York, N.Y. 862,609, pub. 10–15–68. Cl. 12.
Johnson Rubber Co., The, Middlefield, Ohio. 862,867, pub. 10–15–68. Cl. 52.
Jontz, Melvin L., Co., South Pasadena, Calif. 862,608, pub. 10–15–68. Cl. 12.
Jordan Colton Co. Inc., New York, N.Y. 740,691, canc. Cl. 40.
Kaiser Aluminum & Chemical Corp., Oakland, Calif., from Southern Nitrogen Co., Inc., Savannah, Ga. 862,887, pub. 10–15–68. Cl. 101.
Katl Screenprints Inc., New York, N.Y. 862,791, pub. 10–15–68. Cl. 39.
Kayser-Roth Corp., New York, N.Y. 862,933. Cl. 39.
Kayser-Roth Corp., New York, N.Y. 862,935. Cl. 39.

Keemer, Edgar, d.b.a. Dynadisc, Long Branch, N.J. 740,651, canc. Cl. 36.
Kellogg Corset Co., Jackson, Mich. 504,961, ren. 12–31–68. Cl. 44.
Kelly Industrial Co., Beresford, S. Dak. 862,697, pub. 10–15–68. Cl. 23.
Kent Corp., Princeton, N.J. 862,640, pub. 1–23–68. Cl. 21.
Kimberly-Clark Corp.: *See*—
Neenah Paper Co.
Kimberly-Clark Corp., Neenah, Wis. 503,745, ren. 12–31–68. Cl. 12.
Kimberly-Clark Corp., Neenah, Wis. 862,792, pub. 10–15–68. Cl. 39.
King Stove & Range, Inc.: *See*—
Automatic Draft & Stove Co., Inc.
Kip Inc.: *See*—
McCusker, William C.
Kleen-Air, Inc., Payne, Ohio. 740,556, canc. Cl. 23.
Kleinert, I. B., Rubber Co., New York, N.Y. 740,672, canc. Cl. 39.
Klein's Sporting Goods, Inc., Chicago, Ill. 505,861, ren. 12–31–68. Cl. 38.
Klenatron Inc., West Boxford, Mass. 862,641, pub. 10–15–68. Cl. 21.
Koberloy, Inc., La Mesa, Calif. 862,822, pub. 10–15–68. Cl. 44.
Kunian Beauty Salons Inc., Minneapolis, Minn. 862,885, pub. 10–15–68. Cl. 100.
Laboratory for Electronics, Inc.: *See*—
Automatic Signal Corp.
Lafair & Sons Co.: *See*—
Capri Creations.
Laine, Nan G., Malibu, Calif. 740,631, canc. Cl. 32.
Lake, Brian E., d.b.a. Prophets Production Ltd., West Allis, Wis. 862,910, pub. 10–15–68. Cl. 107.
Landsman Packing Co., Inc., Red Hook, N.Y. 862,946. Cl. 46.
Lane Ltd., New York, N.Y. 862,623, pub. 10–15–68. Cl. 17.
Lansing Co., Lansing, Mich. 740,524, canc. Cl. 19.
Lazier, J. F., Mfg. Co., St. Louis, Mo. 862,943. Cl. 46.
Lee, Marcy, Inc.: *See*—
Lee, Marcy, Mfg. Co.
Lee, Marcy, Mfg. Co., to Marcy Lee, Inc., Dallas, Tex. 502,898, ren. 12–31–68. Cl. 39.
Lees Mfg. Co., Cannon Falls, Minn. 862,775, pub. 10–15–68. Cl. 39.
Lee's, Margo, Los Angeles, Calif. 740,717, canc. Cl. 46.
Lehn & Fink Products Corp., Bloomfield, N.J., to Dorothy Gray, Ltd., New York, N.Y. 439,913, ren. 12–31–68. Cl. 51.
Le Pre, Carla, Ltd., New York, N.Y. 740,742, canc. Cl. 51.
Les Nells, Inc.: *See*—
Diamond Printing Machinery Co.
Link-Belt Co., to FMC Corp., Chicago, Ill. 248,922, ren. 12–31–68. Cl. 14.
Lok-Products Co., Fullerton, Calif. 862,720, pub. 10–15–68. Cl. 34.
Lomag Corp., Roosevelt, N.Y. 862,698, pub. 10–15–68. Cl. 23.
Longines-Wittnauer Watch Co., Inc., New York, N.Y. 862,638, pub. 3–14–67. Multiple Class (Classes 21 and 26).
Lorillard, P., Co., New York, N.Y. 501,532–3, ren. 12–31–68. Cl. 17.
Lorillard, P., Co., New York, N.Y. 501,688, ren. 12–31–68. Cl. 17.
Lowe, Joe, Co.: *See*—
Fernandez, Frank C.
Loyd, L. W., Co., Inc., South Pittsburgh, Tenn. 862,602, pub 10–15–68. Cl. 9.
Lucas, John, & Co., Inc., Philadelphia, Pa., to The Sherwin-Williams Co., Cleveland, Ohio. 442,122, ren. 12–31–68. Cl. 16.
Lucky 11: *See*—
Ellis, Otis.
Lumex, Inc., Bay Shore, N.Y. 862,823, pub. 10–15–68. Cl. 44.
Lynwood Laboratories, Inc., Norwood, Mass. 735,132, canc. Cl. 6.
M & M Industrial Services, Inc., Bricktown, N.J. 862,576, pub. 10–15–68. Cl. 4.
Ma Cherie Sales Corp. of America, St. Louis, Mo. 862,831, pub. 10–15–68. Cl. 45.
MacDonald-Bernier Co., Boston, Mass. 740,716, canc. Cl. 46.
Madison Chemical Corp., Maywood, Ill. 862,589, pub. 10–15–68. Cl. 6.
Madison Chemical Corp., Maywood, Ill. 862,869, pub. 10–15–68. Cl. 52.
Magewick, Aloysius F., Livonia, Mich. 862,671, pub. 10–15–68. Cl. 22.
Mailing House, Inc., The, Los Angeles, Calif. 862,880, pub. 10–15–68. Multiple Class (Classes 100 and 101).
Malanco of California, Inc., Blue Island, Ill. 740,449, canc. Cl. 2.
Mandt, Vernon G.: *See*—
Calcaload Co., Inc.
Mangel Stores Corp., New York, N.Y. 862,757, pub. 10–15–68. Cl. 39.
Marcel, John M., London, England. 740,519, canc. Cl. 19.
Marine Development, Inc., New York, N.Y. 740,495, canc. Cl. 16.
Marvella, Inc., New York, N.Y. 740,616, canc. Cl. 12–31–68. Cl. 28.
Master, Nils, Inc., New York, N.Y. 862,663, pub. 10–15–68. Cl. 22.
Master Tank & Welding Co., Dallas, Tex. 862, 696, pub. 10–15–68. Cl. 23.
Mattel, Inc., Hawthorne, Calif. 862,673–7, pub. 10–15–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 862,679, pub. 10–15–68. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 862,682, pub. 10–15–68. Cl. 22.
Matthews, Helen, d.b.a. Donya Pottery, Brookfield, Conn. 740,435, canc. Cl. 1.
Maywood Distributing Co., Independence, Mo. 862,591, pub. 10–15–68. Cl. 6.
McClung, C. M., & Co., Inc., Knoxville, Tenn. 862,660, pub. 10–15–68. Multiple Class (Classes 22, 23, 26, 29, and 35).
McCusker, William C., assor. to Kip Corp., Ltd., Los Angeles, to Brunswig Drug Co., d.b.a. Kip Inc., El Segundo, Calif. 439,820, ren. 12–31–68. Cl. 51.
McEleney, James R., d.b.a. Tish & Redmond Beauty Supply, Leominster, Mass. 740,687, canc. Cl. 40.
McGraw-Hill, Inc.: *See*—
McGraw-Hill Publishing Co., Inc.
McGraw-Hill Publishing Co., Inc., to McGraw-Hill, Inc., New York, N.Y. 506,101, ren. 12–31–68. Cl. 38.
McMurray, Paul H., d.b.a. Automatic Equipment Co., Delphi, Ind. 740,739, canc. Cl. 50.
Mead Corp., The, Dayton, Ohio. 740,444, canc. Cl. 2.
Medelco, Inc., Wood Dale, Ill. 862,703, pub. 8–20–68. Cl. 26.
Medicenters of America, Inc., Memphis, Tenn. 862,879, pub. 10–15–68. Cl. 100.
Mendel, H., & Co., Inc., Atlanta, Ga. 862,756, pub. 10–15–68. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 862,625, pub. 10–15–68. Cl. 18.
Metal Box Co. Ltd., The, London, England. 740,441, canc. Cl. 2.
Metropolitan Telecommunications Corp.: *See*—
Grow Corp., The.
Micrometrical Mfg. Co., Ann Arbor, Mich. 740,755, canc. Cl. 101.
Mid-Atlantic Footwear Corp., New York, N.Y. 862,786, pub. 10–15–68. Cl. 39.
Midwest Dental Mfg. Co., Melrose Park, Ill. 740,700, canc. Cl. 44.
Midwest Industries, Inc., Ida Grove, Iowa. 862,852, pub. 10–15–68. Cl. 50.
Milani, J. L., Los Angeles, Calif. 740,715, canc. Cl. 46.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 503,709, ren. 12–31–68. Cl. 2.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 503,908, ren. 12–31–68. Cl. 36.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 862,579, pub. 10–15–68. Cl. 5.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 862,828–9, pub. 10–15–68. Cl. 44.
Mr. Jerome, Inc., Columbus, Ohio. 862,805, pub. 10–15–68. Cl. 40.
Mrs. Day's Ideal Baby Shoe Co., Inc., Danvers, Mass. 507,142–3, ren. 12–31–68. Cl. 39.
Mix-Mill, Inc., Bluffton, Ind. 862,688, pub. 10–15–68. Cl. 23.
Modern Language Association of America, New York, N.Y. 862,920. Cl. 38.
Modine Mfg. Co., Racine, Wis. 862,718–9, pub. 10–15–68. Cl. 34.
Moline Malleable Iron Co., St. Charles, Ill. 862,615. pub. 10–15–68. Cl. 13.
Montes, Antonio L., d.b.a. Yates Y Pesca Publishing Co., Miami, Fla. 862,930. Cl. 38.
More, Thomas, Association, The, Chicago, Ill. 862,745, pub. 10–15–68. Cl. 38.
Morpul Mfg. Co., Greensboro, N.C. 740,567, canc. Cl. 23.
Movado Watch Agency, Inc.: *See*—
Fabriques Movado.
Movado Watch Agency, Inc., New York, N.Y. 506,409, ren. 12–31–68. Cl. 27.
Muller, Max, & Co., Inc., Jackson, Miss. 740,472, canc. Cl. 10.
Multi-State Industries, Inc., Newark, N.J. 862,666, pub. 10–15–68. Cl. 22.
Narrod, Kenneth, Moving Co., Waukegan, Ill. 862,905, pub. 10–15–68. Cl. 105.
National Can Corp., Chicago, Ill. 740,443, canc. Cl. 2.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 442,077, ren. 12–31–68. Cl. 12.
National Dairy Products Corp., Chicago, Ill. 862,939–40. Cl. 46.
National Gypsum Co., Buffalo, N.Y. 862,606, pub. 10–15–68. Cl. 12.
National Income Tax Service, Inc., Wilmington, Del. 862,895, pub. 10–15–68. Cl. 101.
National Presto Industries, Inc., Eau Claire, Wis. 862,649, pub. 10–15–68. Cl. 21.
Naumkeag Steam Cotton Co., Salem, Mass., to Springs Mills, Inc., New York, N.Y. 440,761, ren. 12–31–68. Cl. 42.
Needaplane, Inc., Highland Park, Ill. 862,889, pub. 10–15–68. Cl. 101.
Neenah Paper Co., to Kimberly-Clark Corp., Neenah, Wis. 507,008, ren. 12–31–68. Cl. 37.
Neenah Paper Co., to Kimberly-Clark Corp., Neenah, Wis. 507,010–11, ren. 12–31–68. Cl. 37.
New Orleans Buccaneers, Inc., New Orleans, La. 862,913, pub. 10–15–68. Cl. 107.
Niagara Weldments Inc., Niagara Falls, N.Y. 740,635, canc. Cl. 34.
Noonoo Rug Co. Inc., New York, N.Y. 862,815, pub. 10–15–68. Cl. 42.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 862,955–60. Cl. 51.
Norstan Industries, Inc., New York, N.Y. 862,787, pub. 10–15–68. Cl. 39.
North American Mills, Inc., Gastonia, N.C. 862,818, pub. 10–15–68. Cl. 42.
North American Philips Co., Inc., New York, N.Y. 862,643, pub. 10–15–68. Multiple Class (Classes 21, 23, 36, and 44).
North American Rockwell Corp., from Rockwell-Standard Corp., Pittsburgh, Pa. 862,686, pub. 10–15–68. Multiple Class (Classes 23, 31, and 34).
Nott Mfg. Co., Inc., Pleasant Valley, N.Y. 862,592, pub. 10–15–68. Cl. 6.

Nyman, Al, & Son, Inc., New York, N.Y. 862,705, pub. 10–15–68. Cl. 26.
Omscolite Corp., Philadelphia, Pa. 740,548, canc. Cl. 21.
1·2·Kangaroo, Inc., New York, N.Y. 862,669, pub. 10–15–68. Cl. 22.
Oneida Ltd., Oneida, N.Y. 862,690, pub. 10–15–68. Cl. 23.
Outstanding Young Americans, Inc., Montgomery, Ala. 862,928. Cl. 38.
P.M. Corp., Philadelphia, Pa. 740,448, canc. Cl. 2.
Pacific Semiconductors, Inc., Lawndale, Calif. 740,542, canc. Cl. 21.
Packaging Corp. of America, Evanston, Ill. 862,571, pub. 10–15–68. Cl. 2.
Pacquin, Inc., New York, N.Y., to Pacquin-Lester Co., Litchfield, Conn. 249,628, ren. 12–31–68. Cl. 52.
Pacquin-Lester Co.: *See*—
Pacquin, Inc.
Pakon Mfg. Co.: *See*—
Besso, Louis S.
Pan American Barter Co., Inc., New York, N.Y. 862,712, pub. 10–15–68. Cl. 27.
Parke, Davis & Co., Detroit, Mich. 506,925. Am. 7(d). Cl. 6.
Parkline Corp., New York, N.Y. 862,918. Cl. 23.
Paulucci, Jeno F., d.b.a. Riksha Inns, Duluth, Minn. 740,730, canc. Cl. 46.
Peachtree Doors, Inc., Atlanta, Ga. 740,476, canc. Cl. 12.
Pennsylvania New York Central Transportation Co., from The New York Central Railroad Co., New York, N.Y. 858,100, cor. Cl. 105.
PepsiCo, Inc., New York, N.Y. 862,830, pub. 10–15–68. Cl. 45.
Perkins, Mary E., d.b.a. Saltys Caps & Apparel, Fort Worth, Tex. 862,812, pub. 5–14–68. Cl. 42.
Permalux Co., The, Aurora, Ill. 862,562, pub. 10–15–68. Multiple Class (Classes 1, 11, and 38).
Pet Inc.: *See*—
Schrafft, W. F., & Sons.
Pet Inc., St. Louis, Mo., from Sue Ann Food Products Corp., Chicago, Ill. 862,937. Cl. 46.
Pfizer, Chas., & Co., Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 501,906, ren. 12–31–68. Cl. 18.
Pfizer, Chas., & Co., Inc., to Chas. Pfizer & Co., Inc., New York, N.Y. 503,018, ren. 12–31–68. Cl. 18.
Philadelphia National Bank, The, Philadelphia, Pa. 862,900, pub. 10–15–68. Cl. 102.
Phillips-Van Heusen Corp., New York, N.Y. 862,755, pub. 10–15–68. Cl. 39.
Photocircuits Corp., Glen Cove, N.Y. 862,588, pub. 10–15–68. Cl. 6.
Picasso, Dennis A., Baltimore, Md. 862,911, pub. 10–15–68. Cl. 107.
Plasti-Vac Corp., Montgomery, Pa. 740,439, canc. Cl. 2.
Plexode, Inc., Chicago, Ill. 862,850, pub. 10–15–68. Cl. 50.
Popcorn Products, Inc., Chicago, Ill. 862,938. Cl. 46.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 740,586, canc. Cl. 26.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 862,814, pub. 5–7–68. Cl. 42.
Postindex Co. Inc., to Art Metal-Knoll Corp., Jamestown, N.Y. 243,031, ren. 12–31–68. Cl. 37.
Postindex Co., Inc., to Art Metal-Knoll Corp., Jamestown, N.Y. 243,630, ren. 12–31–68. Cl. 32.
Postum Co., Inc., to General Foods Corp., New York, N.Y. 250,035, ren. 12–31–68. Cl. 46.
Professional Positioners, Inc., Racine, Wis. 862,826, pub. 10–15–68. Cl. 44.
Professional Press, Inc., The, Chicago, Ill. 862,929. Cl. 38.
Prophets Production Ltd.: *See*—
Lake, Brian E.
Proudfoot Hosiery Corp., New York, N.Y. 862,797, pub. 10–15–68. Cl. 39.
Public Relations Board, Inc., The, Chicago, Ill. 862,888, pub. 10–15–68. Cl. 101.
Purecell Corp., Palo Alto, Calif. 740,624, canc. Cl. 31.
Puritan Fashions Corp., New York, N.Y. 862,762, pub. 10–15–68. Cl. 39.
QC Division: *See*—
San Diego Aircraft Engineering, Inc.
Quixonic, Inc., Plymouth, Mich. 862,732, pub. 10–15–68. Cl. 36.
Racine Hydraulics, Inc., Racine, Wis. 862,617, pub. 10–15–68. Cl. 13.
Radart, Wynne, Ark. 740,610, canc. Cl. 27.
Radiant Color Co., Richmond, Calif. 862,604, pub. 10–15–68. Cl. 10.
Radio Corp. of America, New York, N.Y. 440,372, ren. 12–31–68. Cl. 27.
Radio Corp. of America, New York, N.Y. 740,595, canc. Cl. 26.
Radio Corp. of America, New York, N.Y. 862,657–8, pub. 10–15–68. Cl. 21.
Rainbow Crafts, Inc., Cincinnati, Ohio. 862,681, pub. 10–15–68. Cl. 22.
Ralston Purina Co., St. Louis, Mo. 862,590, pub. 10–15–68. Cl. 6.
Ralston Purina Co., St. Louis, Mo. 862,872, pub. 10–15–68. Cl. 52.
Rank Organisation Ltd., The: *See*—
Taylor, Taylor & Hobson Ltd.
Rayflex Fabrics, Inc., New York, N.Y. 862,810–11, pub. 10–15–68. Cl. 42.
Raymond Industries, Inc., Rochester, N.Y. 740,602, canc. Cl. 26.
Red Carpet Inns, Inc., Daytona Beach, Fla. 862,886, pub. 10–15–68. Cl. 100.
Reed & Carnrick, Kenilworth, N.J. 862,627, pub. 10–15–68. Cl. 18.
Reid-Meredith, Inc., from Reid-Meredith, Inc., Lawrence, Mass. 862,881, pub. 10–15–68. Cl. 100.
Remco Industries, Inc., Harrison, N.J. 862,678, pub. 10–15–68. Cl. 22.
Revlon, Inc., New York, N.Y. 862,952–4. Cl. 51.
Reynolds Mfg. Co., The, Holyoke, Mass. 504,964, ren. 12–31–68. Cl. 37.
Reynolds Mfg. Co., The, Holyoke, Mass. 505,569, ren. 12–31–68. Cl. 37.
Reynolds, R. J., Foods, Inc., New York, N.Y. 862,837, pub. 10–15–68. Cl. 46.
Riegel Textile Corp., New York, N.Y. 506,332, ren. 12–31–68. Cl. 42.
Riksha Inns: *See*—
Paulucci, Jeno F.
Roberts & Porter, Inc., Chicago, Ill. 862,593–4, pub. 10–15–68. Cl. 6.
Rockwell-Standard Corp.: *See*—
North American Rockwell Corp.
Roffler Sculptur-Kut National Franchised System, Inc., Ambridge, Pa. 862,858, pub. 10–15–68. Multiple Class (Classes 51 and 52).
Roper Research Associates, Inc., New York, N.Y. 862,883, pub. 10–15–68. Multiple Class (Classes 100 and 101).
Rosefield Packing Co., Ltd., Alameda, Calif., to Corn Products Co., Englewood Cliffs, N.J. 504,940, ren. 12–31–68. Cl. 46.
Rowe Line Corp., San Gabriel, Calif. 740,581, canc. Cl. 26.
Royal Saxe Corp., New York, N.Y. 740,005, canc. Cl. 30.
Rumbles, Ltd., The, Omah, Nebr. 862,912, pub. 10–15–68. Cl. 107.
Russell Hosiery Mills, Inc., Star, N.C. 862,783, pub. 10–15–68, Cl. 39.
SCM Corp., New York, N.Y. 862,644, pub. 10–15–68. Cl. 21.
Sacramento Union Corp., The, Sacramento, Calif. 862,921. Cl. 38.
Safety First Products Corp., Elmsford, N.Y. 862,583, pub. 12–19–67. Cl. 6.
St. Clair Specialty Mfg. Co., Inc., Bellwood, Ill. 740,693, canc. Cl. 40.
St. Marys Carbon Co., St. Marys, Pa. 862,563, pub. 10–15–68. Multiple Class (Classes 1, 9, 21, 23, 31, and 35).
Sala, Mina, Olgiate Molgora (Como), Italy. 862,765, pub. 10–15–68. Cl. 39.
Saltys Caps & Apparel: *See*—
Perkins, Mary E.
San Diego Aircraft Engineering, Inc., d.b.a. QC Division, San Diego, Calif. 862,856, pub. 10–15–68. Cl. 50.
Sani-Jon of America, Inc., Warren, Mich. 862,612, pub. 10–15–68. Cl. 13.
Santoron Co., Ltd., Aichi-Ken, Japan. 862,754, pub. 10–15–68. Cl. 39.
Sapphire Corp., New York, N.Y. 740,682, canc. Cl. 39.
Sarole, Inc., Pompano Beach, Fla. 862,825, pub. 10–15–68. Cl. 44.
Saxylle-Kilsund AB, Boras, Sweden. 862,813, pub. 10–15–68. Cl. 42.
Schrafft, W. F., & Sons, Boston, Mass., to Pet Inc., St. Louis, Mo. 70,540, ren. 12–31–68. Cl. 46.
Schwartz, Philip A., Longmeadow, Mass. 740,457, canc. Cl. 6.
Schwartz, Philip A., Longmeadow, Mass. 740,545, canc. Cl. 21.
Sci-Tek Computer Center, Inc., Wilmington, Del. 862,892–3, pub. 10–15–68. Cl. 101.
Sea Pak: *See*—
Seapak Division.
Seapak Division, d.b.a. Sea Pak, St. Simons Island, Ga. 862,941. Cl. 46.
Semicon of California, Inc., Watsonville, Calif. 750,375, cor. Cl. 12.
Senor Pico, Inc., d.b.a. Senor Pico's and Senor Pico's Restaurants, San Francisco, Calif. 862,836, pub. 10–15–68. Cl. 46.
Senor Pico's: *See*—
Senor Pico, Inc.
Senor Pico's Restaurants: *See*—
Senor Pico, Inc.
Shadowline, Inc., Morganton, N.C. 862,774, pub. 10–15–68. Cl. 39.
Sherwin-Williams Co., The: *See*—
Acme White Lead & Color Works.
Lucas, John, & Co., Inc.
Shields, Inc., of Attleboro, Mass., New York, N.Y. 855,784, cor. Cl. 8.
Ship 'n Shore, Inc., Upland, Pa. 862,796, pub. 10–15–68. Cl. 39.
Shoreline Seafoods Ltd., Tampa, Fla. 862,838, pub. 10–15–68. Cl. 46.
Sirco Products Co., Inc., Mount Vernon, N.Y. 862,572, pub. 10–15–68. Cl. 3.
16 Magazine, Inc., New York, N.Y. 862,923–5. Cl. 38.
Smit, J. K., & Sons, Inc., Murray Hill, N.J. 862,699–700, pub. 10–15–68. Cl. 23.
Societe d'Electronique et d'Automatisme, Paris, France. 862,639, pub. 10–15–68. Cl. 21.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France, to American Home Products Corp., New York, N.Y. 507,057, ren. 12–31–68. Cl. 6.
Societe Generale de Conditionnement d'Air (Societe Anonyme), Quai Antoine Ler, Monaca. 862,567, pub. 10–15–68. Cl. 2.
Societe Guerlain, Paris, France. 740,743, canc. Cl. 51.
Solomon, Sam, Trading Stamp Co., Charlotte, N.C. 740,753, canc. Cl. 101.
South Bend Toy Mfg. Co., Inc., South Bend, Ind. 744,059. Am. 7(d). Cl. 22.
Southern Nitrogen Co., Inc.: *See*—
Kaiser Aluminum & Chemical Corp.
Southern Steel & Aluminum Co., St. Louis, Mo. 740,475, canc. Cl. 12.

Spartan-Aqualon Corp., South El Monte, Calif. 862,610, pub. 10–15–68. Cl. 12.
Spartans Industries, Inc., New York, N.Y. 862,634, pub. 10–15–68. Cl. 19.
Special Devices Laboratories, Inc., Hackensack, N.J. 740,600, canc. Cl. 26.
Spencer Chemical Co., Kansas City, Mo. 740,471, canc. Cl. 10.
Springs Cotton Mills, The, Lancaster, S.C., to Springs Mills, Inc., New York, N.Y. 506,580, ren. 12–31–68. Cl. 42.
Springs Mills, Inc.: *See*—
Naumkeag Steam Cotton Co.
Springs Cotton Mills, The.
Stacor Equipment Co., Newark, N.J. 740,767, canc. Cl. 32.
Stafford-Lowdon Co., Fort Worth, Tex. 862,735, pub. 10–15–68. Cl. 37.
Stamford Wall Paper Co., Stamford, Conn. 248,559, ren. 12–31–68. Cl. 37.
Standard Electric Co., Inc., San Antonio, Tex. 506,668, ren. 12–31–68. Cl. 21.
Standard Oil Co., The: *See*—
Vistron Corp.
Standard Oil Co., Flemington, N.J. 862,799, pub. 10–15–68. Cl. 39.
Standard Oil Co., Flemington, N.J. 862,819–21, pub. 10–15–68. Cl. 42.
Standard Packaging Corp., New York, N.Y. 862,717, pub. 10–15–68. Cl. 33.
Stauffer Chemical Co., New York, N.Y. 501,005. Am. 7(d). Cl. 6.
Stout Sign Co., St. Louis, Mo. 862,853, pub. 10–15–68. Cl. 50.
Strathmore Paper Co., Mittineague, Mass., to Hammermill Paper Co., Erie, Pa. 248,580, ren. 12–31–68. Cl. 37.
Structural Fasteners, Inc., Bloomfield, Conn. 862,607, pub. 10–15–68. Cl. 12.
Success Motivation Institute, Inc., Waco, Tex. 862,749, pub. 10–15–68. Cl. 38.
Suchard Holding Societe Anonyme, Lausanne, Switzerland. 862,842, pub. 10–15–68. Cl. 46.
Sue Ann Food Products Corp.: *See*—
Pet Inc.
Sue, Terry, Casuals, Inc., Miami, Fla. 862,803, pub. 10–15–68. Cl. 39.
Sun Oil Co., Philadelphia, Pa. 862,600, pub. 10–15–68. Cl. 6.
Sunbeam Corp., Chicago, Ill. 862,654, pub. 10–15–68. Cl. 21.
Sunbeam Lighting Co., Los Angeles, Calif. 862,647, pub. 10–15–68. Cl. 21.
Sunbell Corp., Albuquerque, N. Mex. 862,715, pub. 10–15–68. Cl. 28.
Sun-Maid Raisin Growers of California, Kingsburg, Calif. 252,223–4, ren. 12–31–68. Cl. 46.
Sunset Traveler, Inc.: *See*—
Commodore Corp., The.
Superba Cravats, Inc., Rochester, N.Y. 862,934. Cl. 39.
Sur-Lock Pallet, Inc., Kansas City, Kans. 862,855, pub. 10–15–68. Cl. 50.
Susquehanna Corp., The, by merger from Atlantic Research Corp., Alexandria, Va. 859,699, cor. Cl. 34.
Swanee Paper Corp., New York, N.Y. 862,740, pub. 10–15–68. Cl. 37.
Table Rock Laboratories, Inc., Greenville, S.C. 506,624, ren. 12–31–68. Cl. 18.
Tani Farms, Santa Maria, Calif. 862,942. Cl. 46.
Taylor-Bell Co. Inc., New York, N.Y. 740,688, canc. Cl. 40.
Taylor, Taylor & Hobson Ltd., Leicester, to The Rank Organisation Ltd., London, England. 438,566, ren. 12–31–68. Cl. 26.
Taylor, Taylor & Hobson, Ltd., Leicester, to The Rank Organisation Ltd., London, England. 502,780, ren. 12–31–68. Cl. 23.
Technic, Inc., Cranston, R.I. 862,596–7, pub. 10–15–68. Cl. 6.
Technicon Corp., Ardsley, N.Y. 862,708, pub. 10–15–68. Cl. 26.
Tenneco Inc., Houston, Tex. 862,561, pub. 2–27–68. Multiple Class (Classes 1, 2, 4, 5, 6, 10, 11, 12, 15, 16, 18, 20, 23, 26, 37, 46, 50, 52, 100, 103, and 105).
Terra Chemicals International, Inc., Sioux City, Iowa. 862,890, pub. 10–15–68. Cl. 101.
Texas Electronic Products Corp., from Beautron Corp., Dallas, Tex. 740,706, canc. Cl. 44.
Texize Chemicals, Inc.: *See*—
Hood Chemical Co., Inc.
Textron Inc., Fort Madison, Iowa. 862,739, pub. 10–15–68. Cl. 37.
Textron Inc., Providence, R.I. 862,859, pub. 10–15–68. Cl. 51.
Thomas, Arthur H., Co., Philadelphia, Pa. 862,709, pub. 10–15–68. Cl. 26.
Thomas Industries Inc., Louisville, Ky. 740,640, canc. Cl. 34.
Thunderbird Products Corp., Miami, Fla. 862,630, pub. 10–15–68. Cl. 19.
Tilden, S. G., Inc., Garden City, N.Y. 862,635, pub. 10–15–68. Cl. 19.
Timber Structures, Inc., to Timber Structures, Inc., Portland, Oreg. 500,592, ren. 12–31–68. Cl. 12.
Tippy's Taco House of America, Inc., Dallas, Tex. 862,878, pub. 10–15–68. Cl. 100.
Tish & Redmond Beauty Supply: *See*—
McEleney, James R.
Tivoli Brewing Co., Denver, Colo. 862,949. Cl. 48.
Tomos Tovarna Motornih Vozil, Koper, Yugoslavia. 862,629, pub. 5–21–68. Multiple Class (Classes 19 and 23).
Toperzer, Frank M., Jr., Bethesda, Md. 740,762, canc. Cl. 107.
Trafalgar Foods Ltd., Rye, N.Y. 862,834, pub. 10–15–68. Cl. 46.
Traverse Bay Woolen Co., Traverse City, Mich. 862,763, pub. 10–15–68. Multiple Class (Classes 39 and 42).
Triple Clean, Inc., Oklahoma City, Okla. 862,692, pub. 10–15–68. Cl. 23.
Twin Circle Publishing Co., Inc., New York, N.Y. 862,922. 38.
Ugine Kuhlmann, Paris, France. 862,582, pub. 10–15–68. Cl. 6.
Union Carbide Corp.: *See*—
National Carbon Co., Inc.
Union Pen & Pencil Corp., Mount Vernon, N.Y. 862,741–2, pub. 10–15–68. Cl. 37.
Unique Pure Foods Corp., North Bergen, N.J. 853,753, cor. Cl. 46.
Unistrut Corp., Wayne, Mich. 862,747, pub. 10–15–68. Cl. 38.
United Carbon Co., Charleston, W. Va., to Ashland Oil & Refining Co., Ashland, Ky. 249,072, ren. 12–31–68. Cl. 16.
United Motion Picture Association: *See*—
United Theatre Owners of the Heart of America.
United Products Corp., Kansas City, Mo. 740,451, canc. Cl. 3.
U.S. Nutrition Products Co., Inc., Yonkers, N.Y. 862,624, pub. 7–26–66. Cl. 18.
United Theatre Owners of the Heart of America, d.b.a. United Motion Picture Association, Kansas City, Mo. 862,891, pub. 10–15–68. Cl. 101.
Unox Naamlooze Vennootschap, Oss, Holland. 862,843, pub. 10–15–68. Cl. 46.
Van Derdys, Sivan F., Santurce, Puerto Rico. 740,598, canc. Cl. 26.
Van Dorn Co., Cleveland, Ohio. 862,693, pub. 10–15–68. Cl. 23.
Vasconcellos, D. F., S/A. Optica e Mecanica de Alta Precisao, Sao Paulo, Brazil. 740,584, canc. Cl. 26.
Vending Appliance Mfg. Corp., Brooklyn, N.Y. 740,576, canc. Cl. 24.
Vernitron Corp., Farmingdale, N.Y. 862,711, pub. 10–15–68. Cl. 26.
Versatek Industries, Inc., Indianapolis, Ind. 862,599, pub. 10–15–68. Cl. 6.
Victor Adding Machine Co.: *See*—
Victor Comptometer Corp.
Victor Comptometer Corp., from Victor Adding Machine Co., Chicago, Ill. 740,766, canc. Cl. 26.
Vistron Corp., from The Standard Oil Co., Cleveland, Ohio. 862 620, pub. 10–15–68. Cl. 16.
Vitaminerals, Inc., Glendale, Calif. 503,389, ren. 12–31–68. Cl. 44.
Wall Rope Works, Inc., New York, N.Y. 740,460, canc. Cl. 7.
Washington Fish & Oyster Co. of California, San Francisco, Calif. 862,944. Cl. 46.
Weight Watchers International, Inc., Forest Hills, N.Y. 862,744, pub. 6–18–68. Cl. 38.
Weinberger, Irving, d.b.a. Bouche Jewelers, New York, N.Y. 862,714, pub. 10–15–68. Cl. 28.
Wells Lamont Corp.: *See*—
Wells-Lamont Mfg. Co.
Wells-Lamont Mfg. Co., Minneapolis, Minn., to Wells Lamont Corp., Chicago, Ill. 251,327, ren. 12–31–68. Cl. 39.
Wespak, Inc., Teaneck, N.J. 740,442, canc. Cl. 2.
Westab Inc., Dayton, Ohio. 862,743, pub. 10–15–68. Cl. 37.
Western Microwave Laboratories, Inc., Santa Clara, Calif. 862,646, pub. 9–10–68. Cl. 21.
Wheatland Tube Co., Philadelphia, Pa. 504,565, ren. 12–31–68. Cl. 13.
White-Stokes Co., Inc., Chicago, Ill. 252,772, ren. 12–31–68. Cl. 46.
White, Theodore H., New York, N.Y. 862,750, pub. 10–15–68. Cl. 38.
Williams, J. B., Co., The, Glastonbury, Conn., to The J. B. Williams Co., Inc., New York, N.Y. 501,953, ren. 12–31–68. Cl. 52.
Williams, J. B., Co., Inc., The: *See*—
Contl Products Corp.
Williams, J. B., Co., The.
Willits Shoe Co., Halifax, Pa. 740,676, canc. Cl. 39.
Wilson's, William M., Sons, Inc., Lansdale, Pa. 862,694, pub. 10–15–68. Cl. 23.
Witco Chemical Co., Inc., New York, N.Y. 862,586–7, pub. 10–15–68. Cl. 6.
Woburn Chemical Corp., Harrison, N.J. 862,580, pub. 10–15–68. Cl. 5.
Wood's, T. B., Sons Co., Chambersburg, Pa. 862,655, pub. 10–15–68. Cl. 21.
World Import Co., Inc., St. Louis, Mo. 862,781, pub. 10–15–68. Cl. 39.
Wyandotte Chemicals Corp., Wyandotte, Mich. 503,370, ren. 12–31–68. Cl. 6.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 505,805, ren. 12–31–68. Cl. 6.
Yardley of London, Inc., Totowa, N.J. 862,861, pub. 10–15–68. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 862,861, pub. 10–15–
Yates y Pesca Publishing Co.: *See*—
Montes, Antonio L.
York Feather & Down Corp., Brooklyn, N.Y. 862,680, pub. 10–15–68. Cl. 22.
Yorn Import Co., Inc., San Francisco, Calif. 740,529, canc. Cl. 21.
Young Sport Fashions: *See*—
Altshul, Stern & Co., Inc.
Zayre Corp., Natick, Mass. 862,773, pub. 10–15–68. Cl. 39.
Zeigler Electronics, Inc., Gardena, Calif. 862,824, pub. 10–15–68. Cl. 44.
Zenith Radio Corp., Chicago, Ill. 862,704, pub. 10–15–68. Cl. 26.
Zodiac S.A., La Chaux-De-Fonds, Switzerland. 441,864, ren. 12–31–68. Cl. 27.

U.S. GOVERNMENT PRINTING OFFICE: 0—1968

OFFICIAL GAZETTE
UNITED STATES PATENT OFFICE

VOL. 857

DEC. 1968

MICRO PHOTO DIVISION JN
BELL & HOWELL COMPANY